Contents

Welcome from the General Chair

On behalf of the IEEE Geoscience and Remote Sensing Society and the IGARSS 2019 Organizing Committee, we are pleased to invite you to Yokohama, Japan for IGARSS 2019 that will be held from Sunday July 28th through Friday August 2nd, 2019 at Convention Center "PACIFICO Yokohama".

This will be the 39th annual IGARSS symposium and will continue the excellent tradition of gathering world-class scientists, engineers and educators engaged in the fields of geoscience and remote sensing. We believe that the additional scientific themes of this event, focusing on 'Global-Environment Observation and Disaster Mitigation' will allow the formation of an inspiring technical program.

IGARSS is recognized today as a premier event in remote sensing and provides an ideal forum for obtaining up-to-date information about the latest developments, exchanging ideas, identifying future trends in your research area and making contacts with the international remote sensing community. With intensive and careful planning underway we anticipate a technically outstanding and most pleasant symposium.

We look forward to meeting you in Yokohama during IGARSS 2019.

Akira Hirose
The University of Tokyo
General Chair

Welcome from the IEEE Geoscience and Remote Sensing Society President

Welcome to IGARSS 2019! The IEEE Geoscience And Remote Sensing Symposium is the most important meeting for the membership of the IEEE Geoscience and Remote Sensing Society (GRSS). As the 2019 GRSS President, I am proud to welcome you at this important event!

During IGARSS, GRSS members and non-members share their latest results and novel developments in the area of geoscience and remote sensing. IGARSS is a big conference, and all the technical communities that form the GRSS community are gathering in different sessions, meetings and technical activities. I am sure each of you will find in this program many works that are directly important to your own research. However, the diverse technical program of IGARSS is also a place to engage other communities, who operate within our own field of interest but with whom traditionally we do not connect. Diversity is an advantage, and cross-fertilization of different ideas and points of view has always brought to new ideas and new research projects. The tracks about Special Topics that mark every IGARSS technical program, as well as the Invited Sessions, are the first – but not the only – means to accomplish this task.

Moreover, while I wish you fruitful technical discussions, let me remind you that, in addition to the technical program, there are many other activities at IGARSS that can be extremely helpful for starting new connections and relationships. For instance, the WinGRSS activities this year start with the Women in GRSS Luncheon, an informal platform for women and men to interact and network with senior members of the Society as well as guest speakers. Moreover, the GRSS IDEA ("Inspire, Develop, Empower, and Advance") Committee organizes the IEEE Women in GRSS Forum to provide professional women in GRSS, whether in industry, academia, or government, the opportunity to create communities that fuel innovation, facilitate knowledge sharing, and provide support through a session designed to foster discussion and collaboration.

Finally, let's not forget about the GRSS Booth, a traditional landmark in the IGARSS exhibition, and the easiest way to meet the Society officers, and learn about the Society news. At IGARSS 2018 this booth was a real experience, with a Social Media Wall, live-streamed interviews of senior Society leaders, and a photo contest. This year the team in charge of the booth is planning for more, with the opportunity to meet the Vice Presidents and Directors of the Society, and collect one of the many giveaways from the Society and its Technical Committees. Do not forget to come by and visit the GRSS Booth during your week in Yokohama!

As my final words, I must add that we are all very grateful to the Local Organizing Committee, who made IGARSS possible by an enormous amount of effort by many volunteers. From the reviewers devoting their time to reading and analyzing the submissions, to the Session Organizers recommending decisions on the papers, to the Technical Program Committee determining the schedule and content of the technical program, everybody worked to shape the final set of papers and presentations that are listed in this booklet. All these people deserve a big "thank you!" from us all, because everything that we enjoy during this conference is a direct result of their work.

Paolo Gamba
2019 President
IEEE Geoscience and Remote Sensing Society

Welcome from Technical Program Committee
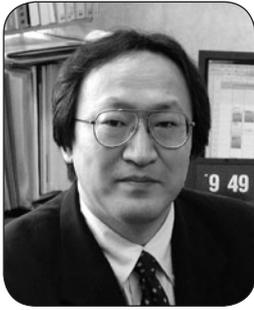
The IGARSS 2019 Technical Program Committee (TPC) expresses great pleasure in welcoming you in Yokohama. IGARSS 2019 is a unique opportunity to exchange ideas and to obtain information about advances and the state of the art in remote sensing and geoscience. According to the IGARSS main theme 'Disasters and Environment', four special sub-themes will be presented in special oral sessions and during the plenary: monitoring of natural disasters and hazards, NewSpace initiatives in remote sensing, big data and machine learning, as well as identification of remote sensing indicators for climate change. In addition to IGARSS`s global theme we have extended the technical program and enriched it with new special topics covering the need for understanding the environment and emerging disasters.

For this year's IGARSS we have received 3102 abstract submissions from over 57 countries. Each submitted abstract has been reviewed by a minimum of 2 expert reviewers, and the IGARSS 2019 Theme Coordinators and Session Organizers have determined abstract acceptance and placement based on the relevance, technical soundness, and originality of the paper. Following the review process, the IGARSS 2019 Theme Coordinators met in San Francisco to assemble an interesting and well balanced technical program which comprises 1061 oral sessions' presentations and 1551 interactive poster sessions. About 37% out of 230 oral sessions have been organized as invited sessions and 7% are special dedicated technical sessions. Especially the high amount of submitted student papers needs to be highlighted.

We encourage you to review poster papers through the day, and to interact with poster authors during the poster sessions in the following primary areas: data analysis methods, atmosphere, cryosphere, oceans, land, but also missions, sensors and calibration or data management and education. All presented papers will be published in the conference proceedings on IEEE Xplore.

The technical program also includes the IGARSS Student Prize Paper Competition. From 305 submitted student paper abstracts only 10 could be selected for the student paper competition. The finalist papers have been selected by a committee of experts and will be presented in two dedicated sessions on Tuesday morning. The winners will be announced at the awards banquet on Thursday evening, to which everyone is cordially invited.

As a novelty this year we decided to forego the printed version of the IGARSS booklet in respect of the environment and will instead handout a thin foldable conference guide. The design of the conference guide is based on the Japanese traditional art called "Origami" that will introduce you into the IGARSS technical program and into the Japanese culture. This special pattern is called "Miura-ori", and is used for foldable solar panel .In addition, a transition to the electronic version of the session chair evaluation form has been generated and will be available for all session chairs (oral and interactive sessions).

Finally, the program has been enriched by other events, seminars, and special activities that you can discover in the conference guide and by using the IGARSS 2019 App. In particular, the Technology, Industry, and Education (TIE) forum will provide opportunities for panel discussion and other interactions on a variety of important topics. The technical committees of GRSS will hold their meetings during the symposium, and warmly welcome all interested colleagues to participate.

Our highest appreciation goes to the Theme Coordinators, the Session Organizers, Invited Session Organizers, and the Reviewers of IGARSS 2019 for their extensive and persistent hard work in selecting high quality papers and creating an excellent technical program. Finally, we would like to thank Conference Management Service (CMS Inc.) for their dedicated support to the implementation of the IGARSS 2019 technical program and especially Lance Cotton of CMS for his outstanding support of our work.

We wish you a productive and exciting week at IGARSS 2019 in Yokohama!

Hiroyoshi Yamada, Akira Iwasaki and Irena Hajnsek
IGARSS 2019 Technical Program Co-Chairs

ORAL SESSIONS. TECHNICAL AND SOCIAL EVENTS

Sunday, July 28

	Room 311	Room 312	Room 313	Room 314	Room 315	Room 411+412	Room 413	Room 416+417	Room 418	Room 419	Room 511+512
08:30 - 12:30	Preliminary Strategic Meeting -Room 422										
09:30 - 12:45	HD-1 Bridge 3D Radiative Transfer Simulations from optical, thermal, lidar to microwave	HD-2 Pansharpening: from classical techniques to recent advances	HD-4 Near Range and Ground Penetrating Radar (GPR) / UWB radar : Fundamentals to applications		FD-1 From SAR Polarimetry to Polarimetric SAR Interferometry and Polarimetric SAR Tomography: Potentials, Limitations and Complementarities in the Context of Future Spaceborne Missions.	FD-2 Remote Sensing with Reflected Global Navigation Satellite System and Signals of Opportunity	FD-3 Machine Learning in Remote Sensing - Best practices and recent solutions	FD-4 Earth Observation Big Data Intelligence: theory and practice of deep learning and big data mining	FD-5 Deep learning with the Orfeo ToolBox	FD-6 Natural disasters and hazards monitoring using Earth Observation data	TIE Industry workshop
12:45 - 14:15	Lunch Time										
14:15 - 17:30	HD-5 Spectrum Management and Radio Frequency Interference (RFI) in Microwave Remote Sensing	HD-6 Random Forest Classification: Guidelines on Model Optimization, Variable and Training Selection	HD-7 Analysis of SAR Amplitude and Phase Time series for land applications	HD-8 3D/4D SAR Tomography: principles and applications	[FD-1 Continued]	[FD-2 Continued]	[FD-3 Continued]	[FD-4 Continued]	[FD-5 Continued]	[FD-6 Continued]	TIE Industry workshop
17:30 - 18:00	Break										
18:00 - 20:00	Welcome Reception -Room 501 + 503										

OPENING, PLENARY, AND ORAL SESSIONS. TECHNICAL AND SOCIAL EVENTS

Monday, July 29

	Room 211+212	Room 213	Room 311+312	Room 313+314	Room 315	Room 411+412	Room 413	Room 416+417	Room 418	Room 419	Room 421	Room 511+512	Room 503
09:00 - 12:40	Plenary Session and Opening Ceremony - Main Hall												
10:25 - 13:00	Walking Tour 1												
12:40 - 13:40	Lunch Time												
13:40 - 15:20			MO3.R3 Advancing Remote Sensing in the Geosciences through Standardization I	MO3.R4 Radio Frequency Interference (RFI) in Passive Instruments	MO3.R5 Object Detection in SAR Imaging I	MO3.R6 Urban Land Use and Land Cover Change	MO3.R7 Global Precipitation Measurement Mission I	MO3.R9 TanDEM-X and Innovative Applications I	TIE Education in Action	MO3.R11 Change Detection Techniques in Multitemporal SAR Images I	MO3.R12 Land Use Applications I	MO3.R13 International Spaceborne Imaging Spectroscopy Missions: Updates and News I	MO3.R8 NewSpace Initiatives in Remote Sensing
15:20 - 16:20	Poster Sessions & Break												
16:20 - 18:00			MO4.R3 Advancing Remote Sensing in the Geosciences through Standardization II	MO4.R4 Radio Frequency Interference (RFI) and Spectrum Management Issues	MO4.R5 Object Detection in Urban Areas II	MO4.R6 Land Use and Land Cover Change in Vegetated Terrains	MO4.R7 Global Precipitation Measurement Mission II	MO4.R9 TanDEM-X and Innovative Applications II	MO4.R10 SAR Instruments and Calibration III	MO4.R11 Analysis of Multitemporal Optical Images	MO4.R12 Recent Developments in LAI and FAPAR Estimation and Validation	MO4.R13 International Spaceborne Imaging Spectroscopy Missions: Updates and News II	MO4.R8 Identification of Remote Sensing Indicators for Climate Change II
19:00 - 21:00	TIE YP Mixture - RISTORANTE ATTIMO												
19:00 - 21:00	Noge Night (The Japanese Casual-Food Evening Walk in Noge Area) 1												

ORAL SESSIONS. TECHNICAL AND SOCIAL EVENTS

Tuesday, July 30

Time	Room 211+212	Room 213	Room 311+312	Room 313+314	Room 315	Room 411+412	Room 413	Room 414+415	Room 416+417	Room 418	Room 419	Room 421	Room 511+512
08:00 - 09:40	TU1.R1 New Developments in Monitoring of Ocean Surface Features with Polarimetric SAR I	TU1.R2 Numerical Weather Prediction and Data Assimilation I	TU1.R3 Advanced Flood Monitoring and Prediction for Global Disaster Risk Reduction I	TU1.R4 Student Paper Competition I	TU1.R5 Object Detectors for Various Remote Sensing Techniques	TU1.R6 Forest Methods using Radar Sensors	TU1.R7 SAR Applications using International Virtual SAR Constellation I	TU1.R8 Topography, Geology and Geomorphology I	TU1.R9 SAR Interferometry: Along and Across I	TU1.R10 Scatterometers and Rain Radars	TU1.R11 Analysis of Image Time Series III	TU1.R12 Estimation and Retrieval of Land Parameters I	TU1.R13 GCOM & Himawari / LEO-GEO Synergy I
08:00 - 17:00	Kamakura Tour												
09:40 - 10:40	Poster Sessions & Break												
10:40 - 12:20	TU2.R1 New Developments in Monitoring of Ocean Surface Features with Polarimetric SAR II	TIE Women in GRSS Forum	TU2.R3 Advanced Flood Monitoring and Prediction for Global Disaster Risk Reduction II	TU2.R4 Student Paper Competition II	TU2.R5 Object Detection from Space	TU2.R6 Forest Methods using Optical Sensors	TU2.R7 SAR Applications using International Virtual SAR Constellation II	TU2.R8 Topography, Geology and Geomorphology IV	TU2.R9 SAR Interferometry: Along and Across IV	TU2.R10 GNSS-R Sensors, Techniques and Applications III	TU2.R11 Deep Learning in Multitemporal Analysis	TU2.R12 Image Restoration and Radiometric Correction	TU2.R13 GCOM & Himawari / LEO-GEO Synergy II
12:20 - 13:40	Lunch Time												
12:20 - 13:40	Student Prize Committee Lunch - Room 422												
12:20 - 13:40	TIE Women in GRSS Luncheon - Bay bridge cafeteria												
13:40 - 15:20	TU3.R1 The 2011 Eastern Japan Great Earthquake Disaster I	TIE Industry Forum	TU3.R3 Spaceborne SAR Missions	TU3.R4 Space Lidar: Missions, Technologies and Observations I	TU3.R5 Deep Learning for Object Detection II	TU3.R6 Forest Methods using Lidar Sensors	TU3.R7 Analytics on Datacubes & Analysis Ready Earth Data - supported by GRSS ESI, OGC, ISO, INSPIRE I	TU3.R8 Remote Sensing of Wetlands I	TU3.R9 Differential SAR Interferometry: Methods and Techniques I	TU3.R10 Data Fusion: The AI Era I	TU3.R11 Unmixing Techniques for Hyperspectral Images I	TU3.R12 Estimation Methods for Ocean and Atmosphere	TU3.R13 Physical Modeling in Microwave and Optical Remote Sensing I
15:20 - 16:20	Poster Sessions & Break												
16:20 - 18:00	TU4.R1 The 2011 Eastern Japan Great Earthquake Disaster II	TU4.R2 Atmospheric Sounding III	TU4.R3 Satellite Missions II	TU4.R4 Space Lidar: Missions, Technologies and Observations II	TU4.R5 Advanced Methods for Object Detection III	TU4.R6 Forest: Application and Modelling		TU4.R8 Remote Sensing of Inland Waters II	TU4.R9 Differential SAR Interferometry: Methods and Techniques V	TU4.R10 Data Fusion: The AI Era II	TU4.R11 Unmixing Techniques for Hyperspectral Images III	TU4.R12 Signal Estimation Techniques I	TU4.R13 Physical Modeling in Microwave and Optical Remote Sensing II
18:00 - 20:00	Chapter Chairs Meeting - Room 503												
19:00 - 21:00	Japanese Style Cruise Tour												
19:00 - 21:00	Noge Night (The Japanese Casual-Food Evening Walk in Noge Area) 2												

ORAL SESSIONS. TECHNICAL AND SOCIAL EVENTS

Wednesday, July 31

Time	Room 211+212	Room 213	Room 311+312	Room 313+314	Room 315	Room 411+412	Room 413	Room 414+415	Room 416+417	Room 418	Room 419	Room 421	Room 511+512
08:00 - 09:40	WE1.R1 Mapping Planetary Bodies through Remote Sensing I	WE1.R2 Clouds and Precipitation: Data Products and Retrievals I	WE1.R3 SAR Polarimetry: Theory and Applications I	WE1.R4 Deep Learning for Multispectral Image Analysis I	WE1.R5 Hyperspectral Image Classification I	WE1.R6 Soil Moisture Modelling and Retrievals	WE1.R7 IEEE GRSS Data Fusion Contest I	WE1.R8 Monitoring and Damage Assessment of Earthquake	WE1.R9 Differential SAR Interferometry: Applications II	WE1.R10 Technology Validation and Science using CubeSat Platforms I	WE1.R11 Target and Anomaly Detection in Hyperspectral Images	WE1.R12 Ocean Biology and Water Quality I	WE1.R13 How Advanced Satellite Capabilities Improve Operational Forecasts for Natural Disasters I
09:40 - 10:40	Poster Sessions & Break												
10:40 - 12:20	WE2.R1 Mapping Planetary Bodies through Remote Sensing II	WE2.R2 Clouds and Precipitation: Calibration and Modelling II	WE2.R3 SAR Polarimetry: Theory and Applications II	WE2.R4 Deep Learning for Multispectral Image Analysis II	WE2.R5 Analysis of Time Series	WE2.R6 Soil Moisture Retrievals and Validation	WE2.R7 IEEE GRSS Data Fusion Contest II	WE2.R8 Monitoring and Damage Assessment of Volcanic Activity	WE2.R9 Earth Observation Applications	WE2.R10 Technology Validation and Science using CubeSat Platforms II	WE2.R11 Target Detection III	WE2.R12 Ocean Surface Winds and Currents IV	WE2.R13 How Advanced Satellite Capabilities Improve Operational Forecasts for Natural Disasters II
12:20 - 19:00	Technical Tour 1 (NICT)												
12:20 - 13:40	Lunch Time												
12:20 - 13:40	Author Education and Editors Meet-up - Room 421												
12:20 - 13:40	GRSS Fellows Evaluation Lunch - Room 422												
13:40 - 15:20	WE3.R1 Non Local SAR Paradigm: New Methods and Applications I	WE3.R2 Aerosols I	WE3.R3 Advanced Methods for Polarimetric SAR Information Extraction I	WE3.R4 Deep Learning in Remote Sensing I	WE3.R5 Learning Scene Classification	WE3.R6 Spatial Resolution Enhancement of Soil Moisture and Related Applications	WE3.R7 Radio Frequency Interference (RFI) in Active Remote Sensing and GNSS Reflectometry	WE3.R8 Monitoring and Damage Assessment of Landslide and Surface Deformation	WE3.R9 Airborne SAR	WE3.R10 Microwave Radiometer Instruments and Calibration I	WE3.R11 Unmixing and Target Detection in Hyperspectral and Multispectral Images	WE3.R12 Ocean Surface Winds and Currents V	WE3.R13 Advances in Reflectometry with GNSS and Signals of Opportunity (GNSS+R) I
15:20 - 16:20	Poster Sessions & Break												
16:20 - 18:00	WE4.R1 Non Local SAR Paradigm: New Methods and Applications II	WE4.R2 Aerosols IV	WE4.R3 Advanced Methods for Polarimetric SAR Information Extraction II	WE4.R4 Deep Learning in Remote Sensing II	WE4.R5 Hyperspectral Image Classification II	WE4.R6 Synergism and Alternative Approaches for Soil Moisture Estimation	WE4.R7 Small Satellite Technology I	WE4.R8 Monitoring and Damage Assessment of Tropical Storm	WE4.R9 SAR Statistics & Parameter Estimation	WE4.R10 Microwave Radiometer Instruments and Calibration IV	WE4.R11 Superresolution and Multiresolution Fusion Techniques II	WE4.R12 Ocean Surface Salinity and Temperature II	WE4.R13 Advances in Reflectometry with GNSS and Signals of Opportunity (GNSS+R) II
19:00 - 21:00	Technical Committees & Chapter Chairs Dinner - RESTAURANT DANZERO												
19:00 - 21:00	IGARSS World Cup												
19:30 - 21:10	JAZZ Night "Motion Blue"												

ORAL SESSIONS. TECHNICAL AND SOCIAL EVENTS

Thursday, August 1

	Room 211+212	Room 213	Room 311+312	Room 313+314	Room 315	Room 411+412	Room 413	Room 414+415	Room 416+417	Room 418	Room 419	Room 421	Room 511+512
08:00 - 09:40	TIE Code Workshop	TH1.R2 GRSS Student Grand Challenge	TH1.R3 ALOS-2/ALOS-4 I	TH1.R4 End-to-End New Observing Strategies for Disaster and Environment I	TH1.R5 Multi-Modal / Multi-Scale: Transfer Learning	TH1.R6 Remote Sensing for Crop Classification, Mapping and Monitoring I	TH1.R7 Electromagnetic Modeling of the Sea Surface	TH1.R8 Monitoring and Damage Assessment of Flood III	TH1.R9 Ambiguity Reduction	TH1.R10 Lidar Science and Technology	TH1.R11 Multisensor and Multisource Classification Techniques	TH1.R12 Coastal Zones I	TH1.R13 NASA Soil Moisture Active Passive Mission Observations and Results I
09:40 - 10:40	Poster Sessions & Break												
10:25 - 13:45	Walking Tour 2 (Half day with Chinese Lunch)												
10:40 - 12:20	TIE Code Workshop	TH2.R2 Data Management and Systems III	TH2.R3 ALOS-2/ALOS-4 II	TH2.R4 End-to-End New Observing Strategies for Disaster and Environment II	TH2.R5 Domain adaptation	TH2.R6 Remote Sensing for Crop Parameters and Phenology	TH2.R7 Electromagnetic Modeling: Volumes, Surfaces, Methods	TH2.R8 Monitoring and Damage Assessment of Urban and Buildings	TH2.R9 SAR Focusing	TH2.R10 Passive Sensors and Calibration	TH2.R11 Data Fusion with Deep Learning Techniques	TH2.R12 Ocean Altimetry II	TH2.R13 NASA Soil Moisture Active Passive Mission Observations and Results II
12:20 - 13:40	Lunch Time												
12:20 - 13:40	Editors Lunch Meeting - Bay bridge Cafeteria												
12:20 - 13:40	TIE 3-Minutes Thesis competition - Room 211+212												
13:40 - 15:20	TIE Code Workshop	TH3.R2 Remote Sensing Data Policy and Decisions I	TH3.R3 Sentinel-1 Mission: Status, Evolution and Contribution to Disasters and Geohazards Monitoring I	TH3.R4 End-to-End New Observing Strategies for Disaster and Environment III	TH3.R5 Hyperspectral Image Classification III	TH3.R6 Remote Sensing for Agricultural Hydrology	TH3.R7 Advanced Machine Learning for Time Series Remote Sensing Data Analysis I	TH3.R8 Monitoring and Damage Assessment of Land Surface	TH3.R9 SAR Imaging Techniques	TH3.R10 Calibration and Validation of Spaceborne Imaging Spectroscopy Sensors	TH3.R11 Super-resolution and Multiresolution Fusion Techniques V	TH3.R12 Geographic Information Science I	TH3.R13 New Products and Results in Monitoring Biomass and Plant Water Stress with Microwave Radiometry I
15:20 - 16:20	Poster Sessions & Break												
16:20 - 18:00	TIE Code Workshop	TH4.R2 Education and Remote Sensing	TH4.R3 Sentinel-1 Mission: Status, Evolution and Contribution to Disasters and Geohazards Monitoring II	Global Exploration Workshop (Space Agency Forum)	TH4.R5 Deep Learning	TH4.R6 Remote Sensing for Crop Classification, Mapping and Monitoring V	TH4.R7 Advanced Machine Learning for Time Series Remote Sensing Data Analysis II	TH4.R8 Data Analysis Methods in Monitoring and Damage Assessment	TH4.R9 PolSAR Methods	TH4.R10 BRDF, Geometric and Radiometric Calibration	TH4.R11 Registration on Multisensor and Multisource Images	TH4.R12 Geographic Information Science IV	TH4.R13 New Products and Results in Monitoring Biomass and Plant Water Stress with Microwave Radiometry II
19:00 - 21:00	Awards Banquet - Osanbashi Hall												

ORAL SESSIONS, TECHNICAL AND SOCIAL EVENTS

Friday, August 2

Time	Room 211+212	Room 213	Room 311+312	Room 313+314	Room 315	Room 411+412	Room 413	Room 414+415	Room 416+417	Room 418	Room 419	Room 421	Room 511+512
08:00 - 09:40	FR1.R1 Big Data and Machine Learning for Improving Urban Climate Resiliency I	FR1.R2 Seasonal Snow	FR1.R3 Analysis Ready Data: Opportunities and Future Directions I	FR1.R4 Earth Observation Science and Exploitation using Common Standards and Platforms I	FR1.R5 Hyperspectral Image Classification IV	FR1.R6 Forest: Biomass and Carbon Cycle	FR1.R7 Spectral Geology from Microns to Kilometers Applied to Mineral Mapping and Resource Studies I	FR1.R8 Big Data and Machine Learning - Neural Network in Remote Sensing II	FR1.R9 PolSAR Methods and Applications	FR1.R10 UAV/Airborne SAR	FR1.R11 Subsurface Sensing / GPR	FR1.R12 Labels in Deep Learning: Friend or Foe? I	FR1.R13 Monitoring and Understanding Cryosphere Dynamics at Different Scales I
09:40 - 10:40	Poster Sessions & Break												
10:00 - 18:00	Technical Tour 2 (JAMSTEC)												
10:40 - 12:20	TIE Group on Earth Observations in Asia-Oceania (AO-GEO) - Room 422												
10:40 - 12:20	FR2.R1 Big Data and Machine Learning for Improving Urban Climate Resiliency II	FR2.R2 Ice Sheets and Glaciers III	FR2.R3 Analysis Ready Data: Opportunities and Future Directions II	FR2.R4 Earth Observation Science and Exploitation using Common Standards and Platforms II	FR2.R5 Image Segmentation I	FR2.R6 Urban Remote Sensing II	FR2.R7 Spectral Geology from Microns to Kilometers Applied to Mineral Mapping and Resource Studies II	FR2.R8 Big Data and Machine Learning - Machine Learning for Landcover/Landuse	FR2.R9 Compact and Quad Polarimetry: Methods and Applications	FR2.R10 Ground Based Systems II	FR2.R11 Digital Agriculture with Machine Learning and Remote Sensing I	FR2.R12 Labels in Deep Learning: Friend or Foe? II	FR2.R13 Monitoring and Understanding Cryosphere Dynamics at Different Scales II
12:20 - 13:40	Lunch Time												
12:20 - 13:40	TC Chairs Luncheon - Room 422												
13:40 - 15:20	FR3.R1 RADARSAT-2 and RADARSAT Constellation Mission I	FR3.R2 Sea Ice	FR3.R3 Remote Sensing for Oil & Gas Exploration and Environmental Monitoring I	FR3.R4 Future Programs, Missions and Instruments on GEO or LEO Orbits I	FR3.R5 Image Segmentation II	FR3.R6 Urban Remote Sensing III	FR3.R7 Advances on Analysis of Big Data in Remote Sensing I	FR3.R8 Big Data and Machine Learning - Machine Learning for SAR	FR3.R9 Tomography and 3D Mapping III	FR3.R10 Hyperspectral Data Analysis	FR3.R11 Digital Agriculture with Machine Learning and Remote Sensing II	TIE How to Market Geospatial Products and Services Worldwide	FR3.R13 Bistatic and Digital Beamforming SAR II
15:20 - 15:40	Break												
15:40 - 17:20	FR4.R1 RADARSAT-2 and RADARSAT Constellation Mission II	FR4.R2 Freeze-Thaw Status and Lake Ice	FR4.R3 Remote Sensing for Oil & Gas Exploration and Environmental Monitoring II	FR4.R4 Future Programs, Missions and Instruments on GEO or LEO Orbits II		FR4.R6 Urban Remote Sensing IV	FR4.R7 Advances on Analysis of Big Data in Remote Sensing II	FR4.R8 Big Data and Machine Learning - New Trends in Remote Sensing II	FR4.R9 Tomography and 3D Mapping IV	FR4.R10 Tensor Decomposition	FR4.R11 Digital Agriculture with Machine Learning and Remote Sensing III		
17:30 - 18:00	Closing Ceremony												

Poster Sessions

Monday, July 29

	Session Code	Poster Area Name	Session Name
Room 501-502 **15:20 - 16:20**	MOP2.PA	Poster Area A	Object Detection in SAR Imaging II
	MOP2.PB	Poster Area B	Object Detection in Urban Areas I
	MOP2.PC	Poster Area C	Advanced Methods for Ship Detection
	MOP2.PD	Poster Area D	Deep Learning for Object Detection I
	MOP2.PE	Poster Area E	Advanced Methods for Static and Moving Objects
	MOP2.PF	Poster Area F	Advanced Methods for Object Detection I
	MOP2.PG	Poster Area G	Advanced Methods for Object Detection II
	MOP2.PH	Poster Area H	Change Detection Techniques in Multitemporal SAR Images II
	MOP2.PI	Poster Area I	Analysis of Multitemporal Multispectral Images
	MOP2.PJ	Poster Area J	Analysis of Image Time Series I
	MOP2.PK	Poster Area K	Analysis of Image Time Series II
	MOP2.PL	Poster Area L	Land Use Applications in Vegetated Areas
	MOP2.PM	Poster Area M	Land Use Applications II
	MOP2.PN	Poster Area N	Land Cover Dynamics for Vegetated Terrains
	MOP2.PO	Poster Area O	Land Cover Dynamics in Urban and Hydrologic Systems
Room 503 **15:20 - 16:20**	MOP2.PQ	Poster Area Q	Identification of Remote Sensing Indicators for Climate Change I
	MOP2.PR	Poster Area R	SAR Instruments and Calibration I
	MOP2.PS	Poster Area S	SAR Instruments and Calibration II

Poster Sessions

Monday, July 29

Tuesday, July 30

	Session Code	Poster Area Name	Session Name
Room 501-502 **09:40 - 10:40**	TUP1.PB	Poster Area B	SAR Interferometry: Along and Across II
	TUP1.PC	Poster Area C	SAR Interferometry: Along and Across III
	TUP1.PD	Poster Area D	Estimation and Retrieval of Land Parameters II
	TUP1.PE	Poster Area E	Estimation and Retrieval of Land Parameters III
	TUP1.PF	Poster Area F	Estimation of Atmosphere and Radiation Parameters
	TUP1.PG	Poster Area G	Signal Estimation Techniques II
	TUP1.PH	Poster Area H	Esitmation Methods for Hyperspectral and Multispectral Data
	TUP1.PI	Poster Area I	Remote Sensing of Leaf Area Index and Clunping
	TUP1.PJ	Poster Area J	Monitoring Temporal Variability of Vegetation
	TUP1.PK	Poster Area K	Spatial Structure and Health Moniotoring of Vegetation
	TUP1.PL	Poster Area L	Remote Sensing of Vegetation Parameters
	TUP1.PM	Poster Area M	Forest Classification and Parameter Estimation
	TUP1.PN	Poster Area N	Topography, Geology and Geomorphology II
	TUP1.PO	Poster Area O	Topography, Geology and Geomorphology III
Room 503 **09:40 - 10:40**	TUP1.PQ	Poster Area Q	Numerical Weather Prediction and Data Assimilation II
	TUP1.PR	Poster Area R	GNSS-R Sensors, Techniques and Applications I
	TUP1.PS	Poster Area S	GNSS-R Sensors, Techniques and Applications II

Tuesday, July 30

	Session Code	Poster Area Name	Session Name
Room 501-502 **15:20 - 16:20**	TUP2.PA	Poster Area A	Atmopsheric Sounding I
	TUP2.PB	Poster Area B	Atmospheric Sounding II
	TUP2.PC	Poster Area C	Differential SAR Interferometry: Methods and Techniques II
	TUP2.PD	Poster Area D	Differential SAR Interferometry: Methods and Techniques III
	TUP2.PE	Poster Area E	Differential SAR Interferometry: Methods and Techniques IV
	TUP2.PF	Poster Area F	Differential SAR Interferometry: Applications I
	TUP2.PG	Poster Area G	Unmixing Techniques for Hyperspectral Images II
	TUP2.PH	Poster Area H	Target Detection and Tracking
	TUP2.PI	Poster Area I	Target Detection I
	TUP2.PJ	Poster Area J	Anomaly Detection and Unmixing in Hyperspectral Images
	TUP2.PK	Poster Area K	Target Detection II
	TUP2.PL	Poster Area L	Remote Sensing of Wetlands II
	TUP2.PM	Poster Area M	Remote Sensing of Inland Waters I
	TUP2.PN	Poster Area N	Satellite Missions I
	TUP2.PO	Poster Area O	Missions, Sensors and Calibration
Room 503 **15:20 - 16:20**	TUP2.PQ	Poster Area Q	Monitoring and Damage Assessment of Earthquake and Volcanic Activity
	TUP2.PR	Poster Area R	Monitoring and Damage Assessment of Landslide and Surface Deformation I
	TUP2.PS	Poster Area S	Monitoring and Damage Assessment of Landslide and Surface Deformation II

IEEE Geoscience and Remote Sensing Society · https://grss-ieee.org/

Wednesday, July 31

	Session Code	Poster Area Name	Session Name
Room 501-502 09:40 - 10:40	WEP1.PA	Poster Area A	Clouds and Precipitation: Data Products and Retrievals II
	WEP1.PB	Poster Area B	Clouds and Precipitation: Calibration and Modelling I
	WEP1.PC	Poster Area C	Image Formation I
	WEP1.PD	Poster Area D	Earth Observation
	WEP1.PE	Poster Area E	SAR Interference Mitigation
	WEP1.PF	Poster Area F	Time-Series / Change Detection
	WEP1.PG	Poster Area G	Data Analysis with UAV
	WEP1.PH	Poster Area H	Analysis of LIDAR Data
	WEP1.PI	Poster Area I	Soil Moisture and Related Variables Extraction
	WEP1.PJ	Poster Area J	Alternative Approaches for Soil Moisture Estimation
	WEP1.PK	Poster Area K	Agricultural Applications of Soil Moisture
	WEP1.PL	Poster Area L	Ocean Biology and Water Quality II
	WEP1.PM	Poster Area M	Ocean Surface Winds and Currents I
	WEP1.PN	Poster Area N	Ocean Surface Winds and Currents II
	WEP1.PO	Poster Area O	Ocean Surface Winds and Currents III
	WEP1.PP	Poster Area P	Small Satellite Technology II
Room 503 09:40 - 10:40	WEP1.PQ	Poster Area Q	Monitoring and Damage Assessment of Landslide and Surface Deformation III
	WEP1.PR	Poster Area R	Monitoring and Damage Assessment of Flood I
	WEP1.PS	Poster Area S	Monitoring and Damage Assessment of Flood II

Wednesday, July 31

	Session Code	Poster Area Name	Session Name
Room 501-502 15:20 - 16:20	WEP2.PA	Poster Area A	Aerosols II
	WEP2.PB	Poster Area B	Aerosols III
	WEP2.PC	Poster Area C	Multi-Channel SAR
	WEP2.PD	Poster Area D	Image Formation II
	WEP2.PE	Poster Area E	Analysis of SAR/POLSAR Data
	WEP2.PF	Poster Area F	Natural Disasters / Monitoring of the Environment
	WEP2.PG	Poster Area G	Hyperspectral Remote Sensing I
	WEP2.PH	Poster Area H	Hyperspectral Remote Sensing II
	WEP2.PI	Poster Area I	Super-resolution and Multiresolution Fusion Techniques I
	WEP2.PJ	Poster Area J	Data Fusion Techniques for Image Registration and Classification
	WEP2.PK	Poster Area K	Synergistic Approaches for Soil Moisture Estimation
	WEP2.PL	Poster Area L	Applications of Soil Moisture Measurements
	WEP2.PM	Poster Area M	Microwave Radiometer Instruments and Calibration II
	WEP2.PN	Poster Area N	Microwave Radiometer Instruments and Calibration III
	WEP2.PO	Poster Area O	Big Data and Machine Learning - Neural Network in Remote Sensing I
	WEP2.PP	Poster Area P	Big Data and Machine Learning - Machine Learning for Land Application
Room 503 15:20 - 16:20	WEP2.PQ	Poster Area Q	Monitoring and Damage Assesment of Storm and Weather
	WEP2.PR	Poster Area R	Monitoring and Damage Assesment of Natural Disaster and Hazards I
	WEP2.PS	Poster Area S	Monitoring and Damage Assesment of Natural Disaster and Hazards II
	WEP2.PT	Poster Area T	Ocean Surface Salinity and Temperature I

11

Thursday, August 1			
	Session Code	Poster Area Name	Session Name
Room 501-502 09:40 - 10:40	THP1.PA	Poster Area A	Electromagnetic Modeling of the Sea, Land, Atmosphere
	THP1.PB	Poster Area B	Topics in Electromagnetic Modeling
	THP1.PC	Poster Area C	SAR Systems
	THP1.PD	Poster Area D	SAR Statistics
	THP1.PE	Poster Area E	Hyperspectral Remote Sensing III
	THP1.PF	Poster Area F	Deep Learning Techniques
	THP1.PG	Poster Area G	Advanced Information Processing
	THP1.PH	Poster Area H	Super-resolution and Multiresolution Fusion Techniques III
	THP1.PI	Poster Area I	Super-resolution and Multiresolution Fusion Techniques IV
	THP1.PJ	Poster Area J	Coastal Zones II
	THP1.PK	Poster Area K	Coastal Zones III
	THP1.PL	Poster Area L	Ocean Altimetry I
	THP1.PM	Poster Area M	Lidar Methods and Techniques
	THP1.PN	Poster Area N	Calibration
	THP1.PO	Poster Area O	Data Management and Systems I
	THP1.PP	Poster Area P	Data Management and Systems II
Room 503 09:40 - 10:40	THP1.PQ	Poster Area Q	Remote Sensing for Crop Classification, Mapping and Monitoring II
	THP1.PR	Poster Area R	Remote Sensing for Crop Classification, Mapping and Monitoring III
	THP1.PS	Poster Area S	Big Data and Machine Learning - Machine Learning for SAR and Meteorology
	THP1.PT	Poster Area T	Big Data and Machine Learning - New Trends in Remote Sensing I

Thursday, August 1			
	Session Code	Poster Area Name	Session Name
Room 501-502 15:20 - 16:20	THP2.PA	Poster Area A	Neural Networks in Polarimetry
	THP2.PB	Poster Area B	POLSAR Applications I
	THP2.PC	Poster Area C	POLSAR Applications II
	THP2.PD	Poster Area D	Hyperspectral Remote Sensing IV
	THP2.PE	Poster Area E	Data Analysis Methods: Feature Extraction and Reduction
	THP2.PF	Poster Area F	Data Fusion with Deep Learning Techniques
	THP2.PG	Poster Area G	Signal Processing and Data Fusion
	THP2.PH	Poster Area H	Geographic Information Science II
	THP2.PI	Poster Area I	Geographic Information Science III
	THP2.PJ	Poster Area J	Passive Sensors
	THP2.PK	Poster Area K	UAV Platforms and Applications
	THP2.PL	Poster Area L	Airborne Platforms
	THP2.PM	Poster Area M	Ground Based Systems I
	THP2.PN	Poster Area N	UAV Sensors
	THP2.PO	Poster Area O	Remote Sensing Data Policy and Decisions II
Room 503 15:20 - 16:20	THP2.PQ	Poster Area Q	New Remote Sensing Methods for Estimating Crop Properties
	THP2.PR	Poster Area R	Remote Sensing for Crop Classification, Mapping and Monitoring IV
	THP2.PS	Poster Area S	Forest and Vegetation Obervation by SAR and LiDAR
	THP2.PT	Poster Area T	Forest Parametrization with SAR and Optics

Friday, August 2			
	Session Code	**Poster Area Name**	**Session Name**
Room 501-502 **09:40 - 10:40**	FRP1.PA	Poster Area A	Bistatic and Digital Beamforming SAR I
	FRP1.PB	Poster Area B	Subsurface Sensing
	FRP1.PC	Poster Area C	GPR
	FRP1.PD	Poster Area D	Tomography and 3D Mapping I
	FRP1.PE	Poster Area E	Tomography and 3D Mapping II
	FRP1.PF	Poster Area F	Monitoring of the Vegetation, Optical/Hyperspectral Sensor
	FRP1.PG	Poster Area G	SAR and Radar Data Analysis
	FRP1.PH	Poster Area H	Hyperspectral Band Selection
	FRP1.PI	Poster Area I	Image Segmentation I
	FRP1.PJ	Poster Area J	Image Segmentation II
	FRP1.PK	Poster Area K	Roads and Buildings
	FRP1.PL	Poster Area L	Optical Remote Sensing of Snow
	FRP1.PM	Poster Area M	Microwave Remote Sensing of Snow Cover
	FRP1.PN	Poster Area N	Ice Sheets and Glaciers I
	FRP1.PO	Poster Area O	Ice Sheets and Glaciers II
	FRP1.PP	Poster Area P	Sea and Lake Ice
Room 503 **09:40 - 10:40**	FRP1.PQ	Poster Area Q	Machine Learning Applications for Urban Remote Sensing
	FRP1.PR	Poster Area R	Urban Remote Sensing I
	FRP1.PS	Poster Area S	Urban Mapping

Area Map
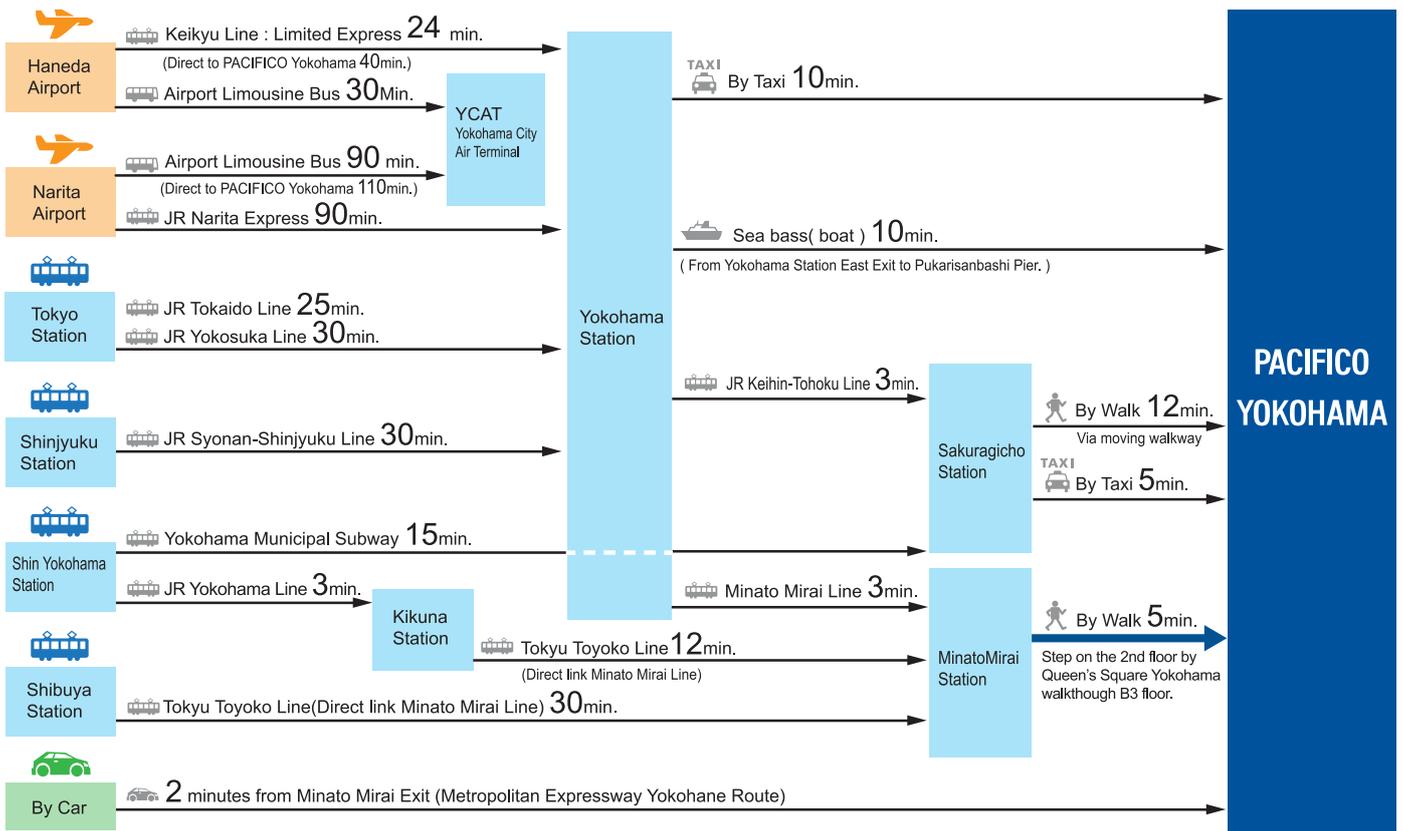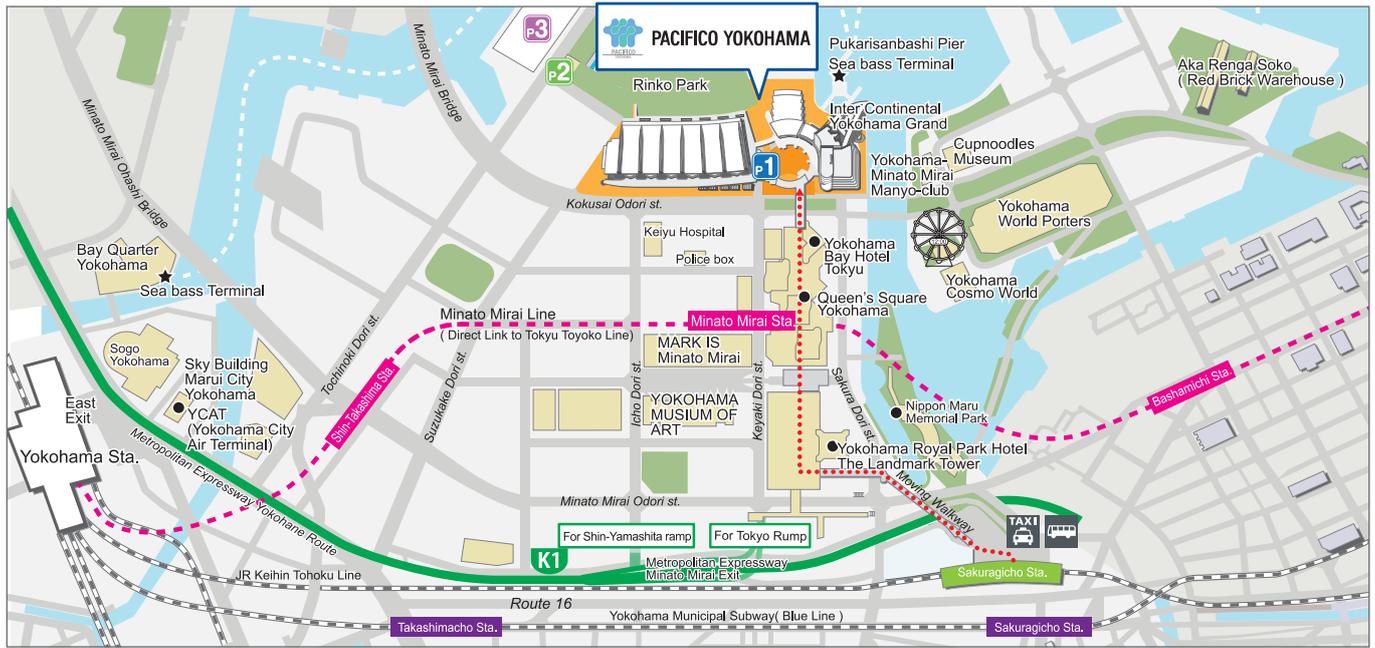
NEC Space Business Vision

Giving the impacts across the whole satellite value chain

Data Utilization

Solving social problems using satellite data and ICT

Safety　　**Environment**　　**Resourse Exploration**　　**Agriculture and Fishery**

Satellite Operation
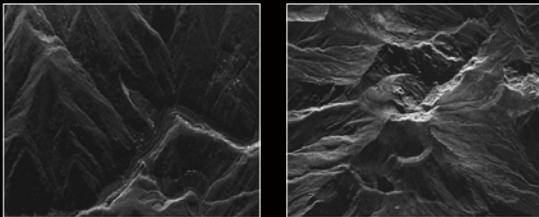
Simulated Images by NEC

©NEC

NEC Satellite Operation Center

Satellite Design / Integration

PACIFICO Yokohama — 1st Floor

1F

InterContinental Yokohama Grand

Entrance Hall

121

Opening Ceremony & Plenary Session
Main Hall

Business Center

124

EV

PACIFICO Yokohama — 2nd Floor

2F

InterContinental Yokohama Grand

Main Entrance

Main Entrance

221

Registration Desk

222

223

211 212 213

EV

Tea Room

Session Room
211+212

Session Room
213
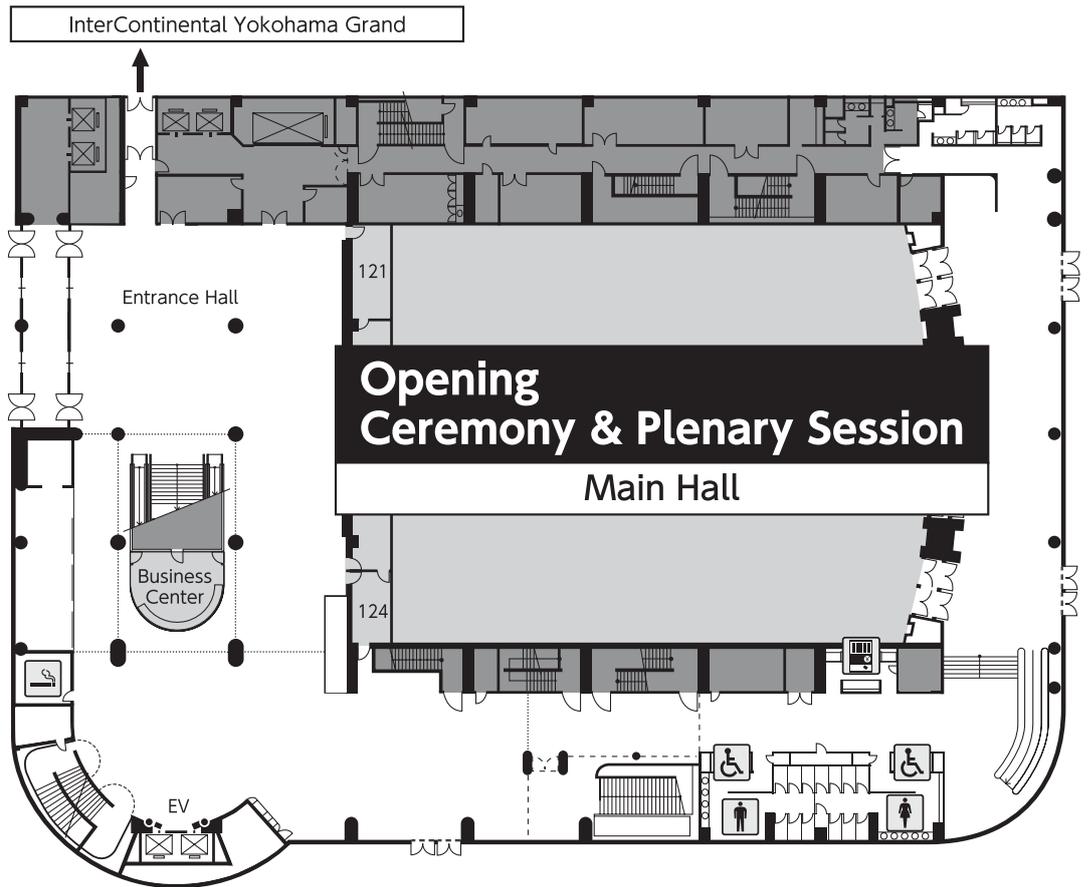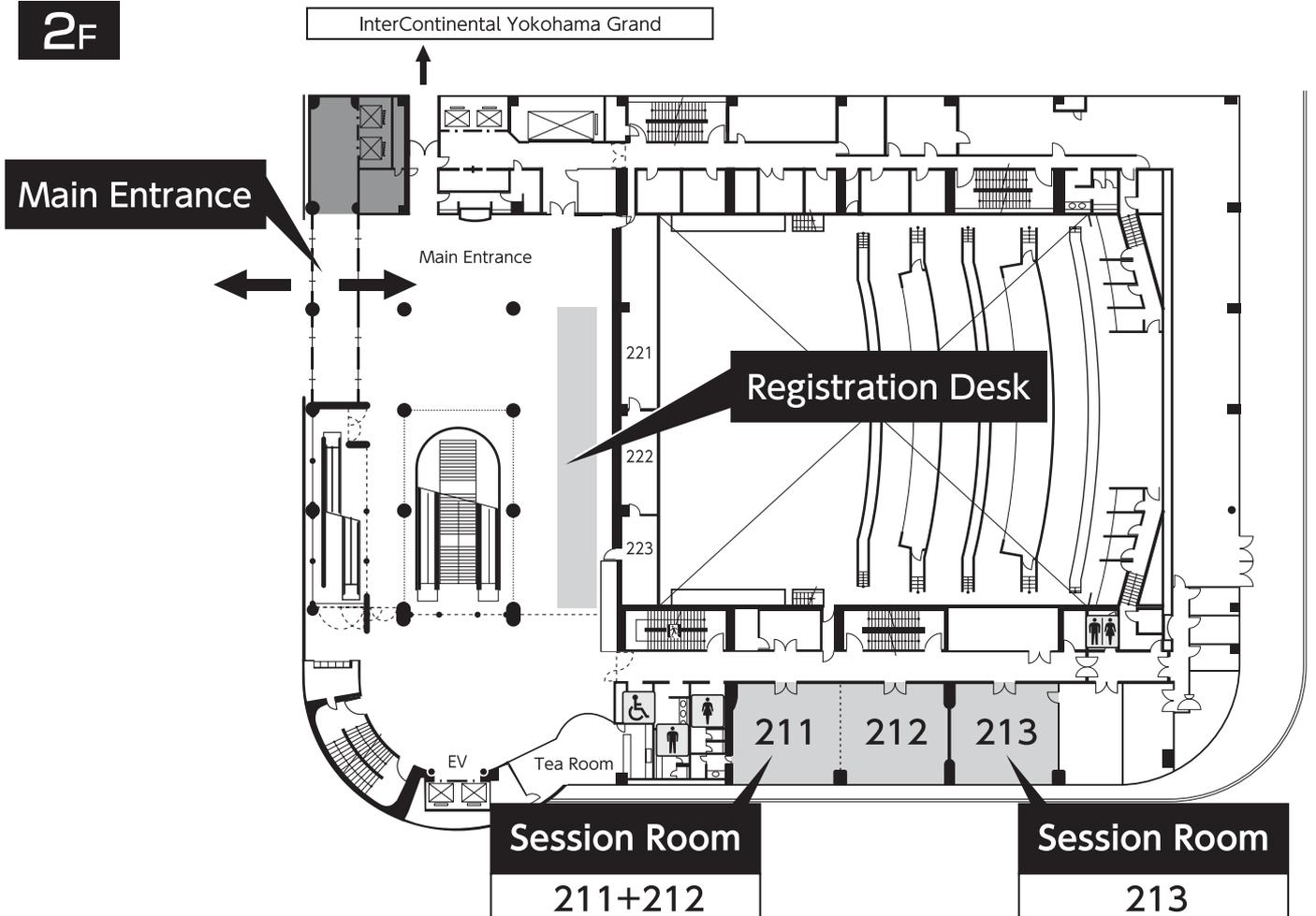
PACIFICO Yokohama — 3rd Floor

3F

Session Room
315

Session Room
313+314

Session Room
311+312

315

314

313

312

311

Foyer

Exhibitions & Coffee Break
301+302+303+304

EV

316

317

318

Secretariat
317
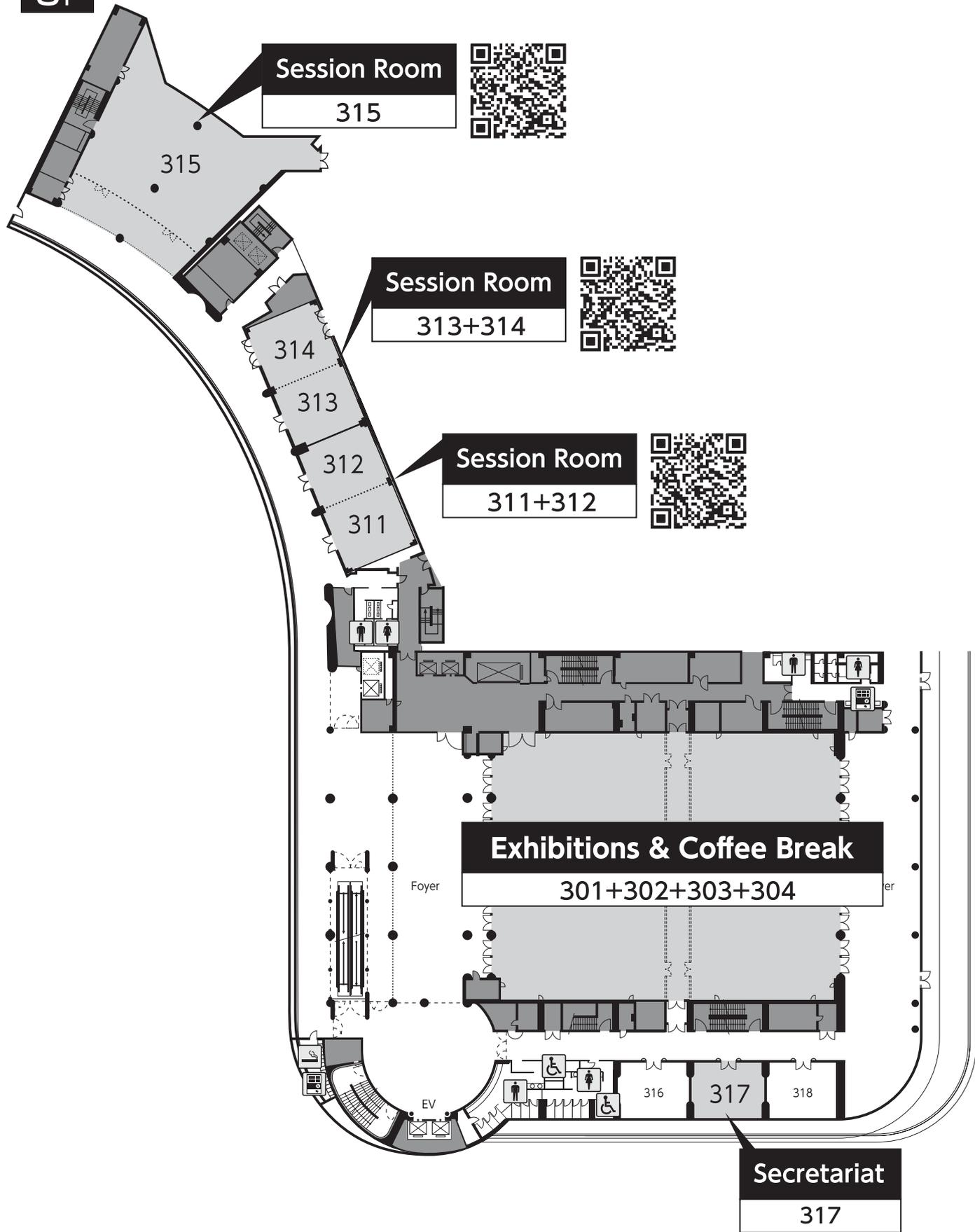
PACIFICO Yokohama — 4th Floor

4F

Session Room
419

419

Session Room
418

418

Session Room
416+417

417

416

Session Room
414+415

415

414

Session Room
413

413

Session Room
411+412

412

411

EV

425

421

422

423

424

EV

Session Room
421

Synspective

Synspective is a Japanese startup company that will establish a synthetic aperture radar (SAR) satellite constellation and provide one-stop geo-solutions based on satellite imagery.

One-stop Geo Solution; Earth observation for anywhere anytime
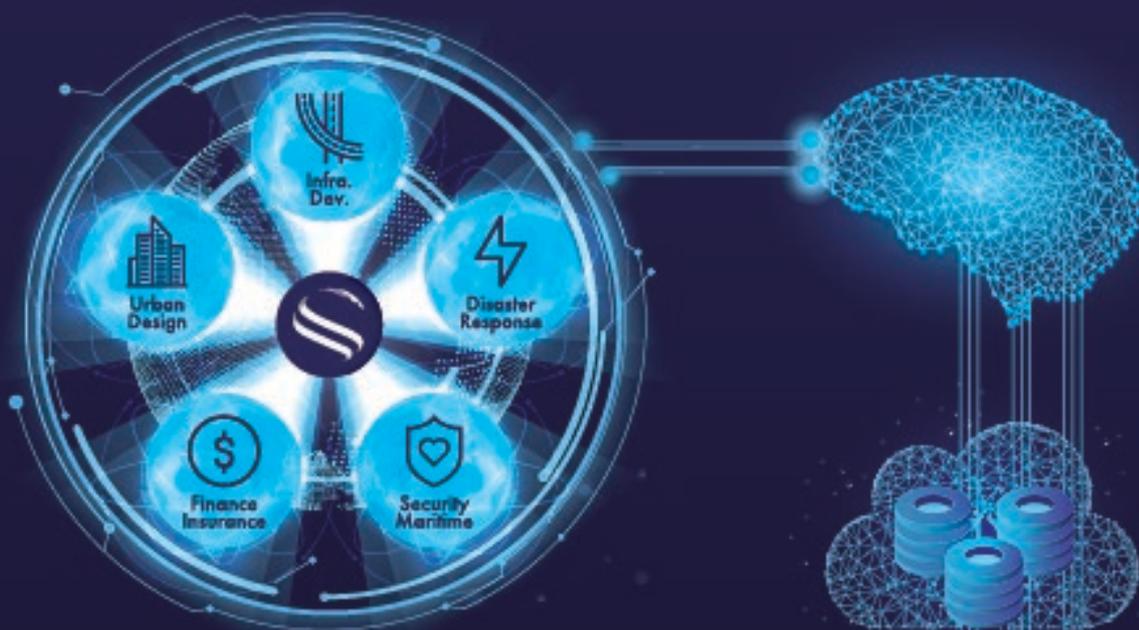
StriX Constellation
- Size: 100kg class
- Sensor: SAR (X-band)
- Resolution: 1-3m
- Revisit: Daily

First
×6
×25

2020
2022 — ASIA
202X — WORLD
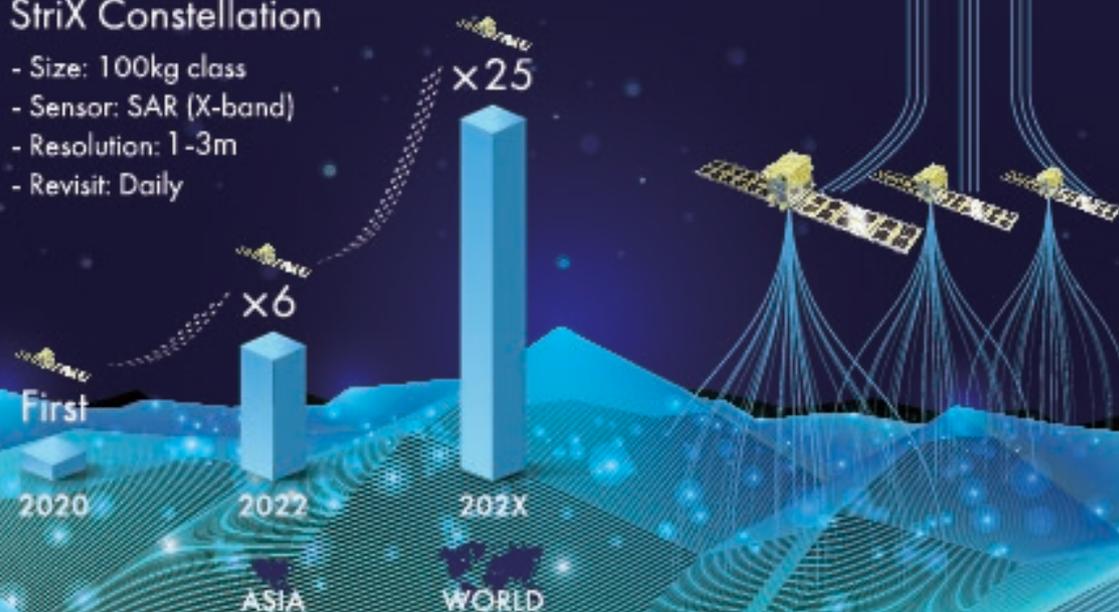
PACIFICO Yokohama — 5ᵗʰ Floor
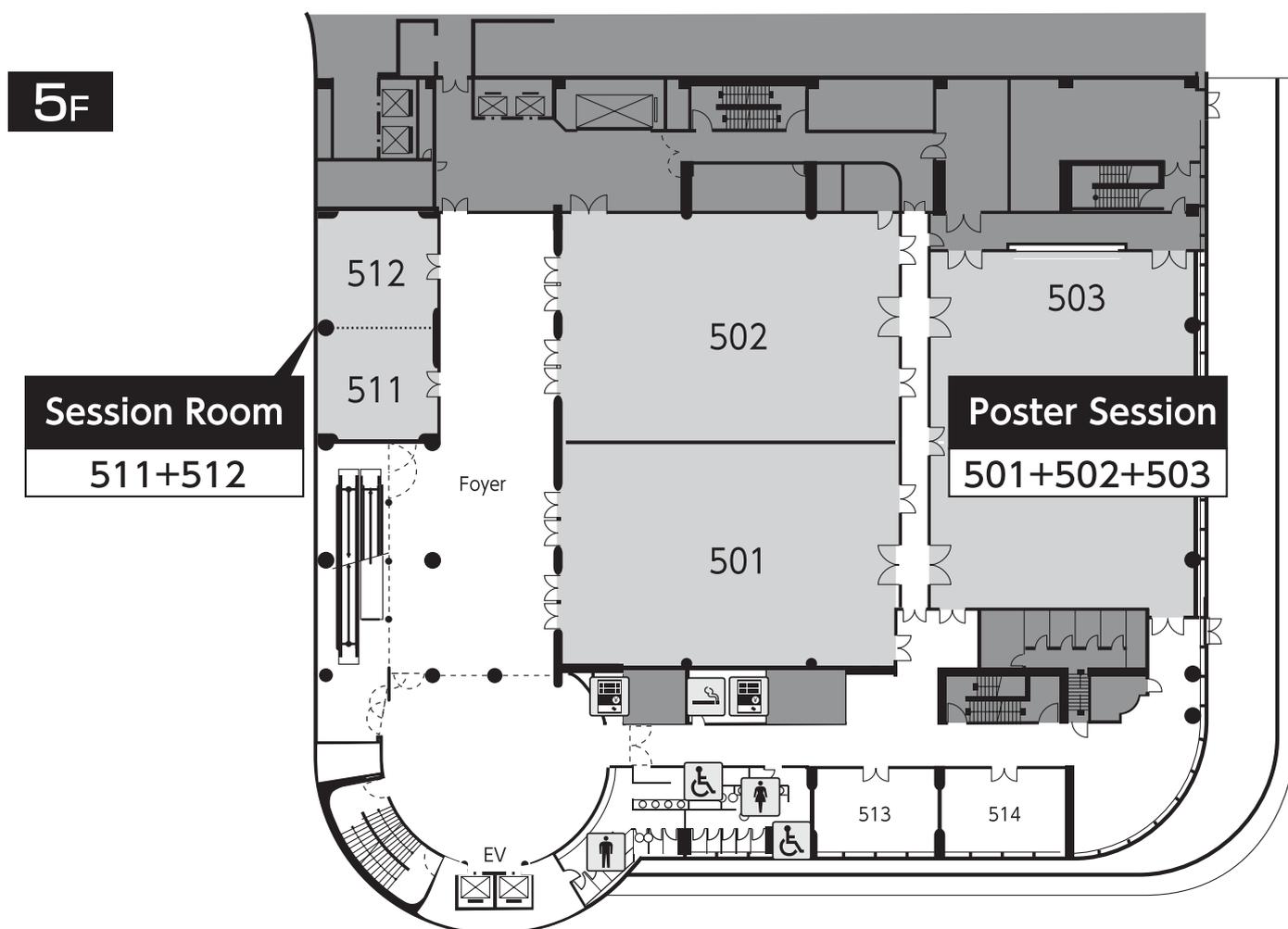
IEEE GRSS Membership

The fields of interest of the GRS Society are the theory, concepts, and techniques of science and engineering as they apply to the remote sensing of the earth, oceans, atmosphere, and space, as well as the processing, interpretation and dissemination of this information. The society sponsors various conferences throughout the year, most notably the annual International Geoscience and Remote Sensing Symposium. If you wish to purchase additional copies of publications included in your membership, please contact www.ieee.org/contactcenter.

IEEE Societies provide access to current information, opportunities to network with peers, and enhancement of the worldwide value of your profession. IEEE members receive special prices for Society memberships. If you are not an IEEE member, you may wish to join as an Affiliate.

Membership includes

IEEE Geoscience and Remote Sensing Magazine (electronic and digital), IEEE Transactions on Geoscience and Remote Sensing (electronic), IEEE Geoscience and Remote Sensing Letters (electronic), IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (electronic), and IEEE Geoscience and Remote Sensing Society Digital Library.

GRSS web site: http://www.grss-ieee.org

GRSS membership:

https://www.ieee.org/membership-catalog/productdetail/showProductDetailPage.html?product=MEMGRS029

PACIFICO Yokohama — Exhibit Hall, Rooms 301-304
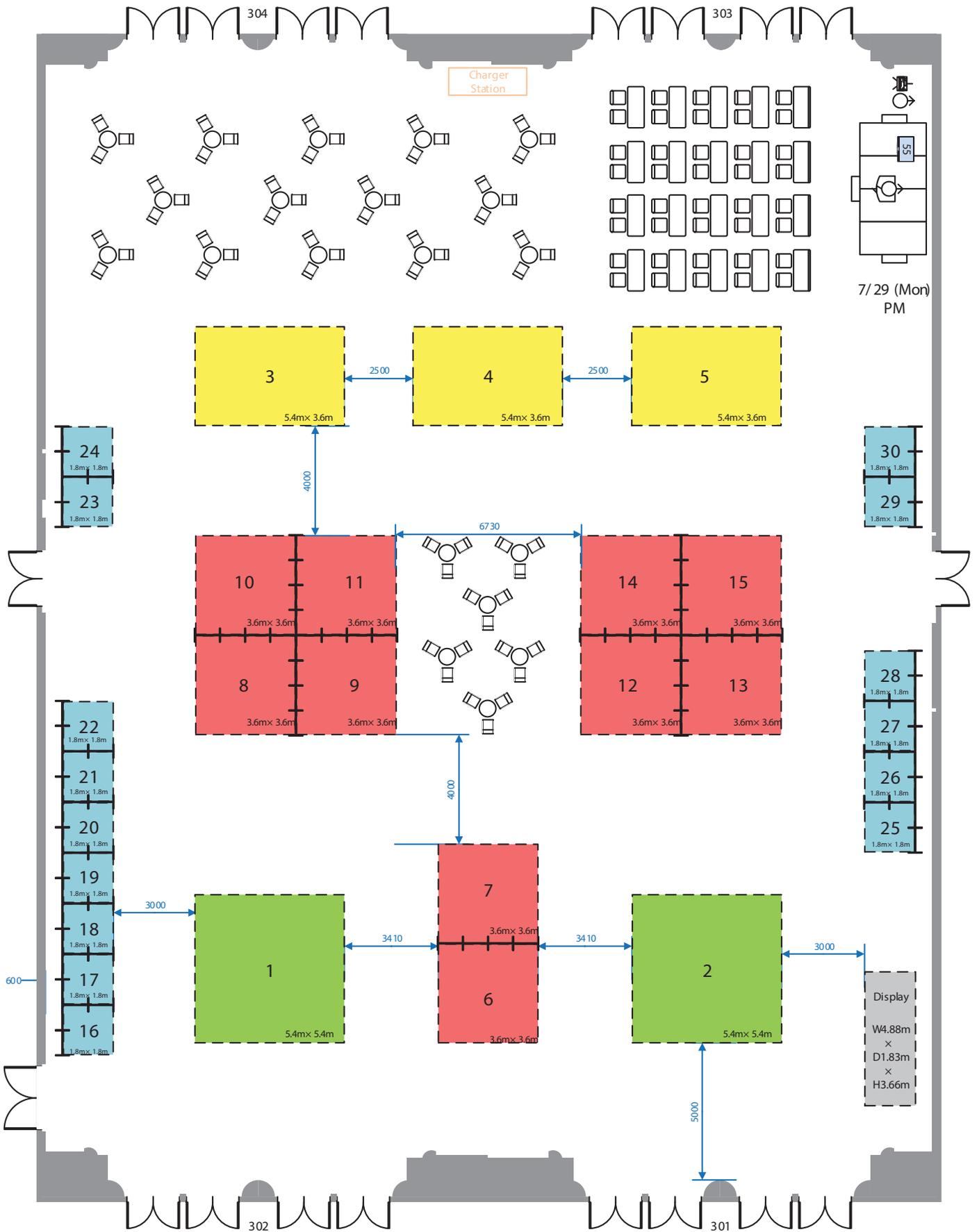
304 303

Charger Station

55

7/29 (Mon) PM

3	4	5
5.4m× 3.6m	5.4m× 3.6m	5.4m× 3.6m

2500 2500

4000

6730

24
1.8m× 1.8m
23
1.8m× 1.8m

30
1.8m× 1.8m
29
1.8m× 1.8m

10	11		14	15
3.6m× 3.6m	3.6m× 3.6m		3.6m× 3.6m	3.6m× 3.6m
8	9		12	13
3.6m× 3.6m	3.6m× 3.6m		3.6m× 3.6m	3.6m× 3.6m

4000

22
1.8m× 1.8m
21
1.8m× 1.8m
20
1.8m× 1.8m
19
1.8m× 1.8m
18
1.8m× 1.8m
17
1.8m× 1.8m
16
1.8m× 1.8m

28
1.8m× 1.8m
27
1.8m× 1.8m
26
1.8m× 1.8m
25
1.8m× 1.8m

3000

600

1	7	2
	3.6m× 3.6m	
	6	
5.4m× 5.4m	3.6m× 3.6m	5.4m× 5.4m

3410 3410 3000

Display

W4.88m
×
D1.83m
×
H3.66m

5000

302 301

PACIFICO Yokohama — Poster Area Detail, Room 501-502
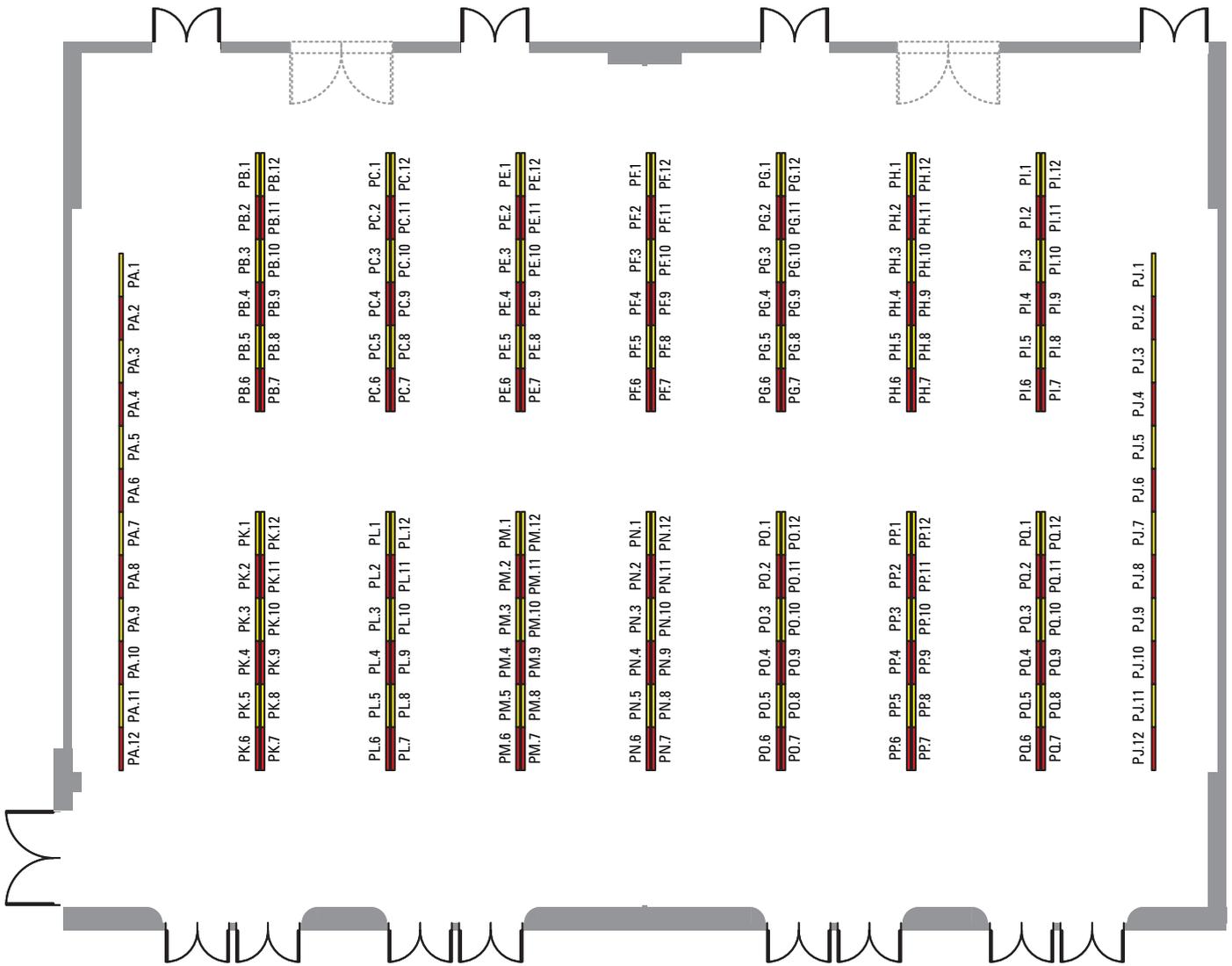
PACIFICO Yokohama — Poster Area Detail, Room 503
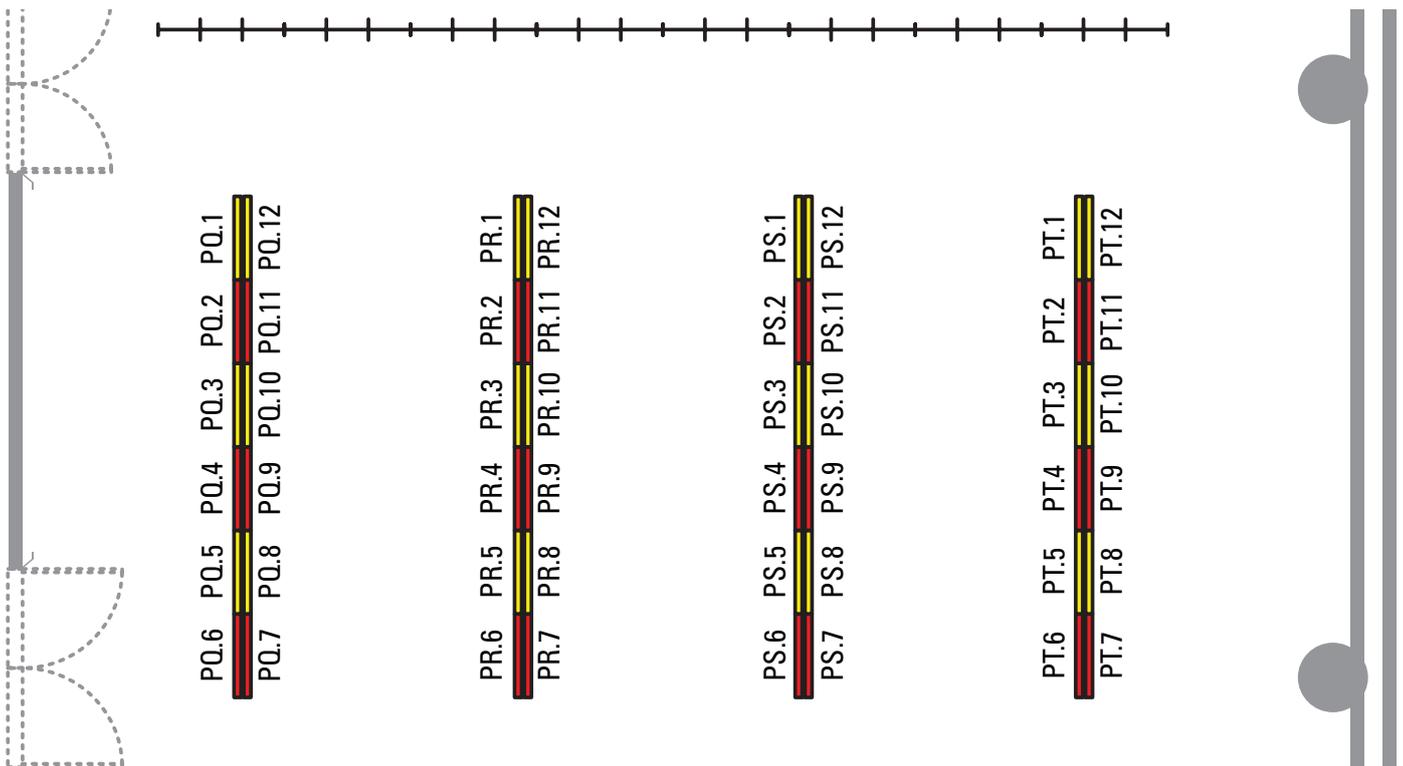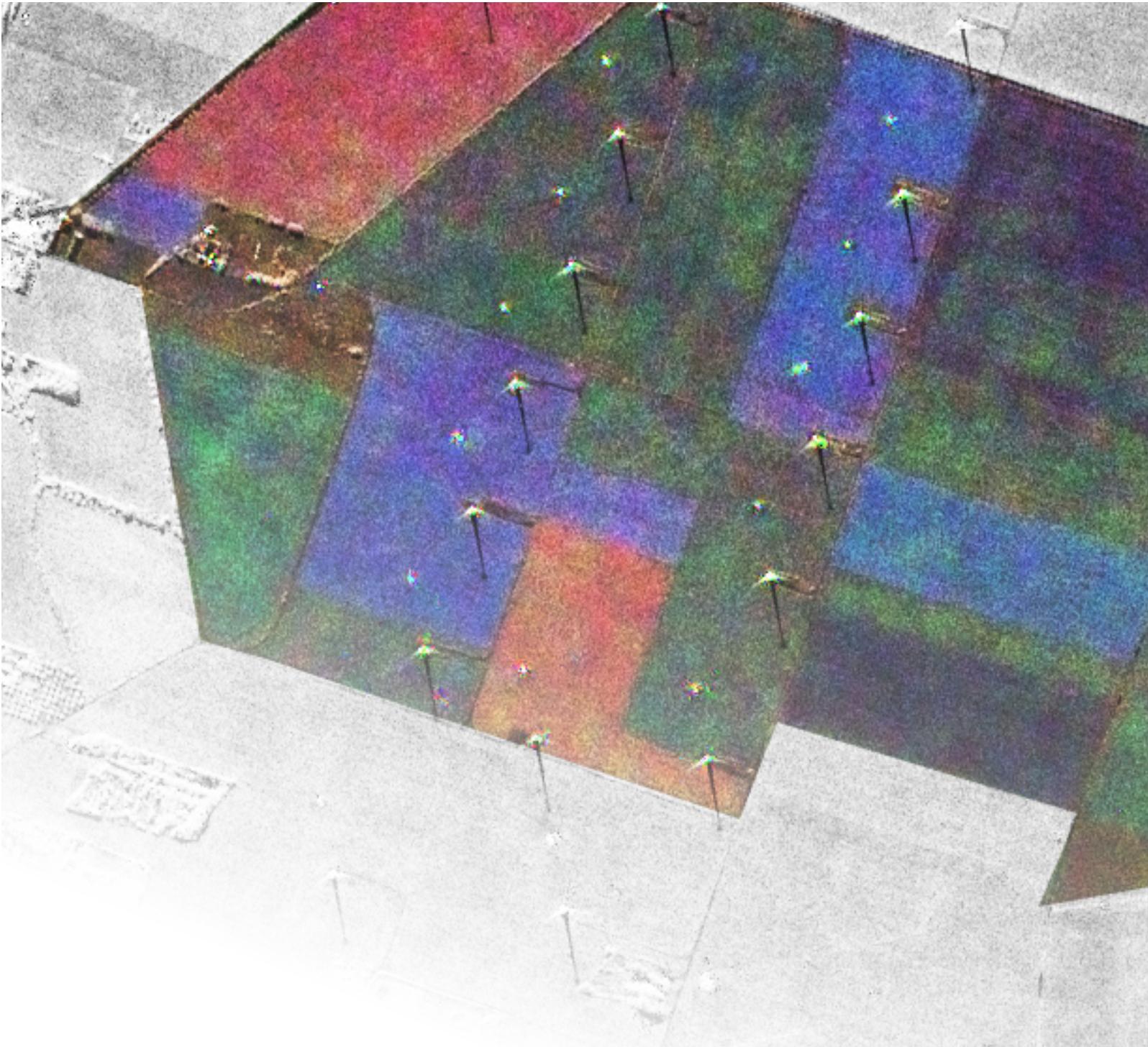
ENVI SARSCAPE®

READ, PROCESS, ANALYZE, AND OUTPUT PRODUCTS FROM SAR DATA.

HARRIS® TECHNOLOGY TO CONNECT, INFORM AND PROTECT™

HarrisGeospatial.com

Exhibits — Rooms 301-304
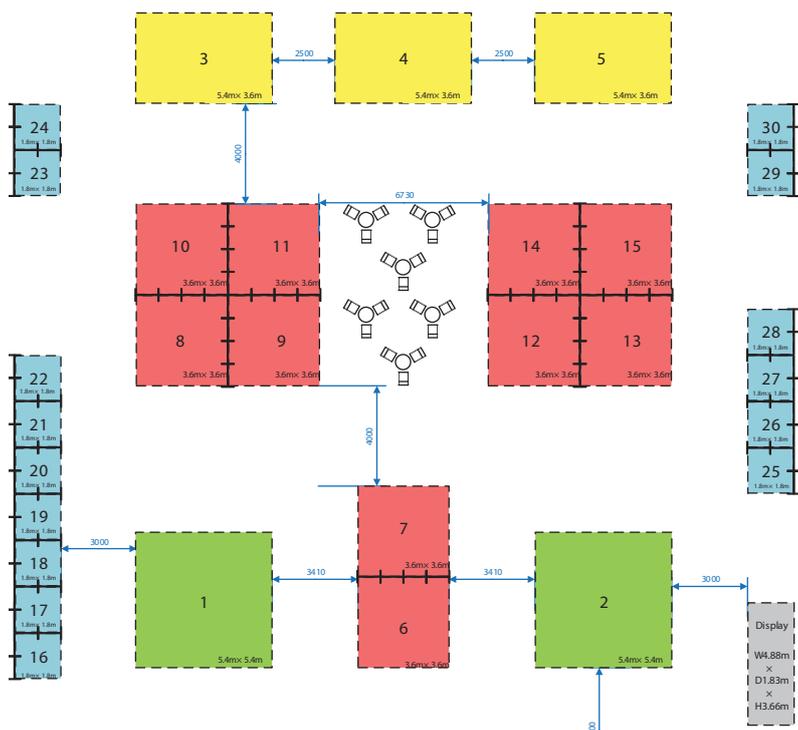
Exhibition Hours:
Monday, July 29...........08:30 – 17:30
Tuesday, July 30 ....08:30 – 17:30
Wednesday, July 25.....08:30 – 17:30
Thursday, July 26 ....08:30 – 17:30
Friday, July 28...............08:30 – 11:00

	Booth	
Platinum Sponsor	Booth 1	Japan Aerospace Exploration Agency (JAXA)
Gold Sponsor	Booth 3	Synspective Inc.
Silver Sponsor	Booth 7	Harris Geospatial Solutions
Silver Sponsor	Booth 9	MITSUBISHI ELECTRIC CORPORATION
Silver Sponsor	Booth 15	NEC Corporation
Type A Exhibitors	Booth 8	Antenna Giken Co., Ltd.
	Booth 6	AW3D
	Booth 11	Headwall Photonics
	Booth 12	HySpex - Norsk Elektro Optikk AS
	Booth 10	Malvern Panalytical
	Booth 14	Taylor & Francis Group
Type B Exhibitors	Booth 16	Beijing PIESAT Information Technology Co., Ltd.
	Booth 20	FUJITSU LIMITED
	Booth 29	Japan EO-Satellite Service, Ltd. (JEOSS)
	Booth 24	Korea Aerospace Research Institute, KARI
	Booth 30	MDPI
	Booth 25	National Institute of Environmental Research (NIER)
	Booth 22	Norderelbe GmbH
	Booth 19	PCI Geomatics
	Booth 23	SI Imaging Services
	Booth 17	Space Shift, Inc.
Other Exhibitors	Booth 4	Geoscience and Remote Sensing Society (GRSS)
	Booth 26	IGARSS 2020 Waikoloa, Hawaii
	Booth 2	NASA

Exhibitors

Japan Aerospace Exploration Agency (JAXA)

The Japan Aerospace Exploration Agency (JAXA) is a core performance agency to support the Japanese government's overall aerospace development and utilization. JAXA conducts integrated operations from basic research and development, to utilization. JAXA obtains an enormous quantity of data from satellites such as the Greenhouse Gases Observation Satellite (GOSAT), the Global Precipitation Measurement/Dual-frequency Precipitation Radar (GPM/DPR), the Global Change Observation Mission (CGOM-W/C), and the Advanced Land Observation Satellite-2 (ALOS-2). JAXA provides accurate and systematic information that elucidates the earth environment change process and supports our lives by continuous earth observation using satellites.

http://global.jaxa.jp/

Synspective Inc.

Synspective is a Japanese startup company that will establish a synthetic aperture radar (SAR) satellite constellation of about 25 satellites and provide geospatial solutions. Synspective gathers broad and high-frequency monitoring data from our own SAR satellite constellation and extracts information using statistical and machine learning techniques to better enable decision-making and action by companies and governments. The information has multiple benefits such as visualization and prediction of economic activity, monitoring of terrain and structures, and immediate understanding of disaster situations. Exhibit contents: Full-sized mock-up model of Synspective's small SAR satellite; Solution samples

https://synspective.com/

Harris Geospatial Solutions

Harris provides ENVI and SARscape, our mission is to empower people to easily extract useful information from Remote sensing data.

https://www.harrisgeospatial.com/

MITSUBISHI ELECTRIC CORPORATION

Mitsubishi Electric's space technology includes the manufacture and implementation of satellites, satellite components, and ground systems. Over the past five decades, we have completed more than 570 satellite projects for communications concerns, government agencies, and other large-scale clients that make us the leading company of space systems in Japan. Our satellites and ground systems work behind the scenes to improve the quality and convenience of life.

http://www.mitsubishielectric.com/bu/space/index.html

25

\Orchestrating a brighter world **NEC**	**NEC Corporation** NEC is leading ICT Company. We provides solutions for a better society in a wide range of fields as a pioneering ICT integrator of computing, software, networks, and space systems. For space systems, NEC has integrated around 70 satellites and has provided 7000 units for more than 250 satellites worldwide. https://www.nec.com/
Antenna Giken Co.Ltd.	**Antenna Giken Co., Ltd.** Antenna Giken, located in the north-east of the Tokyo metropolitan area, provides wide variety ofantennas and communication devices for professional and industrial use. Our products contribute tothe antidisaster community wireless systems, fire-fighting radio systems, broadcasting, and publictransportation networks as well as satellites and defense applications. In the IGARSS 2019, we aredemonstrating our expertise by showing corner reflectors to be used in the calibration process ofearth observatory satellites and a millimeter wave parabolic antenna developed for broadcastingsystems. And a GPS antenna is introduced as our contribution to the ocean-floor observation AUV(Autonomous Underwater Vehicle). http://www.antenna-giken.co.jp/
AW3D®	**AW3D** AW3D is the world's most precise pre-produced global 3D map covering all global land spaces with 5 meter resolution, developed jointly by Japanese Aerospace Exploration Agency (JAXA), the Remote Sensing Technology Center of Japan (RESTEC), and NTT DATA Corporation. AW3D has been used in 800 projects, over 100 countries across the globe, to contribute to measures for infrastructure, disaster prevention and much more. AW3D Suites also offers higher resolution 3D map up to half-meter-resolution, including 3D building vector datasets, telecom datasets, and airport datasets. https://www.aw3d.jp/
Headwall	**Headwall Photonics** Headwall Photonics is a leading designer and manufacturer of hyperspectral instrumentation for remote sensing, advanced machine vision, medical/biotech, and government/defense markets. The company offers complete integrated solutions that include drones with imaging sensors and other instruments for remote-sensing missions such as crop disease detection, mining, environmental monitoring, and even imaging from manned and spaceborne platforms. Headwall enjoys a market leadership position by designing and manufacturing spectral solutions that are customized for application-specific performance for end-users and OEM customers. Headwall is based in Massachusetts where it has two facilities (Bolton and Fitchburg). European operations (Headwall BVBA) are located in Belgium. http://www.headwallphotonics.com/
HySpex	**HySpex - Norsk Elektro Optikk AS** We produce, in all fairness, the best hyperspectral cameras in the World for lab, field, airborne and UAV applications. https://www.hyspex.no/
Malvern Panalytical a **spectris** company	**Malvern Panalytical** ASD spectrometers and spectroradiometers provide state-of-the-art, real time spectral performance. These instruments, when combined with ASD's software and support tools create powerful information that helps you to improve, simplify, and streamline your research and production processes, ideal for a multitude of material measurement solutions. https://www.malvernpanalytical.com/en/
Taylor & Francis Group an **informa** business	**Taylor & Francis Group** Taylor & Francis partners with world-class authors, from leading scientists and researchers, to scholars and professionals operating at the top of their fields. Together, we publish in all areas of the Humanities, Social Sciences, Behavioural Sciences, Science, Technology and Medicine sectors. We are one of the world's leading publishers of scholarly journals, books, eBooks, text books and reference works. We publish more than 2,600 journals and over 5,000 new books each year, with a books backlist in excess of 120,000 specialist titles. http://taylorandfrancis.com/
航天宏图 **Piesat**	**Beijing PIESAT Information Technology Co., Ltd.** Beijing PIESAT Information Technology Co., Ltd. (PIESAT for short) is a Chinese high-tech enterprise specializing in research and application of satellite technology (Remote sensing satellite and Navigation satellite). Founded in 2008, PIESAT keeps on providing professional services and applications of domestic satellites as its mission. PIESAT has independently developed software Pixel Information Expert (PIE), offering its clients integrated solution of geospatial information application. PIESAT locates in Beijing and has branches and representative offices in 32 cities nationwide. PIESAT has more than 1000 employees, and has a strong R&D team of which over 80% are geomatics experts. http://www.piesat.cn/
FUJITSU	**FUJITSU LIMITED** Fujitsu is Japanese leading ICT Company, offering various technology products, solutions and services. Technical computing unit in Fujitsu provides wide range of technologies and services for aerospace, meteorology and Astronomy projects, and also build 30 years of experience in the development of supercomputers. The business platform "SORAplats" enables to acquire target data converting to support customer's decision making and problem solution from remote sensing data provided by satellites. It is a cloud service, providing statistical and time series data from "Remote", "Wide-aria" and "Periodic" data. https://www.fujitsu.com/jp/
JEOSS Japan EO-Sats Service	**Japan EO-Satellite Service, Ltd. (JEOSS)** Japan EO Satellite Service Ltd, (JEOSS) is a company with mission to contribute to safe and secure society by providing very-high-resolution (VHR) remote sensing data and services. Our product ASNARO-2 image is taken with the very high resolution radar satellite launched in January 2018. (AS-2 is the small but very high resolution EO satellite with X-band radar manufactured by NEC.) JEOSS operates AS-2 and has been selling images since September 2018. We would like to introduce our current image analysis products with our sales partner JSI at the exhibition booth! https://jeoss.co.jp/

KARI 한국항공우주연구원 KOREA AEROSPACE RESEARCH INSTITUTE	**Korea Aerospace Research Institute, KARI** Korea Aerospace Research Institute (KARI) is a specialized institution founded for national development through the research and development of aerospace scientific technologies. National Satellite Operation & Application Center of KARI is dedicated to the operation of government satellites and the systematic and efficient utilization of satellite data. It manages the satellite data generated by government satellites and conducts the development of cutting-edge satellite operating technology and R&D utilizing satellite data. In IGARSS 2019, we will exhibit simple application examples of KOMPSAT series satellite images including disaster monitoring, generation of SAR interferogram. http://www.kari.re.kr/eng.do
MDPI Academic Open Access Publishing since 1996	**MDPI** Remote Sensing (ISSN 2072-4292, IF: 4.118, http://www.mdpi.com/journal/remotesensing) is an open access peer-reviewed journal, published by MDPI. It publishes regular research papers, reviews, letters and communications covering all aspects of remote sensing science, from sensor design, validation / calibration, to its application in geosciences, environmental sciences, ecology and civil engineering. Our aim is to publish novel/improved methods/approaches and/or algorithms of remote sensing to benefit the community. Remote Sensing is indexed in the Science Citation Index Expanded (Web of Science). https://www.mdpi.com/
Ministry of Environment **National Institute of Environmental Research**	**National Institute of Environmental Research (NIER)** National Institute of Environmental Research has been consolidating its position as a leading government-run research institute dedicated to environmental studies by streamlining its organization and reinforcing its research capacity. NIER remain committed to better fulfilling its role as a government-run environmental research institute whose work is vital to the development and implementation of Korea's environmental policies and pollution prevention programs. NIER has been developing Geostationary Environment Monitoring Spectrometer to improve capabilities to monitor and forecast climate change and air quality in East Asia. GEMS is loaded aboard GEO-KOMPSAT2B, a follow-up complex satellite to Cheollian Satellite, which is planned to be launched in 2019. http://www.nier.go.kr/
Norderelbe GmbH	**Norderelbe GmbH** You are looking for a trustworthy partner for state of the art, powerful, precise and low cost HF remote sensing solutions? Norderelbe is right address! Ionosonde: The transmitter sweeps part of the HF frequency range, transmitting short pulses. Pulses are reflected at various layers of the ionosphere, and echos are received and analyzed by the control system. The result is displayed in ionogram. Oceanography: Our HF radar is a noninvasive system that measure and map near-surface ocean currents in coastal waters. Moreover it is possible to measure waves heights and it provides an indirect estimate of local wind direction. http://www.norderelbe-gmbh.de/
PCI GEOMATICS	**PCI Geomatics** PCI Geomatics, founded in 1982, is the world leader in geo-imaging products and solutions. PCI Geomatics has set the standard in remote sensing and image processing tools offering customized solutions to the geomatics community in over 135 countries. PCI Geomatics is the developer of Geomatica® - a complete and integrated desktop software that features tools for remote sensing, digital photogrammetry, geospatial analysis, map production, mosaicking and more. Geomatica® software enables users to apply imagery in support of a wide range of applications such as the environment, agriculture, security and intelligence, defense, as well as in the oil and gas industries. http://www.pcigeomatics.com/
SIIS SI Imaging Services	**SI Imaging Services** SI Imaging Services(SIIS) is the exclusive worldwide marketing and sales representative of KOMPSAT series KOMPSAT-2, KOMPSAT-3, KOMPSAT-3A, and KOMPSAT-5. SIIS contributes remote sensing and earth observation industries by providing very high resolution optical and SAR images through over 110 sales partners worldwide. Customers from industries as well as government and international agencies are using KOMPSAT imagery for their mission and researches. They achieve excellent results in several remote sensing applications such as mapping, agriculture, disaster management, and so on. SIIS started its business as a satellite image and service provider and extended its business to KOMPSAT operation. http://www.si-imaging.com/
SPACE SHIFT	**Space Shift, Inc.** Space Shift Inc. is a Japanese SAR (Synthetic Aperture Radar) data analysis software development company. We are very focused on core software components for SAR data analysis like change detection, feature extraction, subsidence analysis with InSAR. Our customers are Marketing, Insurance, Finance, Media and so on different from traditional customers like government. Please come by our booth 17 to see demonstration of our software. https://www.spcsft.com/
GRSS	**Geoscience and Remote Sensing Society (GRSS)** The GRSS is the organizer of the IGARSS conference. It is a technical society of the IEEE http://www.grss-ieee.org/
IGARSS 2020	**IGARSS 2020 Waikoloa, Hawaii** This booth will represent IGARSS 2020 which will be held at the Hilton Hotel in Waikoloa, Hawaii. We will a continuous video loop showing sights to see on the island and some of the interesting history of the Hawaiian Islands. The booth will be decorated with balloons with the logo of IGARSS 2020 and will be manned by members of the 2020 team. Call for the 2020 event will be passed out and question will be answered. http://igarss2020.org/
	NASA Please visit the NASA exhibit at IGARSS 2019! NASA's exhibit will feature the Hyperwall—a video wall capable of simultaneously displaying multiple, high-definition, science data visualizations, which are produced by NASA's Scientific Visualization Studio (svs.gsfc.nasa.gov). Representatives from different NASA Science programs will make presentations on the Hyperwall to highlight NASA's latest Earth science developments. Staff from NASA also will be available to provide information about NASA Science programs and answer questions. Two student-focused Hyperwall presentations on Monday, July 29 will offer Japanese remote sensing students an opportunity to see the latest results from NASA's Earth science missions. http://www.nasa.gov/

Monday, July 29, 09:00 – 12:30, Main Hall, PACIFICO Yokohama

OPENING AND AWARDS SESSION

09:00 - 09:02   **Welcome to IGARSS 2019 Yokohama**
> by Prof. Akira Hirose as IGARSS 2019 General Chair

09:02 - 09:07   **Welcome from IEEE President**
> by Prof. Toshio Fukuda, as IEEE President Elect

09:07 - 09:12   **Welcome from IEEE GRSS President**
> by Prof. Paolo Gamba, as IEEE GRSS President

10:40 - 11:10   **Coffee Break**

PLENARY SESSION

09:12 - 09:32   **"Space Technology for New Era"**
> Dr. Hiroshi Yamakawa, President of JAXA

09:32 - 09:52   **"NASA Earth Science Overview"**
> Mrs. Sandra Cauffman, Acting Director of the Earth Science Division, NASA

09:52 - 10:12   **"Crossing the Valley of Death: how can Earth Observation be relevant to sustainable development?"**
> Prof. Dr. Gilberto Câmara, Secretariat Director, GEO - Group on Earth Observations

10:12 - 10:32   **"Sentinel Asia - Evolution and Current Status"**
> Dr. Franz Ming-Chih Cheng, Director of International Affairs Office, National Applied Research Laboratories (NARL)

AWARDS SESSION

10:32 - 10:35   **Short notes for opening address**

10:35 - 11:15   **Awards Ceremony**
> **Master of Ceremony:** Alberto Moreira
> 2019 IEEE Fellows
> 2019 IEEE GRSS Education Award
> 2019 IEEE GRSS Outstanding Service Award
> 2019 IEEE GRSS Industry Leader Award
> 2019 IEEE GRSS Distinguished Achievement Award
> **Coffee Break**

SYMPOSIUM INTRODUCTION

11:15 - 11:25   **TPC Report**
> Prof. Hiroyoshi Yamada, Prof. Akira Iwasaki, Prof. Irena Hajnsek, IGARSS 2019 Technical Program Committee Co-Chairs

11:25 - 11:30   **Notes for opening address**

     11:30   **Door Close**
> Note: For the operational reasons, it is NOT ALLOWED to enter nor leave the Main Hall after 11:30

OPENING CEREMONY

 12:00-12:30   Note: Please REFRAIN from taking photos or videos during the opening ceremony.

Plenary Speakers

Dr. Hiroshi Yamakawa

President of JAXA

Dr. Hiroshi Yamakawa is the President of the Japan Aerospace Exploration Agency (JAXA). His previous work experience includes Member of Committee on National Space Policy, Cabinet Office; Secretary General, Secretariat of Strategic Headquarters for Space Policy, Cabinet Secretariat; Professor, Research Institute for Sustainable Humanosphere, Kyoto University; JAXA Project Manager, Mercury Exploration Mission "BepiColombo"; Visiting Scientist of the European Space Research and Technology Centre, European Space Agency (ESA); Visiting Scientist of Jet Propulsion Laboratory, National Aeronautics and Space Administration (NASA); and Associate Professor, Institute of Space and Astronautical Science (ISAS). He earned his PhD (Engineering) from the Department of Aeronautics, School of Engineering at the University of Tokyo.

Mrs. Sandra Cauffman

Acting Director of the Earth Science Division, NASA

Sandra Cauffman currently serves as the Acting Director of the Earth Science Division, in the Science Mission Directorate at the National Aeronautics and Space Administration (NASA) Headquarters. She provides executive leadership, strategic direction, and overall management for the entire agency's Earth Science ~$2B portfolio, from technology development, applied science, research, mission implementation and operation. She served as the Deputy Director of the Earth Science Division from May 2016 – February 2019.

Prior to joining NASA HQ, Ms. Cauffman worked at the Goddard Space Flight Center (GSFC) for 25 years serving on a variety of roles. She served as the Deputy Systems Program Director for the Geostationary Operational Environmental Satellite (GOES)-R Series, a multi-billion-dollar operational geostationary weather satellite program developed in partnership with the National Oceanic and Atmospheric Administration (NOAA). Before returning to the GOES program for the third time in her career, Ms. Cauffman was the Deputy Project Manager for the Mars Atmosphere and Volatile Evolution (MAVEN) Mission, a NASA mission to the red planet, which launched on November 18, 2013, which is providing a comprehensive picture of the present state of the upper atmosphere and ionosphere of Mars and the processes controlling them to determine how loss of volatiles to outer space in the present epoch varies with changing solar conditions.

Ms. Cauffman has been awarded the NASA Exceptional Achievement Medal and she is a two-time recipient of the NASA Outstanding Leadership Medal. She is also a four times recipient of the NASA Acquisition Improvement Award, and numerous GSFC and HQ awards. She is a Senior Fellow on the Council for Excellence in Government. She is an Honorary Member of the National Academy of Sciences, Costa Rica. She received a B.S. in Physics, a B.S in Electrical Engineering and a M.S. in Electrical Engineering, all from George Mason University. Ms. Cauffman was born in Costa Rica and is fluent in Spanish.

Prof. Dr. Gilberto Câmara

Secretariat Director, GEO - Group on Earth Observations

Prof. Dr. Gilberto Câmara is a Brazilian researcher in Geoinformatics, Spatial Analysis, Land Use Change, and Nature-Society Interactions, from Brazil's National Institute for Space Research (INPE). He is internationally recognized for promoting free access for geospatial data and for setting up an efficient satellite monitoring of the Brazilian Amazon rainforest. Gilberto has advised 25 PhD dissertations and 31 Master thesis and published more than 230 scholarly papers that have been cited more than 11000 times (Google Scholar, May 2019). Gilberto was INPE's assistant director for Earth Observation (2001-2005), and INPE's director general (2005-2012). He is currently Secretariat Director for the Group on Earth Observations (GEO). As recognition for his work, he was inducted as a Doctor honoris causa from the University of Münster (Germany) and as a Chevalier (Knight) of the Ordre National du Mérite of France. He received the William T. Pecora award from NASA and USGS for "leadership to the broad and open access to remote sensing data".

Dr. Franz Ming-Chih Cheng

Director of International Affairs Office, National Applied Research Laboratories, Taiwan
Steering Committee Member of Sentinel Asia

Dr. Ming-Chih Cheng is Director of International Affairs Office, National Applied Research Laboratories (NARLabs) located in Taipei, Taiwan. He earned his Ph.D. degree at University of Washington in Seattle, USA, with major in Aeronautics and Astronautics. He has a Master degree at National Cheng-Kung University, Taiwan, with major in Civil Engineering. He started his professional career in the National Space Organization (NSPO) in Taiwan as a lead engineer since 1992. He joined Taiwan's pioneering team developing Formosat-1, 2, 3 satellites under international collaborations with the US and France. He took responsibilities in establishing comprehensive capabilities in spacecraft systems in Taiwan. After over 15-years experience in space technology development and program management with major contributions, in 2007, he worked in Business Development Office and International Affairs Office of NARLabs. NARLabs is the major Research and Innovation organization of advanced S&T in Taiwan. Its umbrella covered 10 national laboratories in fields of Earth & Environment, ICT, and Bio-medical Technologies. Since then, he has been actively involved in strategy and promotion of global partnership building. Dr. Cheng advocates universal values of societal benefits through international cooperation in Global Earth Observation System of Systems (GEOSS), Asia-Pacific Regional Space Agency Forum (APRSAF). His major endeavor and achievement was focused on synergizing capabilities in Earth Observations and their applications. He is a Steering Committee member to the Sentinel Asia. He is also leading a team building Taiwan Open DataCube (TWDC).

Organizing Committee

General Chair	Akira Hirose (The University of Tokyo)	
Technical Program Co-Chairs	Irena Hajnsek (ETH Zurich, DLR)	
	Akira Iwasaki (The University of Tokyo)	
	Hiroyoshi Yamada (Niigata University)	
Finance Chair	Takeo Tadono (JAXA)	
Local Arrangements Chair	Kei Suwa (Mitsubishi Electric Co.)	
Sponsorship Chair	Shouhei Kidera (Univ. Electro-Commun.)	
Publicity Chair	Ryo Natsuaki (The University of Tokyo, DLR)	
Publications Co-Chairs	Takuya Sakamoto (Kyoto University)	
	Junichi Susaki (Kyoto University)	
Tutorial Chair	Ryoichi Sato (Niigata University)	
Special Events Chair	Motofumi Arii (Mitsubishi Space Software Co.)	
Exhibition Chair	Tsunekazu Kimura (NEC)	

Student Activity Co-Chairs	Kuniaki Uto (Tokyo Institute of Technology)	
	Hiroaki Kuze (Chiba University)	
	Naoto Yokoya (RIKEN)	
Education Co-Chairs	Chinatsu Yonezawa (Tohoku University)	
	Aya Yamamoto (RESTEC)	
Social Events Chair	Yu Okada (Mitsubishi Electric Co.)	
Technical Tour Co-Chairs	Kazunori Takahashi (Oyo Corporation)	
	Shoichiro Kojima (NICT; National Institute of Information and Communications Technology)	
Outreach Chair	Fang Shang (Univ. Electro-Commun.)	
International Liaison Chair	Josaphat Tetuko Sri Sumantyo (Chiba University)	
TIE event Co-Chairs	Naoto Yokoya (RIKEN)	
	Fang Shang (University Electro-Communications)	
Photos & on-site publicity chair	Manabu Watanabe (Tokyo Denki University)	

Committee Members

Event	Yasumasa Ashida (Mitsubishi Electric Co.)
	Masanobu Shibata (Mitsubishi Electric Co.)
Exhibition	Hirofumi Aoki (NEC Corp.)
	Osamu Hoshuyama (NEC Corp.)
	Shohei Ohno (NEC Corp.)
	Daichi Tanaka (NEC Corp.)
Finance	Masato Ohki (JAXA)
Special Event	Daisuke Ikefuji (NEC Corp.)
General Secretary	Seiko Kitazawa (The University of Tokyo)
	Kazutaka Kikuta (Tohoku University)
	Seisuke Fukuda (JAXA)
	Manabu Hashimoto (Kyoto University)
	Akira Kato (Chiba University)
	Toshifumi Moriyama (Nagasaki University)
	Akitsugu Nadai (NICT)
	Kenta Obata (Aichi Prefectural University)
	Kazuo Ouchi (IHI Corp.)
	Hirofumi Saito (ISAS)
Local Professional Conference Secretariat	Reiko Takahashi (JTB Communication Design)
	Mayumi Takita (JTB Communication Design)
	Ayumi Ohmura (JTB Communication Design)
	Kenichi Sato (JTB Communication Design)

Advisory

	Yoshihisa Hara (Mitsubishi Electric Co.)
	Tetsuo Kirimoto (Univ. Electro-Commun.)
	Motoyuki Sato (Tohoku University)
	Masanobu Shimada (Tokyo Denki University)
	Yasushi Yamaguchi (Nagoya University)
	Yoshio Yamaguchi (Niigata University)

Technical Program Committee

THEME COORDINATORS

Data Analysis Methods (Optical, Multispectral, Hyperspectral, SAR)	Joel Johnson	A.1 - Electromagnetic Modelling A.4 - SAR Imaging Techniques A.8 - Subsurface Sensing / Ground Penetrating Radar
	Irena Hajnsek	A.2 - SAR Interferometry: Along and Across A.3 - Differential SAR Interferometry A.5 - POL and POLInSAR A.6 - Bistatic and digital beamforming SAR A.7 - Tomography and 3D mapping
	Jocelyn Chanussot	A.9 - Feature Extraction and Reduction A.10 - Image Segmentation A.11 - Object Detection and Recognition A.12 - Classification and Clustering
	Lorenzo Bruzzone	A.13 - Estimation and Regression A.14 - Change Detection and Multi-Temporal Analysis A.15 - Target Detection and Unmixing A.16 - Image and Data Fusion A.17 - Geographic Information Science
Cryosphere	Jiancheng Shi	C.1 - Snow Cover C.2 - Ice Sheets and Glaciers C.3 - Sea Ice C.4 - Permafrost
Data Management and Education	Josée Lévesque	D.1 - Data Management and Systems D.2 - Remote Sensing Data and Policy Decisions D.3 - Education and Remote Sensing
Land Applications	Irena Hajnsek	L.1 - Land Use Applications L.2 - Land Cover Dynamics L.3 - Forest and Vegetation: Application and Modelling L.4 - Forest and Vegetation: Biomass and Carbon Cycle L.5 - Agriculture
	Tom Jackson	L.6 - Urban and Built Environment L.7 - Topography, Geology and Geomorphology L.8 - Soils and Soil Moisture L.9 - Wetlands L.10 - Inland Waters
Atmosphere Applications	Al Gasiewski	M.1 - Precipitation and Clouds M.2 - Numerical Weather Prediction and Data Assimilation M.3 - Atmospheric Sounding M.4 - Aerosols and Atmospheric Chemistry
Oceans	Simon Yueh	O.1 - Ocean Biology (Color) and Water Quality O.2 - Ocean Surface Winds and Currents O.3 - Ocean Temperature and Salinity O.4 - Coastal Zones O.5 - Ocean Altimetry
Mission, Sensors and Calibration	Adriano Camps	S.1 - Satellite Missions S.2 - Small Satellite Technology S.3 - SAR Instrument and Calibration S.4 - Scatterometer, Cloud and Rain Radar S.5 - Microwave Radiometer Instruments and Calibration S.6 - GNSS-R Sensors S.7 - Lidar Sensors
	Paolo Gamba	S.8 - Passive Optical, Hyperspectral Sensors and Calibration S.9 - UAV and Airborne Platforms
Special Theme: International Cooperation for Global Awareness	Hiroyoshi Yamada	ST.1 - Monitoring of natural disasters and hazards ST.2 - NewSpace initiatives in remote sensing ST.3 - Big data and machine learning ST.4 - Identification of remote sensing indicators for climate change ST.5 - GRSS Student Grand Challenge
Invited Sessions	Bertrand Le Saux	I.22 - IEEE GRSS Data Fusion Contest
Student Paper Competition	Xiuping Jia	All

Session Organizers

Tom Ainsworth
William J. Blackwell
Francesca Bovolo
Maria Fabrizia Buongiorno
Mariko Burgin
Chandra V Chandrasekar
Paul Chang
Bruce Chapman
Lance Cotton (Admin)
Curt Davis
Paolo de Matthaeis
Fabio Dell'Acqua
Qian Du
Surya Durbha
Michael Eineder
Mathieu Fauvel
Gianfranco Fornaro
Andrea Garzelli

Irena Hajnsek
Martti Hallikainen
Uta Heiden
Scott Hensley
Akira Hirose
Jasmeet Judge
John Kerekes
Yann Kerr
Duk-jin Kim
David Kunkee
Bertrand Le Saux
David M. Le Vine
Josée Lévesque
Jun Li
Peijun Li
Shutao Li
Xiaofeng Li
Nathan Longbotham

Tom Lukowski
Animesh Maitra
Francesco Mattia
Farid Melgani
Sidharth Misra
Gabriele Moser
Ferdinando Nunziata
Roger Oliva
Cindy Ong
Fabio Pacifici
Mario Parente
Nazzareno Pierdicca
Antonio Plaza
Hampapuram Ramapriyan
Steven C. Reising
Paul Rosen
Helmut Rott
Christopher Ruf

Sassan Saatchi
Kamal Sarabandi
Motoyuki Sato
Masanobu Shimada
Michal Shimoni
Andrew Skidmore
Gail Skofronick-Jackson
Salvatore Stramondo
Ridha Touzi
Emmanuel Trouvé
Leung Tsang
Devis Tuia
Jeffrey Walker
Haipeng Wang
Marwan Younis
Simon Yueh

Invited Session Organizers

Tom Ainsworth
Sachidananda Babu
Peter Baumann
Nicolas Brodu
Estel Cardellach
Chandra V Chandrasekar
Marge Cole
Daniel De Lisle
Paolo de Matthaeis
Carlos Roberto de Souza Filho
Begüm Demir
Nibir K. Dhar
Katarina Doctor
Dominique Dubucq
Dara Entekhabi
Hongliang Fang
Giampaolo Ferraioli
Friedrich Fraundorfer
Paolo Gamba
Dirk Geudtner
Mitchell Goldberg
Philippe Goryl

Irena Hajnsek
Ronny Hänsch
Uta Heiden
Kei Hiroi
Yoshiaki Honda
Brian Hornbuckle
Toshio Iguchi
Steve Iris
Xiuping Jia
Joel Johnson
Zhizhong Kang
John Kerekes
Siri Khalsa
Toshiyoshi Kimura
George Komar
Alexandra Konings
Shyunichi Koshimura
David Kunkee
Young-Joo Kwak
Jennifer Lacey
Marine Larrey
Jacqueline Le Moigne
Bertrand Le Saux

Jong-Sen Lee
Michael Little
Carlos Lopez Martinez
Kari Luojus
Andrea Marinoni
Gary McWilliams
Matthieu Molinier
Alberto Moreira
Claudia Notarnicola
Roger Oliva
Cindy Ong
Mario Parente
Ramona Pelich
George Percivall
William Perrie
Pierre Potin
Rahul Ramachandran
Steven C. Reising
Motoyuki Sato
Rashmi Shah
Jiancheng Shi
Masanobu Shimada
Haruhisa Shimoda

Dharmendra Singh
Upendra Singh
Andreia Siqueira
Shinichi Sobue
Yan Soldo
Gordon Staples
Ramón Torres
Ridha Touzi
Devis Tuia
Florence Tupin
Georgios Tzeremes
Manabu Watanabe
Xiaoxiong Xiong
Yoshiki Yamagata
Yasushi Yamaguchi
Naoto Yokoya
Simon Yueh
Biao Zhang
Xiangrong Zhang
Xiaoxiang Zhu

Reviewers

Riadh Abdelfattah
Michael J. Abrams
Mohammad Abuzar
Frédéric Achard
James G Acker
Nico Adam
Ian Adams
Daniel Alves Aguiar
Bruno Aiazzi
Tom Ainsworth
Ruzbeh Akbar
Selim Aksoy
Mirko Albani
Enner Alcantara
Thomas K Alexandridis
Carmelo Alonso-Jimenez
Werner Alpers
Jesus Alvarez-Mozos
Ziad Aly
Shrinidhi Ambinakudige
Amit Angal
Mohamad Awad
Sachidananda Babu
Markus Bachmann
Ramprasad
    Balasubramanian
Luca Baldini
Marco Balsi
Ulrich Balss
Jonathan Bamber
Richard Bamler
Yifang Ban
Abdou Bannari
Shaowu Bao
Teresa Barata
Adrian Barb
Annett Bartsch
Peter Baumann
Alexandre Baussard
Yakoub Bazi
Agnes Begue
Stéphane Belair
Michael Berger
Sergi Bermejo
Kon Joon Bhang
Avik Bhattacharya
Rajat Bindlish
Charon Birkett
Philippe Blondel
Tobias Bollian
Ada Vittoria Bosisio
Francesca Bovolo
Virginia Brancato
Hans Martin Braun
Fabio Marcelo Breunig
Alexandra Bringer
Xavier Briottet
Pietro Alessandro Brivio
Joshua Broadwater
Luca Brocca

Carsten Brockmann
Marco Brogioni
Antoni Broquetas
Maria Antonia Brovelli
Lorenzo Bruzzone
Christopher Buck
Joseph Buckley
Krishna Mohan Buddhiraju
Alessandra Budillon
Maria Fabrizia Buongiorno
Andrea Buono
Mariko Burgin
Sylvie Buteau
François Cabot
Pedro Cabral
Guoyin Cai
Florin Caldararu
Abel Calle
Joerg Callies
Adriano Camps
Gustau Camps-Valls
Changyong Cao
Ying Cao
Lorenzo Capineri
Estel Cardellach
Claude Cariou
John Carranza
Pascal Castellazzi
Francesco Casu
Ilaria Catapano
Elsa Cattani
Delphine Cerutti-Maori
Debashish Chakravarty
Jonathan Chan
Steven Chan
Kelly Chance
Chandra V Chandrasekar
Yang-Lang Chang
Jocelyn Chanussot
Laetitia Chapel
Bruce Chapman
Surajit Chattopadhyay
Nesrine Chehata
Chi-Chih Chen
Chuntao Chen
Fang Chen
Gang Chen
Keming Chen
Xuehong Chen
Yushi Chen
Zhongxin Chen
Tao Cheng
Shao-Shan Chiang
Jeganathan Chockalingam
Karem Chokmani
Florent Christophe
Hean-Teik Chuah
Yi-Ching Chung
Josep Closa Soteras
Edward Cloutis

Craig Coburn
Marge Cole
Andreas Colliander
Davide Comite
Ignasi Corbella
Lorenzo Crocco
Fabrizio Cuccoli
Juan Cuenca
Tengfei Cui
Xiai Cui
Mohammed Dabboor
Jorgen Dall
Mauro Dalla Mura
Sylvie Daniel
Andreas Danklmayer
Corine Davids
Curt Davis
BS Daya Sagar
Pedro Augusto de Alagão
    Penna
Giovanni De Amici
Daniel De Lisle
Paolo de Matthaeis
Patricia de Rosnay
Carlos Roberto de Souza
    Filho
Francesco De Zan
Monique Dechambre
Fabio Del Frate
Fabio Dell'Acqua
Silvana Dellepiane
Begum Demir
Francois Demontoux
Laura Dente
Chris Derksen
Benjamin Deschamps
Yves-Louis Desnos
Nibir K. Dhar
Kamel Didan
Bianca Maria Dinelli
Katarina Doctor
David Doelling
Cihan Dogusgen Erbas
Jefersson Alex Dos Santos
Joao Roberto dos Santos
Anthony Paul Doulgeris
David Dowgiallo
Lucas Drumetz
Eurico D'Sa
Jinyang Du
Dominique Dubucq
Surya Durbha
Steve Durden
Guido D'Urso
Youhao E
Satoshi Ebihara
Naoto Ebuchi
Michael Eineder
Nagwa El-Ashmawy
Hosam El-Ocla

Torbjorn Eltoft
Bill Emery
Alp Ertürk
Gloaguen Erwan
Hong Tat Ewe
Xavier Fabregas
Hongliang Fang
Leyuan Fang
Thomas Farr
Mathieu Fauvel
Raul Feitosa
Juan Carlos Fernandez-
    Diaz
Yolanda M. Fernandez-
    Ordoñez
Giampaolo Ferraioli
Paolo Ferrazzoli
Alessandro Ferretti
Laurent Ferro-Famil
Eric J. Fielding
Jens Fischer
Dana Floricioiu
Nicolas Floury
Giles Foody
Alexander Fore
Gianfranco Fornaro
Michael Förster
Samuel Foucher
Belen Franch
Clive Fraser
Stephen Frasier
Friedrich Fraundorfer
Anthony Freeman
Othmar Frey
Richard Frey
Thomas Fritz
Robert Frouin
Kiyotaka Fujisaki
Todd Gaier
Paolo Gamba
Lianru Gao
Jams Garrison
Andrea Garzelli
Rachel Gaulton
Gary N. Geller
Rudiger Gens
Georgi Georgiev
Dirk Geudtner
Christoph Gierull
Fanny Girard-Ardhuin
Dusan Gleich
Richard Gloaguen
Alvin Goh
Kalifa Goïta
Consuelo Gonzalo-Martin
David Goodenough
Martie Goulding
Jim Gower
Manuel Grana
Yanfeng Gu

Lei Guan
Guo Guangmeng
Leila Guerriero
Stephane Guillaso
Huadong Guo
Majid H. Tangestani
Barry N. Haack
Irena Hajnsek
Martti Hallikainen
Ronny Hänsch
Ramon Hanssen
Xianjun Hao
Charlotte Hasager
Danièle Hauser
Brian Hawkins
Linda Hayden
Liming He
Uta Heiden
Geoffrey Henebry
Scott Hensley
Joon Heo
Laura Hess
Robert Hewson
Yasumasa Hirata
Murakami Hiroshi
Yoshiaki Honda
Liang Hong
Wen Hong
Ye Hong
Brian Hornbuckle
Jochen Horstmann
Stephen Howell
Baoxin Hu
Zhuowei Hu
Chengquan Huang
Chunlin Huang
Huaguo Huang
Hung-Lung Allen Huang
Jingfeng Huang
Weimin Huang
Xin Huang
Heinrich Huehnerfuss
Alfredo R. Huete
Chih-Cheng Hung
Chunlei Huo
Paul Hwang
Toshiaki Ichinose
Emmett Ientilucci
Eastwood Im
Keiji Imaoka
Ryoichi Imasu
Pasquale Imperatore
Michael Inggs
Jordi Inglada
Melina Ioannidou
Steve Iris
Flavio Iturbide-Sanchez
Akira Iwasaki
Tom Jackson
Frederic Jacob
Thomas Jagdhuber

Sermsak Jaruwatanadilok
Li Jia
Sen Jia
Xiuping Jia
Juan C. Jimenez
Shuanggen Jin
Xiaoying Jin
Joel Johnson
Lee F. Johnson
Angel Caroline Johnsy
Inge G.C. Jonckheere
Alicia T. Joseph
Jasmeet Judge
Andreea Julea
Tim Kane
Xudong Kang
Zhizhong Kang
Konstantinos Karantzalos
N. Gökhan Kasapoglu
Akira Kato
Taskin Kavzoglu
Shawn Carlisle Kefauver
Josef Kellndorfer
John Kerekes
Stefan Kern
Yann Kerr
Siri Khalsa
Shohei Kidera
Duk-jin Kim
Edward J. Kim
Seungbum Kim
Yeonjoo Kim
Hiroshi Kimura
Toshiyoshi Kimura
Hideki Kobayashi
Magaly Koch
Jacqueline Kohn
Katsuaki Koike
Shoichiro Kojima
Nickolai Kolev
George Komar
Alexandra Konings
Rob Koopman
Jun-ichi KUDOH
Manoj Kumar Kukreja
Krzysztof Kulpa
Kiichiro Kumagai
David Kunkee
Klaus Kunzi
Kwo-Sen Kuo
Tatiana Kuplich
Mehmet Kurum
Nataliia Kussul
Hiroaki Kuze
Andy Kwarteng
Teodosio Lacava
Jennifer Lacey
Jean-Pierre Lagouarde
Pierre Lahaie
William Lahoz

Rubens Augusto Camargo
    Lamparelli
Riccardo Lanari
Giovanni Laneve
Roger Lang
Allen Larar
Marco Lavalle
Daniel Lavigne
Mykola Lavreniuk
Minda Le
Cedric Le Bastard
Jacqueline Le Moigne
Bertrand Le Saux
David M. Le Vine
Francois Leduc
Jong-Sen Lee
Ken Yoong Lee
Kwangjae Lee
Seung-Kuk Lee
Sebastien Lefevre
Justin Legarsky
Liping Lei
Yan Lei
Josée Lévesque
Guido Levrini
Gang Li
Heng-Chao Li
Jiaojiao Li
Jonathan Li
Jun Li
Kun Li
Li Li
Peijun Li
Qi Li
Shutao Li
Wei Li
Xiaofeng Li
Xin Li
Xinwu Li
Xuanli Li
Yongchen Li
Yuanxiang Li
Cunren Liang
Ding Liang
Xinlian Liang
Liang Liao
Veraldo Liesenberg
Hwee San Lim
K S Lim
Sanghun Lim
Chinsu Lin
Mingsen Lin
Feng Ling
Yuei-An Liou
Jorge Lira
Michael Little
Jane Liu
Jian Guo Liu
Ronggao Liu
Wei-Min Liu
Pierfrancesco Lombardo

David Long
Nathan Longbotham
Nicolas Longepe
Carlos Lopez Martinez
Alejandra Aurelia López-
    Caloca
Paco Lopez-Dekker
Juan M Lopez-Sanchez
Yunling Lou
Hui Lu
Linlin Lu
Zhong Lu
Tom Lukowski
Kari Luojus
Guido Luzi
Zhenkui Ma
Giovanni Macelloni
Ramata Magagi
Animesh Maitra
Clement Mallet
Jordi J. Mallorqui
Dr. Fanar Mansour Abed
Kebiao Mao
Andre R.S. Marcal
Javier Marcello
Andrea Marinoni
Andrea Marinoni
Brian Markham
Prashanth Reddy Marpu
Paulo Marques
Arnaud Martin
Guillermo Martínez-Flores
Manuel Martin-Neira
Frank S. Marzano
Nelson Delfino d'Ávila
    Mascarenhas
Philippa Jane Mason
Christian Massari
Tsuneo Matsunaga
Takeshi Matsuoka
Karim Mattar
Francesco Mattia
Frederic Maussang
John Elton McFee
Darren McKague
Stephen McNeill
Gary McWilliams
Lizwe Mdakane
Peter Meadows
Farid Melgani
Massimo Menenti
Stephane MERIC
Franz Meyer
Eckart Michaelsen
Thierry Michel
Maurizio Migliaccio
Heinrich Miller
Fernando Pellon de
    Miranda
Sidharth Misra
Josef Mittermayer

Tomoaki Miura
Miguel Moctezuma-Flores
Priscilla Mohammed
Katrin Molch
Matthieu Molinier
Alejandro Monsivais
Albert R. Monteith
Andrea Monti Guarnieri
Mario Montopoli
Carsten Montzka
Wooil M. Moon
David I. Morales Avila
Alberto Moreira
Jose Moreno
Keith Morrison
Gabriele Moser
Mahdi Motagh
Arii Motofumi
Seyedmohammad Mousavi
Ury Naftaly
Shin Nagai
Raissouni Naoufal
Adib Nashashibi
Ryo Natsuaki
Catherine M Naud
Enrique A. Navarro
Thomas Neff
Reza Nekovei
wenjian Ni
Giovanni Nico
Allan Aasbjerg Nielsen
Ryuei Nishii
Masahiko Nishimoto
Sima Noghanian
Yoo-jeong Noh
Jean-Francois Nouvel
Ferdinando Nunziata
Ferdinando Nunziata
Andrew O'Brien
Kenta Ogawa
Yisok Oh
Yu Okada
Roger Oliva
Hakan Olsson
Peggy O'Neill
Helene Oriot
Roberto Orosei
Sharmila Padmanabhan
Mahesh Pal
Francesco Palazzo
Simonetta Paloscia
Gintautas Palubinskas
Paolo Pampaloni
Ovidiu Pancrati
Konstantinos
    Papathanassiou
Matteo Pardini
Eulogio Pardo-Igúzquiza
Mario Parente
Sang-Eun Park
Dimitris Paronis

Giuseppe Parrella
Chakrapani Patnaik
Swarnajyoti Patra
Derek Peddle
Ramona Pelich
Antonio Pepe
George Percivall
Augusto José Pereira Filho
Stefano Perna
William Perrie
Claudio Persello
Henrik J. Persson
Walter Petersen
Birgit Peterson
Simone Pettinato
Stuart Phinn
Jose Antonio Piedra
    Fernandez
Nazzareno Pierdicca
Stefano Pignatti Morano
María Piles
Pedro Pina
Antonio Plaza
Javier Plaza
Pierre Potin
Scott Powell
Pau Prats-Iraola
Mark Preiss
Ruiliang Pu
Eldon Puckrin
Yuntao Qian
Marco Quartulli
Julien Radoux
Abdullah Rahman
Nareenart Raksuntorn
Rahul Ramachandran
Hampapuram Ramapriyan
Keith Raney
Diego Reale
Alberto Refice
Andreas Reigber
John A Richards
Philippe Richaume
Rafael Rincon
Sarah Ringerud
Fabio Rocca
Nemesio Rodriguez-
    Fernandez
Jean-Claude Roger
Filomena Romano
Peter Romanov
Roland Romeiser
Petri Rönnholm
Rafael Rosa
Paul Rosen
Philip Rosenkranz
Stanley Rotman
Helmut Rott
Jean-Louis Roujean
Hélène Roussel
Eric Rowell

Tod Rubin
Christopher Ruf
Brian Salmon
Denis Salvadeo
Mercedes Salvia
Luis E. Samaniego
Alim Samat
Arturo Sanchez-Azofeifa
Edson Sano
Veronica Santalla del Rio
Emanuele Santi
Jojene Santillan
Maurizio Santoro
Makoto Satake
Dinesh Sathyamoorthy
Motoyuki Sato
Ryoichi Sato
Mathias Schardt
Rolf Scheiber
Bernd Scheuchl
Paul Scheunders
Gilda Schirinzi
Michael Schmitt
Dustin Schroeder
Marcus Schwaebisch
Evan Seed
Rashmi Shah
Jie Shan
Yun Shao
Nimmi C. Parikh Sharma
Andrii Shelestov
Jiancheng Shi
Yosio Edemir Shimabukuro
Masanobu Shimada
Michal Shimoni
Gustavo H X. Shiroma
Fridon Shubitidze
Claudionor Silva
Jean-Robert Simard
Elizabeth L. Simms
Steven Simske
Ramesh Singh
Upendra Singh
Vern Singhroy
Andreia Siqueira
Andrew Skidmore
Gail Skofronick-Jackson
Mark Sletten
David Small
Anne Smith
Jose A. Sobrino
Shinichi Sobue
Yady Tatiana Solano-
    Correa
Yan Soldo
Domenico Solimini
Lin-Ping Song
Jesus Soria-Ruiz
Boularbah Souissi
Claudia Spinetti

Josaphat Tetuko Sri
    Sumantyo
Gordon Staples
Michael Starek
Susan Steele-Dunne
Sindy Sterckx
James Stiles
Uwe Stilla
Erich Stocker
Thomas Stone
Tazio Strozzi
Hongbo Su
Lihong Su
Robert Sundberg
Junichi Susaki
Kei Suwa
John J Szymanski
Kaoru Tachiiri
Takeo Tadono
Tetsuya Tagawa
Nobuhiro Takahashi
Wataru Takeuchi
Bingxiang TAN
Shojiro Tanaka
Simone Tanelli
Gulsen Taskin
Ryutaro Tateishi
Trevor Taylor
Ana Claudia Teodoro
Medhavy Thankappan
Christian Thiel
Christian Thom
Werner Peter Thomas
Kurt Thome
James C. Tilton
Saibun Tjuatja
Hideyuki Tonooka
Konstantinos Topouzelis
Ramón Torres
Sugimura Toshiro
Ridha Touzi
Robert Treuhaft
Emmanuel Trouvé
Melanie Trudel
Leung Tsang
Devis Tuia
Florence Tupin
Caroline Turcotte
Kalum Priyanath
    Udagepola
Lars Ulander
Silvia Liberata Ullo
Kuniaki Uto
Rajesh Kumar
    Vaidyanathan
Mercedes Vall-llossera
Enric Valor
Jan Van Aardt
Douglas Vandemark
Deborah Vane
Gabriel Vasile

Jorge Vazquez
Niko E.C. Verhoest
Eric Vermote
Jochem Verrelst
Stefano Vignudelli
Ivan E. Villalon-Turrubiates
Massimo Vincini
Anthony Vodacek
Peter Voelger
Slobodan Vucetic
Wolgang Wagner
Hiroyuki Wakabayashi
Jeffrey Walker
Ingo Walterscheid
Chao Wang
Feng Wang
Haipeng Wang
He Wang
Jinfei Wang
Robert Wang
Wenhui Wang
Xi Li Wang
Xiaoqin Wang
Yanting Wang
Yong Wang
Yunpeng Wang
Zhuosen Wang
Bjoern Waske
Manabu Watanabe

Shimon Wdowinski
Urs Wegmüller
Matthias Weiß
David Weissman
Qihao Weng
James West
H. Peter White
Werner Wiesbeck
Ketut Wikantika
David Williams
Joong Sun Won
Fan Wu
Hao Wu
Jindong Wu
XiaoLiang Wu
Junshi Xia
George Xian
Feiqin Xie
Xiaoxiong Xiong
Feng Xu
Lijun Xu
Qing Xu
John Yackel
Hiroyoshi Yamada
Yoshiki Yamagata
Yasushi Yamaguchi
Yoshio Yamaguchi
Fumio Yamazaki
Wai Yeung Yan

Jian Yang
Wenli Yang
Xiaofeng Yang
Xiguang Yang
Tian Yao
Herve Yesou
Yonghong Yi
Naoto Yokoya
Chinatsu Yonezawa
Hiroki Yoshioka
Nicolas Younan
Marwan Younis
Fangjie Yu
Qian Yu
Wenxian Yu
Xiaolei Yu
Jinchun Yuan
Peng Yue
Simon Yueh
Simon Yueh
Igor Zakharov
Evan Zaugg
Valery Zavorotny
Howard Zebker
Wanlin Zhai
Biao Zhang
Bing Zhang
Fengli Zhang
Junping Zhang

Ke Zhang
Lefei Zhang
Liangpei Zhang
Lifu Zhang
Lujun Zhang
Peng Zhang
Xiangrong Zhang
Xiaoyang Zhang
Xin Zhang
Ying Zhang
Yongqin Lisa Zhang
Yun Zhang
Tianjie Zhao
Yindi Zhao
Yongqiang Zhao
Yujie Zheng
Yanfei Zhong
Guoqing Zhou
Ji Zhou
Jun Zhou
Yaping Zhou
Yuyu Zhou
Xiao Xiang Zhu
Yan Zhu
Maciel Zortea
Weibao Zou
Mehrez Zribi
Simon Zwieback

Symposium Information

Conference Venue

Pacific Convention Plaza Yokohama (PACIFICO Yokohama)
1-1-1, Minato Mirai, Nishi-ku,
Yokohama 220-0012, JAPAN

Symposium Registration

IGARSS 2019 Registration will open Sunday, July 28 at the 2nd Floor at PACIFICO Yokohama Conference Center and will continue throughout the duration of the symposium.

Operating hours are:

Sunday, July 28	13:00 – 18:00
Monday, July 29	08:30 – 18:00
Tuesday, July 30	07:30 – 18:00
Wednesday, July 31	07:30 – 18:00
Thursday, August 1	07:30 – 18:00
Friday, August 2	07:30 – 16:00

Name Badges

All delegates will receive a name badge upon registration. Name badges must be worn at all times for identification purposes and admission to symposium technical sessions, exhibitions and catering breaks. In case of loss, replacement badges can be obtained at the registration desk.

Receipt and Proof of Attendance

Registration receipt will be included in the participant kit.

Language

The official language of IGARSS 2019 is English and all presentations must be given in English. No simultaneous interpretation service will be provided.

Wireless Internet Access

Complimentary wireless internet access is available for IGARSS 2019 attendees. Following is the login information:
SSID: FREE-PACIFICO
*No password needed

Twitter

#igarss19
https://twitter.com/IEEE_GRSS

Mobile App

The IGARSS 2019 mobile app is a native application for tablets and smartphones, a hybrid web-based app for Blackberry. There is also a web-based version of the application for all other web browser-enabled phones. View the complete symposium schedule, view speaker details, and more.

Downloading the app is easy. Simply:
- Scan the QR Code (all device types)
- Search for IGARSS in the app store (Android and iOS)
- Type the following URL into your device's mobile browser: http://m.core-apps.com/igarss2019

Mobile Phones

Delegates are kindly requested to set their mobile phones on silent mode in the rooms where scientific sessions are running.

Emergency Phone Numbers

112 – If you require urgent police attention, ambulance, fire brigade etc.

Tickets for Social Events

You have been issued a package containing your name badge and the tickets you ordered for social events when you checked in at the Registration Desk. Please bring the appropriate ticket(s) to all social events. Additional tickets will be available for purchase at the Registration Desk, based on space availability.

Speakers' Preview Room

On the 3rd floor there will be a room to check presentation materials. There will be 12 computers to check and modify the presentations if needed.

The Speakers' preview area opening hours:

Sunday, July 28	16:00 – 19:00
Monday, July 29	08:00 – 18:30
Tuesday, July 30	08:00 – 18:30
Wednesday, July 31	08:00 – 18:30
Thursday, August 1	08:00 – 18:30
Friday, August 2	08:00 – 16:00

Presenters should locate their session room in due time and be in the room 20 minutes before the session begins and should meet the session chair(s), who should be near the stage/lectern. Presentations should be uploaded to the computer in the session room via USB flash memory stick during the break before the session. The USB port is Type A. Presenters are advised, when uploading their presentations, to check if formulas/animations are shown correctly.

At the Speakers' Preview Area, experienced technicians will assist speakers in transferring slides and making changes if needed.

Recording Policy

Tutorials, oral sessions, and poster sessions: For copyright reasons, recordings of any kind (audio, video, pictures, etc.) are prohibited without prior written consent of the presenter or instructor. Attendees may not capture or use the materials presented in any room or in notes on display without written permission. Individuals not complying with this policy will be asked to stop their recording media and delete recorded material.

Coffee/Tea Breaks

Morning and afternoon Coffee/Tea breaks will be served in the exhibition area.

Restaurants

In the PACIFICO Yokohama Conference Center, there is the Bay Bridge Cafeteria on the 6th floor. Note: On July 30 and August 1, this restaurant is reserved for IGARSS registered events and will be unavailable for general use.) There are also some restaurants in the Exhibition Hall.

Personal Property

Please take good care of your personal belongings and do not leave them unattended. The organizers and the symposium secretariat cannot be held responsible for any loss or damage to your personal property.

Disclaimer

The 2019 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2019), including the organizing committee and the secretariat, and all suppliers to the symposium and their servants, agents, contractors and consultants, will not accept liability for damages of any nature sustained by participants or their accompanying persons or loss or damage to their personal property as a result of attending the IGARSS 2019 or related events.

Social Events

Sunday, July 28

Welcome Reception

Please join us for our customary welcome reception.

Location: PACIFICO Yokohama Conference Center 5F, 501+503
Date / Time: Sunday, July 28, 18:00-20:00
Cost: Included with Registration

Monday, July 29

Walking Tour 1

Yokohama is known as a port city. You can enjoy the sight from sea and famous park.

Location: Yamashita Park, Minato-no-Mieru-Oka Park
Date / Time: Monday, July 29, 10:25 - 13:00
Meeting Point: PACIFICO Yokohama 2nd floor (Conference venue) at 10:10. Tour starts at 10:25. (Transportation ticket, English guide included. Lunch is NOT included.)
Itinerary: Venue — (Sea Bus) —Yamashita Park—Harbor View Park— Venue
Cost: US $25 (JCT included)

Noge Evening (Japanese Casual Food Walk in Noge Area) 1

Noge is one of the nostalgic shopping & entertainment street in Yokohama. There are many "Izakaya (Japanese style pub)" in narrow area, and please enjoy Japanese old culture.

Location: Noge
Date / Time: Monday, July 29, 19:00 - 21:00
Meeting Point: Sakuragicho Station Exit North 1 at 19:00. (Transportation is NOT included)
Cost: US $38 (JCT included)

Tuesday, July 30

Kamakura Tour

Kamakura is one of the most historical towns in Japan. You can enjoy temples and shrines.

Location: Kamakura (Please check the "Literary" below)
Date / Time: Tuesday, July 30, 8:00 - 17:00
Meeting Point: PACIFICO Yokohama 1st floor (Conference venue) at 08:00. (Transportation and tour guide included)
Itinerary: Venue—Hasedera Temple—Kotoku-in Temple—-Tsurugaoka Hachimangu Shrine—Venue
Cost: US $120 (JCT included)

Noge Evening (Japanese Casual Food Walk in Noge Area) 2

Noge is one of the nostalgic shopping & entertainment street in Yokohama. There are many "Izakaya (Japanese

style pub)" in narrow area, and please enjoy Japanese old culture.

Location: Noge
Date / Time: Tuesday, July 30, 19:00 - 21:00
Meeting Point: Sakuragicho Station Exit North 1 at 19:00. (Transportation is NOT included)
Cost: US $38 (JCT included)
Capacity: Maximum 60 persons

Japanese Style Cruise (Yakata-fune) Dinner

Yakata-fune is a traditional Japanese houseboat. You can enjoy Japanese style dinner and night view of Yokohama.

Location: Yakata-fune (Japanese style cruise) at Yokohama
Date / Time: Tuesday, July 30, 18:00 - 21:00
Meeting Point: PACIFICO Yokohama 2nd floor (Conference venue) at 18:00. (Transportation and tour guide included)
Cost: US $120 (JCT included)

Wednesday, July 31

Technical Tour 1 (NICT)

The tour will bring you through ICT research facilities at NICT. Guided tours will include their Exhibition Hall to see the overview of the institute, Space Communications laboratory, Japan Standard Time, Remote Sensing laboratories and Space Weather Forecast.

The National Institute of Information and Communications Technology (NICT) is a Japan's sole National Research and Development Agency specializing in the field of information and communications technology. NICT is charged with promoting ICT sector as well as research and development in ICT, which drives economic growth and creates an affluent, safe and secure society. More about NICT, visit: https://www.nict.go.jp/en/

Date / Time: Wednesday, July 31, 12:00-19:00
Meeting Point: PACIFICO Yokohama 1st floor (Conference venue) at 12:00
Cost: US $40, Lunch (light meal), transportation and JCT included

IGARSS World Cup

Just before the Rugby World Cup in Japan, don't forget the IGARSS World Cup! Fees cover the cost of t-shirt, drinks, first aid support, referees, and health insurance for the Participation to the game. There will be four teams, and each team with a maximum of 8 players plays two games, one for semifinal and another for final or third place.

Location: Higashi-Totsuka Football Park
Date / Time: Wednesday, July 31, 18:20-22:00
Meeting Point: PACIFICO Yokohama 1st floor (Conference venue) at 18:20 (load bus). The game starts from 19:30.
Participants: US $30
Spectator: US $15 (including transportation only)

JAZZ Night "Motion Blue"

Yokohama is well-known as Jazz town. You can enjoy great jazz music.

Location: "Motion Blue" at Yokohama
Date / Time: Wednesday, July 31, 19:30 - 21:00
Meeting Point Transportation is not included. The door will open at 18:00, and the show starts from 19:30.

Thursday, August 1

Walking Tour 2 (Half day with Chinese Lunch)

Yokohama has a opened port history. You can enjoy historical place and the biggest China town in Japan.

Location: Yokohama Red Brick Warehouse, Yamashita Park, Chinese town
Date / Time: Thursday, August 1, 10:25-13:45
Meeting Point: PACIFICO Yokohama 2nd floor (Conference venue) at 10:10. Tour starts at 10:25. (Transportation ticket, English guide, lunch included.)
Itinerary: Venue — (Sea Bus) — Yokohama Red Brick Warehouse —Chinese Town— Venue
Cost: US $60 (JCT included)

IGARSS 2019 Awards Banquet

The IGARSS 2019 Awards Banquet will be held at Osanbashi hall, Osanbashi Yokohama International Passenger Terminal. Please enjoy the beautiful scenery with sunset.

Location: Osanbashi Hall, Osanbashi Yokohama
Date / Time: Thursday, August 1, 19:00 - 21:00
Meeting Point Osanbashi Yokohama(Transportation NOT incl.)
Access to the Osanbashi Yokohama will be announced for the participants before the conference.
Cost: US $80 (JCT included)

Friday, August 2

Technical Tour 2 (JAMSTEC and JAXA Sagamihara Campus)

The full-day tour will take you through two key national institutes for geosciences and remote sensing in Japan: JAMSTEC and JAXA. The guided tour at JAMSTEC will include "Earth Simulator" which is a massive super computer used for various fields such as global-warming projection and solid earth interior dynamics. At ISAS/JAXA, the tour plans to include an asteroid explorer "Hayabusa 2", which

recently succeeded to touchdown the target asteroid Ryugu for sample retrieval.

Japan Agency for Marine-Earth Science and Technology (JAMSTEC) is a national institute that works towards the advancement of academic research in addition to the improvement of marine science and technology by proceeding the fundamental research and development on marine, and the cooperative activities on the academic research related to the Ocean for the benefit of the peace and human welfare. More about JAMSTEC, visit: http://www.jamstec.go.jp/e/

The Japan Aerospace Exploration Agency (JAXA) is a core performance agency to support the Japanese government's overall aerospace development and utilization. JAXA conducts integrated operations from basic research and development. The Institute of Space and Astronautical Science (ISAS) is the core of Japan's space science research. ISAS also actively promotes public awareness of and interest in space science. More about ISAS, visit: http://www.isas.jaxa.jp/en/

Location: JAMSTEC and JAXA Sagamihara Campus (ISAS)
Date / Time: Friday, August 2, 09:00-18:00
Meeting Point: PACIFICO Yokohama 2nd floor (Conference venue) at 09:00
Cost: US $55, Lunch at a restaurant, transportation and JCT included.

Saturday, August 3

Sendai Tour [Post Conference Tour] (Memorial of 2011 East Japan Great Earthquake and Tsunami)

Organizer: Motoyuki Sato, Shunichi Koshimura (Tohoku University, Japan)

After IGARSS 2011, originally planned to be held in Sendai, was moved to Vancouver due to 2011 East Japan earthquake and tsunami occurred on March 11, 2011. Our tutorial on remote sensing data used for observation of 2011 tsunami site, we will visit Tsunami affected areas around Sendai. We will learn how remote sensing can contribute to disaster mitigation.

Note: All attendees must arrange their trip to Sendai by themselves .

Location: International Research Institute of Disaster Sciences, Tohoku University, Tsunami affected areas
Date / Time: Saturday, August 3, 09:00-18:00
Meeting Point: International Research Institute of Disaster Sciences, Tohoku University
                 We strongly recommend participants to stay at hotel near by Sendai station
Cost: US $40, Lunch at a restaurant and JCT included

TIE Events

The third annual Technology, Industry, and Education (TIE) forum will host professionals from around the world, in a variety of engagement formats, to discuss and explore the state of the art in geospatial technology and its rapid evolution. This year's new content includes an industry workshop that will bring an opportunity to learn about the latest geospatial platforms directly from the people creating these software offerings, a workshop on marketing geospatial products and services, and a one-on-one resume workshop hosted by an industry recruiting professional. Come and explore this and other expanded TIE content alongside the world-class academic presentations of IGARSS 2019.

Industry Workshop

Session Chair: Nathan Longbotham
Location: PACIFICO Yokohama 511/512
Date / Time: Sunday, July 28, 09:30 - 17:00
Cost: Free [Lunch not provided]

The TIE forum industry workshop is designed as an opportunity for conference participants to learn about platform software capabilities available to remote sensing professionals. In this workshop, industry representatives will provide a hands-on introduction to the modern, large-scale compute capabilities that are available to the remote sensing professional. This year's lineup includes presentations from Development Seed, Descartes Labs, Tellus xData Platform, and Google Earth Engine.

TIE Industry Forum

Session Chair: Kevin Corbley
Location: PACIFICO Yokohama 213
Date / Time: Tuesday, July 30, 13:40 - 15:20

The third annual Remote Sensing Industry Forum will host professionals from around the world to discuss the industry's perspective of geospatial technology and its rapid evolution. This year's forum theme is "Remote Sensing for the Private Sector: Challenges and Solutions" and will explore the complex difficulties that we face moving remote sensing science into commercial applications. Moderated by Kevin Corbley, this year's forum will feature:

• Joerg Herrmann - Senior Vice President, Capella Space
• Shuji Fujimaru - senior radar engineer, Synspective
• Julie Baker - co-founder and COO, Ursa Space
• Kimberly Scott - co-founder and VP of Data Science, Astraea

Code Workshop

Session Chair: Drew Bollinger
Location: PACIFICO Yokohama 211+212
Date / Time: Thursday, August 1, 08:00 - 18:00

The purpose of the TIE Forum is to cross the bridge between the research efforts of academia and the technology industry. In this spirit, the code workshop is designed to build hands-on experience with software tools and data. New this year, the code workshop is running in collaboration with the Machine Learning in Remote Sensing tutorial (FD-3). If you were able to attend the tutorial, come and practice the material! If you were not able to attend the tutorial, see an introduction to some of the core concepts from the tutorial and dive into demonstration problems. Either way, bring your laptop and join in on projects suitable to many experience levels. We will also have developers available throughout the day for questions and coding assistance.

Marketing Geospatial Products and Services Seminar

Session Chair: Kevin Corbley
Location: PACIFICO Yokohama 421
Date / Time: Friday, August 2, 13:40 - 15:20

Thirty years ago, Kevin Corbley worked on the first team ever tasked with marketing satellite imagery to commercial clients. In the years since, he has devised and implemented marketing communications strategies for products and services in every sector of the geospatial industry. In this one-hour session, Kevin will discuss the importance of succinct messaging to position geospatial offerings in a competitive global market. He will then describe the three most effective marketing activities to deliver your messaging and promote your products and services. The second half of the class will focus on the six critical social media channels your organization must leverage to reach decision makers worldwide.

Women in GRSS Forum

Session Chairs: Kevin Corbley & Keely Roth
Location: PACIFICO Yokohama 213
Date / Time: Tuesday, July 30, 10:40 - 12:20

The third annual Women in GRSS Forum will host a diverse panel of women STEM professionals from academia and industry. Organized by the GRSS IDEA committee, whose mission it is to "inspire, develop, empower, and advance" diverse communities in GRSS, this year's forum theme is "Building a Successful Career in STEM". Our panelists will share their perspectives on a range of topics from networking to leadership to pursuing new opportunities. We welcome you to this open session to learn, be inspired, and join the conversation. Moderated by Kevin Corbley, this year's forum will feature:

- Julie Baker - co-founder and COO, Ursa Space
- Kimberly Scott - co-founder and VP of Data Science, Astraea
- Erin Hestir - Associate Professor, University of California, Merced
- Sarah Graves - Program Coordinator, University of Wisconsin-Madison
- Marta Yebra - Senior Scientist and Mission Specialist, Australian National University

Women in GRSS Luncheon

Location: Bay Bridge Cafeteria
Date / Time: Tuesday, July 30, 12:20 - 13:40
Cost: US$ 25

This Women in GRSS luncheon is a great opportunity for attendees to interact and network with senior members and the Women in GRSS Forum speakers. We will have a short, informal program and share a delicious meal together in our 8th consecutive year! All are welcome.

Three Minute Thesis®

Session Chair: Subit Chakrabarti
Location: PACIFICO Yokohama 211+212
Date / Time: Thursday, August 1, 12:20 - 13:40

3MT®, founded by the University of Queensland in 2008, is an academic competition that cultivates students' presentation and research communication skills and challenges them to describe their research within three minutes to a general audience with one static slide. The competition is open to all students attending IGARSS 2019. Students will be able to submit videos to a video platform of their choice and the 10 best presenters will be selected to present to a panel of judges at IGARSS 2019. Prizes will be awarded to top 3 presenters.

TIE Education Forum: Education in Action

Session Chair: Josée Lévesque
Location: PACIFICO Yokohama 418
Date / Time: Monday, July 29, 13:40 - 15:20

So you got your Geoscience and Remote Sensing degree? Now what? How to translate your skills to the real world? Speakers from industry, government, and academia will discuss future trends in remote sensing and the skills they are looking for.

TIE Global Exploration Workshop: The Global Exploration Roadmap

Session Chair: George Komar
Location: PACIFICO Yokohama 313+314
Date / Time: Thursday, August 1, 16:20 - 18:00

The International Space Exploration Coordination Group (ISECG) is a multinational activity set up by 14 space agencies to advance the Global Exploration Strategy through coordination of their mutual efforts in space exploration. They have published the "Global Exploration Roadmap". The discussions in this workshop will center around several space agencies and their plans to implement this strategy.

Group on Earth Observations in Asia-Oceania (AO-GEO): Sustainable Development in Changing Environments

Location: PACIFICO Yokohama 422
Date / Time: Friday, August 2, 10:40 - 12:20

The Asia-Oceania GEOSS (AO-GEOSS) is a GEO Initiative approved and launched in November 2016.The aim of this Session is to introduce and highlight the work of AO-GEOSS in sustainable development and disaster monitoring within the Asia-Oceania region with the anticipation that geoscience related researchers and scientists will be encouraged to work more closely with GEO to promote earth observation capacity of Asia-Oceania countries to confront the challenges which pose a risk to the attainment of sustainable development and to limiting climate change. Presentations will be on Biodiversity, Sustainable Development Goals (SDG's) and Disaster Response.

INTRODUCTION TO GEO – GROUP ON EARTH OBSERVATIONS
Anthony Milne, University of New South Wales, Australia, GEO Programme Board

ASIA-OCEANIA GEO: INTRODUCTION, ITS VISION AND ACTIVITIES
Hiroyuki Muraoka, Gifu University, Japan, AO-GEO Coordination Board, GEO Programme Board

GLOBAL TERRESTRIAL ECOLOGICAL ENVIRONMENT MONITORING AND ASSESSMENT FOR SUSTAINABLE DEVELOPMENT GOALS (SDG's)
Qinhuo Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, CAS, China

BIODIVERSITY OBSERVATIONS FROM SPACE AND IN THE FIELD FOR ASIA PACIFIC BIODIVERSITY REGION
Hiroyuki Muraoka, Gifu University, Japan, AO-GEO Coordination Board, GEO Programme Board

THE CHALLENGE OF QUICK DISASTER RESPONSEl: SOLUTIONS AND PRACTICES FROM AO-GEO
Guoqing Li, Institute of Remote Sensing and Digital Earth, CAS, China

Young Professionals' Mixer

Location: Ristorante Attimo
Date / Time: Monday, July 29, 19:00 - 21:00
Cost: IEEE members: US$ 10,
                      non-members: US$ 35

The young professionals (YP) mixer is a chance for GRSS YPs to have an informal meet and greet and to network with accomplished professionals from industry and academia. Senior GRSS members will be available to share stories about their careers and offer advice to the YPs.

GRSS Evemts

Tuesday, July 30

Student Prize Committee Lunch

Location: PACIFICO Yokohama Room 422
Date / Time: Tuesday, July 30, 12:20-13:40
Cost: By Invitation Only

Wednesday, July 31

Author Education and Editors Meet-Up

Location: PACIFICO Yokohama, Room 421
Date / Time: Wednesday, 31 July 12:20 - 13:20
Cost: Free [Lunch not provided]
Organizers: Bill Emery, VP Publications GRSS; Simon
                      Yueh (EiC TGRS); Jenny Du (EiC JSTARS);
                      Avik Battachaya (EiC, GRSL); and Jim
                      Garrison (EiC, GRSM)

Come and learn about IEEE publication procedures and practices. Hear what the editors in chief have to say about their journals. Ask questions about any aspect of GRSS publications that have been bothering you.

Lunch is not provided for this event.

Technical Committees & Chapter Chairs Dinner

Location: Restaurant Danzero
Date / Time: Wednesday, July 31, 19:00 - 22:00
Cost: US $50

Thursday, August 1

Editors Lunch Meeting

Location: PACIFICO Yokohama Bay Bridge Cafeteria
                      (6F)
Date / Time: Thursday, August 1, 12:20-13:40
Cost: By Invitation Only

Friday, August 2

TC Chairs Luncheon

Location: PACIFICO Yokohama Room 422
Date / Time: Friday, August 2, 12:20-13:40
Cost: By Invitation Only

Student Paper Competition

All IEEE student members were invited and encouraged to enter the IGARSS Student Paper Competition. Ten finalists have been selected by a committee to present their papers during a special session at the symposium in Yokohama, on Tuesday morning, July 30, in room Room 4C. Three prizes will be presented: First Prize (Mikio Takagi Student Prize) endowed with US$1000.00, Second Prize endowed with US$750.00, Third Prize endowed with US$500.00, plus certificates for each. Following the special session at IGARSS, a complimentary ticket to the GRSS Annual Awards Banquet has been offered to the 10 finalists. The ten finalists are listed below.

TU1.R4.1: ROBUST LOW-RANK CHANGE DETECTION FOR SAR IMAGE TIME SERIES

Ammar Mian, CentraleSupélec, France; Arnaud Breloy, Université Paris Nanterre, France; Guillaume Ginolhac, Université Savoie Mont-Blanc, France; Jean-Philippe Ovarlez, ONERA, France

TU1.R4.2: MULTIMODAL-TEMPORAL FUSION: BLENDING MULTIMODAL REMOTE SENSING IMAGES TO GENERATE IMAGE SERIES WITH HIGH TEMPORAL RESOLUTION

Xun Liu, Chenwei Deng, Baojun Zhao, Beijing Institute of Technology, China; Jocelyn Chanussot, University of Grenoble Alpes, CNRS, Grenoble INP, France

TU1.R4.3: FULLY ADAPTIVE CLOUD PROFILING RADAR SIMULATION

Jakob DeLong, Mohammad Shattal, Andrew O'Brien, Christopher Ball, Joel Johnson, Graeme Smith, Ohio State University, United States

TU1.R4.4: TWO DIMENSIONAL IMAGE FORMATION WITH PASSIVE RADAR USING THE SUN FOR ECHO DETECTION

Sean Peters, Dustin Schroeder, Davide Castelletti, Stanford University, United States; Mark Haynes, Andrew Romero-Wolf, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TU1.R4.5: MODELING AND RETRIEVING SOIL MOISTURE AND ORGANIC MATTER PROFILES IN THE ACTIVE LAYER OF PERMAFROST SOILS FROM P-BAND RADAR OBSERVATIONS

Richard Chen, Kazem Bakian-Dogaheh, Alireza Tabatabaeenejad, Mahta Moghaddam, University of Southern California, United States

TU2.R4.1: USING DEEP LEARNING TO COUNT ALBATROSSES FROM SPACE

Ellen Bowler, University of East Anglia, United Kingdom; Peter Fretwell, British Antarctic Survey, United Kingdom; Geoffrey French, Michal Mackiewicz, University of East Anglia, United Kingdom

TU2.R4.2: NOISY SUPERVISION FOR CORRECTING MISALIGNED CADASTER MAPS WITHOUT PERFECT GROUND TRUTH DATA

Nicolas Girard, Inria, France; Guillaume Charpiat, Inria Saclay, France; Yuliya Tarabalka, Inria, France

TU2.R4.3: QUANTIFYING THE CONTRIBUTION OF TROPICAL CYCLONES TO THE EARTH'S OUTGOING RADIATION

Kien Th. Nguyen, Andrey S. Alenin, Elizabeth A. Ritchie, J. Scott Tyo, University of New South Wales, Canberra, Australia

TU2.R4.4: UNSUPERVISED TEMPORAL-ADAPTATION WITH MULTIPLE GEODESIC FLOW KERNELS FOR HYPERSPECTRAL IMAGE CLASSIFICATION

Tianzhu Liu, Yanfeng Gu, Harbin Institute of Technology, China

TU2.R4.5: APPLICATION OF ULTRA-WIDEBAND SYNTHESIS IN SOFTWARE DEFINED RADAR FOR UAV-BASED LANDMINE DETECTION

Samuel Prager, Mahta Moghaddam, University of Southern California, United States

GRSS Technical Committees

The Geoscience and Remote Sensing Society has established a number of Technical Committees to actively promote discussion and advances in areas of member technical interests. Activities of the Technical Committees include the organization of special sessions at IGARSS along with hosting a committee meeting open to all IGARSS participants. The following is a list of current technical committees, brief statement of interest, special sessions and meetings at IGARSS 2019.

Frequency Allocation in Remote Sensing (FARS)

The Frequency Allocations in Remote Sensing Technical Committee (FARS TC) mission is to serve as interface between the GRSS community and the radio-frequency regulatory world. This includes providing guidance and recommendations on matters relevant to spectrum management, promoting the development of radio-frequency, and educating the remote sensing community on relevant spectrum management processes and current issues.

Invited Sessions:
MO3.R4: Radio Frequency Interference (RFI) in Passive Instruments
Monday, July 29, 13:40-15:20, Room 313-314

MO4.R4: Radio Frequency Interference (RFI) and Spectrum Management
Monday, July 29, 16:20-18:00, Room 313-314

WE3.R7: Radio Frequency Interference (RFI) in Active Remote Sensing and GNSS Reflectometry
Wednesday, July 31, 13:40 - 15:20, Room 413

TC Meeting:
Monday, July 29, 18:00-19:00, Room 313-314

Geoscience Spaceborne Imaging Spectroscopy (GSIS)

The Geoscience Spaceborne Imaging Spectroscopy Technical Committee (GSIS TC) provides a community of practice for all stakeholders engaged in spaceborne imaging spectroscopy with an emphasis on geoscientific applications. The mission of the GSIS TC is to share information on future spaceborne imaging spectroscopy ("hyperspectral") missions, to provide opportunities for new partnerships between national space agencies, commercial spaceborne imaging spectroscopy data providers, research institutions and user community, and, to build a knowledge base on underpinning capabilities required for imaging spectroscopy missions to enable uptake of spaceborne imaging spectroscopy by the geoscientific community.

Invited Sessions:
MO3.R13: International Spaceborne Imaging Spectroscopy Missions: Updates and News I
Monday, July 29, 13:40-15:20, Room 511-512

MO4.R13: International Spaceborne Imaging Spectroscopy Missions: Updates and News II
Monday, July 29, 16:20-18:00, Room 511-512

TC Meeting:
Monday, July 29, 18:00-19:00, Room 511-512

GRSS Standards for Earth Observation (GSEO)

The mission of the GRSS Standards for Earth Observation (GSEO) is to advance the usability and uptake of remote sensing products by convening experts from academia, industry and government to create and promote standards and best practices. Working groups identify where standardization can improve the generation, distribution and utilization of interoperable data products from remote sensing systems and then work with existing Standards Development Organizations such as IEEE, OGC and ISO to publish standards that will be widely adopted.

Invited Sessions:
MO3.R3: Advancing Remote Sensing in the Geosciences through Standardization I
Monday, July 29, 13:40-15:20, Room 311-312

MO4.R3: Advancing Remote Sensing in the Geosciences through Standardization II
Monday, July 29, 16:20-18:00, Room 311-312

TC Meeting:
Monday, July 29, 18:00-19:00, Room 311-312

Earth Science Informatics (ESI)

The mission of the Earth Science Informatics Technical Committee (ESI TC) is to advance the application of informatics to the geosciences and remote sensing, to provide a venue for ESI professionals to exchange information and knowledge, and to give technology advice to major national and international ESI initiatives.

Invited Sessions:

TU3.R7: Analytics on Datacubes & Analysis Ready Earth Data I - supported by GRSS ESI, OGC, ISO, INSPIRE
Tuesday, July 30, 16:20-18:00, Room 413

FR1.R4: Earth Observation Science and Exploitation using Common Standards and Platforms I
Friday, August 2, 08:00 - 09:40, Room 313-314

FR2.R4: Earth Observation Science and Exploitation using Common Standards and Platforms II
Friday, August 2, 10:40 - 12:20, Room 313-314

TC Meeting:
Tuesday, July 30, 18:00-19:00, Room 413

Image Analysis and Data Fusion (IADF)

The Image Analysis and Data Fusion Technical Committee (IADFTC) mission is to serve as a global, multi-disciplinary, network for geospatial data fusion, with the aim of connecting people and resources, educating students and professionals, and promoting the best practices in data fusion applications.

Invited Sessions:
TU3.R10: Data Fusion: The AI Era I
   Tuesday, July 30, 13:40-15:20, Room 418

TU4.R10: Data Fusion: The AI Era II
   Tuesday, July 30, 16:20-18:00, Room 418

WE1.R7: IEEE GRSS Data Fusion Contest I
   Wednesday, July 31, 08:00-09:40, Room 413

WE2.R7: IEEE GRSS Data Fusion Contest II
   Wednesday, July 31, 10:40-12:20, Room 413

TC Meeting:
   Tuesday, July 30, 18:00-19:00, Room 418

Instrumentation and Future Technologies (IFT)

The Instrumentation and Future Technologies Technical Committee's (IFT TC) mission is to facilitate, engage and coordinate GRSS members and the communities-at-large to: assess the current state-of-the-art in remote sensing instruments and technology, identify new instrument concepts and relevant technology trends, and recognize enabling technologies for future instruments. The committee actively promotes and provides insight to institutions and industry on remote sensing instrument and technology development.

Invited Sessions:
TU3.R4: Space Lidar: Missions, Technologies and Observations I
   Tuesday, July 30, 13:40-15:20, Room 313-314

TU4.R4: Space Lidar: Missions, Technologies and Observations II
   Tuesday, July 30, 16:20-18:00, Room 313-314

TC Meeting:
   Tuesday, July 30, 18:00-19:00, Room 313-314

Modelling in Remote Sensing (MIRS)

The mission of the Modeling in Remote Sensing Technical Committee (MIRS TC) is to serve as a technical and professional forum for advancing the science of predicting remotely sensed observations from first principles theory. The MIRS TC addresses the technical space between basic electromagnetic theory and data collected by remote sensing instruments. It focuses on models and techniques used to take geometric, volumetric and material composition descriptions of a scene along with their EM (e.g., scattering, absorption, emission, optical BRDF, dielectric properties, etc.) attributes and then predict for a given remote sensing instrument the resulting observation.

Invited Sessions:
TU3.R13: Physical Modeling in Microwave and Optical Remote Sensing I
   Tuesday, July 30, 13:40-15:20, Room 511-512

TU4.R13: Physical Modeling in Microwave and Optical Remote Sensing II
   Tuesday, July 30, 16:20-18:00, Room 511-512

TC Meeting:
   Tuesday, July 30, 18:00-19:00, Room 511-512

Technical Committee Chair Meetings

The GRSS Technical Committees will have a short display of their activities during the Welcome Reception
   Sunday, July 28, 18:00-20:00, PACIFICO Yokohama Conference Center 5F, 501+503

The GRSS Technical Committees will be available at the GRSS Booth providing information about their activities and have some surprises for you available!
   Monday to Friday at the GRSS Booth, Exhibition Hall
   Friday, August 2, 12:20-13:40, Room 422 (for Technical Committee Chairs only)

In addition, IGARSS participants are invited to attend the Technical Committee and Chapter Chairs Dinner (Wednesday, July 31, 19:00-22:00) at which there will be brief presentations by the Chairs of the Technical Committees. Pre-registration is required.

Tutorials

FULL-DAY, SUNDAY, JULY 28, 09:30 - 17:30

FD-1: From SAR Polarimetry to Polarimetric SAR Interferometry and Polarimetric SAR Tomography
Giuseppe Parrella, Konstantinos Papathanassiou and Matteo Pardini (DLR)
Location: Room 315

FD-2: Remote Sensing with Reflected Global Navigation Satellite System and Signals of Opportunity
James L Garrison (Purdue University), Estel Cardellach (Institute of Space Sciences, ICE-CSIC, IEEC), Adriano Camps (Universitat Politecnica de Catalunya -BarcelonaTech, UPC)
Location: Room 411-412

FD-3: Machine Learning in Remote Sensing - Best Practices and Recent Solutions
Ronny Hänsch (Technische Universität Berlin), Yuliya Tarabalka (LuxCarta Technology, France), Devis Tuia (Wageningen University and Research), Bertrand Le Saux (ONERA)
Location: Room 413

FD-4: Earth Observation Big Data Intelligence: Theory and Practice of Deep Learning and Big Data Mining
Mihai Datcu (DLR), Feng Xu (Fudan University), Akira Hirose (The University of Tokyo)
Location: Room 416-417

FD-5: Deep Learning with the Orfeo ToolBox
Rémi CRESSON (IRSTEA), Kenji OSE (UMR TETIS)
Location: Room 418

FD-6: Natural Disasters and Hazards Monitoring using Earth Observation Data
Ramona Pelich, Marco Chini (Luxembourg Institute of Science and Technology), Wataru Takeuchi (University of Tokyo), Young-Joo Kwak (NILIM, Ministry of Land, Infrastructure, Transport and Tourism Japan), Vitaliy Yurchenko (iGeo AS)
Location: Room 419

MORNING, SUNDAY, JULY 28, 09:30 - 12:45

HD-1: Bridge 3D Radiative Transfer Simulations from Optical, Thermal, Lidar to Microwave
Huaguo Huang (Beijing Forestry University)
Location: Room 311

HD-2: Pansharpening: From Classical Techniques to Recent Advances
Mauro Dalla Mura (GIPSA-lab Grenoble Institute of Technology), Andrea Garzelli (University of Siena), Gemine Vivone (University of Salerno)
Location: Room 312

HD-4: Near Range and Ground Penetrating Radar (GPR) / UWB radar: Fundamentals to applications
Motoyuki Sato (Tohoku University)
Location: Room 313

AFTERNOON, SUNDAY, JULY 28, 14:15 - 17:30

HD-5: Spectrum Management and Radio Frequency Interference (RFI) in Microwave Remote Sensing
Paolo de Matthaeis (NASA Goddard Space Flight Center, USA), Yan Soldo (NASA Goddard Space Flight Center, USA), Mingliang Tao (Northwestern Polytechnical University, China)
Location: Room 311

HD-6: Random Forest Classification: Guidelines on Model Optimization, Variable and Training Selection
Koreen Millard, Sarah Banks, Amir Behnamian (Environment and Climate Change Canada)
Location: Room 312

HD-7: Analysis of SAR Amplitude and Phase Time Series for Land Applications
Paolo Pasquali (sarmap s.a.)
Location: Room 313

HD-8: 3D/4D SAR Tomography: Principles and Applications
Fabrizio Lombardini (University of Pisa)
Location: Room 314

2019 Geoscience and Remote Sensing Summer School

Dates: Tuesday, July 23 - Friday, July 26, 2019
Venue: Tokyo Institute of Technology
2-12-1 Ookayama, Meguro-ku,
Tokyo 152-8550
Japan

GRSS Summer School (GR4S) will be held in conjunction with IGARSS 2019. The main venue is Tokyo Institute of Technology, located approximately 30 minutes away from the IGARSS 2019 venue by train. GR4S will be a four-day course that offers three-day seminar lectures and hands-on lab works, with one-day technical tour. Distinguished speakers will give lectures on SAR remote sensing, optical remote sensing and remote sensing for disaster damage mapping, which are followed by hands-on training. On the second day (Wednesday, July 24), a technical tour is planned to NIED and JAXA, Tsukuba, Japan.

Co-chairs: Hiroaki Kuze (Chiba University), Kuniaki Uto (Tokyo Institute of Technology), Naoto Yokoya (RIKEN Center for Advanced Intelligence Project)

Contact information

2019 Geoscience and Remote Sensing Summer School Committee

email: gr4s@igarss2019.org

Education Program

Earth Observation Using Remote Sensing: Investigation from Space

Special education program for 10-15 years old local students will be held during IGARSS 2019. The program includes a lecture on earth observation from satellite including hands-on activities, and a hyper-wall show on current remote sensing examples. This education program is supported by culture and tourism bureau, City of Yokohama.

Contents

- LECTURE organized by Remote Sensing Technology Center of Japan (RESTEC)
  - Satellite for earth observation
  - Japan and overseas seen from space
  - Introduction of remote sensing technique
  - Paper craft globe making
- HYPER-WALL SHOW given by Dr. Gail Skofronick-Jackson, NASA
  - NASA Remote Sensing Examples

Location: PACIFICO Yokohama 301-304
Date/Time: Monday, July 29, 13:30-15:00, 15:30-17:00
Language: Japanese (lecture) / English with Japanese translation (Hyper-wall show)

PACIFICO Yokohama — Poster Area Detail, Room 501-502

PACIFICO Yokohama — Poster Area Detail, Room 503

SPRINT Presentation Area
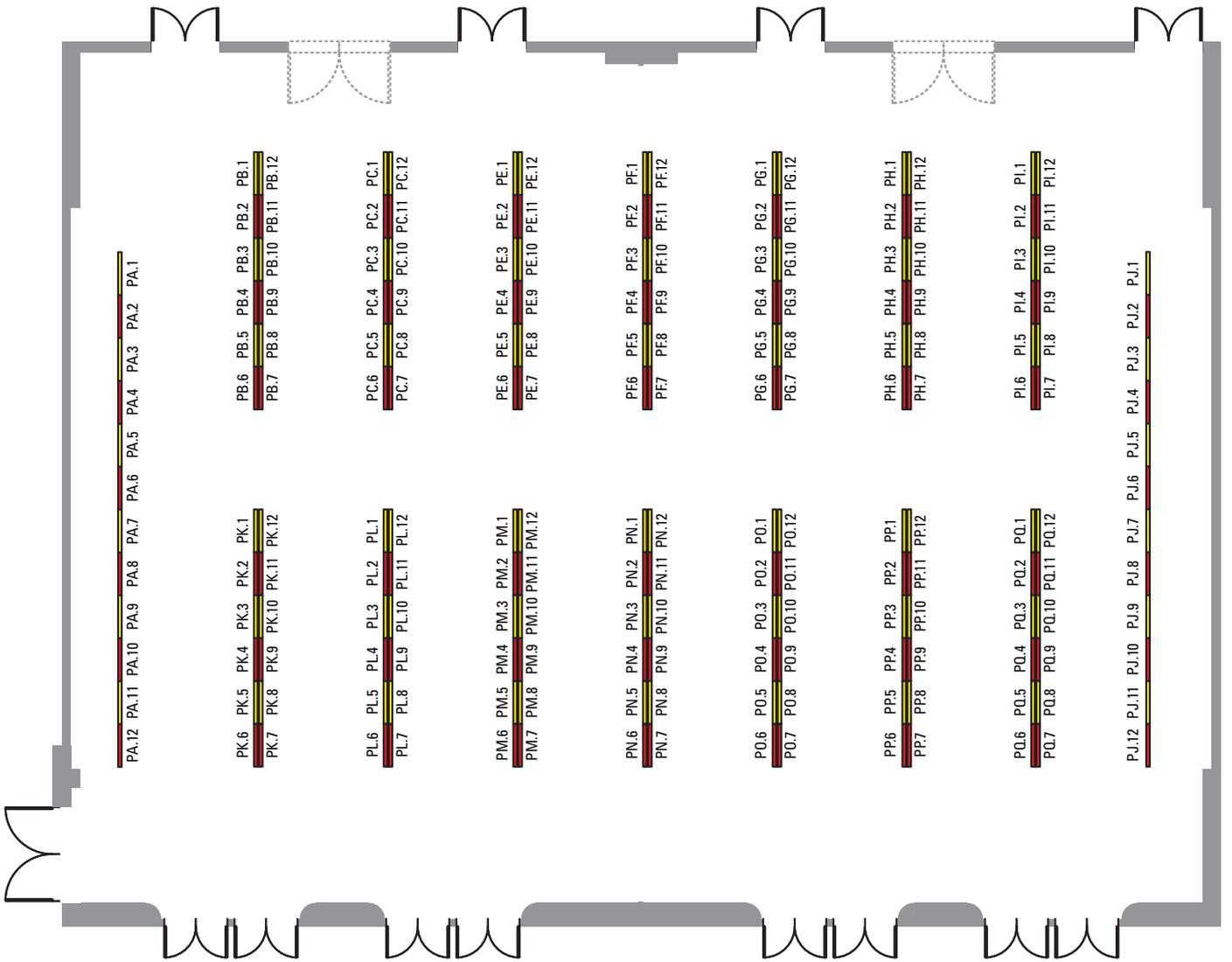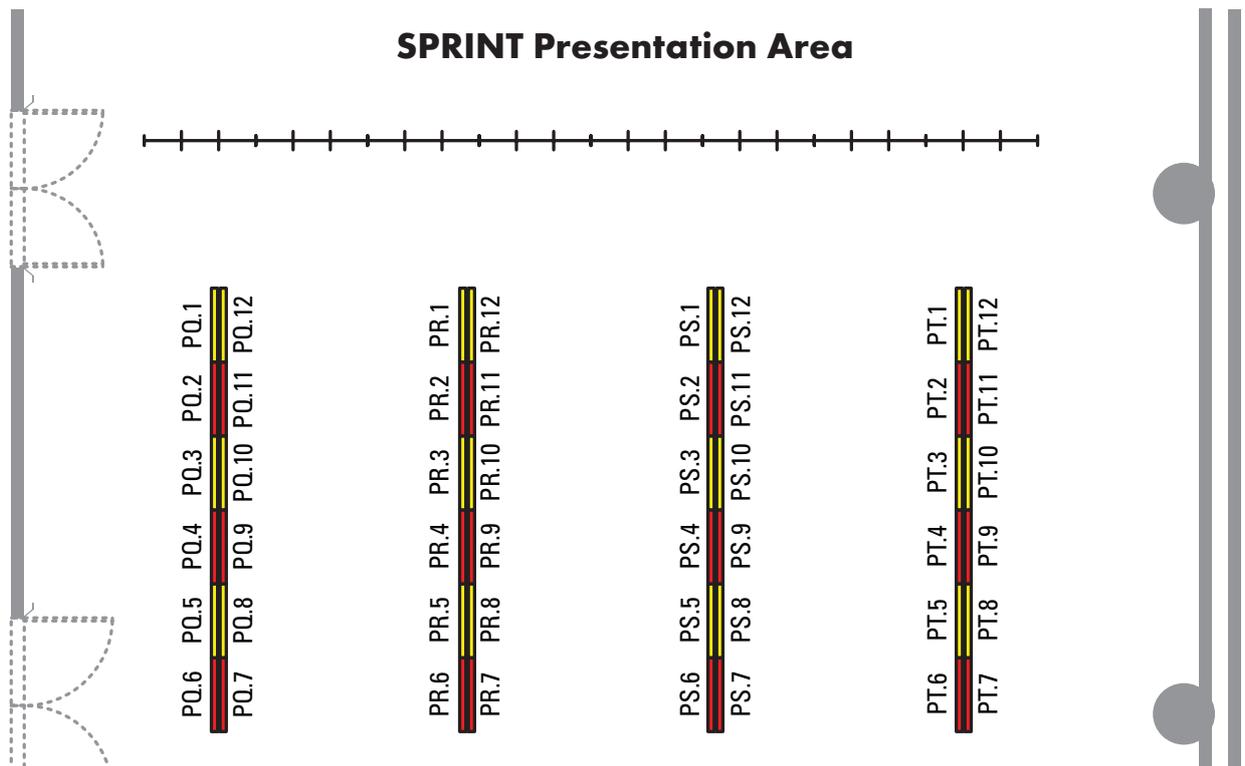
Presentation Instructions

Guidelines for Speakers and Oral Presenters

The official language of the Symposium is English. Each oral presentation time is allocated 20 minutes. We recommend that presentation of your slides should take about 15-16 minutes, leaving 4-5 minutes for introduction, summary, and questions from the audience. To achieve appropriate timing, organize your slides or viewgraphs around the points you intend to make, using no more than one slide per minute. A reasonable strategy is to allocate about 2 minutes per slide when there are equations or important key points to make, and one minute per slide when the content is less complex. Slides attract and hold attention, and reinforce what you say - provided you keep them simple and easy to read. Plan on covering at most 6 points per slide, covered by 6 to 12 spoken sentences and no more than about two spoken minutes.

Make sure each of your key points is easy to explain with aid of the material on your slides. Do not read directly from the slide during your presentation. You shouldn't need to prepare a written speech, although it is often a good idea to prepare the opening and closing sentences in advance. It is very important that you rehearse your presentation in front of an audience before you give your presentation at IGARSS. Surrogate presenters must be sufficiently familiar with the material being presented to answer detailed questions from the audience. In addition, the surrogate presenter must contact the Session Chair in advance of the presenter's session.

Pre-recorded presentations are NOT ALLOWED, and the person giving the presentation MUST be able to take and answer questions regarding the content of the paper and associated research. The presenter must be present in the room, remote virtual presenters are NOT allowed.

A computer-driven slideshow for use with a data projector is recommended for your talk at IGARSS. All presentation rooms will be equipped with a computer, a data projector, a microphone (for large rooms), a lectern, and a pointing device. An overhead projector will be provided upon request.

It is important that the sessions remain on time. The session chair(s) are responsible for keeping presentations on schedule. Any setup time you use is part of your overall 20 minute presentation time, so it is a good idea to check your visual aids before the session begins.

Presenters should locate their session room in due time and be in the room 20 minutes before the session room begins to meet with the session chair, who should be near the stage/ lectern. **Presentation shall be uploaded to the computer in the session room via USB flash memory stick during the break before the session (USB Port is Type A).** Presenters are advised when uploading their presentations to check if formulas/animations are shown correctly. Presenters can check their presentations also in the Speakers' Preview Area on the 3rd floor.

Please do not attempt to use your own computer to connect to the projector. For speed and efficiency, use only the conference-provided computer for displaying your presentation visual aids.

Technical Specifications in the session room:

- All rooms will be fitted with a lectern, laptop, projector, screen and laser pointer. There are staffs in each room, and they will help you to when there's any trouble during the presentation.
- A Windows PC (with Windows 10, PowerPoint 2010~2019) is set up. Sound function will be available. Video files must be produced to be playable with the codec included in the Windows Media Player 11 initial state.
- We recommend you make your slides with aspect ratio of 16:9 (If you make them with aspect ratio of 4:3, the reduced-size slides are projected onto a screen.)

Speakers' Preview Room

On the 3rd floor there will be a room to check presentation materials. There will be 12 computers for the speakers to check and modify the presentations if needed.

The Speakers' preview area opening hours:

- Sunday, July 28 .... 16:00 – 19:00
- Monday, July 29 .... 08:00 – 18:30
- Tuesday, July 30 .... 08:00 – 18:30
- Wednesday, July 31 .... 08:00 – 18:30
- Thursday, August 1 .... 08:00 – 18:30
- Friday, August 2 .... 08:00 – 16:00

Guidelines for Poster Presenters

Poster sessions are a good medium for authors to present papers and meet with interested attendees for in-depth technical discussions. In addition, attendees find the poster sessions a good way to sample many papers in parallel sessions. Thus it is important that you display your message clearly and noticeably to attract people who might have an interest in your paper.

Your poster should cover the key points of your work. It need not, and should not, attempt to include all the details; you can describe them in person to people who are interested. The ideal poster is designed to attract attention, provide a brief overview of your work, and initiate discussion. Carefully and completely prepare your poster well in advance of the conference. Try tacking up the poster before you leave for the conference to see what it will look like and to make sure that you have all of the necessary pieces.

For each paper accepted within a poster session, one board is reserved for your use. Each board has a width of 120 cm (47.2 inches) and a height of 210cm (87.2 inches). You will be able to use the full width of one board. The poster is not required to fill this entire space, but it cannot be any larger

than the board size. It is recommended to use A0 Portrait for your poster size.

The boards will be arranged in rows. Each reserved paper space will be assigned a number. Every paper being presented at the same time will also be assigned a number. The number, called the Board Number, will identify the place to post your poster.

Authors for the morning poster session should have their posters in place by 8:30, stand by their poster during the 9:40-10:40 morning poster session, and remove their poster by 13:00. Authors for the afternoon poster session should have their posters in place by 14:00, stand by their poster during the 15:20-16:20 afternoon poster session, and remove their poster by 18:30.

IMPORTANT: There MUST be a presenter standing at the poster during the entire scheduled poster time. A poster that is mounted to the board, but without any person presenting it will be considered a no-show!

Posters shall be on display during the day dedicated to the specific poster session. Authors are invited to be on stand-by near their posters during the session breaks and must be near their poster during the dedicated poster session time.

The title of your poster should appear at the top in CAPITAL letters about 25mm high. Below the title put the author(s)' name(s) and affiliation(s). The flow of your poster should be from the top left to the bottom right. Use arrows to lead your viewer through the poster. Use color for highlighting and to make your poster more attractive. Use pictures, diagrams, cartoons, figures, etc., rather than text wherever possible. Try to state your main result in 6 lines or less, in lettering about 15mm high so that people can read the poster from a distance. The smallest text on your poster should be at least 9mm high, and the important points should be in a larger size. Use a sans-serif font (such as "cmss" in the Computer Modern family or the "Helvetica" PostScript font) to make the print easier to read from a distance.

Make your poster as self-explanatory as possible. This will save your efforts for technical discussions. There will not be any summaries given at the beginning of the poster sessions at IGARSS 2019, so authors need not prepare any overhead slides for their poster presentations. You may bring additional battery-operated audio or visual aids to enhance your presentation.

Prepare a short presentation of about 5 minutes that you can periodically give to those assembled around your poster throughout the 2 hour poster session. If possible, more than one author should attend the session to aid in presentations and discussions, and to provide the presenters with the chance to rest or briefly view other posters.

SPRINT Presentation Guidelines

Shortly **Pr**esenting **Int**eractive Content

SPRINT is short and scientific that combines the advantage of both oral and poster presentation. It provides the opportunity to interact with the audience. Every SPRINT author first presents his/her work orally and has afterwards the opportunities to discuss the topic during the interactive session at his/her poster display.

SPRINT Session Organization

SPRINT presentations are organized in sessions scheduled at a specific SPRINT spot in Room 503, indicated in the program together with the time of presentation of each contribution. The SPRINT sessions are scheduled in 3-4 presentations during each interactive session in front of the audience.

Prepare your SPRINT presentation

A SPRINT presentation consists of a 4-minute oral slot followed by the presentation time at the interactive session with the poster. SPRINT authors are kindly asked to prepare one presentation file with 3 slides introducing their topic, presenting their results and inviting the audience to discuss and interact at the corresponding poster. Your presentation file must be PowerPoint or PDF and videos and animations can be embedded. We recommend producing your presentation with an 16:9 aspect ratio. However, you can also prepare your presentation in the classic 4:3 format. The authors should upload the presentation at the beginning of the interactive session. The SPRINT session starts 10 min after the interactive session starts.

SPRINT spot equipment

- PC, projector, and screen
- Speaker microphone
- Presentation timer and pointer

MONDAY ORAL

Monday, July 29 **13:40 - 15:20** **Room 311-312**
Session MO3.R3 Oral-Invited

Advancing Remote Sensing in the Geosciences through Standardization I

Session Co-Chairs: Siri Jodha Khalsa, Univ. of Colorado, Boulder; Christopher Durell, Labsphere, Inc

MO3.R3.1 **CREATING STANDARDS TO ADVANCE TECHNOLOGY ADOPTION AND**
13:40 **ADDRESS SOCIETAL NEEDS**
Siri Jodha Khalsa, University of Colorado, Boulder, United States

MO3.R3.2 **IEEE P4001 HYPERSPECTRAL STANDARD: PROGRESS AND**
14:00 **COOPERATION**
Christopher Durell, Labsphere, Inc, United States

MO3.R3.3 **PROGRESS IN SAR METADATA STANDARDS**
14:20 *Leland Pierce, University of Michigan, United States*

MO3.R3.4 **GENERIC PROCESSING OF SAR COMPLEX DATA USING THE SICD**
14:40 **STANDARD IN MATLAB**
Wade Schwartzkopf, National Geospatial Intelligence Agency, United States; Timothy Cox, U.S. Naval Research Laboratory, United States; Frederick Koehler, National Geospatial Intelligence Agency, United States; Ralph Fiedler, U.S. Naval Research Laboratory, United States

MO3.R3.5 **STANDARDIZATION EFFORTS ACROSS SPACE AGENCIES: APPLICATIONS**
15:00 **AND ANALYSIS READY DATA DISCOVERY IN THE CLOUD**
Ingo Simonis, Open Geospatial Consortium, Germany

Monday, July 29 **16:20 - 18:00** **Room 311-312**
Session MO4.R3 Oral-Invited

Advancing Remote Sensing in the Geosciences through Standardization II

Session Chair: Derek Houtz, Swiss Federal Institute for Forest, Snow and Landscape Research

MO4.R3.1 **GC STANDARDIZATION: FROM EARLY IDEAS TO ADOPTED STANDARDS**
16:20 *Ingo Simonis, Open Geospatial Consortium, Germany*

MO4.R3.2 **REMOTE SENSING ANALYTICS IN DATABASES WITH ISO SQL/MDA**
16:40 *Dimitar Misev, Peter Baumann, Jacobs University Bremen, Germany*

MO4.R3.3 **COMPENSATED PHD – A SENSOR-INDEPENDENT PRODUCT FOR SAR PHD**
17:00 *Robert Johnston, Valkyrie Systems Corporation, United States; Wade Schwartzkopf, National Geospatial Intelligence Agency, United States*

MO4.R3.4 **TOWARDS BUILDING A SAR ONTOLOGY : SOME ONGOING**
17:20 **STANDARDIZATION AND RESEARCH EFFORTS IN PROGRESS**
Naresh Kumar Mallenahalli, Hari Priya Sakethapuram, National Remote Sensing Centre, India

MO4.R3.5 **DEVELOPMENT OF AN IEEE STANDARD FOR CALIBRATION OF**
17:40 **MICROWAVE RADIOMETERS**
Derek Houtz, Swiss Federal Institute for Forest, Snow and Landscape Research, Switzerland; William Blackwell, Massachusetts Institute of Technology, Lincoln Laboratory, United States; Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; William Emery, Albin Gasiewski, University of Colorado Boulder, United States; Axel Murk, University of Bern, Switzerland

---

Monday, July 29 **13:40 - 15:20** **Room 313-314**
Session MO3.R4 Oral-Invited

Radio Frequency Interference (RFI) in Passive Instruments

Session Co-Chairs: Roger Oliva, European Space Agency; Yan Soldo, NASA Goddard Space Flight Center

MO3.R4.1 **LESSONS LEARNED FROM SMOS RFI PROCESSING, PERSPECTIVES FOR**
13:40 **FUTURE INTERFEROMETRY MISSIONS.**
Francois Cabot, CNES / CESBIO, France; Eric Anterrieu, Philippe Richaume, Yann Kerr, Ali Khazaal, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

MO3.R4.2 **QUANTIZATION AND SAMPLING EFFECTS ON MICROWAVE**
14:00 **RADIOMETRY RFI MITIGATION ALGORITHMS**
Raúl Díez-García, Adriano Camps, Universitat Politècnica de Catalunya - BarcelonaTech, Spain

MO3.R4.3 **DEVELOPMENTS OF RFI DETECTION ALGORITHMS AND THEIR**
14:20 **APPLICATION TO FUTURE EUROPEAN SPACEBORNE SYSTEMS**
Steen Savstrup Kristensen, Niels Skou, Sten Schmidl Søbjærg, Jan E. Balling, Technical University of Denmark, Denmark

MO3.R4.4 **SMOS RFI EXPERIENCE IN THE 1400-1427 MHZ PASSIVE BAND: CASE OF**
14:40 **EXTENDED INTERFERENCE CAUSED BY BROADCASTING SATELLITE HOME-TV RECEIVERS**
Elena Daganzo, Roger Oliva, European Space Agency (ESA), Netherlands; Philippe Richaume, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Alvaro Llorente, Ekhi Uranga, European Space Agency (ESA), Spain; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

MO3.R4.5 **CHARACTERISTICS OF 18.7 GHZ REFLECTED RADIO FREQUENCY**
15:00 **INTERFERENCE IN PASSIVE RADIOMETER DATA**
David Draper, Ball Aerospace, United States; Paolo de Mattheis, NASA Goddard Space Flight Center / Universities Space Research Association, United States

---

Monday, July 29 **16:20 - 18:00** **Room 313-314**
Session MO4.R4 Oral-Invited

Radio Frequency Interference (RFI) and Spectrum Management Issues

Session Co-Chairs: Paolo de Mattheis, NASA Goddard Space Flight Center; Roger Oliva, European Space Agency

MO4.R4.1 **RADIO FREQUENCY INTERFERENCE DEVICES: THE SMOS EXPERIENCE**
16:20 *Ekhi Uranga, Álvaro Llorente, European Space Agency ESA-ESAC, Spain; Antonio de la Fuente, European Space Agency ESA-ESRIN, Italy; Elena Daganzo, European Space Agency ESA-ESTEC, Netherlands; Roger Oliva, European Space Agency ESA-ESAC, Spain; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO) / CNES/CNRS/IRD/UPS, France*

MO4.R4.2 **CURRENT THREATS TO PASSIVE MICROWAVE REMOTE SENSING AND**
16:40 **THE ROLE OF THE COMMITTEE ON RADIO FREQUENCIES (CORF)**
William Emery, University of Colorado, United States

MO4.R4.3 **RFI EXCISION IN RADIOMETERS: A RADIO ASTRONOMY PERSPECTIVE**
17:00 *Kaushal Buch, Giant Metrewave Radio Telescope, NCRA-TIFR, India*

MO4.R4.4 **CHARACTERISTICS OF RADIO FREQUENCY INTERFERENCE IN THE**
17:20 **PROTECTED PORTION OF L-BAND**
Mustafa Aksoy, Hamid Rajabi, University at Albany, State University of New York, United States

MO4.R4.5 **ASSESSMENT OF SMOS RFI MITIGATION BY MEANS OF A TRIPLE**
17:40 **COLLOCATION TECHNIQUE**
Roger Oliva, Zenithal Blue Technologies, Spain; Veronica Gonzalez-Gambau, Antonio Turiel, BEC and Institute of Marine Sciences, Spain

MONDAY ORAL

Monday, July 29	13:40 - 15:20	Room 315
Session MO3.R5		Oral

Object Detection in SAR Imaging I

Session Co-Chairs: Lan Du, National Laboratory of Radar Signal Processing, Xidian University; Giorgio Gomba, German Aerospace Center (DLR)

MO3.R5.1
13:40
SCALE-TRANSFERRABLE PYRAMID NETWORK FOR MULTI-SCALE SHIP DETECTION IN SAR IMAGES
Nengyuan Liu, Zongyong Cui, Zongjie Cao, Yiming Pi, Hai Lan, University of Electronic Science and Technology of China, China

MO3.R5.2
14:00
MULTISCALE SHIP DETECTION BASED ON DENSE ATTENTION PYRAMID NETWORK IN SAR IMAGES
Qi Li, Rui Min, Zongyong Cui, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China

MO3.R5.3
14:20
WEIGHT OPTIMIZATION FOR MULTI-TASK SPARSE REPRESENTATION IN SAR IMAGE TARGET RECOGNITION
Zhi Zhou, Zongjie Cao, Yalan Zhang, Yiming Pi, Nengyuan Liu, University of Electronic Science and Technology of China, China

MO3.R5.4
14:40
A HIERARCHICAL SALIENCY BASED TARGET DETECTION METHOD FOR HIGH-RESOLUTION SAR IMAGES
Lan Du, Lu Li, Zhaocheng Wang, National Laboratory of Radar Signal Processing, Xidian University, China

MO3.R5.5
15:00
SAR TARGET DETECTION BASED ON PSIFT FEATURE CLUSTERING
Lina Zeng, Deyun Zhou, Qian Pan, Chao Lu, Ying Zhou, Northwestern Polytechnical University, China

Monday, July 29	16:20 - 18:00	Room 315
Session MO4.R5		Oral

Object Detection in Urban Areas II

Session Co-Chairs: Ronny Hänsch, Technische Universität Berlin; Andrea Marinoni, University of Tromsø

MO4.R5.1
16:20
EXPERIMENT ON THE IMPACT OF SPATIAL RESOLUTION ON BUILDING EXTRACTION ACCURACY
Jean-Samuel Proulx-Bourque, Lucie Mathieu, Charles Papasodoro, Daniel Pilon, Nouri Sabo, Mathieu Turgeon-Pelchat, Natural Resources Canada, Canada

MO4.R5.2
16:40
AUTOMATIC VECTORIZATION EXTRACTION OF FLAT-ROOFED HOUSES USING HIGH-RESOLUTION REMOTE SENSING IMAGES
Guorui Ma, Qinjie He, Xiaodan Shi, Xiaojie Fan, Wuhan University, China

MO4.R5.3
17:00
BUILDING EXTRACTION FROM REMOTE SENSING IMAGE WITH PRIVILEGED INFORMATION
Xue Li, Bo Du, Liangpei Zhang, Wuhan University, China

MO4.R5.4
17:20
IMPROVED DEEP FULLY CONVOLUTIONAL NETWORK WITH SUPERPIXEL-BASED CONDITIONAL RANDOM FIELDS FOR BUILDING EXTRACTION
Wenqing Feng, Haigang Sui, Wuhan University, China; Li Hua, Huazhong Agricultural University, China; Chuan Xu, Wuhan University, China

MO4.R5.5
17:40
ASPHALT POTHOLE DETECTION IN UAV IMAGES USING CONVOLUTIONAL NEURAL NETWORKS
Yuri Becker, Henrique Siqueira, Edson Matsubara, Wesley Gonçalves, José Marcato Jr., Universidade Federal de Mato Grosso do Sul, Brazil

Monday, July 29	13:40 - 15:20	Room 411-412
Session MO3.R6		Oral

Urban Land Use and Land Cover Change

Session Co-Chairs: Patrick Helber, German Research Center for Artificial Intelligence (DFKI); Changlin Xiao, ETH Zürich

MO3.R6.1
13:40
TOWARDS A SENTINEL-2 BASED HUMAN SETTLEMENT LAYER
Patrick Helber, Benjamin Bischke, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany

MO3.R6.2
14:00
A MODIFIED STARFM METHOD FOR HETEROGENEOUS AREA BASED ON MULTI-SPECTRAL DATA
Yunshan Meng, National Marine Data and Information Service, China; Bo Ping, Tianjin University, China

MO3.R6.3
14:20
URBAN LAND-COVER CLASSIFICATION WITH FAÇADE FEATURE FROM OBLIQUE IMAGES
Changlin Xiao, ETH Zürich, Singapore; Rongjun Qin, Ohio State University, United States; Xiao Ling, ETH Zürich, Singapore; Hanning Yuan, Beijing Institute of Technology, China

MO3.R6.4
14:40
CHARACTERIZING URBAN EXPANSION OF SMALL CITIES IN NIGERIA AND DEMOCRATIC REPUBLIC OF THE CONGO USING LANDSAT TIME SERIES
Baohui Chai, Peijun Li, Peking University, China; Karen Seto, Yale University, United States

MO3.R6.5
15:00
ANALYSIS OF IMPERVIOUS SURFACE CHANGE AND ECONOMY IN TIANJIN, CHINA USING LANDSAT TIME SERIES DATA
Yanru Zhou, Binbin He, Xiangzhuo Liu, Hongguo Zhang, Minfeng Xing, Shilei Feng, University of Electronic Science and Technology of China, China

Monday, July 29	16:20 - 18:00	Room 411-412
Session MO4.R6		Oral

Land Use and Land Cover Change in Vegetated Terrains

Session Co-Chairs: Alejandro Monsiváis Huertero, Instituto Politécnico Nacional, ESIME Ticoman; Subit Chakrabarti, Indigo

MO4.R6.1
16:20
MAPPING SPATIO-TEMPORAL VARIATIONS OF CONVERTING FARMLAND TO FOREST/GRASSLAND ON THE LOESS PLATEAU USING ALL AVAILABLE LANDSAT TIME-SERIES IMAGES
Zhihui Wang, Peiqing Xiao, Pan Zhang, Weiying Sun, Li Li, Feifei Dong, Xinxin Hou, Li Ma, Chengran Jin, Yellow River Institute of Hydraulic Research, Yellow River Conservancy Commission, China

MO4.R6.2
16:40
MONITORING OF INDONESIA TROPICAL RAINFORESTS AND LAND COVER CHANGE USING HYBRID APPROACH OF TIME SERIES LANDSAT DATA
Arief Wijaya, Rizky Firmansyah, Zuraidah Said, Benita Nathania, WRI Indonesia, Indonesia

MO4.R6.3
17:00
MONITORING THE HISTORICAL DEVELOPMENT OF OIL PALM PLANTATIONS WITH COMBINED USE OF LANDSAT TIME SERIES, MULTITEMPORAL GOOGLE EARTH IMAGES AND ALOS-2/PALSAR-2
Atsushi Tomita, Baruch College, the City University of New York, United States

MO4.R6.4
17:20
COMPARISON OF PASTURE AREAS OVER BRAZIL BIOMES USING GLOBAL AND NATIONAL LAND COVER MAPS
Julianne Oliveira, Rubens Lamparelli, Gleyce Figueiredo, University of Campinas, Brazil; Eleanor Campbell, University of New Hampshire, United States; Johnny Soares, Leonardo Monteiro, Murilo Viana, University of Campinas, Brazil; John Sheehan, Colorado State University, United States; Lee Lynd, Dartmouth College, United States

MO4.R6.5
17:40
DERIVATION OF GLOBAL SURFACE TYPE PRODUCTS FROM VIIRS
Chengquan Huang, Rui Zhang, University of Maryland, United States; Xiwu Zhan, Ivan Csiszar, NOAA/NESDIS Center for Satellite Applications and Research, United States

Monday, July 29	13:40 - 15:20	Room 413
Session MO3.R7		Oral-Invited

Global Precipitation Measurement Mission I

Session Co-Chairs: V Chandrasekar, Colorado State University; David Kunkee, The Aerospace Corporation

MO3.R7.1
13:40
PRECIPITATION EXTREMES MONITORING USING GLOBAL SATELLITE MAPPING OF PRECIPITATION (GSMAP) PRODUCTS
Tomoko Tashima, Takuji Kubota, Riko Oki, Japan Aerospace Exploration Agency (JAXA), Japan

MO3.R7.2
14:00
FEASIBILITY STUDY OF GPM/DPR WIDE SWATH OBSERVATION
Kosuke Yamamoto, Kinji Furukawa, Japan Aerospace Exploration Agency (JAXA), Japan; Nobuhiro Takahashi, Nagoya University, Japan; Takuji Kubota, Japan Aerospace Exploration Agency (JAXA), Japan

MO3.R7.3
14:20
IMPROVEMENTS OF GPM DPR RAIN TYPE CLASSIFICATION ALGORITHM
Jun Awaka, Tokai University, Japan; Stacy Brodzik, University of Washington, United States

MO3.R7.4
14:40
EVALUATION OF INSTANTANEOUS RAIN RATE ESTIMATES IN DPR VERSION-06 PRODUCTS WITH RAIN GAUGE DATASET OVER JAPAN
Shinta Seto, Nagasaki University, Japan

Monday, July 29	16:20 - 18:00	Room 413
Session MO4.R7		Oral-Invited

Global Precipitation Measurement Mission II

Session Co-Chairs: V Chandrasekar, Colorado State University; Ian Adams, NASA Goddard Space Flight Center

MO4.R7.1
16:20
HIGH RESOLUTION GSMAP WITH HIMAWARI 8
Tomoo Ushio, Tomoaki Mega, Tokyo Metropolitan University, Japan

MO4.R7.2
16:40
DETECTION OF VEGETATION DYNAMICS USING SPACEBORNE PRECIPITATION RADARS
Kenlo Nasahara, University of Tsukuba, Japan; Takuji Kubota, Japan Aerospace Exploration Agency (JAXA), Japan; Takeshi Masaki, Remote Sensing Technology Center of Japan, Japan

MO4.R7.3
17:00
ACTIVE AND PASSIVE RADIATIVE TRANSFER SIMULATIONS FOR GPM-RELATED FIELD CAMPAIGNS
Ian S. Adams, S. Joseph Munchak, Kwo-Sen Kuo, Craig Pelissier, Thomas Clune, Rachael Kroodsma, Adrian Loftus, Xiaowen Li, NASA Goddard Space Flight Center, United States

MO4.R7.4
17:20
STUDY OF VERTICAL FEATURES OF SNOW, GRAUPEL AND HAIL ON A GLOBAL SCALE USING GPM PRODUCTS
Minda Le, V. Chandrasekar, Colorado State University, United States

MO4.R7.5
17:40
SNOWFALL OBSERVATIONS DURING THE WINTER OLYMPICS OF 2018 CAMPAIGN USING THE D3R RADAR
V Chandrasekar, Shashank S Joshil, Mohit Kumar, Colorado State University, United States; Manuel A Vega, David Wolff, Walter Petersen, National Aeronautics and Space Administration (NASA), United States

Monday, July 29	13:40 - 15:20	Room 503
Session MO3.R8		Oral

NewSpace Initialives in Remote Sensing

Session Co-Chairs: George Komar, NASA Retired; Marco Lavalle, NASA Jet Propulsion Laboratory

MO3.R8.1
13:40
THE CAPELLA X-BAND SAR CONSTELLATION FOR RAPID IMAGING
Craig Stringham, Gordon Farquharson, Davide Castelletti, Eric Quist, Lucas Riggi, Duncan Eddy, Scott Soenen, Capella Space Corporation, United States

MO3.R8.2
14:00
A NOVEL APPROACH AUTOMATIC DESIGNATION OF PRE-DEFINED CENSUS ENUMERATION AREAS AND POPULATION SAMPLING FRAMES BASED ON REMOTE SENSING DATA: A CASE STUDY IN SOMALIA
Sarchil Qader, University of Southampton, United Kingdom; Veronique Lefebvre, Flowminder, United Kingdom; Andy Tatem, University of Southampton, United Kingdom; Utz Pape, World Bank, United States; Tomas Bird, Flowminder, United Kingdom

MO3.R8.3
14:20
SATELLITE PRECIPITATION ESTIMATES (SPES) AND THEIR VALIDATION USING GROUND-BASED MEASURMENTS: A CASE STUDY IN UTTARAKHAND STATE, INDIA
Anoop Kumar Shukla, C. S. P. Ojha, Indian Institute of Technology Roorkee, India; Satyavati Shukla, Indian Institute of Technology Bombay, India; R. D. Garg, Indian Institute of Technology Roorkee, India

MO3.R8.4
14:40
IMPACT OF LUNAR TERRAIN ON MOON-BASED EARTH OBSERVATION
Hairong Wang, Qing Guo, An Li, Guang Liu, Huadong Guo, Jing Huang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

MO3.R8.5
15:00
OBSERVATION ANGULAR ANALYSIS FROM A MOON-BASED EARTH OBSERVATION PLATFORM
Hanlin Ye, Huadong Guo, Guang Liu, Qing Guo, Guozhuang Shen, Hairong Wang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

Monday, July 29	16:20 - 18:00	Room 503
Session MO4.R8		Oral

Identification of Remote Sensing Indicators for Climate Change II

Session Chair: Tomoaki Miura, University of Hawaii at Manoa

MO4.R8.1
16:20
ERA5: STATE-OF-THE-ART GLOBAL ATMOSPHERIC REANALYSIS AT ECMWF
Hans Hersbach, Bill Bell, Paul Berrisford, Dick Dee, Rossana Dragani, Andras Horanyi, Julian Nicolas, Joaquin Munoz-Sabater, Carole Peubey, Raluca Radu, Dinand Schepers, Adrian Simmons, Cornel Soci, Jean-Noel Thepaut, European Centre for Medium Range Weather Forecasts (ECMWF), United Kingdom

MO4.R8.2
16:40
ESTIMATING AGRICULTURAL CROP TYPES AND FALLOW LANDS USING MULTI TEMPORAL SENTINEL-2A IMAGERIES
Sakshi Saraf, Indian Agricultural Research Institute, India; Sujit Ghosh, Mukund Behera, IIT Kharagpur, India

MO4.R8.3
17:00
ENSEMBLE SATELLITE LAND PRODUCTS DEEPEN THE INTERPRETATION OF DROUGHT IMPACTS ON TERRESTRIAL CARBON CYCLE IN EUROPE OVER 2001–2015
Wei He, Fei Jiang, Weimin Ju, Nanjing University, China; Tu Ngoc Nguyen, Hohai University, China; Meihong Fang, Qiaoning He, Nanjing University, China; Chunhua Zhang, Ludong University, China

MO4.R8.4
17:20
MONITORING VEGETATION DYNAMICS IN JAPAN USING HIMAWARI GEOSTATIONARY SATELLITE
Tomoaki Miura, University of Hawaii at Manoa, United States; Shin Nagai, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan; Kazuhito Ichii, Chiba University, Japan; Hiroki Yoshioka, Aichi Prefectural University, Japan

MO4.R8.5
17:40
EARTH REFLECTOR TYPE CLASSIFICATION BASED ON MULTISPECTRAL REMOTE SENSING IMAGE
Wanjuan Song, Beijing Normal University, China; Yuri Knyazikhin, Boston University, United States; Matti Mõttus, VTT Technical Research Centre of Finland, Finland; Xihan Mu, Guangjian Yan, Beijing Normal University, China

MONDAY ORAL

Monday, July 29	13:40 - 15:20	Room 416-417
Session MO3.R9		Oral-Invited

TanDEM-X and Innovative Applications I

Session Co-Chairs: Alberto Moreira, German Aerospace Center (DLR); Irena Hajnsek, ETH/DLR

MO3.R9.1
13:40
TANDEM-X: MISSION STATUS AND SCIENCE ACTIVITIES
Irena Hajnsek, German Aerospace Center (DLR) / ETH Zürich, Switzerland; Alberto Moreira, Manfred Zink, Stefan Buckreuss, Thomas Kraus, Markus Bachmann, Thomas Busche, German Aerospace Center (DLR), Germany

MO3.R9.2
14:00
GENERATION OF THE TANDEM-X CHANGE DEM FROM THE NEW GLOBAL ACQUISITIONS (2017-2019)
Marie Lachaise, Markus Bachmann, Thomas Fritz, Martin Huber, Barbara Schweisshelm, Birgit Wessel, German Aerospace Center (DLR), Germany

MO3.R9.3
14:20
USING THE TWO-LEVEL MODEL WITH TANDEM-X FOR LARGE-SCALE FOREST MAPPING
Henrik J. Persson, Swedish University of Agricultural Sciences, Sweden; Maciej J. Soja, MJ Soja Consulting, Australia; Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden; Lars M.H. Ulander, Chalmers University of Technology, Sweden

MO3.R9.4
14:40
A STRUCTURE-BASED FRAMEWORK FOR THE COMBINATION OF GEDI AND TANDEM-X MEASUREMENTS OVER FOREST SCENARIOS
Changhyun Choi, Matteo Pardini, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany

MO3.R9.5
15:00
SPACEBORNE DATA FUSION FOR LARGE-SCALE FOREST PARAMETER ESTIMATION: GEDI LIDAR & TANDEM-X INSAR MISSIONS
Seung-Kuk Lee, Temilola Fatoyinbo, NASA Goddard Space Flight Center, United States; Suzanne Marselis, Wenlu Qi, University of Maryland, United States; Steven Hancock, University of Edinburgh, United Kingdom; John Armston, Ralph Dubayah, University of Maryland, United States

Monday, July 29	16:20 - 18:00	Room 416-417
Session MO4.R9		Oral-Invited

TanDEM-X and Innovative Applications II

Session Co-Chairs: Irena Hajnsek, ETH/DLR; Alberto Moreira, German Aerospace Center (DLR)

MO4.R9.1
16:20
GLACIER DETACHMENT HAZARD ANALYSIS IN THE WEST KUNLUN SHAN MOUNTAINS
Silvan Leinss, Cyril Willimann, Irena Hajnsek, ETH Zürich, Switzerland

MO4.R9.2
16:40
CALVING DYNAMICS OF TWO OUTLET GLACIERS OF THE SOUTH PATAGONIAN ICEFIELD DERIVED FROM TERRASAR-X AND TANDEM-X
Erling Johnson, Dana Floricioiu, German Aerospace Center (DLR), Germany

MO4.R9.3
17:00
SEA ICE TOPOGRAPHIC HEIGHT RETRIEVAL FROM TANDEM-X INTERFEROMETRIC SAR DATA
Temesgen Gebrie Yitayew, NORCE, Norwegian Research Centre, Norway; Wolfgang Dierking, Alfred Wegener Institute (AWI), Germany; Dmitry V. Divine, Norwegian Polar Institute, Norway; Torbjorn Eltoft, Jean Negrel, Arctic University of Norway, Norway

MO4.R9.4
17:20
DETECTING RETROGRESSIVE THAW SLUMPS USING SINGLE-PASS BISTATIC TANDEM-X OBSERVATIONS
Philipp Bernhard, ETH Zürich, Switzerland; Simon Zwieback, University Guelph, Canada; Irena Hajnsek, ETH Zürich / German Aerospace Center (DLR), Germany

MO4.R9.5
17:40
COMBINING TANDEM-X WITH MULTI-TEMPORAL, MULTI-SOURCE SATELLITE DATA FOR THE RECONSTRUCTION OF THE BRONZE AGE LANDSCAPES OF THE INDUS CIVILISATION
Hector A. Orengo, Catalan Institute of Classical Archaeology, Spain; Arnau Garcia-Molsosa, Francesc C. Conesa, Adam S. Green, University of Cambridge, United Kingdom; Ravindra N. Singh, Banaras Hindu University, India; Cameron A. Petrie, University of Cambridge, United Kingdom

Monday, July 29	16:20 - 18:00	Room 418
Session MO4.R10		Oral

SAR Instruments and Calibration III

Session Chair: Marwan Younis, German Aerospace Center (DLR)

MO4.R10.1
16:20
THE COST OF OPPORTUNITY FOR GAPLESS IMAGING
Marwan Younis, Felipe Queiroz de Almeida, Sigurd Huber, Mariantonietta Zonno, Marc Rodriguez-Cassola, German Aerospace Center (DLR), Germany; Scott Hensley, California Institute of Technology, NASA Jet Propulsion Laboratory, Germany; Gerhard Krieger, German Aerospace Center (DLR), Germany

MO4.R10.2
16:40
THE SPACE EXPLORATION SYNTHETIC APERTURE RADAR
Rafael Rincon, National Aeronautics and Space Administration (NASA), United States; Lynn Carter, University of Arizona, United States; Daniel Lu, Cornelis Du Toit, Martin Perrine, David Hollibaugh-Baker, National Aeronautics and Space Administration (NASA), United States; Catherine Neish, University of Western Ontario, United States

MO4.R10.3
17:00
UNDER SAMPLING TECHNIQUE FOR DOWNSIZING IN ALOS-4
Akira Karasawa, Yuya Yokota, Masanobu Shibata, Makoto Matsuki, Hiroaki Fujihara, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihiro Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

MO4.R10.4
17:20
PHASE SPOILING TECHNIQUE FOR HIGH POWER AND WIDE BEAM IN ALOS-4
Makoto Matsuki, Yuya Yokota, Masanobu Shibata, Akira Karasawa, Hiroaki Fujihara, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihiro Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

MO4.R10.5
17:40
PALSAR CALIBRATION WITH DISTRIBUTED TARGETS
Alexander Zakharov, Liudmila Zakharova, Kotel'nikov Institute of Radioengineering and Electronics, RAS, Russia

Monday, July 29	13:40 - 15:20	Room 419
Session MO3.R11		Oral

Change Detection Techniques in Multitemporal SAR Images I

Session Chair: Florence Tupin, Télécom ParisTech

MO3.R11.1
13:40
BITEMPORAL FULLY POLARIMETRIC SAR IMAGES CHANGE DETECTION VIA NEAREST REGULARIZED JOINT SPARSE AND TRANSFER DICTIONARY LEARNING
Yao Tan, Jichao Li, Peiyang Zhang, Shuiping Gou, Peng Wang, Xidian University, China; Yuanbo Chen, Beijing Huahang Radio Measurement and Research Institute, China; Jia-Wei Chen, Xidian University, China; Changyan Sun, Beijing Huahang Radio Measurement and Research Institute, China

MO3.R11.2
14:00
GEOMETRICALLY ACCURATE CHANGE MAPPING FROM VHR SAR IMAGES
Andrea Garzelli, Claudia Zoppetti, University of Siena, Italy

MO3.R11.3
14:20
MULTIRESOLUTION AND MULTIMODALITY SAR DATA FUSION BASED ON MARKOV AND CONDITIONAL RANDOM FIELDS FOR UNSUPERVISED CHANGE DETECTION
David Solarna, Gabriele Moser, Sebastiano Serpico, University of Genoa, Italy

MO3.R11.4
14:40
SUBSIDENCE MONITORING WITH INSAR TECHNIQUES AIDED BY LASER SCANNING DATA AND TOPOGRAPHIC MAP: A CASE STUDY OF ROTTERDAM RECLAIMED AREA
Ling Chang, University of Twente, Netherlands

MO3.R11.5
15:00
STABILITY IN SAR CHANGE DETECTION RESULTS USING BIVARIATE RAYLEIGH DISTRIBUTION FOR STATISTICAL HYPOTHESIS TEST
Viet Thuy Vu, Mats Pettersson, Blekinge Institute of Technology, Sweden; Natanael Rodrigues Gomes, Federal University of Santa Maria, Brazil

Monday, July 29	16:20 - 18:00	Room 419
Session MO4.R11		Oral

Analysis of Multitemporal Optical Images

Session Chair: Francesca Bovolo, Fondazione Bruno Kessler

MO4.R11.1
16:20
AGGREGATED PRIMARY DETECTORS FOR GENERIC CHANGE DETECTION IN SATELLITE IMAGES
Vincent Vidal, MAP5, Université Paris Descartes, France; Matthieu Limbert, Tugdual Ceillier, Earthcube, France; Lionel Moisan, MAP5, Université Paris Descartes, France

MO4.R11.2
16:40
SURF-BASED REGISTRATION FOR HYPERSPECTRAL IMAGES
Álvaro Ordóñez, Dora B. Heras, Francisco Argüello, Universidade de Santiago de Compostela, Spain

MO4.R11.3
17:00
ATTENTION-BASED DOMAIN ADAPTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Robiul Hossain Md. Rafi, Bo Tang, Qian Du, Nicolas Younan, Mississippi State University, United States

MO4.R11.4
17:20
AN ADAPTABLE APPROACH FOR PIXEL-BASED COMPOSITING AND CROP TYPE/TREE SPECIES MAPPING
Sebastian Preidl, Maximilian Lange, Daniel Doktor, Helmholtz Centre for Environmental Research GmbH - UFZ, Germany

MO4.R11.5
17:40
SEMI-SUPERVISED CHANGE DETECTION BASED ON GRAPHS WITH GENERATIVE ADVERSARIAL NETWORKS
Junfu Liu, Keming Chen, Guangluan Xu, Hao Li, Menglong Yan, Wenhui Diao, Xian Sun, Institute of Electronics, Chinese Academy of Sciences, China

Monday, July 29	13:40 - 15:20	Room 421
Session MO3.R12		Oral

Land Use Applications I

Session Co-Chairs: Naoto Yokoya, RIKEN; Xavier Pons, Autonomous University of Barcelona

MO3.R12.1
13:40
LAND COVER MAPPING WITHOUT HUMAN ANNOTATION
Tatsuya Yamada, University of Tokyo, Japan; Naoto Yokoya, RIKEN Center for Advanced Intelligence Project, Japan; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Akira Iwasaki, University of Tokyo, Japan

MO3.R12.2
14:00
AN OPERATIONAL PIPELINE FOR GENERATING DIGITAL SURFACE MODELS FROM MULTI-STEREO SATELLITE IMAGES FOR REMOTE SENSING APPLICATIONS
Rongjun Qin, Ohio State University, United States

MO3.R12.3
14:20
BISTATIC SCATTERING FORWARD MODEL VALIDATION USING GNSS-R OBSERVATIONS
Amir Azemati, Mahta Moghaddam, University of Southern California, United States; Arvind Bhat, Intelligent Automation INC. (IAI), United States

MO3.R12.4
14:40
THE USE OF HYPERSPECTRAL REMOTE SENSING TO DETECT PCB CONTAMINATED SOILS IN THE 0.35 TO 12 MICRON SPECTRAL RANGE
Josée Lévesque, Eldon Puckrin, DRDC Valcartier Research Center, Canada; Luc Levert, Centre d'expertise en analyse environnementale du Québec, Canada; Guillaume Bourque, Centre d'Expertise en Analyse Environnementale du Québec, Canada

MO3.R12.5
15:00
SOIL MOISTURE EVALUATION USING MACHINE LEARNING TECHNIQUES ON SYNTHETIC APERTURE RADAR (SAR) AND LAND SURFACE MODEL
Kalyan Dasgupta, Kamal Das, Manikandan Padmanaban, IBM Research, India

Monday, July 29	16:20 - 18:00	Room 421
Session MO4.R12		Oral-Invited

Recent Developments in LAI and FAPAR Estimation and Validation

Session Co-Chairs: Hongliang Fang, Chinese Academy of Sciences; Marie Weiss, Research Scientist/ Université d'Avignon et des Pays du Vaucluse

MO4.R12.1
16:20
IMPROVING SEASONAL VARIATION OF LAI RETRIEVAL OF CONIFER FORESTS BY CONSIDERING NEEDLE LIFE SPAN AND CHLOROPHYLL CONTENT
Jing Chen, Rong Wang, Alemu Gonsamo, Holly Croft, University of Toronto, Canada; Mingzhu Xu, Nanjing University, China; Ronggao Liu, Chinese Academy of Sciences, China; Yang Liu, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

MO4.R12.2
16:40
THE P2S2 VALIDATION DATABASE FOR DECAMETRIC RESOLUTION CROP PRODUCTS: GREEN AREA INDEX, FRACTION OF INTERCEPTED LIGHT, GREEN FRACTION AND CHLOROPHYLL CONTENT
Marie Weiss, Kamran Irfan, Simon Madec, Institut National de la Recherche Agronomique (INRA), France; Francois Charron, Domaine du Merle, France; Jean-Francois Dejoux, Valérie Demarez, Hervé Gibrin, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Benoit de Solan, Antoine Brelot, Stéphane Porrez, ARVALIS Institut du végétal, France; Jean-Pierre Goffart, Viviane Planchon, Yannick Curnel, Centre wallon de Recherches agronomiques, Belgium; Frédéric Baret, Institut National de la Recherche Agronomique (INRA), France

MO4.R12.3
17:00
GBOV (GROUND-BASED OBSERVATION FOR VALIDATION): A COPERNICUS SERVICE FOR VALIDATION OF VEGETATION LAND PRODUCTS
Gabriele Bai, ACRI-ST, France; Jadu Dash, Luke Brown, University of Southampton, United Kingdom; Courtney Meier, Battelle Memorial Institute, United States; Christophe Lerebourg, Erwin Ronco, Nicolas Lamquin, Veronique Bruniquel, ACRI-ST, France; Marco Clerici, Nadine Gobron, European Commission Joint Research Center, Italy

MO4.R12.4
17:20
VALIDATION AND COMPARISON OF CROPLAND LEAF AREA INDEX RETRIEVALS FROM SENTINEL-2/MSI DATA USING SL2P PROCESSOR AND VEGETATION INDICES MODELS
Najib Djamai, Richard Fernandes, Natural Resources Canada, Canada; Marie Weiss, Université d'Avignon et des Pays du Vaucluse, France; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Kalifa Goita, Université de Sherbrooke, Canada

MO4.R12.5
17:40
VALIDATION OF MODIS AND GEOV2 LEAF AREA INDEX (LAI) PRODUCTS OVER CROPLANDS IN NORTHEASTERN CHINA
Hongliang Fang, Yinghui Zhang, Shanshan Wei, Wenjuan Li, Yongchang Ye, Tao Sun, Weiwei Liu, Chinese Academy of Sciences, China

MONDAY ORAL

Monday, July 29	13:40 - 15:20	Room 511-512
Session MO3.R13		Oral-Invited

International Spaceborne Imaging Spectroscopy Missions: Updates and News I

Session Co-Chairs: Uta Heiden, German Aerospace Center (DLR); Rosa Loizzo, ASI

MO3.R13.1 **HISUI STATUS TOWARD 2020 LAUNCH**
13:40 *Tsuneo Matsunaga, NIES, Japan; Akira Iwasaki, University of Tokyo, Japan; Satoshi Tsuchida, Koki Iwao, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Jun Tanii, Osamu Kashimura, J-spacesystems, Japan; Ryosuke Nakamura, Hirokazu Yamamoto, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Soushi Kato, RESTEC, Japan; Kenta Obata, Aichi Prefectural University, Japan; Koichiro Mouri, Tetsushi Tachikawa, J-spacesystems, Japan*

MO3.R13.2 **FIRST RESULTS OF THE DESIS IMAGING SPECTROMETER ON BOARD THE**
14:00 **INTERNATIONAL SPACE STATION**
Emiliano Carmona, Kevin Alonso-González, Martin Bachmann, Daniele Cerra, Daniele Dietrich, Uta Heiden, Uwe Knodt, David Krutz, Rupert Müller, Raquel de los Reyes, Mirco Tegler, Valentin Ziel, German Aerospace Center (DLR), Germany

MO3.R13.4 **PRISMA MISSION STATUS AND PERSPECTIVE**
14:40 *Rosa Loizzo, Maria Girolamo Daraio, Rocchina Guarini, Francesco Longo, Rino Lorusso, Luigi Dini, Ettore Lopinto, Italian Space Agency (ASI), Italy*

MO3.R13.5 **THE ENMAP MISSION: FROM OBSERVATION REQUEST TO DATA**
15:00 **DELIVERY**
Martin Habermeyer, Nicole Pinnel, Tobias Storch, German Aerospace Center (DLR), Germany; Hans-Peter Honold, Paul Tucker, OHB System AG, Germany; Luis Guanter, Karl Segl, Helmholtz Centre Potsdam (GFZ), Germany; Sebastian Fischer, German Aerospace Center (DLR), Germany

Monday, July 29	16:20 - 18:00	Room 511-512
Session MO4.R13		Oral-Invited

International Spaceborne Imaging Spectroscopy Missions: Updates and News II

Session Co-Chairs: Cindy Ong, CSIRO; Tsuneo Matsunaga, NIES

MO4.R13.1 **THE FLUORESCENCE EXPLORER (FLEX) MISSION: FROM SCIENCE**
16:20 **OBJECTIVES TO DATA PRODUCTS**
Jose Moreno, University of Valencia, Spain

MO4.R13.2 **THE EARTH SURFACE MINERAL DUST SOURCE INVESTIGATION (EMIT)**
16:40 **USING NEW IMAGING SPECTROSCOPY MEASUREMENTS FROM SPACE**
Robert Green, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

MO4.R13.3 **STATUS: COPERNICUS HYPERSPECTRAL IMAGING MISSION FOR THE**
17:00 **ENVIRONMENT (CHIME)**
Jens Nieke, European Space Agency ESA-ESTEC, Netherlands; Mike Rast, European Space Agency ESA-ESRIN, Italy

MO4.R13.4 **THE EVOLUTION OF THE HYPERSCOUT PLATFORM FOR SMART EO**
17:20 **APPLICATIONS**
Marco Esposito, Cosine Measurement Systems, Netherlands

MO4.R13.5 **CSIMBA: TOWARDS A SMART-SPECTRAL CUBESAT CONSTELLATION**
17:40 *Joris Blommaert, Bavo Delauré, Stefan Livens, Dirk Nuyts, Flemish Institute for Technological Research (VITO), Belgium; Klaas Tack, Andy Lambrechts, Imec, Belgium; Roberto Di Paola, Vincent Moreau, AMOS, Belgium; Eric Callut, Gerard Habay, Deltatec, Belgium; Luca Maresi, Helene Strese, Alessandro Zuccaro Marchi, European Space Agency (ESA), Netherlands; Benoit Deper, Mikko Viitala, Aerospacelab, Belgium*

Tuesday, July 30	08:00 - 09:40	Room 211-212
Session TU1.R1		**Oral-Invited**

New Developments in Monitoring of Ocean Surface Features with Polarimetric SAR I

Session Co-Chairs: William Perrie, Bedford Institute of Oceanography; Biao Zhang, Nanjing University of Information Science and Technology

TU1.R1.1
08:00
SYNERGISTIC MEASUREMENTS OF HURRICANE WIND SPEEDS AND DIRECTIONS FROM C-BAND DUAL-POLARIZATION SYNTHETIC APERTURE RADAR
Biao Zhang, Shengren Fan, Nanjing University of Information Science and Technology, China; Alexis Mouche, IFREMER, France; Guosheng Zhang, Nanjing University of Information Science and Technology, China; William Perrie, Bedford Institute of Oceanography, Canada

TU1.R1.2
08:20
RECENT DEVELOPMENT OF DRAG COEFFICIENT, FOAM, AND SURFACE ROUGHNESS FOR HIGH WIND EM EMISSION AND SCATTERING COMPUTATION
Paul Hwang, U.S. Naval Research Laboratory, United States

TU1.R1.3
08:40
MULTI-SCALE, MULTI-FREQUENCY, AND QUAD-POLARIZED MICROWAVE SCATTERING FROM SEA SURFACE NUMERICAL SIMULATION
Xiaolu Zhao, Biao Zhang, Nanjing University of Information Science and Technology, China; William Perrie, Bedford Institute of Oceanography, Canada

TU1.R1.4
09:00
OCEAN WAVE OBSERVATIONS WITH HYBRID POLARIZATION COMPACT POLARIMETRY SYNTHETIC APERTURE RADAR
Haiyan Li, University of Chinese Academy of Sciences, China; William Perrie, Bedford Institute of Oceanography, Canada; Jin Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

TU1.R1.5
09:20
C-BAND COMPACT-POLARIMETRIC SAR MONITORING OF OCEAN WINDS
Guosheng Zhang, Nanjing University of Information Science and Technology, China; William Perrie, Bedford Institute of Oceanography, Canada; Biao Zhang, Yijun He, Nanjing University of Information Science and Technology, China

Tuesday, July 30	10:40 - 12:20	Room 211-212
Session TU2.R1		**Oral-Invited**

New Developments in Monitoring of Ocean Surface Features with Polarimetric SAR II

Session Co-Chairs: Biao Zhang, Nanjing University of Information Science and Technology; William Perrie, Bedford Institute of Oceanography

TU2.R1.1
10:40
CO-CROSS POLARIZATION COHERENCE OVER SEA SURFACE FROM SENTINEL-1 DATA: PERSPECTIVES FOR MISSION CALIBRATION AND WIND FIELD RETRIEVAL
Nicolas Longépé, CLS, France; Alexis Mouche, IFREMER, France; Romain Husson, CLS, France; Eric Pottier, Univiersity of Rennes 1, France; Olivier Archer, IFREMER, France

TU2.R1.2
11:00
CONTRIBUTION OF WAVE BREAKING TO QUAD-POLARIZATION SYNTHETIC APERTURE RADAR
Vladimir Kudryavtsev, Russian State Hydrometeorological University, Russia; Shengren Fan, Biao Zhang, Nanjing University of Information Science and Technology, China; Bertrand Chapron, Institute Français de Recherche pour l'Exploitation de la Mer, France

TU2.R1.3
11:20
INTERPRETING SURFACE OCEAN PHENOMENA THROUGH QUAD-POLARIZED SAR MEASUREMENTS
Shengren Fan, Nanjing University of Information Science and Technology, China; Vladimir Kudryavtsev, Russian State Hydrometeorological University, China; Biao Zhang, Nanjing University of Information Science and Technology, China; Bertrand Chapron, Russian State Hydrometeorological University, France

TU2.R1.4
11:40
TOWARDS THE GMF FOR WIND SPEED AND SURFACE STRESS RETRIEVAL IN HURRICANES BASED ON THE COLLOCATED DROPSONDE DATA AND CROSS-POLARIZATION SAR IMAGES
Yulia Troitskaya, Olga Ermakova, Nikita Rusakov, Evgeny Poplavsky, Daniil Sergeev, Galina Balandina, Institute of Applied Physics, Russia

TU2.R1.5
12:00
BACKSCATTER FEATURES OF OCEANIC EDDIES FROM C-BAND MULTI-POLARIZED SAR IMAGES
William Perrie, Bedford Institute of Oceanography, China; Guosheng Zhang, Nanjing University of Information Science and Technology, China

Tuesday, July 30	13:40 - 15:20	Room 211-212
Session TU3.R1		**Oral-Invited**

The 2011 Eastern Japan Great Earthquake Disaster I

Session Co-Chairs: Shunichi Koshimura, Tohoku University; Si-Wei Chen, National University of Defense Technology

TU3.R1.1
13:40
DISASTER MONITORING BY SAR, GB-SAR AND GPR
Motoyuki Sato, Tohoku University, Japan

TU3.R1.3
14:20
ACTIVITIES OF THE ADVANCED LAND OBSERVING SATELLITE (ALOS) FOR THE 2011 GREAT EAST JAPAN EARTHQUAKE
Masato Ohki, Japan Aerospace Exploration Agency (JAXA), Japan

TU3.R1.4
14:40
OBSERVATION OF THE EASTERN JAPAN GREAT EARTHQUAKE DISASTER WITH THE X-BAND AIRBORNE SAR SYSTEM (PI-SAR2) OF NICT
Tatsuharu Kobayashi, Shoichiro Kojima, Jyunpei Uemoto, Akitsugu Nadai, Makoto Satake, Takeshi Matsuoka, National Institute of Information and Communications Technology (NICT), Japan

TU3.R1.5
15:00
URBAN DAMAGE LEVEL MAPPING USING RADAR POLARIMETRIC TECHNIQUES
Si-Wei Chen, Chen-Song Tao, Xue-Song Wang, Shun-Ping Xiao, National University of Defense Technology, China

Tuesday, July 30	16:20 - 18:00	Room 211-212
Session TU4.R1		**Oral-Invited**

The 2011 Eastern Japan Great Earthquake Disaster II

Session Co-Chairs: Si-Wei Chen, National University of Defense Technology; Shunichi Koshimura, Tohoku University

TU4.R1.1
16:20
REMOTE SENSING APPROACH FOR MAPPING AND MONITORING TSUNAMI DEBRIS
Shunichi Koshimura, Tohoku University, Japan; Takumi Fukuoka, NTT DATA Corporation, Japan

TU4.R1.2
16:40
BRIDGE DAMAGE ASSESSMENT USING SINGLE POST-EVENT TERRASAR-X IMAGE
Wen Liu, Fumio Yamazaki, Chiba University, Japan

TU4.R1.3
17:00
ADVANCED POLARIMETRIC STEREO-SAR FOR TSUNAMI DEBRIS ESTIMATION AND DISASTER MITIGATION
Christian Koyama, Tokyo Denki University, Japan; Shunichi Koshimura, Motoyuki Sato, Tohoku University, Japan

TU4.R1.4
17:20
BUILDING DAMAGE MAPPING VIA TRANSFER LEARNING
Junshi Xia, Bruno Adriano, Gerald Baier, Naoto Yokoya, Geoinformatics Unit, RIKEN Center for Advanced Intelligence Project (AIP), Japan

TU4.R1.5
17:40
ESTIMATING TSUNAMI INUNDATION DEPTH USING TERRASAR-X DATA
Hideomi Gokon, Japan Advanced Institute of Science and Technology (JAIST), Japan; Shunichi Koshimura, International Research Institute of Disaster Science, Tohoku University, Japan; Kimiro Meguro, Institute of Industrial Science, University of Tokyo, Japan

Tuesday, July 30	08:00 - 09:40	Room 213
Session TU1.R2		Oral

Numerical Weather Prediction and Data Assimilation I

Session Co-Chairs: V Chandrasekar, Colorado State University; Fuzhong Weng, State Key Laboratory of Severe Weather

TU1.R2.1
08:00
SPACEBORNE L-BAND RADIOMETRY IN ENVIRONMENT AND CLIMATE CHANGE CANADA (ECCC)'S NUMERICAL ANALYSIS AND PREDICTION SYSTEMS
Stephane Belair, Marco Carrera, Maria Abrahamowicz, Nasim Alavi, Bakr Badawy, Maziar Bani Shahabadi, Bernard Bilodeau, Dorothee Charpentier, Daniel Deacu, Dorothy Durnford, Etienne Gaborit, Nicolas Gasset, Environment and Climate Change Canada, Canada

TU1.R2.2
08:20
DETERMINING TROPICAL CYCLONE CENTER LOCATION WITH CYGNSS WIND SPEED MEASUREMENTS
David Mayers, Christopher Ruf, University of Michigan, United States

TU1.R2.3
08:40
FORECAST IMPACT EXPERIMENTS TO OPTIMIZE UTILIZATION OF CYGNSS WIND OBSERVATIONS
Bachir Annane, Cooperative Institute for Marine and Atmospheric Studies, United States; Mark Leidner, Atmospheric and Environmental Research, United States; Brian McNoldy, University of Miami, United States; Robert Atlas, National Oceanic and Atmospheric Administration, United States; Sharanya Majumdar, University of Miami, United States; Ross Hoffman, Atmospheric and Environmental Research, United States

TU1.R2.4
09:00
DATA ASSIMILATION USING MWHTS ONBOARD FY-3C SATELLITE FOR TYPHOON CASE
Na Li, Shengwei Zhang, Jieying He, Chinese Academy of Sciences, China

TU1.R2.5
09:20
EVALUATION OF ALL-SKY GPM/GMI RADIANCES FOR VARDAH CYCLONE EVENT IN REGIONAL DATA ASSIMILATION SYSTEM
Rohit Mangla, J Indu, Indian Institute of Technology Bombay, India

Tuesday, July 30	16:20 - 18:00	Room 213
Session TU4.R2		Oral

Atmospheric Sounding III

Session Chair: Ian Adams, NASA Goddard Space Flight Center

TU4.R2.1
16:20
JPSS ATMOSPHERIC COMPOSITION PRODUCTS FOR ENVIRONMENTAL MONITORING AND APPLICATIONS
Murty Divakarla, IM Systems Group, Inc, United States; Lihang Zhou, Lawrence Flynn, Shobha Kondragunta, Istvan Laszlo, Ivan Csiszar, Center for Satellite Applications and Research, United States; Xingpin Liu, Antonia Gambacorta, IM Systems Group, Inc., United States; Chris Barnet, STC, Inc., United States

TU4.R2.2
16:40
OBSERVING CLOUDS, CONVECTION AND PRECIPITATION WITH A GEOSTATIONARY MICROWAVE SOUNDER
Bjorn Lambrigtsen, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TU4.R2.3
17:00
OBSERVATIONS AND FORCASTING ANALYSIS OF HURRICANE SANDY USING SATELLITE MICROWAVE REMOTE SENSING
Jieying He, National Space Science Center, Chinese Academy of Sciences, China; Haonan Chen, NOAA Earth System Research Laboratory, United States; Shengwei Zhang, Na Li, National Space Science Center, Chinese Academy of Sciences, China

TU4.R2.4
17:20
PERFORMANCE ASSESSMENT OF SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER-2 (SMILES-2)
Philippe Baron, Satoshi Ochiai, National Institute of Information and Communications Technology (NICT), Japan; Donal Murtagh, Chalmers University of Technology, Sweden; Hideo Sagawa, Kyoto Sangyo University, Japan; Akinori Saito, Masato Shiotani, Kyoto University, Japan; Makoto Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

TU4.R2.5
17:40
ALL SKY SINGLE FIELD OF VIEW RETRIEVAL SYSTEM FOR HYPERSPECTRAL SOUNDING
Wan Wu, Science Systems and Applications, Inc, United States; Xu Liu, NASA Langley Research Center, United States; Qiguang Yang, Science Systems and Applications, Inc, United States; Daniel Zhou, Allen Larar, NASA Langley Research Center, United States; Ming Zhao, Science Systems and Applications, Inc, United States; Lihang Zhou, NOAA, United States

TUESDAY ORAL

Tuesday, July 30	08:00 - 09:40	Room 311-312
Session TU1.R3		Oral-Invited

Advanced Flood Monitoring and Prediction for Global Disaster Risk Reduction I

Session Co-Chairs: Young-Joo Kwak, PWRI-ICHARM-UNESCO; Ramona Pelich, Luxembourg Institute of Science and Technology

TU1.R3.1
08:00
THE USE OF REMOTELY SENSED INFORMATION WITHIN A FLOOD RISK MANAGEMENT AND ANALYSIS TOOL (GARI)
Karem Chokmani, Khalid Oubennaceur, Marion Tanguy, Jimmy Poulin, Yves Gauthier, Romain Latapie, Monique Bernier, INRS - Centre Eau Terre Environnement, Canada

TU1.R3.2
08:20
FLOOD DETECTION IN BUILT-UP AREA USING INTERFEROMETRIC SAR DATA BY PALSAR-2
Masato Ohki, Japan Aerospace Exploration Agency (JAXA), Japan; Masanobu Shimada, Tokyo Denki University, Japan

TU1.R3.3
08:40
PROBABILISTIC URBAN FLOOD MAPPING USING SAR DATA
Marco Chini, Renaud Hostache, Ramona Pelich, Patrick Matgen, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Luca Pulvirenti, CIMA Research Foundation, Italy; Nazzareno Pierdicca, Sapienza University of Rome, Italy

TU1.R3.4
09:00
FLOOD EXTENT FORECASTING USING SYNCHRONIZED FLOODWATER INDEX COUPLING WITH IN-SITU DATA
Young-Joo Kwak, National Institute for Land and Infrastructure Management, Ministry of Land, Infrastructure, Transport and Tourism (NILIM-MLIT), Japan; Jonggeol Park, Tokyo University of Information Sciences, Japan; Wataru Takeuchi, University of Tokyo, Japan

TU1.R3.5
09:20
APPLICATIONS OF A SAR-BASED FLOOD MONITORING SERVICE DURING DISASTER RESPONSE AND RECOVERY
Franz J Meyer, Olaniyi A Ajadi, University of Alaska Fairbanks, United States; Lori Schultz, Jordan Bell, University of Alabama Huntsville, United States; Kenneth Arnoult, Rudiger Gens, University of Alaska Fairbanks, United States; Andrew L Molthan, NASA Marshall Space Flight Center, United States; Jeremy B Nicoll, Kirk A Hogenson, University of Alaska Fairbanks, United States

Tuesday, July 30	10:40 - 12:20	Room 311-312
Session TU2.R3		Oral-Invited

Advanced Flood Monitoring and Prediction for Global Disaster Risk Reduction II

Session Co-Chairs: Ramona Pelich, Luxembourg Institute of Science and Technology; Young-Joo Kwak, PWRI-ICHARM-UNESCO

TU2.R3.1
10:40
DETECTION OF FLOOD AREA USING L-BAND SYNTHETIC APERTURE RADAR DATA APPLIED ON A CASE OF HURRICANE IRMA, 2017
Hiroto Nagai, Waseda University, Japan; Masato Ohki, Takahiro Abe, Japan Aerospace Exploration Agency (JAXA), Japan

TU2.R3.2
11:00
FLOODPLAIN INUNDATION MAPPING USING SAR SCATTERING COEFFICIENT THRESHOLDING AND OBSERVED DISCHARGE DATA
Tomasz Berezowski, Tomasz Bielinski, Jakub Osowicki, Gdańsk University of Technology, Poland

TU2.R3.3
11:20
IMPROVING FLOOD DETECTION IN VEGETATED AREAS THROUGH MULTI-FREQUENCY, POLARIMETRIC AND INTERFEROMETRIC SAR DATA
Alberto Refice, Consiglio Nazionale delle Ricerche (CNR), Italy; Marco Chini, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Marina Zingaro, University of Bari, Italy; Annarita D'Addabbo, Consiglio Nazionale delle Ricerche (CNR), Italy

TU2.R3.4
11:40
DEVELOPMENT OF PROTOTYPE FOR WATER HAZARD INFORMATION PLATFORM USING VARIOUS OBSERVATION SYSTEM
Eui Ho Hwang, Hyo Sok Chae, Wan Sik Yu, Dae Sun Kim, Gwang Ha Park, Kwater Institute / Kwater, Korea (South)

TU2.R3.5
12:00
MIGRATION OF INDIGENOUS COASTAL COMMUNITIES DUE TO COASTAL FLOODING IN INDUS DELTA AFTER NANUK TROPICAL CYCLONE
Sumaira Zafar, Asian Institute of Technology, Thailand; Wasim Masood, Saad Ul Haque, Muhammad Arslan, Institute of Space Technology, Pakistan; Ibrahim Zia, National Institute of Oceanography, Pakistan

TUESDAY ORAL

Tuesday, July 30	13:40 - 15:20	Room 311-312
Session TU3.R3		Oral

Spaceborne SAR Missions

Session Chair: Francisco Lopez Dekker, Technical University of Delft

TU3.R3.1
13:40
ADVANCING AUSTRALIA'S IMAGING RADAR CAPABILITY UNDER THE NOVASAR-1 PARTNERSHIP
Alex Held, Zheng-Shu Zhou, Catherine Ticehurst, Commonwealth Scientific and Industrial Research Organisation, Australia; Ake Rosenqvist, solo Earth Observation, Japan; Amy Parker, Laura Brindle, Commonwealth Scientific and Industrial Research Organisation, Australia

TU3.R3.2
14:00
PROCESSING AND PERFORMANCE ANALYSIS OF NASA-ISRO SAR (NISAR) STAGGERED DATA
Muriel Pinheiro, Pau Prats, Michelangelo Villano, Marc Rodriguez-Cassola, German Aerospace Center (DLR), Germany; Paul A. Rosen, Brian Hawkins, Piyush Agram, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TU3.R3.3
14:20
NASA'S NEXT GENERATION SURFACE DEFORMATION AND CHANGE OBSERVING SYSTEM ARCHITECTURE
Paul Rosen, Stephen Horst, Ala Khazendar, Pietro Milillo, Shadi Oveisgharan, Susan Owen, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Batuhan Osmanoglu, Jeanne Sauber-Rosenberg, NASA Goddard Space Flight Center, United States; Andrew Molthan, NASA Marshall Space Flight Center, United States; Kelley Case, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; BJ Jaroux, Ames Research Center/NASA, United States; James Hoffman, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jordan Klovstad, NASA Langley Research Center, United States; Gerald Bawden, National Aeronautics and Space Administration (NASA), United States

TU3.R3.4
14:40
HARMONY: AN EARTH EXPLORER 10 MISSION CANDIDATE TO OBSERVE LAND, ICE, AND OCEAN SURFACE DYNAMICS
Paco Lopez Dekker, Delft University of Technology, Netherlands; Helmut Rott, Enveo, Austria; Pau Prats-Iraola, German Aerospace Center (DLR), Germany; Bertrand Chapron, Ifremer, France; Klaus Scipal, Erik De Witte, European Space Agency (ESA), Italy

TU3.R3.5
15:00
DEVELOPMENT OF ALOS-4 HARDWARE SYSTEM
Yuya Yokota, Masanobu Shibata, Akira Karasawa, Makoto Matsuki, Fujihara Hiroaki, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihiro Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

Tuesday, July 30	16:20 - 18:00	Room 311-312
Session TU4.R3		Oral

Satellite Missions II

Session Chair: Yann Kerr, CESBIO

TU4.R3.1
16:20
THE LAST ADVANCED VERY HIGH RESOLUTION RADIOMETER
Satya Kalluri, Changyong Cao, Andrew Heidinger, Alexander Ignatov, Jeffrey Key, NOAA/NESDIS/STAR, United States

TU4.R3.2
16:40
SMOS-HR: A HIGH RESOLUTION L-BAND PASSIVE RADIOMETER FOR EARTH SCIENCE AND APPLICATIONS
Nemesio Rodriguez-Fernandez, Eric Anterrieu, Bernard Rougé, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Jacqueline Boutin, LOCEAN, France; Ghislain Picard, Thierry Pellarin, Institut de Géosciences de l'Environnement, France; Maria Jose Escorihuela, Isardsat, France; Ahmad Al Bitar, Philippe Richaume, Arnaud Mialon, Olivier Merlin, Christophe Suere, Francois Cabot, Ali Khazaal, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Josiane Costeraste, Baptiste Palacin, Raquel Rodriguez-Suquet, CNES, France; Thierry Tournier, Thibaut Decoopman, Airbus Defence and Space, France; Miguel Colom, Jean-Michel Morel, CMLA, France; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

TU4.R3.3
17:00
THE NOVASAR UK BACKGROUND MISSION
Cristian Rossi, Satellite Applications Catapult, United Kingdom; Maral Bayaraa, Satellite Applications Catapult, United Kingdom; Thomas Jones, Satellite Applications Catapult, United Kingdom; Andrea Minchella, Airbus, United Kingdom; Simon Agass, UK Space Agency, United Kingdom

TU4.R3.4
17:20
THE EUROPEAN COPERNICUS ANTHROPOGENIC CO2 MONITORING MISSION
Jean-Loup Bezy, Bernd Sierk, Armin Loescher, Yasjka Meijer, Herbert Nett, Valerie Fernandez, European Space Agency (ESA), Netherlands

TU4.R3.5
17:40
DEVELOPMENT OF OPERATIONAL APPLICATIONS OF TERRASAR-X PAZ CONSTELLATION
Parivash Lumsdon, Michael Riedmann, Wolfgang Koppe, Jürgen Janoth, Hanjo Kahabka, Airbus Defence and Space GmbH, Germany; Victor Del Estal Fernandez, Juan Ignacio Cicuendez Pérez, Hisdesat Servicios Estratégicos, Spain

Tuesday, July 30	08:00 - 09:40	Room 313-314
Session TU1.R4		Oral

Student Paper Competition I

Session Co-Chairs: Xiuping Jia, University of New South Wales; David Le Vine, NASA Goddard Space Flight Center

TU1.R4.1
08:00
ROBUST LOW-RANK CHANGE DETECTION FOR SAR IMAGE TIME SERIES
Ammar Mian, CentraleSupélec, France; Arnaud Breloy, Université Paris Nanterre, France; Guillaume Ginolhac, Université Savoie Mont-Blanc, France; Jean-Philippe Ovarlez, ONERA, France

TU1.R4.2
08:20
MULTIMODAL-TEMPORAL FUSION: BLENDING MULTIMODAL REMOTE SENSING IMAGES TO GENERATE IMAGE SERIES WITH HIGH TEMPORAL RESOLUTION
Xun Liu, Chenwei Deng, Baojun Zhao, Beijing Institute of Technology, China; Jocelyn Chanussot, University of Grenoble Alpes, CNRS, Grenoble INP, France

TU1.R4.3
08:40
FULLY ADAPTIVE CLOUD PROFILING RADAR SIMULATION
Jakob DeLong, Mohammad Shattal, Andrew O'Brien, Christopher Ball, Joel Johnson, Graeme Smith, Ohio State University, United States

TU1.R4.4
09:00
TWO DIMENSIONAL IMAGE FORMATION WITH PASSIVE RADAR USING THE SUN FOR ECHO DETECTION
Sean Peters, Dustin Schroeder, Davide Castelletti, Stanford University, United States; Mark Haynes, Andrew Romero-Wolf, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TU1.R4.5
09:20
MODELING AND RETRIEVING SOIL MOISTURE AND ORGANIC MATTER PROFILES IN THE ACTIVE LAYER OF PERMAFROST SOILS FROM P-BAND RADAR OBSERVATIONS
Richard Chen, Kazem Bakian-Dogaheh, Alireza Tabatabaeenejad, Mahta Moghaddam, University of Southern California, United States

Tuesday, July 30	10:40 - 12:20	Room 313-314
Session TU2.R4		Oral

Student Paper Competition II

Session Co-Chairs: David Le Vine, NASA Goddard Space Flight Center; Xiuping Jia, University of New South Wales

TU2.R4.1
10:40
USING DEEP LEARNING TO COUNT ALBATROSSES FROM SPACE
Ellen Bowler, University of East Anglia, United Kingdom; Peter Fretwell, British Antarctic Survey, United Kingdom; Geoffrey French, Michal Mackiewicz, University of East Anglia, United Kingdom

TU2.R4.2
11:00
NOISY SUPERVISION FOR CORRECTING MISALIGNED CADASTER MAPS WITHOUT PERFECT GROUND TRUTH DATA
Nicolas Girard, Inria, France; Guillaume Charpiat, Inria Saclay, France; Yuliya Tarabalka, Inria, France

TU2.R4.3
11:20
QUANTIFYING THE CONTRIBUTION OF TROPICAL CYCLONES TO THE EARTH'S OUTGOING RADIATION
Kien Th. Nguyen, Andrey S. Alenin, Elizabeth A. Ritchie, J. Scott Tyo, University of New South Wales, Canberra, Australia

TU2.R4.4
11:40
UNSUPERVISED TEMPORAL-ADAPTATION WITH MULTIPLE GEODESIC FLOW KERNELS FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Tianzhu Liu, Yanfeng Gu, Harbin Institute of Technology, China

TU2.R4.5
12:00
APPLICATION OF ULTRA-WIDEBAND SYNTHESIS IN SOFTWARE DEFINED RADAR FOR UAV-BASED LANDMINE DETECTION
Samuel Prager, Mahta Moghaddam, University of Southern California, United States

Tuesday, July 30	13:40 - 15:20	Room 313-314
Session TU3.R4		Oral-Invited

Space Lidar: Missions, Technologies and Observations I

Session Co-Chairs: Upendra Singh, NASA Langley Research Center; Georgios Tzeremes, European Space Agency

TU3.R4.1
13:40
PRELIMINARY RESULTS FROM THE ICE, CLOUD AND LAND ELEVATION SATELLITE-2 (ICESAT-2)
Richard Slonaker, Michael Freilich, Eric Ianson, Sandra Cauffman, Steve Neeck, Thomas Wagner, NASA Headquarters, United States; Douglas Mclennan, John Leon, Mark Seidleck, Mark Flanegan, Thorsten Markus, Thomas Neumann, Donya Douglas-Bradshaw, Cathy Richardson, Anthony Martino, John Cavanaugh, NASA Goddard Space Flight Center, United States

TU3.R4.3
14:20
AEOLUS - 1 YEAR AFTER LAUNCH
Thomas Kanitz, Anne Grete Straume, European Space Agency (ESA), Netherlands; Jonathan Marshall, Olivier Lecrenier, Valentina Sacchieri, Oliver Reitebuch, Michael Rennie, Denny Wernham, Airbus Stevenage, Netherlands

TU3.R4.4
14:40
ACTIVE OPTICAL REMOTE SENSING SENSORS AND INSTRUMENTATION FOR NASA'S FUTURE EARTH AND SPACE SCIENCE MEASUREMENTS/ MISSIONS
Upendra Singh, NASA Langley Research Center, United States

TU3.R4.5
15:00
ALTIMETRY, IMAGING AND LANDING LOCATION SELECTION LIDARS FOR ESA SPACE APPLICATIONS
Georgios D. Tzeremes, European Space Agency ESA-ESTEC, Netherlands; David Jones, Matias Hernandez, MDA, United Kingdom; Tiago Sousa, EFACEC, Portugal; Alexandre Pollini, Christophe Pache, Jacques Haesler, CSEM, Switzerland; Ian Carnelli, European Space Agency ESA-ESTEC, Netherlands

Tuesday, July 30	16:20 - 18:00	Room 313-314
Session TU4.R4		Oral-Invited

Space Lidar: Missions, Technologies and Observations II

Session Co-Chairs: Georgios Tzeremes, European Space Agency; Upendra Singh, NASA Langley Research Center

TU4.R4.1
16:20
RESULTS OF VIBRATIONAL AND THERMAL TEST FOR MOLI LASER TRANSMITTER
Daisuke Sakaizawa, Rei Mitsuhashi, Junpei Murooka, Tadashi Imai, Toshiyoshi Kimura, Japan Aerospace Exploration Agency (JAXA), Japan

TU4.R4.2
16:40
RECENT RESEARCH AND DEVELOPMENT OF 2-μM LASER FOR FUTURE SPACE-BASED DOPPLER WIND LIDAR IN JAPAN
Shoken Ishii, National Institute of Information and Communications Technology / Tokyo Metropolitan University, Japan; Atsushi Sato, Tohoku Institute of Technology / National Institute of Information and Communications Technology, Japan; Makoto Aoki, Katsuhiro Nakagawa, Shigeo Nagano Nagano, Katsuhiro Nakagawa, National Institute of Information and Communications Technology (NICT), Japan

TU4.R4.3
17:00
INTEGRATED MICRO-PHOTONICS FOR REMOTE EARTH SCIENCE SENSING (IMPRESS) LIDAR
Mark Stephen, National Aeronautics and Space Administration (NASA), United States; Jonathan Klamkin, Larry Coldren, Joseph Fridlander, Victoria Rosborough, Fengqiao Sang, University of California, Santa Barbara, United States; Jeffrey Chen, Kenji Numata, Randy Kawa, National Aeronautics and Space Administration (NASA), United States

TU4.R4.4
17:20
FREQUENCY CONTROL OF MULTI-PULSE 2-MICRON LASER TRANSMITTER FOR ATMOSPHERIC CARBON DIOXIDE MEASUREMENT
Mulugeta Petros, Tamer Refaat, Upendra Singh, Charles Antill, Ruben Remus, Teh-Hwa Wong, Jane Lee, Syed Ismail, NASA Langley Research Center, United States

TU4.R4.5
17:40
GROUND TESTING OF 2-UM TRIPLE-PULSE IPDA LIDAR FOR CARBON DIOXIDE AND WATER VAPOR MEASUREMETS
Tamer Refaat, Mulugeta Petros, Upendra Singh, Charles Antill, Ruben Remus, Syed Ismail, NASA Langley Research Center, United States

Tuesday, July 30	08:00 - 09:40	Room 315
Session TU1.R5		Oral

Object Detectors for Various Remote Sensing Techniques

Session Co-Chairs: Michal Shimoni, Koninklijke Militaire School; Stefania Matteoli, National Council of Research (CNR)

TU1.R5.1
08:00
TRANSFER LEARNING WITH SAS-IMAGE CONVOLUTIONAL NEURAL NETWORKS FOR IMPROVED UNDERWATER TARGET CLASSIFICATION
David Williams, NATO STO, Italy

TU1.R5.2
08:20
RECOGNIZING SUBMERGED MATERIALS WITH FLUORESCENCE LIDAR WITHOUT KNOWLEDGE OF ENVIRONMENTAL CONDITIONS
Stefania Matteoli, National Research Council of Italy, Italy; Giovanni Corsini, University of Pisa, Italy; Marco Diani, Italian Naval Academy, Italy

TU1.R5.3
08:40
DEEP-LEARNING FOR LOD1 BUILDING RECONSTRUCTION FROM AIRBORNE LIDAR DATA
Tee-Ann Teo, National Chiao Tung University, Taiwan

TU1.R5.4
09:00
DEVELOPMENT OF HIGH-PERFORMANCE DETECTOR TECHNOLOGY FOR UV AND IR APPLICATIONS
Ashok Sood, John Zeller, Magnolia Optical Technologies Inc., United States; Parminder Ghuman, Sachidananda Babu, NASA Earth Sciences Technology, United States; Nibir Dhar, U.S. Army Night Vision & Electronic Sensors Directorate, United States

TU1.R5.5
09:20
AN AUTOMATIC TECHNIQUE FOR DECIDUOUS TREES DETECTION IN HIGH DENSITY LIDAR DATA BASED ON DELAUNAY TRIANGULATION
Daniele Marinelli, Claudia Paris, Lorenzo Bruzzone, University of Trento, Italy

Tuesday, July 30	10:40 - 12:20	Room 315
Session TU2.R5		Oral

Object Detection from Space

Session Chair: Richard Bamler, German Aerospace Center (DLR)

TU2.R5.1
10:40
GEOSEG: A COMPUTER VISION PACKAGE FOR AUTOMATIC BUILDING SEGMENTATION AND OUTLINE EXTRACTION
Guangming Wu, Zhiling Guo, Xiaowei Shao, Ryosuke Shibasaki, University of Tokyo, Japan

TU2.R5.2
11:00
MULTI-SCALE OBJECT DETECTION IN SATELLITE IMAGERY BASED ON YOLT
Wentong Li, Northwestern Polytechnical University, China; Wanyi Li, Institute of Automation, Chinese Academy of Sciences, China; Feng Yang, Northwestern Polytechnical University, China; Peng Wang, Institute of Automation, Chinese Academy of Sciences, China

TU2.R5.3
11:20
MULTICLASS VESSEL DETECTION FROM HIGH RESOLUTION OPTICAL SATELLITE IMAGES BASED ON DEEP NEURAL NETWORKS
Sergey Voinov, Frank Heymann, German Aerospace Center (DLR), Germany; Ralf Bill, University of Rostock, Germany; Egbert Schwarz, German Aerospace Center (DLR), Germany

TU2.R5.4
11:40
EVALUATION OF CLOUD TYPE CLASSIFICATION BASED ON SPLIT WINDOW ALGORITHM USING HIMAWARI-8 SATELLITE DATA
Babag Purbantoro, Jamrud Aminuddin, Naohiro Manago, Koichi Toyoshima, Nofel Lagrosas, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Chiba University, Japan

TU2.R5.5
12:00
SEA ICE LEADS DETECTED FROM SENTINEL-1 SAR IMAGES
Dmitrii Murashkin, Gunnar Spreen, University of Bremen, Germany

Tuesday, July 30	13:40 - 15:20	Room 315
Session TU3.R5		Oral

Deep Learning for Object Detection II

Session Co-Chairs: Feng Xu, Fudan University; Begüm Demir, Technische Universität Berlin

TU3.R5.1
13:40
MERGENET: FEATURE-MERGED NETWORK FOR MULTI-SCALE OBJECT DETECTION IN REMOTE SENSING IMAGES
Peijin Wang, Xian Sun, Wenhui Diao, Kun Fu, Institute of Electronics, Chinese Academy of Sciences, China

TU3.R5.2
14:00
QUANTIZED CONVLUTIONAL NEURAL NETWORK BASED OPTICAL REMOTE SENSING IMAGE OBJECT DETECTION MODEL
Wenchao Liu, Xin Wei, Beijing Institute of Technology, China; Long Ma, Zhengzhou University, China; He Chen, Liang Chen, Lei Chen, Beijing Institute of Technology, China

TU3.R5.3
14:20
MULTI-SCALE SHIPS DETECTION IN HIGH-RESOLUTION REMOTE SENSING IMAGE VIA SALIENCY-BASED REGION CONVOLUTIONAL NEURAL NETWORK
Zezhong Li, Yanan You, Fang Liu, Beijing University of Posts and Telecommunications, China

TU3.R5.4
14:40
DEEP LEARNING MODEL FOR TARGET DETECTION IN REMOTE SENSING IMAGES FUSING MULTILEVEL FEATURES
Xili Wang, Yue Ban, Shaanxi Normal University, China; Huimin Guo, Nanyang Technological University, Singapore; Ling Hong, Shaanxi Normal University, China

TU3.R5.5
15:00
EVALUATING DEEP CONTEXTUAL DESCRIPTION OF SUPERPIXELS FOR DETECTION IN AERIAL IMAGES
Eduardo Tavares, Universidade Federal de Minas Gerais, Brazil; Ricardo da S. Torres, University of Campinas, Brazil; Jefersson dos Santos, Universidade Federal de Minas Gerais, Brazil

Tuesday, July 30	16:20 - 18:00	Room 315
Session TU4.R5		Oral

Advanced Methods for Object Detection III

Session Chair: Marco Chini, LIST-Luxemburg

TU4.R5.1
16:20
SPATIAL ENHANCED-SSD FOR MULTICLASS OBJECT DETECTION IN REMOTE SENSING IMAGES
Guanqun Wang, Beijing Institute of Technology, China; Yin Zhuang, Peking University, China; Zhiru Wang, He Chen, Hao Shi, Liang Chen, Beijing Institute of Technology, China

TU4.R5.2
16:40
AIRCRAFT DETECTION FROM REMOTE SENSING IMAGE BASED ON A WEAKLY SUPERVISED ATTENTION MODEL
Jinsheng Ji, Tao Zhang, Shanghai Jiao Tong University, China; Zhen Yang, Jiangxi Science and Technology Normal University, China; Linfeng Jiang, Weilin Zhong, Huilin Xiong, Shanghai Jiao Tong University, China

TU4.R5.3
17:00
OBJECT DETECTION IN VHR IMAGE USING TRANSFER LEARNING WITH DEFORMABLE CONVOLUTION
Zeyu Cao, Xiaorun Li, Zhejiang University, China; Liaoying Zhao, HangZhou Dianzi University, China

TU4.R5.4
17:20
MULTI-SCALE FEATURE FUSION NETWORK FOR OBJECT DETECTION IN VHR OPTICAL REMOTE SENSING IMAGES
Wenhua Zhang, Licheng Jiao, Xu Liu, Xidian University, China; Jia Liu, Nanjing University of Science and Technology, China

TU4.R5.5
17:40
POLARIMETRIC HRRP TARGET RECOGNITION BASED ON CONVLSTM
Wei Chen, Liang Zhang, Ying Xi, Yanhua Wang, Yang Li, School of Information and Electronics, Beijing Institute of Technology, China

Tuesday, July 30	08:00 - 09:40	Room 411-412
Session TU1.R6		Oral

Forest Methods using Radar Sensors

Session Chair: Mahta Moghaddam, University of Southern California

TU1.R6.1
08:00
BIOMASS L2 PROTOTYPE PROCESSOR: CURRENT STATUS
Francesco Banda, Davide Giudici, ARESYS, Italy; Shaun Quegan, University of Sheffield, United Kingdom; Klaus Scipal, European Space Agency (ESA), Netherlands; Kostas Papathanassiou, German Aerospace Center (DLR), Germany; Lars Ulander, Chalmers University of Technology, Sweden; Ludovic Villard, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Maciej Soja, MJ Soja Consulting, University of Tasmania, Australia; Mauro Mariotti d'Alessandro, Stefano Tebaldini, Politecnico di Milano, Italy; Thuy Le Toan, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

TU1.R6.2
08:20
MONITORING AND COMPARISON OF BIOPHYSICAL PARAMETERS OF PLANTATION SPECIES IN TROPICAL REGION USING POLARIMETRIC SAR DATA
Ram Avtar, Stanley Anak Suab, Hokkaido University, Japan

TU1.R6.3
08:40
TIME-SERIES ANALYSIS AND BACKSCATTER MODELING OF L-BAND UAVSAR RADAR OBSERVATIONS OVER FORESTED SITES IN SMAPVEX12
Mariko Burgin, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Ruzbeh Akbar, Massachusetts Institute of Technology, United States; Mahta Moghaddam, University of Southern California, United States

TU1.R6.4
09:00
ESTIMATION OF TROPICAL FOREST STRUCTURE AND BIOMASS FROM AIRBORNE P-BAND BACKSCATTER AND TOMOSAR MEASUREMENTS
Sassan Saatchi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Naveen Ramachandran, Indian Institute of Technology, India; Stefano Tebaldini, Politecnico di Milano, Italy; Shaun Quegan, University of Shefield, United Kingdom; Thuy Le Toan, CNRS-CNES-Université Paul Sabatier-IRD, France; Kostas Papathanassiou, German Aerospace Center (DLR), Germany; Jerome Chave, CNRS, France; Hank Shugart, University of Virginia, United States; Kathryn Jeffery, Lee White, Gabon National Park Service, Gabon

TU1.R6.5
09:20
WATER CLOUD MODEL FOR ABOVE GROUND BIOMASS RETRIVAL IN SAVANNA WOODLANDS
Yaqing Gou, Centre for Landscape and Climate Research, United Kingdom; Casey Ryan, University of Edinburgh, United Kingdom; Heiko Balzter, Centre for Landscape and Climate Research, United Kingdom

---

Tuesday, July 30	10:40 - 12:20	Room 411-412
Session TU2.R6		Oral

Forest Methods using Optical Sensors

Session Co-Chairs: Yun Yang, University of Maryland; Jialin Wang, Wuhan University

TU2.R6.1
10:40
USING DAILY STAND-SCALE EVAPOTRANSPIRATION (ET) ESTIMATED FROM REMOTELY SENSED DATA TO INVESTIGATE DROUGHT IMPACT ON ET IN A TEMPERATE FOREST IN THE CENTRAL US
Yun Yang, University of Maryland, United States; Martha Anderson, Feng Gao, USDA Agricultural Research Service, United States; Christopher Hain, National Aeronautics and Space Administration (NASA), United States; Jeffrey Wood, University of Missouri, United States; Lianhong Gu, Oak Ridge of National Lab, United States

TU2.R6.2
11:00
SEASONAL CONTRIBUTIONS OF UNDERSTORY TO FOREST REFLECTANCE FOR SIX FOREST TYPES IN CHINA
Jing Zhao, Jing Li, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Qinhuo Liu, Wentao Yu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China

TU2.R6.3
11:20
SIMULATING SPECTRAL IMAGES WITH LESS MODEL THROUGH A VOXEL-BASED PARAMETERIZATION OF AIRBORNE LIDAR DATA
Jianbo Qi, Donghui Xie, Guangjian Yan, Beijing Normal University, China; Jean-Philippe Gastellu-Etchegorry, Université de Toulouse, France

TU2.R6.4
11:40
CLASSIFICATION OF FOREST VEGETATION TYPE USING FUSED NDVI TIME SERIES DATA BASED ON STNLFFM
Jialin Wang, Wuhan University, China; Xiaobin Cai, Chinese Academy of Sciences, China; Xiaoling Chen, Zhan Zhang, Linling Tang, Wuhan University, China

TU2.R6.5
12:00
SENSITIVITY OF VEGETATION SHORTWAVE ALBEDO TO TOPOGRAPHY
Dalei Hao, Jianguang Wen, Qing Xiao, Wentao Yu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

---

Tuesday, July 30	13:40 - 15:20	Room 411-412
Session TU3.R6		Oral

Forest Mehtods using Lidar Sensors

Session Chair: Francesca Bovolo, Fondazione Bruno Kessler

TU3.R6.1
13:40
AN EFFECTIVE APPROACH TO 3D STEM MODELING AND BRANCH-KNOT LOCALIZATION IN MULTISCAN TLS DATA
Aravind Harikumar, Francesca Bovolo, Fondazione Bruno Kessler, Italy; Xinlian Liang, Finnish Geospatial Research Institute, Finland

TU3.R6.2
14:00
ESTIMATION OF FOLIAGE STRUCTURE PROPERTIES USING TLS DATA
Ameni Mkaouar, Advanced Technologies for Image and Signal Processing, Tunisia; Abdelaziz Kallel, Rima Guidara, Digital Research Center of Sfax (CRNS), Tunisia; Zouhaier Ben Rabah, Thouraya Sahli, National Mapping and Remote Sensing Center (CNCT), Tunisia; Jianbo Qi, Faculty of Geographical Science, China; Jean-Philippe Gastellu-Etchegorry, Toulouse University, France

TU3.R6.3
14:20
MAPPING LAI AND VERTICAL LAI PROFILE FROM AIRBORNE LIDAR IN TEMPERATE FORESTS
Jing Liu, Andrew Skidmore, Tiejun Wang, University of Twente, Netherlands; Marco Heurich, Bavarian Forest National Park, Germany; Simon Jones, RMIT University, Australia; Joe Premier, Burkhard Beudert, Bavarian Forest National Park, Germany

TU3.R6.4
14:40
MEASURING LEAF EQUIVALENT WATER THICKNESS OF SHORT-ROTATION COPPICE WILLOW CANOPY USING TERRESTRIAL LASER SCANNING
Ahmed Elsherif, Rachel Gaulton, Jon Mills, Newcastle University, United Kingdom

TU3.R6.5
15:00
TREE SKELETON EXTRACTION FROM LASER SCANNED POINTS
Zhonghua Su, Chengdu University of Technology / University of Electronic Science and Technology of China, China; Shihua Li, University of Electronic Science and Technology of China, China; Hanhu Liu, Chengdu University of Technology, China; Ze He, University of Electronic Science and Technology of China, China

---

Tuesday, July 30	16:20 - 18:00	Room 411-412
Session TU4.R6		Oral

Forest: Application and Modelling

Session Co-Chairs: Son V. Nghiem, NASA Jet Propulsion Laboratory; Yi Lin, Peking University

TU4.R6.1
16:20
LIDAR-BASED INDIVIDUAL TREE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK
Yan-Zhen Li, Chao-Cheng Wu, Hsuan-Tsung Chang, National Taipei University of Technology, Taiwan; Chinsu Lin, National Chiayi University, Taiwan; Hsiao-Chi Li, Fu Jen Catholic University, Taiwan

TU4.R6.2
16:40
LASER SCANNING ADVANCING 3D FOREST ECOLOGY
Yi Lin, Peking University, China; Miao Jiang, China Metallurgical Geology Bureau, China; Kerstin Wiegand, University of Göttingen, Germany

TU4.R6.3
17:00
A PHYSICALLY-BASED MODEL FOR CANOPY WATER CONTENT RETRIEVAL
Cong Zhao, Qiming Qin, Institute of Remote Sensing and Geographical Information System, School of Earth and Space Science, Peking University, China

TU4.R6.4
17:20
LIVE FUEL MOISTURE ESTIMATION USING SMAP SOIL MOISTURE AND MODIS VEGETATION INDICES IN SOUTHERN CALIFORNIA, USA
Shenyue Jia, Seung Hee Kim, Chapman University, United States; Son V. Nghiem, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Menas Kafatos, Chapman University, United States

TU4.R6.5
17:40
SAR-ASSISTED FUEL MOISTURE CONTENT ESTIMATION
Krishna Rao, Stanford University, United States; A. Park Williams, Columbia University, United States; Jacqueline Fortin Flefil, Alexandra G. Konings, Stanford University, United States

Tuesday, July 30	08:00 - 09:40	Room 413
Session TU1.R7		**Oral-Invited**

SAR Applications using International Virtual SAR Constellation I

Session Co-Chairs: Shinichi Sobue, Japan Aerospace Exploration Agency; Daniel De Lisle, Canadian Space Agency

TU1.R7.1
08:00
JAPANESE ALOS L-SAR MISSIONS
Shinichi Sobue, Takao Fukuda, Haruchika Kamimura, Osamu Ochiai, Akiko Noda, Tomoki Miyashita, Japan Aerospace Exploration Agency (JAXA), Japan

TU1.R7.3
08:40
RADARSAT CONSTELLATION MISSION FOR DISASTER MANAGEMENT
Daniel De Lisle, Steve Iris, Guennadi Kroupnik, Canadian Space Agency, Canada

TU1.R7.4
09:00
COSMO SKY-MED - SECOND GENERATION
Luigi Dini, Italian Space Agency (ASI), Japan

TU1.R7.5
09:20
INVESTIGATION OF COMPACT SAR L AND C BAND COMPLEMENTARITY FOR PERMAFROST CHARACTERIZATION IN ARCTIC REGIONS
Ridha Touzi, G. Hong, Canada Centre for Remote Sensing, Canada; T. Motohka, S. Shinichi, Japan Aerospace Exploration Agency (JAXA), Japan; D. De Lisle, Canadian Space Agency, Canada

Tuesday, July 30	10:40 - 12:20	Room 413
Session TU2.R7		**Oral-Invited**

SAR Applications using International Virtual SAR Constellation II

Session Co-Chairs: Daniel De Lisle, Canadian Space Agency; Shinichi Sobue, Japan Aerospace Exploration Agency

TU2.R7.1
10:40
ALOS AND RADARSAT SYNERGIES IN GEOLOGICAL INVESTIGATIONS
Vern Singhroy, Junhua Li, Mary-Anne Fobert, Canada Centre for Remote Sensing, Canada

TU2.R7.3
11:20
DEMONSTRATION OF INSAR-BASED THREE DIMENSIONAL CONTINUOUS DEFORMATION MONITORING
Ryo Natsuaki, University of Tokyo, Japan; Akiko Noda, Japan Aerospace Exploration Agency (JAXA), Japan

TU2.R7.4
11:40
EFFECTIVITY OF COMBINATION USE OF MULTIPLE SAR SATELLITES FOR VOLCANO MONITORING – A PRACTICAL LESSON FOR SAR CONSTELLATION
Tomokazu Kobayashi, Geospatial Information Authority of Japan, Japan

TU2.R7.5
12:00
SHIP MONITORING IN JAPAN USING SAR, AIS AND EARTH OBSERVATION SATELLITES
Shuji Shimizu, Junichiro Ishizawa, Hiroaki Sakamoto, Kazuyoshi Nakamura, Japan Aerospace Exploration Agency (JAXA), Japan

TUESDAY ORAL

Tuesday, July 30	13:40 - 15:20	Room 413
Session TU3.R7		**Oral-Invited**

Analytics on Datacubes & Analysis Ready Earth Data - supported by GRSS ESI, OGC, ISO, INSPIRE I

Session Co-Chairs: Peter Baumann, Jacobs University; Rahul Ramachandran, NASA

TU3.R7.1
13:40
FROM SENSOR-CENTRIC TO USER-CENTRIC - WHEN ARE DATA ANALYSIS-READY?
Peter Baumann, Jacobs University, Germany

TU3.R7.2
14:00
FROM ARDS TO AODS: FUTURE OF ANALYTICS FOR EARTH OBSERVATIONS
Rahul Ramachandran, National Aeronautics and Space Administration (NASA), United States; Kaylin Bugbee, University of Alabama Huntsville, United States; Manil Maskey, National Aeronautics and Space Administration (NASA), United States; Chris Lynnes, NASA Goddard Space Flight Center, United States

TU3.R7.3
14:20
MASSIVELY DISTRIBUTED DATACUBE PROCESSING
Vlad Merticariu, Peter Baumann, Jacobs University, Germany

TU3.R7.4
14:40
SPATIOTEMPORAL DATA CUBE MODELING FOR INTEGRATED ANALYSIS OF MULTI-SOURCE SENSING DATA
Jing Zhao, Peng Yue, Wuhan University, China

TU3.R7.5
15:00
COMPUTATIONAL DOMAIN DECOMPOSITION IN PARALLEL GEOPROCESSING – THE CASE ON GENERATING DEM FROM LIDAR POINT CLOUD
Peng Yue, Fan Gao, Zheren Yan, Wuhan University, China

TUESDAY ORAL

Tuesday, July 30	08:00 - 09:40	Room 414-415
Session TU1.R8		Oral

Topography, Geology and Geomorphology I

Session Co-Chairs: Simone Pascucci, CNR; Alicia Caruso, University of Adelaide

TU1.R8.1
08:00
WHAT CAN TERRESTRIAL SAND-TEXTURED SOILS REVEAL ABOUT THE COMPOSITION OF CORE MATERIALS FORMING MARTIAN REGOLITH?
Gladimir Baranoski, Bradley Kimmel, Petri Varsa, Mark Iwanchyshyn, University of Waterloo, Canada

TU1.R8.2
08:20
HIDDEN TERRAINS IN WESTERN LUNAR FARSIDE DISCOVERED BY CE-2 CELMS DATA
Zhiguo Meng, Rui Zhang, Shengbo Chen, Jilin University, China; Yongchun Zheng, National Astronomical Observatory of CAS, China; Tianxing Wang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Lixin Xing, Lele Hou, Yangang Wu, Jilin University, China

TU1.R8.3
08:40
MAGELLAN STEREO REVISTED
Scott Hensley, Daniel Nunes, Karl Mitchell, Kevin Cotton, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TU1.R8.4
09:00
THE POTENTIAL OF MULTI-SENSOR REMOTE SENSING MINERAL EXPLORATION: EXAMPLES FROM SOUTHERN AFRICA
René Booysen, Richard Gloaguen, Sandra Lorenz, Robert Zimmermann, Louis Andreani, Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Germany; Paul A. M. Nex, University of the Witwatersrand, South Africa

TU1.R8.5
09:20
IDENTIFICATION AND MAPPING OF REE ABSORPTIONS IN IMAGING SPECTROMETER DATA
Todd Hoefen, US Geological Survey, United States

Tuesday, July 30	10:40 - 12:20	Room 414-415
Session TU2.R8		Oral

Topography, Geology and Geomorphology IV

Session Co-Chairs: Ülo Suursaar, University of Tartu; Sarvesh Kumar Singh, University of New South Wales

TU2.R8.1
10:40
RHYTHMICITY IN ELEVATED COASTAL LANDFORMS: TIME SERIES ANALYSIS OF LIDAR-BASED ELEVATION DATA
Ülo Suursaar, University of Tartu, Estonia; Tarmo Kall, Estonian University of Life Sciences, Estonia

TU2.R8.2
11:00
ANALYSIS OF TOPOGRAPHIC EFFECTS ON VEGETATION INDICES
Junxiong Zhou, Jin Chen, Beijing Normal University, China

TU2.R8.3
11:20
TERRAIN MAPPING OF A TROPICAL RAINFOREST WITH DUAL-POLARIMETRIC P-BAND INSAR BACKSCATTER-PHASE HISTOGRAMS
Gustavo Hiroshi Xavier Shiroma, Marco Lavalle, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Clovis Gaboardi, Visiona Tecnologia Espacial S.A., Brazil

TU2.R8.4
11:40
FUSION OF DPCA AND ICA ALGORITHMS FOR MINERAL DETECTION USING LANDSAT-8 SPECTRAL BANDS
Amin Beiranvand Pour, Tae-Yoon S. Park, Yongcheol Park, Jong Kuk Hong, Biswajeet Pradhan, Korea Polar Research Institute (KOPRI), Korea (South)

TU2.R8.5
12:00
A PRELIMINARY INVESTIGATION OF MOBILE MAPPING TECHNOLOGY FOR UNDERGROUND MINING
Simit Raval, Bikram Pratap Banerjee, Sarvesh Kumar Singh, Ismet Canbulat, University of New South Wales, Australia

Tuesday, July 30	13:40 - 15:20	Room 414-415
Session TU3.R8		Oral

Remote Sensing of Wetlands I

Session Chair: Akira Hirose, University of Tokyo

TU3.R8.1
13:40
DEVELOPING A TOOL FOR WETLAND CHARACTERIZATION USING FRACTIONAL COVER, TASSELED CAP WETNESS AND WATER OBSERVATIONS FROM SPACE
Bex Dunn, Leo Lymburner, Vanessa Newey, Andrew Hicks, Hashim Carey, Geoscience Australia, Australia

TU3.R8.2
14:00
ESTIMATING THE CARBON CONTENT OF COASTAL WETLAND VEGETATION WITH VISIBLE AND NEAR-INFRARED REFLECTANCE SPECTROSCOPY
Hang Cheng, Jing Wang, Yingkun Du, Jingjing Liu, Wuhan University, China

TU3.R8.3
14:20
MANGROVE SPECIES MAPPING USING SENTINEL-1 AND SENTINEL-2 DATA IN NORTH VIETNAM
Tien Dat Pham, Junshi Xia, Gerald Baier, RIKEN Center for Advanced Intelligence Project (AIP), Japan; Nga Nhu Le, Institute of Mechanics, Vietnam Academy of Science and Techology (VAST), Viet Nam; Naoto Yokoya, RIKEN Center for Advanced Intelligence Project (AIP), Japan

TU3.R8.4
14:40
FULLY CONVOLUTIONAL NEURAL NETWORK FOR LAND COVER MAPPING IN A COASTAL WETLAND WITH HYPERSPATIAL UAS IMAGERY
Mohammad Pashaei, Michael J. Starek, Texas A&M University Corpus Christi, United States

TU3.R8.5
15:00
MAPPING OF COMPLEX VEGETATION COMMUNITIES AND SPECIES USING UAV-LIDAR METRICS AND HIGH-RESOLUTION OPTICAL DATA
Bikram Pratap Banerjee, Simit Raval, Patrick Joseph Cullen, Sarvesh Kumar Singh, University of New South Wales, Australia

Tuesday, July 30	16:20 - 18:00	Room 414-415
Session TU4.R8		Oral

Remote Sensing of Inland Waters II

Session Co-Chairs: Yoshio Yamaguchi, Niigata University; Manabu Watanabe, Tokyo Denki University

TU4.R8.1
16:20
A MULTI-SENSOR TECHNIQUE FOR MONITORING CYANOBACTERIAL HARMFUL ALGAL BLOOMS IN FRESWATER LAKE AND BRACKISH WATER LAGOON
Deepak Mishra, Abhishek Kumar, University of Georgia, United States; Gurdeep Rastogi, Chilika Development Authority, India; Sunil Narumalani, University of Nebraska Lincoln, United States

TU4.R8.2
16:40
AN AUTOMATIC SAR-BASED CHANGE DETECTION METHOD FOR GENERATING LARGE-SCALE FLOOD DATA RECORDS: THE UK AS A TEST CASE
Jie Zhao, Marco Chini, Patrick Matgen, Renaud Hostache, Ramona Pelich, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Wolfgang Wagner, Vienna University of Technology, Austria

TU4.R8.3
17:00
APPLICATION POTENTIAL OF GF-4 SATELLITE IMAGES FOR WATER BODY EXTRACTION
Lijun Zhao, Wei Zhang, Ping Tang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TU4.R8.4
17:20
DYNAMICS AND DRIVING FORCES OF SURFACE WATER EXTENT IN RESERVOIRS OF YONGDING RIVER BASIN, CHINA FROM 1985 TO 2016 BASED ON TIME-SERIES LANDSAT SATELLITE DATA
Yinghai Ke, Mingli Wang, Xiaojuan Li, Lin Zhu, Jing Zhang, Capital Normal University, China

TU4.R8.5
17:40
QUASI-ANALYTICAL ALGORITHM CALIBRATION FOR RETRIEVAL OF INHERENT OPTICAL PROPERTIES FROM EXTREMELY TURBID WATERS: THE CASE OF MADEIRA RIVER BASIN
Henrique Bernini, Faculdade de Rondônia, Brazil; Henrique Borges, Universidade de Brasília, Brazil; Jean-Michel Martinez, Institut de recherche pour le développement, France

Tuesday, July 30	08:00 - 09:40	Room 416-417
Session TU1.R9		Oral

SAR Interferometry: Along and Across I

Session Co-Chairs: Francisco Lopez Dekker, Technical University of Delft; Pau Prats-Iraola, German Aerospace Center (DLR)

TU1.R9.1
08:00
OCEAN SURFACE CURRENT MEASUREMENT WITH AN INTERFEROMETRIC UHF SAR
Mark Sletten, Steven Menk, Jakov Toporkov, US Naval Research Laboratory, United States

TU1.R9.2
08:20
THE PERFORMANCE ANALYSIS OF DUAL-ANTENNA SQUINT INTERFEROMETRIC SAR OCEAN CURRENT MEASUREMENT MODE
Jianfeng Yin, Qingjun Zhang, Jie Liu, Jiuli Liu, Yawen Cai, Beijing Institute of Spacecraft System Engineering, China; Weiya Kong, Chinese Academy of Sciences, China; Bingji Zhao, Chi Zhang, Zhen Li, Beijing Institute of Spacecraft System Engineering, China

TU1.R9.3
08:40
BISTATIC SAR IMAGE FORMATION AND INTERFEROMETRIC PROCESSING FOR THE STEREOID EARTH EXPLORER 10 CANDIDATE MISSION
Pau Prats-Iraola, Muriel Pinheiro, Marc Rodriguez-Cassola, Rolf Scheiber, German Aerospace Center (DLR), Germany; Paco Lopez-Dekker, Delft University of Technology, Netherlands

TU1.R9.4
09:00
ON AZIMUTH AMBIGUITIES SUPPRESSION FOR SHORT-BASELINE ALONG-TRACK INTERFEROMETRY: THE STEREOID CASE
Paco Lopez-Dekker, Yuanhao Li, Lorenzo Iannini, Delft University of Technology, Netherlands; Pau Prats-Iraola, Marc Rodriguez-Cassola, German Aerospace Center (DLR), Germany

TU1.R9.5
09:20
HIGH-RESOLUTION HYBRID SPOTLIGHT-STRIPMAP SAR INTERFEROMETRY VIA COMPRESSIVE SENSING
Huizhang Yang, Chengzhi Chen, Shengyao Chen, Feng Xi, Zhong Liu, Nanjing University of Science and Technology, China

Tuesday, July 30	10:40 - 12:20	Room 416-417
Session TU2.R9		Oral

SAR Interferometry: Along and Across IV

Session Co-Chairs: Pau Prats-Iraola, German Aerospace Center (DLR); Francisco Lopez Dekker, Technical University of Delft

TU2.R9.1
10:40
CONTRIBUTION OF DUAL POLARIZED SENTINEL-1A AND TERRASAR-X DATA IN PERSISTENT SCATTERER ANALYSIS
Yasser Maghsoudi, Saeed Azadnejad, K.N.Toosi University, Iran; Daniele Perissin, Purdue University, United States

TU2.R9.2
11:00
MULTITEMPORAL SAR AND MAP FUSION FOR EXTRACTING PERSISTENT SCATTERERS ON ROADS
Taichi Tanaka, Daisuke Ikefuji, Osamu Hoshuyama, NEC Corporation, Japan

TU2.R9.3
11:20
MITIGATION OF POSITIONING BIAS IN PSI POINT CLOUDS
Sina Montazeri, Fernando Rodriguez Gonzalez, German Aerospace Center (DLR), Germany; Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

TU2.R9.4
11:40
EVALUATING IONOSPHERIC PHASE DELAY IN L-BAND ALOS-2 SCANSAR: OBSERVATIONS FROM 2016 MW 7.8 ECUADOR EARTHQUAKE
Zhiyuan Wang, Leibniz University, Germany; Mahdi Motagh, Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences, Germany

TU2.R9.5
12:00
NON-FUZZY INTERFEROMETRIC PHASE ESTIMATION METHOD BASED ON DEEP LEARNING
Shuo Li, Huaping Xu, Shuai Gao, Chunsheng Li, Beihang University, China

Tuesday, July 30	13:40 - 15:20	Room 416-417
Session TU3.R9		Oral

Differential SAR Interferometry: Methods and Techniques I

Session Co-Chairs: Scott Hensley, NASA Jet Propulsion Laboratory; Michael Eineder, German Aerospace Center (DLR)

TU3.R9.1
13:40
EXPLOITING SPARSITY FOR PHASE UNWRAPPING
Rick Chartrand, Matthew Calef, Michael Warren, Descartes Labs, United States

TU3.R9.2
14:00
GAP-FILLING BASED ON ITERATIVE EOF ANALYSIS OF TEMPORAL COVARIANCE : APPLICATION TO INSAR DISPLACEMENT TIME SERIES.
Alexandre Hippert-Ferrer, Yajing Yan, Philippe Bolon, LISTIC, Université Savoie Mont Blanc, France

TU3.R9.3
14:20
A GENETIC ALGORITHM FOR PHASE UNWRAPPING ERRORS CORRECTION IN THE SBAS-DINSAR APPROACH
Claudio De Luca, Giovanni Onorato, Francesco Casu, Riccardo Lanari, Michele Manunta, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy

TU3.R9.4
14:40
EMI: EFFICIENT TEMPORAL PHASE ESTIMATION AND ITS IMPACT ON HIGH-PRECISION INSAR TIME SERIES ANALYSIS
Homa Ansari, Francesco De Zan, Giorgio Gomba, Richard Bamler, German Aerospace Center (DLR), Germany

TU3.R9.5
15:00
CAR-BORNE AND UAV-BORNE MOBILE MAPPING OF SURFACE DISPLACEMENTS WITH A COMPACT REPEAT-PASS INTERFEROMETRIC SAR SYSTEM AT L-BAND
Othmar Frey, Gamma Remote Sensing / ETH Zurich, Switzerland; Charles Werner, Gamma Remote Sensing AG, Switzerland; Roberto Coscione, ETH Zürich, Switzerland

Tuesday, July 30	16:20 - 18:00	Room 416-417
Session TU4.R9		Oral

Differential SAR Interferometry: Methods and Techniques V

Session Co-Chairs: Michael Eineder, German Aerospace Center (DLR); Scott Hensley, NASA Jet Propulsion Laboratory

TU4.R9.1
16:20
TRAJECTORY UNCERTAINTY IN REPEAT-PASS SAR INTERFEROMETRY: A CASE STUDY
Roberto Coscione, Irena Hajnsek, Othmar Frey, Eidgenössische Technische Hochschule Zürich (ETHZ), Switzerland

TU4.R9.2
16:40
A COMPARISON OF TROPOSPHERIC PATH DELAYS ESTIMATED IN PSI PROCESSING AGAINST DELAYS DERIVED FROM A GNSS NETWORK IN THE SWISS ALPS
Muhammad Adnan Siddique, Karina Wilgan, ETH Zürich, Pakistan; Tazio Strozzi, Gamma Remote Sensing AG, Switzerland; Alain Geiger, ETH Zürich, Switzerland; Irena Hajnsek, ETH Zurich / German Aerospace Center, Switzerland; Othmar Frey, ETH Zurich / Gamma Remote Sensing, Switzerland

TU4.R9.3
17:00
ESTIMATION OF DISPLACEMENT VECTOR BY LINEAR MIMO ARRAYS WITH REDUCED SYSTEM ERROR INFLUENCES
Weike Feng, Tohoku University, Japan; Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Jiyu Guo, School of Resources and Environment, China; Suyun Wang, Graduate School of Environmental Studies, Japan; Motoyuki Sato, Center for Northeast Asian Studies, Japan

TU4.R9.4
17:20
WIDE AREA DEFORMATION MAPPING THROUGH THE CLOUD-COMPUTING BASED SENTINEL-1 P-SBAS AUTOMATIC PIPELINE
Ivana Zinno, Manuela Bonano, Sabatino Buonanno, Francesco Casu, Claudio De Luca, Michele Manunta, Mariarosaria Manzo, Giovanni Onorato, Riccardo Lanari, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy

TU4.R9.5
17:40
ANSWERS TO QUESTIONS ABOUT USER-FRIENDLY INSAR DATA PRODUCTS
Howard Zebker, Stanford University, United States

Tuesday, July 30	08:00 - 09:40	Room 418
Session TU1.R10		Oral

Scatterometers and Rain Radars

Session Co-Chairs: Friedhelm Rostan, Airbus Defence and Space GmbH; V Chandrasekar, Colorado State University; Friedhelm Rostan, Airbus Defence and Space GmbH; Charles Werner, Gamma Remote Sensing AG

TU1.R10.1
08:00
THE METOP-SG SCA WIND SCATTEROMETER: CDR DEVELOPMENT STATUS AND PERFORMANCE OVERVIEW
Friedhelm Rostan, Dieter Ulrich, Christoph Heer, Airbus Defence and Space GmbH, Germany; Allan Ostergaard, European Space Agency ESA-ESTEC, Netherlands

TU1.R10.2
08:20
PHASECODING FOR MITIGATING SECOND-TRIP ECHOES IN D3R WEATHER RADAR
Shashank S Joshil, V Chandrasekar, Colorado State University, United States

TU1.R10.3
08:40
THE ESA WIDEBAND MICROWAVE SCATTEROMETER (WBSCAT): DESIGN AND IMPLEMENTATION
Charles Werner, Gamma Remote Sensing AG, Switzerland; Martin Suess, European Space Agency ESA-ESTEC, Netherlands; Urs Wegmüller, Othmar Frey, Andreas Wiesmann, Gamma Remote Sensing AG, Switzerland

TU1.R10.4
09:00
ON THE QUALITY OF CFOSAT SCATTEROMETER WINDS
Wenming Lin, Nanjing University of Information Science and Technology, China; Marcos Portabella, Institute of Marine Sciences (ICM-CSIC), Spain; Shuyan Lang, National Satellite Ocean Application Service, China; Xiaolong Dong, Xingou Xu, National Space Science Center, Chinese Academy of Sciences, China; Zhixiong Wang, Yijun He, Nanjing University of Information Science and Technology, China

TU1.R10.5
09:20
PRELIMINARY CALIBRATIONS OF THE CFOSAT SCATTEROMETER
Di Zhu, National Space Science Center, Chinese Academy of Sciences, China; Lei Zhang, DFH Satellite co., Ltd, China; Xiaolong Dong, Risheng Yun, Chinese Academy of Sciences, China; Wenming Lin, Nanjing University of Information Science and Technology, China; Shuyan Lang, National Satellite Ocean Application Service, China

Tuesday, July 30	10:40 - 12:20	Room 418
Session TU2.R10		Oral

GNSS-R Sensors, Techniques and Applications III

Session Co-Chairs: Estel Cardellach, Institut de Ciencies de l'Espai (ICE-CSIC) Institut d'Estudis Espacials de Catalunya (IEEC); Nazzareno Pierdicca, Sapienza University of Rome

TU2.R10.1
10:40
INTEGRATION OF CYGNSS WIND AND WAVE OBSERVATIONS WITH THE WAVEWATCH III NUMERICAL MODEL
Tianlin Wang, University of Michigan, United States; Valery Zavorotny, University of Colorado, United States; Joel Johnson, Yuchan Yi, Ohio State University, United States; Christopher Ruf, University of Michigan, United States

TU2.R10.2
11:00
FIRST EVIDENCES OF SPACEBORNE CARRIER PHASE ALTIMETRY USING GNSS REFLECTED SIGNALS AT GRAZING ANGLES OF OBSERVATION OVER OPEN SEA WATER
Estel Cardellach, Weiqiang Li, Antonio Rius, Institut de Ciencies de l'Espai (ICE-CSIC) Institut d'Estudis Espacials de Catalunya (IEEC), Spain; Maximilian Semmling, Jens Wickert, Florian Zus, GeoForschungsZentrum (GFZ), Germany; Chris Ruf, University of Michigan, United States

TU2.R10.3
11:20
SENSITIVITY TO SOIL MOISTURE AND OBSERVATION GEOMETRY OF SPACEBORNE GNSS-R DELAY-DOPPLER MAPS
Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Jordi Castellvi, Universitat Politècnica de Catalunya (UPC), ICGC, Spain; Merce Vall-llossera, Gerard Portal, Luciana Rossato, Universitat Politècnica de Catalunya (UPC), Spain

TU2.R10.4
11:40
SIMULATIONS OF SPACEBORNE GNSS-R SIGNAL OVER MOUNTAIN AREAS
Leila Guerriero, Laura Dente, Tor Vergata University, Italy; Davide Comite, Nazzareno Pierdicca, Sapienza University of Rome, Italy

TU2.R10.5
12:00
ANALYZING ANOMALOUS ARTEFACTS IN TDS-1 DELAY DOPPLER MAPS
Changjiang Hu, Craig Benson, University of New South Wales, Canberra, Australia; Hyuk Park, Adriano Camps, UPC, Spain; Li Qiao, University of New South Wales, Canberra, Australia; Chris Rizos, University of New South Wales, Sydney, Australia

Tuesday, July 30	13:40 - 15:20	Room 418
Session TU3.R10		Oral-Invited

Data Fusion: The AI Era I

Session Co-Chairs: Ronny Hänsch, Technische Universität Berlin; Bertrand Le Saux, ONERA

TU3.R10.1
13:40
MULTISOURCE LABELED DATA: AN OPPORTUNITY FOR TRAINING DEEP LEARNING NETWORKS
Lorenzo Bruzzone, University of Trento, Italy

TU3.R10.3
14:20
LEARNING TO MAP NEARLY ANYTHING
Tawfiq Salem, Connor Greenwell, Hunter Blanton, Nathan Jacobs, University of Kentucky, United States

TU3.R10.4
14:40
A COMPUTER VISION PERSPECTIVE ON ANALYZING AND SYNTHESIZING GEOSPATIAL DATA
Ilke Demir, DeepScale, United States; Guan Pang, Jing Huang, Facebook, United States

TU3.R10.5
15:00
MULTISENSOR FEATURE FUSION USING LOW-RANK MODELING AND COMPONENT ANALYSIS
Behnood Rasti, University of Iceland, Iceland; Pedram Ghamisi, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Germany

Tuesday, July 30	16:20 - 18:00	Room 418
Session TU4.R10		Oral-Invited

Data Fusion: The AI Era II

Session Co-Chairs: Ronny Hänsch, Technische Universität Berlin; Bertrand Le Saux, ONERA

TU4.R10.1
16:20
DIFFERENTIAL INFORMATION RESIDUAL CONVOLUTIONAL NEURAL NETWORK FOR PANSHARPENING
Menghui Jiang, School of Resource and Environmental Sciences, Wuhan University, China; Jie Li, Qiangqiang Yuan, School of Geodesy and Geomatics, Wuhan University, China; Huanfeng Shen, School of Resource and Environmental Sciences, Wuhan University, China; Xinxin Liu, College of Electrical and Information Engineering, Hunan University, China; Mingming Xu, College of Geosciences and Technology, China University of Petroleum, China

TU4.R10.2
16:40
MULTI-TASK DEEP LEARNING FOR SATELLITE IMAGE PANSHARPENING AND SEGMENTATION
Andrew Khalel, Onur Tasar, Inria Sophia Antipolis, Egypt; Guillaume Charpiat, Inria Saclay, France; Yuliya Tarabalka, LuxCarta Technology, France

TU4.R10.3
17:00
MULTI-SCALE MACHINE LEARNING FOR THE CLASSIFICATION OF BUILDING PROPERTY VALUES
Patrick Helber, Benjamin Bischke, Qiushi Guo, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany

TU4.R10.4
17:20
DEEP LEARNING FOR SAR-OPTICAL IMAGE MATCHING
Lloyd Haydn Hughes, Technical University of Munich, Germany; Nina Merkle, German Aerospace Center (DLR), Germany; Tatjana Bürgmann, Airbus Defence and Space GmbH, Germany; Stefan Auer, German Aerospace Center (DLR), Germany; Michael Schmitt, Technical University of Munich, Germany

TU4.R10.5
17:40
COMBINING SENTINEL-1 AND SENTINEL-2 TIME SERIES VIA RNN FOR OBJECT-BASED LAND COVER CLASSIFICATION
Dino Ienco, IRSTEA, France; Raffaele Gaetano, Roberto Interdonato, CIRAD, France; Kenji Ose, Dinh Ho Tong Minh, IRSTEA, France

Tuesday, July 30	08:00 - 09:40	Room 419
Session TU1.R11		Oral

Analysis of Image Time Series III

Session Co-Chairs: Fabio Pacifici, DigitalGlobe; Sicong Liu, College of Surveying and Geo-informatics

TU1.R11.1
08:00
MULTISCALE CHANGE ANALYSIS FOR SAR IMAGE TIME SERIES: APPLICATION TO INUNDATION DETECTION
Thu Trang Le, Jean-Luc Froger, Alexis Hrysiewicz, Université Clermont Auvergne, France

TU1.R11.2
08:20
MULTIMODAL APPROACH FOR FLOOD MONITORING FROM TIME-SERIES SATELLITE IMAGES COMBINING ATTRIBUTE FILTERS AND KOHONEN MAP
Moslem Ouled Sghaier, University of Montreal, Canada; Samuel Foucher, Tom Landry, Computer Research Institute of Montreal (CRIM), Canada

TU1.R11.3
08:40
ATTRIBUTE PROFILES FOR SATELLITE IMAGE TIME SERIES
Caglayan Tuna, François Merciol, Sébastien Lefèvre, Université Bretagne Sud, France

TU1.R11.4
09:00
AGING BRICK KILNS IN THE ASIAN BRICK BELT USING A LONG TIME SERIES OF LANDSAT SENSOR DATA TO INFORM THE STUDY OF MODERN DAY SLAVERY
Xiaodong Li, Chinese Academy of Sciences, China; Giles Foody, Doreen Boyd, University of Nottingham, United Kingdom; Feng Ling, Chinese Academy of Sciences, China

TU1.R11.5
09:20
3-D STRUCTURE-FROM-MOTION RETRIEVAL BASED ON CIRCULAR VIDEOSAR SEQUENCES
Ying Zhang, Daiyin Zhu, Yingying Kong, Nanjing University of Aeronautics and Astronautics, China

Tuesday, July 30	10:40 - 12:20	Room 419
Session TU2.R11		Oral

Deep Learning in Multitemporal Analysis

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Devis Tuia, Wageningen

TU2.R11.1
10:40
SCENE CHANGE DETECTION VIA DEEP CONVOLUTION CANONICAL CORRELATION ANALYSIS NEURAL NETWORK
Yong Wang, Bo Du, Lixiang Ru, Chen Wu, Wuhan University, China; Hui Luo, China University of Geosciences (Wuhan), China

TU2.R11.2
11:00
A DISTRIBUTED AND PARALLEL METHOD OF CHANGE DETECTION IN REMOTE SENSING IMAGE BASED ON FULLY CONNECTED CONDITIONAL RANDOM FIELD
Tiantian Zhou, Zebin Wu, Jun Liu, Jin Sun, Yi Zhang, Nanjing University of Science and Technology, China; Jiandong Yang, China Satellite Maritime Tracking and Control Department, China; Hongyi Liu, Zhihui Wei, Nanjing University of Science and Technology, China

TU2.R11.3
11:20
HOMOGENEOUS TRANSFORMATION BASED ON DEEP-LEVEL FEATURES IN HETEROGENEOUS REMOTE SENSING IMAGES
Xiao Jiang, Gang Li, Tsinghua University, China; Yu Liu, Beihang University, China; Xiao-Ping Zhang, Ryerson University, Canada; You He, Tsinghua University, China

TU2.R11.4
11:40
CONVOLUTIONAL LONG SHORT-TERM MEMORY NETWORK FOR MULTITEMPORAL CLOUD DETECTION OVER LANDMARKS
Gonzalo Mateo-García, Jose E. Adsuara, Adrián Pérez-Suay, Luis Gómez-Chova, University of Valencia, Spain

TU2.R11.5
12:00
DETECTING URBAN CHANGES WITH RECURRENT NEURAL NETWORKS FROM MULTITEMPORAL SENTINEL-2 DATA
Maria Papadomanolaki, National Technical University of Athens, Greece; Sagar Verma, Maria Vakalopoulou, CentraleSupélec, Université Paris-Saclay, France; Siddharth Gupta, Granular AI, United States; Konstantinos Karantzalos, National Technical University of Athens, Greece

TUESDAY ORAL

Tuesday, July 30	13:40 - 15:20	Room 419
Session TU3.R11		Oral

Unmixing Techniques for Hyperspectral Images I

Session Co-Chairs: Antonio Plaza, University of Extremadura; Paul Scheunders, University of Antwerp - Vision Lab

TU3.R11.1
13:40
LOCAL SPARSE REPRESENTATION BASED SPATIAL PREPROCESSING FOR ENDMEMBER EXTRACTION
Ge Zhang, Shaohui Mei, Northwestern Polytechnical University, China; Jin Tian, Northwestern Polytechnical University / Shanxi Normal University, China; Yan Feng, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, United States

TU3.R11.2
14:00
HYPERSPECTRAL OCEANIC REMOTE SENSING WITH ADJACENCY EFFECTS: FROM SPECTRAL-VARIABILITY-BASED MODELING TO PERFORMANCE OF ASSOCIATED BLIND UNMIXING METHODS
Yannick Deville, Salah-Eddine Brezini, Fatima Zohra Benhalouche, Moussa Sofiane Karoui, University of Toulouse, France; Mireille Guillaume, Aix Marseille University, France; Xavier Lenot, Bruno Lafrance, C.S. Systemes d'Information, France; Malik Chami, Sorbonne University, France; Sylvain Jay, Aix Marseille University, France; Audrey Minghelli, Universite de Toulon, France; Xavier Briottet, ONERA, France; Marie-Véronique Serfaty, DGA, France

TU3.R11.3
14:20
A SPECTRAL MIXING MODEL ACCOUNTING FOR MULTIPLE REFLECTIONS AND SHADOW
Vera Andrejchenko, Zohreh Zahiri, University of Antwerp - Vision Lab, Belgium; Rob Heylen, KU Leuven, Belgium; Paul Scheunders, University of Antwerp - Vision Lab, Belgium

TU3.R11.4
14:40
WEIGHTED BLIND LQ HYPERSPECTRAL UNMIXING
Jakob Sigurdsson, Magnus Ulfarsson, Johannes Sveinsson, University Of Iceland, Iceland

TU3.R11.5
15:00
GAUSSIAN MIXTURE MODEL FOR HYPERSPECTRAL UNMIXING WITH LOW-RANK REPRESENTATION
Qiwen Jin, Yong Ma, Xiaoguang Mei, Xiaobing Dai, Wuhan University, China; Hao Li, Wuhan Polytechnic University, China; Fan Fan, Jun Huang, Wuhan University, China

Tuesday, July 30	16:20 - 18:00	Room 419
Session TU4.R11		Oral

Unmixing Techniques for Hyperspectral Images III

Session Co-Chairs: Qian Du, Mississippi State University; John Kerekes, Rochester Institute of Technology

TU4.R11.1
16:20
CONVOLUTIONAL AUTOENCODER FOR SPATIAL-SPECTRAL HYPERSPECTRAL UNMIXING
Burkni Palsson, Magnus O. Ulfarsson, Johannes R. Sveinsson, University of Iceland, Iceland

TU4.R11.2
16:40
A SEMI-SUPERVISED METHOD FOR NONLINEAR HYPERSPECTRAL UNMIXING
Bikram Koirala, Paul Scheunders, University of Antwerp, Belgium

TU4.R11.3
17:00
BLIND UNMIXING OF HYPERSPECTRAL IMAGERY BASED ON GENERALIZED MORPHOLOGICAL COMPONENT ANALYSIS
Xiang Xu, University of Electronic Science and Technology of China, China; Jun Li, Sun Yat-Sen University, China; Shutao Li, College of Electrical and Information Engineering, Hunan University, China; Mercedes E. Paoletti, Juan M. Haut, Antonio J. Plaza, Hyperspectral Computing Laboratory, University of Extremadura, Spain

TU4.R11.4
17:20
HYPERSPECTRAL UNMIXING VIA SIMULTANEOUS DICTIONARY REFINING AND ENHANCED SPARSE REGRESSION
Tianqi Yang, Yalei Gao, Nanjing University of Science and Technology, China; Zhizhong Zheng, Nanjing Center, China Geological Survey, China; Liang Xiao, Nanjing University of Science and Technology, China

TU4.R11.5
17:40
WU-NET: A WEAKLY-SUPERVISED UNMIXING NETWORK FOR REMOTELY SENSED HYPERSPECTRAL IMAGERY
Danfeng Hong, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany; Jocelyn Chanussot, Univ. Grenoble Alpes, CNRS, Grenoble INP, France; Naoto Yokoya, RIKEN Center for Advanced Intelligence Project (AIP), Japan; Uta Heiden, Wieke Heldens, German Aerospace Center (DLR), Germany; Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

TUESDAY ORAL

Tuesday, July 30	08:00 - 09:40	Room 421
Session TU1.R12		Oral

Estimation and Retrieval of Land Parameters I

Session Co-Chairs: Luca Pulvirenti, CIMA Research Foundation; Claudia Notarnicola, EURAC

TU1.R12.1
08:00
RETRIEVAL OF MULTIPLE LAND SURFACE AND ATMOSPHERIC PARAMETERS FROM THE HIMAWARI-8 AHI TOP-OF-ATMOSPHERE OBSERVATIONS
Han Ma, Wuhan University, China; Shunlin Liang, University of Maryland, United States

TU1.R12.2
08:20
A PARAMETERIZED DIRECTIONAL THERMAL RADIANCE MODEL FOR ROW CROPS
Kun Li, Yong-Gang Qian, Ning Wang, Ling-Ling Ma, Shi Qiu, Chuan-Rong Li, Ling-Li Tang, Yong-Guang Zhao, Key Laboratory of Quantitative Remote Sensing Information Technology, Academy of Opto-Electronics, Chinese Academy of Sciences, China

TU1.R12.3
08:40
MAIZE LEAF AREA INDEX RETRIEVAL USING FY-3B SATELLITE DATA BY LONG SHORT-TERM MEMORY MODEL
Mao Zhang, Xia Zhang, Changping Huang, Senlin Tang, Wenchao Qi, Chinese Academy of Sciences, China

TU1.R12.4
09:00
AN OVERVIEW OF LAND SURFACE TEMPERATURE RETRIEVAL FROM CHINESE GAOFEN-5 THERMAL INFRARED IMAGES
Huazhong Ren, Institute of Remote Sensing and Geographical Information System, School of Earth and Space Sciences, Peking University, China

TU1.R12.5
09:20
A COMBINED ALGORITHM FOR SOIL AND VEGETATION TEMPERATURES WITH SLSTR DUAL-ANGLE DATA
Zunjian Bian, Biao Cao, Hua Li, Yongming Du, Qing Xiao, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

Tuesday, July 30	10:40 - 12:20	Room 421
Session TU2.R12		Oral

Image Restoration and Radiometric Correction

Session Chair: Jocelyn Chanussot, Grenoble Institute of Technology

TU2.R12.1
10:40
OPTICAL IMAGE GAP FILLING USING DEEP CONVOLUTIONAL AUTOENCODER FROM OPTICAL AND RADAR IMAGES
Rémi Cresson, Dino Ienco, IRSTEA, France; Raffaele Gaetano, cirad, France; Kenji Ose, Dinh Ho Tong Minh, IRSTEA, France

TU2.R12.2
11:00
HYPERSPECTRAL IMAGE DENOISING VIA CONVEX LOW-FIBERED-RANK REGULARIZATION
Yu-Bang Zheng, Ting-Zhu Huang, Xi-Le Zhao, Tai-Xiang Jiang, Jie Huang, University of Electronic Science and Technology of China, China

TU2.R12.3
11:20
REMOTE SENSING IMAGE MATCHING USING TPS TRANSFORMATION AND LOCAL GEOMETRICAL CONSTRAINT
Jun Chen, Huimin Liu, Linbo Luo, Wenping Gong, Xuejiao Li, China University of Geosciences, China

TU2.R12.4
11:40
SPECTRAL-SPATIAL JOINT NOISE ESTIMATION FOR HYPERSPECTRAL IMAGES
Minchao Ye, Hong Chen, Chenxi Ji, Ling Lei, China Jiliang University, China; Yuntao Qian, Zhejiang University, China

TU2.R12.5
12:00
WEIGHTED GROUP SPARSITY REGULARIZED LOW-RANK TENSOR DECOMPOSITION FOR HYPERSPECTRAL IMAGE RESTORATION
Yong Chen, School of Mathematical Sciences, University of Electronic Science and Technology of China, China; Wei He, Naoto Yokoya, RIKEN Center for Advanced Intelligence Project (AIP), China; Ting-Zhu Huang, School of Mathematical Sciences, University of Electronic Science and Technology of China, China

Tuesday, July 30	13:40 - 15:20	Room 421
Session TU3.R12		Oral

Estimation Methods for Ocean and Atmosphere

Session Chair: Flavio Iturbide-Sanchez, NOAA

TU3.R12.1
13:40
DOWNSCALING OCEAN SURFACE NET RADIATION AT GLOBAL SCALES WITH RANDOM FOREST
Jianglei Xu, Bo Jiang, Beijing Normal University, China

TU3.R12.2
14:00
MAPPING SUBMERGED AQUATIC VEGETATION IN SHALLOW WATER OF ARABIAN GULF USING WATER SPECTRAL INDICES, FIELD OBSERVATIONS AND LANDSAT-OLI DATA
Alanoud Alkhatlan, Abderrazak Bannari, Ali Thamer Salim Al-Dawood, Asma Abahussain, Nadir Hameid, Arabian Gulf University, Bahrain

TU3.R12.3
14:20
SPECTRAL MONITORING OF ALGAL BLOOMS IN AN EUTROPHIC LAKE USING SENTINEL-2
Alba German, Provincial Administration of Water Resources / National University of Córdoba, Argentina; Anabella Ferral, Carlos Marcelo Scavuzzo, Mario Gulich Institute, CONAE-UNC, Argentina; Andrea Guachalla Alarcon, Instituto de Investigaciones Farmacéuticas y Bioquímicas,Universidad Mayor de San Andrés, Bolivia; Ivana Tropper, Guillermo Ibañez, Sandra Torrusio, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Michal Shimoni, Belgian Royal Military Academy (SIC-RMA), Belgium

TU3.R12.4
14:40
SIMULTANEOUS ESTIMATION OF MULTIPLE SHIP PARAMETERS FROM SAR IMAGES USING A FORKED CONVOLUTIONAL NEURAL NETWORK
James Imber, Björn Tings, Domenico Velotto, German Aerospace Centre (DLR), Germany

TU3.R12.5
15:00
A NOVEL IONOSPHERIC TEC ESTIMATION METHOD BASED ON L-BAND ISAR SIGNAL PROCESSING
Jixiang Fu, Dan Xu, Mengdao Xing, National Laboratory of Radar Signal Processing, Xidian University, China

Tuesday, July 30	16:20 - 18:00	Room 421
Session TU4.R12		Oral

Signal Estimation Techniques I

Session Chair: Flavio Iturbide-Sanchez, NOAA

TU4.R12.1
16:20
MOVING TARGET VELOCITY ESTIMATION USING MULTI-AZIMUTH ANGLE MODE
Yamin Wang, Jie Chen, Wei Yang, Zhirong Men, Rui Zhang, Beihang University, China; Xiaokun Sun, Beijing Institute of Remote Sensing Information, China

TU4.R12.2
16:40
WRAPPED INTERFEROMETRIC PHASE REGISTRATION BASED POSITIONING METHOD
Yuming Jiang, Jingwen Li, Bing Sun, Beihang University, China; Ran Li, Zhimin He, Beijing Institute of Remote Sensing Equipment, China

TU4.R12.3
17:00
SINGLE RFI LOCALIZATION BASED ON CONJUGATE CROSS-CORRELATION OF DUAL-CHANNEL SAR SIGNALS
Junfei Yu, Jingwen Li, Bing Sun, Jie Chen, Chunsheng Li, Beihang University, China; Wei Li, Liying Xu, Shanghai Institute of Satellite Engineering, China

TU4.R12.4
17:20
ASSESSING THE SHARPNESS OF SATELLITE IMAGES: STUDY OF THE PLANETSCOPE CONSTELLATION
Jérémy Anger, ENS Cachan, France; Carlo de Franchis, ENS Cachan/Kayrros, France; Gabriele Facciolo, ENS Cachan, France

TU4.R12.5
17:40
HYPERSPECTRAL IMAGE RESTORATION USING NONCONVEX HYBRID REGULARIZATION
Yue Hu, Xiaodi Li, Harbin Institute of Technology, China

Tuesday, July 30	08:00 - 09:40	Room 511-512
Session TU1.R13		Oral-Invited

GCOM & Himawari / LEO-GEO Synergy I - In memory of Prof. Haruhisa Shimoda

Session Co-Chairs: Naoto Ebuchi, Hokkaido University; Yoshiaki Honda, Chiba University

TU1.R13.1 **STATUS OF HIMAWARI-8/9 AND THEIR SYNERGY WITH GCOM SERIES**
08:00 *Kotaro Bessho, Japan Meteorological Agency, Japan*

TU1.R13.3 **POST-LAUNCH VALIDATION OF GCOM-C/SGLI GEOPHYSICAL PRODUCTS**
08:40 *Masahiro Hori, Hiroshi Murakami, Risa Miyazaki, Toshiyuki Kobayashi, Takashi Nagao, Kazunori Ogata, Rigen Shimada, Japan Aerospace Exploration Agency (JAXA), Japan; Yoshiaki Honda, Chiba University, Japan; Kenlo Nasahara, Graduate School of Life and Environmental Science, University of Tsukuba, Japan; Koji Kajiwara, Chiba University, Japan; Takashi Y. Nakajima, Tokai University, Japan; Hitoshi Irie, Chiba University, Japan; Mitsuhiro Toratani, Tokai University, Japan; Toru Hirawake, Hokkaido University, Japan; Teruo Aoki, Okayama University, Japan*

TU1.R13.4 **LONG-TERM OBSERVATIONS OF THE GLOBAL WATER CYCLE, AIR-SEA INTERACTIONS AND POLAR ENVIRONMENTS BY GCOM-W/AMSR2**
09:00 *Naoto Ebuchi, Hokkaido University, Japan; Misako Kachi, Hideyuki Fujii, Takashi Maeda, Nodoka Ono, Marehito Kasahara, Japan Aerospace Exploration Agency (JAXA), Japan; Haruhisa Shimoda, Tokai University, Japan*

TU1.R13.5 **PRIMARY RESULT ON ABOVE GROUND BIOMASS PRODUCTS FROM GCOM-C / SGLI**
09:20 *Yoshiaki Honda, Koji Kajiwara, Ryota Ishibashi, Chiba University, Japan*

Tuesday, July 30	10:40 - 12:20	Room 511-512
Session TU2.R13		Oral-Invited

GCOM & Himawari / LEO-GEO Synergy II - In memory of Prof. Haruhisa Shimoda

Session Co-Chairs: Misako Kachi, Japan Aerospace Exploration Agency; Mitsuhiro Toratani, Tokai University

TU2.R13.1 **OVERVIEW OF JAPANESES LEO/GEO SYNERGY**
10:40 *Haruhisa Shimoda, Tokai University, Japan*

TU2.R13.2 **ASSIMILATION EXPERIMENTS OF MICROWAVE AND INFRARED RADIANCE DATA IN JMA GLOBAL NUMRICAL WEATHER PREDICTION SYSTEM**
11:00 *Masahiro Kazumori, Japan Meteorological Agency, Japan*

TU2.R13.3 **GCOM-C/SGLI OCEAN STANDARD PRODUCTS AND EARLY VALIDATION RESULTS**
11:20 *Mitsuhiro Toratani, Tokai University, Japan; Kazunori Ogata, Japan Aerospace Exploration Agency (JAXA), Japan; Koji Suzuki, Hokkaido University, Japan; Joji Ishizaka, Nagoya University, Japan; Toru Hirawake, Takafumi Hirata, Tomonori Isada, Hokkaido University, Japan; Hiroto Higa, Yokohama National University, Japan; Victor Kuwahara, Soka University, Japan; Stanford Hooker, National Aeronautics and Space Administration (NASA), United States; Yoko Kiyomoto, Seikai Japan Fisheries Research and Education Agency, Japan; Hiroshi Murakami, Japan Aerospace Exploration Agency (JAXA), Japan; Yukio Kurihara, Triple-i, Japan; Masahiro Hori, Japan Aerospace Exploration Agency (JAXA), Japan; Hisatomo Waga, Youhei Yamashita, Hokkaido University, Japan; Akihiko Tanaka, Tokai University, Japan*

TU2.R13.4 **JAXA HIMAWARI MONITOR AND ITS SYNERGIES WITH GLOBAL CHANGE OBSERVATION MISSION (GCOM)**
11:40 *Misako Kachi, Hiroshi Murakami, Maki Kikuchi, Mayumi Yoshida, Takashi Nagao, Nodoka Ono, Japan Aerospace Exploration Agency (JAXA), Japan; Yukio Kurihara, Triple-i, Japan; Teruyuki Nakajima, Japan Aerospace Exploration Agency (JAXA), Japan*

TU2.R13.5 **STATUS OF GCOM-W AND THE FOLLOW-ON MISSION**
12:00 *Marehito Kasahara, Misako Kachi, Kazuya Inaoka, Japan Aerospace Exploration Agency (JAXA), Japan*

TUESDAY ORAL

Tuesday, July 30	13:40 - 15:20	Room 511-512
Session TU3.R13		Oral-Invited

Physical Modeling in Microwave and Optical Remote Sensing I

Session Co-Chairs: Joel Johnson, Ohio State University; John Kerekes, Rochester Institute of Technology

TU3.R13.2 **PROGRESSES ON THERMAL RADIATION DIRECTIONALITY MODELING FOR VEGETATION CANOPY**
14:00 *Qinhuo Liu, Biao Cao, Zunjian Bian, Yongming Du, Hua Li, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China*

TU3.R13.3 **MODELING THE COHERENCE OF SCATTERED SIGNALS OF OPPORTUNITY**
14:20 *Davide Comite, Sapienza University of Rome, Italy; Laura Dente, Leila Guerriero, Tor Vergata University, Italy; Nazzareno Pierdicca, Sapienza University of Rome, Italy*

TU3.R13.4 **THEORETICAL MODELING OF MULTI-FREQUENCY TOMOGRAPHY RADAR OBSERVATIONS OF SNOW STRATIGRAPHY**
14:40 *Xiaolan Xu, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Leung Tsang, University of Michigan, Ann Arbor, United States*

TU3.R13.5 **TWO-YEAR TIME SERIES GROUND-BASED SAR AND MICROWAVE RADIOMETER OBSERVATION OF SNOW AND ITS MODEL STUDY**
15:00 *Chuan Xiong, Jiancheng Shi, Jinmei Pan, Tao Chen, Mingyu Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China*

Tuesday, July 30	16:20 - 18:00	Room 511-512
Session TU4.R13		Oral-Invited

Physical Modeling in Microwave and Optical Remote Sensing II

Session Co-Chairs: Joel Johnson, Ohio State University; Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

TU4.R13.1 **OCEAN SCATTERING AND EMISSION USING NYSTROM/NIBC COMBINED WITH SMCG**
16:20 *Yanlei Du, Ruoxing Gao, Leung Tsang, University of Michigan, United States*

TU4.R13.2 **INTEGRATED MODELING OF ACTIVE AND PASSIVE MICROWAVES AND PASSIVE OPTICAL SIGNATURES**
16:40 *Ismail Baris, Thomas Jagdhuber, German Aerospace Center (DLR), Germany; Francois Jonard, Forschungszentrum Jülich GmbH, Germany; Jasmeet Judge, University of Florida, United States; Harald Anglberger, German Aerospace Center (DLR), Germany; Clémence Dubois, Friedrich-Schiller University Jena, Germany; Anke Fluhrer, German Aerospace Center (DLR), Germany*

TU4.R13.3 **LANDRS: A VIRTUAL CONSTELLATION SIMULATOR FOR INSAR, LIDAR WAVEFORM AND STEREO IMAGERY OVER MOUNTAINOUS FOREST LANDSCAPES**
17:00 *Wenjian Ni, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Guoqing Sun, university of maryland, United States; Kenneth Ranson, Paul Montesano, NASA Goddard Space Flight Center, United States; Qinhuo Liu, Institute of Remote Sensing Applications, China; Zengyuan Li, Chinese Academy of Forestry, China; Vyacheslav Kharuk, Siberian Federal University, Russia; Zhiyu Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China*

TU4.R13.4 **ABOVE SNOW VEGETATION EFFECTS ON WIDEBAND AUTOCORRELATION RADIOMETRY**
17:20 *Shurun Tan, Zhejiang University, China / University of Illinois Urbana-Champaign Institute / The College of Information Science and Electronic Engineering, China; Maryam Salim, Leung Tsang, University of Michigan, United States; Joel T. Johnson, Ohio State University, United States; Roger D. De Roo, University of Michigan, United States*

TU4.R13.5 **ANALYSIS OF OIL PALMS WITH BASAL STEM ROT DISEASE WITH L BAND SAR DATA**
17:40 *Chia Ming Toh, Universiti Tunku Abdul Rahman, Malaysia; Mohamad Anuar Izzuddin, MPOB, Malaysia; Hong Tat Ewe, Universiti Tunku Abdul Rahman, Malaysia; Abu Seman Idris, MPOB, Malaysia*

WEDNESDAY ORAL

Wednesday, July 31 08:00 - 09:40 Room 211-212	Wednesday, July 31 10:40 - 12:20 Room 211-212
Session WE1.R1 Oral-Invited	Session WE2.R1 Oral-Invited

Mapping Planetary Bodies through Remote Sensing I

Session Co-Chairs: Zhizhong Kang, Chine University of Geosciences Beijing; Mario Parente, University of Massachusetts

WE1.R1.1
08:00
MORPHOMETRIC ANALYSIS OF LUNAR SINUOUS RILLES
Maria Teresa Melis, University of Cagliari, Italy; Maria Teresa Brunetti, IRPI-CNR, Italy; Claudia Collu, Valentino Demurtas, University of Cagliari, Italy; Sofia Fiorucci, IRPI-CNR, Italy; Sabrina Podda, University of Cagliari, Italy; Marco Scaioni, Politecnico di Milano, Italy; Angelo Zinzi, ASI, Italy

WE1.R1.2
08:20
DIVERSE SURFACE MINERALOGY OF MARS FROM HYPERSPECTRAL SENSING
James Wray, Georgia Institute of Technology, United States

WE1.R1.3
08:40
NEW CRISM DATA PRODUCTS FOR IMPROVED CHARACTERIZATION AND ANALYSIS OF THE MARS2020 LANDING SITE
Mario Parente, Yuki Itoh, Arun Saranathan, University of Massachusetts Amherst, United States

WE1.R1.4
09:00
HIGH-RESOLUTION GEOLOGICAL MAPPING AND AGE DETERMINATION FOR ILRS SITE CHARACTERIZATION
Zhizhong Kang, Teng Hu, China University of Geosciences, China; Matteo Massironi, Università di Padova, Italy; Harald Hiesinger, University of Munster, Germany

WE1.R1.5
09:20
MAPPING MINERAL ABUNDANCES ON THE MOON SURFACE USING CHANG'E-1 IIM DATA
David Marzi, University of Pavia, Italy; Andrea Marinoni, Arctic University of Norway, Norway; Paolo Gamba, University of Pavia, Italy

Mapping Planetary Bodies through Remote Sensing II

Session Co-Chairs: Mario Parente, University of Massachusetts; Zhizhong Kang, Chine University of Geosciences Beijing

WE2.R1.1
10:40
TACTICAL AND STRATEGIC DATA ANALYSIS METHODS FOR MULTISPECTRAL IMAGING DATA FROM LANDED MARS MISSIONS
James Bell, Arizona State University, United States

WE2.R1.2
11:00
TOPOGRAPHY AND ILLUMINATION CONDITIONS OF CHANG'E-4 LANDING AREA
Xiaohua Tong, Shijie Liu, Hao Chen, Ming Hu, Qian Huang, Fan He, Yaqiong Wang, Tongji University, China

WE2.R1.3
11:20
HIGH PRECISION MAPPING OF CHANG'E-4 AND CHANG'E-5 LANDING SITES
Kaichang Di, Bin Liu, Mengna Jia, Xin Xin, Shengli Niu, Zhaoqin Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WE2.R1.4
11:40
PHOTOCLINOMETRY AND PHOTOGRAMMETRY INTEGRATED APPROACH FOR PIXEL-RESOLUTION 3D MAPPING AND APPLICATIONS IN CHINA'S LUNAR LANDING MISSIONS
Bo Wu, Wai Chung Liu, Hong Kong Polytechnic University, China

WE2.R1.5
12:00
MATISSE FOR MOON MAPPING: EXPLOITING ADVANCED ARCHIVING AND 3D VISUALIZATION SOLUTIONS FOR A JOINT INTERNATIONAL PROJECT
Angelo Zinzi, Space Science Data Center - ASI, Italy; Maria Teresa Melis, University of Cagliari, Italy; Maria Teresa Brunetti, Istituto per la Ricerca e la Prevenzione Idrologica - CNR, Italy; Francesco Zucca, University of Pavia, Italy; Paolo Giommi, Italian Space Agency (ASI), Italy

Wednesday, July 31 13:40 - 15:20 Room 211-212	Wednesday, July 31 16:20 - 18:00 Room 211-212
Session WE3.R1 Oral-Invited	Session WE4.R1 Oral-Invited

Non Local SAR Paradigm: New Methods and Applications I

Session Co-Chairs: Giampaolo Ferraioli, Università di Napoli Parthenope; Florence Tupin, Télécom ParisTech

WE3.R1.1
13:40
TEN YEARS OF PATCH-BASED APPROACHES FOR SAR IMAGING: A REVIEW
Florence Tupin, Télécom Paristech, France; Loïc Denis, Université de Lyon, France; Charles Deledalle, CNRS, France; Giampaolo Ferraioli, Partenope Uiversity, Italy

WE3.R1.3
14:20
THE INFLUENCE OF DISTANCES IN NLM POLSAR FILTERS
Luis Gomez-Deniz, Universidad Las Palmas De Gran Canaria, Spain; Alejandro Frery, Universidade Federal de Alagoas, Brazil

WE3.R1.4
14:40
FROM PATCHES TO DEEP LEARNING: COMBINING SELF-SIMILARITY AND NEURAL NETWORKS FOR SAR IMAGE DESPECKLING
Loïc Denis, Université de Lyon, France; Charles-Alban Deledalle, CNRS, France; Florence Tupin, Télécom Paristech, France

WE3.R1.5
15:00
NONLOCAL SAR IMAGE DESPECKLING BY CONVOLUTIONAL NEURAL NETWORKS
Davide Cozzolino, Luisa Verdoliva, Giuseppe Scarpa, Giovanni Poggi, University Federico II of Naples, Italy

Non Local SAR Paradigm: New Methods and Applications II

Session Co-Chairs: Florence Tupin, Télécom ParisTech; Giampaolo Ferraioli, Università di Napoli Parthenope

WE4.R1.1
16:20
THE USE OF NON LOCAL FILTERS IN POLSAR APPLICATIONS
Ferdinando Nunziata, Andrea Buono, Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy

WE4.R1.2
16:40
THE EXPLOITATION OF THE NON LOCAL PARADIGM FOR SAR 3D RECONSTRUCTION
Giampaolo Ferraioli, Università di Napoli Parthenope, Italy; Loic Denis, CNRS / Université de Saint-Etienne, France; Charles Deledalle, CNRS / Université de Bordeaux, France; Florence Tupin, Télécom Paristech, France

WE4.R1.3
17:00
NON-LOCAL SAR TOMOGRAPHY FOR LARGE-SCALE URBAN MAPPING
Yilei Shi, Technical University of Munich, Germany; Yuanyuan Wang, Technical University of Munich (TUM), Germany; Xiao Xiang Zhu, Richard Bamler, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

WE4.R1.4
17:20
ANALYSIS OF OFFSET-COMPENSATED NONLOCAL FILTERING FOR INSAR DEM GENERATION
Francescopaolo Sica, Nicola Gollin, German Aerospace Center (DLR), Germany

WE4.R1.5
17:40
ROBUST NONLOCAL LOW-RANK SAR STACK DESPECKLING WITH APPLICATION TO CHANGE DETECTION
Gerald Baier, Wei He, Bruno Adriano, Junshi Xia, Naoto Yokoya, RIKEN, Japan

Wednesday, July 31	08:00 - 09:40	Room 213
Session WE1.R2		Oral

Clouds and Precipitation: Data Products and Retrievals I

Session Co-Chairs: David Kunkee, The Aerospace Corporation; Lin Lin, ESSIC/UMD-CICS; Stephen Frasier, University of Massachusetts

WE1.R2.1
08:00
A PRELIMINARY LAYER PERCEPTIBLE WATER VAPOR RETRIEVAL ALGORITHM FOR FENGYUN-4 ADVANCED GEOSYNCHRONOUS RADIATION IMAGER
Yong Zhang, Institute of Satellite Meteorology, China; Zhenglong Li, Jun Li, Space Science and Engineering Center, United States

WE1.R2.2
08:20
THE NOAA MICROWAVE INTEGRATED RETRIEVAL SYSTEM MULTIPLE SATELLITE RAIN RATE RETRIEVAL AND MONITORING
Shuyan Liu, Colorado State University, United States; Christopher Grassotti, University of Maryland, United States; Quanhua Liu, NOAA, United States; Yong-Keun Lee, University of Maryland, United States; Ryan Honeyager, I.M. Systems Group, United States

WE1.R2.3
08:40
COMPARISON OF THE WINTER PRECIPITATION PRODUCTS OVER THE TIBETAN PLATEAU
Junhua Zhou, Hui Lu, Kun Yang, Tsinghua University, China

WE1.R2.4
09:00
LIQUID WATER PATH (LWP) RETRIEVALS FROM REPROCESSED S-NPP ATMS THROUGH REMAPPING
Lin Lin, ESSIC/UMD-CICS, United States; Lihang Zhou, NOAA/NESDIS/STAR, United States

WE1.R2.5
09:20
COMPARISON OF PHASED-ARRAY AND PARABOLIC ANTENNA POLARIMETRIC WEATHER RADAR VARIABLES AT X-BAND
William Heberling, Stephen Frasier, Casey Wolsieffer, Max Adam, University of Massachusetts, United States

Wednesday, July 31	10:40 - 12:20	Room 213
Session WE2.R2		Oral

Clouds and Precipitation: Calibration and Modelling II

Session Co-Chairs: David Kunkee, The Aerospace Corporation; Rachael Kroodsma, ESSIC, University of Maryland / NASA Goddard Space Flight Center

WE2.R2.1
10:40
IMPACT OF MICROWAVE SOUNDER CALIBRATION ON PRECIPITATION FOR THE GLOBAL PRECIPITATION MEASUREMENT MISSION
Rachael Kroodsma, ESSIC, University of Maryland / NASA Goddard Space Flight Center, United States

WE2.R2.2
11:00
CROSS-VALIDATION OF CSU-CHIVO RADAR AND GPM DURING RELAMPAGO
Ivan Arias, V. Chandrasekar, Shashank S. Joshil, Colorado State University, United States

WE2.R2.3
11:20
MODELING CYCLONE-RELATED PRECIPITATION CHANGES IN FUTURE CLIMATES USING WRF MODEL AND CMIP5 OUTPUT DATA
Martin Mäll, Waseda University, Japan; Ülo Suursaar, University of Tartu, Estonia; Tomoya Shibayama, Waseda University, Japan; Ryota Nakamura, Niigata University, Japan

WE2.R2.4
11:40
OBSERVING SYSTEM SIMULATION EXPERIMENT ON THE ACCURACY OF GLOBAL SATELLITE MAPPING OF PRECIPITATION (GSMAP) BY FUTURE SMALL PRECIPITATION RADAR CONSTELLATION
Moeka Yamaji, Takuji Kubota, Riko Oki, Japan Aerospace Exploration Agency (JAXA), Japan

WE2.R2.5
12:00
A SHORT TERM CLOUD TRACKING MODEL BASED ON THE BRUHN OPTICAL FLOW METHOD
Jervis Ong Zhe Ao, Sherilyn Teo, Santo Salinas, Soo Chin Liew, National University of Singapore, Singapore

WEDNESDAY ORAL

Wednesday, July 31	13:40 - 15:20	Room 213
Session WE3.R2		Oral

Aerosols I

Session Co-Chairs: Fuzhong Weng, State Key Laboratory of Severe Weather; Yuan Wang, Wuhan University

WE3.R2.1
13:40
POLARIZED AEROSOL RETRIEVAL ALGORITHM OVER URBAN SURFACES - DUBAI MUNICIPALITY SATELLITE
Diena Aldogom, University of Dubai, United Arab Emirates; Saeed Al Mansoori, Meera Al Shamsi, Alya AlMaazmi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

WE3.R2.2
14:00
MAPPING DIURNAL AEROSOL PROPERTIES IN EAST ASIA FROM DEEP SPACE CLIMATE OBSERVATORY
Xinhuiyu Liu, Lanzhou University, China; Zhaocheng Zeng, California Institute of Technology, China

WE3.R2.3
14:20
VALIDATION OF MODIS 1-KM MAIAC AEROSOL PRODUCTS WITH AERONET IN CHINA DURING 2008-2016
Yuan Wang, Qiangqiang Yuan, Haotian Wang, Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

WE3.R2.4
14:40
EFFICIENT ALGORITHMS FOR AEROSOL RETRIEVAL FROM GCOM-C/SGLI
Sonoyo Mukai, Kyoto College of Graduate Studies for Informatics, Japan; Itaru Sano, Makiko Nakata, Kindai University, Japan

WE3.R2.5
15:00
LONG TEMPORAL ANALYSIS OF NITROGEN DIOXIDE CONTENTS OVER CHINA USING SATELLITE AND GROUND OBSERVATIONS
Yingjie Li, Qingmiao Ma, Jing Chen, Xin Li, Xinyue Yang, Qianjie Wang, Jiangsu Normal University, China

Wednesday, July 31	16:20 - 18:00	Room 213
Session WE4.R2		Oral

Aerosols IV

Session Co-Chairs: Fuzhong Weng, State Key Laboratory of Severe Weather; Maria Fernanda García Ferreyra, Comisión Nacional de Actividades Espaciales

WE4.R2.1
16:20
ESTIMATING THE HIGH-SPATIAL-RESOLUTION DAILY PM2.5 CONCENTRATIONS USING MAIAC AOD PRODUCT OVER CHINA
Jing Wei, Beijing Normal University, China; Zhanqing Li, University of Maryland, United States

WE4.R2.2
16:40
ESTIMATING PM2.5 EMISSION FROM BRICK KILN INDUSTRY OVER NORTHERN INDIA WITH NUMERICAL MODEL AND REMOTE SENSING OBSERVATION
Ardhi Adhary Arbain, Ryoichi Imasu, University of Tokyo, Japan

WE4.R2.3
17:00
MONITORING AIR POLLUTION FROM WILDFIRES USING GROUND DATA, SATELLITE PRODUCTS AND MODELING: THE AUSTRAL SUMMER 2016-2017 IN ARGENTINA
María Fernanda García Ferreyra, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Gabriele Curci, Universita degli studi dell'Aquila, Italy; Lara Della Ceca, Universidad Nacional de Rosario, Argentina; Lidia Otero, Pablo Ristori, Instituto de Investigaciones Científicas y Técnicas para la Defensa, Argentina; Juan Pablo Argañaraz, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina; Alba Germán, Universidad Nacional de Córdoba, Argentina; Andrés Lighezzolo, Carlos Marcelo Scavuzzo, Comisión Nacional de Actividades Espaciales (CONAE), Argentina

WE4.R2.4
17:20
HYDROMETEOROLOGICAL DRIVERS OF PARTICULATE MATTER USING BAYESIAN MODEL AVERAGING
Seulchan Lee, Jaehwan Jeong, Minha Choi, Sungkyunkwan University, Korea (South)

WE4.R2.5
17:40
APPLICATION OF A PHYSICAL MODEL TO THE REMOTE SENSING OF PM2.5 OVER SINGAPORE
Li Tan, Daniel M. Kalbermatter, Santo V. Salinas, National University of Singapore, Singapore

WEDNESDAY ORAL

Wednesday, July 31	08:00 - 09:40	Room 311-312
Session WE1.R3		Oral-Invited

SAR Polarimetry: Theory and Applications I

Session Co-Chairs: Tom Ainsworth, NRL; Sang-Eun Park, Sejong University

WE1.R3.1
08:00
THREE-DIMENSIONAL POLARIMETRIC COVARIANCE MATRIX VIA INSAR HISTOGRAMS: A CASE STUDY WITH L- AND P-BAND NASA ABOVE CAMPAIGN DATA
Marco Lavalle, Gustavo H. X. Shiroma, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE1.R3.2
08:20
THREE-DIMENSIONAL URBAN CHARACTERIZATION USING POLARIMETRIC SAR CORRELATION TOMOGRAPHIC TECHNIQUES AND TSX/TDX IMAGES
Xing Peng, Central South University, China; Yue Huang, Laurent Ferro-Famil, University of Rennes 1, France; Jianjun Zhu, Central South University, China; Yanan Du, Guangzhou University, China; Haiqiang Fu, Central South University, China

WE1.R3.3
08:40
INTERPRETATION OF POLARIMETRIC AND TOMOGRAPHIC SIGNATURES FROM GLACIER SUBSURFACE: THE K-TRANSECT CASE STUDY
Giuseppe Parrella, Georg Fischer, Matteo Pardini, Kostas Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR), Germany

WE1.R3.4
09:00
POLINSAR TWO LAYER MODEL GROUND AND VOLUME RESPONE SEPARATION
Alberto Alonso-Gonzalez, Emanuel Hecht, Kostas Papathanassiou, German Aerospace Center (DLR), Germany

WE1.R3.5
09:20
ON THE GEOMETRICAL DEPENDENCY OF THE POLARIMETRIC BISTATIC SAR OBSERVATION
Yanting Wang, Thomas Ainsworth, Jong-Sen Lee, U.S. Naval Research Laboratory, United States

Wednesday, July 31	10:40 - 12:20	Room 311-312
Session WE2.R3		Oral-Invited

SAR Polarimetry: Theory and Applications II

Session Co-Chairs: Tom Ainsworth, NRL; Yue Huang, University of Rennes 1

WE2.R3.1
10:40
ROLL-INVARIANT FEATURES IN RADAR POLARIMETRY: A SURVEY
Si-Wei Chen, Guo-Qing Wu, Da-Hai Dai, Xue-Song Wang, Shun-Ping Xiao, National University of Defense Technology, China

WE2.R3.2
11:00
ASSESSMENT OF MODEL-BASED POLSAR DECOMPOSITIONS
Thomas Ainsworth, Naval Research Laboratory, United States; Jong-Sen Lee, Computational Physics, Inc., United States; Yanting Wang, Naval Research Laboratory, United States

WE2.R3.3
11:20
THE IMPACT OF DIFFERENT POLARIMETRIC DISTANCE MEASURES FOR THE DESPECKLING OF POLSAR DATA FOLLOWING THE BELTRAMI APPROACH
Joel Amao-Oliva, Marc Jäger, Andreas Reigber, Gustavo Daniel Martín-del-Campo-Becerra, German Aerospace Center (DLR), Germany; Deni Torres-Román, Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV-IPN), Mexico

WE2.R3.4
11:40
DETECTION OF EARTHQUAKE-INDUCED DAMAGES USING POLARIMETRIC SAR REMOTE SENSING
Sang-Eun Park, Yoon-Taek Jung, Keunhoo Cho, Sejong University, Korea (South)

WE2.R3.5
12:00
ADVANCEMENTS FOR SENTINEL-1 BASED VESSEL MONITORING: DUAL-POLARIZATION DETECTION AND SAR-BASED COASTLINE DETECTION
Ramona Pelich, Marco Chini, Renaud Hostache, Patrick Matgen, Carlos López-Martínez, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Miguel Nuevo, Philippe Ries, Gerd Eiden, Willibald Croi, LuxSpace Sàrl, Luxembourg

Wednesday, July 31	13:40 - 15:20	Room 311-312
Session WE3.R3		Oral-Invited

Advanced Methods for Polarimetric SAR Information Extraction I

Session Co-Chairs: Ridha Touzi, Canada Centre for Remote Sensing; Jong-Sen Lee, Naval Research Laboratory

WE3.R3.1
13:40
DEVELOPMENTS OF SCATTERING POWER DECOMPOSITION FROM 3 TO 7 COMPONENTS
Yoshio Yamaguchi, Niigata University, Japan; Gulab Singh, Indian Institute of Technology Bombay, India; Kanta Yamada, Maito Umemura, Hiroyoshi Yamada, Niigata University, Japan

WE3.R3.3
14:20
A SCATTERING POWER FACTORIZATION FRAMEWORK USING A GEODESIC DISTANCE FOR MULTI-LOOKED POLSAR DATA
Debanshu Ratha, Avik Bhattacharya, Indian Institute of Technology, Bombay, India; Alejandro Frery, Universidade Federal de Alagoas, Brazil; Eric Pottier, University of Rennes1, France

WE3.R3.4
14:40
ON ICA BASED ICTD CLASSIFICATION OF POLSAR DATA
Gabriel Vasile, National Center for Scientific Research (CNRS), France

WE3.R3.5
15:00
POLARIMETRIC L-BAND PALSAR2 FOR DISCONTINUOUS PERMAFROST MAPPING IN PEATLAND REGIONS
Ridha Touzi, Canada Centre for Remote Sensing, Canada; S. Pawley, AGS-AER, Canada; M. Hosseini, X. Jiao, Canada Centre for Remote Sensing, Canada

Wednesday, July 31	16:20 - 18:00	Room 311-312
Session WE4.R3		Oral-Invited

Advanced Methods for Polarimetric SAR Information Extraction II

Session Co-Chairs: Jong-Sen Lee, Naval Research Laboratory; Ridha Touzi, Canada Centre for Remote Sensing; Ridha Touzi, Canada Centre for Remote Sensing

WE4.R3.1
16:20
POLSAR DATA COMPENSATION OF STEEP TERRAIN WITH APPLICATION TO SOIL MOISTURE RETRIVAL
Jong-Sen Lee, Thomas Ainsworth, Yanting Wang, Naval Research Laboratory, United States; Irena Hajnsek, Kostas Pappathanassiou, German Aerospace Center (DLR), Germany

WE4.R3.2
16:40
REVISITING AN ITERATIVE SPECKLE FILTERING TECHNIQUE
Samuel Foucher, Mario Beaulieu, Computer Research Institute of Montreal (CRIM), Canada; Francois Cavayas, University of Montreal, Canada; Mohamed Dahmane, Computer Research Institute of Montreal (CRIM), Canada

WE4.R3.3
17:00
ASSESSMENT OF POLARIMETRIC VARIABILITY BY DISTANCE GEOMETRY FOR ENHANCED CLASSIFICATION OF OIL SLICKS USING SAR
Andrea Marinoni, Martine M. Espeseth, Arctic University of Norway, Norway; Paolo Gamba, University of Pavia, Italy; Camilla Brekke, Torbjørn Eltoft, Arctic University of Norway, Norway

WE4.R3.4
17:20
COMPARATIVE ANALYSIS OF THE RELATIVE POLARIMETRIC RADAR SIGNATURE OF VEGETATION AND CITIES DISTRICTS
Laetitia Thirion-Lefevre, Régis Guinvarc'h, CentraleSupélec, France; Elise Colin-Koeniguer, ONERA, France

WE4.R3.5
17:40
AIRBORNE-SINGLE PASS X-BAND FMCW INSAR INSTRUMENT FOR THE ACCURATE DEM GENERATION
Masanobu Shimada, Tokyo Denki University, Japan; Akira Nohmi, Hitoshi Nohmi, Allouette Technology, Japan; Shuto Sugai, Mayumi Noguchi, Akira Sasagawa, Geospatial Survey of Institute, Japan

Wednesday, July 31	08:00 - 09:40	Room 313-314
Session WE1.R4		Oral-Invited

Deep Learning for Multispectral Image Analysis I

Session Co-Chairs: Matthieu Molinier, VTT Technical Research Centre of Finland Ltd; Devis Tuia, Wageningen

WE1.R4.1
08:00

IMAGE REGISTRATION OF SATELLITE IMAGERY WITH DEEP CONVOLUTIONAL NEURAL NETWORKS

Maria Vakalopoulou, CentraleSupélec, France; Stergios Christodoulidis, University of Bern, Switzerland; Mihir Sahasrabudhe, CentraleSupélec, France; Stavroula Mougiakakou, University of Bern, Switzerland; Nikos Paragios, Therapanacea, France

WE1.R4.2
08:20

CONTINUAL LEARNING FOR DENSE LABELING OF SATELLITE IMAGES

Onur Tasar, Yuliya Tarabalka, Pierre Alliez, INRIA, France

WE1.R4.3
08:40

CROSS-DOMAIN-CLASSIFICATION OF TSUNAMI DAMAGE VIA DATA SIMULATION AND RESIDUAL-NETWORK-DERIVED FEATURES FROM MULTI-SOURCE IMAGES

Bruno Adriano, Naoto Yokoya, Junshi Xia, Gerald Baier, RIKEN Center for Advanced Intelligence Project, Japan; Shunichi Koshimura, International Research Institute of Disaster Science, Tohoku University, Japan

WE1.R4.4
09:00

VISUAL QUESTION ANSWERING FROM REMOTE SENSING IMAGES

Sylvain Lobry, Jesse Murray, Diego Marcos, Devis Tuia, Wageningen University and Research, Netherlands

WE1.R4.5
09:20

LARGE SCALE UNSUPERVISED DOMAIN ADAPTATION OF SEGMENTATION NETWORKS WITH ADVERSARIAL LEARNING

Xueqing Deng, University of California, Merced, United States; Hsiuhan Lexie Yang, Nikhil Makkar, Dalton Lunga, Oak Ridge National Laboratory, United States

Wednesday, July 31	10:40 - 12:20	Room 313-314
Session WE2.R4		Oral-Invited

Deep Learning for Multispectral Image Analysis II

Session Co-Chairs: Devis Tuia, Wageningen; Matthieu Molinier, VTT Technical Research Centre of Finland Ltd

WE2.R4.1
10:40

UNSUPERVISED MULTIPLE-CHANGE DETECTION IN VHR MULTISENSOR IMAGES VIA DEEP-LEARNING BASED ADAPTATION

Sudipan Saha, Francesca Bovolo, Fondazione Bruno Kessler, Italy; Lorenzo Bruzzone, University of Trento, Italy

WE2.R4.2
11:00

FUSING MULTI-SEASONAL SENTINEL-2 IMAGES WITH RESIDUAL CONVOLUTIONAL NEURAL NETWORKS FOR LOCAL CLIMATE ZONE-DERIVED URBAN LAND COVER CLASSIFICATION

Chunping Qiu, Michael Schmitt, Xiao Xiang Zhu, Technical University of Munich (TUM), Germany

WE2.R4.3
11:20

ROAD MAPPING IN LIDAR IMAGES USING A JOINT-TASK DENSE DILATED CONVOLUTIONS MERGING NETWORK

Qinghui Liu, Norwegian Computing Center, Norway; Michael Kampffmeyer, Robert Jenssen, Arctic University of Norway, Norway; Arnt-Børre Salberg, Norwegian Computing Center, Norway

WE2.R4.4
11:40

SEMANTIC VEHICLE SEGMENTATION IN VERY HIGH RESOLUTION MULTISPECTRAL AERIAL IMAGES USING DEEP NEURAL NETWORKS

Nina Merkle, Seyed Majid Azimi, Sebastian Pless, Franz Kurz, German Aerospace Center (DLR), Germany

WE2.R4.5
12:00

AVOIDING OVERFITTING WHEN APPLYING SPECTRAL-SPATIAL DEEP LEARNING METHODS ON HYPERSPECTRAL IMAGES WITH LIMITED LABELS

Matthieu Molinier, Jorma Kilpi, VTT Technical Research Centre of Finland Ltd, Finland

WEDNESDAY ORAL

Wednesday, July 31	13:40 - 15:20	Room 313-314
Session WE3.R4		Oral-Invited

Deep Learning in Remote Sensing I

Session Co-Chairs: Xiaoxiang Zhu, German Aerospace Center / Technical University of Munich; Friedrich Fraundorfer, Graz University of Technology

WE3.R4.1
13:40

BUILDING FOOTPRINT EXTRACTION WITH GRAPH CONVOLUTIONAL NETWORK

Yilei Shi, Qingyu Li, Technical University of Munich, Germany; Xiaoxiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

WE3.R4.2
14:00

REGULARIZATION OF BUILDING BOUNDARIES IN SATELLITE IMAGES USING ADVERSARIAL AND REGULARIZED LOSSES

Stefano Zorzi, Friedrich Fraundorfer, Graz University of Technology, Austria

WE3.R4.3
14:20

UNSUPERVISED SUPER-RESOLUTION OF SATELLITE IMAGERY FOR HIGH FIDELITY MATERIAL LABEL TRANSFER

Arthita Ghosh, Max Ehrlich, Larry Davis, Rama Chellappa, University of Maryland, United States

WE3.R4.4
14:40

PRIMITIVE-BASED 3D BUILDING MODELING, SENSOR SIMULATION, AND ESTIMATION

Xia Li, Yen-Liang Lin, James Miller, Alex Cheon, GE Global Research, United States; Walt Dixon, GE Research, United States

WE3.R4.5
15:00

REGISTRATION OF HIGH RESOLUTION SAR AND OPTICAL SATELLITE IMAGERY USING FULLY CONVOLUTIONAL NETWORKS

Stefan Hoffmann, Clemens-Alexander Brust, Maha Shadaydeh, Joachim Denzler, Friedrich Schiller University Jena, Germany

Wednesday, July 31	16:20 - 18:00	Room 313-314
Session WE4.R4		Oral-Invited

Deep Learning in Remote Sensing II

Session Co-Chairs: Friedrich Fraundorfer, Graz University of Technology; Xiao Xiang Zhu, German Aerospace Center (DLR)

WE4.R4.1
16:20

A DEEP ARCHITECTURE BASED ON A TWO-STAGE LEARNING FOR SEMANTIC SEGMENTATION OF LARGE-SIZE REMOTE SENSING IMAGES

Lei Ding, Lorenzo Bruzzone, University of Trento, Italy

WE4.R4.2
16:40

SPATIAL RELATIONAL REASONING IN NETWORKS FOR IMPROVING SEMANTIC SEGMENTATION OF AERIAL IMAGES

Lichao Mou, Yuansheng Hua, Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

WE4.R4.3
17:00

EDGE-CONVOLUTION POINT NET FOR SEMANTIC SEGMENTATION OF LARGE-SCALE POINT CLOUDS

Jhonatan Contreras, Joachim Denzler, Friedrich-Schiller-University Jena, Germany

WE4.R4.4
17:20

ZOOM IN , ZOOM OUT: INJECTING SCALE INVARIANCE INTO LANDUSE CLASSIFICATION CNNS

Jesse Murray, Diego Marcos, Devis Tuia, Wageningen University, Netherlands

WE4.R4.5
17:40

LABEL RELATION INFERENCE FOR MULTI-LABEL AERIAL IMAGE CLASSIFICATION

Yuansheng Hua, Lichao Mou, Xiaoxiang Zhu, German Aerospace Center (DLR), Germany

Wednesday, July 31	08:00 - 09:40	Room 315
Session WE1.R5		Oral

Hyperspectral Image Classification I

Session Chair: Jocelyn Chanussot, Grenoble Institute of Technology

WE1.R5.1
08:00
DEEP FEATURE EXTRACTION BASED ON SIAMESE NETWORK AND AUTO-ENCODER FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Jiajia Miao, Bin Wang, Xiaofeng Wu, Liming Zhang, Bo Hu, Jian Qiu Zhang, Fudan University, China

WE1.R5.2
08:20
DECISION FUSION BASED ON JOINT LOW RANK AND SPARSE COMPONENT FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Feiyan Li, People's Public Security University of China, China; Wei Li, Beijing University of Chemical Technology, China; Hongtao Huo, People's Public Security University of China, China; Qiong Ran, Beijing University of Chemical Technology, China

WE1.R5.3
08:40
ROLLING GUIDANCE RECURSIVE FILTERING-BASED MULTIPLE KERNEL LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Binge Cui, Liwei Zhong, Xiujuan Tian, Shandong University of Science and Technology, China

WE1.R5.4
09:00
ACCESSIBILITY-FREE ACTIVE LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Chenying Liu, Jun Li, Sun Yat-Sen University, China; Mercedes E. Paoletti, Juan M. Haut, Antonio Plaza, University of Extremadura, Spain; Qian Shi, Sun Yat-Sen University, China

WE1.R5.5
09:20
SPECTRAL-SPATIAL CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON A JOINT ATTENTION NETWORK
Erting Pan, Yong Ma, Xiaoguang Mei, Xiaobing Dai, Fan Fan, Xin Tian, Jiayi Ma, Wuhan University, China

Wednesday, July 31	10:40 - 12:20	Room 315
Session WE2.R5		Oral

Analysis of Time Series

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Qian Du, Mississippi State University

WE2.R5.1
10:40
A SEMI-SUPERVISED CROP-TYPE CLASSIFICATION BASED ON SENTINEL-2 NDVI SATELLITE IMAGE TIME SERIES AND PHENOLOGICAL PARAMETERS
Yady Tatiana Solano-Correa, Francesca Bovolo, Fondazione Bruno Kessler, Italy; Lorenzo Bruzzone, University of Trento, Italy

WE2.R5.2
11:00
DEEP LEARNING FOR THE CLASSIFICATION OF SENTINEL-2 IMAGE TIME SERIES
Charlotte Pelletier, Geoffrey I Webb, François Petitjean, Monash University, Australia

WE2.R5.3
11:20
IMPROVING HYPERSPECTRAL IMAGE CLASSIFICATION BY COMBINING SPECTRAL AND MULTIBAND COMPACT TEXTURE FEATURES
Khelifa Djerriri, Centre des Techniques Spatiales, Algeria; Abdelmounaime Safia, Centre d'applications et de Recherches en Télédétection (CARTEL), Canada; Reda Adjoudj, Djillali Liabes University, Algeria; Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria

WE2.R5.4
11:40
COMPARING PHENOMETRICS EXTRACTED FROM DENSE LANDSAT-LIKE IMAGE TIME SERIES FOR CROP CLASSIFICATION
Hugo Bendini, Leila Fonseca, National Institute for Space Research (INPE), Brazil; Marcel Schwieder, Humboldt-Universität zu Berlin, Germany; Thales Körting, National Institute for Space Research (INPE), Brazil; Philippe Rufin, Humboldt-Universität zu Berlin, Germany; Ieda Sanches, National Institute for Space Research (INPE), Brazil; Pedro Leitão, Patrick Hostert, Humboldt-Universität zu Berlin, Germany

WE2.R5.5
12:00
DEEP RECURRENT NEURAL NETWORKS FOR LAND-COVER CLASSIFICATION USING SENTINEL-1 INSAR TIME SERIES
Shaojia Ge, Nanjing University of Science and Technology, China; Oleg Antropov, VTT Technical Research Centre of Finland, Finland; Weimin Su, Hong Gu, Nanjing University of Science and Technology, China; Jaan Praks, Aalto University, Finland

Wednesday, July 31	13:40 - 15:20	Room 315
Session WE3.R5		Oral

Learning Scene Classification

Session Chair: Shutao Li, Hunan University

WE3.R5.1
13:40
HIERARCHICAL DEEP FEATURE REPRESENTATION FOR HIGH-RESOLUTION SCENE CLASSIFICATION
Xiaoyong Bian, Chunfang Chen, Chunhua Deng, Ruiyao Liu, Wuhan University of Science and Technology, China; Qian Du, Mississippi State University, United States

WE3.R5.2
14:00
SCENE CLASSIFICATION OF HIGH RESOLUTION REMOTE SENSING IMAGES VIA SELF-PACED DEEP LEARNING
Xiwen Yao, Liuqing Yang, Gong Cheng, Junwei Han, Lei Guo, Northwestern Polytechnical University, China

WE3.R5.3
14:20
REMOTE SENSING SCENE CLASSIFICATION BASED ON RES-CAPSNET
Tian Tian, Xiaoyan Liu, Lizhe Wang, China University of Geosciences, China

WE3.R5.4
14:40
LEARNING REGION RESPONSE RANKING FEATURES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Junyu Yang, Gong Cheng, Xiwen Yao, Junwei Han, Lei Guo, Northwestern Polytechnical University, China

WE3.R5.5
15:00
AN INTROSPECTIVE LEARNING STRATEGY FOR REMOTE SENSING SCENE CLASSIFICATION
Jingran Su, Qi Wang, Northwestern Polytechnical University, China; Shangdong Chen, Northwest University, China; Xuelong Li, Northwestern Polytechnical University, China

Wednesday, July 31	16:20 - 18:00	Room 315
Session WE4.R5		Oral

Hyperspectral Image Classification II

Session Chair: Paul Scheunders, University of Antwerp - Vision Lab

WE4.R5.1
16:20
SOLVING DEEP NEURAL NETWORKS WITH ORDINARY DIFFERENTIAL EQUATIONS FOR REMOTELY SENSED HYPERSPECTRAL IMAGE CLASSIFICATION
Mercedes E. Paoletti, Juan M. Haut, Javier Plaza, Antonio Plaza, University of Extremadura, Spain

WE4.R5.2
16:40
DISCRIMINATIVE CNN VIA METRIC LEARNING FOR HYPERSPECTRAL CLASSIFICATION
Zhongqi Tian, Northwestern Polytechnical University, China; Zhi Zhang, Chinese Academy of Sciences, China; Shaohui Mei, Ruoqiao Jiang, Shuai Wan, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, United States

WE4.R5.3
17:00
HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON NON-LOCAL NEURAL NETWORKS
Chen Wang, Xiao Bai, Lei Zhou, Beihang University, China; Jun Zhou, Griffith University, Australia

WE4.R5.4
17:20
JOINT MULTILAYER SPATIAL-SPECTRAL CLASSIFICATION OF HYPERSPECTRAL IMAGES BASED ON CNN AND CONVLSTM
Jie Feng, Xiande Wu, Jiantong Chen, Xiangrong Zhang, Xu Tang, Di Li, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education, Xidian University, China

WE4.R5.5
17:40
SEMI-SUPERVISED LEARNING WITH GRAPHS: COVARIANCE BASED SUPERPIXELS FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Philip Sellars, Angelica Aviles-Rivero, University of Cambridge, United Kingdom; Nicolas Papadakis, Universite Bordeaux, France; David Coomes, Anita Faul, Carola-Bibiane Schönlieb, University of Cambridge, United Kingdom

WEDNESDAY ORAL

Wednesday, July 31	08:00 - 09:40	Room 411-412
Session WE1.R6		**Oral**

Soil Moisture Modelling and Retrievals

Session Chair: Mariko S. Burgin, NASA Jet Propulsion Laboratory

WE1.R6.1
08:00
AFTER ALMOST 10 YEARS IN ORBIT: FIRST GLANCE AT SYNERGISMS AND NEW RESULTS
Yann H. Kerr, CNES / CESBIO, France; Jean-Pierre Wigneron, INRA, France; Arnaud Mialon, Ahmad Al Bitar, Emma Bousquet, Philippe Richaume, CNES / CESBIO, France; Nemesio Rodriguez-Fernandez, CNRS / CESBIO, France; François Cabot, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Maciej Miernecki, CNES / CESBIO, France; Amen Al-Yaari, Lei Fan, INRA, France

WE1.R6.2
08:20
"TAU-OMEGA"- AND TWO-STREAM EMISSION MODELS APPLIED TO CLOSE-RANGE AND SMOS MEASUREMENTS
Mike Schwank, Swiss Federal Research Institute WSL, Switzerland; Xiaojun Li, INRA Centre de Bordeaux Aquitaine, France; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Reza Naderpour, Swiss Federal Research Institute WSL, Switzerland; Christian Mätzler, Gamma Remote Sensing AG, Switzerland; Jean-Pierre Wigneron, INRA Centre de Bordeaux Aquitaine, France

WE1.R6.3
08:40
SIMULTANEOUS RETRIEVAL OF SURFACE ROUGHNESS PARAMETERS FROM COMBINED ACTIVE-PASSIVE SMAP OBSERVATIONS
Anke Fluhrer, Thomas Jagdhuber, German Aerospace Center (DLR), Germany; Ruzbeh Akbar, Massachusetts Institute of Technology, United States; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States

WE1.R6.4
09:00
ESTIMATING SURFACE SOIL MOISTURE FROM SATELLITE OBSERVATIONS USING MACHINE LEARNING TRAINED ON IN SITU MEASUREMENTS IN THE CONTINENTAL U.S.
Hongzhang Xu, Qiangqiang Yuan, Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

WE1.R6.5
09:20
AUTONOMOUS MOISTURE CONTINUUM SENSING NETWORK: INTELLIGENT AND ENERGY EFFICIENT IN SITU WIRELESS SENSOR NETWORKS IN SUPPORT OF REMOTE SENSING MISSIONS
Ruzbeh Akbar, Massachusetts Institute of Technology, United States; Agnelo Silva, METER Group, United States; Negar Golestani, Richard Chen, Jay Jadva, University of Southern California, United States; Kamoya Ikhofua, Dimitris Koutentakis, Massachusetts Institute of Technology, United States; Mahta Moghaddam, University of Southern California, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States

Wednesday, July 31	10:40 - 12:20	Room 411-412
Session WE2.R6		**Oral**

Soil Moisture Retrievals and Validation

Session Chair: Yann Kerr, CESBIO

WE2.R6.1
10:40
A METHOD FOR ASSESSING SMAP CORE VALIDATION SITE SCALING BIAS USING ENHANCED SAMPLING AND RANDOM FORESTS
Jane Whitcomb, Mahta Moghaddam, University of Southern California, United States; Daniel Clewley, Plymouth Marine Laboratory, United Kingdom; Andreas Colliander, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Michael Cosh, USDA Agricultural Research Service, United States; Jarrett Powers, Matthew Friesen, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Aaron Berg, University of Guelph, Canada; David Bosch, Chandra Holifield Collins, John Prueger, USDA Agricultural Research Service, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States

WE2.R6.2
11:00
USING TRIPLE COLLOCATION TO ESTIMATE SMAP PERFORMANCE IN TROPICAL PEATLAND FORESTS OF SOUTHEAST ASIA
Nathan Dadap, Alexandra Konings, Stanford University, United States

WE2.R6.3
11:20
VALIDATION OF FIVE PASSIVE MICROWAVE REMOTELY SENSED SOIL MOISTURE PRODUCTS OVER THE QINGHAI-TIBET PLATEAU, CHINA
Jin Liu, Linna Chai, Zheng Lu, Yuquan Qu, Jian Wang, Shiqi Yang, Beijing Normal University, China

WE2.R6.4
11:40
COMPARISON OF IN-FIELD MEASUREMENTS AND INSAR ESTIMATES OF SOIL MOISTURE: INVERSION STRATEGIES OF INTERFEROMETRIC DATA
Vasco Conde, IDL, Faculdade de Ciências, Universidade de Lisboa, Portugal; Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Joao Catalao, IDL, Faculdade de Ciências, Universidade de Lisboa, Portugal

WE2.R6.5
12:00
THE THEXMEX-18 DATASET: UNDERSTANDING THE SOIL AND VEGETATION DYNAMICS OF AGRICULTURAL FIELDS IN CENTRAL MEXICO FROM L-BAND SMAP OBSERVATIONS
Alejandro Monsiváis-Huertero, Juan Carlos Hernández-Sánchez, Iván Edmundo De La Rosa-Montero, Eduardo Arizmendi-Vasconcelos, José Carlos Jiménez-Escalona, Daniel Enrique Constantino-Recillas, Roberto Ivan Villalobos-Martínez, Jaime Hugo Puebla-Lomas, Enrique Zempoaltecatl-Ramirez, Ramón Sidonio Aparicio-García, Carlos Rodolfo Sánchez-Villanueva, Víctor Manuel Saúce-Rangel, Instituto Politécnico Nacional, Mexico; Jasmeet Judge, University of Florida, United States

Wednesday, July 31	13:40 - 15:20	Room 411-412
Session WE3.R6		**Oral**

Spatial Resolution Enhancement of Soil Moisture and Related Applications

Session Co-Chairs: Jeffrey Walker, Monash University; Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

WE3.R6.1
13:40
DOWNSCALING AND VALIDATION OF SMAP RADIOMETER SOIL MOISTURE IN CONUS
Bin Fang, Venkat Lakshmi, University of Virginia, United States; Rajat Bindlish, NASA Goddard Space Flight Center, United States; Tom Jackson, USDA Agricultural Research Service Hydrology and Remote Sensing Laboratory, United States; Pang-Wei Liu, NASA Goddard Space Flight Center, United States

WE3.R6.2
14:00
REFINING SMAP SOIL ROUGHNESS PARAMETERIZATION IN THE U.S. CORN BELT
Victoria Walker, Brian Hornbuckle, Iowa State University, United States; Michael Cosh, USDA Agricultural Research Service, United States

WE3.R6.3
14:20
IMPLICATIONS FOR VALIDATION ACTIVITIES OF GLOBAL SOIL MOISTURE MISSIONS BY THE PREDICTION OF SUB-GRID SOIL MOISTURE VARIABILITY
Carsten Montzka, Heye Bogena, Harry Vereecken, Forschungszentrum Jülich GmbH, Germany

WE3.R6.4
14:40
ON RECONSTRUCTING THE SOIL SHRINKAGE CHARACTERISTIC CURVE BY DIELECTRIC SPECTROSCOPY
Thierry Bore, Partha Narayan Mishra, Moritz Schwing, Madalena Ribeiro, University of Queensland, Australia; Norman Wagner, Bauhaus-University, Germany; Alexander Scheuermann, University of Queensland, Australia

WE3.R6.5
15:00
HIGH RESOLUTION SOIL MOISTURE RETRIEVAL USING OPTICAL AND GNSS-R AIRBORNE DATA
Jordi Castellvi, Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Jordi Corbera, Ramon Alamús, Institut Cartogràfic i Geològic de Catalunya, Spain

Wednesday, July 31	16:20 - 18:00	Room 411-412
Session WE4.R6		**Oral**

Synergism and Alternative Approaches for Soil Moisture Estimation

Session Chair: Rajat Bindlish, NASA Goddard Space Flight Center

WE4.R6.1
16:20
INVESTIGATIONS INTO CYGNSS-BASED SOIL MOISTURE RETRIEVAL ALGORITHMS
Orhan Eroglu, Dylan Boyd, Ali Gurbuz, Mehmet Kurum, Mississippi State University, United States

WE4.R6.2
16:40
ANALYSIS OF L BAND RADAR DATA OVER TROPICAL AGRICULTURAL AREAS
Mehrez Zribi, CNRS, France; Sekhar Muddu, Indian Institute of Science, India; Soumya Bandyopadhyay, Indian Space Research Organisation, India; Safa Bousbih, IRD, France; Ahmad Al Bitar, CNRS, France; Sat Kumar Tomer, Satyukt Analytics, India; Nicolas Baghdadi, IRSTEA, France

WE4.R6.3
17:00
SENSITIVITY OF SENTINEL-1 INTERFEROMETRIC COHERENCE TO CROP STRUCTURE AND SOIL MOISTURE
Davide Palmisano, Giuseppe Satalino, Anna Balenzano, Fabio Bovenga, Francesco Mattia, Consiglio Nazionale delle Ricerche (CNR), Italy; Michele Rinaldi, Sergio Ruggieri, Consiglio per la Ricerca in Agricoltura e l'Analisi Economica, Italy; Henning Skriver, Technical University of Denmark, Denmark; Malcolm Davidson, European Space Agency (ESA), Netherlands; Oliver Cartus, Urs Wegmuller, Gamma Remote Sensing Research and Consulting AG, Switzerland

WE4.R6.4
17:20
AIRBORNE P-BAND PASSIVE MICROWAVE SOIL MOISTURE REMOTE SENSING: PRELIMINARY RESULTS
Nan Ye, Xiaoling Wu, Jeffrey Walker, Nithyapriya Boopathi, Liujun Zhu, Xiaoji Shen, Monash University, Australia; Thomas Jackson, USDA Agricultural Research Service, United States; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Edward Kim, NASA Goddard Space Flight Center, United States; Andrew McGrath, Flinders University, Australia; In-Young Yeo, University of Newcastle, Australia; Ivan PopStefanija, ProSensing Inc., United States

WE4.R6.5
17:40
IS SOIL SALINITY DETECTABLE BY GNSS-R/IR?
Xuerui Wu, Chifeng University, China; Junming Xia, National Space Science Center, Chinese Academy of Sciences, China; Shuanggen Jin, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; Weihua Bai, National Space Science Center, Chinese Academy of Sciences, China; Zhounan Dong, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China

WEDNESDAY ORAL

Wednesday, July 31	08:00 - 09:40	Room 413
Session WE1.R7		**Oral-Invited**

IEEE GRSS Data Fusion Contest I

WE1.R7.1
08:00
2019 IEEE GRSS DATA FUSION CONTEST: LARGE-SCALE SEMANTIC 3D RECONSTRUCTION
Bertrand Le Saux, ONERA, France; Naoto Yokoya, RIKEN, Japan; Ronny Hänsch, Technische Universität Berlin, Germany; Myron Brown, Johns Hopkins University, United States

WE1.R7.2
08:20
U-NET ENSEMBLE FOR SEMANTIC AND HEIGHT ESTIMATION USING COARSE-MAP INITIALIZATION
Saket Kunwar, NestAI, Nepal

WE1.R7.3
08:40
POP-NET: ENCODER-DUAL DECODER FOR SEMANTIC SEGMENTATION AND SINGLE-VIEW HEIGHT ESTIMATION
Zhuo Zheng, Yanfei Zhong, Junjue Wang, Wuhan University, China

WE1.R7.4
09:00
MULTI-LEVEL FUSION OF THE MULTI-RECEPTIVE FIELDS CONTEXTUAL NETWORKS AND DISPARITY NETWORK FOR PAIRWISE SEMANTIC STEREO
Hongyu Chen, Manhui Lin, Hongyan Zhang, Guangyi Yang, Gui-Song Xia, Xianwei Zheng, Liangpei Zhang, Wuhan University, China

WE1.R7.5
09:20
PAIRWISE STEREO IMAGE DISPARITY AND SEMANTICS ESTIMATION WITH THE COMBINATION OF U-NET AND PYRAMID STEREO MATCHING NETWORK
Rongjun Qin, Xu Huang, Wei Liu, Changlin Xiao, Ohio State University, United States

Wednesday, July 31	10:40 - 12:20	Room 413
Session WE2.R7		**Oral-Invited**

IEEE GRSS Data Fusion Contest II

WE2.R7.1
10:40
3D SEMANTIC SEGMENTATION FROM MULTI-VIEW OPTICAL SATELLITE IMAGES
Pablo d'Angelo, Daniele Cerra, Seyed Majid Azimi, Nina Merkle, Jiaojiao Tian, Stefan Auer, Miguel Pato, Raquel de los Reyes, Xiangyu Zhuo, Ksenia Bittner, Thomas Krauß, Peter Reinartz, German Aerospace Center (DLR), Germany

WE2.R7.2
11:00
SEMANTIC 3D RECONSTRUCTION USING MULTI-VIEW HIGH-RESOLUTION SATELLITE IMAGES BASED ON U-NET AND IMAGE-GUIDED DEPTH FUSION
Rongjun Qin, Xu Huang, Wei Liu, Changlin Xiao, Ohio State University, United States

WE2.R7.3
11:20
A DENSE POINTNET++ ARCHITECTURE FOR 3D POINT CLOUD SEMANTIC SEGMENTATION
Yanchao Lian, Tuo Feng, Jinliu Zhou, Xidian University, China

WE2.R7.4
11:40
A GLOBAL POINT-SIFT ATTENTION NETWORK FOR 3D POINT CLOUD SEMANTIC SEGMENTATION
Meixia Jia, Aijin Li, Zhaoyang Wu, Xidian University, China

Wednesday, July 31	13:40 - 15:20	Room 413
Session WE3.R7		**Oral-Invited**

Radio Frequency Interference (RFI) in Active Remote Sensing and GNSS Reflectometry

Session Co-Chairs: Yan Soldo, NASA Goddard Space Flight Center; Paolo de Matthaeis, NASA Goddard Space Flight Center

WE3.R7.1
13:40
PULSE AND RANGE DEPENDENT RFI MITIGATION FOR SYNTHETIC APERTURE RADAR USING DIGITAL BEAMFORMING
Tobias Bollian, USRA / NASA Goddard Space Flight Center, United States; Batuhan Osmanoglu, Rafael Rincon, NASA Goddard Space Flight Center, United States; SeungKuk Lee, University of Maryland / NASA Goddard Space Flight Center, United States; Temilola Fatoyinbo, NASA Goddard Space Flight Center, United States

WE3.R7.2
14:00
CHARACTERIZATION OF TERRAIN SCATTERED INTERFERENCE FROM SPACE-BORNE ACTIVE SENSOR: A CASE STUDY IN SENTINEL-1 IMAGE
Mingliang Tao, Jia Su, Ling Wang, Northwestern Polytechnical University, China; Guimei Zheng, Air Force Engineering University, China; Xinyu Zhang, Lanzhou University, China

WE3.R7.4
14:40
ON THE NEW ARCHITECTURE AND CAPABILITIES OF THE FRONT-END GNSS INTERFERENCE EXCISOR (FENIX)
Adrián Pérez, Adriano Camps, Universitat Politècnica de Catalunya Barcelona Tech and IEEC/CTE-UPC, Spain; Jorge Querol, University of Luxembourg, Luxembourg

WE3.R7.5
15:00
A SYSTEM DESIGN OF REAL-TIME NARROWBAND RFI DETECTION AND MITIGATION FOR GNSS-R RECEIVER
Tongsheng Qiu, Xianyi Wang, Yusen Tian, Qifei Du, Yueqiang Sun, National Space Science Center, Chinese Academy of Sciences, China

Wednesday, July 31	16:20 - 18:00	Room 413
Session WE4.R7		**Oral**

Small Satellite Technology I

Session Co-Chairs: Sharmila Padmanabhan, NASA Jet Propulsion Laboratory; William Blackwell, MIT Lincoln Laboratory; Adriano Camps, Universitat Politècnica de Catalunya

WE4.R7.1
16:20
DEMONSTRATING THE VIABILITY OF THE TEMPEST-D CUBESAT RADIOMETER FOR SCIENCE APPLICATIONS
Wesley Berg, Chris Kummerow, Steven Reising, V Chandrasekar, Rick Schulte, Yuriy Goncharenko, Braxton Kilmer, Colorado State University, United States; Shannon Brown, Boon Lim, Sharmila Padmanabhan, Todd Gaier, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE4.R7.2
16:40
CUBESAT CONSTELLATION CONCEPTS FOR SWATH ALTIMETRY
Christopher Buck, European Space Agency (ESA), Netherlands

WE4.R7.3
17:00
LUNAR MICROWAVE BRIGHTNESS TEMPERATURE SPECTRUM BETWEEN 23 TO 183GHZ FOR SMALL SATELLITE CALIBRATION
Hu Yang, Jun Zhou, University of Maryland, United States

WE4.R7.4
17:20
SWIRP (SUBMM-WAVE AND LONG WAVE INFRARED POLARIMETER); A NEW TOOL FOR INVESTIGATIONS OF ICE DISTRIBUTION AND SIZE IN CIRRUS CLOUDS
Dong Wu, Manuel Vega, Mike Solly, Victor Marrero, NASA Goddard Space Flight Center, United States; Kira Hart, University of Arizona, United States; Sergio Guerrero, NASA Goddard Space Flight Center, United States; William Gaines, Northrop Grumman Corp, United States; Cornelis Du Toit, Giovanni De Amici, NASA Goddard Space Flight Center, United States; William Deal, Northrop Grumman Corp, United States; Aaron Dabrowski, Michael Coon, NASA Goddard Space Flight Center, United States; Russell Chipman, University of Arizona, United States

WE4.R7.5
17:40
DEVELOPMENT OF COMPACT SAR SYSTEMS FOR SMALL SATELLITE
Hirobumi Saito, Japan Aerospace Exploration Agency (JAXA), Japan; Jiro Hirokawa, Takashi Tomura, Tokyo Institute of Technology, Japan; Prilando Rizki Akbar, Keio University, Japan; Budhaditya Pyne, Koji Tanaka, Makoto Mita, Japan Aerospace Exploration Agency (JAXA), Japan; Tomoki Kaneko, University of Tokyo, Japan; Hiromi Watanabe, Keio University, Japan; Koichi Ijichi, Japan Aerospace Exploration Agency (JAXA), Japan

Wednesday, July 31	08:00 - 09:40	Room 414-415
Session WE1.R8		Oral

Monitoring and Damage Assessment of Earthquake

Session Co-Chairs: Manabu Hashimoto, Kyoto University; Ademir Marques Junior, Universidade do Vale do Rio dos Sinos

WE1.R8.1
08:00
POSTSEISMIC DEFORMATION FOLLOWING THE APRIL 2016 KUMAMOTO, JAPAN, EARTHQUAKE SEQUENCE DETECTED WITH INSAR
Manabu Hashimoto, Kyoto University, Japan

WE1.R8.2
08:20
COMPLEMENTARY OCCURRENCE OF FAULT CREEP AND AN MW 6.5 EARTHQUAKE ALONG THE PHILIPPINE FAULT ON LEYTE ISLAND REVEALED BY ALOS AND ALOS-2 SAR INTERFEROMETRY
Yo Fukushima, Tohoku University, Japan; Manabu Hashimoto, Kyoto University, Japan

WE1.R8.3
08:40
DISPLACEMENT LINEAR SURFACE RUPTURE OF THE 2018 PALU EARTHQUAKE DETECTED BY SENTINEL-1 SAR INTERFEROMETRY AND VERY HIGH-RESOLUTION IMAGERIES OF PLANETSCOPE DATA
Fatwa Ramdani, Brawijaya University, Indonesia; Fajar Amanda, Noriyoshi Tsuchiya, Tohoku University, Japan

WE1.R8.4
09:00
A PROPOSED EARTHQUAKE WARNING SYSTEM BASED ON IONOSPHERIC ANOMALIES DERIVED FROM GNSS MEASUREMENTS AND ARTIFICIAL NEURAL NETWORKS
Diego Brum, Mauricio Roberto Veronez, Eniuce Menezes de Souza, Ismael Érique Koch, Luiz Gonzaga Jr, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil; Ivandro Klein, Federal Institute of Santa Catarina, Brazil; Marcelo Tomio Matsuoka, Vinicius Francisco Rofatto, Federal University of Uberlândia, Brazil; Ademir Marques Junior, Graciela Eliane dos Reis Racolte, Fabiane Bordin, Eduardo Kediamosiko Nzinga, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil

WE1.R8.5
09:20
ATTRIBUTE PROFILES IN EARTHQUAKE DAMAGE IDENTIFICATION FROM VERY HIGH RESOLUTION POST EVENT IMAGE
Enes Oğuzhan Alataş, Gülşen Taşkın, Istanbul Technical University, Turkey

Wednesday, July 31	10:40 - 12:20	Room 414-415
Session WE2.R8		Oral

Monitoring and Damage Assessment of Volcanic Activity

Session Co-Chairs: Francesco Casu, IREA-CNR; Stefano Corradini, INGV

WE2.R8.1
10:40
MONITORING VOLCANO DEFORMATION FROM SPACE WITH SENTINEL-1 DATA FOR CIVIL PROTECTION
Francesco Casu, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Manuela Bonano, IMAA - CNR, Italy; Raffaele Castaldo, Claudio De Luca, Vincenzo De Novellis, Riccardo Lanari, Michele Manunta, Mariarosaria Manzo, Giovanni Onorato, Susi Pepe, Giuseppe Solaro, Pietro Tizzani, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Emanuela Valerio, Università di Roma, Italy; Ivana Zinno, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy

WE2.R8.2
11:00
RECONSTRUCTION OF THE 2014-2015 FOGO VOLCANO (CAPE VERDE) ERUPTION THROUGH THERMAL REMOTELY SENSED IMAGERY
Vasco Miranda, Pedro Pina, Sandra Heleno, University of Lisbon, Portugal; Mathieu Gouhier, Université Clermont Auvergne, France; Stéphanie Dumont, Universidade Beira Interior, Portugal

WE2.R8.3
11:20
THE CHRISTMAS 2018 ETNA ERUPTION: REAL TIME MONITORING USING GEOSTATIONARY AND POLAR ORBIT SATELLITES SYSTEMS AND PRODUCTS VALIDATION
Stefano Corradini, Lorenzo Guerrieri, Dario Stelitano, Luca Merucci, Giuseppe Salerno, Simona Scollo, INGV, Italy; Matteo Picchiani, GEO-K s.r.l., University of Rome Tor Vergata, Italy; Nicolas Theys, Belgian Institute for Space Aeronomy (BIRA-IASB), Belgium; Valerio Lombardo, Malvina Silvestri, Massimo Musacchio, Tommaso Caltabiano, Michele Prestifilippo, INGV, Italy

WE2.R8.4
11:40
MULTI-HAZARD ANALYSIS OF ETNA 2018 ERUPTION BY SAR IMAGING
Christian Bignami, Matteo Albano, Francesco Guglielmino, Cristiano Tolomei, Simone Atzori, Elisa Trasatti, Marco Polcari, Giuseppe Puglisi, Salvatore Stramondo, Stefano Salvi, Istituto Nazionale di Geofisica e Vulcanologia, Italy

WE2.R8.5
12:00
COMPARISON OF DIFFERENT MACHINE LEARNING MODELS FOR LANDSLIDE SUSCEPTIBILITY MAPPING
Yaning Yi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Zhijie Zhang, University of Connecticut, United States; Wanchang Zhang, Chi Xu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEDNESDAY ORAL

Wednesday, July 31	13:40 - 15:20	Room 414-415
Session WE3.R8		Oral

Monitoring and Damage Assessment of Landslide and Surface Deformation

Session Chair: Takahiro Abe, Japan Aerospace Exploration Agency

WE3.R8.1
13:40
LANDSLIDE IDENTIFICATION BASED ON HIERARCHICAL FUZZY CONTOUR MODEL CLUSTERING ALGORITHM USING POLSAR IMAGES
Cong Wang, Yan Chen, Min Du, University of Electronic Science and Technology of China, China; Lei Wu, Yunping Chen, Deep Blue Remote Sensing Technology Co,Ltd, China

WE3.R8.2
14:00
LANDSLIDE MAPPING AND ANALYSIS USING MULTI-SOURCE DATA AND ONE-CLASS RANDOM FOREST
Junru Liu, Peijun Li, Peking University, China

WE3.R8.3
14:20
A HYBRID DAMAGE DETECTION APPROACH BASED ON MULTI-TEMPORAL COHERENCE AND AMPLITUDE ANALYSIS FOR DISASTER RESPONSE
Jungkyo Jung, Sang-Ho Yun, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE3.R8.4
14:40
SURFACE CHANGES DUE TO THE 2018 ERUPTION OF SIERRA NEGRA VOLCANO IN GALÁPAGOS ISLAND REVEALED BY ALOS-2/PALSAR-2
Takahiro Abe, Masato Ohki, Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan

WE3.R8.5
15:00
MULTI-TEMPORAL DINSAR TECHNIQUES TO MONITOR THE ACTIVITY OF ASO AND SAKURAJIMA VOLCANOES, JAPAN
Giulia Tessari, sarmap SA, Switzerland; Silvia Puliero, Lisa Beccaro, University of Padova, Italy; Andrey Giardino, sarmap SA, Switzerland; Mario Floris, Andrea Marzoli, University of Padova, Italy; Fumitaka Ogushi, Harris Japan, Japan; Paolo Pasquali, sarmap SA, Switzerland

Wednesday, July 31	16:20 - 18:00	Room 414-415
Session WE4.R8		Oral

Monitoring and Damage Assessment of Tropical Storm

Session Chair: Clair Stark, University of New South Wales

WE4.R8.1
16:20
MODELLING TROPICAL CYCLONE WIND RADII IN THE AUSTRALIAN REGION USING THE DEVIATION ANGLE VARIANCE TECHNIQUE
Clair Stark, Elizabeth Ritchie, J. Scott Tyo, University of New South Wales, Australia

WE4.R8.2
16:40
MODELING PARAMETERS AND IMPACTS OF FUTURE CYCLONES: SOUTH-EAST ASIAN AND NORTHERN EUROPEAN CASE STUDIES
Martin Mäll, Waseda University, Japan; Ülo Suursaar, University of Tartu, Estonia; Ryota Nakamura, Niigata University, Japan; Khandker Masuma Tasnim, Weathernews Inc., Japan; Tomoya Shibayama, Waseda University, Japan

WE4.R8.3
17:00
POLARIMETRIC RADAR-BASED QUANTITATIVE PRECIPITATION ESTIMATION DURING TYPHOON EVENTS OVER SOUTHERN CHINA
Qiulei Xia, Chengdu University of Information Technology, China; Haonan Chen, Colorado State University / NOAA Earth System Research Laboratory, United States; Wenjuan Zhang, Chinese Academy of Meteorological Sciences, China; Jieying He, National Space Science Center, Chinese Academy of Sciences, China; Zhendong Yao, Chengdu University of Information Technology, China

WE4.R8.4
17:20
DEEP LEARNING-BASED MONITORING AND FORECAST OF THE INTENSITY OF TROPICAL CYCLONES
Jungho Im, Cheolhee Yoo, Dongjin Cho, Kyoungmin Kim, Juhyun Lee, Dong-Hyun Cha, Tsz-Chiu Au, Ulsan National Institute of Science and Technology, Korea (South)

WE4.R8.5
17:40
RECOVERY MONITORING IN HAITI AFTER HURRICANE MATTHEW THROUGH MARKOV RANDOM FIELDS AND A REGION-BASED APPROACH
Andrea De Giorgi, Gabriele Moser, Giorgio Boni, University of Genoa, Italy; Anna Rita Pisani, Deodato Tapete, Simona Zoffoli, Agenzia Spaziale Italiana (ASI), Italy; Sebastiano Bruno Serpico, University of Genoa, Italy

Wednesday, July 31	08:00 - 09:40	Room 416-417
Session WE1.R9		Oral

Differential SAR Interferometry: Applications II

Session Co-Chairs: Othmar Frey, ETH; Homa Ansari, German Aerospace Center (DLR)

WE1.R9.1
08:00
EVALUATION OF ENSEMBLE COHERENCE AS A MEASURE FOR STOCHASTIC AND SYSTEMATIC PHASE INCONSISTENCIES
Homa Ansari, Fernando Rodriguez Gonzalez, Ramon Brcic, Francesco De Zan, German Aerospace Center (DLR), Germany

WE1.R9.2
08:20
INSAR REVEALS THE LONG TERM SUBSIDENCE AND POTENTIAL LANDDEGRADATION IN MEXICO CITY FROM 2004 TO 2018 WITH FIVE SAR SENSORS
Zheyuan Du, Linlin Ge, Alex Hay-Man Ng, University of New South Wales, Australia

WE1.R9.3
08:40
POTENTIAL LANDSLIDE EARLY IDENTIFICATION ALONG NU RIVER WITH TIME SERIES INTERFEROMETRY
Jing Wang, Chao Wang, Hong Zhang, Yixian Tang, Wei Duan, Chinese Academy of Sciences, China

WE1.R9.4
09:00
INFRASTRUCTURE STABILITY ANALYSIS BY COSMO-SKYMED PSP SAR INTERFEROMETRY: SPATIO-TEMPORAL ANALYSIS AND 3D MODELING
Salvatore Falco, Federico Minati, Francesco Vecchioli, Mario Costantini, e-GEOS - Italian Space Agency / Telespazio, Italy

WE1.R9.5
09:20
AUTOMATIC DETECTION OF INSAR DEFORMATION SIGNALS ASSOCIATED WITH HYDROCARBON PRODUCTION AND WASTEWATER INJECTION USING LAPLACIAN OF GAUSSIAN FILTERING
Scott Staniewicz, Jingyi Chen, Ellen Rathje, Jon Olson, University of Texas at Austin, United States

Wednesday, July 31	10:40 - 12:20	Room 416-417
Session WE2.R9		Oral

Earth Observation Applications

Session Chair: Heather McNairn, Agriculture and Agri-Food Canada

WE2.R9.1
10:40
AN ANISOTROPIC SCATTERING ANALYSIS METHOD BASED ON LIKELIHOOD RATIO USING CIRCULAR SAR DATA
Fei Teng, Wen Hong, Institute of Electronics, Chinese Academy of Sciences, China; Yun Lin, North China University of Technology, China; Bing Han, Institute of Electronics, Chinese Academy of Sciences, China; Yanping Wang, North China University of Technology, China; Wenjie Shen, Shanshan Feng, Institute of Electronics, Chinese Academy of Sciences, China

WE2.R9.2
11:00
IMPACTS OF THE ANISOTROPIC IRREGULAR IONOSPHERE ON SPACEBORNE P-BAND SYNTHETIC APERTURE RADAR IMAGING
Yifei Ji, Zhen Dong, Qilei Zhang, Yongsheng Zhang, Dexin Li, Yi Su, National University of Defense Technology, China; Baidong Yao, East China Research Institute of Electronic Engineering, China

WE2.R9.3
11:20
COSMO-SKYMED FOR UNSUPERVISED URBAN CHANGE DETECTION USING RADAR BACKSCATTERING AND INTERFEROMETRIC COHERENCE
Alessia Benedetti, University of Rome Tor Vergata, Italy; Matteo Picchiani, Daniele Latini, GEO-K s.r.l., Italy; Fabio Del Frate, Giovanni Schiavon, University of Rome Tor Vergata, Italy

WE2.R9.4
11:40
ASSESSMENT OF MULTI-FREQUENCY SAR FOR CROP TYPE CLASSIFICATION AND MAPPING
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada

WE2.R9.5
12:00
SOIL SALINITY MAPPING WITH POLARIMETRIC SAR IMAGES IN QINGHAI LAKE WATERSHED
Dianji Jia, Tingting Zhang, Yun Shao, Key Laboratory of Target Microwave Properties and Remote Sensing of Zhejiang Province, China

Wednesday, July 31	13:40 - 15:20	Room 416-417
Session WE3.R9		Oral

Airborne SAR

Session Chair: Lars Ulander, Chalmers University of Technology

WE3.R9.1
13:40
AIRBORNE SAR FOCUSING IN THE PRESENCE OF SEVERE SQUINT VARIATIONS
Paolo Berardino, Carmen Esposito, Antonio Natale, Riccardo Lanari, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Stefano Perna, Università degli Studi di Napoli "Parthenope", Italy

WE3.R9.2
14:00
AIRBORNE SAR FOR CALIBRATION OF P-BAND TOWER RADAR
Lars Ulander, Albert Monteith, Chalmers University of Technology, Sweden; Per-Olov Frölind, Anders Gustavsson, Anders Haglund, Rolf Ragnarsson, Gunnar Stenström, Swedish Defence Research Agency (FOI), Sweden

WE3.R9.3
14:20
UAVSAR REAL-TIME EMBEDDED GPU PROCESSOR
Brian Hawkins, Wayne Tung, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE3.R9.4
14:40
THREE-DIMENSIONAL IMAGING OF DRONE FLEET BORNE RADARS USING FREQUENCY-DIVISION SIGNALS
Jubo Hao, Jin Li, Shuliang Gui, Xin Fang, Yiming Pi, University of Electronic Science and Technology of China, China

WE3.R9.5
15:00
DEM EXTRACTION USING C-BAND CIRCULAR SAR DATA
Shanshan Feng, Institute of Electronics, Chinese Academy of Sciences, China; Yun Lin, North China University of Technology, China; Wen Hong, Bing Han, Institute of Electronics, Chinese Academy of Sciences, China; Yanping Wang, North China University of Technology, China; Yanhui Yang, Beijing Institute of Remote Sensing Equipment, China; Wenjie Shen, Fei Teng, Institute of Electronics, Chinese Academy of Sciences, China

Wednesday, July 31	16:20 - 18:00	Room 416-417
Session WE4.R9		Oral

SAR Statistics & Parameter Estimation

Session Chair: Rémy Abergel, Université Paris Descartes, Sorbonne Paris Cité

WE4.R9.1
16:20
AN IMPROVED PARAMETER ESTIMATION OF LFM SIGNAL BASED ON MCKF
Tong Gu, Guisheng Liao, Yachao Li, Yinghui Quan, Yifan Guo, Yan Huang, Xidian University, China

WE4.R9.2
16:40
SIMULTANEOUS NARROWBAND AND WIDEBAND INTERFERENCE SUPPRESSION ON SINGLE-CHANNEL SAR SYSTEM VIA LOW-RANK RECOVERY
Yan Huang, Southeast University, China; Lan Lan, Xidian University, China; Lei Zhang, Sun Yat-Sen University, China; Zhanye Chen, Xidian University, China; Gang Xu, Southeast University, China

WE4.R9.3
17:00
COMPACT POLARIMETRIC SAR IMAGE SUPER-RESOLUTION THROUGH A MODIFIED NEURO TREE NETWORK
Shenlong Lou, Qiancong Fan, Feng Chen, Xiamen University, China; Rulin Xiao, Satellite Environmental Center, China; Ming Chen, Yiping Chen, Cheng Wang, Jonathan Li, Xiamen University, China

WE4.R9.4
17:20
RESOLUTION-PRESERVING SPECKLE REDUCTION OF SAR IMAGES: THE BENEFITS OF SPECKLE DECORRELATION AND TARGETS EXTRACTION
Rémy Abergel, Laboratoire MAP5 (CNRS UMR 8145), Université Paris Descartes, Sorbonne Paris Cité, France; Loïc Denis, Univ Lyon, UJM-Saint-Etienne, Institut d'Optique Graduate School, Laboratoire Hubert Curien CNRS UMR 5516, Saint-Etienne, France; Florence Tupin, Saïd Ladjal, LTCI, Télécom ParisTech, Université Paris Saclay, France; Charles-Alban Deledalle, Institut de Mathématiques de Bordeaux, Université Bordeaux, France; Andrés Almansa, Laboratoire MAP5 (CNRS UMR 8145), Université Paris Descartes, Sorbonne Paris Cité, France

WE4.R9.5
17:40
A NOVEL WAVEFORM OPTIMIZATION FRAMEWORK
Guodong Jin, Yunkai Deng, Robert Wang, Pei Wang, Yajun Long, Wei Wang, Yongwei Zhang, Institute of Electronics, Chinese Academy of Sciences, China

Wednesday, July 31	08:00 - 09:40	Room 418
Session WE1.R10		**Oral-Invited**

Technology Validation and Science using CubeSat Platforms I

Session Co-Chairs: Sachidananda Babu, NASA Earth Science Technology Office; Pamela Millar, NASA Earth Science Technology Office

WE1.R10.1
08:00
PROGRAMATIC OVERVIEW OF NASA SCIENCE WITH SMALL SPACECRAFT
Charles Norton, National Aeronautics and Space Administration (NASA), United States

WE1.R10.2
08:20
RADIOMETER ASSESSMENT USING VERTICALLY ALIGNED NANOTUBES (RAVAN)
William Swartz, Johns Hopkins University Applied Physics Laboratory, United States; Steven Lorentz, L-1 Standards and Technology, United States; Philip Huang, Sonia Reilly, Nolan Reilly, Stergios Papadakis, Johns Hopkins University Applied Physics Laboratory, United States

WE1.R10.3
08:40
RAINCUBE - A NEW PARADIGM TO OBSERVE WEATHER PROCESSES
Eva Peral, Simone Tanelli, Shannon Statham, Shivani Joshi, Ousmane Sy, Travis Imken, Douglas Price, Jonathan Sauder, Nacer Chahat, Eastwood Im, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE1.R10.4
09:00
HYTI: THERMAL HYPERSPECTRAL IMAGING FROM A CUBESAT PLATFORM
Robert Wright, University of Hawaii at Manoa, United States; Miguel Nunes, Hawaii Space Flight Laboratory, United States; Paul Lucey, Hawaii Institute of Geophysics and Planetology, United States; Luke Flynn, Hawaii Space Flight Laboratory, United States; Thomas George, SaraniaSat Inc., United States; Sarath Gunapala, David Ting, Sir Rafol, Alexander Soibel, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Chiara Ferrari-Wong, Abigail Flom, Hawaii Institute of Geophysics and Planetology, United States; John Mecikalski, University of Alabama Huntsville, United States; Prasad Thenkabail, United States Geological Survey, United States

WE1.R10.5
09:20
CUBERRT: FIRST EVER DEMONSTRATION OF SPACEBORNE ON-BOARD RADIO FREQUENCY INTERFERENCE FILTERING TECHNOLOGY
Sidharth Misra, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Joel Johnson, Mark Andrews, Christopher Ball, Ohio State University, United States; Rudi Bendig, Shannon Brown, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Quenton Bonds, NASA Goddard Space Flight Center, United States; Lauren Burton, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Chi-Chih Chen, Ohio State University, United States; Joelle Cooperrider, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Carlos Duran-Aviles, NASA Goddard Space Flight Center, United States; Carl Felten, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Matthew Fritts, NASA Goddard Space Flight Center, United States; J. Landon Gary, Ohio State University, United States; Kevin Horgan, NASA Goddard Space Flight Center, United States; Robert Jarnot, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jonathon Kocz, California Institute of Technology, United States; Joseph Knuble, NASA Goddard Space Flight Center, United States; Ervin Kraus, Doug Laczkowski, Blue Canyon Technologies, United States; Heather Lim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Daniel Lu, A.K. Aerospace Technology Corporation / NASA Goddard Space Flight Center, United States; Jared Lucey, NASA Goddard Space Flight Center, United States; Christa Mckelvey, Ohio State University, United States; Shawn McMurphy, A.S. & D Inc and NASA Goddard Space Flight Center, United States; Andrew O'Brien, Ohio State University, United States; Matthew Pallas, Blue Canyon Technologies, United States; Prashanth Pandian, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jinzheng Peng, NASA Goddard Space Flight Center / Universities Space Research Association, United States; Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States; Rick Raffanti, Techne Instruments, United States; Graeme Smith, Ohio State University, United States; Michael Solly, Charles Turner, NASA Goddard Space Flight Center, United States

Wednesday, July 31	13:40 - 15:20	Room 418
Session WE3.R10		**Oral**

Microwave Radiometer Instruments and Calibration I

Session Co-Chairs: David Le Vine, NASA Goddard Space Flight Center; Roger Oliva, European Space Agency; Javier Bosch-Lluis, Jet Propulsion Laboratory

WE3.R10.1
13:40
SMAP OBSERVATIONS OF THE FOURTH STOKES PARAMETER AT L-BAND
Yan Soldo, NASA Goddard Space Flight Center / Chapman University / Universities Space Research Association, United States; David Le Vine, National Aeronautics and Space Administration (NASA), United States; Emmanuel Dinnat, NASA Goddard Space Flight Center / Chapman University, United States

WE3.R10.2
14:00
FIRST RESULTS FROM THE TEMPEST-D IMAGING MICROWAVE RADIOMETER IN A 6U CUBESAT
Shannon Brown, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Wes Berg, Colorado State University, United States; Todd Gaier, Boon Lim, Sharmila Padmanabhan, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Steven Reising, Chandrasekaran Venkatachalam, Colorado State University, United States

WE3.R10.3
14:20
MIRAS TEMPORAL STABILITY
Ignasi Corbella, Francesc Torres, Nuria Duffo, Israel Duran, Universitat Politècnica de Catalunya (UPC), Spain; Veronica González-Gambau, Institute of Marine Sciences (ICM-CSIC), Spain; Roger Oliva, Manuel Martin-Neira, European Space Agency (ESA), Spain

WE3.R10.4
14:40
MULTI-CHANNEL CORRELATOR ARRAY-FED MICROWAVE RADIOMETER
Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States; Ali Mahnad, Science Systems and Applications, Inc., United States; Giovanni De Amici, NASA Goddard Space Flight Center, United States; Jinzheng Peng, Universities Space Research Association, United States; Jared Jordan, Ken Vanhille, Nuvotronics, Inc., United States; Thomas Holmes, Paul Racette, NASA Goddard Space Flight Center, United States

WE3.R10.5
15:00
MULTIYEAR SEA ICE THICKNESS ESTIMATION USING WIDEBAND P/L-BAND RADIOMETRIC MEASUREMENTS
Xavier Bosch-Lluis, Sidharth Misra, Carl Felten, Mehmet Ogut, Isaac Perez-Ramos, Barron Latham, Simon Yueh, Shannon Brown, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

Wednesday, July 31	10:40 - 12:20	Room 418
Session WE2.R10		**Oral-Invited**

Technology Validation and Science using CubeSat Platforms II

Session Co-Chairs: Charles Norton, NASA Jet Propulsion Laboratory; Robert Estep, NASA Goddard Space Flight Center

WE2.R10.1
10:40
ADVANCING TECHNOLOGY FOR NASA SCIENCE WITH SMALL SPACECRAFT
Michael Seablom, Florence Tan, Charles Norton, Christopher Baker, Pamela Millar, Carolyn Mercer, Daniel Moses, National Aeronautics and Space Administration (NASA), United States

WE2.R10.2
11:00
CYGNSS SMALLSAT MISSION DESIGN, ENGINEERING PERFORMANCE AND SCIENCE RESULTS
Christopher Ruf, Darren McKague, University of Michigan, United States; Scott Gleason, UCAR, United States

WE2.R10.3
11:20
GLOBAL OBSERVATIONS PERFORMED BY A WELL-CALIBRATED, STABLE MICROWAVE ATMOSPHERIC SOUNDING RADIOMETER: TEMPORAL EXPERIMENT FOR STORMS AND TROPICAL SYSTEMS DEMONSTRATION (TEMPEST-D) MISSION
Steven C. Reising, Colorado State University, United States; Todd C. Gaier, Shannon T. Brown, Sharmila Padmanabhan, Boon H. Lim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Christian D. Kummerow, Wesley Berg, V. Chandrasekar, Colorado State University, United States; Cate Heneghan, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Richard Schulte, C. Radhakrishnan, Colorado State University, United States; Matthew Pallas, Doug Laczkowski, Austin Bullard, Blue Canyon Technologies, United States

WE2.R10.4
11:40
TECHNOLOGY EVOLUTION TO ENABLE HIGH-PERFORMANCE CUBESAT RADIOMETRY MISSIONS
William Blackwell, Massachusetts Institute of Technology, Lincoln Laboratory, United States

WE2.R10.5
12:00
SNOOPI: A TECHNOLOGY VALIDATION MISSION FOR P-BAND REFLECTOMETRY USING SIGNALS OF OPPORTUNITY
James Garrison, Jeffrey Piepmeier, Purdue University, United States; Rashmi Shah, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Manuel Vega, NASA Goddard Space Flight Center, United States; David Spencer, Purdue University, United States; Roger Banting, Cynthia Firman, NASA Goddard Space Flight Center, United States; Benjamin Nold, Purdue University, United States; Kameron Larsen, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Rajat Bindlish, NASA Goddard Space Flight Center, United States

Wednesday, July 31	16:20 - 18:00	Room 418
Session WE4.R10		**Oral**

Microwave Radiometer Instruments and Calibration IV

Session Co-Chairs: Roger Oliva, European Space Agency; Javier Bosch-Lluis, Jet Propulsion Laboratory

WE4.R10.1
16:20
CALIBRATION OF MULTI-CHANNEL MILLIMETER-WAVE RADIOMETERS OF GEOSYNCHRONOUS FY-4M USING BRIGHTNESS TEMPERATURE OF THE LUNAR SURFACE AT MILLIMETER CHANNELS
Liu Niutao, Jin Ya-Qiu, Fudan University, China

WE4.R10.2
16:40
REFINING THE METHODOLOGY TO CORRECT THE FARADAY ROTATION ANGLE FROM SMOS MEASUREMENTS
Roselena Rubino, Nuria Duffo Ubeda, Universitat Politècnica de Catalunya (UPC), Spain; Verónica González-Gambau, Barcelona Expert Centre, Spain; Ignasi Corbella, Israel Durán, Francesc Torres, Universitat Politècnica de Catalunya (UPC), Spain; Manuel Martín-Neira, European Space Agency (ESA), Netherlands

WE4.R10.3
17:00
PRELIMINARY SYSTEM STUDIES ON A HIGH-RESOLUTION SMOS FOLLOW-ON: SMOS-HR
Eric Anterrieu, Nemezio Rodriguez-Fernandez, Bernard Rougé, François Cabot, Philippe Richaume, Ali Khazaal, Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Jean-Michel Morel, Miguel Colom, CMLA, France; Josianne Costerate, Baptiste Palacin, Raquel Rodriguez-Suquet, CNES, France; Thierry Tournier, Thibaut Decoopman, Romain Caujolle, Nicolas Jeannin, Laurent Costes, Frédéric Payot, Airbus Defence and Space, France

WE4.R10.4
17:20
COMPARISONS BETWEEN HY-2B SMR AND GMI BRIGHTNESS TEMPERATURE FROM 6 TO 37GHZ OVER THE OCEAN
Chaofei Ma, Wu Zhou, National Satellite Ocean Application Service, China; Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd, China; Rui Yu, Xi'an Institute of Space Radio Technology, Chinese Academy of Space Technology, China; Ninghui Diao, National Satellite Ocean Application Service, China; Shishuai Wang, Beijing Piesat Information Technology Co. Ltd, China

WE4.R10.5
17:40
A NEXT GENERATION MICROWAVE RADIOMETER FOR COLD WATER SALINITY MEASUREMENT
Sidharth Misra, Javier Bosch-Lluis, Carl Felten, Mehmet Ogut, Isaac Ramos-Perez, Barron Latham, Tong Lee, Simon Yueh, Shannon Brown, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEDNESDAY ORAL

Wednesday, July 31	08:00 - 09:40	Room 419
Session WE1.R11		Oral

Target and Anomaly Detection in Hyperspectral Images

Session Co-Chairs: Xudong Kang, Hunan University; Stefania Matteoli, National Research Council of Italy

WE1.R11.1
08:00
ISOLATION FOREST FOR ANOMALY DETECTION IN HYPERSPECTRAL IMAGES
Kunzhong Zhang, Xudong Kang, Shutao Li, Hunan University, China

WE1.R11.2
08:20
A KERNEL BACKGROUND PURIFICATION BASED ANOMALY TARGET DETECTION ALGORITHM FOR HYPERSPECTRAL IMAGERY
Yan Zhang, Mingming Xu, Yanguo Fan, China University of Petroleum (East China), China; Yuxiang Zhang, Yanni Dong, China University of Geosciences, China

WE1.R11.3
08:40
PREDICTION AND ASSESSMENT COMPARISON FOR OPTIMIZING SPECTRAL IMAGING SYSTEM DESIGN
Sanghui Han, John Kerekes, Rochester Institute of Technology, United States; Shawn Higbee, Lawrence Siegel, Alex Pertica, Lawrence Livermore National Laboratory, United States

WE1.R11.4
09:00
NONPARAMETRIC TARGET DETECTION WITH TARGET STRENGTH ESTIMATION FOR HYPERSPECTRAL IMAGES
Stefania Matteoli, National Research Council of Italy, Italy; Marco Diani, Italian Naval Academy, Italy; Giovanni Corsini, University of Pisa, Italy

WE1.R11.5
09:20
CARBON MONOXIDE (CO) DETECTION IN SHIP GAS PLUME USING IMAGE BASED SIGNATURE EXTRACTION IN MWIR HYPERSPECTRAL IMAGERY
Şafak Öztürk, Yusuf Artan, Yunus Emre Esin, Ömer Özdil, Berkan Demirel, HAVELSAN Inc., Turkey

Wednesday, July 31	10:40 - 12:20	Room 419
Session WE2.R11		Oral

Target Detection III

Session Chair: Richard Bamler, German Aerospace Center (DLR)

WE2.R11.1
10:40
PARAMETERS ESTIMATION OF HIGH SPEED MANEUVERING TARGET WITH MICRO MOTION IN GEOSAR
Jindong Yu, Ze Yu, Chunsheng Li, Beihang University, China

WE2.R11.2
11:00
MOVING TARGET TRACKING ON EFFICIENT CONVOLUTION OPERATORS FOR SAR
Zihan Liang, Harbin Institute of Technology, China; Yadong Lu, Beijing Institute of Spacecraft System Engineering, China; Pengfei Zhao, Yun Zhang, Huilin Mu, Harbin Institute of Technology, China

WE2.R11.3
11:20
SAR SHIP DETECTION FOR ROUGH SEA CONDITIONS
Pasquale Iervolino, Raffaella Guida, Donato Amitrano, University of Surrey, United Kingdom; Armando Marino, University of Stirling, United Kingdom

WE2.R11.4
11:40
MOVING TARGET INDICATION IN MODERATE RESOLUTION, PASSIVE MISR SATELLITE IMAGERY
Michael Garay, Kiri Wagstaff, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE2.R11.5
12:00
INTERMITTENT SAMPLING DECEPTIVE JAMMING SUPPRESSION FOR SAR BASED ON AZIMUTH PHASE CODING
Zhouyang Tang, Yunkai Deng, Robert Wang, Huifang Zheng, Institute of Electronics, Chinese Academy of Sciences, China

Wednesday, July 31	13:40 - 15:20	Room 419
Session WE3.R11		Oral

Unmixing and Target Detection in Hyperspectral and Multispectral Images

Session Chair: Yannick Deville, Institut de Recherche en Astrophysique et Planetologie (IRAP), Toulouse

WE3.R11.1
13:40
LOCAL BLOCK GROUPING WITH NAPCA SPATIAL PREPROCESSING FOR HYPERSPECTRAL REMOTE SENSING IMAGERY SPARSE UNMIXING
Ruyi Feng, Lizhe Wang, China University of Geosciences (Wuhan), China; Yanfei Zhong, Wuhan University, China

WE3.R11.2
14:00
FAST LINEAR UNMIXING OF HYPERSPECTRAL IMAGE BY SLOW FEATURE ANALYSIS AND SIMPLEX VOLUME RATIO APPROACH
Samiran Das, Sohom Chakraborty, Aurobinda Routray, Alok Kanti Deb, IIT Kharagpur, India

WE3.R11.3
14:20
MULTITASK LEARNING FOR SPATIAL-SPECTRAL HYPERSPECTRAL UNMIXING
Burkni Palsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland

WE3.R11.4
14:40
BACKGROUND GUIDED TARGET DETECTION FOR HYPERSPECTRAL IMAGE
Chongxiao Zhong, Junping Zhang, Harbin Institute of Technology, China

WE3.R11.5
15:00
A SUB-PIXEL MAPPING METHOD BASED ON LOGISTIC REGRESSION AND PIXEL-SWAPPING MODEL
Lijuan Su, Yue Xu, Yan Yuan, Jingyi Yang, Beihang University, China

Wednesday, July 31	16:20 - 18:00	Room 419
Session WE4.R11		Oral

Super-resolution and Multiresolution Fusion Techniques II

Session Chair: Pedram Ghamisi, German Aerospace Center (DLR) and Technical University of Munich (TUM)

WE4.R11.1
16:20
HYPERSPECTRAL PANSHARPENING BASED ON GUIDED FILTER AND DEEP RESIDUAL LEARNING
Yuxuan Zheng, Jiaojiao Li, Yunsong Li, Xidian University, China

WE4.R11.2
16:40
PATCH BASED PANSHARPENING USING WEIGHTED NUCLEAR NORM MINIMIZATION
Kai Zhang, Feng Zhang, School of Information Science and Engineering, Shandong Normal University, China

WE4.R11.3
17:00
DEEP SPECTRAL SUPER-RESOLUTION WITH NOISY INPUT
Zhiqiang Lang, Northwestern Polytechnical University, China; Lei Zhang, University of Adelaide, China; Wei Wei, Jiangtao Nie, Northwestern Polytechnical University, China; Chunna Tian, School of Electronic and Engineering, Xidian University, China; Yanning Zhang, Northwestern Polytechnical University, China

WE4.R11.4
17:20
SUPER-RESOLUTION OF SENTINEL-2 IMAGES BASED ON DEEP CHANNEL-ATTENTION RESIDUAL NETWORK
Xi Zhu, Yang Xu, Zhihui Wei, Nanjing University of Science and Technology, China

WE4.R11.5
17:40
HYPERSPECTRAL AND PANCHROMATIC IMAGE FUSION BASED ON WEIGHTED TENSOR MATRIX
Jiahui Qu, State Key Lab. of Integrated Service Networks, Xidian University, China; Qian Du, Mississippi State University, United States; Yunsong Li, Wenqian Dong, State Key Lab. of Integrated Service Networks, Xidian University, China

Wednesday, July 31	08:00 - 09:40	Room 421
Session WE1.R12		**Oral**

Ocean Biology and Water Quality I

Session Co-Chairs: Katalin Blix, UIT The Arctic University of Norway; Xiaofeng Li, NOAA

WE1.R12.1
08:00
A GENERALIZED CHLOROPHYLL-A ESTIMATION MODEL FOR COMPLEXITY-DIVERSE ARCTIC WATERS
Katalin Blix, Torbjørn Eltoft, Arctic University of Norway, Norway

WE1.R12.2
08:20
COMBINED USE OF SAR AND UNDERWATER GLIDERS FOR OIL SEEPS DETECTION
Damien Dhont, Romain Jatiault, Philippe Lattes, TOTAL SA, France

WE1.R12.3
08:40
INVERSION OF CHROMOPHORIC DISSOLVED ORGANIC MATTER USING SPARSE REGRESSION
Ruihao Zhang, Ruru Deng, Yan Qin, Yeheng Liang, Yingfei Liu, Yongming Liu, Sun Yat-Sen University, China

WE1.R12.4
09:00
VIIRS-DERIVED INHERENT OPTICAL PROPERTY DATA OVER GLOBAL COASTAL AND INLAND WATERS USING THE NIR-BASED APPROACH
Wei Shi, Menghua Wang, NOAA/NESDIS/STAR, United States

WE1.R12.5
09:20
PRELIMINARY VALIDATION OF SENTINEL 3A OLCI BIO-OPTICAL PRODUCTS IN SOUTH CHINA SEA
Bing Han, Jianhua Zhu, Tongji Li, Jun Li, Di Jia, Kai Guo, Zhifeng Li, An'An Yang, National Ocean Technology Center, China

Wednesday, July 31	10:40 - 12:20	Room 421
Session WE2.R12		**Oral**

Ocean Surface Winds and Currents IV

Session Co-Chairs: Xiaolong Dong, Chinese Academy of Sciences; Alexander Fore, Jet Propulsion Laboratory

WE2.R12.1
10:40
PRELIMINARY RESULTS OF THE CFOSAT SCATTEROMETER
Xiaolong Dong, Di Zhu, Chinese Academy of Sciences, China; Lei Zhang, DFH Satellite co., Ltd, China; Risheng Yun, Chinese Academy of Sciences, China; Wenming Lin, Nanjing University of Information Science and Technology, China; Shuyan Lang, National Satellite Ocean Application Service, China

WE2.R12.2
11:00
SYNERGISTIC USE OF SATELLITE ACTIVE AND PASSIVE MICROWAVE OBSERVATIONS TO ESTIMATE TYPHOON INTENSITY
Xiaofeng Yang, Kunsheng Xiang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Kaijun Ren, National University of Defense Technology, China

WE2.R12.3
11:20
ON EXTREME WINDS AT L-BAND WITH THE SMAP SYNTHETIC APERTURE RADAR
Alexander Fore, Simon Yueh, Bryan Stiles, Wenqing Tang, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE2.R12.4
11:40
SENSITIVITY OF GNSS-R DELAY-DOPPLER MAPS TO WIND DIRECTION WITH A DECONVOLUTION APPROACH
Maurizio di Bisceglie, Carmela Galdi, Generoso Giangregorio, Università degli Studi del Sannio, Italy

WE2.R12.5
12:00
AN EVALUATION OF CYGNSS TROPICAL CYCLONE GALE WIND RADII ESTIMATES
Mary Morris, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Charles Sampson, Naval Research Laboratory, United States

Wednesday, July 31	13:40 - 15:20	Room 421
Session WE3.R12		**Oral**

Ocean Surface Winds and Currents V

Session Co-Chairs: ronan fablet, IMT Atlantique/Lab-STICC; Paul Hwang, U.S. Naval Research Laboratory

WE3.R12.1
13:40
THE IMPACT OF RAIN ON L1 GNSS-R RADAR SCATTERING CROSS-SECTION
Rajeswari Balasubramaniam, Christopher Ruf, University of Michigan, Ann Arbor, United States

WE3.R12.2
14:00
FREQUENCY AND DIRECTIONAL RESPONSE OF OCEAN SURFACE FOAM IN MICROWAVE EMISSION
Paul Hwang, U.S. Naval Research Laboratory, United States; Nicolas Reul, IFREMER, France; Thomas Meissner, Remote Sensing Systems, United States; Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE3.R12.3
14:20
CHARACTERISTICS OF MARINE ATMOSPHERIC BOUNDARY LAYER ROLL VORTICES FROM SENTINEL-1 SAR WAVE MODE
Chen Wang, Alexis Mouche, Laboratoire d'Oceanographie Physique et Spatiale, Ifremer, France; Ralph Foster, Applied Physics Laboratory, University of Washington, United States; Douglas Vandemark, Ocean Processes Analysis Laboratory, University of New Hampshire, United States; Justin Stopa, University of Hawaii at Manoa, United States; Pierre Tandeo, Institut Mines-Télécom Atlantique, UMR 6285 Lab STICC, Université Bretagne Loire, Technopôle Brest-Iroise CS 83818, France; Nicolas Longépé, Space and Ground Segment, Collecte Localisation Satellites (CLS), France; Bertrand Chapron, Laboratoire d'Oceanographie Physique et Spatiale, Ifremer, France

WE3.R12.4
14:40
SPACEBORNE GNSS-R USING THE SMAP RADAR RECEIVER (SMAP-R): OCEAN WIND VECTOR SENSITIVITY INVESTIGATION
Mary Morris, Sidharth Misra, Nereida Rodriguez-Alvarez, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE3.R12.5
15:00
LEARNING DIFFERENTIAL TRANSPORT OPERATORS FOR THE JOINT SUPER-RESOLUTION OF SEA SURFACE TRACERS AND PREDICTION OF SUBGRID-SCALE FEATURES
Ronan Fablet, IMT Atlantique/Lab-STICC, France; Julien Le Sommer, J.M. Molines, IGE, France; Lucas Drumetz, IMT Atlantique/Lab-STICC, France; François Rousseau, IMT Atlantique, France; Bertrand Chapron, Ifremer/LOPS, France

Wednesday, July 31	16:20 - 18:00	Room 421
Session WE4.R12		**Oral**

Ocean Surface Salinity and Temperature II

Session Co-Chairs: Wenqing Tang, Jet Propulsion Laboratory; Emmanuel Dinnat, Chapman University / NASA-GSFC

WE4.R12.1
16:20
THE JPL SMAP SEA SURFACE SALINITY ALGORITHM
Alexander Fore, Simon Yueh, Wenqing Tang, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE4.R12.2
16:40
A THEORETICAL ALGORITHM FOR THE RETRIEVAL OF SEA SURFACE SALINITY FROM SMAP OBSERVATIONS
Emmanuel Dinnat, Chapman University / NASA Goddard Space Flight Center, United States; David Le Vine, NASA Goddard Space Flight Center, United States; Yan Soldo, Paolo de Matthaeis, USRA, United States

WE4.R12.3
17:00
VARIABILITY OF SPACEBASED SEA SURFACE SALINITY AND FRESHWATER CONTENTS IN THE HUDSON BAY
Wenqing Tang, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Daqing Yang, Ellie Mcleod, Environment and Climate Change Canada, Canada; Alexander Fore, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Estrella Olmedo, Justino Martinez, Carolina Gabarró, Barcelona Expert Center, Spain

WE4.R12.4
17:20
CHARACTERIZATION AND CORRECTION OF THE LATITUDINAL AND SEASONAL BIAS IN BEC SMOS SEA SURFACE SALINITY MAPS
Estrella Olmedo, Verónica González-Gambau, Justino Martínez, Cristina González-Haro, Antonio Turiel, Marcos Portabella, BEC and Institute of Marine Sciences, Spain; Manuel Arias, Argans Limited UK, United Kingdom; Roberto Sabia, Roger Oliva, European Space Agency (ESA), Italy; Ignasi Corbella, Remote Sensing Laboratory, Universitat Politècnica de Catalunya, Spain

WE4.R12.5
17:40
SATELLITE SEA SURFACE SALINITY: EVALUATION OF PRODUCTS AND IMPACT OF RETRIEVAL ALGORITHMS
Emmanuel Dinnat, Chapman University / NASA Goddard Space Flight Center, United States; David Le Vine, NASA Goddard Space Flight Center, United States; Jacqueline Boutin, LOCEAN, France; Thomas Meissner, Remote Sensing Systems, United States

Wednesday, July 31	08:00 - 09:40	Room 511-512
Session WE1.R13		Oral-Invited

How Advanced Satellite Capabilities Improve Operational Forecasts for Natural Disasters I

Session Chair: Bill Sjoberg, Global Science and Technology (GST) Contractor supporting NOAA

WE1.R13.1 **THE JOINT POLAR SATELLITE SYSTEM OVERVIEW**
08:00   *Mitch Goldberg, NOAA/NESDIS, United States; Bill Sjoberg, Global Science and Technology (GST) Contractor supporting NOAA, United States*

WE1.R13.3 **JPSS CAPABILITIES PROVIDING CRITICAL SUPPORT TO RECENT STORMS**
08:40   *Bill Sjoberg, Global Science and Technology (GST) Contractor supporting NOAA, United States; Mitch Goldberg, NOAA JPSS Program Office, United States; William Straka, University of Wisconsin – Madison, Space Science and Engineering Center (SSEC), Cooperative Institute for Meteorological Satellite Studies (CIMSS),, United States*

WE1.R13.4 **JOINT POLAR SATELLITE SYSTEM (JPSS) CALIBRATION AND VALIDATION**
09:00   *Lihang Zhou, NOAA/NESDIS/STAR, United States; Mitch Goldberg, NOAA/JPSS, United States*

WE1.R13.5 **DAY/NIGHT BAND PROVIDES CRITICAL AND UNIQUE SUPPORT CAPABILITIES TO NATURAL HAZARDS**
09:20   *William C. Straka III, SSEC/CIMSS, United States; Steven Miller, Curtis Seaman, Cooperative Institute for Research in the Atmosphere, Colorado State University, United States*

Wednesday, July 31	10:40 - 12:20	Room 511-512
Session WE2.R13		Oral-Invited

How Advanced Satellite Capabilities Improve Operational Forecasts for Natural Disasters II

Session Chair: Menghua Wang, NOAA/NESDIS/STAR

WE2.R13.1 **COMMUNITY SATELLITE PROCESSING PACKAGE (CSPP) – PROVIDING HYPERSPECTRAL SOUNDING RETRIEVAL FROM MULTI-SATELLITE/SENSOR**
10:40   *Allen Huang, SSEC/CIMSS University of Wisconsin-Madison, United States; Mitch Goldberg, National Oceanic and Atmospheric Administration, United States*

WE2.R13.2 **MULTI-SENSOR OCEAN COLOR DATA FUSION AND APPLICATIONS**
11:00   *Menghua Wang, Lide Jiang, Xiaoming Liu, SeungHyun Son, Karlis Mikelsons, Junqiang Sun, Wei Shi, Liqin Tan, Xiaolong Wang, Mike Chu, Veronica Lance, NOAA/NESDIS/STAR, United States*

WE2.R13.3 **JPSS PRECIPITATION PRODUCTS IN THE HYDROLOGY INITIATIVE**
11:20   *Ralph Ferraro, NOAA/NESDIS, United States; Nai-Yu Wang, University of Maryland, United States*

WE2.R13.4 **MONITORING THE CRYOSPHERE FOR COMMERCE AND TRANSPORTATION**
11:40   *Arron Layns, NOAA/NESDIS, United States; Bonnie Reed, Science and Technology Corporation, United States*

WE2.R13.5 **RECENT STATUS OF THE GLOBAL CHANGE OBSERVATION MISSION (GCOM) AND ITS SYNERGIES WITH JPSS**
12:00   *Misako Kachi, Hiroshi Murakami, Masahiro Hori, Japan Aerospace Exploration Agency (JAXA), Japan; Yoshiaki Honda, Chiba University, Japan; Naoto Ebuchi, Hokkaido University, Japan; Haruhisa Shimoda, Tokai University, Japan*

Wednesday, July 31	13:40 - 15:20	Room 511-512
Session WE3.R13		Oral-Invited

Advances in Reflectometry with GNSS and Signals of Opportunity (GNSS+R) I

Session Co-Chairs: Estel Cardellach, Institut de Ciencies de l'Espai (CSIC-IEEC); Rashmi Shah, NASA Jet Propulsion Laboratory

WE3.R13.1 **THE GNSS-R CYGNSS MISSION: AN UPDATE**
13:40   *Christopher Ruf, Darren McKague, University of Michigan, United States; Mary Morris, Derek Posselt, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Mahta Moghaddam, University of Southern California, United States*

WE3.R13.2 **THE ESA PASSIVE REFLECTOMETRY AND DOSIMETRY (PRETTY) MISSION**
14:00   *Andreas Dielacher, Heinz Fragner, RUAG Space GmbH, Austria; Otto Koudelka, Graz University of Technology, Austria; Peter Beck, Seibersdorf Labor GmbH, Austria; Jens Wickert, German Research Centre for Geosciences GFZ, Germany; Estel Cardellach, Institut d'Estudis Espacials de Catalunya, Spain; Per Høeg, University of Oslo, Norway*

WE3.R13.3 **FORMOSAT-7R MISSION FOR GNSS REFLECTOMETRY**
14:20   *Jyh-Ching Juang, National Cheng Kung University, Taiwan; Yung-Fu Tsai, Chen-Tsung Lin, National Space Organization, Taiwan*

WE3.R13.4 **THE STATUS AND PROGRESS OF FENGYUN-3E GNOS II MISSION FOR GNSS REMOTE SENSING**
14:40   *Yueqiang Sun, Xianyi Wang, Qifei Du, Weihua Bai, Junming Xia, Yuerong Cai, Dongwei Wang, Chunjun Wu, Xiangguang Meng, Congliang Liu, Yusen Tian, Cheng Liu, Wei Li, Danyang Zhao, Fu Li, Hao Qiao, Beijing Key Laboratory of Space Environment Exploration, National Space Science Center, Chinese Academy of Sciences / Joint Laboratory on Occultations for Atmosphere and Climate (JLOAC) of NSSC/CAS and University of Graz, China*

WE3.R13.5 **THE FLEXIBLE MICROWAVE PAYLOAD -2: ARCHITECTURE AND TESTING OF A COMBINED GNSS-R AND L-BAND RADIOMETER WITH RFI MITIGATION PAYLOAD FOR CUBESAT-BASED EARTH OBSERVATION MISSIONS**
15:00   *Joan Francesc Munoz-Martin, Lara Fernandez, Joan Ruiz-de-Azua, Adriano José Camps Carmona, Universitat Politècnica de Catalunya (UPC), Spain*

Wednesday, July 31	16:20 - 18:00	Room 511-512
Session WE4.R13		Oral-Invited

Advances in Reflectometry with GNSS and Signals of Opportunity (GNSS+R) II

Session Co-Chairs: Rashmi Shah, NASA Jet Propulsion Laboratory; Estel Cardellach, Institut de Ciencies de l'Espai (CSIC-IEEC)

WE4.R13.1 **THE FLEXIBLE MICROWAVE PAYLOAD -2: DESIGN, IMPLEMENTATION, AND OPTIMIZATION OF A GNSS-R AND RADIOMETRY PROCESSOR FOR CUBESAT-BASED EARTH OBSERVATION MISSIONS**
16:20   *Joan Francesc Munoz-Martin, Lara Fernandez, Joan Ruiz-de-Azua, Adriano José Camps Carmona, Universitat Politècnica de Catalunya (UPC), Spain*

WE4.R13.2 **A GNSS-REFLECTOMETRY INSTRUMENT FOR WETLAND EXTENT AND DYNAMICS**
16:40   *Stephen Lowe, Jeff Dickson, David Robison, Casey Handmer, Mark Miller, California Institute of Technology, NASA Jet Propulsion Laboratory, United States*

WE4.R13.3 **APPLICATIONS OF SPACEBORNE GNSS-R OVER INLAND WATERS AND WETLANDS**
17:00   *Weiqiang Li, Estel Cardellach,, Fran Fabra, Serni Ribó, Antonio Rius, Institute of Space Sciences (ICE, CSIC), Spain*

WE4.R13.4 **INVERSION STUDY OF SIMULATED AND PHYSICAL SOIL MOISTURE PROFILES USING MULTIFREQUENCY SOOP-SOURCES**
17:20   *Dylan Boyd, Mehmet Kurum, Mississippi State University, United States; James Garrison, Benjamin Nold, Purdue University, United States; Ali Gurbuz, Bryan LaGrone, Orhan Eroglu, Robiulhossain Mdrafi, Mississippi State University, United States; Jeffrey Piepmeier, Manuel Vega, Rajat Bindlish, NASA Goddard Space Flight Center, United States*

WE4.R13.5 **EXPERIMENTAL RESULTS OF SNOW AND SOIL MOISTURE MEASUREMENT FROM NON-VEGETATED AND VEGETATED SITES USING P-BAND SIGNALS OF OPPORTUNITY**
17:40   *Rashmi Shah, Simon Yueh, Xiaolan Xu, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Kelly Elder, Banning Starr, United States Forest Services, United States*

Thursday, August 1	08:00 - 09:40	Room 213
Session TH1.R2		**Oral**

GRSS Student Grand Challenge

TH1.R2.1
08:00

DEVELOPMENT OF A SURVEILLANCE SYSTEM FOR FOREST FIRE DETECTION AND MONITORING USING DRONES

Saif Allauddin Md., Sai Kiran G, Raj Kiran G S S, Srinivas G, Uma Ratna Mouli G, Vishnu Prasad P, Gokaraju Rangaraju Institute of Engineering and Technology, India

TH1.R2.2
08:20

MACHINE LEARNING APPLIED TO UAV IMAGERY IN PRECISION AGRICULTURE AND FOREST MONITORING IN BRAZILILIAN SAVANAH

David Robledo Di Martini, Federal University of Mato Grosso do Sul, Brazil; Everton Castelão Tetila, Catholic University Dom Bosco, Brazil; José Marcato Junior, Edson Takashi Matsubara, Henrique Siqueira, Amaury Antônio de Castro Junior, Márcio Santos Araujo, Carlos Henrique Monteiro, Federal University of Mato Grosso do Sul, Brazil; Hemerson Pistori, Catholic University Dom Bosco, Brazil; Veraldo Liesenberg, University of the State of Santa Catarina, Brazil

TH1.R2.3
08:40

MULTISENSORY SURVEILLANCE DRONE FOR SURVIVOR DETECTION AND GEOLOCALIZATION IN COMPLEX POST-DISASTER ENVIRONMENT

Budiman P.A. Rohman, Muhammad Bagus Andra, Hanif Putra, Dion Fandiantoro, Masahiko Nishimoto, Kumamoto University, Japan

TH1.R2.4
09:00

DEVELOPMENT OF UAV BASED GLACIAL LAKE OUTBURST MONITORING SYSTEM

Swastika Chakraborty, Sikkim Manipal Institute of Technology, India; Saurabh Das, IIT Indore, India; Nirmal Rai, Sikkim Manipal Institute of Technology, India; Anirban Patra, JIS College of Engineering, India; Aritra Dhar, Arnav Sadhu, Baishali Gautam, Pooja Verma, Anindita Singh, Chimila Sherpa, Lipika Karn, Sikkim Manipal Institute of Technology, India

TH1.R2.5
09:20

A DRONE-BASED SENSING SYSTEM TO SUPPORT SATELLITE IMAGE ANALYSIS FOR RICE FARM MAPPING

Yiqing Guo, Xiuping Jia, David Paull, Junpeng Zhang, Adnan Farooq, Xiaolin Chen, Md. Nazrul Islam, University of New South Wales, Australia

Thursday, August 1	10:40 - 12:20	Room 213
Session TH2.R2		**Oral**

Data Management and Systems III

Session Co-Chairs: Reginald Blake, New York City College of Technology; Qian Zhan, China University of Geosciences

TH2.R2.2
11:00

AUDITING REMOTE SENSING DATA USING GEOSPATIAL PROVENANCE

Guillem Closa, Universitat Autònoma de Barcelona, Spain; Joan Masó, Lluís Pesquer, Centre for Ecological Research and Forestry Applications, Spain; Xavier Pons, Universitat Autònoma de Barcelona, Spain

TH2.R2.3
11:20

THE ARCTIC PORTAL – A COMPREHENSIVE GEO-INFORMATIONAL SYSTEM TO STUDY THE ARCTIC WITH SATELLITE DATA.

Ekaterina Balashova, Sergey Azarov, Sergey Baranovsky, Kirill Khvorostovsky, Russian State Hydrometeorological University, Russia; Bertrand Chapron, Ifremer, France

TH2.R2.4
11:40

BUILDING A DATA ECOSYSTEM: A NEW DATA STEWARDSHIP PARADIGM FOR THE MULTI-MISSION ALGORITHM AND ANALYSIS PLATFORM (MAAP)

Kaylin Bugbee, University of Alabama Huntsville, United States; Manil Maskey, NASA Marshall Space Flight Center, United States; Aimee Barciauskas, DevelopmentSeed, United States; Rahul Ramachandran, NASA Marshall Space Flight Center, United States; Aaron Kaulfus, Jeanne le Roux, Jeffrey Miller, Iksha Gurung, University of Alabama Huntsville, United States; Amanda Whitehurst, ASRC Federal Technical Services, United States; Chris Lynnes, NASA Goddard Space Flight Center, United States

TH2.R2.5
12:00

A UNIQUE AIRBORNE MULTI-ANGULAR DATA SET FOR DIFFERENT APPLICATIONS IN REMOTE SENSING

Charles Gatebe, NASA Goddard Space Flight Center / Universities Space Research Association, United States; Rajesh Poudyal, SSAI / NASA Goddard Space Flight Center, United States

THURSDAY ORAL

Thursday, August 1	13:40 - 15:20	Room 213
Session TH3.R2		**Oral**

Remote Sensing Data Policy and Decisions I

Session Co-Chairs: Qian Zhan, China University of Geosciences; Josée Lévesque, DRDC Valcartier Research Center

TH3.R2.1
13:40

SPATIALLY ASSESSING NAVIGATIONAL ENVIRONMENTAL RISK ALONG FAIRWAY IN FOGGY SEASON EXPLOITING MODIS DATA

Xiaoqi Wang, Li Jiang, China University Of Petroleum, China; Yanfang Xiao, First Institute of Oceanography, Ministry of Natural Resources of China, China; Chunyang Zhu, Kaiqiang Ma, Shanwei Liu, Zhe Zeng, China University Of Petroleum, China

TH3.R2.2
14:00

A CNN-BASED METHOD FOR SAR IMAGE DESPECKLING

Dejiao Ma, Xiaoling Zhang, Xinxin Tang, Jing Ming, Jun Shi, University of Electronic Science and Technology of China, China

TH3.R2.3
14:20

AZIMUTH SUPERRESOLUTION OF FORWARD-LOOKING RADAR IMAGING BASED ON IMPROVED TOTAL VARIATION

Qiping Zhang, Yin Zhang, Yongchao Zhang, Wenchao Li, Yulin Huang, Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China, China

TH3.R2.4
14:40

PROGRESS, CHALLENGE AND PROSPECT FOR REMOTE SENSING MONITORING OF FLOOD AND DROUGHT DISASTERS IN CHINA

Kun Yang, China Institute of Water Resources and Hydropower Research (IWHR), China

TH3.R2.5
15:00

CLEAR-CUTS DETECTION SERVICES FOR THE MONITORING NEEDS OF THE FRENCH MINISTRY OF AGRICULTURE

Kenji Ose, Rémi Cresson, IRSTEA, France

Thursday, August 1	16:20 - 18:00	Room 213
Session TH4.R2		**Oral**

Education and Remote Sensing

Session Chair: Reginald Blake, New York City College of Technology

TH4.R2.1
16:20

REMOTE SENSING RESEARCH: A PROVEN CATALYST FOR INCREASING GEOSCIENCE ENGAGEMENT AMONG MINORITY STUDENTS

Reginald Blake, Janet Liou-Mark, Hamidreza Norouzi, Laura Yuen-Lau, New York City College of Technology, United States

TH4.R2.2
16:40

PRINTGRAMMETRY: GOOGLE EARTH IMAGERY BASED 3D MODEL GENERATION FOR VR APPLICATIONS

Rafael Kenji Horota, Ademir Marques Jr, Pedro Rossa, Eniuce Menezes de Souza, Alysson Soares Aires, Caroline Lessio Cazarin, Mauricio Roberto Veronez, Luiz Gonzaga Jr, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil

TH4.R2.3
17:00

UNDERGRADUATE EDUCATION OF REMOTE SENSING SCIENCE AND TECHNOLOGY IN CHINA: A CASE OF STUDY IN JIANGSU NORMAL UNIVERSITY

Qingmiao Ma, Yingjie Li, Jing Chen, Xin Li, Boyan Liu, Jinzhi Li, Yalan Li, Chenze Zhang, Jiangsu Normal University, China

TH4.R2.4
17:20

USING ISS EARTH OBSERVATION IN AUGMENTED AND VIRTUAL REALITY TO REACH THE NEXT GENERATION OF THE STEM WORKFORCE

Claudia Lindner, Annette Ortwein, Henryk Hodam, Carsten Jürgens, Johannes Schultz, Fabian Selg, Andreas Rienow, Ruhr-University Bochum, Germany

TH4.R2.5
17:40

GEOGRAPHIC INFORMATION SYSTEM AND REMOTE SENSING EDUCATION IN INDIA – ISSUES & SOLUTIONS

Varsha Turkar, Don Bosco College of Engineering, India; Sangita Chaudhari, Ramrao Adik Institute of Technology, India; Avila Naik, Don Bosco College of Engineering, India

Thursday, August 1	08:00 - 09:40	Room 311-312
Session TH1.R3		Oral-Invited

ALOS-2/ALOS-4 I

Session Co-Chairs: Masanobu Shimada, Tokyo Denki University / JAXA; Manabu Watanabe, Tokyo Denki University

TH1.R3.1
08:00
ALOS-2 OPERATION STATUS
Shinichi Sobue, Takao Fukuda, Haruchika Kamimura, Osamu Ochiai, Akiko Noda, Tomoki Miyashita, Japan Aerospace Exploration Agency (JAXA), Japan

TH1.R3.2
08:20
ALOS-4 L-BAND SAR MISSION AND OBSERVATION
Takeshi Motohka, Yukihiro Kankaku, Satoko Miura, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

TH1.R3.3
08:40
PALSAR-2 COMPACT ASSESSMENT AND CALIBRATION
Ridha Touzi, Canada Centre for Remote Sensing, Canada; Masanobu Shimada, Tokyo Denki University, Japan; Takeshi Motohka, Japan Aerospace Exploration Agency (JAXA), Japan; S. Nedelcu, Canada Centre for Remote Sensing, Canada

TH1.R3.4
09:00
POLARIMETRIC CALIBRATION OF SPACEBORNE SAR DATA IN THE PRESENCE OF THE IONOSPHERE BY MEANS OF AZIMUTH SUB-BANDS
Jun Su Kim, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany

TH1.R3.5
09:20
WIND SPEED RETRIEVAL USING L-BAND CROSS-PORALIZATION MEASUREMENT
Osamu Isoguchi, Kenta Ishizuka, RESTEC, Japan; Takeo Tadono, Takeshi Motohka, Japan Aerospace Exploration Agency (JAXA), Japan; Masanobu Shimada, Tokyo Denki University, Japan

Thursday, August 1	10:40 - 12:20	Room 311-312
Session TH2.R3		Oral-Invited

ALOS-2/ALOS-4 II

Session Co-Chairs: Manabu Watanabe, Tokyo Denki University; Masanobu Shimada, Tokyo Denki University / JAXA

TH2.R3.1
10:40
RELATIONSHIP BETWEEN GROUND DISPLACEMENT AND GAS PIPELINE DAMAGE ACCORDING TO INSAR ANALYSIS OF PALSAR-2 IMAGERY
Masashi Matsuoka, Tokyo Institute of Technology, Japan; Takahiro Koyama, Hiroaki Kimura, Tokyo Gas Co., Ltd., Japan

TH2.R3.2
11:00
IMPROVEMENT OF DEFORESTATION DETECTION ALGORITHMS USED IN JJ-FAST
Manabu Watanabe, Christian Koyama, Tokyo Denki University, Japan; Masato Hayashi, Izumi Nagatani, Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Masanobu Shimada, Tokyo Denki University, Japan

TH2.R3.3
11:20
PIXEL-BASED DEFORESTATION DETECTION ALGORITHM FOR ALOS-2/PALSAR-2
Izumi Nagatani, Masato Hayashi, Japan Aerospace Exploration Agency (JAXA), Japan; Manabu Watanabe, Tokyo Denki University, Japan; Takeo Tadono, Tomohiro Watanabe, Japan Aerospace Exploration Agency (JAXA), Japan; Christian Koyama, Masanobu Shimada, Tokyo Denki University, Japan

TH2.R3.4
11:40
MAPPING SPATIAL-TEMPORAL FOREST HETEROGENEITY IN THE TROPICAL BELT BY ALOS-2/PALSAR-2 BIG DATA ANALYSIS
Christian Koyama, Manabu Watanabe, Masanobu Shimada, Tokyo Denki University, Japan

TH2.R3.5
12:00
EVALUATION OF REINFORECED SLOPE DYNAMICS USING ALOS-2/PALSAR-2
Tomohito Asaka, Takashi Nonaka, Keishi Iwashita, Sadayoshi Aoyama, Toshirou Sugimura, Nihon University, Japan

Thursday, August 1	13:40 - 15:20	Room 311-312
Session TH3.R3		Oral-Invited

Sentinel-1 Mission: Status, Evolution and Contribution to Disasters and Geohazards Monitoring I

Session Co-Chairs: Ramon Torres, European Space Agency; Pierre Potin, European Space Agency

TH3.R3.1
13:40
OVERVIEW OF COPERNICUS SAR SPACE COMPONENT AND ITS EVOLUTION
Ramon Torres, Malcolm Davidson, European Space Agency (ESA), Netherlands

TH3.R3.3
14:20
COPERNICUS SENTINEL-1 CONSTELLATION MISSION OPERATIONS STATUS
Pierre Potin, Betlem Rosich, Nuno Miranda, Patrick Grimont, Ian Shurmer, Alistair O'Connell, Mike Krassenburg, Jean-Baptiste Gratadour, European Space Agency (ESA), Italy

TH3.R3.4
14:40
ESA COPERNICUS SENTINEL-1 EXPLOITATION ACTIVITIES
Magdalena Fitrzyk, RSAC c/o ESA-ESRIN, Italy; Marcus Engdahl, Diego Fernandez, European Space Agency ESA-ESRIN, Italy

TH3.R3.5
15:00
EXPLOITATION OF SENTINEL-1 DATA FOR FLOOD MAPPING AND MONITORING WITHIN THE FRAMEWORK OF THE COPERNICUS EMERGENCY CORE AND DOWNSTREAM SERVICES
Nadine Tholey, Stephen Clandillon, Université de Strasbourg, France; Lucia Luzietti, e-GEOS, Italy; Jerome Maxant, Stephanie Battiston, Herve Yesou, Université de Strasbourg, France

Thursday, August 1	16:20 - 18:00	Room 311-312
Session TH4.R3		Oral-Invited

Sentinel-1 Mission: Status, Evolution and Contribution to Disasters and Geohazards Monitoring II

Session Co-Chairs: Pierre Potin, European Space Agency; Ramon Torres, European Space Agency

TH4.R3.1
16:20
MONITORING GEOHAZARDS USING ON-DEMAND AND SYSTEMATIC SERVICES ON ESA'S GEOHAZARDS EXPLOITATION PLATFORM
Michael Foumelis, BRGM - French Geological Survey, France; Theodora Papadopoulou, ARGANS Ltd. c/o ESA, France; Philippe Bally, European Space Agency (ESA), Italy; Fabrizio Pacini, Terradue s.r.l., Italy; Floriane Provost, European Space Agency (ESA), Italy; Jolanda Patruno, RHEA Group c/o ESA, Italy

TH4.R3.2
16:40
INSAR.NO: A NATIONAL INSAR DEFORMATION MAPPING/MONITORING SERVICE IN NORWAY – FROM CONCEPT TO OPERATIONS
John Dehls, Geological Survey of Norway, Norway; Yngvar Larsen, NORCE, Norway; Petar Marinkovic, PPO.labs, Netherlands; Tom Rune Lauknes, Daniel Stødle, NORCE, Norway; Dag Anders Moldestad, Norwegian Space Agency, Norway

TH4.R3.3
17:00
SATELLITE GEODESY FOR VOLCANO MONITORING IN THE SENTINEL-1 AND SAR CONSTELLATION ERA
S K Ebmeier, University of Leeds, United Kingdom; J Biggs, University of Bristol, United States; M Poland, US Geological Survey, United States; M E Pritchard, Cornell University, United States; S Zoffoli, ASI, Italy; M Furtney, Rice University, United States; K Reath, Cornell University, United States

TH4.R3.4
17:20
THE SARVIEWS PROJECT: AUTOMATED PROCESSING OF SENTINEL-1 SAR DATA FOR GEOSCIENCE AND HAZARD RESPONSE
Franz J Meyer, Matthew A Whitley, Thomas A Logan, David B. McAlpin, Kirk A Hogenson, Jeremy B Nicoll, University of Alaska Fairbanks, United States

TH4.R3.5
17:40
SENTINEL-1 CONTRIBUTION TO TROPICAL CYCLONES OBSERVATIONS AT HIGH RESOLUTION
Alexis Mouche, IFREMER, France; François Soulat, CLS, France; Pierre Potin, European Space Agency (ESA), Italy; Luca Martino, Serco Spa for ESA, Italy

THURSDAY ORAL

Thursday, August 1	08:00 - 09:40	Room 313-314
Session TH1.R4		Oral-Invited

End-to-End New Observing Strategies for Disaster and Environment I

Session Chair: Jacqueline Le Moigne, NASA Goddard Space Flight Center

TH1.R4.1
08:00
NEW OBSERVING STRATEGY (NOS) FOR FUTURE EARTH SCIENCE MISSIONS
Jacqueline Le Moigne, Mike Little, National Aeronautics and Space Administration (NASA), United States; Marjorie Cole, SGT, Inc., United States

TH1.R4.2
08:20
MODELING CHALLENGES FOR EARTH OBSERVING SYSTEMS OF SYSTEMS
Paul Grogan, Stevens Institute of Technology, United States

TH1.R4.3
08:40
BLOCKCHAIN APPLICATION WITHIN A MULTI-SENSOR SATELLITE ARCHITECTURE
Jack de La Beaujardiere, University of Maryland, United States; Rohan Mital, University of Colorado, Colorado Springs, United States; Rohit Mital, KBR Inc., United States

TH1.R4.4
09:00
VALUING NEW EARTH OBSERVATION MISSIONS FOR SYSTEM ARCHITECTURE TRADE-STUDIES
Afreen Siddiqi, Eric Magliarditi, Olivier de Weck, Massachusetts Institute of Technology, United States

TH1.R4.5
09:20
OPEN SOURCE SOFTWARE FOR SIMULATING COLLABORATIVE NETWORKS OF AUTONOMOUS ADAPTIVE SENSORS
Ryan Linnabary, Andrew O'Brien, Graeme E. Smith, Christopher Ball, Joel T. Johnson, Ohio State University, United States

Thursday, August 1	10:40 - 12:20	Room 313-314
Session TH2.R4		Oral-Invited

End-to-End New Observing Strategies for Disaster and Environment II

Session Co-Chairs: Mike LIttle, NASA; Jacqueline Le Moigne, NASA Goddard Space Flight Center

TH2.R4.1
10:40
TESTBED REQUIREMENTS TO ENABLE NEW OBSERVING STRATEGIES
Michael Little, Jacqueline Le Moigne, National Aeronautics and Space Administration (NASA), United States; Marge Cole, KBR-Wyle, United States

TH2.R4.2
11:00
THE QUAKES CONCEPT FOR OBSERVING AND MITIGATING NATURAL DISASTERS
Andrea Donnellan, Yunling Lou, Curtis Padgett, Jay Parker, Brian Hawkins, Robert Granat, Margaret Glasscoe, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; John Rundle, Lisa Grant Ludwig, University of California, United States; Marlon Pierce, Jun Wang, Indiana University, United States; Yehuda Ben-Zion, University of Southern California, United States

TH2.R4.3
11:20
CONSTELLATIONS IN THE CLOUD: VIRTUALIZING REMOTE SENSING SYSTEMS
Andrew Schmidt, Vivek Venugopalan, Marco Paolieri, Matthew French, University of Southern California, United States

TH2.R4.4
11:40
ANALYTICS CENTER FRAMEWORK FOR ESTIMATING THE CIRCULATION AND CLIMATE OF THE OCEAN
Thomas Huang, Maya DeBellis, Ian Fenty, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Patrick Heimbach, University of Texas at Austin, United States; Joseph Jacob, Ou Wang, Elizabeth Yam, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TH2.R4.5
12:00
EARTH OBSERVATION DATA MINING: A USE CASE FOR FOREST MONITORING
Corneliu Octavian Dumitru, Gottfried Schwarz, German Aerospace Center (DLR), Germany; Anna Pulak-Siwiec, Bartosz Kulawik, SmallGIS, Poland; Jose Lorenzo, Atos Spain SA, Spain; Mihai Datcu, German Aerospace Center (DLR), Germany

THURSDAY ORAL

Thursday, August 1	13:40 - 15:20	Room 313-314
Session TH3.R4		Oral-Invited

End-to-End New Observing Strategies for Disaster and Environment III

Session Chair: Jacqueline Le Moigne, NASA Goddard Space Flight Center

TH3.R4.1
13:40
AN API FOR SPACEBORNE SUB-METER RESOLUTION PRODUCTS FOR EARTH SCIENCE
Christopher S.R. Neigh, NASA Goddard Space Flight Center, United States; Mark L. Carroll, Paul M. Montesano, Daniel A. Slayback, Margaret R. Wooten, NASA Goddard Space Flight Center / Science Systems Applications Inc., United States; Alexei I. Lyapustin, NASA Goddard Space Flight Center, United States; David E. Shean, University of Washington, United States; Oleg A. Alexandrov, NASA Ames Research Center SGT, United States; Matthew J. Macander, Alaska Biological Research, United States; Compton J. Tucker, NASA Goddard Space Flight Center, United States

TH3.R4.2
14:00
PERSPECTIVES FOR VHR BIG DATA IMAGE PROCESSING AND ANALYTICS TOWARD A DEDICATED FRAMEWORK FOR MAJOR DISASTER AND ENVIRONMENT MONITORING FROM SPACE
Simon Baillarin, Claire Tinel, Pierre Lassalle, Olivier Melet, David Youssefi, Peter Kettig, Victor Poughon, CNES, France; Vincent Gaudissart, C.S., France

TH3.R4.3
14:20
VISAGE – A VISUALIZATION AND EXPLORATION FRAMEWORK FOR ENVIRONMENTAL DATA
Helen Conover, Todd Berendes, University of Alabama Huntsville, United States; Patrick Gatlin, Manil Maskey, National Aeronautics and Space Administration (NASA), United States; Aaron Naeger, University of Alabama Huntsville, United States; Stephanie Wingo, Universities Space Research Association, United States; Ajinkya Kulkarni, Abdelhak Marouane, Lihua Wang, Brian Ellingson, Bibek Dahal, Khomsun Singhirunnusorn, University of Alabama Huntsville, United States

TH3.R4.4
14:40
ON THE USE OF CLOUD, ALGORITHM CATALOGS, AND MACHINE LEARNING FOR SAR-BASED HAZARDS MONITORING
Hook Hua, Susan Owen, Sang-Ho Yun, Eric Fielding, Gerald Manipon, Justin Linick, Mohammed Karim, Brian Bue, Gian Franco Sacco, Namrata Malarout, David Bekaert, Piyush Agram, Marjorie Lucas, Lan Dang, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TH3.R4.5
15:00
AN EYE ON THE STORM: UNCOVERING MULTI-VARIATE RELATIONSHIPS WITH A SCIENCE-DRIVEN SYSTEM FOR INTERACTIVE ANALYSIS AND VISUALIZATION; MOTIVATING MACHINE-LEARNING DISCOVERIES FOR HURRICANE RAPID INTENSITY CHANGES
Svetla Hristova-Veleva, P. Peggy Li, Brian Knosp, F. Joseph Turk, William L. Poulsen, Quoc Vu, Ziad Haddad, Tsae-Pyng Shen, Bryan Stiles, Bjorn Lambrigtsen, Hui Su, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jeffrey Reid, Naval Research Laboratory, United States; Saiprasanth Bhalachandran, Purdue University, United States; Hua Leighton, NOAA/AOML/HRD/RSMAS, United States; Sundararaman Gopalakrishnan, NOAA/AOML/HRD, United States; Andres Navarro, Francisco Tapiador, Universidad de Castilla-La Mancha, Spain

Thursday, August 1	08:00 - 09:40	Room 315
Session TH1.R5		Oral

Multi-Modal / Multi-Scale: Transfer Learning

Session Chair: Licheng Jiao, School of Artificial Intelligence, Xidian University

TH1.R5.1
08:00
UNSUPERVISED TRANSFER LEARNING USING FOR MULTI-MODEL REMOTE SENSING DATA CLASSIFICATION
Wei Liu, Rongjun Qin, Ohio State University, United States

TH1.R5.2
08:20
CLASSIFYING METEOROLOGICAL ECHOES IN WEATHER RADAR IMAGES WITH TRANSFER LEARNING
Ryan Gooch, V Chandrasekar, Colorado State University, United States

TH1.R5.3
08:40
SUPERVISED OPTIMAL SCALE PARAMETER ESTIMATION FOR MULTISCALE OBJECT-BASED LANDCOVER CLASSIFICATION
Zhongwen Hu, Chisheng Wang, Shenzhen University, China; Peng Liu, Southern University of Science and Technology, China

TH1.R5.4
09:00
A MULTI-VIEW DEEP FEATURE FUSION SQUEEZE-AND-EXCITATION NETWORK FOR MULTIRESOLUTION REMOTE SENSING IMAGE CLASSIFICATION
Hao Zhu, Lingling Li, Wenping Ma, Fang Liu, Licheng Jiao, School of Artificial Intelligence, Xidian University, China

TH1.R5.5
09:20
MODULATION SENSING IN COMPOSITE RADAR SIGNAL USING TRANSFER LEARNING
Fang Li, Bo Huang, Zixian Yang, Liangliang Zhao, China Academy of Engineering Physics, China

Thursday, August 1	10:40 - 12:20	Room 315
Session TH2.R5		Oral

Domain adaptation

Session Chair: Wei Li, Northwestern Polytechnical University

TH2.R5.1
10:40
CROSS-SCENE HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON DEEP CONDITIONAL DISTRIBUTION ADAPTATION NETWORKS
Jie Geng, Northwestern Polytechnical University, China; Xiaorui Ma, Dalian University of Technology, China; Wen Jiang, Xiaoyu Hu, Dawei Wang, Northwestern Polytechnical University, China; Hongyu Wang, Dalian University of Technology, China

TH2.R5.2
11:00
CLASS-SPECIFIC DICTIONARY BASED SEMI-SUPERVISED DOMAIN ADAPTATION FOR LAND-COVER CLASSIFICATION OF AERIAL IMAGES
Li Yan, Ruixi Zhu, Yi Liu, Nan Mo, Wuhan University, China

TH2.R5.3
11:20
UNSUPERVISED DOMAIN ADAPTATION IN LAND-COVER CLASSIFICATION UNDER NEURAL APPROACH USING FEATURE-LEVEL ENSEMBLE
Shounak Chakraborty, Indrajit Kalita, Moumita Roy, Indian Institute of Information Technology Guwahati, India

TH2.R5.4
11:40
DOMAIN ADAPTATION FOR SEMANTIC SEGMENTATION USING CONVOLUTIONAL NEURAL NETWORKS
Fabian Schenkel, Wolfgang Middelmann, Fraunhofer IOSB, Germany

TH2.R5.5
12:00
UNSUPERVISED DEEP DOMAIN ADAPTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Wei Li, Wei Wei, Northwestern Polytechnical University, China; Lei Zhang, Inception Institute of Artificial Intelligence (IIAI), United Arab Emirates; Cong Wang, Yanning Zhang, Northwestern Polytechnical University, China

Thursday, August 1	13:40 - 15:20	Room 315
Session TH3.R5		Oral

Hyperspectral Image Classification III

Session Chair: Qian Du, Mississippi State University

TH3.R5.1
13:40
ORTHOGONAL GRAPH-REGULARIZED NON-NEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL IMAGE CLUSTERING
Long Tian, Qian Du, Mississippi State University, United States; Ivica Kopriva, Nicolas Younan, Ruđer Bošković Institute, Croatia (Hrvatska)

TH3.R5.2
14:00
LANDMARK-BASED LARGE-SCALE SPARSE SUBSPACE CLUSTERING METHOD FOR HYPERSPECTRAL IMAGES
Shaoguang Huang, Ghent University, Belgium; Hongyan Zhang, Wuhan University, China; Aleksandra Pizurica, Ghent University, Belgium

TH3.R5.3
14:20
CLUSTERING HYPERSPECTRAL IMAGES VIA SPARSE DICTIONARY LEARNING WITH JOINT SPARSITY AND SHARED WAVELETS
Nan Huang, Liang Xiao, Nanjing University of Science and Technology, China; Songze Tang, Nanjing Forest Police College, China; Qichao Liu, Nanjing University of Science and Technology, China

TH3.R5.4
14:40
GROUND TRUTH SIMULATION FOR DEEP LEARNING CLASSIFICATION OF MID-RESOLUTION VENUS IMAGES VIA UNMIXING OF HIGH-RESOLUTION HYPERSPECTRAL FENIX DATA
Ido Faran, Nathan S. Netanyahu, Eli David, Bar-Ilan University, Israel; Maxim Shoshany, Fadi Kizel, Jisung Geba Chang, Ronit Rud, Technion Israel Institute of Technology, Israel

TH3.R5.5
15:00
HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON GENERATIVE ADVERSARIAL NETWORKS WITH FEATURE FUSING AND DYNAMIC NEIGHBORHOOD VOTING MECHANISM
Ying Zhan, Jin Qin, Tao Huang, Kang Wu, Beijing Normal University, China; Dan Hu, University of North Carolina at Chapel Hill, United States; Zhengang Zhao, Beijing Normal University, China; Yuntao Wang, Ying Cao, RunCheng Jiao, Beijing Institute of Geology, China; Yasmine Medjadba, Guian Wang, Xianchuan Yu, Beijing Normal University, China

Thursday, August 1	16:20 - 18:00	Room 315
Session TH4.R5		Oral

Deep Learning

Session Chair: Pedram Ghamisi, German Aerospace Center (DLR) and Technical University of Munich (TUM)

TH4.R5.1
16:20
MULTI-SCALE CONVOLUTIONAL SVM NETWORKS FOR MULTI-CLASS CLASSIFICATION PROBLEMS OF REMOTE SENSING IMAGES
Gabriele Cavallaro, Forschungszentrum Jülich GmbH, Germany; Yakoub Bazi, King Saud University, Saudi Arabia; Farid Melgani, University of Trento, Italy; Morris Riedel, Forschungszentrum Jülich GmbH, Germany

TH4.R5.2
16:40
REMOTE SENSING IMAGE RETRIEVAL BASED ON SEMI-SUPERVISED DEEP HASHING LEARNING
Xu Tang, Chao Liu, Xiangrong Zhang, Jingjing Ma, Changzhe Jiao, Licheng Jiao, Xidian University, China

TH4.R5.3
17:00
GENERATIVE ADVERSARIAL NETWORK WITH FOLDED SPECTRUM FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Wenyue Li, Jihao Yin, Bingnan Han, Hongmei Zhu, Beihang University, China

TH4.R5.4
17:20
(SEMI-) SUPERVISED MIXTURES OF FACTOR ANALYZERS AND DEEP MIXTURES OF FACTOR ANALYZERS DIMENSIONALITY REDUCTION ALGORITHMS FOR HYPERSPECTRAL IMAGES CLASSIFICATION
Bin Zhao, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland; Jocelyn Chanussot, Univ. Grenoble Alpes; University of Iceland, France

TH4.R5.5
17:40
MIXTURES OF FACTOR ANALYZERS AND DEEP MIXTURES OF FACTOR ANALYZERS DIMENSIONALITY REDUCTION ALGORITHMS FOR HYPERSPECTRAL IMAGES CLASSIFICATION
Bin Zhao, Magnus O. Ulfarsson, Johannes R. Sveinsson, University of Iceland, Iceland; Jocelyn Chanussot, Univ. Grenoble Alpes; University of Iceland, France

Thursday, August 1   08:00 - 09:40   Room 411-412
Session TH1.R6   Oral

Remote Sensing for Crop Classification, Mapping and Monitoring I

Session Co-Chairs: Laura Dingle Robertson, Agriculture and Agri-Food Canada; Silvia Valero, Centre d'Etude Spatial de la BIOsphère (CESBIO)

TH1.R6.1
08:00
USING DENSE TIME-SERIES OF C-BAND SAR IMAGERY FOR CLASSIFICATION OF DIVERSE, WORLDWIDE AGRICULTURAL SYSTEMS
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada; Diego de Abelleyra, Santiago Verón, Instituto de Clima y Agua, Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina; Pierre Defourny, Université catholique de Louvain, Belgium; Guerric le Maire, CIRAD, France; Milena Planells, Silvia Valero, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Nima Ahmadian, Julius-Maximilians-Universität Würzburg, Germany; Alisa Coffin, David Bosch, Michael H. Cosh, USDA Agricultural Research Service, United States; Paul Siqueira, University of Massachusetts Amherst, United States; Bruno Basso, Michigan State University, United States; Nicanor Saliendra, USDA Agricultural Research Service, United States

TH1.R6.2
08:20
CROP MAPPING AND MONITORING USING MULTITEMPORAL COMPACT POLSAR DATA IN PREPARATION FOR THE RADARSAT CONSTELLATION MISSION (RCM)
Saeid Homayouni, University of Ottawa, Canada; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Carleton University, Canada; Masoud Mahdianpari, Fariba Mohammadimanesh, Memorial University, Canada; Mohammad Rezaee, University of New Brunswick, Canada

TH1.R6.3
08:40
EARLY SEASON WINTER WHEAT IDENTIFICATION USING SENTINEL -1 SYNTHETIC APERTURE RADAR (SAR) AND OPTICAL DATA
Claire Boryan, Zhengwei Yang, Patrick Willis, Avery Sandborn, National Agricultural Statistics Service, United States

TH1.R6.4
09:00
SENTINEL'S CLASSIFIER FUSION SYSTEM FOR SEASONAL CROP MAPPING
Silvia Valero, Ludovic Arnaud, Milena Planells, Eric Ceschia, Gerard Dedieu, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

TH1.R6.5
09:20
TIME-SPACE TRADEOFF IN DEEP LEARNING MODELS FOR CROP CLASSIFICATION ON SATELLITE MULTI-SPECTRAL IMAGE TIME SERIES
Vivien Sainte Fare Garnot, Loic Landrieu, Sebastien Giordano, Universite Paris-Est, France; Nesrine Chehata, Universite Bordeaux Montaigne, France

---

Thursday, August 1   10:40 - 12:20   Room 411-412
Session TH2.R6   Oral

Remote Sensing for Crop Parameters and Phenology

Session Co-Chairs: Kuniaki Uto, Tokyo Institute of Technology; Mehdi Hosseini, Carleton University

TH2.R6.1
10:40
COTTON LEAF AREA INDEX ESTIMATION USING UNMANNED AERIAL VEHICLE MULTI-SPECTRAL IMAGES
Pengfei Chen, Chinese Academy of Sciences, China

TH2.R6.2
11:00
A NOVEL DEEP LEARNING BASED COTTON GENOTYPE SELECTION FRAMEWORK USING MULTI-TEMPORAL UAS DATA
Akash Ashapure, Jinha Jung, Texas A&M University Corpus Christi, United States; Murilo Maeda, Texas A&M AgriLife Extension - Lubbock, United States; Juan Landivar, Texas A&M AgriLife Research at Corpus Christi, United States; Anjin Chang, Texas A&M University Corpus Christi, United States; Junho Yeom, Kyungpook National University, Korea (South); Steve Hague, Wayne Smith, Texas A&M University, United States

TH2.R6.3
11:20
ESTIMATION OF INDIVIDUAL POTATO PLANTS AREA AND VOLUME FROM UAV-BASED MULTISPECTRAL IMAGES
Victor Angulo Morales, Universidad Distrital Francisco Jose de Caldas, Colombia; Jorge Rodriguez Galvis, Universidad Nacional de Colombia, Colombia; Elvis Gaona Garcia, Universidad Distrital Francisco Jose de Caldas, Colombia; Ivan Lizarazo Salcedo, Universidad Nacional de Colombia, Colombia

TH2.R6.4
11:40
ESTIMATION OF DIFFUSE COMPONENT OF GLOBAL RADIATION BASED ON LEAF-SCALE CROP IMAGES
Kuniaki Uto, Tokyo Institute of Technology, Japan; Mauro Dalla Mura, Jocelyn Chanussot, Univ. Grenoble Alpes, CNRS, Grenoble INP, GIPSA-lab, France; Koichi Shinoda, Tokyo Institute of Technology, Japan

TH2.R6.5
12:00
COMPARISON OF MACHINE LEARNING ALGORITHMS AND WATER CLOUD MODEL FOR LEAF AREA INDEX ESTIMATION OVER CORN FIELDS
Mehdi Hosseini, Carleton University, Canada; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Scott Mitchell, Carleton University, Canada; Andrew Davidson, Laura Dingle-Robertson, Agriculture and Agri-Food Canada, Canada

THURSDAY ORAL

Thursday, August 1   13:40 - 15:20   Room 411-412
Session TH3.R6   Oral

Remote Sensing for Agricultural Hydrology

Session Co-Chairs: Nicolas Baghdadi, IRSTEA; Mehdi Hosseini, Agriculture and Agri-Food Canada

TH3.R6.1
13:40
CROP DROUGHT AREA EXTRACTION BASED ON REMOTE SENSING TIME SERIES SPATIAL-TEMPORAL FUSION VEGETATION INDEX
Shufu Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Jingguo Tian, Henan Modern Agriculture Big Data Technology Research Co., Ltd., China; Shudong Wang, Dacheng Wang, Tianhe Chi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Ying Zhang, Henan Modern Agriculture Big Data Technology Research Co., Ltd., China

TH3.R6.2
14:00
ANALYSIS OF SENTINEL-1 DERIVED SOIL MOISTURE MAPS OVER OCCITANIE, SOUTH FRANCE
Nicolas Baghdadi, Hassan Bazzi, Mohammad El Hajj, IRSTEA, France; Mehrez Zribi, CNRS, France

TH3.R6.3
14:20
ESTIMATING VEGETATION WATER CONTENT AND SOIL SURFACE ROUGHNESS USING PHYSICAL MODELS OF RADAR SCATTERING AND SAR DATA
Seungbum Kim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Huanting Huang, University of Michigan, United States; Tienhao Liao, California Institute of Technology, United States

TH3.R6.4
14:40
EVAPOTRANSPIRATION AND EVAPORATION/TRANSPIRATION RETRIEVAL USING DUAL-SOURCE SURFACE ENERGY BALANCE MODELS INTEGRATING VIS/NIR/TIR DATA WITH SATELLITE SURFACE SOIL MOISTURE INFORMATION
Gilles Boulet, Centre d'Etude Spatial de la BIOsphère (CESBIO) / Université de Toulouse/CNES/CNRS/IRD/INRA, France; Zoubair Rafi, UCAM, Morocco; Valérie Le Dantec, Centre d'Etude Spatial de la BIOsphère (CESBIO) / Université de Toulouse/CNES/CNRS/IRD/INRA, France; Kanishka Mallick, LIST, Luxembourg; Albert Olioso, EMMAH, INRA/UAPV, France; Salah Er-Raki, UCAM, Morocco; Olivier Merlin, Centre d'Etude Spatial de la BIOsphère (CESBIO) / Université de Toulouse/CNES/CNRS/IRD/INRA, France

TH3.R6.5
15:00
ENHANCING FOOD SECURITY THROUGH THE AFRICULTURES PROJECT: DESIGN OF CROP, WATER AND DROUGHT SERVICES
Thomas Alexandridis, Aristotle University of Thessaloniki, Greece; Giovanni Laneve, Sapienza University of Rome, Italy; Eleni Katragkou, Ines Cherif, Georgios Ovakoglou, Dimitrios Kasampalis, Maria Chara Karypidou, Stergios Kartsios, Ioannis Pytharoulis, Dimitrios Moshou, Aristotle University of Thessaloniki, Greece; Sixto Herrera García, Universidad de Cantabria, Spain; Grigory Nikulin, Swedish Hydrological and Meteorological Institute, Sweden; Juan Suárez Beltrán, GMV Aerospace and Defence S.A.U., Spain

---

Thursday, August 1   16:20 - 18:00   Room 411-412
Session TH4.R6   Oral

Remote Sensing for Crop Classification, Mapping and Monitoring V

Session Co-Chairs: Nicolas Baghdadi, IRSTEA; Laura Dingle-Roberson, Agriculture and Agri-Food Canada

TH4.R6.1
16:20
THE USE OF LANDSAT 8 AND SENTINEL-2 DATA AND METEROLOGICAL OBSERVATIONS FOR WINTER WHEAT YIELD ASSESSMENT
Sergii Skakun, Belen Franch, University of Maryland, United States; Eric Vermote, NASA Goddard Space Flight Center, United States; Jean-Claude Roger, University of Maryland, United States; Nataliia Kussul, Space Research Institute NAS Ukraine & SSA Ukraine, Ukraine; Jeff Masek, NASA Goddard Space Flight Center, United States

TH4.R6.2
16:40
PREDICTION OF SPATIAL DISTRIBUTION OF ANNUAL CROP PLANTING WITH MACHINE LEARNING
Liping Di, Chen Zhang, Liying Guo, Li Lin, George Mason University, United States

TH4.R6.3
17:00
COMPARISON OF SMAP, GLDAS AND SIMULATED SOIL MOISTURE DATASETS OVER A MALAYSIAN REGION
Kamal Das, Jitendra Singh, Jagabondhu Hazra, IBM Research, India

TH4.R6.4
17:20
COMPARISON OF WINTER WHEAT SPRING PHENOLOGY EXTRACTION BY VARIOUS REMOTE SENSING VEGETATION INDICES AND METHODS
Liqin Gan, Xin Cao, Jin Chen, Beijing Normal University, China

TH4.R6.5
17:40
CROP FIELDS CLASSIFICATION BASED ON IN SITU PHENOLOGICAL METRICS
Roberto Luciani, Giovanni Laneve, Sapienza University of Rome, Italy; Claudia Arantes Silva, Universidade de Brasilia, Brazil

Thursday, August 1	08:00 - 09:40	Room 413
Session TH1.R7		Oral

Electromagnetic Modeling of the Sea Surface

Session Co-Chairs: Joel Johnson, Ohio State University; Steve Reising, Colorado State University

TH1.R7.1
08:00
FULL-POLARIZATION BISTATIC WAVE SCATTERING FROM A SPATIALLY ANISOTROPIC ROUGH SURFACE WITH INHOMOGENEOUS DIELECTRIC PROFILE
Ying Yang, University of Chinese Academy of Sciences, China; Kun-Shan Chen, Chinese Academy of Sciences, China

TH1.R7.2
08:20
INVESTIGATION ON ELECTROMAGNETIC SCATTERING FROM TIME-EVOLVING ROUGH SEA SURFACE CONTAMINATED BY NATURAL SEA SLICKS
Peng-Ju Yang, Rui Wu, Xin-Cheng Ren, Yu-Qiang Zhang, Yu-Qing Wang, Yanan University, China

TH1.R7.3
08:40
NUMERICAL EVALUATION OF WIND WAVE SPECTRA ON RADAR BACKSCATTERING FROM OCEAN SURFACE
Dengfeng Xie, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China; Kun-Shan Chen, Xiaofeng Yang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TH1.R7.4
09:00
VALIDITY OF THE KIRCHHOFF-GEOMETRIC OPTICS APPROACH FOR MODELING OF OCEAN BISTATIC RADAR SCATTERING
Valery Zavorotny, CIRES/NOAA Earth System Research Laboratory, United States; Alexander Voronovich, NOAA Earth System Research Laboratory, United States

TH1.R7.5
09:20
SWELL EFFECTS ON NEAR-COASTAL SMAP L-BAND HIGH-RESOLUTION NRCS DATA
Shanka Wijesundara, Joel Johnson, Ohio State University, United States

Thursday, August 1	10:40 - 12:20	Room 413
Session TH2.R7		Oral

Electromagnetic Modeling: Volumes, Surfaces, Methods

Session Co-Chairs: Kamal Sarabandi, University of Michigan; Ya-Qiu Jin, Fudan University

TH2.R7.1
10:40
TIME-EFFICIENT FULL-WAVE SCATTERING COMPUTATION FOR SNOW-PACKS WITH ARBITRARY THICKNESS
Mostafa Zaky, Kamal Sarabandi, University of Michigan, United States

TH2.R7.2
11:00
MODELING THE ANISOTROPIC REFLECTANCE OF SNOW IN A KERNEL-DRIVEN BRDF MODEL FRAMEWORK USING A SNOW KERNEL
Ziti Jiao, Anxin Ding, Beijing Normal University, China; Alexander Kokhanovsky, VITROCISET, Germany; Yadong Dong, Beijing Normal University, Germany

TH2.R7.3
11:20
MACROSCOPIC DIELECTRIC CONSTANT FORMULATION FOR ROUGH LAYERED STRUCTURES
Xun Yang, Ling Tong, Ming Li, University of Electronic Science and Technology of China, China

TH2.R7.4
11:40
SAR IMAGING BASED ON TWO-DIMENSIONAL MULTIFRACTIONAL MODELING
Gang Xiong, Shanghai Jiao Tong University, China; Lizhe Wang, Jiangsu Urban and Rural Construction College, China; Fang Wang, Shanghai Jiao Tong University, China; Lijun Wang, Science and Technology on Communication Information Security Control Labaoratory, China

TH2.R7.5
12:00
NUMERICAL CPR SIMULATION OF POLARIMETRIC ECHOES FROM MOON CRATERED SURFACE FOR ANALYSIS OF MINI-RF DATA
Ya-Qiu Jin, Niutao Liu, Fudan University, China

Thursday, August 1	13:40 - 15:20	Room 413
Session TH3.R7		Oral-Invited

Advanced Machine Learning for Time Series Remote Sensing Data Analysis I

Session Co-Chairs: Xiangrong Zhang, Xidian University, China; Xiuping Jia, University of New South Wales

TH3.R7.1
13:40
REPRESENTATION LEARNING VIA VARIATIONAL BAYES NETWORK WITH G0 DISTRIBUTION FOR SAR IMAGE SEGMENTATION
Fang Liu, Xiaoxue Qian, Licheng Jiao, Zonghao Sun, Biao Hou, Ronghua Shang, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education, School of Artificial Intelligence, Xidian University, China

TH3.R7.2
14:00
IMPROVED LOW RANK PLUS STRUCTURED SPARSITY AND UNSTRUCTURED SPARSITY DECOMPOSITION FOR MOVING OBJECT DETECTION IN SATELLITE VIDEOS
Junpeng Zhang, Xiuping Jia, University of New South Wales, Australia

TH3.R7.3
14:20
A STEPWISE METHOD FOR CHANGE DETECTION IN LARGE-SCALE POLARIMETRIC SAR IMAGES
Fang Liu, Nanjing University of Science and Technology, China; Xu Tang, Xidian University, China

TH3.R7.4
14:40
FORECASTING POLLEN AEROBIOLOGY WITH MODIS EVI, LAND COVER, AND PHENOLOGY USING MACHINE LEARNING TOOLS
Alfredo Huete, Ngoc Nguyen Tran, Ha Nguyen, Qiaoyun Xie, University of Technology Sydney, Australia; Constance Katelaris, Western Sydney University, Australia

TH3.R7.5
15:00
OBJECT DETECTION AND TRCACKING BASED ON CONVOLUTIONAL NEURAL NETWORKS FOR HIGH-RESOLUTION OPTICAL REMOTE SENSING VIDEO
Biao Hou, Jingliang Li, Xiangrong Zhang, Shuang Wang, Licheng Jiao, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education of China, Xidian University, China

Thursday, August 1	16:20 - 18:00	Room 413
Session TH4.R7		Oral-Invited

Advanced Machine Learning for Time Series Remote Sensing Data Analysis II

Session Co-Chairs: Xiuping Jia, University of New South Wales; Xiangrong Zhang, Xidian University, China

TH4.R7.1
16:20
WEAK MOVING OBJECT DETECTION IN OPTICAL REMOTE SENSING VIDEO WITH MOTION-DRIVE FUSION NETWORK
Yuxuan Li, Licheng Jiao, Xu Tang, Xiangrong Zhang, Wenhua Zhang, Xidian University, China; Li Gao, State Key Laboratory of Geo-Information Engineering, China

TH4.R7.2
16:40
AN AUTOMATIC APPROACH FOR CHANGE DETECTION IN LARGE-SCALE REMOTE SENSING IMAGES
Sicong Liu, Zhen Ye, Xiaohua Tong, Yongjie Zheng, Tongji University, China

TH4.R7.3
17:00
A NOVEL DEEP FEATURE FUSION NETWORK FOR REMOTE SENSING SCENE CLASSIFICATION
Yangyang Li, Qi Wang, Xiaoxu Liang, Licheng Jiao, Xidian University, China

TH4.R7.4
17:20
A SPARSE AUTOENCODER BASED HYPERSPECTRAL ANOMALY DETECTION ALGORIHTM USING RESIDUAL OF RECONSTRUCTION ERROR
Shizhen Chang, Remote Sensing Group, State Key Laboratory of Information Engineering in Surveying, Mapping, and Remote Sensing, Wuhan University, China; Bo Du, School of Computer Science, Wuhan University, China; Liangpei Zhang, Remote Sensing Group, State Key Laboratory of Information Engineering in Surveying, Mapping, and Remote Sensing, Wuhan University, China

TH4.R7.5
17:40
MOVING TARGETS DETECTION FOR SATELLITE-BASED SURVEILLANCE VIDEO
Xiaoyong Wang, Laboratory of Spatial Data Processing Technology of Henan University, China; Feng Li, Lei Xin, Qian Xuesen Laboratory of Space Technology, Chinese Academy of Space Technology, China; Jun Ma, Laboratory of Spatial Data Processing Technology of Henan University, China; Xue Yang, Qian Xuesen Laboratory of Space Technology, Chinese Academy of Space Technology, China; Xing Chang, Lanzhou Jiaotong University, China

Thursday, August 1	08:00 - 09:40	Room 414-415
Session TH1.R8		Oral

Monitoring and Damage Assessment of Flood III

Session Co-Chairs: Yunling Lou, Jet Propulsion Laboratory, California Institute of Technology; Desheng Liu, Ohio State University

TH1.R8.1
08:00
FLOOD MAPPING AND IMPACT ASSESSMENT IN AGUSAN RIVER BASIN, PHILIPPINES USING SENTINEL-1 SAR IMAGES
Monalaine Bermoy, Meriam Santillan, Jojene Santillan, Arthur Amora, Joy Casinginan, Janice Baay, Caraga State University, Philippines

TH1.R8.2
08:20
AN UNSUPERVISED SURFACE WATER UN-MIXING METHOD USING LANDSAT AND MODIS IMAGES FOR RAPID INUNDATION OBSERVATION
Jiayong Liang, Desheng Liu, Ohio State University, United States

TH1.R8.3
08:40
RECENT AIRBORNE SAR DEMONSTRATIONS FOR MONITORING AND ASSESSMENT OF VOLCANIC LAVA FLOW AND SEVERE FLOODING
Yunling Lou, Scott Hensley, Bruce Chapman, Brian Hawkins, Cathleen Jones, Paul Lundgren, Thierry Michel, Ron Muellerschoen, Naiara Pinto, Yang Zheng, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TH1.R8.4
09:00
DETECTION OF WATER LEAKAGE FROM CANALS USING SENTINEL-1 SAR DATA
Seungbum Kim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

Thursday, August 1	10:40 - 12:20	Room 414-415
Session TH2.R8		Oral

Monitoring and Damage Assessment of Urban and Buildings

Session Co-Chairs: Magaly Koch, Boston University; Ferdaous Chaabane, Higher School of Communication of Tunis SUP'COM

TH2.R8.1
10:40
DETECTING COLLAPSED BUILDINGS AFTER A NATURAL HAZARD ON VHR OPTICAL SATELLITE IMAGERY USING U-NET CONVOLUTIONAL NEURAL NETWORKS
Vahid Rashidian, Laurie Baise, Tufts University, United States; Magaly Koch, Boston University, United States

TH2.R8.2
11:00
VHR SATELLITE IMAGE TIME SERIES ANALYSIS FOR ILLEGAL BUILDING MONITORING USING MULTI-DIMENSIONAL HISTOGRAM EARTH MOVER'S DISTANCE
Ferdaous Chaabane, Safa Réjichi, Higher School of Communication of Tunis SUP'COM, Tunisia; Chayma Kefi, Haythem Ismail, CNCT (Centre National de la Cartographie et de la Télédétection), Tunisia; Florence Tupin, Télécom ParisTech, France

TH2.R8.3
11:20
BUILDING DAMAGE ASSESSMENT FROM POST-EVENT POLSAR IMAGE BASED ON OPCE AND TEMPLATE MATCHING
Yuliang Nie, Qiming Zeng, Jian Jiao, Peking University, China

TH2.R8.4
11:40
WEB CAMERA SENSOR COUPLED WITH LIDAR DATA FLOOD MAP FOR FLOOD WARNING SYSTEM
Indra Riyanto, Universitas Indonesia, Indonesia; Lestari Margatama, Angga Ariawan, Luhur Bayuaji, Universitas Budi Luhur, Indonesia; Mia Rizkinia, Dodi Sudiana, Harry Sudibyo, Universitas Indonesia, Indonesia; Josaphat Tetuko Sri Sumantyo, Chiba University, Japan

TH2.R8.5
12:00
INVESTIGATING EFFECTS OF TYPHOON MANGKHUT ON URBAN VEGETATION USING SENTINEL-2 IMAGES
Shuai Xu, Xiaolin Zhu, Hong Kong Polytechnic University, China; Eileen H. Helmer, US Forest Service (USDA), United States; Tao Wei, Shenzhen University, China

THURSDAY ORAL

Thursday, August 1	13:40 - 15:20	Room 414-415
Session TH3.R8		Oral

Monitoring and Damage Assessment of Land Surface

Session Co-Chairs: Patricia Oliva, Universidad Mayor; Olena Dubovyk, University of Bonn

TH3.R8.1
13:40
STUDY ON LOCUST DISASTER MONITORING BASED ON SMOS L2 SOIL MOISTURE DATA
Na Yang, Xuehao Cui, Henan Polytechnic University, China

TH3.R8.2
14:00
EVALUATING THE SENTINEL-2A SATELLITE DATA FOR FUEL MOISTURE CONTENT RETRIEVAL
Qidi Shu, Xingwen Quan, University of Electronic Science and Technology of China, China; Marta Yebra, Australian National University, Australia; Xiangzhuo Liu, Long Wang, Yang Zhang, University of Electronic Science and Technology of China, China

TH3.R8.3
14:20
SPATIALLY REFINED BIOMASS AND COMBUSTION EFFICIENCY ESTIMATIONS IN SUPPORT OF FOREST FIRES EMISSIONS QUANTIFICATION
Patricia Oliva, Leonardo Duran, Alejandro Venegas, Paulina Vidal, Claudia Montoya, Universidad Mayor, Chile

TH3.R8.4
14:40
SPATIAL ASSESSMENT OF DROUGHT HAZARD IN KAZAKHSTAN: TOWARDS A COUNTRYWIDE DROUGHT MONITORING SYSTEM
Olena Dubovyk, Gohar Ghazaryan, Javier González, Valerie Graw, University of Bonn, Germany; Fabian Löw, Jonas Schreier, MapTailor Geospatial Consulting GbR, Germany

TH3.R8.5
15:00
RESEARCH ON DROUTH MONITORING IN SHANDONG PROVIENCE BASED ON MULTI-SOURCE REMOTE SENSING DATA
Hong Wan, Peng Guo, Zhengdong Wang, College of Information Science and Engineering, Shandong Agricultural University, China; Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Chunhong Meng, Gang Yang, College of Information Science and Engineering, Shandong Agricultural University, China

Thursday, August 1	16:20 - 18:00	Room 414-415
Session TH4.R8		Oral

Data Anaysis Methods in Monitoring and Damage Assessment

Session Co-Chairs: Shouhei Kidera, University of Electro-Communications; Motofumi Arii, Mitsubishi Space Software Corporation

TH4.R8.1
16:20
PROPOSAL OF ADAPTIVE SEARCH-AND-RESCUE RADAR SYSTEM WITH ONLINE COMPLEX-VALUED FREQUENCY-DOMAIN INDEPENDENT COMPONENT ANALYSIS
Takahiro Nakanishi, Akira Hirose, University of Tokyo, Japan

TH4.R8.2
16:40
OBJECT-ORIENTED OPEN PIT EXTRACTION BASED ON CONVOLUTIONAL NEURAL NETWORK, A CASE STUDY IN YUZHOU, CHINA
Naixun Hu, Tao Chen, Ruiqing Niu, Institute of Geophysics & Geomatics, China University of Geosciences, China; Na Zhen, Geological Environment Monitoring Institute of Henan Province, China

TH4.R8.3
17:00
A STUDY ON FEATURES EXTRACTION FOR HMM BASED ANOMALOUS SIGNAL DETECTION FROM WAVEFORM IMAGES OF ELF MAGNETIC SIGNALS
Motoaki Mouri, Aichi University, Japan; Akitoshi Itai, Chubu University, Japan; Hiroshi Yasukawa, Aichi Prefectural University, Japan; Ichi Takumi, Nagoya Institute of Technology, Japan

TH4.R8.4
17:20
HAS GOVERNMENT WATER PROTECTION POLICY TAKEN EFFECT ON PREVENTING HARMFUL ALGAL BLOOMS IN ERHAI LAKE?
Zhan Zhang, Jianya Gong, Jialin Wang, Xiaoling Chen, Liqiong Chen, Wuhan University, China

Thursday, August 1	08:00 - 09:40	Room 416-417
Session TH1.R9		Oral

Ambiguity Reduction

Session Chair: Lin Chen, Shanghai Jiao Tong University

TH1.R9.1
08:00
AZIMUTH AMBIGUITY DETECTION AND SUPPRESSION IN SAR IMAGES
Noboru Oishi, Kei Suwa, Mitsubishi Electric Corporation, Japan

TH1.R9.2
08:20
K-SPACE DECOMPOSITION BASED RANGE POINTS MIGRATION METHOD FOR MILLIMETER WAVE RADAR
Yoshiki Akiyama, Shouhei Kidera, University of Electro-Communications, Japan

TH1.R9.3
08:40
CURVILINEAR VIDEO-SAR PERSISTENT IMAGING WITH DISTORTION CORRECTION BASED ON NUFFT-3
Ruizhi Hu, National University of Singapore, Singapore; Feng Zuo, Xiaolong Li, University of Electronic Science and Technology of China, China; Xianyang Hu, Tat Soon Yeo, National University of Singapore, Singapore; Changzheng Ma, MooVita Pte Ltd., Singapore

TH1.R9.4
09:00
THE RANGE AMBIGUITY SUPPRESSION BASED ON AMPLITUDE MODULATION CHIRP
Peng Xiao, Min Liu, China Academy of Space Technology, China; Wei Guo, Hong Kong Polytechnic University, China; Jindong Yu, Beihang University, China

TH1.R9.5
09:20
EFFICIENT NONCONVEX REGULARIZATION FOR AZIMUTH RESOLUTION ENHANCEMENT OF REAL BEAM SCANNING RADAR
Lin Chen, Xue Jiang, Penghui Huang, Ye Zhang, Xingzhao Liu, Shanghai Jiao Tong University, China

Thursday, August 1	10:40 - 12:20	Room 416-417
Session TH2.R9		Oral

SAR Focusing

Session Chair: Alberto Moreira, German Aerospace Center (DLR)

TH2.R9.1
10:40
ON THE USE OF TIME-DOMAIN SAR FOCUSING IN SPACEBORNE SAR MISSIONS
Marc Rodriguez-Cassola, Pau Prats-Iraola, Gerhard Krieger, Alberto Moreira, German Aerospace Center (DLR), Germany

TH2.R9.2
11:00
A NOVEL IMAGING MODE FOR SIMULTANEOUS SINGLE-/DUAL- AND QUAD-POL SAR ACQUISITION OVER SWATHS OF DIFFERENT WIDTHS
Michelangelo Villano, Ulrich Steinbrecher, Gerhard Krieger, Alberto Moreira, German Aerospace Center (DLR), Germany

TH2.R9.3
11:20
CHALLENGES OF SHIP FOCUSING WITH LONG COHERENCE PROCESSING INTERVAL
Wenkang Liu, Mengdao Xing, Guang-Cai Sun, Xidian University, China

TH2.R9.4
11:40
SPARSE RECONSTRUCTION FOR SYNTHETIC APERTURE RADAR VIA GENERALIZED SPARSE COVARIANCE FITTING
Xiaqing Yang, Yongchao Zhang, Deqing Mao, Yuanyuan Bu, Haiguang Yang, Jun Shi, University of Electronic Science and Technology of China, China

TH2.R9.5
12:00
PROCESSING OF SPACEBORNE HIGH-RESOLUTION SAR DATA WITH CURVED ORBIT
Da Liang, Weidong Yu, Heng Zhang, Lei Zhang, Huaitao Fan, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

Thursday, August 1	13:40 - 15:20	Room 416-417
Session TH3.R9		Oral

SAR Imaging Techniques

Session Co-Chairs: Paul Rosen, Jet Propulsion Laboratory / Caltech; Takehiro Hoshino, Mitsubishi Electric Corporation

TH3.R9.1
13:40
1-BIT SAR IMAGING ASSISTED WITH SINGLE-FREQUENCY THRESHOLD
Bo Zhao, Lei Huang, Qiang Li, Min Huang, Weimin Bao, Shenzhen University, China

TH3.R9.2
14:00
IMPROVED ADAPTIVE PARAMETER ESTIMATION FOR SPARSE SAR IMAGING BASED ON COMPLEX IMAGE AND AZIMUTH-RANGE DECOUPLE
Mingqian Liu, Zhilin Xu, Zhongqiu Xu, Zhonghao Wei, Bingchen Zhang, Yirong Wu, Institute of Electronics, Chinese Academy of Sciences, China

TH3.R9.3
14:20
A REAL-TIME IMAGING ALGORITHM FOR SPACEBORNE SAR VIA SUB-APERTURE COMPLEX IMAGES COMBINING
Guang-cai Sun, National Laboratory of Radar Signal Processing, Xidian University, China; Yanbin Liu, School of Physics and Optoelectronic Engineering, Xidian University, China; Mengdao Xing, National Laboratory of Radar Signal Processing, Xidian University, China; Liang Guo, School of Physics and Optoelectronic Engineering, Xidian University, China; Zheng Bao, National Laboratory of Radar Signal Processing, Xidian University, China

TH3.R9.4
14:40
BISTATIC FORWARD-LOOKING SAR MOTION ERROR COMPENSATION METHOD BASED ON KEYSTONE TRANSFORM AND MODIFIED AUTOFOCUS BACK-PROJECTION
Qing Yang, University of Electronic Science and Technology of China, China; Deming Guo, Nanjing Research Institute of Electronics Technology, China; Zhongyu Li, Junjie Wu, Yulin Huang, Haiguang Yang, Jianyu Yang, University of Electronic Science and Technology of China, China

TH3.R9.5
15:00
EXPERIMENTAL STUDY OF COMPRESSIVE SENSING FOR SYNTHETIC APERTURE RADAR ON SUB-NYQUIST LINEARLY DECIMATED ARRAY
Takehiro Hoshino, Kei Suwa, Yuya Yokota, Teruyuki Hara, Mitsubishi Electric Corporation, Japan

Thursday, August 1	16:20 - 18:00	Room 416-417
Session TH4.R9		Oral

PolSAR Methods

Session Chair: Masanobu Shimada, Tokyo Denki University / JAXA

TH4.R9.1
16:20
A REFLECTION SYMMETRY APPROXIMATION FOR FREEMAN-DURDEN DECOMPOSTION OF POLSAR DATA
Wentao An, Mingsen Lin, Yongjun Jia, Xiaoqing Lu, National Satellite Ocean Application Service, China

TH4.R9.2
16:40
MULTI-TEMPORAL SPECKLE REDUCTION OF POLARIMETRIC SAR IMAGES: A RATIO-BASED APPROACH
Charles-Alban Deledalle, CNRS, France; Loïc Denis, Université de Lyon, France; Laurent Ferro-Famil, Université Rennes 1, France; Jean-Marie Nicolas, Florence Tupin, Télécom Paristech, France

TH4.R9.3
17:00
SENSITIVITY STUDY OF X-BAND MIMP SAR DATA FROM VEGETABLES
Motofumi Arii, Mitsubishi Electric Co., Ltd., Japan; Hitoshi Sakamoto, Mitsubishi Space Software Co., Ltd., Japan; Hiroyoshi Yamada, Niigata University, Japan; Shoichiro Kojima, National Institute of Information and Communications Technology (NICT), Japan

TH4.R9.4
17:20
ANALYSIS OF POLARIMETRIC SCATTERING FROM DIHEDRAL STRUCTURE FOR DETECTING BUILDING DAMAGED BY MUDFLOW
Ryoichi Sato, Kentaro Sasaki, Yoshio Yamaguchi, Hiroyoshi Yamada, Niigata University, Japan

TH4.R9.5
17:40
DISCUSSION ON THE ROTATION TRANSFORMATION IN FULLY POLARIMETRIC SYNTHETIC APERTURE RADAR DARA INTERPRETATION
Fang Shang, University of Electro-Communications, Japan

Thursday, August 1	08:00 - 09:40	Room 418
Session TH1.R10		Oral

Lidar Science and Technology

Session Co-Chairs: John Kerekes, Rochester Institute of Technology; Georgios Tzeremes, European Space Agency

TH1.R10.1
08:00
A NOVEL METHOD TO AUTOMATICALLY FUSE MULTI-VIEW LIDAR DATA IN FOREST ENVIRONMENTS BASED ON TREE LOCATIONS
Hongcan Guan, Institute of Botany, Chinese Academy of Sciences / University of Chinese Academy of Sciences, China; Yanjun Su, Institute of Botany, Chinese Academy of Sciences, China; Rui Wang, Qin Ma, Qiuli Yang, Institute of Botany, Chinese Academy of Sciences / University of Chinese Academy of Sciences, China; Tianyu Hu, Shichao Jin, Qinghua Guo, Institute of Botany, Chinese Academy of Sciences, China

TH1.R10.2
08:20
MULTIPLE SCATTERING EFFECT ON FOREST PHYSIOLOGICAL PARAMETERS OF MULTI-SPECTRAL LIDAR CANOPY WAVEFORMS
Xuebo Yang, Cheng Wang, Xiaohuan Xi, Chinese Academy of Sciences, China

TH1.R10.3
08:40
INTENSITY CALIBRATION OF A MCT-APD SENSOR FOR A FLASH LIDAR SYSTEM
Victor Emanuel Saraiva Parahyba, Regis Perrier, Eric de Borniol, CEA-LETI, France; Jocelyn Chanussot, Universite Grenoble Alpes, France

TH1.R10.4
09:00
ROBUST BUILDING-BASED REGISTRATION OF AIRBORNE LIDAR DATA AND OPTICAL IMAGERY ON URBAN SCENES
Thanh Huy Nguyen, Université Laval & IMT Atlantique, Canada; Sylvie Daniel, Université Laval, Canada; Didier Guériot, Christophe Sintès, Jean-Marc Le Caillec, IMT Atlantique, France

TH1.R10.5
09:20
THE COMPARISON OF DENOISING METHODS FOR PHOTON COUNTING LASER ALTIMETER DATA
Dan Ye, Huan Xie, Xiaohua Tong, Zhong Zhang, Tongji University, China; Ming Li, Chinese Academy of Sciences, China

Thursday, August 1	10:40 - 12:20	Room 418
Session TH2.R10		Oral

Passive Sensors and Calibration

Session Chair: Tomoyuki Urabe, Japan Aerospace Exploration Agency

TH2.R10.1
10:40
LUNAR CALIBRATION INTER-COMPARISON OF SGLI, MODIS AND VIIRS
Tomoyuki Urabe, Japan Aerospace Exploration Agency (JAXA), Japan; Xiaoxiong Xiong, National Aeronautics and Space Administration (NASA), United States; Taichiro Hashiguchi, Remote Sensing Technology Center of Japan, Japan; Shigemasa Ando, Yoshihiko Okamura, Kazuhiro Tanaka, Masaaki Mokuno, Japan Aerospace Exploration Agency (JAXA), Japan

TH2.R10.2
11:00
NOAA-20 VIIRS SENSOR DATA RECORDS GEOMETRIC AND RADIOMETRIC CALIBRATION PERFORMANCE ONE YEAR IN-ORBIT
Wenhui Wang, Global Science & Technology, Inc, United States; Changyong Cao, NOAA, United States

TH2.R10.3
11:20
INTEGRATED INDEPENDENT GEOMETRIC CALIBRATION OF STEREO CAMERAS ABOARD AN OPTICAL SATELLITE
Yingdong Pi, Bo Yang, Ru Chen, Xin Li, Wuhan University, China

TH2.R10.4
11:40
ACIX – ATMOSPHERIC ATMOSPHERIC CORRECTION INTER-COMPARISON EXERCISE
Eric Vermote, NASA Goddard Space Flight Center, United States; Georgia Doxani, SERCO SpA for European Space Agency ESA-ESRIN, United States; Ferran Gascon, European Space Agency ESA-ESRIN, United States; Jean-Claude Roger, University of Maryland, College Park, United States

TH2.R10.5
12:00
FULL SPECTRUM SIMULATION OF PARTLY CLOUDY SCENES
Robert Sundberg, Steven Richtsmeier, Spectral Sciences, United States

Thursday, August 1	13:40 - 15:20	Room 418
Session TH3.R10		Oral

Calibration and Validation of Spaceborne Imaging Spectroscopy Sensors

Session Co-Chairs: Cindy Ong, CSIRO; Hirokazu Yamamoto, AIST

TH3.R10.1
13:40
UNDERSTANDING OF AEROSOL OPTICAL PROPERTIES OVER HISUI VALIDATION SITES USING GROUND-BASED MEASUREMENTS
Hirokazu Yamamoto, Satoshi Tsuchida, National Institute of Advanced Industrial and Science and Technology (AIST), Japan

TH3.R10.2
14:00
RAPID FLUORESCENCE ANALYSIS METHOD FOR MONITORING WATER ENVIRONMENT WITH WIDE CONCENTRATION RANGE BASED ON MULTIDIMENSIONAL PARTIAL LEAST SQUARES METHOD
Jing Xu, Beijing Institute of Space Mechanics & Electricity, China

TH3.R10.3
14:20
THE USE OF THE PINNACLES DESERT CALIBRATION SITE FOR CALIBRATION AND VALIDATION OF IMAGING SPECTROSCOPY SENSORS
Cindy Ong, CSIRO, Australia; Martin Bachmann, German Aerospace Center (DLR), Germany; Carolina Barrientos Gajardo, Servicio Aerofotogramétrico del Gral. Juan Soler Manfredini, Fuerza Aérea de Chile, Chile; Jeff Czapla-Myers, University of Arizona, United States; Peter Fearns, Ian Lau, Timothy Malthus, CSIRO, Australia; Kurtis Thome, Brian Wenny, National Aeronautics and Space Administration (NASA), United States

TH3.R10.4
14:40
DESIGN OF HIGH-RESOLUTION HYPERSPECTRAL IMAGING SATELLITE WITH LARGE ANGULAR MOTION COMPENSATION
Zhen Li, Beijing Institute of Spacecraft System Engineering, China; Tong-zhong Liu, Beijing Spacecrafts, China; Kai Qiao, Beijing Institute of Tracking and Telecommunications Technology, China; Yong-hua Jiang, Dong Yang, Wuhan University, China

TH3.R10.5
15:00
CALIBRATION AND VALIDATION WORKING GROUP FOR SURFACE BIOLOGY AND GEOLOGY (SBG)
Raymond Kokaly, U.S. Geological Survey, United States; Kevin Turpie, National Aeronautics and Space Administration (NASA), United States

Thursday, August 1	16:20 - 18:00	Room 418
Session TH4.R10		Oral

BRDF, Geometric and Radiometric Calibration

Session Co-Chairs: Zhuosen Wang, University of Maryland; Aaron Pearlman, GeoThinkTank LLC

TH4.R10.1
16:20
EVALUATION OF LUNAR BRDF CORRECTION FOR THE RETRIEVAL OF DAILY VIIRS BLACK MARBLE NIGHTTIME LIGHTS
Zhuosen Wang, University of Maryland, United States; Miguel Román, Universities Space Research Association, United States; Virginia Kalb, NASA Goddard Space Flight Center, United States; Ranjay Shrestha, Science Systems and Applications, Inc. / NASA Goddard Space Flight Center, United States; Eleanor Stokes, University of Maryland, United States

TH4.R10.2
16:40
SENTINEL-2 GLOBAL SURFACE REFLECTANCE LEVEL-2A PRODUCT GENERATED WITH SEN2COR
Jérôme Louis, Telespazio France, France; Bringfried Pflug, Magdalena Main-Knorn, German Aerospace Center (DLR), Germany; Vincent Debaecker, Telespazio France, France; Uwe Mueller-Wilm, Telespazio Vega Deutschland, Germany; Rosario Quirino Iannone, RHEA SpA, Italy; Enrico Giuseppe Cadau, SERCO Italia SpA, Italy; Valentina Boccia, Ferran Gascon, European Space Agency (ESA), Italy

TH4.R10.3
17:00
A RIGOROUS ON-ORBIT GEOMETRIC CALIBRATION METHOD FOR HIGH-RESOLUTION OPTICAL SENSOR OF CHINESE MAPPING SATELLITE
Kun Hu, Institute of Electronics, Chinese Academy of Sciences, China; Yongjun Zhang, Wuhan University, China; Xu Huang, Ohio State University, United States

TH4.R10.4
17:20
RADIOMETRIC CALIBRATION STATUS AND RECALIBRATION OF ASTER THERMAL INFRARED IMAGES
Hideyuki Tonooka, Ibaraki University, Japan; Fumihiro Sakuma, Tetsushi Tachikawa, Masakuni Kikuchi, Japan Space Systems, Japan

TH4.R10.5
17:40
LANDSAT 9 THERMAL INFRARED SENSOR 2 SPECTRAL RESPONSE TEST: UPDATES AND PERSPECTIVE
Aaron Pearlman, Boryana Efremova, GeoThinkTank LLC, United States; Allen Lunsford, Catholic University of America, United States; Joel McCorkel, Amy Simon, Dennis Reuter, National Aeronautics and Space Administration (NASA), United States

THURSDAY ORAL

Thursday, August 1	08:00 - 09:40	Room 419
Session TH1.R11		Oral

Multisensor and Multisource Classification Techniques

Session Chair: Lorenzo Bruzzone, University of Trento

TH1.R11.1
08:00
LIDAR DATA-AIDED HYPERGRAPH REGULARIZED MULTI-MODAL UNMIXING
Sevcan Kahraman, Kocaeli University, Turkey; Yang Xu, Nanjing University of Science and Technology, China; Jocelyn Chanussot, Université Grenoble Alpes, CNRS, Grenoble INP, France; Ali Tangel, Kocaeli University, Turkey

TH1.R11.2
08:20
DATA ASSOCIATION TECHNIQUES FOR NEAR-CONTEMPORANEOUS SAR AND AIS DATASETS FROM NOVASAR-1
Maximilian Rodger, Raffaella Guida, University of Surrey, United Kingdom

TH1.R11.3
08:40
FUSION OF MULTISPECTRAL IMAGE AND AIRBORNE LIDAR DATA FOR THE CLASSIFICATION OF URBAN AREA WITH ROTATION FOREST
Jike Chen, Nanjing University of Information Science and Technology, China; Junshi Xia, RIKEN Center for Advanced Intelligence Project, RIKEN, China; Shuanggen Jin, Nanjing University of Information Science and Technology, China; Peijun Du, Nanjing University, China; Zhigang Xu, University Key Laboratory for Mineral Resources Safe Mining Fujian Province, China

TH1.R11.4
09:00
A NEW CLASSIFICATION METHOD FOR SEMI-ARID REGIONS BASED ON SAR AND LIDAR DATA FUSION
Pasquale Iervolino, University of Surrey, United Kingdom; Alessandro Coppola, Universita degli Studi di Napoli, Federico II, Italy; Raffaella Guida, University of Surrey, United Kingdom; Daniele Riccio, Universita degli Studi di Napoli, Federico II, Italy

TH1.R11.5
09:20
DOMAIN ADAPTATION OF LANDSAT-8 AND PROBA-V DATA USING GENERATIVE ADVERSARIAL NETWORKS FOR CLOUD DETECTION
Gonzalo Mateo-García, Valero Laparra, Luis Gómez-Chova, Universidad de Valencia, Spain

Thursday, August 1	10:40 - 12:20	Room 419
Session TH2.R11		Oral

Data Fusion with Deep Learning Techniques

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Qian Du, Mississippi State University

TH2.R11.1
10:40
CLOUD AND SHADOW REMOVAL FOR SENTINEL-2 BY PROGRESSIVELY SPATIOTEMPORAL PATCH GROUP LEARNING
Qiang Zhang, Qiangqiang Yuan, Jie Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

TH2.R11.2
11:00
RECONSTRUCTING GEOSTATIONARY SATELLITE LST BASED ON MULTISCALE FEATURE CONNECTED CONVOLUTIONAL NEURAL NETWORK
Zhixiang Yin, Penghai Wu, Hui Yang, Xiaoshuang Ma, Yanlan Wu, Anhui University, China

TH2.R11.3
11:20
DSM BUILDING SHAPE REFINEMENT FROM COMBINED REMOTE SENSING IMAGES BASED ON WNET-CGANS
Ksenia Bittner, German Aerospace Center (DLR), Germany; Marco Körner, Technical University of Munich (TUM), Germany; Peter Reinartz, German Aerospace Center (DLR), Germany

TH2.R11.4
11:40
COLOR ADAPTATION AND CLOUD REMOVAL BETWEEN SATELLITE IMAGES VIA OPTIMAL TRANSPORT
Zheng Zhang, Changmiao Hu, Ping Tang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Thomas Corpetti, CNRS - UMR 6554 LETG-RENNES COSTEL, France

TH2.R11.5
12:00
REMOTE ESTIMATION OF FREE-FLOW SPEEDS
Weilian Song, Tawfiq Salem, Hunter Blanton, Nathan Jacobs, University of Kentucky, United States

Thursday, August 1	13:40 - 15:20	Room 419
Session TH3.R11		Oral

Super-resolution and Multiresolution Fusion Techniques V

Session Chair: Andrea Garzelli, University of Siena

TH3.R11.1
13:40
A NEW SPATIO-TEMPORAL FUSION METHOD FOR REMOTELY SENSED DATA BASED ON CONVOLUTIONAL NEURAL NETWORKS
Yunfei Li, Chenying Liu, Lin Yan, Jun Li, Guangdong Provincial Key Laboratory of Urbanization and Geo-simulation, School of Geographic and planning, Sun Yat-Sen University, China; Antonio Plaza, Hyperspectral Computing Laboratory, Avenida de la Universidad s/n, Spain; Bo Li, School of Computer Science and Engineering, Beihang University, China

TH3.R11.2
14:00
REPRODUCIBILITY OF SPECTRAL AND RADIOMETRIC NORMALIZED SIMILARITY INDICES FOR MULTIBAND IMAGES
Alberto Arienzo, National Research Council of Italy, Italy; Luciano Alparone, University of Florence, Italy; Bruno Aiazzi, Stefano Baronti, National Research Council of Italy, Italy; Andrea Garzelli, University of Siena, Italy

TH3.R11.3
14:20
A SPECTRAL MAPPING BASED INTENSITY MODULATION FOR PAN-SHARPENING
Xiaofei Zhao, Hongyi Liu, Jun Zhang, Zebin Wu, Zhihui Wei, Nanjing University of Science and Technology, China

TH3.R11.4
14:40
ROBUST DEEP HYPERSPECTRAL IMAGERY SUPER-RESOLUTION
Jiangtao Nie, Northwestern Polytechnical University, China; Lei Zhang, Inception Institute of Artificial Intelligence (IIAI), United Arab Emirates; Cong Wang, Wei Wei, Yanning Zhang, Northwestern Polytechnical University, China

TH3.R11.5
15:00
SPECTRAL SUPER-RESOLUTION FOR MULTISPECTRAL IMAGE BASED ON SPECTRAL AND SPATIAL STRATEGIES
Chen Yi, Yong-qiang Zhao, Northwestern Polytechnical University, China; Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

Thursday, August 1	16:20 - 18:00	Room 419
Session TH4.R11		Oral

Registration on Multisensor and Multisource Images

Session Co-Chairs: Jacqueline Le Moigne, NASA Goddard Space Flight Center; Mihai Datcu, German Aerospace Center (DLR)

TH4.R11.1
16:20
ROBUST MUTUAL INFORMATION-BASED MULTI-IMAGE REGISTRATION
Dehong Liu, Hassan Mansour, Petros Boufounos, Mitsubishi Electric Research Laboratories, United States

TH4.R11.2
16:40
A NOVEL ROBUST FEATURE DESCRIPTOR FOR MULTI-SOURCE REMOTE SENSING IMAGE REGISTRATION
Song Cui, Yanfei Zhong, Ailong Ma, Liangpei Zhang, Wuhan University, China

TH4.R11.3
17:00
SAR2OPT: IMAGE ALIGNMENT BETWEEN MULTI-MODAL IMAGES USING GENERATIVE ADVERSARIAL NETWORKS
Hisatoshi Toriya, University of Tsukuba, Japan; Ashraf Dewan, Curtin University, Australia; Itaru Kitahara, University of Tsukuba, Japan

TH4.R11.4
17:20
AUTOMATIC REGISTRATION OF SAR IMAGE AND GIS BUILDING FOOTPRINTS DATA IN DENSE URBAN AREA
Yao Sun, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany; Yuanyuan Wang, Technical University of Munich (TUM), Germany; Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

TH4.R11.5
17:40
AUTOMATIC REGISTRATION OF OPTICAL AND SAR IMAGES VIA IMPROVED PHASE CONGRUENCY
Yuming Xiang, Rongshu Tao, Feng Wang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China

Thursday, August 1	08:00 - 09:40	Room 421
Session TH1.R12		Oral

Coastal Zones I

Session Chair: Duk-jin Kim, Seoul National University

TH1.R12.1
08:00

AI-BASED REMOTE SENSING OCEANOGRAPHY – IMAGE CLASSIFICATION, DATA FUSION, ALGORITHM DEVELOPMENT AND PHENOMENON FORECAST
Gang Zheng, Second Institute of Oceanography, Ministry of Natural Resources, China; Xiaofeng Li, Institute of Oceanology, Chinese Academy of Sciences, China; Bin Liu, Shanghai Ocean University, China

TH1.R12.2
08:20

RADON-AUGMENTATION OF SENTINEL-II IMAGERY TO ENHANCE RESOLUTION AND VISIBILITY OF (NEARSHORE) OCEAN-WAVE PATTERNS
Erwin W.J. Bergsma, CNES, France; Rafael Almar, IRD, France; Philippe Maisongrande, CNES, France

TH1.R12.3
08:40

BATHYMETRIC EXTRACTION USING OVERLAPPING ORTHOIMAGES
Zhenling Ma, Xiao Xu, Yannan Chen, Weijie Wang, Shanghai Ocean University, China

TH1.R12.4
09:00

LONGTERM RELEASE OF OIL FROM A WRECK IN THE BLACK SEA MONITORED BY SPACEBORNE SAR
Martin Gade, Universität Hamburg, Germany

TH1.R12.5
09:20

EXPLORING THE RELATIONSHIP BETWEEN SAR-DERIVED WIND SPEEDS AND SURFACE ROUGHNESS LENGTH OVER THE OCEAN THROUGH WAVELET ANALYSIS
Samantha Ballard, Hans Graber, Michael Caruso, Roland Romeiser, University of Miami, United States

Thursday, August 1	10:40 - 12:20	Room 421
Session TH2.R12		Oral

Ocean Altimetry II

Session Co-Chairs: Bertrand Chapron, IFREMER; Xiaofeng Li, NOAA

TH2.R12.1
10:40

ON THE ASSIMILATION OF CFOSAT WAVE DATA IN THE WAVE MODEL MFWAM : VERIFICATION PHASE
Lotfi Aouf, Alice Dalphinet, Météo-France, France; Daniele Hauser, Lauriane Delaye, CNRS, France; Céline Tison, CNES, France; Bertrand Chapron, IFREMER, France; Laura Hermozo, Cédric Tourain, CNES, France

TH2.R12.2
11:00

TOWARDS AN OCEAN ALTIMETRY PRODUCT USING CYGNSS
Eric Loria, Ohio State University, United States; Jake Mashburn, University of Colorado Boulder, United States; Andrew O'Brien, Ohio State University, United States; Penina Axelrad, University of Colorado Boulder, United States; Cinzia Zuffada, Zhijin Li, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TH2.R12.3
11:20

OCEAN WAVE MEASUREMENT USING SAR CROSS-TRACK INTERFEROMETRY
Akitsugu Nadai, National Institute of Information and Communications Technology (NICT), Japan

TH2.R12.4
11:40

SEA LEVEL PERIODIC CHANGE OVER THE CHINA SEA AND ITS VICINITY BASED ON ALTIMETER DATA
Qinting Sun, Jianhua Wan, Shanwei Liu, China University of Petroleum (East China), China

TH2.R12.5
12:00

ASSESSMENT OF REPROCESSED SEA SURFACE HEIGHT MEASUREMENTS DERIVED FROM HY-2A/GM ALTIMETER DATA
Maofei Jiang, Ke Xu, Qiankun Liu, National Space Science Center, Chinese Academy of Sciences, China

Thursday, August 1	13:40 - 15:20	Room 421
Session TH3.R12		Oral

Geographic Information Science I

Session Co-Chairs: Peter Baumann, Jacobs University; Xiao Xiang Zhu, German Aerospace Center (DLR)

TH3.R12.1
13:40

CALCULATING OPENSTREETMAP BUILDING HEIGHTS FROM SINGLE USER-GENERATED PHOTOGRAPHS
Eliana Bshouty, Sagi Dalyot, Technion, Israel

TH3.R12.2
14:00

MUTUAL INFORMATION ANALYSIS OF SOCIAL MEDIA IMAGES AND BUILDING FUNCTIONS
Eike Jens Hoffmann, Technical University of Munich (TUM), Germany; Martin Werner, Xiao Xiang Zhu, German Aerospace Center (DLR), Germany

TH3.R12.3
14:20

A WORDNET-BASED GEOSPATIAL WEB SERVICES SEARCH METHOD SUPPORTING QUALITY OF SERVICE CONSTRAINTS
Ling Jiang, Kai Li, University of Electronic Science and Technology of China, China; Desheng Liu, Ohio State University, United States; Yan Zhou, Zezhong Zheng, Fang Huang, University of Electronic Science and Technology of China, China

TH3.R12.4
14:40

ASSESSMENT OF FUEL AND WIND DRIVERS OF FIRE RISK IN PROTECTED MOUNTAINOUS GRASSLAND OF SOUTH AFRICA
Kayode Adepoju, Samuel Adelabu, University of The Free State, South Africa

TH3.R12.5
15:00

SECURE OUTSOURCING OF GEOSPATIAL VECTOR DATA
Sangita Chaudhari, Ramrao Adik Institute of Technology, India; Parvatham Venkatachalam, Krishnamohan Buddhiraju, Indian Institute of Technology Bombay, India

Thursday, August 1	16:20 - 18:00	Room 421
Session TH4.R12		Oral

Geographic Information Science IV

Session Chair: Xudong Kang, Hunan University

TH4.R12.1
16:20

URBAN LAND PRICE ASSESSMENT BASED ON GIS AND DEEP LEARNING
Hongga Li, Xiaoxia Huang, Xia Li, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TH4.R12.2
16:40

LANDSLIDE INVENTORY USING INSAR AND ANCILLARY DATASETS FOR SUSCEPTIBILITY IN WESTERN AREA, SIERRA LEONE
Matthew Biniyam Kursah, Yong Wang, University of Electronic Science and Technology of China, China

TH4.R12.3
17:00

ANALYZING THE EFFECTS OF RAINFALL ON THE URBAN TRAFFIC CONGESTION BOTTLENECKS BY USING FLOATING CAR DATA
Yao Yao, China University of Geosciences, China; Daiqiang Wu, Wuhan University, China; Jian Yang, Xuguo Shi, Lin Du, China University of Geosciences, China; Yuyang Cai, School of Geography and Information Engineering, China University of Geoscience, China

TH4.R12.4
17:20

3-D PATH-SEARCHING FOR UAVS USING GEOGRAPHICAL SPATIAL INFORMATION
Chenchen Xu, Xiaohan Liao, Huanyin Yue, Xiaoming Deng, Xiwang Chen, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

TH4.R12.5
17:40

PHOTOGRAMMETRIC TECHNIQUES AND UAV FOR DRAINAGE PATTERN AND OVERFLOW ASSESSMENT IN MOUNTAINOUS TERRAINS - HATTA/ UAE
Saeed Al Mansoori, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates; Rami Al-Ruzouq, University of Sharjah, United Arab Emirates; Diena Al Dogom, University of Dubai, United Arab Emirates; Meera AlShamsi, Alya Al Maazmi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates; Nour Aburaed, University of Dubai, United Arab Emirates

THURSDAY ORAL

Thursday, August 1	08:00 - 09:40	Room 511-512
Session TH1.R13		Oral-Invited

NASA Soil Moisture Active Passive Mission Observations and Results I

Session Co-Chairs: Dara Entekhabi, Massachusetts Institute of Technology; Simon Yueh, NASA Jet Propulsion Laboratory

TH1.R13.1
08:00
SMAP MISSION STATUS AND PLAN
Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Jared Entin, NASA Headquarters, United States; Tung-Han You, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TH1.R13.2
08:20
THE SMAP AND COPERNICUS SENTINEL 1A/B MICROWAVE ACTIVE-PASSIVE HIGH RESOLUTION SURFACE SOIL MOISTURE PRODUCT AND ITS APPLICATIONS
Narendra Das, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States; Scott Dunbar, Mario Chaubell, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Thomas Jagdhuber, German Aerospace Centre (DLR), Germany; Andreas Colliander, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, Germany; Peggy O'Neill, NASA Goddard Space Flight Center, Germany

TH1.R13.3
08:40
SMAP REGULARIZED DUAL-CHANNEL ALGORITHM FOR THE RETRIEVAL OF SOIL MOISTURE AND VEGETATION OPTICAL DEPTH
Julian Chaubell, Simon Yueh, Steven Chan, Scott Dunbar, Andreas Colliander, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States; Fan Chen, USDA Agricultural Research Service, United States

TH1.R13.4
09:00
RETRIEVAL OF VEGETATION WATER CONTENT USING BRIGHTNESS TEMPERATURES FROM THE SOIL MOISTURE ACTIVE PASSIVE (SMAP) MISSION
Steven K. Chan, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Rajat Bindlish, NASA Goddard Space Flight Center, United States

TH1.R13.5
09:20
SEASONAL DEPENDENCE OF SMAP RADIOMETER-BASED SOIL MOISTURE PERFORMANCE AS OBSERVED OVER CORE VALIDATION SITES
Andreas Colliander, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Thomas Jackson, USDA Agricultural Research Service, United States; Steven Chan, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Peggy O'Neill, Rajat Bindlish, NASA Goddard Space Flight Center, United States; Michael Cosh, USDA Agricultural Research Service, United States; Todd Caldwell, University of Texas at Austin, United States; Jeffrey Walker, Monash University, Australia; Aaron Berg, University of Guelph, Canada; Heather Mcnairn, Agriculture and Agri-Food Canada, Canada; Marc Thibeault, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Jose Martinez-Fernandez, University of Salamanca, Spain; Karsten Jensen, University of Kopenhagen, Denmark; Jun Asanuma, University of Tsukuba, Japan; Mark Seyfried, David Bosch, Patrick Starks, Chandra Holifield Collins, John Prueger, USDA Agricultural Research Service, United States; Zhongbo Su, University of Twente, Netherlands; Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

Thursday, August 1	10:40 - 12:20	Room 511-512
Session TH2.R13		Oral-Invited

NASA Soil Moisture Active Passive Mission Observations and Results II

Session Co-Chairs: Dara Entekhabi, Massachusetts Institute of Technology; Simon Yueh, NASA Jet Propulsion Laboratory

TH2.R13.1
10:40
VERIFICATION OF THE SMAP LEVEL-4 SOIL MOISTURE ANALYSIS USING RAINFALL OBSERVATIONS IN AUSTRALIA
Rolf Reichle, Qing Liu, NASA Goddard Space Flight Center, United States; Gabrielle De Lannoy, KU Leuven, Belgium; Wade Crow, USDA Agricultural Research Service, United States; Lucas Jones, John Kimball, University of Montana, United States; Randal Koster, NASA Goddard Space Flight Center, United States

TH2.R13.2
11:00
SMAP L4 ASSESSMENT OF THE US NORTHERN PLAINS 2017 FLASH DROUGHT
John S. Kimball, Lucas Jones, Kelsey Jensco, Mingzhu He, Marco Maneta, University of Montana, United States; Rolf Reichle, NASA Goddard Space Flight Center, United States

TH2.R13.3
11:20
INTEGRATED SMAP AND SMOS SOIL MOISTURE OBSERVATIONS
Rajat Bindlish, NASA Goddard Space Flight Center, United States; Steven K. Chan, Andreas Colliander, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Thomas J. Jackson, Retired, United States

TH2.R13.4
11:40
EVALUATING BRIGHTNESS TEMPERATURE INFORMATION FOR ESTIMATING MICROWAVE LAND SURFACE AND VEGETATION PROPERTIES
Dara Entekhabi, Andrew Feldman, Massachusetts Institute of Technology, United States

TH2.R13.5
12:00
SMAP MICROWAVE RADIOMETER CALIBRATION REVISIT
Jinzheng Peng, Universities Space Research Association / NASA Goddard Space Flight Center, United States; Sidharth Misra, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States; Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Emmanuel Dinnat, NASA Goddard Space Flight Center / Chapman University, United States; David Le Vine, NASA Goddard Space Flight Center, United States; Thomas Meissner, Remote Sensing Systems, United States; Priscilla Mohammed, NASA Goddard Space Flight Center / Morgan State University, United States

Thursday, August 1	13:40 - 15:20	Room 511-512
Session TH3.R13		Oral-Invited

New Products and Results in Monitoring Biomass and Plant Water Stress with Microwave Radiometry I

Session Co-Chairs: Brian Hornbuckle, Iowa State University; Alexandra Konings, Stanford University

TH3.R13.1
13:40
SMAP VEGETATION OPTICAL DEPTH RETRIEVALS USING THE MULTI-TEMPORAL DUAL-CHANNEL ALGORITHM
Andrew Feldman, Dara Entekhabi, Massachusetts Institute of Technology, United States

TH3.R13.2
14:00
SATELLITE-BASED VEGETATION OPTICAL DEPTH AS AN INDICATOR OF DROUGHT-DRIVEN TREE MORTALITY
Krishna Rao, Stanford University, United States; William R. L. Anderegg, University of Utah, United States; Anna Sala, University of Montana, United States; Jordi Martínez-Vilalta, CREAF Campus de Bellaterra (UAB), Spain; Alexandra Konings, Stanford University, United States

TH3.R13.3
14:20
SMAP VEGETATION OPTICAL DEPTH IS DIRECTLY PROPORTIONAL TO CROP WATER IN THE US CORN BELT
Kaitlin Togliatti, Theodore Hartman, Iowa State University, United States; Timothy Arkebauer, Andrew Suyker, University of Nebraska Lincoln, United States; Andy VanLoocke, Brian Hornbuckle, Iowa State University, United States

TH3.R13.4
14:40
MAPPING CARBON STOCKS IN CENTRAL AND SOUTH AMERICA WITH SMAP VEGETATION OPTICAL DEPTH
David Chaparro, Universitat Politècnica de Catalunya (UPC), Spain; Grégory Duveiller, Joint Research Centre (JRC), Italy; Maria Piles, Universitat de València, Spain; Mercè Vall-llossera, Universitat Politècnica de Catalunya (UPC), Spain; Alessandro Cescatti, Joint Research Centre (JRC), Italy; Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Dara Entekhabi, Massachusetts Institute of Technology, United States

TH3.R13.5
15:00
ESTIMATION OF VOLUME FRACTION AND GRAVIMETRIC MOISTURE OF WINTER WHEAT BASED ON MICROWAVE ATTENUATION: A FIELD SCALE STUDY
Thomas Meyer, Forschungszentrum Jülich GmbH, Germany; Thomas Jagdhuber, German Aerospace Center (DLR), Germany; María Piles, University of Valencia, Spain; Anke Fluhrer, German Aerospace Center (DLR), Germany; François Jonard, Forschungszentrum Jülich GmbH, Germany

Thursday, August 1	16:20 - 18:00	Room 511-512
Session TH4.R13		Oral-Invited

New Products and Results in Monitoring Biomass and Plant Water Stress with Microwave Radiometry II

Session Co-Chairs: Alexandra Konings, Stanford University; Brian Hornbuckle, Iowa State University

TH4.R13.1
16:20
IS VEGETATION OPTICAL DEPTH NEEDED TO ESTIMATE BIOMASS FROM PASSIVE MICROWAVE RADIOMETERS? A STATISTICAL STUDY USING NEURAL NETWORKS
Nemesio Rodriguez-Fernandez, Philippe Richaume, Emma Bousquet, Arnaud Mialon, Ahmad Al Bitar, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Sassan Saatchi, National Aeronautics and Space Administration (NASA), United States; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

TH4.R13.2
16:40
NOVEL LONG-TERM GLOBAL INDICATORS OF PLANT PRODUCTIVITY FROM MICROWAVE SATELLITES
Wouter Dorigo, Leander Mösinger, Irene Teubner, Tracy Scanlon, TU Wien - Vienna University of Technology, Austria; Robin van der Schalie, Richard de Jeu, VanderSat B.V., Netherlands; Matthias Forkel, TU Wien - Vienna University of Technology, Austria

TH4.R13.3
17:00
REDUCED UNCERTAINTIES FROM MULTIFREQUENCY CONSTRAINTS ON TERRESTRIAL CARBON AND WATER PROCESSES
Victoria Meyer, Anthony Bloom, Mariko Burgin, John Thomas Reager, Rashmi Shah, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Alexandra Konings, Stanford University, United States

TH4.R13.4
17:20
COMBINING L-BAND RADAR AND SMOS L-BAND VOD FOR HIGH RESOLUTION ESTIMATION OF BIOMASS
Emma Bousquet, Arnaud Mialon, Nemesio Rodriguez-Fernandez, Stephane Mermoz, Alexandre Bouvet, Olivier Merlin, Yann Kerr, Centre d'Etude Spatial de la BIOsphere (CESBIO), France

TH4.R13.5
17:40
VEGETATION OPTICAL DEPTH AND SENTINEL-1 BACKSCATTER DYNAMICS FOR PHENOLOGY MONITORING: SYNERGIES AND DISCORDANCES.
Mariette Vreugdenhil, Wolfgang Wagner, Sebastian Hahn, Wouter Dorigo, TU Wien - Vienna University of Technology, Austria; Richard de Jeu, Vandersat B.V., Netherlands; Susan Steele-Dunne, TU Delft, Netherlands

Friday, August 2	08:00 - 09:40	Room 211-212
Session FR1.R1		Oral-Invited

Big Data and Machine Learning for Improving Urban Climate Resiliency I

Session Co-Chairs: Yoshiki Yamagata, National Institute for Environmental Studies; Kei Hiroi, Nagoya University

FR1.R1.1
08:00
SPATIOTEMPORAL HEATWAVE RISK MODELING COMBINING MULTIPLE OBSERVATIONS
Daisuke Murakami, Institute of Statistical Mathematics, Japan; Yoshiki Yamagata, Takahiro Yoshida, National Institute for Environmental Studies, Japan; Tomoko Matsui, Institute of Statistical Mathematics, Japan

FR1.R1.2
08:20
SPATIALLY DETAIL HEAT STRESS EVALUATION USING PEOPLE FLOW AND GROUND SURFACE TEMPERATURE DATA
Takahiro Yoshida, Yoshiki Yamagata, National Institute for Environmental Studies, Japan; Daisuke Murakami, Institute of Statistical Mathematics, Japan

FR1.R1.3
08:40
SPATIOTEMPORAL HEATWAVE RISK EVALUATION: CONSIDERING HAZARD, EXPOSURE, AND VULNERABILITY
Yoshiki Yamagata, National Institute for Environmental Studies, Japan; Daisuke Murakami, Institute of Statistical Mathematics, Japan; Takahiro Yoshida, National Institute for Environmental Studies, Japan

FR1.R1.4
09:00
DEVELOPMENT OF BUILDING MICRO GEODATA FOR EARTHQUAKE DAMAGE ESTIMATION
Yuki Akiyama, Yoshiki Ogawa, University of Tokyo, Japan

FR1.R1.5
09:20
EARTHQUAKE DAMAGE ESTIMATION BY SPARSE MODELING USING GEOSPATIAL BIG DATA
Yoshiki Ogawa, Yuki Akiyama, Yoshihide Sekimoto, Ryosuke Shibasaki, University of Tokyo, Japan

Friday, August 2	10:40 - 12:20	Room 211-212
Session FR2.R1		Oral-Invited

Big Data and Machine Learning for Improving Urban Climate Resiliency II

Session Co-Chairs: Kei Hiroi, Nagoya University; Yoshiki Yamagata, National Institute for Environmental Studies

FR2.R1.1
10:40
PROCESSING TIME AND REPRODUCIBILITY TOWARD A REAL-TIME SIMULATION SYSTEM FOR FLOOD EVACUATION
Kei Hiroi, Nagoya University, Japan; Masatoshi Enomoto, Tsubasa Yumura, Toshiyuki Miyachi, National Institute of Information and Communications Technology (NICT), Japan

FR2.R1.2
11:00
PROPOSING OF SOFTWARE TESTING PLATFORM WITH FEDERATING SIMULATION AND SOFTWARE EMULATION FOR ROUTE RECOMMENDATION SYSTEM IN THE CASE OF FLOODING
Masatoshi Enomoto, Tsubasa Yumura, National Institute of Information and Communications Technology (NICT), Japan; Kei Hiroi, Nagoya University, Japan; Toshiyuki Miyachi, National Institute of Information and Communications Technology (NICT), Japan

FR2.R1.3
11:20
JOOSTAR: HETEROGENEOUS SIMULATOR FEDERATION FOR APPLICATION-IN-THE-LOOP SIMULATION
Tsubasa Yumura, NICT, Japan; Yuki Oshikawa, Japan Advanced Institute of Science and Technology (JAIST), Japan; Masatoshi Enomoto, Tomoya Inoue, NICT, Japan; Yoichi Shinoda, Japan Advanced Institute of Science and Technology (JAIST), Japan

FR2.R1.4
11:40
VERIFICATION ON EVACUATION OF FLOOD DISASTER BY USING GPS: CASE STUDY IN MABI, JAPAN 2018
Takahiro Yoshida, National Institute for Environmental Studies, Japan; Kei Hiroi, Nagoya University, Japan; Yoshiki Yamagata, National Institute for Environmental Studies, Japan; Daisuke Murakami, Institute of Statistical Mathematics, Japan

FR2.R1.5
12:00
A GPS-BASED SIMPLE EVALUATION SIMULATION APPROACH: CASE STUDY IN JOSO, JAPAN
Daisuke Murakami, Tomoko Matsui, Institute of Statistical Mathematics, Japan; Takahiro Yoshida, Yoshiki Yamagata, National Institute for Environmental Studies, Japan

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 211-212
Session FR3.R1		Oral-Invited

RADARSAT-2 and RADARSAT Constellation Mission I

Session Co-Chairs: Gordon Staples, MDA; Heather McNairn, Agriculture and Agri-Food Canada

FR3.R1.1
13:40
RADARSAT CONSTELLATION MISSION
Steve Iris, Guennadi Kroupnik, Daniel De Lisle, Magdalena Wierus, Canadian Space Agency, Canada

FR3.R1.2
14:00
CALIBRATION OF RCM COMPACT MODES
Ridha Touzi, Canada Centre for Remote Sensing, Canada; Stephane Cote, Canadian Space Agency, Canada

FR3.R1.4
14:40
THE IMPACT OF ADDITIVE NOISE ON POLARIMETRIC RADARSAT-2 DATA COVERING OIL SLICKS
Martine M. Espeseth, Stine Skrunes, Camilla Brekke, Malin Johansson, Arctic University of Norway, Norway

FR3.R1.5
15:00
ON THE USE OF MACHINE LEARNING AND POLARIMETRY FOR ESTIMATING SOIL MOISTURE FROM RADARSAT IMAGERY OVER ITALIAN AND CANADIAN TEST SITES
Emanuele Santi, Institute of Applied Physics - National Research Council (IFAC - CNR), Italy; Mohammed Dabboor, Environment and Climate Change Canada, Canada; Simone Pettinato, Simonetta Paloscia, Institute of Applied Physics - National Research Council (IFAC - CNR), Italy; Claudia Notarnicola, Felix Greifeneder, Giovanni Cuozzo, Institute for Earth Observation - EURAC Research, Italy

Friday, August 2	15:40 - 17:20	Room 211-212
Session FR4.R1		Oral-Invited

RADARSAT-2 and RADARSAT Constellation Mission II

Session Co-Chairs: Martin Gade, University of Hamburg; Steve Iris, Canadian Space Agency steve.iris@canada.ca

FR4.R1.1
15:40
ASSESSMENT OF COMPACT POLARIMETRIC SAR PARAMETERS FOR LAKE AND FAST SEA ICE CHARACTERISIZATION
Mohammed Dabboor, Mohammed Shokr, Environment and Climate Change Canada, Canada

FR4.R1.2
16:00
OIL SLICK CHARACTERIZATION USING RADARSAT CONSTELLATION MISSION SIMULATED DATA
Gordon Staples, MDA, Canada; Oscar Garcia, WaterMapping, United States

FR4.R1.3
16:20
RETRIEVAL OF CROP BIOPHYSICAL PARAMETERS USING C-BAND: PREPARING FOR THE RADARSAT-CONSTELLATION
Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Carleton University, Canada; Laura Dingle-Robertson, Andrew Davidson, Agriculture and Agri-Food Canada, Canada; Scott Mitchell, Carleton University, Canada; Katarzyna Dabrowska-Zielinska, Institute of Geodesy and Cartography, Poland

FR4.R1.4
16:40
COMPACT POLARIMETRY FOR AGRICULTURAL MAPPING AND INVENTORY: PREPARATION FOR RADARSAT CONSTELLATION MISSION
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada

FR4.R1.5
17:00
MONITORING POST LANDSLIDE ACTIVITY FROM RADARSAT CONSTELLATION MISSION
Vern Singhroy, Junhua Li, Mary-Anne Fobert, Canada Centre for Remote Sensing, Canada; Ching-Fang Lee, Sinotech Engineering Consultants, Inc., Taiwan; Mrinmoy Kumar Das, Geological Survey of India, India

Friday, August 2	08:00 - 09:40	Room 213
Session FR1.R2		Oral

Seasonal Snow

Session Co-Chairs: Martti Hallikainen, Aalto University; Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

FR1.R2.1
08:00
AIRBORNE SNOW MEASUREMENTS OVER ALASKA MOUNTAINS AND GLACIERS WITH A COMPACT FMCW RADAR
Jilu Li, Fernando Rodriguez-Morales, Emily Arnold, Carl Leuschen, John Paden, Jiaxuang Shang, Daniel Gomez-Garcia, University of Kansas, United States; Chris Larsen, University of Alaska Fairbanks, United States

FR1.R2.2
08:20
ESTIMATION SNOW PARAMETERS USING DIGITAL IMAGERY
Ali Nadir Arslan, Cemal Melih Tanis, Finnish Meteorological Institute, Finland; Marco Bongio, Carlo de Michele, Politecnico di Milano, Italy

FR1.R2.3
08:40
A PROTOTYPE ULTRA-WIDEBAND FMCW RADAR FOR SNOW AND SOIL-MOISTURE MEASUREMENTS
Ryan A. Taylor, Sivaprasad Gogineni, Sevgi Gurbuz, Shriniwas Kolpuke, Linfeng Li, Charles O'Neill, Jie-Bang Yan, University of Alabama, United States; Torry Akins, James Carswell, Remote Sensing Solutions, United States; David Braaten, University of Kansas, United States; Shun Tsutaki, A. Abe-Ouchi, University of Tokyo, Japan; Shuji Fujita, Kenji Kawamura, National Institute of Polar Research, Japan; Brice Van Liefferinge, Kenichi Matsuoka, Norwegian Polar Institute, Norway

FR1.R2.4
09:00
SNOW MICROWAVE COMPLEX PERMITTIVITY MEASURED WITH RESONATOR SENSORS
Reza Naderpour, Department of Environmental Systems Science, Switzerland; Mike Schwank, Derek Houtz, Swiss Federal Research Institute WSL, Switzerland

FR1.R2.5
09:20
ATMOSPHERIC CORRECTION OF PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE ON THE ESTIMATION OF SNOW DEPTH
Lijuan Shi, Yubao Qiu, Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Juha Lemmetyinen, Arctic Research Center, Finnish Meteorological Institute, Finland; Jiancheng Shi, Key Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

Friday, August 2	10:40 - 12:20	Room 213
Session FR2.R2		Oral

Ice Sheets and Glaciers III

Session Chair: Jean Tournadre, IFREMER

FR2.R2.1
10:40
ICEBERG STUDIES USING SATELLITE ALTIMETER DATA
Jean Tournadre, Anastasia Tarasenko, IFREMER, France

FR2.R2.2
11:00
RETRIEVALS OF SNOW PROPERTIES OVER GREENLAND FROM L-BAND RADIOMETRY
Derek Houtz, Reza Naderpour, Mike Schwank, Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Switzerland

FR2.R2.3
11:20
APPLICATIONS OF HISTORICAL OPTICAL DISP IMAGES IN ANTARCTICA STUDY
Yixiang Tian, Menglian Xia, Xuewei Li, Gang Qiao, Rongxing Li, Tongji University, China

FR2.R2.4
11:40
IMPROVED DELINEATION OF INDIVIDUAL OUTLET GLACIER DRAINAGE BASINS FROM TANDEM-X ELEVATIONS AND SENTINEL-1 VELOCITIES
Lukas Krieger, Dana Floricioiu, German Aerospace Center (DLR), Germany

FR2.R2.5
12:00
ICESAT-2 OVER THE POLAR REGIONS: INITIAL OBSERVATIONS OF LAND ICE FROM NASA'S NEWEST LASER ALTIMETRY MISSION
Catherine Walker, University of Maryland / NASA Goddard Space Flight Center, United States; Benjamin Smith, University of Washington, United States; Thomas Neumann, NASA Goddard Space Flight Center, United States; Alex Gardner, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Helen Fricker, Scripps Institution of Oceanography, University of California San Diego, United States; Nick Holschuh, University of Washington, United States; Susheel Adusumilli, Scripps Institution of Oceanography, University of California San Diego, United States; Johan Nilsson, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

Friday, August 2	13:40 - 15:20	Room 213
Session FR3.R2		Oral

Sea Ice

Session Chair: Son V. Nghiem, NASA Jet Propulsion Laboratory

FR3.R2.1
13:40
SATELLITE MONITORING OF THE AMUNDSEN AND PINE ISLAND POLYNYAS (2014-2019)
Cristina M. Surdu, New York University Abu Dhabi, United Arab Emirates; David M. Holland, New York University Abu Dhabi / New York University, United Arab Emirates

FR3.R2.2
14:00
AUTOMATED SEA ICE CLASSIFICATION USING SENTINEL-1 IMAGERY
Jeong-Won Park, Korea Polar Research Institute (KOPRI), Korea (South); Anton Korosov, Mohamed Babiker, Nansen Environmental and Remote Sensing Center, Norway; Hyun-Cheol Kim, Korea Polar Research Institute (KOPRI), Korea (South)

FR3.R2.3
14:20
POLAR SEA ICE THICKNESS AND MELT POND FRACTION MEASUREMENTS WITH MULTI-FREQUENCY BISTATIC RADAR POLARIMETRIC AND INTERFEROMETRIC REFLECTOMETRY
Son Nghiem, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Donald Perovich, Dartmouth College, United States; Christopher Polashenski, Cold Regions Research and Engineering Laboratory, United States; Stephen Lowe, Rashmi Shah, Anthony Mannucci, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Adriano Camps, Universitat Politècnica de Catalunya Barcelona, Spain; Estel Cardellach, Instituto de Ciencias del Espacio, Spain; Leung Tsang, Jiyue Zhu, Shurun Tan, University of Michigan, United States

FR3.R2.4
14:40
SAR DOPPLER CALIBRATION AND APPLICATION FOR SEA ICE DRIFT ESTIMATION
Jeong-Won Park, Korea Polar Research Institute (KOPRI), Korea (South); Morten Hansen, Anton Korosov, Nansen Environmental and Remote Sensing Center, Norway; Hyun-Cheol Kim, Korea Polar Research Institute (KOPRI), Korea (South)

FR3.R2.5
15:00
THE COUPLING CHARACTERISTICS OF ARCTIC SEA ICE CONCENTRATION AND SEA ICE MOTION IN WINTER
Jie Su, Qian Shi, Ping Chen, Hongjie Liang, Physical Oceanography Laboratory/CIMST, Ocean University of China / Qingdao National Laboratory for Marine Science and Technology, China

Friday, August 2	15:40 - 17:20	Room 213
Session FR4.R2		Oral

Freeze-Thaw Status and Lake Ice

Session Co-Chairs: Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Xiaolan Xu, NASA Jet Propulsion Laboratory

FR4.R2.1
15:40
CHARACTERIZATION OF THE LAND SURFACE FREEZE/THAW STATE WITH SMAP-REFLECTOMETRY (SMAP-R)
Nereida Rodriguez-Alvarez, Erika Podest, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

FR4.R2.2
16:00
VALIDATION AND ANALYSIS OF THE SMAP AND AMSR2 FREEZE/THAW DATASET OVER CHINA
Jian Wang, Lingmei Jiang, Huizhen Cui, Jianwei Yang, Gongxue Wang, Xiaojing Liu, Xu Su, Beijing Normal University, China

FR4.R2.3
16:20
DEVELOPING A SOIL INVERSION MODEL FRAMEWORK FOR REGIONAL PERMAFROST MONITORING
Yonghong Yi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Richard Chen, University of Southern California, United States; Dmitry Nicolsky, University of Alaska Fairbanks, United States; Mahta Moghaddam, University of Southern California, United States; John Kimball, University of Montana, United States; Vladimir Romanovsky, University of Alaska Fairbanks, United States; Charles Miller, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

FR4.R2.4
16:40
SEMI-AUTOMATED DETECTION OF THAW LAKES IN PERMAFROST AREAS IN QINGHAI-TIBET PLATEAU FROM SENTINEL-2 IMAGES USING MARKOV RANDOM FIELD
Yuanyuan Qin, Ping Lu, Tongji University, China; Zhongbin Li, South Dakota State University, United States

FR4.R2.5
17:00
OPERATIONAL LAKE MAPPING ON THE SOUTHERN TIBET USING SENTINEL-1 DATA
Han Cao, Hong Zhang, Chao Wang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Qinghua Ye, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China; Yixian Tang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRIDAY ORAL

Friday, August 2	08:00 - 09:40	Room 311-312
Session FR1.R3		**Oral-Invited**

Analysis Ready Data: Opportunities and Future Directions I

Session Co-Chairs: Brian Killough, NASA Langley Research Center; Pierre Potin, European Space Agency

FR1.R3.1
08:00
CEOS ANALYSIS READY DATA FOR LAND – AN OVERVIEW ON THE CURRENT AND FUTURE WORK
Andreia Siqueira, Adam Lewis, Medhavy Thankappan, Geoscience Australia, Australia; Zoltan Szantoi, Joint Research Centre, Italy; Philippe Goryl, European Space Agency (ESA), Italy; Steven Labahn, US Geological Survey, United States; Jonathon Ross, Geoscience Australia, Australia; Steven Hosford, Susanne Mecklenburg, European Space Agency (ESA), Italy; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Ake Rosenqvist, solo Earth Observation, Japan; Jennifer Lacey, US Geological Survey, United States

FR1.R3.2
08:20
ROLE OF CEOS WORKING GROUP ON CALIBRATION AND VALIDATION IN ANALYSIS READY DATA PRODUCTS
Kurtis Thome, National Aeronautics and Space Administration (NASA), United States; Cindy Ong, CSIRO, Australia; Akihiko Kuze, Japan Aerospace Exploration Agency (JAXA), Jamaica

FR1.R3.3
08:40
THE U.S. GEOLOGICAL SURVEY'S APPROACH TO ANALYSIS READY DATA
Cody Anderson, Steve Labahn, Dennis Helder, Greg Stensaas, Christopher Engebretson, Christopher Crawford, US Geological Survey, United States; Calli Jenkerson, Christopher Barnes, KBRwyle, United States

FR1.R3.4
09:00
JAXA GLOBAL SAR MOSAICS – ASSESSING COMPLIANCE WITH CEOS ANALYSIS READY DATA FOR LAND (CARD4L) SPECIFICATIONS
Ake Rosenqvist, solo Earth Observation, Japan; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Masanobu Shimada, Tokyo Denki University, Japan; Takuya Itoh, Remote Sensing Technology Center of Japan, Japan

FR1.R3.5
09:20
CARD4L-ST SELF-ASSESSMENT: SENTINEL-3 LST
Darren Ghent, University of Leicester, United Kingdom

Friday, August 2	10:40 - 12:20	Room 311-312
Session FR2.R3		**Oral-Invited**

Analysis Ready Data: Opportunities and Future Directions II

Session Co-Chairs: Medhavy Thankappan, Geoscience Australia; Cody Anderson, USGS

FR2.R3.1
10:40
CONTINENTAL SCALE VALIDATION OF ANALYSIS READY DATA IN AUSTRALIA: EXPERIENCE WITH SATELLITE DERIVED SURFACE REFLECTANCE
Medhavy Thankappan, Guy Byrne, Andrew Walsh, Fuqin Li, Geoscience Australia, Australia; Tim Malthus, Cindy Ong, Ian Lau, CSIRO, Australia

FR2.R3.2
11:00
ANALYSIS READY DATA SENSITIVITY ANALYSES
Lan-Wei Wang, Fuqin Li, Imam Alam, Geoscience Australia, Australia; David Jupp, CSIRO, Australia; Simon Oliver, Medhavy Thankappan, Geoscience Australia, Australia

FR2.R3.3
11:20
THE IMPACT OF ANALYSIS READY DATA IN THE AFRICA REGIONAL DATA CUBE
Brian Killough, National Aeronautics and Space Administration (NASA), United States

FR2.R3.4
11:40
SEN2LIKE, A TOOL TO GENERATE SENTINEL-2 HARMONISED SURFACE REFLECTANCE PRODUCTS - FIRST RESULTS WITH LANDSAT-8
Sébastien Saunier, Jérôme Louis, Vincent Debaecker, Telespazio France, France; Thomas Beaton, Telespazio UK, United Kingdom; Enrico, Giuseppe Cadau, Serco SPA, Italy; Valentina Boccia, Ferran Gascon, European Space Agency ESA-ESRIN, Italy

FR2.R3.5
12:00
OPEN DATA CUBE (ODC) IN TAIWAN: THE INITIATIVE AND PROTOCOL DEVELOPMENT
Ming-Chih Cheng, National Applied Research Laboratories, Taiwan; Chi-Ryong Chiou, National Taiwan University, Taiwan; Bo Chen, Cynthia Liu, Hsi-Ching Lin, I-Liang Shih, National Applied Research Laboratories, Taiwan; Chih-Hsin Chung, National Iland University, Taiwan; Huan-Yu Lin, Taiwan Forestry Research Institute, Council of Agriculture, Taiwan; Chiao-Ying Chou, National Applied Research Laboratories, Taiwan

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 311-312
Session FR3.R3		**Oral-Invited**

Remote Sensing for Oil & Gas Exploration and Environmental Monitoring I

Session Co-Chairs: Carlos Roberto de Souza Filho, University of Campinas; Dominique Dubucq, TOTAL S.A.

FR3.R3.1
13:40
PEERING AT THE TOP OF THE WORLD: SATELLITE REMOTE SENSING OF PETROLEUM HYDROCARBON RESERVOIRS IN THE BARENTS AND KARA SEAS
Ira Leifer, Leonid Yurganov, Bubbleology Research International, United States; Thomas McClimans, SINTEF, Norway; Frank Müller-Karger, University of Southern Florida, United States

FR3.R3.2
14:00
AUTOMATIC MAPPING OF HYDROCARBON POLLUTION BASED ON HYPERSPECTRAL IMAGING
Véronique Achard, Christopher Elin, ONERA, France

FR3.R3.3
14:20
MULTI-BAND SUPERVISED CLASSIFICATION FOR POLARIMETRIC SAR
Xavier Dupuis, Valentine Wasik, Alexandre Alakian, ONERA, France; Dominique Dubucq, Total, France

FR3.R3.4
14:40
OIL SLICK VOLUME ESTIMATION FROM COMBINED USE OF AIRBORNE HYPERSPECTRAL AND POOL EXPERIMENT DATA
Laure Roupioz, Francoise Viallefont-Robinet, ONERA, France; Veronique Miegebielle, Total, France

FR3.R3.5
15:00
DETECTION OF METHANE AND HEAVY HYDROCARBON GASES IN THE INFRARED RANGE USING HYPERSPECTRAL AIRBORNE REMOTE SENSING: AN OVERVIEW
Rebecca Scafutto, Carlos Roberto de Souza Filho, University of Campinas, Brazil

Friday, August 2	15:40 - 17:20	Room 311-312
Session FR4.R3		**Oral-Invited**

Remote Sensing for Oil & Gas Exploration and Environmental Monitoring II

Session Co-Chairs: Dominique Dubucq, TOTAL S.A.; Ira Leifer, Bubbleology Research International LLC

FR4.R3.1
15:40
REMOTELY PILOTED AIRCRAFT SYSTEMS APPLIED TO THE PETROLEUM INDUSTRY: STATE OF THE ART AND FUTURE INSIGHTS
Carlos Roberto de Souza Filho, Saeid Asadzadeh, University of Campinas, Brazil; Wilson Jose Oliveira, Petróleo Brasileiro SA, Brazil

FR4.R3.2
16:00
CLASSIFICATION OF OIL SPILL THICKNESSES USING MULTISPECTRAL UAS AND SATELLITE REMOTE SENSING FOR OIL SPILL RESPONSE
Oscar Garcia, Water Mapping, LLC, United States; Chuanmin Hu, Shaojie Sun, University of South Florida, United States; Diana Garcia, Water Mapping, LLC, United States; Jay Cho, Bureau of Safety and Environmental Enforcement (BSEE), United States; George Graettinger, Lisa DiPinto, Ellen Ramirez, National Oceanic and Atmospheric Administration (NOAA), United States

FR4.R3.3
16:20
AIRBONE HYPERSPECTRAL ACQUISITIONS FOR MINERALOGICAL MAPPING AS A MARKER FOR FLUID CIRCULATION: EXAMPLE OF SOUTHEASTERN SPAIN
Marine Larrey, GET-OMP, University of Toulouse, France; Karine Adeline, French Aerospace Lab (ONERA), Optics and Associated Techniques Department (DOTA), France; Véronique Miegebielle, Total, France

FR4.R3.4
16:40
USE OF REMOTE SENSING RADAR IMAGES FOR OFFSHORE OIL SLICK DETECTION IN OIL AND GAS DOMAIN: MANUAL AND AUTOMATIC INTERPRETATION
Veronique Miegebielle, Bruno Conche, Total, France; Zhexuan Huang, Ecole Polytechnique, France; Peigen Xie, Clement Killisly, Total, France

FR4.R3.5
17:00
DETECTION AND QUANTIFICATION OF TOTAL PETROLEUM HYDROCARBONS IN SOILS USING VEGETATION OPTICAL PROPERTIES
Guillaume Lassalle, Sophie Fabre, Office National d'Études et de Recherches Aérospatiales (ONERA), France; Anthony Credoz, Rémy Hédacq, TOTAL S.A., France; Pierre Borderies, Office National d'Études et de Recherches Aérospatiales (ONERA), France; Georges Bertoni, INRA, France; Dominique Dubucq, TOTAL S.A., France; Arnaud Elger, CNRS, France

Friday, August 2	08:00 - 09:40	Room 313-314
Session FR1.R4		Oral-Invited

Earth Observation Science and Exploitation using Common Standards and Platforms I

Session Chair: Peter Baumann, Jacobs University

FR1.R4.1
08:00
BIG EARTH DATACUBE SERVICES: CONCEPTS, STANDARDS, TOOLS
Peter Baumann, Jacobs University, Germany

FR1.R4.2
08:20
INTERCONNECTING SENSOR DATA AND DATACUBES
Katharina Schleidt, DataCove e.U., Austria; Peter Baumann, Jacobs University Bremen, Germany

FR1.R4.3
08:40
EXTENDING OGC STANDARDS FOR SUPPORTING BIG-EARTH DATA RETRIEVAL AND ANALYTICS
Konstantinos Apostolopoulos, Georgios Kakaletris, Communication & Information Technologies Experts, Greece; Panagiota Koltsida, National and Kapodistrian University of Athens, Greece

FR1.R4.4
09:00
SMART HANDOFFS: PRESERVING USER CONTEXT BETWEEN TOOLS AND SERVICES RELATED TO NASA'S EOSDIS DATA ARCHIVE
Doug Newman, Raytheon, United States; Christopher Lynnes, National Aeronautics and Space Administration (NASA), United States

FR1.R4.5
09:20
APPLYING MACHINE LEARNING TO EARTH OBSERVATIONS IN A STANDARDS BASED WORKFLOW
Tom Landry, David Byrns, Francis Charette-Migneault, Mario Beaulieu, Pierre-Luc St-Charles, Samuel Foucher, Claude Chapdelaine, Ayoub Tlili, Cedric Noiseux, Martin Sotir, Jean-Francois Rajotte, Computer Research Institute of Montreal (CRIM), Canada

Friday, August 2	10:40 - 12:20	Room 313-314
Session FR2.R4		Oral-Invited

Earth Observation Science and Exploitation using Common Standards and Platforms II

FR2.R4.1
10:40
A CLOUD-ENABLED GEOSPATIAL BIG DATA PLATFORM FOR DISASTER INFORMATION SERVICES
Lianlian He, Hubei University of Education, China; Peng Yue, Wuhan University, China

FR2.R4.2
11:00
DATACUBE MANIPULATION EXTENSIONS TO SQL LANGUAGE - ISO IS 9075-15:2018
Dimitar Misev, Peter Baumann, Jacobs University Bremen, Germany

FR2.R4.3
11:20
COPERNICUS EO BIG DATA INTELLIGENT PROCESSING UNDER OGC DISCRETE GLOBAL GRID SYSTEM STANDARDS
Zoheir Sabeur, Gianluca Correndo, Andrew Rawson, University of Southampton, United Kingdom

FR2.R4.4
11:40
AN APPLICATION DEVELOPMENT FRAMEWORK FOR OPEN GEOSPATIAL CONSORTIUM DISCRETE GLOBAL GRID SYSTEM STANDARD
Perry Peterson, Camosun College / Global Grid Systems, Canada; Idan Shatz, Global Grid Systems, Canada

FR2.R4.5
12:00
DESPITE OPEN DATA: HOW TO SECURE PIXELS APPROPRIATELY?
Dimitar Misev, Peter Baumann, Jacobs University Bremen, Germany

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 313-314
Session FR3.R4		Oral-Invited

Future Programs, Missions and Instruments on GEO or LEO Orbits I

Session Co-Chairs: Xiaoxiong Xiong, NASA Goddard Space Flight Center; Toshiyoshi Kimura, Japan Aerospace Exploration Agency

FR3.R4.1
13:40
SENTINEL-3 A, B, C, D: DEVELOPMENT, COMMISSIONING AND OPERATIONS OF AN ENVIRONMENTAL AND CLIMATE MONITORING OBSERVATION SYSTEM
Jens Nieke, European Space Agency ESA-ESTEC, Netherlands; Steffen Dransfeld, Craig Donlon, Johannes Frerick, Susanne Mecklenburg, European Space Agency ESA-ESRIN, Netherlands

FR3.R4.2
14:00
FUTURE NOAA LEO AND GEO SATELLITE OBSERVING SYSTEM ARCHITECTURE AND THE WAY-AHEAD
Karen St. Germain, Frank Gallagher III, David Spencer, NOAA, United States; Mark Maier, Phillip Jasper, The Aerospace Corporation, United States

FR3.R4.3
14:20
LANDSAT 9: MISSION STATUS AND PRELAUNCH INSTRUMENT PERFORMANCE CHARACTERIZATION AND CALIBRATION
Brian Markham, NASA Goddard Space Flight Center, United States; Julia Barsi, Science Systems and Applications, Inc. / NASA Goddard Space Flight Center, United States; Eric Donley, Ball Aerospace, United States; Boryana Efremova, GeoThinkTank LLC, United States; Jason Hair, Del Jenstrom, NASA Goddard Space Flight Center, United States; Edward Kaita, Science Systems and Applications, Inc. / NASA Goddard Space Flight Center, United States; Edward Knight, Geir Kvaran, Ball Aerospace, United States; Joel McCorkel, NASA Goddard Space Flight Center, United States; Matthew Montanaro, Rochester Institute of Technology, United States; Eric Morland, Ball Aerospace, United States; Aaron Pearlman, GeoThinkTank LLC, United States; Jeffrey Pedelty, NASA Goddard Space Flight Center, United States; Brian Wenny, Science Systems and Applications, Inc. / NASA Goddard Space Flight Center, United States

FR3.R4.4
14:40
IN-ORBIT OBSERVATION OF THE SECOND GENERATION GLOBAL IMAGER (SGLI) AND STUDY TOWARDS FOLLOW-ON IMAGING RADIOMETER
Yoshihiko Okamura, Yoshino Yamada, Tomoyuki Urabe, Shigemasa Ando, Kazuhiro Tanaka, Japan Aerospace Exploration Agency (JAXA), Japan

FR3.R4.5
15:00
CHALLENGES AND APPROACHES FOR SENSOR REFLECTIVE SOLAR CALIBRATION
Xiaoxiong Xiong, Jim Butler, NASA Goddard Space Flight Center, United States

Friday, August 2	15:40 - 17:20	Room 313-314
Session FR4.R4		Oral-Invited

Future Programs, Missions and Instruments on GEO or LEO Orbits II

Session Co-Chairs: Toshiyoshi Kimura, Japan Aerospace Exploration Agency; Xiaoxiong Xiong, NASA Goddard Space Flight Center

FR4.R4.1
15:40
DEVELOPMENT OF OPTICAL IMAGER FOR ADVANCED OPTICAL SATELLITE (ALOS-3)
Kensuke Wada, Saori Sakamoto, Aya Tanaka, Mitsubishi Electric, Japan

FR4.R4.2
16:00
MISSION OVERVIEW OF THE ADVANCED OPTICAL SATELLITE (ALOS-3)
Takeo Tadono, Yousei Mizukami, Ayano Oka, Hidenori Watarai, Masakazu Sagisaka, Japan Aerospace Exploration Agency (JAXA), Japan

FR4.R4.3
16:20
PRELAUNCH STATUS OF HYPERSPECTRAL IMAGER SUITE (HISUI)
Akira Iwasaki, University of Tokyo, Japan; Jun Tanii, Osamu Kashimura, Japan Space Systems (J-spacesystems), Japan; Yoshiyuki Ito, NEC Corporation, Japan

FR4.R4.4
16:40
IMAGING SPECTROMETER SUITE FOR MONITORING THE ANTHROPOCENE REMOTELY FROM SPACE
Akihiko Kuze, Hiroshi Suto, Japan Aerospace Exploration Agency (JAXA), Japan

FR4.R4.5
17:00
GEOSTATIONARY EARTH OBSERVATION SATELLITE WITH LARGE SEGMENTED TELESCOPE
Toshiyoshi Kimura, Tadahito Mizutani, Yoji Shirasawa, Michito Sakai, Ayaka Kumeta, Seichi Sato, Japan Aerospace Exploration Agency (JAXA), Japan; Norihide Miyamura, Meisei University, Japan; Akira Iwasaki, University of Tokyo, Japan

Friday, August 2	08:00 - 09:40	Room 315
Session FR1.R5		Oral

Hyperspectral Image Classification IV

Session Chair: Leyuan Fang, Hunan University

FR1.R5.1
08:00
MULTIPLE-FEATURE IDEAL REGULARIZED KERNEL FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Yan Xu, Mississippi State University, United States; Jiangtao Peng, Hubei University, China; Qian Du, Nicolas Younan, Mississippi State University, United States

FR1.R5.2
08:20
CONVOLUTIONAL NEURAL NETWORK WITH PCA AND BATCH NORMALIZATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Aamir Abbasi, Mingyi He, Northwestern Polytechnical University, China

FR1.R5.3
08:40
SPNET: A SPECTRAL PATCHING NETWORK FOR END-TO-END HYPERSPECTRAL IMAGE CLASSIFICATION
Xin Hu, Xinyu Wang, Yanfei Zhong, Wuhan University, China; Ji Zhao, China University of Geosciences, China; Chang Luo, Wuhan University, China; Lifei Wei, Hubei University, China

FR1.R5.4
09:00
GRU WITH SPATIAL PRIOR FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Erting Pan, Yong Ma, Xiaobing Dai, Fan Fan, Jun Huang, Xiaoguang Mei, Jiayi Ma, Wuhan University, China

FR1.R5.5
09:20
ENSEMBLE MARGIN BASED SEMI-SUPERVISED RANDOM FOREST FOR THE CLASSIFICATION OF HYPERSPECTRAL IMAGE WITH LIMITED TRAINING DATA
Wei Feng, Wenjiang Huang, Chinese Academy of Sciences, China; Gabriel Dauphin, University Paris XIII, France; Junshi Xia, RIKEN Center for Advanced Intelligence Project (AIP), Japan; Yinghui Quan, Xidian University, China; Huichun Ye, Yingying Dong, Chinese Academy of Sciences, China

Friday, August 2	10:40 - 12:20	Room 315
Session FR2.R5		Oral

Image Segmentation I

Session Co-Chairs: Naoto Yokoya, RIKEN; Sebastiano Serpico, University of Genoa

FR2.R5.1
10:40
OVER-SEGMENTATION OF VHR SATELLITE IMAGES USING NONPARAMETRIC BAYESIAN ITERATIVE CLUSTERING
Wei Huang, Hong Tang, Xin Yang, Beijing Normal University, China

FR2.R5.2
11:00
A MULTISCALE SUPERPIXEL-GUIDED FILTER APPROACH FOR VHR REMOTE SENSING IMAGE CLASSIFICATION
Sicong Liu, Qing Hu, Tongji University, China; Alim Samat, Chinese Academy of Sciences, China; Xiaohua Tong, Tongji University, China

FR2.R5.3
11:20
SEMANTIC LABELING FOR HIGH-RESOLUTION AERIAL IMAGES BASED ON THE DMFFNET
Zhiying Cao, Wenhui Diao, Yi Zhang, Menglong Yan, Hongfeng Yu, Xian Sun, Kun Fu, Institute of Electronics, Chinese Academy of Sciences, China

FR2.R5.4
11:40
SHIP INSTANCE SEGMENTATION FROM REMOTE SENSING IMAGES USING SEQUENCE LOCAL CONTEXT MODULE
Yingchao Feng, Wenhui Diao, Yi Zhang, Hao Li, Zhonghan Chang, Menglong Yan, Xian Sun, Xin Gao, Institute of Electronics, Chinese Academy of Sciences, China

FR2.R5.5
12:00
CLOUD-NET: AN END-TO-END CLOUD DETECTION ALGORITHM FOR LANDSAT 8 IMAGERY
Sorour Mohajerani, Parvaneh Saeedi, Simon Fraser University, Canada

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 315
Session FR3.R5		Oral

Image Segmentation II

Session Co-Chairs: Yang Xu, Nanjing University of Science and Technology; Begüm Demir, Technische Universität Berlin

FR3.R5.1
13:40
DEEP LEARNING METHODS FOR CROP CLASSIFICATION MAPS FILTRATION
Mykola Lavreniuk, Space Research Institute NASU-SSAU, Ukraine

FR3.R5.2
14:00
A NOVEL STATISTICAL-BASED SCALE-INDEPENDENT APPROACH TO UNSUPERVISED WATER SEGMENTATION OF SAR IMAGES
Francesco Asaro, Politecnico di Milano, Italy

FR3.R5.3
14:20
UNSUPERVISED POLSAR IMAGE FACTORIZATION WITH DEEP CONVOLUTIONAL NETWORKS
Haixia Bi, University of Derby, United Kingdom; Feng Xu, Fudan University, China; Zhiqiang Wei, Xi'an Electronics and Engineering Institute, China; Yibo Han, Nanyang Institute of Technology, China; Yuanlong Cui, Yong Xue, University of Derby, United Kingdom; Zongben Xu, Xi'an Jiaotong University, China

FR3.R5.4
14:40
EFFICIENT MULTI-CLASS SEMANTIC SEGMENTATION OF HIGH RESOLUTION AERIAL IMAGERY WITH DILATED LINKNET
Qingtian Zhu, Yumin Zheng, Yulai Jiang, Junli Yang, Beijing University of Posts and Telecommunications, China

FR3.R5.5
15:00
A MULTI-TASK DEEP LEARNING FRAMEWORK COUPLING SEMANTIC SEGMENTATION AND IMAGE RECONSTRUCTION FOR VERY HIGH RESOLUTION IMAGERY
Maria Papadomanolaki, Konstantinos Karantzalos, National Technical University of Athens, Greece; Maria Vakalopoulou, CentraleSupélec, Université Paris-Saclay, France

Friday, August 2	08:00 - 09:40	Room 411-412
Session FR1.R6		Oral

Forest: Biomass and Carbon Cycle

Session Chair: Johan E.S. Fransson, Swedish University of Agricultural Sciences

FR1.R6.1
08:00
UPDATED DATA-DRIVEN GPP AND NEE ESTIMATION WITH REMOTE SENSING AND MACHINE LEARNING ACROSS ASIA
Zhiyan Liu, Kazuhito Ichii, Yusuke Hayashi, Riku Kawase, Kodai Hayashi, Chiba University, Japan; Masahito Ueyama, Osaka Prefecture University, Japan; Yuji Kominami, Forestry and Forest Products Research Institute, Japan; Kireet Kumar, Sandipan Mukherjee, GBP National Institute of Himalayan Environment and Sustainable Development, India

FR1.R6.2
08:20
SOLAR-INDUCED CHLOROPHYLL FLUORESCENCE (SIF) ADVANCES IN TRACKING THE EFFECT ON THE CARBON CYCLE FROM HUMAN ACTIVITIES AND NATURE
Ailin Liang, Nanjing University of Information Science and Technology, China; Ge Han, Ma Xin, Wuhan University, China; Chengzhi Xiang, Nanjing University of Information Science and Technology, China

FR1.R6.3
08:40
ESTIMATION OF FOREST PARAMETERS COMBINING HIGH RESOLUTION RADAR AND OPTICAL SPACEBORNE SENSORS
David Morin, Milena Planells, Gérard Dedieu, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

FR1.R6.4
09:00
INTEGRATING SAR BACKSCATTER, ICESAT GLAS METRICS AND ALLOMETRIC FUNCTIONS TOWARDS AN IMPROVED ESTIMATION OF FOREST BIOMASS
Maurizio Santoro, Gamma Remote Sensing AG, Switzerland; Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden

FR1.R6.5
09:20
CHARACTERIZING TROPICAL SECONDARY FOREST WITH MULTIFREQUENCY SAR
Veraldo Liesenberg, Santa Catarina State University (UDESC), Brazil

Friday, August 2	10:40 - 12:20	Room 411-412
Session FR2.R6		Oral

Urban Remote Sensing II

Session Chair: A.P. Prathiba, Indian Institute of Technology, Roorkee

FR2.R6.1
10:40
EXPLOITATION OF ESA AND NASA HERITAGE REMOTE SENSING DATA FOR MONITORING THE HEAT ISLAND EVOLUTION IN CHENNAI WITH THE GOOGLE EARTH ENGINE
Francesca Cecinati, University of Bath, United Kingdom; Donato Amitrano, University of Surrey, United Kingdom; Lemia Benevides Leoncio, Elvis Walugendo, Nuffield Research Placement, United Kingdom; Raffaella Guida, Pasquale Iervolino, University of Surrey, United Kingdom; Sukumar Natarajan, University of Bath, United Kingdom

FR2.R6.2
11:00
ASSESSMENTS OF DIFFERENT KERNEL-DRIVEN MODELS FOR MODELING URBAN DAYTIME THERMAL ANISOTROPY OVER SIMULATION AND SATELLITE DATA
Lu Jiang, Wenfeng Zhan, Nanjing University, China

FR2.R6.3
11:20
MAPPING URBAN IMPERVIOUS SURFACES BY FUSING OPTICAL AND SAR DATA AT DECISION LEVEL
Yunkun Bai, Guangmin Sun, Yi Ge, Beijing University of Technology, China; Yuanzhi Zhang, National Astronomical Observatories, China; Yu Li, Beijing University of Technology, China

FR2.R6.4
11:40
URBAN GREEN SPACES AND HEAT STRESS RISK PATTERNS IN TAIPEI CITY BY SENTINEL 2 IMAGERY
Yuei-An Liou, Kim-Anh Nguyen, Le-Thu Ho, National Central University, Taiwan

FR2.R6.5
12:00
EMBRANCHMENT CNN BASED LOCAL CLIMATE ZONE CLASSIFICATION USING SAR AND MULTISPECTRAL REMOTE SENSING DATA
Pengming Feng, State Key Laboratory of Space-Ground Integrated Information Technology, China; Youtian Lin, Jian Guan, Harbin Engineering University, China; Yan Dong, China Ship Research and Development Academy, China; Guangjun He, Zhenghuan Xia, Huifeng Shi, State Key Laboratory of Space-Ground Integrated Information Technology, China

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 411-412
Session FR3.R6		Oral

Urban Remote Sensing III

Session Chair: Sivasakthy Selvakumaran, University of Cambridge

FR3.R6.1
13:40
BUILT-UP AREA EXTRACTION FROM HIGH TEMPORAL RESOLUTION GF-4 IMAGES
Yuhuan Ren, Yalan Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FR3.R6.2
14:00
REMOTE SENSING OF THE IMMIGRATION COMMUNITY VARIATION IN DAXING DISTRICT, BEIJING
Haobo Wu, Ling Hu, Siqi Yang, Wenjie Fan, Dingfang Tian, Huazhong Ren, Zhifang Wang, Peking University, China; Xizhang Gao, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

FR3.R6.3
14:20
REMOTE SENSING BASED ANALYSIS OF URBAN LANDSCAPE AREA: A CASE STUDY OF NATIONAL CAPITAL REGION (NCR), INDIA
Prathiba A.P, Kamal Jain, Indian Institute of Technology Roorkee, India

FR3.R6.4
14:40
EXTRACTION OF URBAN AND RURAL BASED ON GLOBALAND30
Donghui Xie, Jianbo Qi, Guangjian Yan, Beijing Normal University, China

FR3.R6.5
15:00
HOW REMOTELY SENSED BUILT AREAS AND THEIR REALIZATIONS INFORM AND CONSTRAIN GRIDDED POPULATION MODELS
Forrest Stevens, Fennis Reed, Andrea Gaughan, University of Louisville, United States; Parmanand Sinha, University of Chicago, United States; Alessandro Sorichetta, University of Southampton, United Kingdom; Gregory Yetman, Columbia University, United States; Andrew Tatem, University of Southampton, United Kingdom

Friday, August 2	15:40 - 17:20	Room 411-412
Session FR4.R6		Oral

Urban Remote Sensing IV

Session Co-Chairs: Demetris Stathakis, University of Thessaly; Masahiko Nishimoto, Kumamoto University

FR4.R6.1
15:40
UNDERSTANDING INSAR MEASUREMENT THROUGH COMPARISON WITH TRADITIONAL STRUCTURAL MONITORING - WATERLOO BRIDGE, LONDON
Sivasakthy Selvakumaran, University of Cambridge, United Kingdom; Graham Webb, John Bennetts, WSP, United Kingdom; Cristian Rossi, Satellite Applications Catapult, United Kingdom; Elena Barton, National Physical Laboratory, United Kingdom; Campbell Middleton, University of Cambridge, United Kingdom

FR4.R6.2
16:00
A NEW NIGHTTIME LIGHT IMAGERY-LUOJIA 1-01 TO INVESTIGATE ARTIFICIAL LIGHT
Wei Jiang, Guojin He, Tengfei Long, Hongxiang Guo, Wanchun Leng, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FR4.R6.3
16:20
CONCRETE DIELECTRIC CONSTANT ESTIMATION BASED ON ANALYTIC SIGNAL PEAK RATIO OF GPR RESPONSE FOR NON-DESTRUCTIVE INSPECTION
Budiman P.A. Rohman, Masahiko Nishimoto, Kumamoto University, Japan

FR4.R6.4
16:40
VIIRS LUNAR RADIANCE REMOVAL BY DARK OBJECT SUBTRACTION
Demetris Stathakis, Leonidas Liakos, University of Thessaly, Greece

FR4.R6.5
17:00
THE DESIGN OF AN INFORMAL CADASTRE FOR DISASTER RISK MANAGEMENT BASED ON SATELLITE IMAGERY
Edward Kurwakumire, Guy Blanchard Ikokou, Tshwane University of Technology, South Africa; Shelter Kuzhazha, Monash University South Africa, South Africa

Friday, August 2	08:00 - 09:40	Room 413
Session FR1.R7		Oral-Invited

Spectral Geology from Microns to Kilometers Applied to Mineral Mapping and Resource Studies I

Session Co-Chairs: Carlos Roberto de Souza Filho, University of Campinas; Raymond Kokaly, USGS

FR1.R7.1
08:00
ASTER 20TH ANNIVERSARY: ACHIEVEMENTS AND GEOLOGIC CONTRIBUTIONS TO MINERAL AND LITHOLOGIC MAPPING
Michael Abrams, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

FR1.R7.2
08:20
GLOBAL MAPPING OF MINERALO-LITHOLOGICAL INDICES DERIVED WITH ASTER MULTISPECTRAL THERMAL INFRARED DATA
Yoshiki Ninomiya, Geological Survey of Japan, Japan

FR1.R7.3
08:40
ASTER AND MINERAL EXPLORATION-INDIAN EXPERIENCES WITH FEW CASE STUDIES ON DIFFERENT TYPES OF MINERAL DEPOSITS
Arindam Guha, Vinod Kumar Kumarnchat, Pvn Rao, National Remote Sensing Centre, India; Yashushi Yamaguchi, Nagoya University, Japan

FR1.R7.4
09:00
GEOLOGICAL MAPPING USING MULTISPECTRAL REMOTE SENSING DATA IN THE WESTERN CHINA
Bihong Fu, Pilong Shi, Han Fu, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Yoshiki Ninomiya, Geological Survey of Japan, Japan; Jiaxin Du, Aerospace Information Research Institute, Chinese Academy of Sciences, China

FR1.R7.5
09:20
MULTI-SOURCE AND MULTI-SCALE IMAGING-DATA INTEGRATION TO BOOST MINERAL MAPPING
Richard Gloaguen, Margret Fuchs, Mahdi Khodadadzadeh, Pedram Ghamisi, Moritz Kirsch, René Booysen, Robert Zimmermann, Sandra Lorenz, Helmholz Institute Freiberg for Resource Technology, Germany

Friday, August 2	10:40 - 12:20	Room 413
Session FR2.R7		Oral-Invited

Spectral Geology from Microns to Kilometers Applied to Mineral Mapping and Resource Studies II

Session Co-Chairs: Yasushi Yamaguchi, University of Nagoya; Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf

FR2.R7.1
10:40
MAPPING LITHOLOGICAL AND ORE-CONTROLLING STRUCTURAL FEATURES USING ASTER MULTISPECTRAL DATA IN THE EASTERN TIAN SHAN
Shuo Zheng, Anhui University, China; Bihong Fu, Pilong Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FR2.R7.2
11:00
USE OF THERMAL INFRARED REMOTE SENSING FOR TARGETING MINERAL DEPOSITS
Neil Pendock, Dirt Exploration, South Africa

FR2.R7.3
11:20
MAPPING ACID MINE DRAINAGE (AMD) AND ACID SULFATE SOILS USING SENTINEL-2 DATA
Veronika Kopackova, Czech Geological Survey, Czech Republic

FR2.R7.4
11:40
MAPPING THE CHEMICAL AND MINERAL PROPERTIES OF TOTAL SUSPENDED MATTER IN PEARL RIVER WATER BY MULTISPECTRAL OPTICAL REMOTE SENSING
Yunpeng Wang, Feng Gao, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

FR2.R7.5
12:00
MULTISCALE HYPERSPECTRAL IMAGING OF WHITE MICA WAVELENGTH POSITION: EVALUATING THE IMPACT OF CHANGING SPATIAL AND SPECTRAL RESOLUTIONS
Raymond Kokaly, Garth Graham, Todd Hoefen, U.S. Geological Survey, United States

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 413
Session FR3.R7		Oral-Invited

Advances on Analysis of Big Data in Remote Sensing I

Session Co-Chairs: Begüm Demir, Technische Universität Berlin; Andrea Marinoni, University of Tromsø

FR3.R7.1
13:40
USING SOCIAL MEDIA DATA TO MAP URBAN AREAS: IDEAS AND LIMITS
Zelang Miao, Central South University, China; Gianni Cristian Iannelli, Ticinum Aerospace, Italy; Paolo Gamba, University of Pavia, Italy

FR3.R7.2
14:00
STUDY CASES ON FAST COMPRESSION DISTANCE BASED DATA VISUALIZATION
Wei Yao, German Aerospace Center (DLR), Germany

FR3.R7.3
14:20
ONLINE RANDOM FORESTS FOR LARGE-SCALE LAND-USE CLASSIFICATION FROM POLARIMETRIC SAR IMAGES
Ronny Hänsch, Olaf Hellwich, Technische Universität Berlin, Germany

FR3.R7.4
14:40
RETRIEVING IMAGES WITH GENERATED TEXTUAL DESCRIPTIONS
Genc Hoxha, Farid Melgani, University of Trento, Italy; Begüm Demir, Technische Universität Berlin, Germany

FR3.R7.5
15:00
ADVANCED PROCESSING OF REMOTELY SENSED BIG DATA FOR CULTURAL HERITAGE CONSERVATION
Michal Shimoni, Signal and Image Center SIC-RMA, Belgium; Thibauld Croonenborghs, RMA, Belgium; Pierre-Yves Declercq, Royal Belgian Institute of Natural Sciences (RBINS), Belgium; Anastasios Drougkas, Els Verstrynge, Katholieke Universiteit Leuven, Belgium; Francois-Philippe Hocquet, Roald Hayen, Royal Institute for Cultural Heritage, Belgium; Koen Van Balen, Katholieke Universiteit Leuven, Belgium

Friday, August 2	15:40 - 17:20	Room 413
Session FR4.R7		Oral-Invited

Advances on Analysis of Big Data in Remote Sensing II

Session Co-Chairs: Begüm Demir, Technische Universität Berlin; Andrea Marinoni, University of Tromsø

FR4.R7.1
15:40
ACCESS CONTROL ON BIG DATA AND SMALL PIXELS: HOW TO ACHIEVE PRIVACY AND SECURITY
Peter Baumann, Dimitar Misev, Jacobs University, Germany

FR4.R7.2
16:00
BIGEARTHNET: A LARGE-SCALE BENCHMARK ARCHIVE FOR REMOTE SENSING IMAGE UNDERSTANDING
Gencer Sumbul, Technische Universität Berlin, Germany; Marcela Charfuelan, DFKI, Germany; Begüm Demir, Volker Markl, Technische Universität Berlin, Germany

FR4.R7.3
16:20
SCALABLE WORKFLOWS FOR REMOTE SENSING DATA PROCESSING WITH THE DEEP-EST MODULAR SUPERCOMPUTING ARCHITECTURE
Ernir Erlingsson, University of Iceland, Iceland; Gabriele Cavallaro, Forschungszentrum Jülich GmbH, Germany; Helmut Neukirchen, University of Iceland, Iceland; Morris Riedel, Forschungszentrum Jülich GmbH, Germany

FR4.R7.4
16:40
IMPROVED EARTH OBSERVATION DATA RETRIEVAL THROUGH HASHING ALGORITHMS
Alexandru-Cosmin Grivei, Corina Văduva, University Politehnica of Bucharest, Romania; Mihai Datcu, German Aerospace Center (DLR), Germany

FR4.R7.5
17:00
A FAST AND PRECISE METHOD FOR LARGE-SCALE LAND-USE MAPPING BASED ON DEEP LEARNING
Xuan Yang, Zhengchao Chen, Baipeng Li, Dailiang Peng, Pan Chen, Bing Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

Friday, August 2	08:00 - 09:40	Room 414-415
Session FR1.R8		Oral

Big Data and Machine Learning - Neural Network in Remote Sensing II

Session Co-Chairs: Ronan Fablet, IMT-Atlantique/LAB-STICC; Maryam Rahnemoonfar, Texas A&M University-Corpus Christi

FR1.R8.1
08:00
DEEP ORDINAL CLASSIFICATION FOR AUTOMATIC CLOUD COVER ASSESSMENT
Qixuan Liu, East China Normal University, China; Jinsong Fan, Wenzhou University, China; Chaomin Shen, East China Normal University, China; Yaxin Peng, Shanghai University, China; Wei Peng, East China Normal University, China

FR1.R8.2
08:20
LEARNING OCEAN DYNAMICAL PRIORS FROM NOISY DATA USING ASSIMILATION-DERIVED NEURAL NETS
Said Ouala, Duong Nguyen, IMT-Atlantique/LAB-STICC, France; Cédric Herzet, IMT-Atlantique/ INRIA Bretagne-Atlantique, France; Lucas Drumetz, IMT-Atlantique/LAB-STICC, France; Bertrand Chapron, Ifremer, France; Ananda Pascual, IMEDEA, France; Fabrice Collard, Lucile Gaultier, OceanDataLab, France; Ronan Fablet, IMT-Atlantique/LAB-STICC, France

FR1.R8.3
08:40
SEMANTIC SEGMENTATION OF UNDERWATER SONAR IMAGERY WITH DEEP LEARNING
Maryam Rahnemoonfar, Dugan Dobbs, Texas A&M University Corpus Christi, United States

FR1.R8.4
09:00
GENERATIVE ADVERSARIAL NETWORKS TO AUGMENT MICRO-DOPPLER SIGNATURES FOR THE CLASSIFICATION OF HUMAN ACTIVITY
Ibrahim Alnujaim, California State University, Fresno, United States; Daegun Oh, Daegu Gyeongbuk Institute of Science & Technology, Korea (South); Youngwook Kim, California State University, Fresno, United States

FR1.R8.5
09:20
URBAN FUNCTIONAL REGIONS DISCOVERING BASED ON DEEP LEARNING
Fan Mou, Rui Kong, Kai Li, Zezhong Zheng, University of Electronic Science and Technology of China, China; Jun Xia, Wuhan University, China; Yong He, Sichuan Research Institute for Eco-system Restoration & Geo-disaster Prevention, China; Mingcang Zhu, Department of Natural Resources of Sichuan Province, China; Guoqing Zhou, Guilin University of Technology, China; Hongsheng Zhang, Chinese University of Hong Kong, China; Zhigang Liu, Beijing Normal University, China; Ankai Hou, Ling Jiang, Shengli Wang, University of Electronic Science and Technology of China, China; Jiang Li, Old Dominion University, United States

Friday, August 2	10:40 - 12:20	Room 414-415
Session FR2.R8		Oral

Big Data and Machine Learning - Machine Learning for Landcover/Landuse

Session Chair: Zhengwei Yang, USDA National Agricultural Statistics Service

FR2.R8.1
10:40
IMPACT OF NON-PROPORTIONAL TRAINING SAMPLING OF IMBALANCED CLASSES ON LAND COVER CLASSIFICATION ACCURACY WITH SEE5 DECISION TREE
Zhengwei Yang, Claire Boryan, USDA National Agricultural Statistics Service, United States

FR2.R8.2
11:00
MULTISCALE BASED CHARACTERIZATION AND CLASSIFICATION OF URBAN LAND-USE
Jacob Arndt, Dalton Lunga, Jeanette Weaver, St. Thomas LeDoux, Sarah Tennille, Oak Ridge National Laboratory, United States

FR2.R8.3
11:20
A CLASS ACTIVATION MAPPING GUIDED ADVERSARIAL TRAINING METHOD FOR LAND-USE CLASSIFICATION AND OBJECT DETECTION
Rui Yang, Xin Xu, Wuhan University, China; Zhaozhuo Xu, Stanford University, United States; Chujiang Ding, Fangling Pu, Wuhan University, China

FR2.R8.4
11:40
SPATIAL INFORMATION INFERENCE NET: ROAD EXTRACTION USING ROAD-SPECIFIC CONTEXTUAL INFORMATION
Ji Qi, Chao Tao, Hao Wang, Yuqi Tang, Zhenqi Cui, Central South University, China

Friday, August 2	13:40 - 15:20	Room 414-415
Session FR3.R8		Oral

Big Data and Machine Learning - Machine Learning for SAR

Session Co-Chairs: Qian Song, Fudan University; Shilei Fu, Key Lab for Information Science of Electromagnetic Waves (MoE), Fudan University

FR3.R8.1
13:40
A SEMI-SUPERVISED METHOD FOR SAR TARGET DISCRIMINATION BASED ON CO-TRAINING
Lan Du, Yan Wang, Weitong Xie, Xidian University, China

FR3.R8.2
14:00
END-TO-END AUTOMATIC SHIP DETECTION AND RECOGNITION IN HIGH-RESOLUTION GAOFEN-3 SPACEBORNE SAR IMAGES
Xiyue Hou, Wei Ao, Feng Xu, Fudan University, China

FR3.R8.3
14:20
TRANSLATING SAR TO OPTICAL IMAGES FOR ASSISTED INTERPRETATION
Shilei Fu, Feng Xu, Ya-Qiu Jin, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, China

FR3.R8.4
14:40
A NEW RATIO IMAGE BASED CNN ALGORITHM FOR SAR DESPECKLING
Sergio Vitale, Giampaolo Ferraioli, Vito Pascazio, Università di Napoli, Italy

FR3.R8.5
15:00
SAR IMAGE REPRESENTATION LEARNING WITH ADVERSARIAL AUTOENCODER NETWORKS
Qian Song, Feng Xu, Ya-Qiu Jin, Fudan University, China

Friday, August 2	15:40 - 17:20	Room 414-415
Session FR4.R8		Oral

Big Data and Machine Learning - New Trends in Remote Sensing II

Session Chair: Mesay Belete Bejiga, University of Trento

FR4.R8.1
15:40
TOWARDS GENERATING REMOTE SENSING IMAGES OF THE FAR PAST
Mesay Belete Bejiga, Farid Melgani, University of Trento, Italy

FR4.R8.2
16:00
A 10 M SENTINELS-DERIVED WETLAND EXTENT PRODUCT OF NEWFOUNDLAND ON THE GOOGLE EARTH ENGINE CLOUD COMPUTING PLATFORM
Masoud Mahdianpari, C-CORE and Memorial University, Canada; Bahram Salehi, State University of New York (SUNY), United States; Fariba Mohammadimanesh, C-CORE and Memorial University, Canada; Saeid Homayouni, University of Ottawa, Canada; Eric Gill, Memorial University of Newfoundland, Canada

FR4.R8.3
16:20
ALTERNATIVE DATASETS FOR IDENTIFICATION OF EARTH SCIENCE EVENTS AND DATA
Kaylin Bugbee, Robert Griffin, Brian Freitag, Jeffrey Miller, University of Alabama Huntsville, United States; Rahul Ramachandran, NASA Marshall Space Flight Center, United States; Jia Zhang, Carnegie Mellon University, United States

FR4.R8.4
16:40
A PROTOTYPE SYSTEM USING LOCATION-BASED TWITTER DATA FOR DISASTER MANAGEMENT
Quan Zou, Southwest University, China

FR4.R8.5
17:00
AN INTERACTIVE VISUAL ANALYTICS TOOL FOR BIG EARTH OBSERVATION DATA CONTENT ESTIMATION
Daniela Faur, Andreea Griparis, Politehnica University of Bucharest, Romania; Adrian Stoica, TERRASIGNA, Romania; Philippe Mougnaud, European Space Agency (ESA), Italy; Mihai Datcu, German Aerospace Center (DLR) / Politehnica University of Bucharest, Romania

FRIDAY ORAL

Friday, August 2	08:00 - 09:40	Room 416-417
Session FR1.R9		Oral

PolSAR Methods and Applications

Session Co-Chairs: Masanobu Shimada, Tokyo Denki University / JAXA; Jong-Sen Lee, Naval Research Laboratory

FR1.R9.1
08:00
ON THE SEPARATION OF GROUND AND CANOPY SCATTERINGS USING SINGLE POLARIMETRIC MULTI-BASELINE SAR TOMOGRAPHY
Hossein Aghababaee, Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Gilda Schirinzi, Università di Napoli Parthenope, Italy

FR1.R9.2
08:20
URBAN AREA EXTRACTION FROM POLSAR DATA USING OPTIMIZED ROLL-INVARIANT FEATURES AND SELECTED HIDDEN POLARIMETRIC FEATURES IN THE ROTATION DOMAIN
Yu Wang, School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, China; Chunle Wang, Weidong Yu, Institute of Electronics, Chinese Academy of Sciences, China

FR1.R9.3
08:40
BENEFIT OF XPOL FOR URBAN CLASSIFICATION USING SAR IMAGES
Régis Guinvarc'h, Laetitia Thirion-Lefevre, CentraleSupélec, France; Donald Atwood, Michigan Tech Research Institute, France

FR1.R9.4
09:00
THREE-DIMENSIONAL TARGET SCATTERING CLASSIFICATION USING FULL-RANK POLARIMETRIC TOMOGRAPHIC SAR FOCUSING
Hossein Aghababaee, Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Gilda Schirinzi, Università di Napoli Parthenope, Italy

FR1.R9.5
09:20
SEMI-SUPERVISED CLASSIFICATION OF POLARIMETRIC SAR IMAGES USING MARKOV RANDOM FIELD AND TWO-LEVEL WISHART MIXTURE MODEL
Chi Liu, Wenzhi Liao, Ghent University, Belgium; Heng-Chao Li, Rui Wang, Southwest Jiaotong University, China; Wilfried Philips, Ghent University, Belgium

Friday, August 2	10:40 - 12:20	Room 416-417
Session FR2.R9		Oral

Compat and Quad Polarimetry: Methods and Applications

Session Co-Chairs: Jong-Sen Lee, Naval Research Laboratory; Yoshio Yamaguchi, Niagata University

FR2.R9.1
10:40
QUANTITATIVE ANALYSIS OF FULL AND SIMULATED COMPACT POLARIMETRIC SAR DATA FOR WETLAND MAPPING
Fariba Mohammadimanesh, C-CORE and Memorial University, Canada; Bahram Salehi, State University of New York (SUNY), United States; Masoud Mahdianpari, C-CORE and Memorial University, Canada; Brian Brisco, Canada Centre for Remote Sensing, Canada

FR2.R9.2
11:00
A NOVEL RADAR VEGETATION INDEX FOR COMPACT POLARIMETRIC SAR DATA
Dipankar Mandal, Avik Bhattacharya, Vineet Kumar, Debanshu Ratha, Subhadip Dey, Indian Institute of Technology Bombay, India; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Alejandro C. Frery, Universidade Federal de Alagoas, Brazil; Y. S. Rao, Indian Institute of Technology Bombay, India

FR2.R9.3
11:20
RISAT-1 SAR HRS MODE DATA QUALITY EVALUATION
Maneesha Gupta, Vaibhav Malhotra, Bankim Shah, Shilpa Prakash, Anuja Sharma, Kartikeyan B, SAC/ISRO, India

FR2.R9.4
11:40
SIRV-BASED DUAL-DOMAIN FILTER FOR HIGH-RESOLUTION POLSAR IMAGE
Yexian Ren, Lingli Zhao, Jie Yang, Pingxiang Li, Wuhan University, China; Xiaoli Ding, Hong Kong Polytechnic University, China

FR2.R9.5
12:00
OBSERVING THE GERMAN WADDEN SEA – A NEW APPROACH TO DISTINGUISH SEDIMENTS AND HABITATS USING ALOS-2 PALSAR-2 DATA
Wensheng Wang, Institute of Electronics, Chinese Academy of Sciences, China; Martin Gade, Universität Hamburg, Germany

Friday, August 2	13:40 - 15:20	Room 416-417
Session FR3.R9		Oral

Tomography and 3D Mapping III

Session Co-Chairs: Matteo Pardini, German Aerospace Center (DLR); Giampaolo Ferraioli, Università di Napoli Parthenope

FR3.R9.1
13:40
TOMOGRAPHY AND GROUND/VOLUME DECOMPOSITION FOR FOREST BIOMASS RETRIEVAL
Francesco Banda, ARESYS, Italy; Mauro Mariotti d'Alessandro, Stefano Tebaldini, Politecnico di Milano, Italy; Davide Giudici, ARESYS, Italy

FR3.R9.2
14:00
SUB-CANOPY GROUND LOCALIZATION FROM MULTI-BASELINE POL-INSAR DATA IN FOREST SCENARIOS
Matteo Pardini, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany

FR3.R9.3
14:20
THE IMPACT OF ORBITAL CONTROL ON THE QUALITY OF BIOMASS ESTIMATES THROUGH P-BAND SAR TOMOGRAPHY
Mauro Mariotti d'Alessandro, Stefano Tebaldini, Politecnico di Milano, Italy

FR3.R9.4
14:40
GENERALIZED-CAPON DIFF-TOMO FOR SENSING OF DECORRELATING SCATTERERS: INSIGHTS, CHARACTERIZATION, AND EXPERIMENTS
Fabrizio Lombardini, University of Pisa, Italy; Francesco Cai, Leonardo S.p.A., Italy

FR3.R9.5
15:00
3D MODELING OF EARTH'S SURFACE: STUDY OF THE ANTARCTICA
Philippe Chiberre, Enric Meinhardt-Llopis, CMLA, France; Carlo De Franchis, CMLA and Kayrros, France; Gabriele Facciolo, CMLA, France

Friday, August 2	15:40 - 17:20	Room 416-417
Session FR4.R9		Oral

Tomography and 3D Mapping IV

Session Chair: Scott Hensley, NASA Jet Propulsion Laboratory

FR4.R9.1
15:40
A VIRTUAL ADAPTIVE BEAMFORMING APPROACH FOR FEATURE ENHANCED SAR TOMOGRAPHY
Gustavo Daniel Martín-del-Campo-Becerra, Andreas Reigber, Matteo Nannini, German Aerospace Center (DLR), Germany

FR4.R9.2
16:00
ROBUST HEIGHT RECONSTRUCTION OF BUILDINGS BASED ON ESPRIT-TOMOSAR
Masanori Gocho, Hiroyoshi Yamada, Yoshio Yamaguchi, Ryoichi Sato, Niigata University, Japan; Shoichiro Kojima, National Institute of Information and Communications Technology (NICT), Japan; Motofumi Arii, Mitsubishi Electric Corporation, Japan

FR4.R9.3
16:20
UAVSAR TOMOGRAPHY OF MUNICH
Scott Hensley, Brian Hawkins, Thierry Michel, Ronald Muellerschoen, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Xiaoxiang Zhu, Andreas Reigber, Gustavo Daniel Martin del Campo, German Aerospace Center (DLR), Germany

FR4.R9.4
16:40
HIGH RESOLUTION DSM GENERATION FROM ALOS-3 STEREO IMAGERIES
Junichi Takaku, Remote Sensing Technology Center of Japan, Japan; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Fumi Ohgushi, Masanori Doutsu, Remote Sensing Technology Center of Japan, Japan

FR4.R9.5
17:00
DIRECTION OF ARRIVAL ASSESSMENT IN AIRBORNE ICE-SOUNDING SYNTHETIC APERTURE RADAR
Alvaro Arenas-Pingarron, Paul Brennan, University College London, United Kingdom; Hugh Corr, British Antarctic Survey, United Kingdom

FRIDAY ORAL

Friday, August 2	08:00 - 09:40	Room 418
Session FR1.R10		Oral

UAV/Airborne SAR

Session Co-Chairs: Daniel Henke, University of Zurich; Antonio Natale, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR)

FR1.R10.1
08:00
HINOTORI-C2 MISSION : CN235MPA AIRCRAFT ONBOARD CIRCULARLY POLARIZED SYNTHETIC APERTURE RADAR (CP-SAR)
Josaphat Tetuko Sri Sumantyo, Chua Ming Yam, Cahya Edi Santosa, Good Fried Panggabean, Tomoro Watanabe, Chiba University, Japan; Bambang Setiadi, Indonesian Institute of Sciences, Indonesia; Kengo Tsushima, Chiba University, Japan; Franciscus Dwikoco Sri Sumantyo, Bhayangkara Jakarta Raya University, Indonesia; Karna Sasmita, Agus Mardiyanto, Edi Supartono, Tentara Nasional Indonesia Angkatan Udara, Indonesia; Eko Tjipto Rahardjo, Gunawan Wibisono, Universitas Indonesia, Indonesia; Retnadi Jatmiko, Sudaryatno Sudaryatno, Taufik Purwanto, Barandi Widartono, Muhammad Kamal, Universitas Gadjah Mada, Indonesia; Robertus Heru Triharjanto, Lembaga Antariksa dan Penerbangan Nasional, Indonesia; Steven Gao, University of Kent, United Kingdom; K. Ito, Chiba University, Japan

FR1.R10.2
08:20
MIRANDA35 EXPERIMENTS IN PREPARATION FOR SMALL UAV-BASED SAR
Daniel Henke, Max Frioud, Julian Fagir, University of Zurich, Switzerland; Sébastien Guillaume, Michael Meindl, Alain Geiger, ETH Zürich, Switzerland; Stefan Sieger, Daniel Janssen, Frank Klöppel, Michael Caris, Stephan Stanko, Fraunhofer Institute, Germany; Matthias Renker, Peter Wellig, armasuisse, Switzerland

FR1.R10.3
08:40
AXIS AIRBORNE SAR SYSTEM: FLIGHT-TEST RESULTS
Carmen Esposito, Antonio Natale, Paolo Berardino, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Gianfranco Palmese, Elettra Microwave S.r.l., Italy; Riccardo Lanari, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Stefano Perna, Università degli Studi di Napoli "Parthenope", Italy

FR1.R10.4
09:00
THE ASI P-BAND HELICOPTER-BORNE INTEGRATED SOUNDER-SAR SYSTEM: PRELIMINARY RESULTS OF THE 2018 MOROCCO DESERT CAMPAIGN
Stefano Perna, Università degli Studi di Napoli "Parthenope", Italy; Giovanni Alberti, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Paolo Berardino, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Lorenzo Bruzzone, University of Trento, Italy; Dario Califano, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Ilaria Catapano, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Luca Ciofaniello, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Elena Donini, University of Trento, Italy; Carmen Esposito, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Claudia Facchinetti, Roberto Formaro, Agenzia Spaziale Italiana (ASI), Italy; Gianluca Gennarelli, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Christopher Gerekos, University of Trento, Italy; Riccardo Lanari, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Francesco Longo, Agenzia Spaziale Italiana (ASI), Italy; Giovanni Ludeno, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Mauro Mariotti d'Alessandro, Politecnico di Milano, Italy; Antonio Natale, Carlo Noviello, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Gianfranco Palmese, Claudio Papa, Giulia Pica, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Fabio Rocca, Politecnico di Milano, Italy; Giuseppe Salzillo, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Francesco Soldovieri, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Stefano Tebaldini, Politecnico di Milano, Italy; Sanchari Thakur, University of Trento, Italy

FR1.R10.5
09:20
AN AIRBORNE MULTI-CHANNEL SAR IMAGING METHOD WITH MOTION COMPENSATION
Jiayi Guo, Jie Chen, Chunsheng Li, Wei Yang, Beihang University, China

Friday, August 2	10:40 - 12:20	Room 418
Session FR2.R10		Oral

Ground Based Systems II

Session Co-Chairs: Massimiliano Pieraccini, University of Florence; Giovanni Nico, CNR

FR2.R10.1
10:40
GROUND-BASED BISTATIC POLARIMETRIC INTERFEROMETRIC SYNTHETIC APERTURE RADAR SYSTEM
Suyun Wang, Weike Feng, Kazutaka Kikuta, Grigory Chernyak, Motoyuki Sato, Tohoku University, Japan

FR2.R10.2
11:00
ONLINE HIGH RESOLUTION STOCHASTIC RADIATION RADAR IMAGING USING SPARSE COVARIANCE FITTING
Yongchao Zhang, Deqing Mao, Yuanyuan Bu, Junjie Wu, Yulin Huang, University of Electronic Science and Technology of China, China; Andreas Jakobsson, Lund University, Sweden

FR2.R10.3
11:20
GROUND-BASED RADIATION OBSERVATIONAL METHOD IN MOUNTAINOUS AREAS
Qing Chu, Guangjian Yan, Beijing Normal University, China; Martin Wild, Eidgenössische Technische Hochschule Zürich (ETHZ), Switzerland; Yingji Zhou, Kai Yan, Linyuan Li, Yanan Liu, Yiyi Tong, Xihan Mu, Beijing Normal University, China

FR2.R10.4
11:40
LARGE SCALE DIGITAL SURFACE MODEL PRODUCTION ON CLOUD USING BIG DATA TECHNOLOGIES FOR FUTURE EO MISSION
Olivier Melet, David Youssefi, Julien Michel, Myriam Cournet, Florie Languille, Laurent Lebegue, CNES, France; Cyrille Bouisson, Audrey Paccini, C.S., France

FR2.R10.5
12:00
PROVIDING REFERENCE FOREST BIOMASS DATA FOR EO IMAGERY : A COMPARISON OF FOUR IN-SITU RELASCOPE MEASURING DEVICES IN ASTURIAS, SPAIN
Matthieu Molinier, Renne Tergujeff, VTT Technical Research Centre of Finland Ltd, Finland; Timo Toivanen, CGI Group Inc., Finland; Tuomas Häme, VTT Technical Research Centre of Finland Ltd, Finland; Carlos López-Sánchez, Marcos Barrio Anta, Alís Novo-Fernández, University of Oviedo, Spain

Friday, August 2	13:40 - 15:20	Room 418
Session FR3.R10		Oral

Hyperspectral Data Analysis

Session Co-Chairs: Hilda Deborah, Norwegian University of Science and Technology; Wolfgang Gross, Fraunhofer IOSB

FR3.R10.1
13:40
FEATURE EXTRACTION OF HYPERSPECTRAL IMAGERY BASED ON DEEP NMF
Chenxi Ji, Minchao Ye, Huijuan Lu, Futian Yao, China Jiliang University, China; Yuntao Qian, Zhejiang University, China

FR3.R10.2
14:00
DUAL DICTIONARY LEARNING FOR MINING A UNIFIED FEATURE SUBSPACE BETWEEN DIFFERENT HYPERSPECTRAL IMAGE SCENES
Hong Chen, Minchao Ye, Huijuan Lu, Ling Lei, China Jiliang University, China; Yuntao Qian, Zhejiang University, China

FR3.R10.3
14:20
APPLICATION OF NONLINEAR FEATURE NORMALIZATION ON COMBINED HYPERSPECTRAL AND LIDAR DATA
Wolfgang Gross, Dimitri Bulatov, Peter Solbrig, Fraunhofer IOSB, Germany

FR3.R10.4
14:40
A METROLOGICAL SPECTRAL DIFFERENCE SPACE FOR THE STATISTICAL MODELLING OF HYPERSPECTRAL IMAGES
Hilda Deborah, Norwegian University of Science and Technology, Norway; Noël Richard, Laboratory XLIM, JRU CNRS 7252, France; Magnús Örn Úlfarsson, Jón Atli Benediktsson, University of Iceland, Iceland; Jon Yngve Hardeberg, Norwegian University of Science and Technology, Norway

FR3.R10.5
15:00
STATISTICAL FUSION-BASED TRANSFER LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Xiaomei Liu, Sen Jia, Meng Xu, Jiasong Zhu, Shenzhen University, China

Friday, August 2	15:40 - 17:20	Room 418
Session FR4.R10		Oral

Tensor Decomposition

Session Co-Chairs: Yihua Tan Tan, Huazhong University of Science and Technology; Xiayuan Huang, Chinese Academy of Sciences

FR4.R10.1
15:40
A NOVEL TENSOR-BASED FEATURE EXTRACTION METHOD FOR POLSAR IMAGE CLASSIFICATION
Xiayuan Huang, Xiangli Nie, Hong Qiao, Bo Zhang, Chinese Academy of Sciences, China

FR4.R10.3
16:20
HYPERSPECTRAL IMAGE CLASSIFICATION VIA TENSOR RIDGE REGRESSION
Jianjun Liu, Hao Chen, Jiangnan University, China; Songze Tang, Nanjing Forest Police College, China; Jinlong Yang, Jiangnan University, China; Hong Yan, City University of Hong Kong, China

FR4.R10.4
16:40
INFRARED SMALL TARGET DETECTION ALGORITHM BASED ON ROBUST TENSOR DECOMPOSITION MODEL WITHIN BAYESIAN FRAMEWORK
Yihua Tan, Zhi Li, Yuan Xiao, Na Liu, Huazhong University of Science and Technology, China

FR4.R10.5
17:00
HYPERSPECTRAL IMAGE CLASSIFICATION USING TENSOR CP DECOMPOSITION
Mohamad Jouni, Mauro Dalla Mura, Pierre Comon, Grenoble Images Parole Signal Automatique, France

Friday, August 2	08:00 - 09:40	Room 419
Session FR1.R11		Oral

Subsurface Sensing / GPR

Session Co-Chairs: Motoyuki Sato, Tohoku University; Francesca Bovolo, Fondazione Bruno Kessler

FR1.R11.1
08:00
REVISITING THE LIMITS OF AZIMUTH PROCESSING GAIN FOR RADAR SOUNDING
Dustin Schroeder, Davide Castelletti, Isabella Pena, Stanford University, United States

FR1.R11.2
08:20
ASSESSING THE DETECTION PERFORMANCE ON ICY TARGETS ACQUIRED BY AN ORBITING RADAR SOUNDER
Elena Donini, Fondazione Bruno Kessler, Italy; Sanchari Thakur, University of Trento, Italy; Francesca Bovolo, Fondazione Bruno Kessler, Italy; Lorenzo Bruzzone, University of Trento, Italy

FR1.R11.3
08:40
SURFACE-BASED MULTI-CHANNEL RADAR SYSTEMS FOR ICE SHEET MEASUREMENTS
Jie-Bang Yan, Joshua Nunn, Prasad Gogineni, Charles O'Neill, Christopher Simpson, Ryan Taylor, Linfeng Li, Shashank Wattal, Sijia Yu, University of Alabama, United States; Daniel Steinhage, Alfred Wegener Institute, Germany; Dorthe Dahl-Jensen, University of Copenhagen, Denmark; Heinz Miller, Olaf Eisen, Alfred Wegener Institute, Germany

FR1.R11.4
09:00
REPEAT-PASS INTERFEROMETRY APPLIED TO ENGLACIAL LAYER VELOCITY ESTIMATION USING RADAR SOUNDER DATA
Davide Castelletti, Dustin Schroeder, Thomas Jordan, Stanford University, United States; Duncan Young, University of Texas at Austin, United States

FR1.R11.5
09:20
TREE TRUNK INSPECTION BY GPR WITH REFLECTION AND TRANSMISSION MEASUREMENTS
Kazunori Takahashi, Kunio Aoike, Ken Kajino, Yayoi Ashiba, Kumi Kaneko, Nobuaki Ishizawa, OYO Corporation, Japan

Friday, August 2	10:40 - 12:20	Room 419
Session FR2.R11		Oral-Invited

Digital Agriculture with Machine Learning and Remote Sensing I

Session Chair: Dharmendra Singh, Indian Institute of Technology, Roorkee

FR2.R11.1
10:40
MACHINE LEARNING TECHNIQUES FOR PREDICTING CROP PRODUCTION IN INDIA
Sarthak Agarwal, Naina Narang, Manipal University Jaipur, India

FR2.R11.2
11:00
A STEP FOR DIGITAL AGRICULTURE BY ESTIMATING NEAR REAL TIME SOIL MOISTURE WITH SCATSAT-1 DATA
Ajay Kumar Maurya, Deepak Murugan, Dharmendra Singh, IIT Roorkee, India; K P Singh, Indian Institute of Technology BHU (Banaras Hindu University), India

FR2.R11.3
11:20
DIGITAL DISEASE PHENOTYPING
Cristhian Delgado, Hernan Benitez, Pontificia Universidad Javeriana, Colombia; Maribel Cruz, Fondo Latinoamericano para Arroz de Riego, Colombia; Michael Selvaraj, International Center for Tropical Agriculture, Colombia

FR2.R11.4
11:40
ENHANCEMENT OF POLARIZATION MECHANISM IN PIXEL-BY-PIXEL PHASE OPTIMIZATION IN POLINSAR
Yuta Otsuka, Ryo Natsuaki, Akira Hirose, University of Tokyo, Japan

FR2.R11.5
12:00
DIFFERENT MODALITY BASED REMOTE SENSING DATA FUSION APPROACH FOR EFFICIENT CLASSIFICATION OF AGRICULTURE AND URBAN SUBCLASSES
S. N. Chaudhri, N. S. Rajput, K. P. Singh, Indian Institute of Technology BHU (Banaras Hindu University), India; D Singh, Indian Institute of Technology Roorkee, India

Friday, August 2	13:40 - 15:20	Room 419
Session FR3.R11		Oral-Invited

Digital Agriculture with Machine Learning and Remote Sensing II

Session Chair: Dharmendra Singh, Indian Institute of Technology, Roorkee

FR3.R11.1
13:40
MAXIMUM MEMBERSHIP FRACTION BASED PURE PIXEL ASSESSMENT APPROACH FOR HYPERSPECTRAL DATA ANALYSIS USING DEEP LEARNING
S. N. Chaudhri, N. S. Rajput, K. P. Singh, Indian Institute of Technology BHU (Banaras Hindu University), India; D. Singh, Indian Institute of Technology, Roorkee, India

FR3.R11.2
14:00
IMPROVED UTILIZATION OF POLSAR POLARIZATION SIGNATURES USING CONVOLUTIONAL-DEEP NEURAL NETS FOR LAND COVER CLASSIFICATION
Gopal Phartiyal, Dharmendra Singh, Indian Institute of Technology Roorkee, India; Nicolas Brodu, Hussein Yahia, INRIA, France

FR3.R11.3
14:20
A STEP TOWARDS DIGITAL AGRICULTURE FOR DEVELOPMENT OF OBJECT BASED PHENOLOGY APPROACH TO CLASSIFY SUGARCANE AND PADDY CROPS USING MULTISENSOR DATA
Deepak Murugan, Dharmendra Singh, IIT Roorkee, India

FR3.R11.4
14:40
DEVELOPMENT OF MACHINE LEARNING BASED APPROACH FOR COMPUTING OPTIMAL VEGETATION INDEX WITH THE USE OF SENTINEL-2 AND DRONE DATA
Ankush Agarwal, Sandeep Kumar, Dharmendra Singh, IIT Roorkee, India

FR3.R11.5
15:00
IN-SEASON PREDICTION OF CROP TYPES IN THE US GREAT PLAINS USING SEQUENCE BASED STOCHASTIC MODELS AND DEEP LEARNING
Subit Chakrabarti, Rob Braswell, Nick Malizia, Damien Sulla-Menashe, Tina Cormier, Indigo Agriculture, United States; Mark Friedl, Boston University, United States

Friday, August 2	15:40 - 17:20	Room 419
Session FR4.R11		Oral-Invited

Digital Agriculture with Machine Learning and Remote Sensing III

Session Chair: Dharmendra Singh, Indian Institute of Technology, Roorkee

FR4.R11.1
15:40
CRITICAL ANALYSIS OF FUSION ALGORITHMS FOR DIGITAL AGRICULTURE: AN EFFICIENT APPLICATION OF PALSAR DATA
Vikas Mittal, National Institute of Technology Kurukshetra, India; Dharmendra Singh, Indian Institute of Technology Roorkee, India

FR4.R11.2
16:00
MONITORING THE CHANGE IN WATER CLASS OF TWO RIVERS IN SANGAM REGION, PRAYAGRAJ, INDIA USING LANDSAT-8 OLI IMAGERY
Vikash Mishra, Triloki Pant, Indian Institute of Information Technology Allahabad, India

FR4.R11.3
16:20
POTENTIAL OF ALPHA ANGLE OF FULLY POLARIMETRIC L-BAND DATA TIME SERIES IN CHARACTERIZING FOREST DYNAMICS
Mohamed Musthafa S, Gulab Singh, Indian Institute of Technology Bombay, India

FR4.R11.4
16:40
EFFECT OF SURFACE ROUGHNESS PARAMETER ON SOIL MOISTURE OF WHEAT FIELD IN GROWING STAGE: AN APPLICATION OF SENTINEL-1 SAR DATA
Nidhi Verma, Indian Institute of Information Technology Allahabad, India; Pooja Mishra, Neetesh Purohit, Indian Institute of Information Technology, India

FR4.R11.5
17:00
STOCK VOLUME LOSS ESTIMATION IN POPLARS USING REGRESSION MODELS AND ALOS-2/PALSAR-2 BACKSCATTER
Gulab Singh, Unmesh Khati, Indian Institute of Technology Bombay, India; Stefano Tebaldini, Politecnico di Milano, Italy

FRIDAY ORAL

Friday, August 2	08:00 - 09:40	Room 421
Session FR1.R12		Oral-Invited

Labels in Deep Learning: Friend or Foe? I

Session Co-Chairs: Katarina Doctor, Naval Research Laboratory; Ronny Hänsch, Technische Universität Berlin

FR1.R12.1
08:00
WHERE DO LABELS COME FROM?
Jeff Byers, Katarina Doctor, Naval Research Laboratory, United States

FR1.R12.3
08:40
THE TRUTH ABOUT GROUND TRUTH: LABEL NOISE IN HUMAN-GENERATED REFERENCE DATA
Ronny Hänsch, Olaf Hellwich, Technische Universität Berlin, Germany

FR1.R12.4
09:00
BUILDING AN OPERATIONALLY RELEVANT DATASET FROM SATELLITE IMAGERY
Katie Rainey, Naval Information Warfare Center Pacific, United States

FR1.R12.5
09:20
LEARNING TO UNDERSTAND EARTH OBSERVATION IMAGES WITH WEAK AND UNRELIABLE GROUND TRUTH
Rodrigo Caye Daudt, Adrien Chan-Hon-Tong, Bertrand Le Saux, Alexandre Boulch, ONERA, France

Friday, August 2	10:40 - 12:20	Room 421
Session FR2.R12		Oral-Invited

Labels in Deep Learning: Friend or Foe? II

Session Co-Chairs: Katarina Doctor, Naval Research Laboratory; Ronny Hänsch, Technische Universität Berlin

FR2.R12.1
10:40
THE CHALLENGE OF CREATING THE SARPTICAL DATASET
Yuanyuan Wang, Technical University of Munich, Germany; Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany

FR2.R12.2
11:00
INTERACTIVE COCONUT TREE ANNOTATION USING FEATURE SPACE PROJECTIONS
John Edgar Vargas-Muñoz, University of Campinas, Brazil; Ping Zhou, HERE Technologies, Netherlands; Alexandre Xavier Falcão, University of Campinas, Brazil; Devis Tuia, Wageningen University, Netherlands

FR2.R12.3
11:20
AUTOMATIC EXTRACTION OF WEAK LABELED SAMPLES FROM EXISTING THEMATIC PRODUCTS FOR TRAINING CONVOLUTIONAL NEURAL NETWORKS
Claudia Paris, Lorenzo Bruzzone, University of Trento, Italy

FR2.R12.4
11:40
A NOVEL MULTI-ATTENTION DRIVEN SYSTEM FOR MULTI-LABEL REMOTE SENSING IMAGE CLASSIFICATION
Gencer Sumbul, Begüm Demir, Technische Universität Berlin, Germany

FR2.R12.5
12:00
AN OVERVIEW OF LABELS IN DEEP LEARNING
Katarina Doctor, Naval Research Laboratory, United States; Ronny Hänsch, Technische Universität Berlin, Germany

FRIDAY ORAL

Friday, August 2	08:00 - 09:40	Room 511-512
Session FR1.R13		**Oral-Invited**

Monitoring and Understanding Cryosphere Dynamics at Different Scales I

Session Co-Chairs: Claudia Notarnicola, EURAC; Kari Luojus, Finnish Meteorological Institute

FR1.R13.1
08:00
THE AMSR2 SATELLITE-BASED MICROWAVE SNOW ALGORITHM (SMSA): A NEW ALGORITHM FOR ESTIMATING GLOBAL SNOW ACCUMULATION
Richard Kelly, Qinghuan Li, Nastaran Saberi, University of Waterloo, Canada

FR1.R13.3
08:40
DEVELOPMENT OF SWE RETRIEVAL METHODS IN THE ESA SNOW CCI PROJECT AND LONG TERM TRENDS IN SEASONAL SNOW MASS
Kari Luojus, Jouni Pulliainen, Matias Takala, Juha Lemmetyinen, Mikko Moisander, Finnish Meteorological Institute, Finland; Chris Derksen, Lawrence Mudryk, Environment and Climate Change Canada, Canada; Thomas Nagler, Gabriele Schwaizer, ENVEO IT GmbH, Austria

FR1.R13.4
09:00
SPACE-TIME COVERAGE SCENARIOS FOR A GLOBAL SNOW SATELLITE CONSTELLATION
Edward Kim, NASA Goddard Space Flight Center, United States; Barton Forman, Lizhao Wang, University of Maryland, United States; Jacqueline Lemoigne-Stewart, Sreeja Nag, Sujay Kumar, Carrie Vuyovich, Bryan Blair, NASA Goddard Space Flight Center, United States; Michelle Hofton, University of Maryland, United States

FR1.R13.5
09:20
EVALUATION OF SEASONAL WATER BUDGET COMPONENTS OVER THE MAJOR DRAINAGE BASINS OF NORTH AMERICA USING AN ENSEMBLE-BASED LAND SURFACE MODEL APPROACH
Carrie Vuyovich, Sujay Kumar, NASA Goddard Space Flight Center, United States; Lawrence Mudryk, Environment and Climate Change Canada, United States; Rhae Sung Kim, NASA Goddard Space Flight Center / Universities Space Research Association, United States; Jessica Lundquist, University of Washington, United States; Michael Durand, Ohio State University, United States; Chris Derksen, Ana Barros, Environment and Climate Change Canada, United States; Paul Houser, George Mason University, United States; Ed Kim, NASA Goddard Space Flight Center, United States

Friday, August 2	10:40 - 12:20	Room 511-512
Session FR2.R13		**Oral-Invited**

Monitoring and Understanding Cryosphere Dynamics at Different Scales II

Session Co-Chairs: Kari Luojus, Finnish Meteorological Institute; Claudia Notarnicola, EURAC

FR2.R13.1
10:40
A NOVEL APPROACH TO SNOW COVERAGE RETRIEVAL UNDER CLOUD-OBSCURED PIXELS BASED ON MULTITEMPORAL CORRELATION
Milad Niroumand-Jadidi, Fondazione Bruno Kessler, Italy; Massimo Santoni, Lorenzo Bruzzone, University of Trento, Italy; Francesca Bovolo, Fondazione Bruno Kessler, Italy

FR2.R13.2
11:00
USING OPTICAL AND THERMAL DATA FOR TRACKING SNOWMELT PROCESSES IN ALPINE AREA
Roberto Colombo, Roberto Garzonio, Biagio Di Mauro, University of Milano Bicocca, Italy; Marie Dumont, François Tuzet, Météo-France, CNRS, France; Sergio Cogliati, Greta Pennati, University of Milano Bicocca, Italy; Antonino Maltese, University of Palermo, Italy; Edoardo Cremonese, Environmental Protection Agency of Aosta Valley, Italy

FR2.R13.3
11:20
EXPLOITING THE SYNERGY BETWEEN SENTINEL-1 AND COSMO SKY-MED DATA FOR SNOW MONITORING IN ALPINE AREAS
Simone Pettinato, Simonetta Paloscia, Emanuele Santi, IFAC - CNR, Italy; Claudia Notarnicola, Mattia Callegari, Carlo Marin, Eurac Research, Italy; Enrico Palchetti, IFAC-CNR, Italy

FR2.R13.4
11:40
A DUAL-FREQUENCY KU-BAND RADAR MISSION CONCEPT FOR SEASONAL SNOW
Chris Derksen, Environment and Climate Change Canada, Canada; Juha Lemmetyinen, Finnish Meteorological Institute, Finland; Joshua King, Stephane Belair, Camille Garnaud, Environment and Climate Change Canada, Canada; Melanie Lapointe, Yves Crevier, Canadian Space Agency, Canada; Geoff Burbidge, Airbus Defence and Space, United Kingdom; Paul Siqueira, University of Massachusetts, United States

FR2.R13.5
12:00
ESA SNOWLAB PROJECT: 4 YEARS OF WIDE BAND SCATTEROMETER MEASUREMENTS OF SEASONAL SNOW
Andreas Wiesmann, Rafael Caduff, Charles Werner, Othmar Frey, Gamma Remote Sensing AG, Switzerland; Martin Schneebeli, Henning Löwe, Matthias Jaggi, WSL Institute for Snow and Avalanche Research Davos SLF, Switzerland; Mike Schwank, Reza Naderpour, WSL, Swiss Federal Institute for Forest, Snow and Landscape, Switzerland; Thorsten Fehr, European Space Agency ESA-ESTEC, Netherlands

FRIDAY ORAL

Friday, August 2	13:40 - 15:20	Room 511-512
Session FR3.R13		**Oral**

Bistatic and Digital Beamforming SAR II

Session Chair: Marc Rodriguez Cassola, German Aerospace Center (DLR)

FR3.R13.1
13:40
CHANNEL IMBALANCE COMPENSATION WITH IF SIGNAL FOR CHINA'S IDBSAR
Qingchao Zhao, Yi Zhang, Wei Wang, Pei Wang, Robert Wang, Yunkai Deng, Huachun Zhang, Kai Ye, Yashi Zhou, Institute of Electronics, Chinese Academy of Sciences, China

FR3.R13.2
14:00
AN ADVANCED NON-INTERRUPTED SYNCHRONIZATION SCHEME FOR BISTATIC SYNTHETIC APERTURE RADAR
Da Liang, Kaiyu Liu, Haixia Yue, Yafeng Chen, Yunkai Deng, Heng Zhang, Chuang Li, Guodong Jin, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

FR3.R13.3
14:20
MULTI-APERTURE FOCUSING IN SPACEBORNE TRANSMITTER-STATIONARY RECEIVER BISTATIC SAR
Andrei Anghel, University Politehnica of Bucharest, Romania; Remus Cacoveanu, EOS Electronic Systems / University Politehnica of Bucharest, Romania; Bjorn Rommen, European Space Agency (ESA), Netherlands; Mihai Datcu, German Aerospace Center (DLR) / University Politehnica of Bucharest, Germany

FR3.R13.4
14:40
DOPPLER BASED AZIMUTH RECONSTRUCTION ALGORITHM FOR MULTISTATIC SAR FORMATIONS IN HIGH RESOLUTION WIDE SWATH MODE
Nida Sakar, Marc Rodriguez-Cassola, Pau Prats-Iraola, Alberto Moreira, German Aerospace Center (DLR), Germany

FR3.R13.5
15:00
EXPERIMENTAL SAR PROCESSORS FOR BISTATIC CONCEPTS CONSIDERING COMPANION SATELLITES
Andrey Giardino, Marco Defilippi, Paolo Pasquali, sarmap SA, Switzerland; Christopher Buck, European Space Agency ESA-ESTEC, Netherlands

Monday, July 30	15:20 - 16:20	Room 503: Sprint Area
Session MOP2.SPR		SPRINT Presentation

MOP2 SPRINT Session

MOP2.SPR.1
15:30
THE USE OF NEAR-REAL-TIME DATA AND HIGH-RESOLUTION SATELLITE IMAGES FOR AREA IDENTIFICATION OF ILLEGAL FOREST CLEARING
Zuraidah Said, Rizky Firmansyah, Benita Nathania, World Resources Institute Indonesia, Indonesia

MOP2.SPR.2
15:35
PRF SAMPLING STRATEGIES FOR SWARMSAR SYSTEMS
Lorenzo Iannini, Alessandro Mancinelli, Paco Lopez-Dekker, Peter Hoogeboom, Yuanhao Li, Faruk Uysal, Alexander Yarovoy, Delft University of Technology, Netherlands

MOP2.SPR.3
15:40
EVALUATION OF GRIDDED CO2 EMISSIONS FROM NIGHT-TIME LIGHTS COMPARED WITH GEOSPATIALLY-DERIVED POPULATION DISTRIBUTIONS FOR VIETNAM, CAMBODIA, AND LAOS
Andrea Gaughan, University of Louisville, WorldPop, United States; Tomohiro Oda, Universities Space Research Association / NASA Goddard Space Flight Center, United States; Alessandro Sorichetta, WorldPop, University of Southampton, United Kingdom; Forrest Stevens, University of Louisville, WorldPop, United States; Laura Krauser, University of Louisville, United States; Greg Yetman, Columbia University, United States; Rostyslav Bun, Lviv Polytechnic National University, WSB University, Ukraine; Maksym Bondarenko, WorldPop, University of Southampton, United Kingdom; Son Nghiem, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

MONDAY
POSTER

Monday, July 29 **15:20 - 16:20 Room 501-502: Area A**	**Monday, July 29** **15:20 - 16:20 Room 501-502: Area B**
Session MOP2.PA Poster	**Session MOP2.PB** Poster

Object Detection in SAR Imaging II

Session Chair: Haipeng Wang, Fudan University

MOP2.PA.1 **AIRCRAFT TARGET DETECTION FROM SPACEBORNE SAR IMAGE**
Board PA.1
Qian Guo, Haipeng Wang, Fudan University, China; Lihong Kang, Li Zhou, Beijing Institute of Remote Sensing Information, China; Feng Xu, Fudan University, China

MOP2.PA.2 **SAR OBJECT DETECTION WITH A SALIENCY METHOD BASED ON PCA**
Board PA.2 **AND GLOBAL CONTRAST**
Haixiang Li, Xuelian Yu, Yonghao Tang, Xuegang Wang, University of Electronic Science and Technology of China, China

MOP2.PA.3 **SAR TARGET RECOGNITION VIA MICRO CONVOLUTIONAL NEURAL**
Board PA.3 **NETWORK**
Hai Lan, Zongyong Cui, Zongjie Cao, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China

MOP2.PA.4 **SAR TARGET DETECTION USING ADABOOST VIA GPU ACCELERATION**
Board PA.4
Rui Min, Hongbin Quan, Zongyong Cui, Zongjie Cao, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China

MOP2.PA.5 **SAR ATR WITH ROTATED REGION BASED ON CONVOLUTION NEURAL**
Board PA.5 **NETWORK**
Yin Long, Xue Jiang, Xingzhao Liu, Shanghai Jiao Tong University, China; Yuzhe Zhang, Beijing Institute of Remote Sensing Information, China

MOP2.PA.6 **SAR SHIP DETECTION BASED ON RESNET AND TRANSFER LEARNING**
Board PA.6
Yong Li, Zegang Ding, Beijing Institute of Technology, China; Chi Zhang, Beijing Institute of Spacecraft System Engineering, China; Yan Wang, Jing Chen, Beijing Institute of Technology, China

MOP2.PA.7 **A ROBUST MULTISCALE DICTIONARY LEARNING ALGORITHM FOR SAR**
Board PA.7 **OBJECT RECOGNITION**
Lei Tao, Xue Jiang, Ye Zhang, Xingzhao Liu, Bin Yuan, Shanghai Jiao Tong University, China

MOP2.PA.8 **BUILT-UP AREAS EXTRACTION FROM POLSAR IMAGERY VIA**
Board PA.8 **EIGENVALUE STATISTICAL INFORMATION AND PU-LEARNING**
Rong Gui, Xin Xu, Wuhan University, China; Dejin Zhang, Hubei University of Technology, China; Lei Wang, Rui Yang, Fangling Pu, Wuhan University, China

MOP2.PA.9 **AN APPROACH OF FEATURE MATCHING FOR MULTI-ANGLE SAR IMAGES**
Board PA.9 **OF MAN-MADE TARGETS**
Yueting Zhang, Fangfang Li, Chibiao Ding, Bin Lei, Xiaolan Qiu, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PA.10 **ISAR IMAGING BASED ON HOMOTOPY RE-WEIGHTED L1-NORM**
Board PA.10 **MINIMIZATION**
Yuexin Gao, Xidian University, China; Xinyu Zhang, Lanzhou University, China; Mengdao Xing, Jixiang Fu, Zijing Zhang, Xidian University, China; Ying Wang, Shaanxi Nonferrous Metals Holding Group Co., Ltd., China

MOP2.PA.11 **DISTRIBUTION DISCREPANCY MAXIMIZATION METRIC LEARNING FOR**
Board PA.11 **SHIP CLASSIFICATION IN SYNTHETIC APERTURE RADAR IMAGES**
Yongjie Xu, Haitao Lang, Xiaopeng Chai, Beijing University of Chemical Technology, China

MOP2.PA.12 **A FAST INFERENCE NETWORKS FOR SAR TARGET FEW-SHOT LEARNING**
Board PA.12 **BASED ON IMPROVED SIAMESE NETWORKS**
Jiaxin Tang, Fan Zhang, Yongsheng Zhou, Qiang Yin, Wei Hu, Beijing University of Chemical Technology, China

Object Detection in Urban Areas I

Session Co-Chairs: Sebastiano Serpico, University of Genoa; Xiao Xiang Zhu, German Aerospace Center (DLR)

MOP2.PB.1 **A ROAD EXTRACTION METHOD USING DUAL-TEMPORAL**
Board PB.1 **HIGH-RESOLUTION SAR IMAGES**
Fanghong Xiao, Ling Tong, University of Electronic Science and Technology of China, China

MOP2.PB.2 **DEEP CONVOLUTIONAL NEURAL NETWORK APPLICATION ON ROOFTOP**
Board PB.2 **DETECTION FOR AERIAL IMAGE**
Mengge Chen, Jonathan Li, University of Waterloo, Canada

MOP2.PB.3 **POLSAR LAND COVER CLASSIFICATION VIA TENSORIAL EMBEDDING**
Board PB.3 **METHODS**
Bo Ren, Biao Hou, School of Artificial Intelligence, Xidian University, France; Jocelyn Chanussot, Univ. Grenoble Alpes, CNRS, Grenoble INP, GIPSA-lab, France; Changzhe Jiao, Xiangrong Zhang, School of Artificial Intelligence, Xidian University, China

MOP2.PB.4 **HIGHWAY TRAFFIC MONITORING ON MEDIUM RESOLUTION SATELLITE**
Board PB.4 **IMAGES**
Sébastien Drouyer, ENS Paris Saclay, France; Carlo De Franchis, Kayrros, France

MOP2.PB.5 **HIERARCHICAL DETECTION FROM PARKING LOT TO VEHICLE IN**
Board PB.5 **LARGE-AREA REMOTE SENSING IMAGES BASED ON VISUAL SALIENCY**
AND ANGLE ESTIMATION
Hao Chen, Wen Chen, Jing Zhao, Xueqi Yin, Ye Zhang, Harbin Institute of Technology, China

MOP2.PB.6 **A NOVEL DOMINANT FEATURE DRIVEN URBAN ROAD EXTRACTION**
Board PB.6 **METHOD**
Mingting Zhou, Haigang Sui, Xiaomeng Cheng, Wuhan University, China

MOP2.PB.7 **GIS-SUPERVISED BUILDING EXTRACTION IN REMOTE SENSING IMAGES**
Board PB.7 **WITH NOISY-ADAPTIVE FCN**
Rui Liu, Monash University, China; Mingjie Li, Shanghai Jiao Tong University, China; Qi Wang, China Mobile, China

MOP2.PB.8 **A FINE-GRAINED FULLY CONVOLUTIONAL NETWORK FOR EXTRACTION**
Board PB.8 **OF BUILDING ALONG HIGH-SPEED RAIL LINES FROM VHR REMOTE**
SENSING IMAGE
Wenfan Qiao, Li Shen, Jicheng Wang, Yungang Cao, Southwest Jiaotong University, China; Shi He, Henan Polytechnic University, China; Yanshuai Dai, Southwest Jiaotong University, China

MOP2.PB.9 **ANALYSIS OF THE IMPACT OF GOOGLE MAPS' LEVEL ON OBJECT**
Board PB.9 **DETECTION**
Bing Sun, Yi Xu, Chunsheng Li, Junfei Yu, Beihang University, China

MOP2.PB.10 **PARTIAL 3D OBJECT RETRIEVAL AND COMPLETENESS EVALUATION FOR**
Board PB.10 **URBAN STREET SCENE**
Yan Guo, Chenglu Wen, Xiaotian Sun, Cheng Wang, Jonathan Li, Xiamen University, China

MOP2.PB.11 **MULTIFRACTAL PARAMETERS FOR SPECTRAL PROFILE DESCRIPTION**
Board PB.11
Michał Krupiński, Anna Wawrzaszek, Space Research Centre, Polish Academy of Sciences, Poland; Wojciech Drzewiecki, AGH University of Science and Technology, Poland; Sebastian Aleksandrowicz, Małgorzata Jenerowicz, Space Research Centre, Polish Academy of Sciences, Poland

MONDAY POSTER

111

Monday, July 29	15:20 - 16:20	Room 501-502: Area C
Session MOP2.PC		**Poster**

Advanced Methods for Ship Detection

Session Chair: Peng Liu, Fudan University

MOP2.PC.1
Board PC.1
A NEW SHIP DETECTION ALGORITHM OF MULTIPLE-TARGET ENVIRONMENT BASED ON MULTI-LAYERED COVOLUTIONAL NEURAL NETWORK IN SAR IMAGERY
Jiaqiu Ai, Ruitian Tian, Xuezhi Yang, Hefei University of Technology, China; Kai Jiang, 38th Institute, CETC, China; Qiwu Luo, Central South University, China

MOP2.PC.2
Board PC.2
SHIP DETECTION USING THE SURFACE SCATTERING SIMILARITY AND SCATTERING POWER
Tao Zhang, Shanghai Jiao Tong University, China; Zhen Yang, Jiangxi Science and Technology Normal University, China; Bo Mao, Nanjing University of Finance and Economics, China; Jian Yang, Tsinghua University, China; Yifang Ban, KTH Royal Institute of Technology, Sweden; Huilin Xiong, Shanghai Jiao Tong University, China

MOP2.PC.3
Board PC.3
SMALL SAMPLE SET INSHORE SHIP DETECTION FROM OPTICAL REMOTE SENSING IMAGES BASED ON STRUCTURED SPARSE REPRESENTATION
Yin Zhuang, School of Electronic Engineering and Computer Science, Peking University, China; Guanqun Wang, He Chen, Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, China; Lianlin Li, School of Electronic Engineering and Computer Science, Peking University, China; Siru Liu, None, China; Fukun Bi, School of Electronic Information Engineering, North China University of Technology, China

MOP2.PC.4
Board PC.4
REMOTE SENSING SHIP TARGET DETECTION AND RECOGNITION SYSTEM BASED ON MACHINE LEARNING
Zongling Li, Luyuan Wang, Jiyang Yu, Bowen Cheng, Liang Hao, Shuai Jiang, Zhen Li, Jianfeng Yin, Institute of Spacecraft System Engineering, China Academy of Space Technology, China

MOP2.PC.5
Board PC.5
MULTI-SATELLITE SHIP DETECTION USING OPTICAL, HYPERSPECTRAL, AND MICROWAVE SAR REMOTE SENSING DATA IN COASTAL REGIONS
Jae-Jin Park, Kyung-Ae Park, Jae-Cheol Jang, Ji-Hyun Lee, Seoul National University, Korea (South); Sangwoo Oh, Moonjin Lee, Korea Research Institute of Ships & Ocean Engineering (KRISO), Korea (South); June-Beom Jung, Seoul National University, Korea (South)

MOP2.PC.6
Board PC.6
ESTIMATION OF SHIP SIZE FROM SATELLITE OPTICAL IMAGE USING ELLIPTIC CHARACTERISTICS OF SHIP PERIPHERY
Jae-Jin Park, Kyung-Ae Park, Jae-Cheol Jang, June-Beom Jung, Seoul National University, Korea (South)

MOP2.PC.7
Board PC.7
AN ON-ORBIT SHIP DETECTION AND CLASSIFICATION ALGORITHM FOR SAR SATELLITE
Huifeng Shi, Guangjun He, Pengming Feng, Jin Wang, State Key Laboratory of Space-Ground Integrated Information Technology, Beijing Institute of Satellite Information, China

MOP2.PC.8
Board PC.8
MULTICLASS ORIENTED SHIP LOCALIZATION AND RECOGNITION IN HIGH RESOLUTION REMOTE SENSING IMAGES
Jiachi Sun, Huanxin Zou, Zhipeng Deng, Xu Cao, Meilin Li, Qian Ma, National University of Defense Technology, China

MOP2.PC.9
Board PC.9
VISUAL SALIENCY BASED SHIP EXTRACTION USING IMPROVED BING
Yihua Tan, Hao Liang, Zengrong Guan, Huazhong University of Science and Technology, China; Airong Sun, Wuhan Institute of Technology, China

MOP2.PC.10
Board PC.10
SHIP DETECTION IN POLARIMETRIC SAR IMAGE BASED ON SIMILARITY TEST
Xing-Chao Cui, Si-Wei Chen, Yi Su, National University of Defense Technology, China

MOP2.PC.11
Board PC.11
SATELLITE IMAGE-BASED SHIP CLASSIFICATION METHOD WITH SENTINEL-1 IW MODE DATA
Seungryong Kim, Jeongju Bae, Chan-Su Yang, Korea Institute of Ocean Science & Technology, Korea (South)

MOP2.PC.12
Board PC.12
A TRANSFER LEARNING METHOD OF SHIP IDENTIFICATION BASED ON WEIGHTED HOG FEATURES
Hongbo Li, Bin Guo, Tong Gao, Hao Chen, Harbin Institute of Technology, China

Monday, July 29	15:20 - 16:20	Room 501-502: Area D
Session MOP2.PD		**Poster**

Deep Learning for Object Detection I

Session Chair: Haipeng Wang, Fudan University

MOP2.PD.1
Board PD.1
COMBINED CONVOLUTIONAL AND STRUCTURED FEATURES FOR POWER LINE DETECTION IN UAV IMAGES
Heng Zhang, Wen Yang, Huai Yu, Fang Xu, Haijian Zhang, Wuhan University, China

MOP2.PD.2
Board PD.2
PIXELWISE REMOTE SENSING IMAGE CLASSIFICATION BASED ON RECURRENCE PLOT DEEP FEATURES
Danielle Dias, Ulisses Dias, Nathalia Menini, Rubens Lamparelli, Unicamp, Brazil; Guerric Le Maire, Univ. Montpellier, Brazil; Ricardo Torres, Unicamp, Brazil

MOP2.PD.3
Board PD.3
ROBUST REAL-TIME OBJECT DETECTION BASED ON DEEP LEARNING FOR VERY HIGH RESOLUTION REMOTE SENSING IMAGES
Yiming Zhao, Jinzheng Zhao, Chunyu Zhao, Weiyu Xiong, Qingli Li, Junli Yang, Beijing University of Posts and Telecommunications, China

MOP2.PD.4
Board PD.4
A WEAKLY-SUPERVISED DEEP NETWORK FOR DSM-AIDED VEHICLE DETECTION
Xin Wu, Beijing Institute of Technology, China; Danfeng Hong, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany; Jiaojiao Tian, Ralph Kiefl, German Aerospace Center (DLR), Germany; Ran Tao, Beijing Institute of Technology, China

MOP2.PD.5
Board PD.5
AN IMPROVED FASTER R-CNN BASED ON MSER DECISION CRITERION FOR SAR IMAGE SHIP DETECTION IN HARBOR
Rufei Wang, Fanyun Xu, Jifang Pei, Chenwei Wang, Yulin Huang, Jianyu Yang, Junjie Wu, University of Electronic Science and Technology of China, China

MOP2.PD.6
Board PD.6
COMPARISON OF DEEP LEARNING MODEL PERFORMANCE BETWEEN META-DATASET TRAINING VERSUS DEEP NEURAL ENSEMBLES
Alex Hurt, Grant Scott, Curt Davis, University of Missouri, United States

MOP2.PD.7
Board PD.7
GLOBAL RECEPTIVE BASED NEURAL NETWORK ORIENTED TO TARGET RECOGNITION IN SAR IMAGES
Ganggang Dong, Hongwei Liu, Xidian University, China

MOP2.PD.8
Board PD.8
T-SCNN: A TWO-STAGE CONVOLUTIONAL NEURAL NETWORK FOR SPACE TARGET RECOGNITION
Tan Wu, Xi Yang, Bin Song, Nannan Wang, Xinbo Gao, Liyang Kuang, Xiaoting Nan, Yuwen Chen, Xidian University, China; Dong Yang, Xi'an Institute of Space Radio Technology, China

MOP2.PD.9
Board PD.9
CLASS-ORIENTED LOCAL STRUCTURE PRESERVING DICTIONARY LEARNING FOR SAR TARGET RECOGNITION
Haohao Ren, Xuelian Yu, Lin Zou, Yun Zhou, Xuegang Wang, University of Electronic Science and Technology of China, China

MOP2.PD.10
Board PD.10
SIAMESE NETWORK BASED METRIC LEARNING FOR SAR TARGET CLASSIFICATION
Zongxu Pan, Xianjie Bao, Yueting Zhang, Bowei Wang, Quanzhi An, Bin Lei, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PD.11
Board PD.11
ATTENTION BASED RESIDUAL NETWORK FOR HIGH-RESOLUTION REMOTE SENSING IMAGERY SCENE CLASSIFICATION
Runyu Fan, Lizhe Wang, Ruyi Feng, Yingqian Zhu, China University of Geosciences, China

MONDAY POSTER

Monday, July 29	15:20 - 16:20	Room 501-502: Area E
Session MOP2.PE		Poster

Advanced Methods for Static and Moving Objects

Session Co-Chairs: Chao Wang, Chinese Academy of Sciences; Chunlei Huo, Institute of Automation, Chinese Academy of Sciences

MOP2.PE.1
Board PE.1
MOVING TARGET DETECTION AND MOTION PARAMETER ESTIMATION VIA DUAL-BEAM INTERFEROMETRIC SAR
Jinyu Bao, Xiaoling Zhang, Xinxin Tang, Shunjun Wei, Jun Shi, University of Electronic Science and Technology of China, China

MOP2.PE.2
Board PE.2
HIGH-SPEED AIRCRAFT SINGLE CHANNEL SAR-GMTI BASED ON NEURAL NETWORK
Liang Li, Xiaoling Zhang, Chen Wang, Liming Pu, Jun Shi, Shunjun Wei, University of Electronic Science and Technology of China, China

MOP2.PE.3
Board PE.3
IMPACT ANALYSIS OF INCIDENT ANGLE FACTOR ON HIGH-RESOLUTION SAR IMAGE SHIP CLASSIFICATION BASED ON DEEP LEARNING
Yingbo Dong, Chao Wang, Hong Zhang, Yuanyuan Wang, Bo Zhang, Chinese Academy of Sciences, China

MOP2.PE.4
Board PE.4
AIRPORT AIRCRAFT DETECTION BASED ON LOCAL CONTEXT DPM IN REMOTE SENSING IMAGES
Fukun Bi, Zhihua Yang, Mingyang Lei, North China University of Technology, China; Mingming Bian, Beijing Institute of Spacecraft System Engineering, China

MOP2.PE.5
Board PE.5
JOINT DETECTION OF AIRPLANE TARGETS BASED ON SAR IMAGES AND OPTICAL IMAGES
Jitao Qin, Haicheng Qu, Liaoning Technical University, China; Hao Chen, Wen Chen, Harbin Institute of Technology, China

MOP2.PE.6
Board PE.6
AN AIRCRAFT DETECTION METHOD BASED ON IMPROVED MASK R-CNN IN REMOTELY SENSED IMAGERY
Pengfei Zhao, Harbin Institute of Technology, China; Huayu Gao, Beijing Institute of Aerospace Systems Engineering, China; Yun Zhang, Hongbo Li, Rui Yang, Harbin Institute of Technology, China

MOP2.PE.7
Board PE.7
DETECTING AND POSITIONING OF WIND TURBINE BLADE TIPS FOR UAV-BASED AUTOMATIC INSPECTION
Haowen Guo, Qiangqiang Cui, Jinwang Wang, Fang Xu, Wen Yang, Wuhan University, China; Zhengrong Li, Beijing New3S Technology Co. LTD, China

MOP2.PE.8
Board PE.8
ROTATION AWARENESS BASED SELF-SUPERVISED LEARNING FOR SAR TARGET RECOGNITION
Shuai Zhang, Zaidao Wen, Zhunga Liu, Quan Pan, Northwestern Polytechnical University, China

MOP2.PE.9
Board PE.9
ROTATION-INVARIANT LATENT SEMANTIC REPRESENTATION LEARNING FOR OBJECT DETECTION IN VHR OPTICAL REMOTE SENSING IMAGES
Xiwen Yao, Xiaoxu Feng, Gong Cheng, Junwei Han, Lei Guo, Northwestern Polytechnical University, China

MOP2.PE.10
Board PE.10
ROTATION AND SCALE-INVARIANT OBJECT DETECTOR FOR HIGH RESOLUTION OPTICAL REMOTE SENSING IMAGES
He Huang, University of Chinese Academy of Sciences, China; Chunlei Huo, Institute of Automation, Chinese Academy of Sciences, China; Feilong Wei, Beijing Union University, China; Chunhong Pan, Institute of Automation, Chinese Academy of Sciences, China

MOP2.PE.11
Board PE.11
MOTION STATES CLASSIFICATION OF ROTOR TARGET BASED ON MICRO-DOPPLER FEATURES USING CNN
Wantian Wang, Ziyue Tang, Xin Xiong, Yichang Chen, Yuanpeng Zhang, Yongjian Sun, Zhenbo Zhu, Chang Zhou, Air Force Early Warning Academy, China

Monday, July 29	15:20 - 16:20	Room 501-502: Area F
Session MOP2.PF		Poster

Advanced Methods for Object Detection I

Session Chair: Marco Chini, LIST-Luxemburg

MOP2.PF.1
Board PF.1
LOW-RANK AND COLLABORATIVE REPRESENTATION FOR HYPERSPECTRAL ANOMALY DETECTION
Zhaoyue Wu, Hongjun Su, Hohai University, China; Qian Du, Mississippi State University, United States

MOP2.PF.2
Board PF.2
INFRARED SMALL TARGET DETECTION BASED ON MORPHOLOGICAL FEATURE EXTRACTION
Mingjing Zhao, Lu Li, Beijing University of Chemical Technology, China; Wei Li, Beijing Institute of Technology, China; Liwei Li, Wenjuan Zhang, Chinese Academy of Sciences, China

MOP2.PF.3
Board PF.3
A NEW INDEX FOR SANDY LAND DETECTION BASED ON THERMAL INFRARED EMISSIVITY DATA
Shanshan Chen, Huazhong Ren, Yunzhu Tao, Yitong Zheng, Yuanheng Sun, Jing Nie, Jinxin Guo, Rongyuan Liu, Wenjie Fan, Peking University, China

MOP2.PF.4
Board PF.4
INVESTIGATING THE EIGENVECTOR PARAMETRIC SPACE FOR LUNAR REGOLITH CLASSIFICATION USING BISTATIC MINIATURE RADAR DATA
Shashwat Shukla, University of Twente, Netherlands; Shashi Kumar, Indian Institute of Remote Sensing, India; Valentyn Tolpekin, University of Twente, Netherlands

MOP2.PF.5
Board PF.5
SEISMIC SIGNAL CLASSIFICATION USING PERCEPTRON WITH DIFFERENT LEARNING RULES
Kou-Yuan Huang, Fajar Abdurrahman, National Chiao Tung University, Taiwan

MOP2.PF.6
Board PF.6
A TRAINING-FREE, ONE-SHOT DETECTION FRAMEWORK FOR GEOSPATIAL OBJECTS IN REMOTE SENSING IMAGES
Tengfei Zhang, Xian Sun, Yue Zhang, Menglong Yan, Yaoling Wang, Zhirui Wang, Kun Fu, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PF.7
Board PF.7
A REVISED RTM-BASED ALGORITHM TO REMOVE THIN CLOUDS WITHIN VISIBLE BAND DATA OF SENTINEL-2A
Yue Gao, Yong Wang, Haitao Lv, Jiang Qian, University of Electronic Science and Technology of China, China

MOP2.PF.8
Board PF.8
LARGE-SCALE OIL PALM TREE DETECTION FROM HIGH-RESOLUTION REMOTE SENSING IMAGES USING FASTER-RCNN
Juepeng Zheng, Tongji University, China; Weijia Li, Maocai Xia, Runmin Dong, Haohuan Fu, Shuai Yuan, Tsinghua University, China

MOP2.PF.9
Board PF.9
THIN AND THICK CLOUD REMOVAL ON REMOTE SENSING IMAGE BY CONDITIONAL GENERATIVE ADVERSARIAL NETWORK
Xiaoke Wang, Guangluan Xu, Yang Wang, Daoyu Lin, Peiguang Li, Institute of Electronics, Chinese Academy of Sciences, China; Xiujing Lin, National Nuclear Emergency Response and Technical Assistance Center, China

MOP2.PF.10
Board PF.10
A REVISED ICA ALGORITHM TO REMOVE CIRRUS CLOUD EFFECTS IN SPECTRAL DATA OF LANDSAT-8 BANDS 1–7
Haitao Lv, University of Electronic Science and Technology of China, China; Yong Wang, East Carolina University, United States

MOP2.PF.11
Board PF.11
A THIN-CLOUD REMOVAL APPROACH COMBINING THE CIRRUS BAND AND RTM-BASED ALGORITHM FOR LANDSAT-8 OLI DATA
Binxing Zhou, Yong Wang, University of Electronic Science and Technology of China, China

MOP2.PF.12
Board PF.12
CLOUD DETECTION BASED ON DEEP LEARNING COMBINING MUTI-FEATURE FOR REMOTE SENSING IMAGES
Nan Ma, School of Physics and Electronics, Shandong Normal University, China; Sichao Liu, Qinghua Su, Zhenjun Yu, Xirong Liu, Geomatics College, Shandong University of Science and Technology, China

MONDAY POSTER

Monday, July 29	15:20 - 16:20	Room 501-502: Area G
Session MOP2.PG		Poster

Advanced Methods for Object Detection II

Session Chair: ronan fablet, IMT Atlantique/Lab-STICC

MOP2.PG.1
Board PG.1
DRBOXLIGHT: A LIGHT OBJECT DETECTION MODEL FOR REMOTE SENSING APPLICATIONS
Yizhao Gao, School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, China; Lei Liu, Guowei Chen, Bin Lei, Key Laboratory of Technology in Geo-spatial Information Processing and Application System, Chinese Academy of Sciences, China

MOP2.PG.2
Board PG.2
DRBOX FAMILY: A GROUP OF OBJECT DETECTION TECHNIQUES FOR REMOTE SENSING IMAGES
Lei Liu, Zongxu Pan, Guowei Chen, Yizhao Gao, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PG.3
Board PG.3
GEOSPATIAL OBJECT DETECTION IN REMOTE SENSING IMAGES BASED ON MULTI-SCALE CONVOLUTIONAL NEURAL NETWORKS
Qunli Yao, Xian Hu, Hong Lei, University of Chinese Academy of Sciences, China

MOP2.PG.4
Board PG.4
OBJECT DETECTION AND INSTANCE SEGMENTATION IN REMOTE SENSING IMAGERY BASED ON PRECISE MASK R-CNN
Hao Su, Shunjun Wei, Min Yan, Chen Wang, Jun Shi, Xiaoling Zhang, University of Electronic Science and Technology of China, China

MOP2.PG.5
Board PG.5
OBJECT-ORIENTED AUTOMATIC AND ACCURATE SHADOW DETECTION FOR VERY HIGH SPATIAL RESOLUTION SATELLITE IMAGES
Yuwei Jin, Wenbo Xu, Donghang Shao, Xixu He, Xueru Zhang, University of Electronic Science and Technology of China, China

MOP2.PG.6
Board PG.6
LW-ODF: A LIGHT-WEIGHT OBJECT DETECTION FRAMEWORK FOR OPTICAL REMOTE SENSING IMAGERY
Xin Wu, Beijing Institute of Technology, China; Danfeng Hong, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany; Pedram Ghamisi, Helmholtz Institute Freiberg for Resource Technology, Helmholtz-Zentrum Dresden-Rossendorf, Germany; Wei Li, Ran Tao, Beijing Institute of Technology, China

MOP2.PG.7
Board PG.7
TARGET DETECTION BASED ON STATISTICAL SALIENCY ANALYSIS AND GEODESIC ACTIVE CONTOUR MODEL FOR SAR IMAGERY
Shan Wang, Yanan Liu, Libao Zhang, Beijing Normal University, China

MOP2.PG.8
Board PG.8
FINE-GRAINED GESTURE RECOGNITION BASED ON HIGH RESOLUTION RANGE PROFILES OF TERAHERTZ RADAR
Liying Wang, Zongyong Cui, Zongjie Cao, Shengping Xu, Rui Min, University of Electronic Science and Technology of China, China

MOP2.PG.9
Board PG.9
TARGET DETECTION OF FORWARD-LOOKING SCANNING RADAR BASED ON LOW-RANK AND SPARSE MATRIX DECOMPOSITION
Wenchao Li, Wentao Zhang, Qiping Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

MOP2.PG.10
Board PG.10
WEAKLY SUPERVISED DEEP CONVOLUTIONAL NETWORKS FOR FINE-GRAINED OBJECT RECOGNITION IN MULTISPECTRAL IMAGES
Bulut Aygunes, Selim Aksoy, Bilkent University, Turkey; Ramazan Gokberk Cinbis, Middle East Technical University, Turkey

MOP2.PG.11
Board PG.11
AN ADAPTIVE STATISTICAL APPROACH FOR SIMULTANEOUS CLASSIFICATION OF REMOTE SENSING SCENES INCLUDING NATURAL AND URBAN TARGETS
Letícia Sartorio, Daniel Zanotta, National Institute for Education, Science and Technology at Rio Grande do Sul, Brazil

MOP2.PG.12
Board PG.12
DYNAMIC THRESHOLD OIL SPILL DETECTION ALGORITHM FOR LANDSAT ETM+
Tianlong Zhang, Jie Guo, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences;Key Laboratory of Coastal Zone Environmental Processes, CAS; Shandong Provincial Key Laboratory of Coastal Zone Environmental Processes, China; Yulei Chi, Geomatics College, Shandong University of Science and Technology, China; Yebao Wang, Ocean College, Yantai University, China

Monday, July 29	15:20 - 16:20	Room 501-502: Area H
Session MOP2.PH		Poster

Change Detection Techniques in Multitemporal SAR Images II

Session Chair: Francesca Bovolo, Fondazione Bruno Kessler

MOP2.PH.1
Board PH.1
INTERSEISMIC STRAIN ACCUMULATION ACROSS THE ZEMUHE-DALIANGSHAN FAULT ZONE IN HEAVILY-VEGETATED SOUTHWESTERN CHINA, FROM ALOS-2 INTERFEROMETRIC OBSERVATION
Xiaogang Song, Xinjian Shan, Chunyan Qu, Institute of Geology, China Earthquake Administration, China

MOP2.PH.2
Board PH.2
A MEASUREMENT CAMPAIGN IN HARBOR TO DETECT CHANGES OF ACTIVITIES
Viet Thuy Vu, Mats Pettersson, Blekinge Institute of Technology, Sweden; Thomas Sjögren, Swedish Defense Reseach Agency, Sweden; Mattias Dahl, Blekinge Institute of Technology, Sweden

MOP2.PH.3
Board PH.3
RESIDUAL UNET FOR URBAN BUILDING CHANGE DETECTION WITH SENTINEL-1 SAR DATA
Lu Li, Chao Wang, Hong Zhang, Bo Zhang, Chinese Academy of Sciences, China

MOP2.PH.4
Board PH.4
ON-BOARD WAVELET BASED CHANGE DETECTION IMPLEMENTATION OF SAR FLOOD IMAGE
Lei Shu, Guoqing Zhou, Dequan Liu, Jinjing Huang, Rongting Zhang, Fan Wang, Tianjin University, China

MOP2.PH.5
Board PH.5
A METHOD FOR OBSERVING SEISMIC GROUND DEFORMATION FROM AIRBORNE SAR IMAGES
Haruki Imai, Koichi Ito, Takafumi Aoki, Tohoku University, Japan; Jyunpei Uemoto, Seiho Uratsuka, National Institute of Information and Communications Technology (NICT), Japan

MOP2.PH.6
Board PH.6
A NOVEL ACTIVITY DETECTOR APPLIED TO SENTINEL-1 FOR SURVEILLANCE
Axel Davy, Max Dunitz, ENS Paris-Saclay, France

MOP2.PH.7
Board PH.7
A CHANGE DETECTION ALGORITHM FOR SAR IMAGES BASED ON LOGISTIC REGRESSION
Ricardo Simao Diniz Dal Molin Junior, Aeronautics Institute of Technology – ITA, Brazil; Rafael Antônio da Silva Rosa, Visiona Tecnologia Espacial S.A., Brazil; Fábio Mariano Bayer, Federal University of Santa Maria, Brazil; Mats Pettersson, Blekinge Institute of Technology, Sweden; Renato Machado, Aeronautics Institute of Technology – ITA, Brazil

MOP2.PH.8
Board PH.8
COHERENCE CHANGE ANALYSIS FOR MULTIPASS INSAR IMAGES BASED ON THE CHANGE DETECTION MATRIX
Thu Trang Le, Jean-Luc Froger, Alexis Hrysiewicz, Raphael Paris, Université Clermont Auvergne, France

MOP2.PH.9
Board PH.9
MULTI-TEMPORAL QUAD-POLARIMETRIC SAR CLASSIFICATION BASED ON A CHANGE MATRIX
Cristian Silva, Armando Marino, University of Stirling, United Kingdom; Juan Manuel Lopez-Sanchez, University of Alicante, Spain; Iain Cameron, Environment Systems LTD, United Kingdom

MOP2.PH.10
Board PH.10
CHANGE DETECTION BETWEEN HIGH-RESOLUTION AIRBORNE SAR AND MULTISPECTRAL DATA WITH DEMPSTER-SHAFER THEORY
Julian Fagir, Max Frioud, Daniel Henke, Remote Sensing Laboratories (RSL), University of Zurich, Switzerland

MOP2.PH.11
Board PH.11
CHANGE DETECTION FROM UNLABELED REMOTE SENSING IMAGES USING SIAMESE ANN
Rachid Hedjam, Abdelhamid Abdesselam, Sultan Qaboos University, Oman; Farid Melgani, University of Trento, Italy

MOP2.PH.12
Board PH.12
DETECTION OF LAND USE TYPE USING MULTITEMPORAL SAR IMAGES
Qiwen Yu, Minfeng Xing, University of Electronic Science and Technology of China, China; Xiaofang Liu, Sichuan University of Science and Engineering, China; Long Wang, Kaiwei Luo, Xingwen Quan, University of Electronic Science and Technology of China, China

MONDAY POSTER

Analysis of Multitemporal Multispectral Images

Session Co-Chairs: Nathan Longbotham, Descartes Labs; Matthieu Molinier, VTT Technical Research Centre of Finland Ltd

MOP2.PI.1
Board PI.1
HUMAN SETTLEMENT DYNAMICS IN HURRICANE-PRONE ZONES OF CONTERMINOUS U.S: A VIEW FROM NIGHTTIME REMOTE SENSING
Xiao Huang, Cuizhen Wang, University of South Carolina, United States

MOP2.PI.2
Board PI.2
ESTIMATION AND PREDICTION OF VEGETATION COVERAGE IN YANCHENG NATIONAL NATURE RESERVE
Yingkun Du, Wuhan University, China; Yifan Lin, Peking University, China; Jing Wang, Xuesong Kong, Zhifeng Jin, Xiang Zhao, Wuhan University, China

MOP2.PI.3
Board PI.3
UNSUPERVISED CHANGE DETECTION IN MULTITEMPORAL MULTISPECTRAL SATELLITE IMAGES: A CONVEX RELAXATION APPROACH
Wei-Cheng Zheng, Chia-Hsiang Lin, Kuo-Hsin Tseng, Chih-Yuan Huang, Tang-Huang Lin, Chia-Hsiang Wang, National Central University, Taiwan; Chong-Yung Chi, National Tsing Hua University, Taiwan

MOP2.PI.4
Board PI.4
INTERCOMPARISON OF FIVE TOP-OF-ATMOSPHERE SATELLITE ALBEDO PRODUCTS OVER LAND
Chuan Zhan, Beijing Normal University, China; Shunlin Liang, University of Maryland, United States; Zhen Song, Beijing Normal University, China; Dongdong Wang, University of Maryland, United States

MOP2.PI.5
Board PI.5
EXPLORE URBAN POPULATION DISTRIBUTION USING NIGHTTIME LIGHTS, LAND-USE/LAND-COVER AND POPULATION CENSUS DATA
Yune La, Hasi Bagan, Shanghai Normal University, China; Wataru Takeuchi, University of Tokyo, Japan

MOP2.PI.6
Board PI.6
EFFECT ANALYSIS IN THE FINE CO-REGISTRATION OF VERY-HIGH-RESOLUTION SATELLITE IMAGES FOR UNSUPERVISED CHANGE DETECTION
Youkyung Han, Sejung Jung, Kyungpook National University, Korea (South); Sicong Liu, Tongji University, China; Junho Yeom, Kyungpook National University, Korea (South)

MOP2.PI.7
Board PI.7
AN IMPROVED FMASK ALGORITHM IN TROPICAL REGIONS FOR LANDSAT IMAGES
Mei Sun, Yanchen Bo, Lei Cui, Ruo Yang Li, Beijing Normal University, China

MOP2.PI.8
Board PI.8
EFFECTS OF DIFFERENT METHODS OF RADIOMETRIC CALIBRATION ON THE USE OF TRAINING DATA FOR SUPERVISED CLASSIFICATION OF LANDSAT5/TM IMAGES FROM OTHER DATES
Mariane Reis, National Institute for Space Research (INPE), Brazil; Eliana Pantaleão, Federal University of Uberlândia, Brazil; Luciano Dutra, Sidnei Sant'Anna, Maria Isabel Escada, National Institute for Space Research (INPE), Brazil

MOP2.PI.9
Board PI.9
RAPID IDENTIFICATION OF SEISMIC LANDSLIDES COMBINING WITH OBJECT-ORIENTED AND INDEPENDENT COMPONENT ANALYSIS TRANSFORMATION :A CASE OF THE MS6.5 EARTHQUAKE IN LUDIAN, YUNNAN
Yuxue Wang, Shufang Tian, China University of Geosciences (Beijing), China; Chang Liu, Shandong University of Science and Technology, China

MOP2.PI.10
Board PI.10
AUTOMATIC 3D BUILDING CHANGE DETECTION USING UAV IMAGES
Wenzhuo Li, Kaimin Sun, Chuan Xu, Wuhan University, China

MOP2.PI.11
Board PI.11
FLOOD MAPPING WITH SAR AND MULTI-SPECTRAL REMOTE SENSING IMAGES BASED ON WEIGHTED EVIDENTIAL FUSION
Xi Chen, Peking University, China; Wei Shen, Shanghai Ocean University, China; Huan Li, Yaokui Cui, Yang Hong, Peking University, China; Liangliang Tao, Jing Li, Beijing Normal University, China

MOP2.PI.12
Board PI.12
TRANSFER LEARNING FOR CHANGES DETECTION IN OPTICAL REMOTE SENSING IMAGERY
Larabi Mohammed Amin, Souleyman Chaib, Khadidja Bakhti, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria

Analysis of Image Time Series I

Session Chair: Matthieu Molinier, VTT Technical Research Centre of Finland Ltd

MOP2.PJ.1
Board PJ.1
SPATIOTEMPORAL MAPPING OF NEW INFESTATION OF MOUNTAIN PINE BEETLE IN THE U.S. CENTRAL ROCKY MOUNTAINS USING A LANDSAT-BASED TIME SERIES OF MORTALITY PERCENTAGE
Emma Bode, Rick Lawrence, Scott Powell, Amy Trowbridge, Shannon Savage, Montana State University, United States

MOP2.PJ.2
Board PJ.2
SOIL MOISTURE ESTIMATION FROM SMAP OBSERVATIONS USING LONG SHORT-TERM MEMORY (LSTM)
Ali Ben Abbes, Ramata Magagi, Kalifa Goita, Centre d'applications et de Recherches en Télédétection (CARTEL), Canada

MOP2.PJ.3
Board PJ.3
APPLYING SENTINEL-1 TIME SERIES ANALYSIS TO SUGARCANE HARVEST DETECTION
Mattia Stasolla, Xavier Neyt, Royal Military Academy, Belgium

MOP2.PJ.4
Board PJ.4
LAND-USE/LAND-COVER CHANGE AND DRIVERS OF LAND DEGRADATION IN THE HORQIN SANDY LAND, CHINA
Yun Du, Hasi Bagan, Shanghai Normal University, China; Wataru Takeuchi, University of Tokyo, Japan

MOP2.PJ.5
Board PJ.5
MONITORING A TIME-SERIES OF LAND SUBSIDENCE IN BUSAN, KOREA USING SPACE-BASED MULTI-TEMPORAL SAR OBSERVATIONS
Seo-Woo Park, Seong-Woo Jung, Sang-Hoon Hong, Pusan National University, Korea (South)

MOP2.PJ.6
Board PJ.6
DETECTION OF SPATIOTEMPORAL CHANGES OF SURFACE MINING AREA IN CHANGTING COUNTY SOUTHEAST CHINA
Bo Wu, Jiangxi Normal University, China; Yindi Zhao, China University of Mining and Technology, China; Chaoyang Fang, Jiangxi Normal University, China

MOP2.PJ.7
Board PJ.7
MODIS EVI TIME SERIES BREAKPOINT DETECTION FOR ONLINE DEFORESTATION MONITORING IN CHACO FOREST USING CONVOLUTIONAL NETWORKS
Francisco Grings, Esteban Roitberg, Veronica Barraza, Institute of Astronomy and Space Physics (IAFE), Argentina

MOP2.PJ.8
Board PJ.8
A COOPERATIVE MULTITEMPORAL SEGMENTATION METHOD FOR SAR AND OPTICAL IMAGES CHANGE DETECTION
Ling Wan, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PJ.9
Board PJ.9
RESEARCH AND ANALYSIS OF LAND USE DYNAMIC CHANGE IN QINGDAO BASED ON RS AND GIS IN RECENT TEN YEARS
Yafei Wang, Xiaoli Zhao, Zengxiang Zhang, Lijun Zuo, Wang Xiao, Aerospace Information Research Institute, Chinese Academy of Sciences, China

MOP2.PJ.10
Board PJ.10
FUSION OF OPTICAL IMAGERY AND SYNTHETIC APERTURE RADAR (SAR) FOR ECOLOGICAL CHANGE DETECTION OF NIPA PALM IN THAILAND
Jannet Bencure, Nitin Kumar Tripathi, Asian Institute of Technology, Thailand

MOP2.PJ.11
Board PJ.11
EVALUATION OF GRIDDED CO2 EMISSIONS FROM NIGHT-TIME LIGHTS COMPARED WITH GEOSPATIALLY-DERIVED POPULATION DISTRIBUTIONS FOR VIETNAM, CAMBODIA, AND LAOS
Andrea Gaughan, University of Louisville, WorldPop, United States; Tomohiro Oda, Universities Space Research Association / NASA Goddard Space Flight Center, United States; Alessandro Sorichetta, WorldPop, University of Southampton, United Kingdom; Forrest Stevens, University of Louisville, WorldPop, United States; Laura Krauser, University of Louisville, United States; Greg Yetman, Columbia University, United States; Rostyslav Bun, Lviv Polytechnic National University, WSB University, Ukraine; Maksym Bondarenko, WorldPop, University of Southampton, United Kingdom; Son Nghiem, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

MONDAY POSTER

Monday, July 29 15:20 - 16:20 Room 501-502: Area K	Monday, July 29 15:20 - 16:20 Room 501-502: Area L
Session MOP2.PK Poster	Session MOP2.PL Poster

Analysis of Image Time Series II

Session Chair: Charles Marshak, California Institute of Technology, NASA Jet Propulsion Laboratory

MOP2.PK.1
Board PK.1
OBJECT-ORIENTED MONITORING OF FOREST DISTURBANCES WITH ALOS/PALSAR TIME-SERIES
Charles Marshak, Marc Simard, Michael Denbina, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

MOP2.PK.2
Board PK.2
SENSITIVITY ANALYSIS OF LAND PRODUCTIVITY CHANGE CALCULATION IN MOZAMBIQUE
Frédérique Montfort, Nitidae, France; Agnès Bégué, Louise Leroux, Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France; Clovis Grinand, Nitidae, France

MOP2.PK.3
Board PK.3
THE IMPACT OF LAND RECLAMATION ON ESTURINE ENVIRONMENT IN LINGDING BAY, CHINA
Bahaa Mohamadi, Shuisen Chen, Chongyang Wang, Xia Zhou, Guangzhou Institute of Geography, China

MOP2.PK.4
Board PK.4
INSHORE SHIP CHANGE DETECTION BASED ON SPATIAL-TEMPORAL SALIENCY
Long Ma, Zhengzhou University, China; Wenchao Liu, Zhong Han, Jue Wang, He Chen, Beijing Institute of Technology, China

MOP2.PK.5
Board PK.5
CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL CHANGE DETECTION
Alp Ertürk, Kocaeli University, Turkey

MOP2.PK.6
Board PK.6
DETECTION AND ANALYSIS OF FOREST DEGRADATION BY FIRE USING LANDSAT/OLI IMAGES IN GOOGLE EARTH ENGINE
Egidio Arai, Yosio Edemir Shimabukuro, Andeise Cerqueira Dutra, Valdete Duarte, National Institute for Space Research (INPE), Brazil

MOP2.PK.7
Board PK.7
EFFECTS OF LONG-TERM FIRE EXCLUSION IN THE MODIS NDVI TIME SERIES IN THE ÁGUAS EMENDADAS ECOLOGICAL STATION, BRAZIL
Níckolas Santana, Osmar Carvalho Júnior, Roberto Gomes, Renato Guimarães, Universidade de Brasília, Brazil

MOP2.PK.8
Board PK.8
A NEW PERSPECTIVE ON GLOBAL THERMAL ENVIRONMENT MONITORING
Xiao-Jing Han, Huajun Tang, Si-Bo Duan, Maofang Gao, Pei Leng, Chinese Academy of Agricultural Sciences, China; Cheng Huang, University of Chinese Academy of Sciences, China; Zhao-Liang Li, Shangrong Wu, Chinese Academy of Agricultural Sciences, China

MOP2.PK.9
Board PK.9
AUTOMATIC CLOUD REMOVAL FROM MULTI-TEMPORAL LANDSAT COLLECTION 1 DATA USING POISSON BLENDING
Changmiao Hu, Lianzhi Huo, Zheng Zhang, Ping Tang, Aerospace Information Research Institute, Chinese Academy of Sciences, China

MOP2.PK.10
Board PK.10
IMPROVEMEMT OF MULTI-TEMPORAL VEGETATION MODELING USING HYBRID DEEP NEURAL NETWORKS OF MULTISPECTRAL REMOTE SENSING IMAGES
Khadidja Bakhti, Khelifa Djerriri, Mohammed El Amin Arabi, Souleyman Chaib, Moussa Sofiane Karoui, Algerian Space Agency, Center for Space Technology, Algeria

MOP2.PK.11
Board PK.11
A WEAKLY-SUPERVISED CHANGE DETECTION TECHNIQUE FOR SAR IMAGES BASED ON DEEP LEARNING AND SYNTHETIC TRAINING DATA GENERATED BY AN ENSEMBLE OF SELF-ORGANIZING MAPS
Victor-Emil Neagoe, Adrian-Dumitru Ciotec, Polytechnic University of Bucharest, Romania; Lorenzo Bruzzone, University of Trento, Italy

MOP2.PK.12
Board PK.12
VISIBILITY DETECTION IN TIME SERIES OF PLANETSCOPE IMAGES
Tristan Dagobert, Jean-Michel Morel, Université Paris-Saclay, France; Carlo de Franchis, Kayrros, France; Rafaele Grompone von Gioi, Université Paris-Saclay, France

Land Use Applications in Vegetated Areas

Session Co-Chairs: Josée Lévesque, DRDC Valcartier Research Center; Sicong Liu, College of Surveying and Geo-informatics

MOP2.PL.1
Board PL.1
JURISDICTIONAL SCALE ESTIMATES OF TROPICAL DEFORESTATION. CAN ESTABLISHED SOURCES SUPPORT STRATEGIC ENVIRONMENTAL POLICIES?
Juan Ardila, Rafael Vargas, Juan Rojas, Earth Innovation Institute, United States

MOP2.PL.2
Board PL.2
THE USE OF NEAR-REAL-TIME DATA AND HIGH-RESOLUTION SATELLITE IMAGES FOR AREA IDENTIFICATION OF ILLEGAL FOREST CLEARING
Zuraidah Said, Rizky Firmansyah, Benita Nathania, World Resources Institute Indonesia, Indonesia

MOP2.PL.3
Board PL.3
SPATIO-TEMPORAL PATTERN OF CULTIVATED LAND AND AGRICULTURAL RESOURCES ANALYSIS OF CHONGMING ECO-ISLAND
Yuanqin Liao, Shanghai Institute of Geological Survey, China; Jiashu Liu, Huan Xie, College of Surveying and Geo-informatics, China; Hailing Zheng, Shanghai Institute of Geological Survey, China; Qingyu Xu, Qing Hu, Xiong Xu, Sicong Liu, College of Surveying and Geo-informatics, China

MOP2.PL.4
Board PL.4
CORN FINE CLASSIFICATION WITH GF-3 HIGH-RESOLUTION SAR DATA BASED ON DEEP LEARNING
Sisi Wei, Hong Zhang, Chao Wang, Fan Wu, Bo Zhang, Chinese Academy of Sciences, China

MOP2.PL.5
Board PL.5
ASSESSMENT OF LAND USE LAND COVER IN BRAZIL, SOUTH AMERICA, USING FRACTION IMAGES DERIVED FROM PROBA-V DATASETS
Yosio Edemir Shimabukuro, Egidio Arai, Valdete Duarte, Andeise Cerqueira Dutra, Brazilian National Institute for Space Research, Brazil

MOP2.PL.6
Board PL.6
MAPPING LAND USE AND LAND COVER IN THE BRAZILIAN NORTHEAST USING FRACTION IMAGES AND MULTI-SENSOR APPROACH
Andeise Cerqueira Dutra, Egidio Arai, Valdete Duarte, Yosio Edemir Shimabukuro, National Institute for Space Research (INPE), Brazil

MOP2.PL.7
Board PL.7
REMOTE SENSING INVESTIGATION OF LAND USE STATUS OF IRRAWADDY RIVER BASIN
Zhiguo Pang, Wei Qu, Jingxuan Lu, June Fu, Xiaotao Li, Lin Li, Daling Cao, China Institute of Water Resources and Hydropower Research (IWHR), China

MOP2.PL.8
Board PL.8
DYNAMIC ATTRIBUTION ANALYSIS FOR RUNOFF CHANGE INTEGRATING LANDSAT-DERIVED LAND USE DYNAMICS WITH SWAT MODEL
Shasha Luo, Qinli Yang, Hongcai Wu, Jiaming Liu, University of Electronic Science and Technology of China, China; Guoqing Wang, Nanjing Hydraulic Research Institute, China; Yong Wang, Yuanyuan Yang, University of Electronic Science and Technology of China, China

MOP2.PL.9
Board PL.9
SIMULTANEOUS RETRIEVAL OF LAND SURFACE TEMPERATURE AND EMISSIVITY FROM AHI/HIMAWARI8 DATA
Shugui Zhou, Jie Cheng, Xiangchen Meng, Beijing Normal University, China

MONDAY POSTER

Monday, July 29 15:20 - 16:20 Room 501-502: Area M	Monday, July 29 15:20 - 16:20 Room 501-502: Area N
Session MOP2.PM Poster	Session MOP2.PN Poster

Land Use Applications II

Session Co-Chairs: Christian Bignami, Istituto Nazionale di Geofisica e Vulcanologia; Peter Reinartz, German Aerospace Center (DLR), Remote Sensing Technology Institute

MOP2.PM.1
Board PM.1
REMOTE SENSING MONITORING AND INTEGRATED ASSESSMENT FOR THE ECO-ENVIRONMENT ALONG CHINA-PAKISTAN ECONOMIC CORRIDOR
Ainong Li, Jinhu Bian, Guangbin Lei, Xi Nan, Zhengjian Zhang, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China

MOP2.PM.2
Board PM.2
NEXUS APPROACH FOR CALCULATING SDG INDICATOR 2.4.1 USING REMOTE SENSING AND BIOPHYSICAL MODELING
Nataliia Kussul, Mykola Lavreniuk, Leonid Shumilo, Andrii Kolotii, Space Research Institute NASU-SSAU, Ukraine

MOP2.PM.3
Board PM.3
TEMPORAL VARIATIONS OF SURFACE AND ATMOSPHERE CHARACTERISTICS IN TAKLAMAKAN DESERT FROM AMSR2 OBSERVATIONS
Leonid Mitnik, Vladimir Kuleshov, Maia Mitnik, Elena Khazanova, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russia

MOP2.PM.4
Board PM.4
COMPARING ATMOSPHERIC CORRECTION PERFORMANCE FOR SENTINEL-2 AND LANDSAT-8 DATA
Bringfried Pflug, Rudolf Richter, Raquel de los Reyes, Peter Reinartz, German Aerospace Centre (DLR), Germany

MOP2.PM.5
Board PM.5
EVALUATION OF MINE EXPLOITATION INTENSITY BASED ON TOPSIS AND BP NEURAL NETWORK: A CASE STUDY IN FUJIAN PROVINCE, CHINA
Yujia Chen, Shufang Tian, China University of Geosciences (Beijing), China

MOP2.PM.6
Board PM.6
THE CO-SEISMIC SLIP INDUCED BY THE 2018 SULAWESI EARTHQUAKE ON PALU BAY IMAGED BY SAR AND OPTICAL DATA
Marco Polcari, Cristiano Tolomei, Christian Bignami, Stramondo Salvatore, Istituto Nazionale di Geofisica e Vulcanologia, Italy

MOP2.PM.7
Board PM.7
AN IMPROVED FULLY CONVOLUTIONAL NETWORK FOR LEARNING RICH BUILDING FEATURES
Shuang Wang, Ligang Zhou, Pei He, Dou Quan, Qing Zhao, Xuefeng Liang, Biao Hou, Xidian University, China

MOP2.PM.8
Board PM.8
RETRIEVING LAND SURFACE TEMPERATURE FROM HIGH SPATIAL RESOLUTION THERMAL INFRARED DATA OF CHINESE GAOFEN-5
Xiangchen Meng, Jie Cheng, Shugui Zhou, Beijing Normal University, China

MOP2.PM.9
Board PM.9
SURFACE ENERGY FLUXES RETRIEVAL IN THE ARCTIC TUNDRA AND THE BOREAL FOREST USING A THERMAL REMOTE SENSING MODEL
Jordi Cristobal, Asiaq - Greenland Survey, Denmark; Anupma Prakash, Geophysical Institute, University of Alaska Fairbanks, United States; Martha C. Anderson, William P. Kustas, United States Department of Agriculture, United States; Lluís Pesquer, Xavier Pons, Autonomous University of Barcelona, Spain

Land Cover Dynamics for Vegetated Terrains

Session Chair: Chengquan Huang, University of Maryland

MOP2.PN.1
Board PN.1
EVALUATION OF FOREST DISTURBANCE AND ITS PATCH SIZE DISTRIBUTION IN CHINA FROM REMOTE SENSING PRODUCT
Danxia Song, Central China Normal University, China; Tao He, Wuhan University, China; Min Feng, University of Maryland, College Park, United States

MOP2.PN.2
Board PN.2
EVOLUTION OF THE VEGETATION COVER IN A COMPLEX MOUNTAIN ECOSYSTEM THROUGH THE PROCESSING OF MULTIPLATFORM REMOTE SENSING DATA
Francisco Eugenio, Javier Marcello, Universidad de Las Palmas de Gran Canaria, Spain; Ferran Marques, Universitat Politecnica de Catalunya BarcelonaTECH, Spain

MOP2.PN.3
Board PN.3
VERY HIGH RESOLUTION IMAGERY FOR PROJECTING LAND COVER AND LAND USE TRAJECTORIES IN DEFORESTED AREAS AS DETECTED BY A NEAR-REAL TIME DEFORESTATION SYSTEM
Alejandro Coca-Castro, King's College London, United Kingdom; Paula Paz, Jhon Tello, Louis Reymondin, International Center for Tropical Agriculture, Colombia; Mark Mulligan, King's College London, United Kingdom

MOP2.PN.4
Board PN.4
LONG-TERM SPATIOTEMPORAL CHANGES OF SURFACE ALBEDO IN NORTHEAST CHINA: EVALUATION WITH GLASS PHASE-2 SURFACE ALBEDO DATASETS
Xijia Li, Mengsi Wang, Yan Song, Ying Qu, Northeast Normal University, China

MOP2.PN.5
Board PN.5
ANALYSIS OF VEGETATION VARIATION AROUND ZIJINSHAN GOLD AND COPPER MINE, FUJIAN, CHINA
Mengjing Lin, Xiaoqin Wang, Aifang Xiao, Fuzhou University, China

MOP2.PN.6
Board PN.6
SPATIOTEMPORAL PATTERN SIMULATION OF FRACTIONAL VEGETATION COVERAGE IN THE SOUTH QILIAN MOUNTAINS BASED ON BP NEURAL NETWORK
Xinmeng Wang, Binbin He, Minfeng Xing, Xiangzhuo Liu, Shuxu Gao, University of Electronic Science and Technology of China, China

MOP2.PN.7
Board PN.7
LAND SURFACE ECOSYSTEM CHANGE DUE TO NATURAL AND ANTHROPOLOGY EFFECTS-THE ORDOS CASE, INNER MONGOLIA
Liping Zheng, Lin Zhu, Jie Yu, Capital Normal University, China; Wei Wang, Tianjin Center of China Geological Survey, China; Xiaojuan Li, Yinghai Ke, Capital Normal University, China; Junsheng Li, Chinese Academy of Sciences, China

MOP2.PN.8
Board PN.8
NDVI VERSUS CNN FEATURES IN DEEP LEARNING FOR LAND COVER CLASSIFICATION OF AERIAL IMAGES
Anushree Ramanath, Saipreethi Muthusrinivasan, Yiqun Xie, Shashi Shekhar, University of Minnesota Twin Cities, United States; Bharathkumar Ramachandra, North Carolina State University, United States

MOP2.PN.9
Board PN.9
NDVI BASED SPATIAL TREND ANALYSIS TO EVALUATE GROWING CONDITIONS IN IRRIGATED AREAS OF INDUS BASIN
Ali Ismaeel, Zhou Qiming, Hong Kong Baptist University, China

MOP2.PN.10
Board PN.10
VEGETATION AND WATER VARIATION OF EJIN BANNER OASIS: NEW INSIGHTS INTO THE EXPANSION OF THE BADAIN JARAN DESERT
Jiaxin Du, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China; Bihong Fu, Qiang Guo, Pilong Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

MOP2.PN.11
Board PN.11
DETECTION OF VEGETATION AREAS ATTACKED BY PESTS AND DISEASES BASED ON ADAPTIVELY WEIGHTED ENHANCED GLOBAL AND LOCAL DEEP FEATURES
Yanshuai Dai, Li Shen, Yungang Cao, Southwest Jiaotong University, China; Tianjie Lei, China Institute of Water Resources and Hydropower Research (IWHR), China; Wenfan Qiao, Southwest Jiaotong University, China

MOP2.PN.12
Board PN.12
ANALYSIS OF VEGETATION DYNAMICS IN BAICHENG DISTRICT, CHINA FROM SPOT-VEGETATION NDVI TIME SERIES
Fang Huang, Ping Wang, Wenli Wu, Northeast Normal University, China

MONDAY POSTER

Monday, July 29	15:20 - 16:20	Room 501-502: Area O
Session MOP2.PO		Poster

Land Cover Dynamics in Urban and Hydrologic Systems

Session Chair: Patrick Helber, German Research Center for Artificial Intelligence (DFKI)

MOP2.PO.1
Board PO.1
PREDICTION MODEL OF LAND USE AND LAND COVER CHANGES IN BEIJING BASED ON ANN AND MARKOV_CA MODEL
Qian Zhan, Jiaojiao Tian, Shufang Tian, China University of Geosciences (Beijing), China

MOP2.PO.2
Board PO.2
LAND COVER SPURIOUS CHANGE DETECTION USING A GEO-ECO ZONING RULE BASE
Ling Zhu, Yixuan La, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China; Shu Peng, National Geomatics Center of China, China

MOP2.PO.3
Board PO.3
FRAGMENT POLYGON REMOVAL IN INCREMENTAL LAND COVER MAP UPDATING
Ling Zhu, Xuanye Wei, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China

MOP2.PO.4
Board PO.4
TEMPORAL AND SPATIAL FEATURES OF URBAN AND CONSTRUCTION LAND IN CHENGDU CITY, CHINA
Wei Cao, Lin Huang, Yunfeng Hu, Duanyang Xu, Hongyan Ren, Junxing Yang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Lulu Liu, School of Architecture and Civil Engineering, Chengdu University, China

MOP2.PO.5
Board PO.5
SPATIO-TEMPORAL CHARACTERISTICS OF LAND COVER CHANGES OF LIANGJIANG NEW DISTRICT IN CHINA DURING 2010-2018
Xiaopan Wang, Chongqing Geomatics Center, China; Chaolei Wang, Chongqing Foundation Engineering Co., Ltd., China; Yan Hu, Yi Ding, Jing Chen, Bin Zhang, Chongqing Geomatics Center, China

MOP2.PO.6
Board PO.6
ANALYSIS AND EXPLORE FUTURE LAND USE/COVER CHANGE BASED ON 3S AND CELLULAR AUTOMATA IN TIANJIN(CHINA)
Ruorou Wang, Tianjin Normal University, China; Yanfei Yang, Hohai University, China; Xingmei Chen, Yi Lian, Lei Chen, Tianjin Normal University, China

MOP2.PO.7
Board PO.7
LAND USE AND LAND COVER CHANGE OF QINGHAI LAKE AND ITS SURROUNDINGS
Mujie Li, Rui Kong, Jiaxi Liu, Yiqun He, Zezhong Zheng, University of Electronic Science and Technology of China, China; Mingcang Zhu, Department of Natural Resources of Sichuan Province, China; Yong He, Sichuan Research Institute for Eco-system Restoration & Geo-disaster Prevention, China; Yue He, Ankai Hou, Huaixin Chen, University of Electronic Science and Technology of China, China; Guoqing Zho, Guilin University of Technology, China; Jiang Li, Old Dominion University, United States

MOP2.PO.8
Board PO.8
INVESTIGATING WATER SUSTAINABILITY AND LAND USE/LAND COVER CHANGE (LULC) AS THE IMPACT OF TOURISM ACTIVITY IN BALI, INDONESIA
Andi Besse Rimba, Saroj Kumar Chapagain, Yoshifumi Masago, United Nations University, Japan; Kensuke Fukushi, University of Tokyo, Japan; Geetha Mohan, United Nation University, Japan

MOP2.PO.9
Board PO.9
REMOTE SENSING ANALYSIS ON ECOSYSTEM EVOLUTION OF THE IRRAWADDY RIVER DELTA
Wei Qu, Zhiguo Pang, Jingxuan Lu, June Fu, Xiaotao Li, Tianjie Lei, Lin Li, Yanan Tan, China Institute of Water Resources and Hydropower Research (IWHR), China

Monday, July 29	15:20 - 16:20	Room 503: Area Q
Session MOP2.PQ		Poster

Identification of Remote Sensing Indicators for Climate Change I

Session Co-Chairs: Giuseppe Parrella, German Aerospace Center (DLR); Ryoichi Sato, Niigata University

MOP2.PQ.1
Board PQ.1
ESTIMATION OF FOREST COVER RESILIENCE IN INDIA USING MC2 DVM
Pulakesh Das, Vidyasagar University; and IIT Kharagpur, India; Mukunda Dev Behera, IIT Kharagpur, India; PS Roy, ICRISAT, India

MOP2.PQ.2
Board PQ.2
RETRIEVAL OF FRACTION OF ABSORBED PHOTOSYNTHETICALLY ACTIVE RADIATION (FPAR) BASED ON FENGYUN-3C /MERSI DATA
Xinyi Li, Wenbo Xu, University of Electronic Science and Technology of China, China; Yue Hu, Second Research Institute of Civil Aviation Administration of China, China; Xueru Zhang, Chunliang Zhao, University of Electronic Science and Technology of China, China; Jinlong Fan, National Satellite Meteorological Center, China Meteorological Administration, China

MOP2.PQ.3
Board PQ.3
SATELLITE-ESTIMATED WINTER MEAN MINIMUM TEMPERATURE (TN) ANALYSIS OVER 2000-2013 FOR THE TIBET AUTONOMOUS REGION OF CHINA
Yuanyuan Wang, Zhaojun Zheng, Guicai Li, National Satellite Meteorological Center, China Meteorological Administration, China

MOP2.PQ.4
Board PQ.4
IMPACTS OF CLIMATE VARIABILITY ON HANNA LAKE IN QUETTA, PAKISTAN
Salman Sarwar, Talal Naseer, Mehran University of Engineering and Technology, Pakistan; Mumtaz Ali, USPCAS-W (MUET) Jamshoro,Sindh, Pakistan; Arjumand Zaidi, Mehran University of Engineering and Technology, Pakistan

MOP2.PQ.5
Board PQ.5
SURFACE ALBEDO INVERSION OF FY-3C MERSI DATA
Chunliang Zha, Wenbo Xu, Xueru Zhang, Xinyi Li, University of Electronic Science and Technology of China, China; Jinlong Fan, National Satellite Meteorological Center, China Meteorological Administration, China; Yantong Wu, University of Electronic Science and Technology of China, China

MOP2.PQ.6
Board PQ.6
MODELING CORAL REEF SUSCEPTIBILITY USING GIS MULTI-CRITERIA ANALYSIS
Khusharah Aslam, Rao Zahid Khalil, Saad Malik, Sumaira Zafar, Institute of Space Technology, Pakistan

MOP2.PQ.7
Board PQ.7
SPATIOTEMPORAL VARIATION OF VEGETATION COVERAGE AND ITS RESPONSE TO CLIMATE CHANGE BEFORE AND AFTER IMPLEMENTATION OF GRAIN FOR GREEN PROJECT IN THE LOESS PLATEAU
Rui Sun, University of Chinese Academy of Sciences / Key Laboratory of Water Cycle and Related Land Surface Processes, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Shaohui Chen, Hongbo Su, Key Laboratory of Water Cycle and Related Land Surface Processes, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Guibin Hao, University of Chinese Academy of Sciences / Key Laboratory of Water Cycle and Related Land Surface Processes, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

MOP2.PQ.8
Board PQ.8
CLIMATE DATA RECORDS FOR ATMOSPHERIC MOTION VECTORS FOR C3S
Roger Huckle, Marie Doutriaux-Boucher, Alessio Lattanzio, Oliver Sus, Olivier Hautecoeur, Jörg Schulz, EUMETSAT, Germany

MOP2.PQ.9
Board PQ.9
A GEOPHYSICAL MODEL FUNCTION FOR WIND SPEED RETRIEVAL FROM C-BAND HH-POLARIZED SYNTHETIC APERTURE RADAR
Yiru Lu, Biao Zhang, Nanjing University of Information Science and Technology, China

MOP2.PQ.10
Board PQ.10
EXAMINATION OF TYPHOON SURFACE WIND ASYMMETRY IN NORTHWEST PACIFIC OCEAN USING SMAP OBSERVATIONS
Ziyao Sun, Biao Zhang, Nanjing University of Information Science and Technology, China

MOP2.PQ.11
Board PQ.11
ANALYSIS ON CHANGE TREND OF PERCIPITATION USE EFFICIENCY FOR NATURAL VEGETATION IN LONG TIME SERIES IN CHINA
Lei He, Chengdu University of Information Technology, China; Yuxia Li, University of Electronic Science and Technology of China, China; Huanping Wu, National Climate Center, China

MONDAY POSTER

Monday, July 29	15:20 - 16:20	Room 503: Area R
Session MOP2.PR		Poster

SAR Instruments and Calibration I

Session Chair: Takeshi Motohka, Japan Aerospace Exploration Agency

MOP2.PR.1
Board PR.1
APPLICABILITY ANALYSIS FOR ESTIMATING AND VALIDATING POLARIMETRIC DISTORTION PARAMETERS USING CORNER REFLECTORS FOR THE N-SAR SYSTEM
Fan Wang, Aifang Liu, Hui Xu, Nanjing Research Institute of Electronics Technology, China

MOP2.PR.2
Board PR.2
ANALYSIS OF QUADRATIC PHASE ERROR INTRODUCED BY ORBIT DETERMINATION IN SPACEBORNE TRINODAL PENDULUM SAR FORMATION REAL-TIME IMAGING WITH MONTE CARLO SIMULATION
Xiaoyu Yan, Jie Chen, Beihang University, China; Holger Nies, University of Siegen, Germany; Hongcheng Zeng, Beihang University, China; Otmar Loffeld, University of Siegen, Germany

MOP2.PR.3
Board PR.3
EXPERIMENTAL DEMONSTRATION OF THE ABMP MODE USING THE N-SAR DATA
Fan Wang, Aifang Liu, Hui Xu, Nanjing Research Institute of Electronics Technology, China; Jinwei Xie, Xidian University, China; Chipan Lai, Nanjing Research Institute of Electronics Technology, China

MOP2.PR.4
Board PR.4
AN ELECTROMAGNETIC SCATTERING SIMULATION BASED SEMI-PHYSICAL SYSTEM FOR SAR JAMMING
Jiaxuan Xu, Haipeng Wang, Fudan University, China; Chunzhuo Fan, Beijing Institute of Remote Sensing Information, China; Feng Xu, Fudan University, China

MOP2.PR.5
Board PR.5
SAR IMAGE RECTIFICATION BASED ON VECTOR MAP
Feng Wang, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PR.6
Board PR.6
CALIBRATION OF NEW ALONG-TRACK INTERFEROMETRIC SAR INSTRUMENT IN PI-SAR X2 SYSTEM
Shoichiro Kojima, National Institute of Information and Communications Technology (NICT), Japan

MOP2.PR.7
Board PR.7
AUTOMATIC SUB-IMAGES EXTRACTION FROM ENTIRE URBAN SAR SCENES BASED ON THE CLUSTERING-BASED ALGORITHM AND GRAPH TRAVERSAL METHODS
Jie Li, Ran Cheng, Yesheng Gao, Xue Jiang, Bin Yuan, Ye Zhang, Xingzhao Liu, Shanghai Jiao Tong University, China

MOP2.PR.8
Board PR.8
DEVELOPMENT AND COMPARISON OF DDS AND MULTI-DDS CHIRP WAVEFORM GENERATOR
Kyeong-Rok Kim, Song Kim, Choong-Ho Ki, Tu-Hwan Kim, Ajou University, Korea (South); Heein Yang, Lumir-inc, Korea (South); Jae-Hyun Kim, Ajou University, Korea (South)

MOP2.PR.9
Board PR.9
A SPACEBORNE SAR CALIBRATION SIMULATOR BASED ON GAOFEN-3 DATA
Rui Zhang, Beihang University, China; Jianjun Huang, Beijing Institute of Remote Sensing Information, China; Wei Yang, Jie Chen, Yamin Wang, Beihang University, China

MOP2.PR.10
Board PR.10
ADVANTAGES AND LIMITATIONS OF FORWARD SQUINT SAR IN SINGLE PASS INTERFEROMETRIC MAPPING OF TOPOGRAPHY
Alexander Zakharov, Kotel'nikov Institute of Radioengineering and Electronics, RAS, Russia; Pavel Denisov, Ministry of agriculture of Russian Federation, Russia

MOP2.PR.11
Board PR.11
PARAMETER DESIGN OF MULTI - MODE SMALL SATELLITE SAR SYSTEM
Weiqiang Lv, Peng Zhou, College of Information and Control Engineering, China University of Petroleum, China; Ying Wang, Beijing Research Institute of Telemetry, China; Xi Zhang, First Institute of Oceanography, Ministry of Natural Resources of China, China; Yong Wan, Xiaojun Qu, College of Information and Control Engineering, China University of Petroleum, China

MOP2.PR.12
Board PR.12
PRF SAMPLING STRATEGIES FOR SWARMSAR SYSTEMS
Lorenzo Iannini, Alessandro Mancinelli, Paco Lopez-Dekker, Peter Hoogeboom, Yuanhao Li, Faruk Uysal, Alexander Yarovoy, Delft University of Technology, Netherlands

Monday, July 29	15:20 - 16:20	Room 503: Area S
Session MOP2.PS		Poster

SAR Instruments and Calibration II

Session Chair: Takeshi Motohka, Japan Aerospace Exploration Agency

MOP2.PS.1
Board PS.1
ON THE USE OF CNN FOR AUTOMATED QUALITY ASSESSMENT OF GF-3 POLARIMETRIC DATA
Songtao Shangguan, University of Chinese Academy of Sciences; Institute of Electronics, Chinese Academy of Sciences, China; Xiaolan Qiu, Bin Lei, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PS.2
Board PS.2
A 3.6 GHZ X-BAND WIDEBAND EXPERIMENTAL AIRBORNE SAR SYSTEM
Yashi Zhou, School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, China; Pei Wang, Kai Ye, Yunkai Deng, Robert Wang, Huachun Zhang, Qingchao Zhao, Institute of Electronics, Chinese Academy of Sciences, China

MOP2.PS.3
Board PS.3
MAXIMUM NESIGMA0 BASED ON THE NEW STEERING STRATEGY FOR GEO SAR
Sen Yuan, Chunsheng Li, Ze Yu, Jiwen Geng, Jindong Yu, Beihang University, China

MOP2.PS.4
Board PS.4
PASSIVE BISTATIC SAR IMAGING AND INTERFEROMETRY BY USING SATELLITE DIGITAL TV SIGNAL
Weike Feng, Tohoku University, Japan; Jean-Michel Friedt, FEMTO-ST, France; Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Gilles Martin, FEMTO-ST, France; Motoyuki Sato, Tohoku University, Japan

MOP2.PS.5
Board PS.5
INITIAL RESULTS FROM THE 2019 NISAR ECOSYSTEM CAL/VAL EXERCISE IN THE SE USA
Bruce Chapman, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Paul Siqueira, University of Massachusetts, United States; Sassan Saatchi, Marc Simard, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Josef Kellndorfer, Earth Big Data, United States

MOP2.PS.6
Board PS.6
POLARIMETRIC CALIBRATION OF L-BAND AIRBORNE SAR DATA
Abhisek Maiti, University of Twente, Faculty of ITC; Indian Institute of Remote Sensing, ISRO, India; Shashi Kumar, Indian Institute of Remote Sensing, ISRO, India; Valentyn Tolpekin, University of Twente, Faculty of ITC, Netherlands; Shefali Agarwal, Indian Institute of Remote Sensing, ISRO, India

MOP2.PS.7
Board PS.7
AN ERROR ESTIMATION METHOD FOR STEPPED FREQUENCY CHIRP SAR SIGNAL BASED ON RECEIVED ECHOES
Taoli Yang, Qihuang Huang, Yuanbin Cui, University of Electronic Science and Technology of China, China

MOP2.PS.8
Board PS.8
TRI-FREQUENCY SYNTHETIC APERTURE RADAR FOR THE MEASUREMENTS OF SNOW WATER EQUIVALENT
Rafael Rincon, Batuhan Osmanoglu, Paul Racette, Quenton Bonds, Martin Perrine, Ludovic Brucker, Steve Seufert, Chase Kielbasa, National Aeronautics and Space Administration (NASA), United States

MOP2.PS.9
Board PS.9
CALIBRATION OF HIGH-RESOLUTION POLARIMETRIC IMAGING SAR ACCOUNTING FOR THE IMPULSE RESPONSE OF THE ACTIVE POINT-TARGET AND THE SAR AMBIGUITY FUNCTION
Mani Kashanianfard, University of Michigan, United States; Kamal Sarabandi, University of Michigan - Radlab, United States

MOP2.PS.10
Board PS.10
METHOD TO SUPPRESS TRANSIENT INTERFERENCE IN THE SKYWAVE OTHR
Ziwei Liu, Shanshan Zhao, Gengxin Zhang, Nanjing University of Posts and Telecommunications, China

MONDAY POSTER

119

Tuesday, July 30	09:40 - 10:40	Room 503: Sprint Area
Session TUP1.SPR		SPRINT Presentation

TUP1 SPRINT Session

TUP1.SPR.1
09:50
INSAR REMOTE SENSING OF ATMOSPHERE: BRIDGING HIGH RESOLUTION DATA AND NWP MODELS
Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Pedro Mateus, João Catalão, Instituto Dom Luiz (IDL), Universidade de Lisboa, Portugal

TUP1.SPR.2
09:55
HIGH RESOLUTION CHANGE DETECTION USING PLANET MOSAIC
Alan Woodley, Connor McLaughlin, Holly Hutson, Shlomo Geva, Timothy Chappell, Wayne Kelly, Dimitri Perrin, Wageeh Boles, Lance De Vine, Queensland University of Technology, Australia

Tuesday, July 30	15:20 - 16:20	Room 503: Sprint Area
Session TUP2.SPR		SPRINT Presentation

TUP2 SPRINT Session

TUP2.SPR.1
15:30
EMPIRICAL CORRECTION OF TIDES AND INVERSE BAROMETER EFFECT PHASE COMPONENTS FROM DOUBLE DINSAR AND REGIONAL MODELS
Quentin Glaude, Université Libre de Bruxelles, Belgium; Sophie Berger, Alfred Wegener Institute for Polar and Marine Research, Belgium; Charles Amory, Université de Liège, Belgium; Frank Pattyn, Université Libre de Bruxelles, Belgium; Christian Barbier, Anne Orban, Université de Liège, Belgium

TUP2.SPR.2
15:35
A STATISTICAL APPROACH TO IMPROVE VIRTUAL DIMENSIONALITY OF HYPERSPECTRAL DATA
Vijayashekhar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodara, India; Bhargab Chattopadhyay, Indian Institute of Management Vishakapatnam, India

TTUP2.SPR.3
15:40
ADVANCEMENT IN BEDFAST LAKE ICE MAPPING FROM SENTINEL-1 SAR DATA
Claude Duguay, University of Waterloo, Canada; Junqian Wang, H2O Geomatics Inc., Canada

TUESDAY POSTER

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area A
Session TUP2.PA		Poster

Atmopsheric Sounding I

Session Chair: Haris Haralambous, Frederick University, Frederick Research Center

TUP2.PA.1
Board PA.1
REMOTE SENSING OF WAVE SIGNATURES IN THE IONOSPHERE OVER EASTERN MEDITERRANEAN
Krishnendu S Paul, Institute of Radio Physics and Electronics, University of Calcutta, India; Haris Haralambous, Frederick University, Frederick Research Center, Cyprus; Christina Oikonomou, Frederick Research Center, Cyprus; Ashik Paul, Institute of Radio Physics and Electronics, University of Calcutta, India

TUP2.PA.2
Board PA.2
A NEW TYPE OF SENSOR FOR ENVIRONMENTAL MONITORING OF FOG AND HAZE
Jingli Wang, Institute of Urban Meteorology, China Meteorological Administration, China

TUP2.PA.3
Board PA.3
THE ON-ORBIT PERFORMANCE OF FY-3D GNOS
Qifei Du, Yueqiang Sun, Weihua Bai, Xianyi Wang, Dongwei Wang, Xiangguang Meng, Yuerong Cai, Junming Xia, Chunjun Wu, Congliang Liu, Wei Li, Cheng Liu, Fu Li, Hao Qiao, National Space Science Center, Chinese Academy of Sciences, China

TUP2.PA.4
Board PA.4
EXTINCTION ÅNGSTRÖM EXPONENTS OF COATED SOOT PARTICLES: A NUMERICAL INVESTIGATION BASED ON CLOSED-CELL MODEL
Jia Liu, Yongming Zhang, Qixing Zhang, University of Science and Technology of China, China

TUP2.PA.5
Board PA.5
CONSTRAINING ANTHROPOGENIC EMISSION SOURCES FROM TROPOMI: A CASE STUDY IN NORTHERN CHINA
Haotian Zong, Beijing 101 High School, China; Zhao-Cheng Zeng, California Institute of Technology, United States; Xinhuiyu Liu, Lanzhou University, China

TUP2.PA.6
Board PA.6
COMPARING THE THERMAL STRUCTURES OF TROPICAL CYCLONES DERIVED FROM ATMS AND MWHS
Fuzhong Weng, Key State Laboratory of Severe Weather, China; Hao Hu, Yang Han, Nanjing University of Information Science and Technology, China

TUP2.PA.7
Board PA.7
DETERMINATION OF TOTAL PRECIPITABLE WATER FROM GNSS DATA IN THAILAND
Weeranat Phasamak, King Mongkut's Institute of Technology Ladkrabang, Thailand; Seubson Soisuvarn, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Yuttapong Rangsanseri, King Mongkut's Institute of Technology Ladkrabang, Thailand

TUP2.PA.8
Board PA.8
EQUILIBRIUM ON-LINE WAVELENGTH SELECTION OF DIFFERENTIAL ABSORPTION LIDAR FOR DETECTING ATMOSPHERIC CARBON DIOXIDE
Ailin Liang, Nanjing University of Information Science and Technology, China

TUP2.PA.9
Board PA.9
RESULTS FROM SUBMILLIMETER WAVE PROPAGATION EXPERIMENTS AT 325.153 GHZ WATER VAPOR ABSORPTION LINE USING THE THZ ATMOSPHERIC AND IONOSPHERIC PROPAGATION AND SCATTERING (TAIPAS) SYSTEM
Omkar Pradhan, University of Colorado, United States; Lawrence Scally, Colorado Engineering Inc., United States; Albin Gasiewski, University of Colorado, United States

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area B
Session TUP1.PB		**Poster**

SAR Interferometry: Along and Across II

Session Chair: Jakov Toporkov, US Naval Research Laboratory

TUP1.PB.1
Board PB.1
SYSTEM ERROR ANALYSIS OF AN AIRBORNE ALONG-TRACK INTERFEROMETRIC FMCW SAR FOR SURFACE VELOCITY ESTIMATE
Huazeng Deng, Gordon Farquharson, University of Washington, Seattle, United States; Mikhail Balaban, O.Ya. Usikov Institude for Radiophysics and Electronics of NASU, Ukraine; John Sahr, Andrew Jessup, University of Washington, Seattle, United States

TUP1.PB.2
Board PB.2
AN ENHANCED REFINED FILTER FOR SAR INTERFEROMETRIC NOISE
Tingting Li, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China; Kun-Shan Chen, Institute of Remote Sensing and Digital Earth / Xuchang University, China; Genyuan Du, Xuchang University, China

TUP1.PB.3
Board PB.3
INTERFEROMETRIC PHASE STACK DENOISEING VIA NONLOCAL HIGHER ORDER ROBUST PCA METHOD
Rui Wang, Yanan You, Wenli Zhou, Beijing University of Posts and Telecommunications, China

TUP1.PB.4
Board PB.4
ON THE USE OF ARTIFICIAL FREQUENCY-STABLE REFLECTORS IN SPLIT-BAND INTERFEROMETRY
Ludivine Libert, Dominique Derauw, Quentin Glaude, Anne Orban, Christian Barbier, Université de Liège, Belgium

TUP1.PB.5
Board PB.5
ACCURATE INTERFEROMETRIC PARAMETER ESTIMATION OF AIRBORNE MULTI-BASELINE INSAR DATA WITHOUT CORNER REFLECTORS
Xiaotong Dong, Bingnan Wang, Liangjiang Zhou, Maosheng Xiang, Aerospace Information Research Institute, Chinese Academy of Sciences, China

TUP1.PB.6
Board PB.6
AN OPTIMIZATION OF WEIGHTED MULTI-BASELINE LS UNWRAPPING ALGORITHM BASED ON QUALITY MAP
Xinyue Fan, Xiaoling Zhang, Zhi Liu, Huan Dang, University of Electronic Science and Technology of China, China

TUP1.PB.7
Board PB.7
A NEW INTERFEROMETRIC PHASE UNWRAPPING METHOD BASED ON ENERGY MINIMIZATION FROM CONTEXTUAL MODELING
Ayoub Tlili, Computer Research Institute of Montreal (CRIM), Canada; François Cavayas, Université de Montréal, Canada; Samuel Foucher, Computer Research Institute of Montreal (CRIM), Canada

TUP1.PB.8
Board PB.8
MOON-BASED SAR FOR EARTH OBSERVATION AND ITS SPATIAL BASELINE DECORRELATION IN REPEAT-PASS INTERFEROMETRY
Houjun Jiang, Nanjing University of Posts and Telecommunications, China; Jinglong Dong, Liming Jiang, Dewei Li, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, China

TUP1.PB.9
Board PB.9
JOINT MULTI-CHANNEL SPARSE METHOD OF ROBUST PCA FOR SAR GROUND MOVING TARGET IMAGE INDICATION
Gang Xu, Southeast University, China; Xianpeng Wang, Hainan University, China; Yan Huang, Longzhu Cai, Zhihao Jiang, Southeast University, China

TUP1.PB.10
Board PB.10
PSINSAR BASED LAND DEFORMATION BASED DISASTER MONITORING USING SENTINEL-1 DATASETS
Shubham Awasthi, Kamal Jain, Akshay Pandey, Indian Institute of Technology Roorkee, India

TUP1.PB.11
Board PB.11
THE LOCATION MODEL OF PLATFORM IN INSAR/INS INTEGRATED NAVIGATION SYSTEM
Bingnan Wang, Maosheng Xiang, Liangjiang Zhou, Institute of Electronics, Chinese Academy of Sciences, China; Shuai Jiang, Institute of Spacecraft System Engineering, China Academy of Space Technology, China; Jiaxin Tang, Beijing University of Chemical Technology, China

TUP1.PB.12
Board PB.12
THE USE OF INSAR TECHNOLOGY TO CHARACTERIZE LAND SURFACE DEFORMATION IN THE CANTO DO AMARO OILFIELD, NORTHEASTERN BRAZIL
Enrico Pedroso, National Agency of Petroleum, Natural Gas and Biofuels, Brazil; Adrian Bohane, Tre Altamira, Canada; Wilson José de Oliveira, Cristina Maria Bentz, Petróleo Brasileiro SA, Brazil

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area B
Session TUP2.PB		**Poster**

Atmospheric Sounding II

Session Chair: Ian Adams, NASA Goddard Space Flight Center

TUP2.PB.1
Board PB.1
SPATIOTEMPORAL PATTERN OF AQI IN SHANDONG, CHINA USING THE EMPIRICAL ORTHOGONAL FUNCTION ANALYSIS
Huisheng Wu, China University of Petroleum, China; Maogui Hu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Lu Fu, Yuan Han, China University of Petroleum, China

TUP2.PB.2
Board PB.2
SMILES-2 BAND SELECTION STUDY FOR CHEMICAL SPECIES
Phillipe Baron, Satoshi Ochiai, National Institute of Information and Communication Technology, Japan; Naohiro Manago, Makoto Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

TUP2.PB.3
Board PB.3
SOUNDING THE ORIGIN OF L-BAND SAR STRIPES IN THE EQUATORIAL IONOSPHERE: COORDINATED OBSERVATION OF ALOS-2 AND AIR GLOW IMAGER
Hiroatsu Sato, Jun Su Kim, German Aerospace Center (DLR), Germany; Cristiano Max Wrasse, Jonas Rodrigues de Souza, National Institute for Space Research (INPE), Brazil

TUP2.PB.4
Board PB.4
MEASURING VECTOR VELOCITY OF MIDDLE ATMOSPHERE BY MU RADAR
Junfeng Xiao, Zhangyou Chen, Wuhan University, China; Hiroyuki Hashiguchi, Kyoto University, Japan

TUP2.PB.5
Board PB.5
MEASUREMENT AND VALIDATION OF IONOSPHERIC TEC BASED ON CHINESE AREA POSITIONING SYSTEM
Liang Li, Jun Hong, Feng Ming, Liangjiang Zhou, Institute of Electronics, Chinese Academy of Sciences, China

TUP2.PB.6
Board PB.6
A STATISTICAL ANALYSIS OF SPREAD F OCCURRENCE DURING MINIMUM AND MAXIMUM SOLAR ACTIVITIES IN LOW LATITUDE REGION
Dessi Marlia, Falin Wu, Ednofri, Beihang University, China; Asnawi Husin, National Institute of Aeronautics and Space (LAPAN), Indonesia; Gongliu Yang, Beihang University, China

TUP2.PB.7
Board PB.7
ANALYSIS OF IONOSPHERIC IRREGULARITIES IN LOW LATITUDE DURING GEOMAGNETIC STORM USING GISTM NETWORK
Dessi Marlia, Falin Wu, Beihang University, China; Sri Ekawati, Asnawi Husin, Sefria Anggarani, National Institute of Aeronautics and Space (LAPAN), Indonesia; Ednofri Ednofri, Gongliu Yang, Beihang University, China

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area C
Session TUP1.PC		**Poster**

SAR Interferometry: Along and Across III

Session Co-Chairs: Pau Prats-Iraola, German Aerospace Center (DLR); Muriel Aline Pinheiro, German Aerospace Center (DLR)

TUP1.PC.1
Board PC.1
THE RELATIONSHIPS BETWEEN ERRORS OF DEM AND THE HEIGHT OF AMBIGUITY OF SENTINEL-1
Takashi Nonaka, Tomohito Asaka, Keishi Iwashita, Nihon University, Japan; Fumitaka Ogushi, Harris Geospatial Solutions K.K., Japan

TUP1.PC.2
Board PC.2
MONITORING MT. SHINNMOE'S CRATER ACTIVITY USING THE TIMESERIES PALSAR-2 INTERFEROMETRY
Kaho Fujiyama, Shimada Masanobu, Tokyo Denki University, Japan

TUP1.PC.3
Board PC.3
IDENTIFICATION OF HIDDEN BUILDING FOOTPRINTS IN INTERFEROMETRIC PHASE PROFILE
Jyunpei Uemoto, National Institute of Information and Communications Technology (NICT), Japan

TUP1.PC.4
Board PC.4
A MODIFIED GOLDSTEIN FILTER FOR INTERFEROGRAM DENOISING BASED ON RESIDUE DENSITY
Rui Li, Fangjia Dou, Xiaolei Lv, Jili Yuan, University of Chinese Academy of Sciences; Institute of Electronics, Chinese Academy of Sciences, China; Yuming Xiang, Institute of Electronics, Chinese Academy of Sciences, China

TUP1.PC.5
Board PC.5
MEASUREMENT OF ALONG-TRACK SURFACE DISPLACEMENTS BY SAR: MULTI- APERTURE INTERFEROMETRY VS. AMPLITUDE PIXEL OFFSET
Hiroshi Kimura, Gifu University, Japan

TUP1.PC.6
Board PC.6
AN ESTIMATION STUDY ON AREAL GROUND SUBSIDENCE IN HATOYAMA, SAITAMA USING TIME SERIES INTERFEROMETRIC SAR
Wataru Iwatate, Shimada Masanobu, Tokyo Denki University, Japan

TUP1.PC.7
Board PC.7
VELOCITY ESTIMATION IN MULTI-CHANNEL SAR BASED ON MAXIMUM PROBABILITY METHOD
Yahua Ren, Junfeng Wang, Xingzhao Liu, Shanghai Jiao Tong University, China

TUP1.PC.8
Board PC.8
TWO-DIMENSIONAL DISPLACEMENT ANALYSIS OF BUILDINGS BASED ON PERSISTENT SCATTERER CLUSTERING AND MAP DATA
Daisuke Ikefuji, Taichi Tanaka, Osamu Hoshuyama, NEC Corporation, Japan

TUP1.PC.9
Board PC.9
INTERFEROMETRIC PHASE CHARACTERISTICS ANALYSIS AND UNWRAPPING METHOD OF AIRBORNE INSAR IN LOW COHERENCE AREA
Fangfang Li, Yueting Zhang, Donghui Hu, Chibiao Ding, Jiayin Liu, Institute of Electronics, Chinese Academy of Sciences, China

TUP1.PC.10
Board PC.10
A MULTIPATH-BASED FEATURE FOR 3-D RECONSTRUCTION OF BUILDINGS BASED ON SAR TOMOGRAPHY
Ruichang Cheng, Xingdong Liang, Fubo Zhang, Wei Sun, Qichang Guo, Institute of Electronics, Chinese Academy of Sciences, China

TUP1.PC.11
Board PC.11
A CONVEX HULL AND CLUSTER-ANALYSIS BASED FAST LARGE-SCALE PHASE UNWRAPPING METHOD FOR MULTIBASELINE SAR INTERFEROGRAMS
Yang Lan, National Laboratory of Radar Signal Processing, Xidian University, China; Hanwen Yu, University of Houston, United States; Mengdao Xing, National Laboratory of Radar Signal Processing, Xidian University, China

TUP1.PC.12
Board PC.12
PHASE UNWRAPPING ALGORITHM BASED ON IMPROVED WEIGHTED QUALITY GRAPH
Haoyu Wang, Ling Tong, Yuxia Li, Fanghong Xiao, University of Electronic Science and Technology of China, China

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area C
Session TUP2.PC		**Poster**

Differential SAR Interferometry: Methods and Techniques II

Session Co-Chairs: Homa Ansari, German Aerospace Center (DLR); Howard Zebker, Stanford University

TUP2.PC.1
Board PC.1
MONITORING OF VESPUCCI BRIDGE IN FLORENCE, ITALY USING A FAST REAL APERTURE RADAR AND A MIMO RADAR
Massimiliano Pieraccini, Lapo Miccinesi, Neda Rojhani, University of Florence, Italy

TUP2.PC.2
Board PC.2
SMALL BASELINE SUBSET INTERFEROMETRIC SAR TECHNIQUE FOR SPATIOTEMPORAL ANALYSIS OF THE REGENT LANDSLIDES, SIERRA LEONE
Matthew Biniyam Kursah, Yong Wang, University of Electronic Science and Technology of China, China

TUP2.PC.3
Board PC.3
THE 'DIRECT' ALGORITHM FOR THE EFFICIENT ESTIMATION OF MEAN DEFORMATION VELOCITY WITH PSI
Gabriel Santana Brito, Muriel Pinheiro, Pau Prats, German Aerospace Center (DLR), Germany

TUP2.PC.4
Board PC.4
CONTINUOUS MONITORING THE GROUND DEFORMATION BY A STEP-BY-STEP ESTIMATOR IN MT-INSAR
Songbo Wu, Xiaoli Ding, Bochen Zhang, Hong Kong Polytechnic University, China

TUP2.PC.5
Board PC.5
COMPARISON OF VARIOUS DEMS FOR HEIGHT ACCURACY ASSESSMENT OVER DIFFERENT TERRAINS OF INDIA
Divya Sekhar Vaka, Vineet Kumar, Y. S. Rao, Indian Institute of Technology Bombay, India; Rinki Deo, TERI School of Advanced Studies, India

TUP2.PC.6
Board PC.6
STUDY ON POST-SEISMIC DEFORMATION OF TWO STRONG EARTHQUAKES OCCURRED IN NORTHERN TIBET PLATEAU
Chunyan Qu, Dezheng Zhao, Xinjian Shan, Xin Qiao, Institute of Geology, China Earthquake Administration, China

TUP2.PC.7
Board PC.7
ROAD SURFACE DEFORMATION ASSESSMENT OF CHENGDU, CHINA USING PS-INSAR TECHNIQUE AND SENTINEL-1 MULTI-TEMPORAL SAR DATASETS
Bao Zhu, Yong Wang, University of Electronic Science and Technology of China, China

TUP2.PC.8
Board PC.8
MONITORING THE STABILITY OF TIDE GAUGES USING TIME-SERIES INSAR ANALYSIS: A CASE STUDY IN POHANG, SOUTH KOREA
Suresh Krishnan Palanisamy Vadivel, Duk-Jin Kim, Seoul National University, Korea (South); Jungkyo Jung, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Sun-Gu Lee, Korea Aerospace Research Institute, Korea (South); Yang-Ki Cho, Seoul National University, Korea (South)

TUP2.PC.9
Board PC.9
TUNNELLING INDUCED GROUND MOVEMENTS DETECTED BY SENTINEL-1 SAR INTERFEROMETRY.
Matteo Roccheggiani, Daniela Piacentini, Emanuela Tirincanti, University of Urbino, Italy; Daniele Perissin, RASER Limited, China; Marco Menichetti, University of Urbino, Italy

TUP2.PC.10
Board PC.10
MOON-BASED SAR FOR MACRO-SCALE SOLID EARTH OBSERVATION: SYSTEM PARAMETERS ANALYSIS AND DESIGN
Dewei Li, Liming Jiang, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, China; Houjun Jiang, Nanjing University of Posts and Telecommunications, China; Jinglong Dong, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, China

TUESDAY POSTER

123

Tuesday, July 30	09:40 - 10:40 Room 501-502: Area D
Session TUP1.PD	Poster

Estimation and Retrieval of Land Parameters II

Session Chair: Claudia Notarnicola, EURAC

TUP1.PD.1
Board PD.1
POLARIMETRIC ALOS/PALSAR-2 DATA FOR RETRIEVING ABOVEGROUND BIOMASS OF SECONDARY FOREST IN THE BRAZILIAN AMAZON
Henrique Luis Godinho Cassol, Luiz E. de O. C. Aragão, Elisabete Caria Moraes, INPE, Brazil; João Manuel de Brito Carreiras, University of Sheffield, United Kingdom; Yosio Edemir Shimabukuro, INPE, Brazil

TUP1.PD.2
Board PD.2
USING RIDGE REGRESSION METHOD TO REDUCE ESTIMATION UNCERTAINTY IN CHLOROPHYLL MODELS BASED ON WORLDVIEW MULTISPECTRAL DATA
Chien-Yu Lin, University of Maryland, Baltimore County, United States; Chinsu Lin, National Chiayi University, Taiwan

TUP1.PD.3
Board PD.3
THE CONTRIBUTION OF THE NON-LOCAL MEANS TO THE ITERATIVE MMSE SAR DESPECKLING
Soumaya Fatnassi, Université of Gabès, Tunisia; Mohamed Yahia, Université Tunis El Manar, Tunisia; Riadh Abdelfattah, University of Carthage, IMT-Atlantique, Tunisia

TUP1.PD.4
Board PD.4
ESTIMATION OF LEAF AREA INDEX OF WINTER WHEAT BASED ON HYPERSPECTRAL DATA OF UNMANNED AERIAL VEHICLES
Riqiang Chen, Henan Polytechnic University, China; Haikuan Feng, Beijing Research Center for Information Technology in Agriculture, China; Fuqin Yang, Henan Institute of Engineering, China; Changchun Li, Henan Polytechnic University, China; Guijun Yang, Beijing Research Center for Information Technology in Agriculture, China; Haojie Pei, Henan Polytechnic University, China; Li Pan, Liaoning Technical University, China; Peng Chen, Henan Polytechnic University, China

TUP1.PD.5
Board PD.5
EVALUATION OF THE MUSYQ LAND SURFACE TEMPERATURE PRODUCT IN AN ARID AREA OF NORTHWEST CHINA
Hua Li, Ruibo Li, Zunjian Bian, Biao Cao, Yongming Du, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP1.PD.6
Board PD.6
HYPERSPECTRAL PLANT DISEASE FORECASTING USING GENERATIVE ADVERSARIAL NETWORKS
Alina Förster, Jens Behley, Jan Behmann, Ribana Roscher, University of Bonn, Germany

TUP1.PD.7
Board PD.7
VIIRS LST PRODUCT VALIDATION BASED ON SPATIAL REPRESENTATIVENESS EVALUATION OF THE GROUND MEASUREMENTS
Jin Ma, Ji Zhou, Xiaodong Zhang, Mingsong Li, Kaiwei Luo, Qihuang Huang, University of Electronic Science and Technology of China, China

TUP1.PD.8
Board PD.8
AN EFFECTIVE LEAF AREA INDEX ESTIMATION METHOD FOR WHEAT FROM UAV-BASED POINT CLOUD DATA
Yang Song, Jinfei Wang, University of Western Ontario, Canada; Bo Shan, A&L Canada Laboratories Inc, Canada

TUP1.PD.9
Board PD.9
APPLICATION OF FUZZY CLASSIFICATION THEORY IN THE INVERSION MODEL OF MASSON PINE DISEASE INDEX
Shuang Wang, University of Electronic Science and Technology of China, China; Xiao Chen, Tokyo Institute of Technology, Japan; Ying Zhang, University of Electronic Science and Technology of China, China

TUP1.PD.10
Board PD.10
REPEATED OBSERVATIONS WITH SHORT TIME INTERVALS FOR MEASURING TEMPERATURE DISTRIBUTION OF A VOLCANIC CRATER USING AN AIRBORNE IMAGING SPECTROMETER
Tetsuya Jitsufuchi, National Research Institute for Earth Science and Disaster Resilience, Japan

Tuesday, July 30	15:20 - 16:20 Room 501-502: Area D
Session TUP2.PD	Poster

Differential SAR Interferometry: Methods and Techniques III

Session Co-Chairs: Michael Eineder, German Aerospace Center (DLR); Howard Zebker, Stanford University

TUP2.PD.1
Board PD.1
MONITORING SPATIOTEMPORAL DEFORMATION OF TATUN VOLCANO GROUP BY MULTI-TEMPORAL INSAR
Hongyu Liang, Hong Kong Polytechnic University, China; Lei Zhang, University of Hong Kong, China; Xin Li, Chinese Academy of Sciences, China; Xiaoli Ding, Hong Kong Polytechnic University, China; Roufei Chen, Chinese Culture University, Taiwan; Bochen Zhang, Hong Kong Polytechnic University, China; Yanan Du, Guangzhou University, China; Hongyu Liu, Hong Kong Polytechnic University, China

TUP2.PD.2
Board PD.2
POTENTIAL USE OF POLARIMETRIC INFORMATION FOR TERRAIN MORPHOLOGICAL CHANGE DETECTION INCLUDING ATMOSPHERIC PHASE SCREEN COMPENSATION EFFECT IN GROUND-BASED DINSAR APPLICATION
Yuta Izumi, Tohoku University, Japan; Lilong Zou, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Kazutaka Kikuta, Motoyuki Sato, Tohoku University, Japan

TUP2.PD.3
Board PD.3
ANOMALOUS ATMOSPHERIC PHASE SCREEN COMPENSATION IN GROUND-BASED SAR OVER MOUNTAINOUS AREA
Yuta Izumi, Tohoku University, Japan; Lilong Zou, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Kazutaka Kikuta, Motoyuki Sato, Tohoku University, Japan

TUP2.PD.4
Board PD.4
EMPIRICAL CORRECTION OF TIDES AND INVERSE BAROMETER EFFECT PHASE COMPONENTS FROM DOUBLE DINSAR AND REGIONAL MODELS
Quentin Glaude, Université Libre de Bruxelles, Belgium; Sophie Berger, Alfred Wegener Institute for Polar and Marine Research, Belgium; Charles Amory, Université de Liège, Belgium; Frank Pattyn, Université Libre de Bruxelles, Belgium; Christian Barbier, Anne Orban, Université de Liège, Belgium

TUP2.PD.5
Board PD.5
LANDSLIDE DETECTION AND MONITORING FOR MOUTAINOUS AREAS OF SOUTHWEST CHINA USING TIME SERIES INSAR
Wei Duan, Chao Wang, Hong Zhang, Yixian Tang, Jing Wang, Chinese Academy of Sciences, China

TUP2.PD.6
Board PD.6
INSAR ERROR BUDGET FOR LARGE SCALE DEFORMATION
Francesco De Zan, Alessandro Parizzi, Fernando Rodriguez Gonzalez, Homa Ansari, Giorgio Gomba, Ramon Brcic, Michael Eineder, German Aerospace Center (DLR), Germany

TUP2.PD.7
Board PD.7
ADAPTING STAMPS FOR JOINTLY PROCESSING DISTRIBUTED SCATTERERS AND PERSISTENT SCATTERERS
Markus Even, karlsruhe Institute of Technology (KIT), Germany

TUP2.PD.8
Board PD.8
DETECTION OF 3D LAND DISPLACEMENT AFTER THE GREAT EAST JAPAN EARTHQUAKE IN 2011 FROM MULTI-TEMPORAL SAR IMAGES AND GPS DATA
Junichi Susaki, Hiroki Ito, Kyoto University, Japan; Takuma Anahara, Japan Aerospace Exploration Agency (JAXA), Japan

TUP2.PD.9
Board PD.9
ESTIMATING DIKE ELEVATION FROM MUTLI-TEMPORAL SAR IMAGES FOR EFFICIENT DIKE MANAGEMENT
Takaya Kusakabe, Junichi Susaki, Kyoto University, Japan; Takuma Anahara, Japan Aerospace Exploration Agency (JAXA), Japan

TUESDAY POSTER

Tuesday, July 30 09:40 - 10:40 Room 501-502: Area E	
Session TUP1.PE	**Poster**

Estimation and Retrieval of Land Parameters III

Session Co-Chairs: Geng-Ming Jiang, Fudan University; Mahdi Khodadadzadeh, Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

TUP1.PE.1
Board PE.1
ESTIMATING THE DISTRIBUTION OF HEAVY METALS IN SOIL FROM AIRBORNE HYPERSPECTRAL IMAGERY OVER JILIN GONGZHULING GOLD MINING AREA OF CHINA
Rongyuan Liu, Fuping Gan, Bokun Yan, Junchuan Yu, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources, China; Huazhong Ren, Institute of Remote Sensing and Geographic Information System, Peking University, China; Huiyun Yang, School of Earth Sciences and Resources, China University of Geosciences, China

TUP1.PE.2
Board PE.2
SELECTION OF PREDICTOR VARIABLES IN DOWNSCALING LAND SURFACE TEMPERATURE USING RANDOM FOREST ALGORITHM
Wan Li, Hua Wu, State Key Laboratory of Resources and Environment Information System, China; Si-Bo Duan, Key Laboratory of Agricultural Remote Sensing,Ministry of Agriculture/ Institute of Agricultural Resources and Regional Planning, China; Zhao-Liang Li, Key Laboratory of Agricultural Remote Sensing, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, China; Qingsheng Liu, State Key Laboratory of Resources and Environment Information System, China

TUP1.PE.3
Board PE.3
TEMPORAL NORMALIZATION OF LAND SURFACE TEMPERATURE DERIVED FROM AHI-8 MEASUREMENTS USING A DIURNAL TEMPERATURE CYCLE MODEL
Geng-Ming Jiang, Wen-Xia Li, Fudan University, China; Guicai Li, Chuan Li, National Satellite Meteorological Center, China Meteorological Administration, China

TUP1.PE.4
Board PE.4
A PHYSICAL METHOD FOR RETRIEVING MICROWAVE LAND SURFACE EMISSIVITY UNDER ALL-WEATHER CONDITIONS
Fang-Cheng Zhou, Shihao Tang, National Satellite Meteorological Center, China Meteorological Administration, China; Hua Wu, State Key Laboratory of Resources and Environment Information System, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Zhao-Liang Li, Key Laboratory of Agri-informatics, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China; Xiaoning Song, University of Chinese Academy of Sciences, China; Xiuzhen Han, Shengli Wu, National Satellite Meteorological Center, China Meteorological Administration, China

TUP1.PE.5
Board PE.5
IMPACT FACTORS OF DAYTIME VARIATION FOR BROADBAND LAND SURFACE EMISSIVITY OF CONCRETE ROAD
Hongmei Zhao, Jiangxi Normal university, China

TUP1.PE.6
Board PE.6
ESTIMATION OF SPATIALLY COMPLETE LAND SURFACE EVAPOTRANSPIRATION OVER THE HEIHE RIVER BASIN
Qian-Yu Liao, College of Geomatics and Geoinformation, Guilin University of Technology, China; Pei Leng, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China; Chao Ren, College of Geomatics and Geoinformation, Guilin University of Technology, China; Zhao-Liang Li, Si-Bo Duan, Mao-Fang Gao, Xiao-Jing Han, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China; Suchuang Di, Yajing Lu, Wanlai Xue, Beijing Water Science and Technology Institute, China

TUP1.PE.7
Board PE.7
HIGH TEMPORAL RESOLUTION LAND SURFACE TEMPERATURE RETRIEVAL FROM GLOBAL GEOSTATIONARY SATELLITE DATA
Ruibo Li, Geomatics College, Shandong University of Science and Technology, China; Hua Li, Zunjian Bian, Biao Cao, Yongming Du, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Lin Sun, Geomatics College, Shandong University of Science and Technology, China; Qinhuo Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP1.PE.8
Board PE.8
PREDICTION OF NITROGEN CONTENT IN APPLE LEAVES BASED ON CONTINUOUS WAVELET TRANSFORM
Mengke Miao, Henan Polytechnic University, China; Haikuan Feng, Beijing Research Center for Information Technology in Agriculture, China; Baoshan Wang, Changchun Li, Henan Polytechnic University, China; Guijun Yang, Beijing Research Center for Information Technology in Agriculture, China; Liting Zhai, Mingxing Liu, Zhichao Wu, Henan Polytechnic University, China

TUP1.PE.9
Board PE.9
UPSCALING HIGH-RESOLUTION MINERALOGICAL ANALYSES TO ESTIMATE MINERAL ABUNDANCES IN DRILL CORE HYPERSPECTRAL DATA
Mahdi Khodadadzadeh, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Germany

TUP1.PE.10
Board PE.10
A METHOD FOR ANGULAR NORMALIZATION OF LAND SURFACE TEMPERATURE PRODUCTS BASED ON COMPONENT TEMPERATURES AND FRACTIONAL VEGETATION COVER
Xiangyang Liu, Bo-Hui Tang, Hua Wu, Ronglin Tang, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Guofei Shang, Hebei GEO University, China

Tuesday, July 30 15:20 - 16:20 Room 501-502: Area E	
Session TUP2.PE	**Poster**

Differential SAR Interferometry: Methods and Techniques IV

Session Co-Chairs: Muriel Aline Pinheiro, German Aerospace Center (DLR); Giorgio Gomba, German Aerospace Center (DLR)

TUP2.PE.1
Board PE.1
MONITORING SURFACE DEFORMATION OF TRANSMISSION CORRIDORS IN MOUNTAIN AREAS BASED ON SBAS-INSAR
Hui Luo, State Grid Sichuang Electric Power Company, China; Ligang Zuo, Yan Chen, Yunping Chen, Jing Chen, School of Automation Engineering, University of Electronic Science and Technology of China, China

TUP2.PE.2
Board PE.2
LAND SUBSIDENCE IN BEIJING FROM 2017-2018 REVEALED BY SENTINEL-1 TOPS TIME SERIES INTERFEROMETRY
Peilian Ran, Keren Dai, Chengdu University of Technology, China; Leyin Hu, Beijing Earthquake Agency, China; Tengteng Qu, Peking University, China; Jisong Gou, Guanchen Zhuo, Chengdu University of Technology, China

TUP2.PE.3
Board PE.3
EXPLOITATION OF BURST OVERLAPPING AREAS OF TOPS DATA. APPLICATION TO SENTINEL-1
Nestor Yague-Martinez, Pau Prats-Iraola, Muriel Pinheiro, Marc Jaeger, German Aerospace Center (DLR), Germany

TUP2.PE.4
Board PE.4
ASSESSMENT OF SENTINEL-1 PRODUCTS FOR REVEALING GLACIER SURFACE MOVEMENT IN INDIAN HIMALAYAS USING DIFFERENTIAL SAR INTERFEROMETRY
Anirudha Mahagaonkar, Praveen K. Thakur, Indian Institute of Remote Sensing, India; Ling Chang, University of Twente, Faculty of Geo-Information Science and Earth Observation (ITC), Netherlands

TUP2.PE.5
Board PE.5
INVESTIGATING THE DEFORMATION HISTORY AND FAILURE MECHANISM OF HEIFANGTAI LOESS LANDSLIDE, CHINA WITH MULTI-SOURCE SAR DATA
Xiaojie Liu, Chaoying Zhao, Qin Zhang, Chang'an University, China; Zhong Lu, Southern Methodist University, United States; Fuchu Dai, Beijing University of Technology, China

TUP2.PE.6
Board PE.6
A SQUEESAR DATABASE OVER THE ENTIRE JAPANESE TERRITORY
Alessandro Ferretti, Fabrizio Novali, Chiara Giannico, Andrea Uttini, Iolanda Iannicella, Tre Altamira, Italy; Toshimi Mizuno, OYO Corporation, Japan

TUP2.PE.7
Board PE.7
ESTIMATION OF IONOSPHERIC EFFECTS ON SPACEBORNE TWINSAR-L SAR INTERFEROGRAMS
Yun Sui, Haiyang Fu, Feng Xu, Fudan University, China; Robert Wang, Chinese Academy of Sciences, China; Ya-Qiu Jin, Fudan University, China

TUP2.PE.8
Board PE.8
DECTECTION OF SEASONAL DEFORMATION ON OVERPASSES IN BEIJING URBAN AREA USING PS-INSAR TECHNIQUE
Mingyuan Lyu, Yinghai Ke, Xiaojuan Li, Huili Gong, Lin Zhu, Capital Normal University, China

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area F
Session TUP1.PF		Poster

Estimation of Atmosphere and Radiation Parameters

Session Chair: Tao He, Wuhan University

TUP1.PF.1
Board PF.1
CARBON DIOXIDE EMISSIONS STIMULATION AND ANALYSIS BASED ON CITY INDUSTRIAL STRUCTURE AND DMSP-OLS NIGHTTIME LIGHT DATA
Shuyi Li, Liang Cheng, Nanjing University, China

TUP1.PF.2
Board PF.2
ESTIMATING MONTHLY-MEAN SOLAR RADIATION BASED ON ARTIFICIAL NEURAL NETWORK
Jiaojiao Feng, Weizhen Wang, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China; Jing Li, Northwest Normal University, China

TUP1.PF.3
Board PF.3
A LUT-BASED METHOD TO ESTIMATE CLEAR-SKY INSTANTANEOUS LAND SURFACE SHORTWAVE DOWNWARD RADIATION AND ITS DIRECT COMPONENT FROM MODIS DATA
Yuechi Yu, Tianxing Wang, Jiancheng Shi, Wang Zhou, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP1.PF.4
Board PF.4
THE GLASS DAILY SURFACE NET RADIATION PRODUCT
Bo Jiang, Beijing Normal University, China; Shunlin Liang, University of Maryland, United States; Jianglei Xu, Beijing Normal University, China

TUP1.PF.5
Board PF.5
SURFACE SHORTWAVE NET RADIATION ESTIMATION FROM LANDSAT DATA
Yezhe Wang, Bo Jiang, Jianglei Xu, Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University, China

TUP1.PF.6
Board PF.6
A COMPREHENSIVE ASSESSMENT OF MODIS-DERIVED INSTANTANEOUS NET SURFACE SHORTWAVE RADIATION USING THE IN-SITU FLUXNET DATABASE
Wangmin Ying, Ruibo Wang, Lu Niu, Hua Wu, State Key Laboratory of Resources and Environment Information System, China

TUP1.PF.7
Board PF.7
AN IN-SCENE ATMOSPHERIC COMPENSATION ALGORITHM FOR ASTER THERMAL BAND
Mengshuo Chen, Xiaoguang Jiang, Hua Wu, Ning Wang, Ronglin Tang, University of Chinese Academy of Sciences, China

TUP1.PF.8
Board PF.8
UV RADIATION ESTIMATION IN THE UNITED STATES USING MODIS DATA
Congyuan Pei, Tao He, Wuhan University, China

TUP1.PF.9
Board PF.9
CLOUDY-SKY LAND SURFACE LONGWAVE UPWARD RADIATION DERIVATION FROM SATELLITE MEASUREMENTS
Tianxing Wang, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Ya Ma, Chinese Academy for Environmental Planning, China; Jiancheng Shi, Aerospace Information Research Institute, Chinese Academy of Sciences, China

TUP1.PF.10
Board PF.10
RECONSTRUCTION OF DAILY EVAPOTRANSPIRATION ON CLOUDY SKY CONDITIONS FROM FIELD AND MODIS DATA
Yazhen Jiang, Xiaoguang Jiang, University of Chinese Academy of Sciences, China; Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Zhao-Liang Li, Xiaoping Zhang, University of Chinese Academy of Sciences, China; Suchuang Di, Yajing Lu, Wanlai Xue, Beijing Water Science and Technology Institute, China

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area F
Session TUP2.PF		Poster

Differential SAR Interferometry: Applications I

Session Co-Chairs: Gianfranco Fornaro, CNR-IREA; Othmar Frey, ETH

TUP2.PF.1
Board PF.1
STUDY ON GROUNDWATER AND DEFORMATION TIME SERIES FROM ASAR AND TERRASAR-X USING SHORT BASELINE TCPINSAR AND IN-SITU MEASUREMENTS IN SHANGHAI
Yanling Chen, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; Jicang Wu, Tongji University, China

TUP2.PF.2
Board PF.2
MONITORING OF URBAN LANDSLIDES WITH VERY HIGH RESOLUTION DATA: THE CASE STUDY OF LATRONICO
Gianfranco Fornaro, Diego Reale, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Caterina Di Maio, University of Basilicata, Italy; Dario Gioia, IBAM-CNR, Italy; Marcello Schiattarella, Roberto Vassallo, University of Basilicata, Italy

TUP2.PF.3
Board PF.3
MONITORING OF GROUND DISPLACEMENT IN GERMANO IRON MINING COMPLEX, MARIANA-MG, BRAZIL, WITH A-DINSAR TECHNIQUES USING TERRASAR-X DATA.
Jose Claudio Mura, Fabio Furlan Gama, Waldir Renato Paradella, National Institute for Space Research (INPE), Brazil; Cleber Gonzales Oliveira, VISIONA Tecnologia Espacial, Brazil; Samuel Carneiro, SAMARCO Mineração S.A., Brazil

TUP2.PF.4
Board PF.4
MONITORING LAND SUBSIDENCE IN GUATEMALA CITY USING TIME-SERIES INTERFEROMETRY
Young Cheol Kim, Duk-jin Kim, Seoul National University, Korea (South); Jungkyo Jung, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TUP2.PF.5
Board PF.5
MAPPING COASTAL SUBSIDENCE OVER HANGZHOU BAY USING ADVANCED MULTI-TEMPORAL INSAR TECHNIQUE WITH DISTRIBUTED SCATTERER
Qishi Sun, Liming Jiang, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, China

TUP2.PF.6
Board PF.6
STRUCTURAL HEALTH AND STABILITY ASSESSMENT OF QINGHAI–TIBET POWER TRANSMISSION LINE WITH TIME-SERIES INSAR USING X-BAND TERRASAR DATA
Zhengjia Zhang, Peng Fan, Xiuguo Liu, Mengmeng Wang, Chao Wang, Hong Zhang, Faculty of Information Engineering, China University of Geosciences, China

TUP2.PF.7
Board PF.7
URBAN HAZARDS MANAGEMENT USING SENTINEL-1 DATA, APPLICATION TO ALEXANDRIA CITY, EGYPT
Tamer ElGharbawi, Suez Canal University, Egypt

TUP2.PF.8
Board PF.8
INCREASING INSAR COVERAGE IN VEGETATED AND ROUGH TERRAIN USING TEMPORAL STABLE PIXELS
Tamer ElGharbawi, Suez Canal University, Egypt; Masayuki Tamura, Kyoto University, Japan

TUP2.PF.9
Board PF.9
ESTIMATION OF GROUND DEFORMATION USING PSINSAR WITH L-BAND ALOS PALSAR DATA: A CASE STUDY OF KOLKATA, INDIA
Kousik Biswas, Debashish Chakravarty, Pabitra Mitra, Indian Institute of Technology Kharagpur, India; Arundhati Misra, Indian Space Research Organisation, India

TUP2.PF.10
Board PF.10
SPATIO-TEMPORAL SUBSIDENCE ESTIMATION OF JHARIA COAL FIELD, INDIA USING SBAS-DINSAR WITH COSMO-SKYMED DATA
Tapas Kumar Dey, Kousik Biswas, Debashish Chakravarty, Indian Institute of Technology, Kharagpur, India; Arundhati Misra, Indian Space Research Organisation, India; Biswajit Samanta, Indian Institute of Technology, Kharagpur, India

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40 Room 501-502: Area G
Session TUP1.PG	**Poster**

Signal Estimation Techniques II

Session Co-Chairs: Andrea Marinoni, University of Tromsø; Mihai Datcu, German Aerospace Center (DLR)

TUP1.PG.1
Board PG.1
IMPROVING MODELS OF URBAN GREEN VOLUME ESTIMATION USING LIDAR DATA
Qiuping Zhai, Linyi university, China; Tianyu Hu, Yanjun Su, Shichao Jin, Shang Gao, Qinghua Guo, Chinese Academy of Sciences, China

TUP1.PG.2
Board PG.2
URBAN AREA IMPERVIOUS SURFACE ESTIMATION BY SUBPIXEL UNMIXING
Bai Xue, University of Maryland, Baltimore County, United States; Shuhan Chen, Zhejiang University, China; Chia-Chen Liang, University of Maryland, Baltimore County, United States; Shengwei Zhong, Harbin Institute of Technology, China; Peter Hu, University of Maryland School of Medicine, United States; Chein-I Chang, University of Maryland, Baltimore County, United States

TUP1.PG.3
Board PG.3
RECONSTRUCTION OF 3D ZEBRA CROSSINGS FROM MOBILE LASER SCANNING POINT CLOUDS
Hongbin Zeng, Yiping Chen, Zongliang Zhang, Cheng Wang, Jonathan Li, Fujian Key Laboratory of Sensing and Computing for Smart Cities, Xiamen University, China

TUP1.PG.4
Board PG.4
SUBPIXEL URBAN MAPPING OVER THE CONTERMINOUS U.S. (CONUS) USING S-NPP VIIRS
Huiran Jin, New Jersey Institute of Technology, United States

TUP1.PG.5
Board PG.5
DEEP DESPECKLING OF SAR IMAGES
Dušan Gleich, Danijel Šipoš, University of Maribor, Slovenia

TUP1.PG.6
Board PG.6
SELF-NORMALIZING GENERATIVE ADVERSARIAL NETWORK FOR SUPER-RESOLUTION RECONSTRUCTION OF SAR IMAGES
Ce Zheng, Xue Jiang, Ye Zhang, Xingzhao Liu, Bin Yuan, Shanghai Jiao Tong University, China; Zhixin Li, Beijing Institute of Remote Sensing Information, China

TUP1.PG.7
Board PG.7
RAPID IDENTIFICATION OF EVAPOTRANSPIRATION FEATURES USING NORMALIZED DIFFERENCE LATENT HEAT INDEX (NDLI)
Yuei-An Liou, Le Mai Son, National Central University, Taiwan

TUP1.PG.8
Board PG.8
TWO STAGE ESTIMATION PROCEDURE FOR SPATIAL REGRESSION MODELS AND MODEL SELECTION
Shojiro Tanaka, Hiroshima University of Economics, Japan; Ryuei Nishii, Nagasaki University, Japan; Gigih Fitrianto, Hiroshima University of Economics, Japan

TUP1.PG.9
Board PG.9
SPARSE LAYER INVERSION USING LINEAR PROGRAMMING APPROACH
Patitapaban Palo, Sanket Smarak Panda, Rakesh Mandal, Aurobinda Routray, IIT Kharagpur, India

TUP1.PG.10
Board PG.10
ERROR ANALYSIS ON NMF2 PREDICTED BY IRI-2016 MODEL DURING GEOMAGNETIC QUIET AND STORM PERIODS
Weihua Bai, Guangyuan Tan, Yueqiang Sun, Qifei Du, Junming Xia, National Space Science Center, Chinese Academy of Sciences, China

TUP1.PG.11
Board PG.11
AN OPTRONIC PROCESSOR FOR ULTRA-WIDEBAND SPECTRUM AWARENESS
Jiaqi Wu, Yesheng Gao, Bin Yuan, Xingzhao Liu, Shanghai Jiao Tong University, China

Tuesday, July 30	15:20 - 16:20 Room 501-502: Area G
Session TUP2.PG	**Poster**

Unmixing Techniques for Hyperspectral Images II

Session Chair: Yannick Deville, Institut de Recherche en Astrophysique et Planetologie (IRAP), Toulouse

TUP2.PG.1
Board PG.1
MULTI-TASK LEARNING WITH LOW-RANK MATRIX FACTORIZATION FOR HYPERSPECTRAL NONLINEAR UNMIXING
Yuanchao Su, Jun Li, Sun Yat-Sen University, China; Hairong Qi, University of Tennessee, United States; Paolo Gamba, University of Pavia, Italy; Antonio Plaza, Javier Plaza, University of Extremadura, Spain

TUP2.PG.2
Board PG.2
ENDMEMBER BUNDLE EXTRACTION BASED ON PURE PIXEL INDEX AND SUPERPIXEL SEGMENTATION
Ziqiang Hua, Xiaorun Li, Zhejiang University, China; Liaoying Zhao, HangZhou Dianzi University, China

TUP2.PG.3
Board PG.3
TWO-DIMENSIONAL ROBUST NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL UNMIXING
Risheng Huang, Zhejiang University, China; Haiqiang Lu, Jiaxing Hengchuang Power Equipment Co., Ltd, China; Xiaorun Li, Zhejiang University, China; Liaoying Zhao, Hangzhou Dianzi University, China

TUP2.PG.4
Board PG.4
HYPERSPECTRAL UNMIXING BASED ON SPARSITY-CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION WITH ADAPTIVE TOTAL VARIATION
Xin-Ru Feng, Heng-Chao Li, Rui Wang, Southwest Jiaotong University, China

TUP2.PG.5
Board PG.5
HYPERSPECTRAL UNMIXING VIA L1/4 SPARSITY-CONSTRAINED MULTILAYER NMF
Zihan Zhang, Qi Wang, Yuan Yuan, Northwestern Polytechnical University, China

TUP2.PG.6
Board PG.6
HYPERSPECTRAL UNMIXING USING WEIGHTED L1/2 SPARSE TOTAL VARIATION REGULARIZED AND VOLUME PRIOR CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION
Kewen Qu, Wenxing Bao, North Minzu University / Hefei University of Technology, China; Xiangfei Shen, North Minzu University, China

TUP2.PG.7
Board PG.7
DEEP UNFOLDED ITERATIVE SHRINKAGE-THRESHOLDING MODEL FOR HYPERSPECTRAL UNMIXING
Qipeng Qian, Shanghai Jiao Tong University, China; Fengchao Xiong, Zhejiang University, China; Jun Zhou, Griffith University, Australia

TUP2.PG.8
Board PG.8
SUPERPIXEL-GUIDED SPARSE UNMIXING FOR REMOTELY SENSED HYPERSPECTRAL IMAGERY
Shaoquan Zhang, Chengzhi Deng, Nanchang Institute of Technology, China; Jun Li, Sun Yat-Sen University, China; Shengqian Wang, Fan Li, Chenguang Xu, Nanchang Institute of Technology, China; Antonio Plaza, University of Extremadura, Spain

TUP2.PG.9
Board PG.9
A NOVEL APPROACH FOR ABUNDANCE ESTIMATION IN WAVELET DOMAIN
Vijayashekhar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodara, India

TUESDAY POSTER

127

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area H
Session TUP1.PH		**Poster**

Esitmation Methods for Hyperspectral and Multispectral Data

Session Co-Chairs: Shutao Li, Hunan University; Stefania Matteoli, National Council of Research (CNR)

TUP1.PH.1
Board PH.1
NON-CONVEX RELAXATION LOW-RANK TENSOR COMPLETION FOR HYPERSPECTRAL IMAGE RECOVERY
Hanyang Li, Hongyi Liu, Jun Zhang, Zebin Wu, Zhihui Wei, Nanjing University of Science and Technology, China

TUP1.PH.2
Board PH.2
CONSTRAINED LOW-TUBAL-RANK TENSOR RECOVERY FOR HYPERSPECTRAL IMAGES MIXED NOISE REMOVAL BY BILATERAL RANDOM PROJECTIONS
Hao Zhang, Xi-Le Zhao, Tai-Xiang Jiang, University of Electronic Science and Technology of China, China; Michael Kwok-Po Ng, Hong Kong Baptist University, China

TUP1.PH.3
Board PH.3
SYNERGISTIC INVERSION OF RICE FPAR BASED ON OPTICAL AND RADAR REMOTE SENSING DATA
Yu Zhang, Shihua Li, Ze He, Yuhan Liu, Zhonghua Su, University of Electronic Science and Technology of China, China

TUP1.PH.4
Board PH.4
RETRIEVAL OF LEAF NITROGEN CONCENTRATION IN WINTER WHEAT USING RED EDGE BAND AND ARTIFICIAL NEURAL NETWORK
Tianyuan Zhang, Qiming Qin, Juan Sui, Yao Zhang, Cong Zhao, Peking University, China

TUP1.PH.5
Board PH.5
DECS-NET: CONVOLUTIONAL SELF-ENCODING NETWORK FOR HYPERSPECTRAL IMAGE DENOISING
Xiao Liu, Shaohui Mei, Northwestern Polytechnical University, China; Zhi Zhang, Zhongyuan Research Institute of Electronics Technology, China; Yifan Zhang, Jingyu Ji, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, China

TUP1.PH.6
Board PH.6
RETREVAL OF SOLAR-INDUCED CHLOROHYLL FLUORESENCE WITH PRINCIPAL COMPONENT ANANLYSIS METHOD
Menghao Ji, Bo-Hui Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

TUP1.PH.7
Board PH.7
A CNN BASED CLOUD REMOVAL MODEL USING MULTI-TEMPORAL REMOTE SENSING IMAGES
Peiyu Dai, Shiqing Wei, Shunping Ji, Whuhan University, China

TUP1.PH.8
Board PH.8
HYPERSPECTRAL COMPRESSIVE SENSING VIA SPATIAL-SPECTRAL TOTAL VARIATION REGULARIZED LOW-RANK TENSOR DECOMPOSITION
Ting Xie, Shutao Li, Bin Sun, Hunan University, China

TUP1.PH.9
Board PH.9
NONLINEAR RELATIVE RADIOMETRIC NORMALIZATION FOR LANDSAT 7 AND LANDSAT 8 IMAGERY
Lino Garda Denaro, Chao-Hung Lin, National Cheng Kung University, Taiwan

TUP1.PH.10
Board PH.10
TOTAL VARIATION REGULARIZED LOW-RANK SPARSITY DECOMPOSITION FOR BLIND CLOUD AND CLOUD SHADOW REMOVAL FROM MULTITEMPORAL IMAGERY
Yong Chen, School of Mathematical Sciences, University of Electronic Science and Technology of China, China; Wei He, Naoto Yokoya, RIKEN Center for Advanced Intelligence Project (AIP), China; Ting-Zhu Huang, School of Mathematical Sciences, University of Electronic Science and Technology of China, China

TUP1.PH.11
Board PH.11
THIN CLOUD REMOVAL WITH RESIDUAL SYMMETRICAL CONCATENATION NETWORK
Wenbo Li, School of Computer Science, Northwest Polytechnical University, China / Department of Electronics and Informatics, Vrije Universiteit Brussel, Belgium; Ying Li, Di Chen, School of Computer Science, Northwest Polytechnical University, China; Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

TUP1.PH.12
Board PH.12
ESTIMATION OF NET SURFACE SHORTWAVE RADIATION FROM SIMULATED CHINESE GAOFEN-5 SATELLITE DATA
Menglin Si, Bo-Hui Tang, Ronglin Tang, Hua Wu, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Guofei Shang, Hebei GEO University, China

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area H
Session TUP2.PH		**Poster**

Target Detection and Tracking

Session Chair: Mario Parente, University of Massachusetts

TUP2.PH.1
Board PH.1
AN IMPROVED MOVING TARGET DETECTION METHOD BASED ON RPCA FOR SAR SYSTEMS
Yifan Guo, Guisheng Liao, Jun Li, Tong Gu, Xidian University, China

TUP2.PH.2
Board PH.2
UAV TARGET DETECTION ALGORITHM USING GNSS-BASED BISTATIC RADAR
Hong-Cheng Zeng, Beihang University, China; Hao-Jie Zhang, Beijing Institute of Electronic System Engineering, China; Jie Chen, Wei Yang, Beihang University, China

TUP2.PH.3
Board PH.3
HYDROMETEOR MODEL ENHANCEMENT FOR DOPPLER POLARIMETRIC METHOD OF ATMOSPHERIC HAZARDS DETECTION
Felix Yanovsky, Anna Rudiakova, Yuliya Averyanova, National Aviation University, Ukraine

TUP2.PH.4
Board PH.4
MULTISTATIC BEIDOU-BASED PASSIVE RADAR FOR MARITIME MOVING TARGET DETECTION AND LOCALIZATION
Chuan Huang, Zhongyu Li, Junjie Wu, Yulin Huang, Haiguang Yang, Jianyu Yang, University of Electronic Science and Technology of China, China

TUP2.PH.5
Board PH.5
A NOVEL METHOD OF MITIGATING THE MUTUAL INTERFERENCE BETWEEN MULTIPLE LFMCW RADARS FOR AUTOMOTIVE APPLICATIONS
Zhihuo Xu, Quan Shi, Jiajia Shi, Han Wang, Ming Wei, Ruifeng Gao, Yeqin Shao, Huairen Tao, Nantong University, China

TUP2.PH.6
Board PH.6
TRACKING OF MOVING TARGET BASED ON CFWCR IN VIDEO SAR SYSTEM
Gaopeng Li, Harbin Institute of Technology, China; Zhenhua Xu, Hong Kong University of Science and Technology, China; Zihan Liang, Yun Zhang, Harbin Institute of Technology, China

TUP2.PH.7
Board PH.7
COMPARISON OF TARGET DETECTION PERFORMANCE FOR RADIANCE AND REFLECTANCE DOMAIN IN VNIR HYPERSPECTRAL IMAGES
Omer Ozdil, Ahmet Gunes, Yunus Emre Esin, Berkan Demirel, Safak Ozturk, HAVELSAN Inc., Turkey

TUP2.PH.8
Board PH.8
IMPACT OF ATMOSPHERIC CORRECTION ON THE SHIP DETECTION USING AIRBORNE HYPERSPECTRAL IMAGE
Tae-Sung Kim, Sangwoo Oh, Tae Byung Chun, Moonjin Lee, Korea Research Institute of Ships & Ocean Engineering (KRISO), Korea (South)

TUP2.PH.9
Board PH.9
SHIP DETECTION FOR POLARIMETRIC SAR IMAGES VIA GRAPH-BASED SPARSE MANIFOLD RANKING
Huiping Lin, Hongmiao Wang, Hang Chen, Tsinghua University, China; Junjun Yin, University of Science and Technology Beijing, China; Jian Yang, Tsinghua University, China

TUP2.PH.10
Board PH.10
MULTI-TARGETS TRACKING IN MARITIME SEARCH USING IMPROVED DYNAMIC PROGRAMMING
Qian Zhang, Yulin Huang, Yongchao Zhang, Jifang Pei, Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China, China

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area I
Session TUP1.PI		**Poster**

Remote Sensing of Leaf Area Index and Clunping

Session Chair: José Marcato Junior, Federal University of Mato Grosso do Sul

TUP1.PI.1
Board PI.1
TOPOGRAPHIC EFFECTS ON LEAF AREA INDEX RETRIEVAL BY REMOTE SENSING APPROACH
Wentao Yu, Jing Li, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP1.PI.2
Board PI.2
IMAGE SEGMENTATION AND CLASSIFICATION WITH SLIC SUPERPIXEL AND CONVOLUTIONAL NEURAL NETWORK IN FOREST CONTEXT
José Martins, José Marcato Junior, Federal University of Mato Grosso do Sul, Brazil; Geazy Menezes, Hemerson Pistori, Diego Sant´Ana, Dom Bosco Catholic University, Brazil; Wesley Gonçalves, Federal University of Mato Grosso do Sul, Brazil

TUP1.PI.3
Board PI.3
PATH LENGTH CORRECTION FOR IMPROVING LEAF AREA INDEX MEASUREMENTS OVER SLOPING TERRAINS
Gaofei Yin, Southwest Jiaotong University, China

TUP1.PI.4
Board PI.4
A METHOD FOR ESTIMATING LEAF AREA INDEX FROM LANDSAT DATA BASED ON DART MODEL AND GAUSSIAN PROCESS
Nan Liu, Zhiqiang Xiao, Hanyu Shi, Xuchen Zhan, Beijing Normal University, China

TUP1.PI.5
Board PI.5
MULTI SCALE LAI ESTIMATION BASED ON MULTIRESOLUTION TREE MODEL
Changjing Wang, Hongmin Zhou, Guodong Zhang, State Key Laboratory of Remote Sensing Science, Beijing Engineering Research Center for Global Land Remote Sensing Products, Faculty of Geographical Science, China; Huazhu Xue, School of Surveying & Land Information Engineering, Henan Polytechnic University, China; Jindi Wang, State Key Laboratory of Remote Sensing Science, Beijing Engineering Research Center for Global Land Remote Sensing Products, Faculty of Geographical Science, China; Ni Hu, Patent Examinaton Cooperation Center of Sipo, China

TUP1.PI.6
Board PI.6
EVALUATION AND VALIDATION OF THE MODIS LAI ALGORITHM WITH DIGITAL HEMISPHERICAL PHOTOGRAPHY AT BHITAR KANIKA MANGROVE FOREST, INDIA
Somnath Paramanik, Mukund Dev Behera, IIT Kharagpur, India; Bimal Kumar Bhattacharya, SAC ISRO Ahmedabad, India; Sandeep Tripathi, Principal Chief Conservator of Forest and Wildlife, Odisha, India

TUP1.PI.8
Board PI.8
ESTIMATING EFFECTIVE LEAF AREA INDEX USING LI-STRAHLER GEOMETRIC-OPTICAL MODEL, LANDSAT 7 ETM+, AND AIRBORNE LIDAR IN THE GREATER KHINGAN MOUNTAINS OF CHINA
Chengyan Gu, Planning and Design Institute of Forestry Product Industry, National Forestry and Grassland Administration, China; Chongyang Wang, Xin Tian, Zengyuan Li, Shanshan Sun, Zhihai Gao, Institute of Forest Resource Information Techniques, Chinese Academy of Forestry, China

TUP1.PI.9
Board PI.9
RETRIEVING LEAF CHLOROPHYLL CONTENT BY CONSIDERING LEAF SURFACE VARIATION IN THE PROSPECT MODEL
Feng Qiu, Nanjing University, China

TUP1.PI.10
Board PI.10
MODELING LANDSAT CLUMPING INDEX BASING ON MODIS AND FIELD DATA: A MACHINE LEARNING APPROACH
Siyang Yin, Ziti Jiao, Yadong Dong, Lei Cui, Anxin Ding, Xiaoning Zhang, Yaxuan Chang, Rui Xie, Jing Guo, Beijing Normal University, China

TUP1.PI.11
Board PI.11
A SOFTWARE TOOL FOR RETRIEVING THE CLUMPING INDEX PRODUCT FROM THE MODIS PRODUCTS
Yadong Dong, Ziti Jiao, Beijing Normal University, China; Hu Zhang, Tianjin Normal University, China; Xiaoning Zhang, Lei Cui, Siyang Yin, Anxin Ding, Yaxuan Chang, Rui Xie, Jing Guo, Beijing Normal University, China

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area I
Session TUP2.PI		**Poster**

Target Detection I

Session Chair: Xiaoyan Luo, Beihang University

TUP2.PI.1
Board PI.1
QUALITY INSPECTION OF PHALAENOPSIS HYBRIDS USING HYPERSPECTRAL BAND SELECTION TECHNIQUES
Yen-Chieh Ouyang, Bo-Han Chen, Meng-Chueh Lee, National Chung Hsing University, Taiwan; Tsang-Sen Liu, Taiwan Agriculture Research Institute, Taiwan; Mang Ou-Yang, National Chiao Tung University, Taiwan; Hsian-Min Chen, Taichung Veterans General Hospital, Taiwan; Chao-Cheng Wu, National Taipei University of Technology, Taiwan; Chia-Hsien Wen, Providence University, Taiwan; Horng Yuh Guo, Taiwan Agriculture Research Institute, Taiwan; Min-Shao Shih, National Chung Hsing University, Taiwan; Chein-I Chang, University of Maryland, Baltimore County, United States; Yung-Jhe Yan, National Chiao Tung University, Taiwan

TUP2.PI.2
Board PI.2
LOOK FOR SALIENCY IN HYPERSPECTRAL IMAGES
Zhiqi Shen, Xiaoyan Luo, Rui Xue, Beihang University, China; Hongyan Wang, Xi'an Satellite Control Center, China

TUP2.PI.3
Board PI.3
HYPERSPECTRAL IMAGE TARGET DETECTION BY WEIGHTED JOINT NEAREST NEIGHBOR AND SPARSE REPRESENTATION
Xianfeng Ou, Yiming Zhang, Pengcheng Yan, Jianhui Wu, Bing Tu, Hunan Institute of Science and Technology, China

TUP2.PI.4
Board PI.4
PEDESTRIAN DETECTION BASED ON INFRARED IMAGING THROUGH GRAY TRANSFORMATION AND DEEP LEARNING
Zhenyu Lu, Juntao Chen, Ji Zhou, Jirong Zhang, Lingxuan Meng, Jin Ma, Ruochen Liang, University of Electronic Science and Technology of China, China

TUP2.PI.5
Board PI.5
RECONSIDERATION OF THE DECOMPOSITION ALGORITHMS FOR QUAD-POL SAR DATA
Yong Wang, Dingfeng Duan, University of Electronic Science and Technology of China, China; Hong Li, East Carolina University, United States

TUP2.PI.6
Board PI.6
GLRT DETECTORS FOR AIRBORNE RADAR BASED ON KNOWLEDGE-AIDED AND COMPRESSIVE SENSING
Zhihang Wang, Zishu He, Qin He, Guohao Sun, Fengde Jia, University of Electronic Science and Technology of China, China

TUP2.PI.7
Board PI.7
THE EFFECTS ON CONTINUUM REMOVED BAND DEPTH BY VEGETATION COVER BASED ON PROSAIL MODEL
Lei Chen, Yixuan Xu, Da Qian, Ruorou Wang, Hu Zhang, Yi Lian, Tianjin Normal University, China

TUP2.PI.8
Board PI.8
MULTICHANNEL-TWO PULSE CANCELLATION METHOD BASED ON NLCS IMAGING FOR BISTATIC FORWARD-LOOKING SAR
Shanchuan Li, Zhongyu Li, Zhutian Liu, Haiguang Yang, Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China, China

TUP2.PI.9
Board PI.9
TARGET AND AMBIGUITY DISCRIMINATION USING DOPPLER SPECTRUM FROM LOW PRF SAR IMAGE
Hiroaki Fujihara, Yumiko Katayama, Noboru Oishi, Yuya Yokota, Masanobu Shibata, Akira Karasawa, Makoto Matsuki, Shohei Nakamura, Mitsubishi Electric Corporation, Japan

TUP2.PI.10
Board PI.10
ACHIEVING TARGET IDENTIFICATION FOR THE MMW SEEKER BASED ON SCANNING MATCHING AND BEAM POINTING
Fugang Lu, Shichao Chen, Junsheng Liu, Xi'an Modern Control Technology Research Institute, China; Ming Liu, Shaanxi Normal University, China

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area J
Session TUP1.PJ		**Poster**

Monitoring Temporal Variability of Vegetation

Session Chair: Alan Woodley, Queensland University of Technology

TUP1.PJ.1
Board PJ.1

HIGH RESOLUTION CHANGE DETECTION USING PLANET MOSAIC
Alan Woodley, Connor McLaughlin, Holly Hutson, Shlomo Geva, Timothy Chappell, Wayne Kelly, Dimitri Perrin, Wageeh Boles, Lance De Vine, Queensland University of Technology, Australia

TUP1.PJ.2
Board PJ.2

FOREST LOSS SIMULATION AND WATER YIELD ASSESSMENT BASED ON GEOSOS-FLUS MODEL: A CASE STUDY OF YANGTZE RIVER DELTA AND PEARL RIVER DELTA
Meng Luo, Xia Li, East China Normal University, China

TUP1.PJ.3
Board PJ.3

PIXELWISE TIME SERIES RETRIEVAL IN PHENOLOGICAL STUDIES
Elisangela Santos, University of Campinas, Brazil; Bruna Alberton, Leonor Morellato, UNESP, Brazil; Ricardo Torres, University of Campinas, Brazil

TUP1.PJ.4
Board PJ.4

AUTOMATIC DEFORESTATION DETECTION METHODOLOGY USING SENTINEL-1
Christian Vargas, Universidad Nacional Federico Villareal, Peru; Takuya Itoh, Remote Sensing Technology Center of Japan, Japan; Shinichiro Tsuji, Nippon Koei Co., Ltd., Japan; Takahiro Koide, Kokusai Kogyo Co., Ltd., Japan; Kazuyo Hirose, Japan Space Systems, Japan; Hiroaki Okonogi, Japan International Cooperation Agency, Japan

TUP1.PJ.5
Board PJ.5

HOT SPOTS OCCURRENCE IN THE DYNAMICS OF DEFORESTATION IN THE AMAZON RAINFOREST
Claudia Arantes Silva, Giancarlo Santilli, Universidade de Brasilia, Brazil; Edson Eyji Sano, IBAMA, Brazil; Giovanni Laneve, Sapienza University of Rome, Italy

TUP1.PJ.6
Board PJ.6

FOREST MONITORING IN GUATEMALA USING SATELLITE IMAGERY AND DEEP LEARNING
Nina Sofia Wyniawskyj, Milena Napiorkowska, David Petit, Pritimoy Podder, Deimos Space UK, United Kingdom; Paula Marti, European Maritime Safety Agency, Portugal

TUP1.PJ.7
Board PJ.7

ASSESSMENT OF NPP DYNAMICS AND THE RESPONSES TO CLIMATE CHANGES IN CHINA FROM 1982 TO 2012
Mengjia Wang, Gang Liu, Rui Sun, Zhiqiang Xiao, Beijing Normal University, China

TUP1.PJ.8
Board PJ.8

A METHOD TO IMPROVE THE GCC SERIES OF PHENOLOGY CAMERAS BASED ON HISTOGRAM FEATURES USING MULTIPLE LINEAR REGRESSION
Qing Li, Xuehong Chen, Jin Chen, Beijing Normal University, China

TUP1.PJ.9
Board PJ.9

AUTOMATIC METHODOLOGY FOR MASS DETECTION OF PAST DEFORESTATION IN BRAZILIAN AMAZON
Daniel Zanotta, Letícia Sartório, Anniely Lemos, Eduarda Machado, Fabiano Dias, IFRS, Brazil

TUP1.PJ.10
Board PJ.10

TEMPORAL AND SPATIAL VARIATION OF VEGETATION COVERAGE IN TARIM RIVER BASIN
Meiqin Cao, Yunzhi Chen, Xiaoqin Wang, Jinchen Ding, Key Lab. of Spatial Data Mining & Information Sharing of Ministry of Education, National & Local Joint Engineering Research Center of Satellite Geospatial Information Technology, Fuzhou University, China

TUP1.PJ.11
Board PJ.11

AN APPROACH FOR MONITORING GLOBAL VEGETATION BASED ON AQUARIUS L-BAND SCATTEROMETER AND RADIOMETER OBSERVATIONS
Liang Chen, Cheng Wang, Qian Xuesen Laboratory of Space Technology, Chinese Academy of Space Technology, China; Tianjie Zhao, State Key Laboratory of Remote Sensing Science, Chinese Academy of Sciences, China; Haichao Li, Qian Xuesen Laboratory of Space Technology, Chinese Academy of Space Technology, China

TUP1.PJ.12
Board PJ.12

DETECTION OF OAK WILT DISEASE USING CONVOLUTIONAL NEURAL NETWORK FROM UAV NATURAL COLOR IMAGERY
Hwa-Seon Lee, Won-Woo Seo, Kyu-Sung Lee, Inha University, Korea (South)

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area J
Session TUP2.PJ		**Poster**

Anomaly Detection and Unmixing in Hyperspectral Images

Session Chair: Ye Zhang, Harbin Institute of Technology

TUP2.PJ.1
Board PJ.1

HYPERSPECTRAL ANOMALY DETECTION BASED ON LOW RANK AND SPARSE TENSOR DECOMPOSITION
Fuhe Qin, Zebin Wu, Yang Xu, Hongyi Liu, Yan Zhang, Zhihui Wei, Nanjing University of Science and Technology, China

TUP2.PJ.2
Board PJ.2

HYPERSPECTRAL ANOMALY DETECTION BASED ON IMPROVED RX WITH CNN FRAMEWORK
Zhuang Li, Ye Zhang, Harbin Institute of Technology, China

TUP2.PJ.3
Board PJ.3

MORPHOLOGICAL RANDOM WALKER FOR HYPERSPECTRAL ANOMALY DETECTION
Zhihong Huang, Shutao Li, Hunan University, China

TUP2.PJ.4
Board PJ.4

HYPERSPECTRAL ANOMALY DETECTION BASED ON TOTAL VARIATION AND STRUCTURED DICTIONARY
Tongkai Cheng, Bin Wang, Fudan University, China

TUP2.PJ.5
Board PJ.5

ENHANCED HYPERSPECTRAL UNMIXING VIA NON-NEGATIVE MATRIX FACTORIZATION INCORPORATING THE END MEMBER INDEPENDENCE
Mevan Ekanayake, University of Peradeniya, Sri Lanka; Bhathiya Rathnayake, Sri Lanka Technological Campus, Sri Lanka; Hasantha Ekanayake, Anusha Rathnayake, Vijitha Herath, Roshan Godaliyadda, Parakrama Ekanayake, University of Peradeniya, Sri Lanka

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area K
Session TUP1.PK		**Poster**

Spatial Structure and Health Moniotoring of Vegetation

Session Chair: Nyamsuren Baasankhuu, University of Tsukuba

TUP1.PK.1
Board PK.1
SPATIAL PATTERNS AND DRIVING FACTORS OF QUERCUS MONGOLICA ARCHITECTURE VARIATIONS USING TERRESTRIAL LIDAR TECHNOLOGY
Yanjun Su, Yongcai Wang, Yumei Li, Tianyu Hu, Institute of Botany, Chinese Academy of Sciences, China; Jingyu Dai, Hongyan Liu, Peking University, China; Jing Zhang, Shichao Jin, Institute of Botany, Chinese Academy of Sciences, China; Jingyun Fang, Peking University, China; Qinghua Guo, Institute of Botany, Chinese Academy of Sciences, China

TUP1.PK.2
Board PK.2
PREDICTING THE SPATIAL PATTERNS OF RED CYPRESS INVERSELY FROM POSITIVE EFFECTS OF TOPOGRAPHIC OBSTACLES ON FIR
Bao-Hua Shao, National Chung Hsing University, Taiwan; Nan-Chang Lo, Experimental Forest Management Office, Taiwan; Kai-Yi Huang, National Chung Hsing University, Taiwan

TUP1.PK.3
Board PK.3
ACCURATE GROUND POSITIONING OBTAINED FROM 3D DATA MATCHING BETWEEN AIRBORNE AND TERRESTRIAL DATA FOR GROUND VALIDATION OF SATELLITE LASER
Akira Kato, Chiba University, Japan; Hiroyuki Wakabayashi, Nihon University, Japan; Matt Bradford, Commonwealth Scientific and Industrial Research Organisation, Australia; Andrew Hudak, US Forest Service (USDA), United States; L.Monika Moskal, University of Washington, United States; Manabu Watanabe, Tokyo Denki University, Japan

TUP1.PK.4
Board PK.4
THE LAND SURFACE VEGETATION FEATURES OBSERVED BY GPM/DPR BACKSCATTERING IN MONGOLIA
Nyamsuren Baasankhuu, Kenlo Nishida Nasahara, University of Tsukuba, Japan; Takuji Kubota, Japan Aerospace Exploration Agency (JAXA), Japan; Takeshi Masaki, Remote Sensing Technology Center of Japan, Japan

TUP1.PK.5
Board PK.5
FOREST CANOPY CLOSURE ESTIMATION IN GREATER KHINGAN FOREST BASED ON GF-2 DATA
Shanshan Sun, Zengyuan Li, Xin Tian, Zhihai Gao, Chongyang Wang, Institute of Forest Resource Information Techniques, Chinese Academy of Forestry, China; Chengyan Gu, Planning and Design Institute of Forestry Product Industry, National Forestry and Grassland Administration, China

TUP1.PK.6
Board PK.6
SEGMENTATION OF INDIVIDUAL TREES BASED ON THE 3-D DISTRIBUTION CHARACTERISTICS OF POINT CLOUD DATA OBTAINED BY AIRBORNE LIDAR
Yuhan Liu, Shihua Li, Ze He, University of Electronic Science and Technology of China, China

TUP1.PK.7
Board PK.7
FAST CONSTRUCTION OF VEGETATION POLYGONS BASED ON OBJECT-ORIENTED METHOD
Fengmin Wu, Zhipeng Zheng, Yan Hu, Jing Chen, Bin Zhang, Chongqing Geomatics Center, China

TUP1.PK.8
Board PK.8
EXPLORING THE CAPABILITIES OF SENTINEL-2 DATA IN VEGETATION HEALTH/STRESS MAPPING
Gaurav Shukla, Rahul Dev Garg, Pradeep Kumar Garg, Indian Institute of Technology, Roorkee, India; Hari Shankar Srivastava, Indian Institute of Remote Sensing, Indian Space Research Organization (ISRO), India; Pradeep Kumar, Banaras Hindu University, India; Bijayananda Mohanty, National Institute of Technology, Mizoram, India

TUP1.PK.9
Board PK.9
SIMULATION OF SHOOT BEETLE STRESS ON YUNNAN PINE FOREST SPECTRA USING A 3D RADIATIVE TRANSFER MODEL
QiNan Lin, HuaGuo Huang, Beijing Forestry University, China

TUP1.PK.10
Board PK.10
EVALUATION OF FOUR KERNEL DRIVEN MODELS IN THE THERMAL INFRARED BAND USING AIRBORNE MEASURED MULTI-ANGLE DATASETS
Biao Cao, Zunjian Bian, Yongming Du, Hua Li, Qing Xiao, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP1.PK.11
Board PK.11
MAXENT MODEL APPLICATION FOR TREE PESTS MONITORING
Pablo Marzialetti, Giovanni Laneve, Sapienza University of Rome, Italy; Giancarlo Santilli, Universidade de Brasilia, Brazil; Wenjiang Huang, Chinese Academy of Sciences, China; Diego Zappacosta, Universidad Nacional del Sur, Argentina

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area K
Session TUP2.PK		**Poster**

Target Detection II

Session Chair: Antonio Plaza, University of Extremadura

TUP2.PK.1
Board PK.1
FEATURES EXTRACTION OF THE DOPPLER FREQUENCY SIGNATURE OF A HUMAN WALKING AT 1 GHZ
Giovanni Manfredi, Jean-Philippe Ovarlez, ONERA, France; Laetitia Thirion-Lefevre, CentraleSupélec, Université Paris-Saclay, France

TUP2.PK.2
Board PK.2
FEASIBILITY EVALUATION FOR KEYWORD SPOTTING SYSTEM USING MINI MICROPHONE ARRAY ON UAV
Muhammad Bagus Andra, Budiman P.A Rohman, Tsuyoshi Usagawa, Kumamoto University, Japan

TUP2.PK.3
Board PK.3
SHIP AND SEA-ICE DISCRIMINATION USING SUB-SPECTRA STRATEGY AND SINGLE POLARIMETRIC SAR IMAGERY
Canbin Hu, National Innovation Institute of Defense Technology, China; Deliang Xiang, National Innovation Institute of Technology, China; Zuoyang Zhong, National Innovation Institute of Defense Technology, China; Laurent Ferro-Famil, Yue Huang, University of Rennes 1, France

TUP2.PK.4
Board PK.4
A STATISTICAL APPROACH TO IMPROVE VIRTUAL DIMENSIONALITY OF HYPERSPECTRAL DATA
Vijayashekhar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodara, India; Bhargab Chattopadhyay, Indian Institute of Management Vishakapatnam, India

TUP2.PK.5
Board PK.5
MAIN-LOBE JAMMING SUPPRESSION METHOD IN MULTIPLE-RADAR SYSTEM
Shanshan Zhao, Ziwei Liu, Nanjing University of Posts and Telecommunications, China

TUP2.PK.6
Board PK.6
HYPERSPECTRAL IMAGERY TARGET DETECTION USING COLLABORATIVE REPRESENTATION WITH SPECTRAL VARIATION EXTENDED DICTIONARY
Bobo Xie, Yifan Zhang, Northwestern Polytechnical University, China; Feng Yan, Beijing Military Representatives Bureau, China; Yan Feng, Shaohui Mei, Northwestern Polytechnical University, China

TUP2.PK.7
Board PK.7
HYPERSPECTRAL TARGET DETECTION VIA DEEP MULTIPLE INSTANCE SELF-ATTENTION NEURAL NETWORK
Xiuxiu Wang, Xiaoying Chen, Shuiping Gou, Xidian University, China; Chao Chen, MathWorks, United States; Yuanbo Chen, Beijing Huahang Radio Measurement and Research Institute, China; Xu Tang, Changzhe Jiao, Xidian University, China

TUESDAY POSTER

131

Tuesday, July 30	09:40 - 10:40	Room 501-502: Area L
Session TUP1.PL		Poster

Remote Sensing of Vegetation Parameters

Session Chair: Andrea Massetti, Monash University

TUP1.PL.1
Board PL.1
MONITOR LAND SURFACE PHENOLOGY USING THE NORMALIZED DIFFERENCE BETWEEN HOTSPOT AND DARKSPOT (NDHD) INDEX
Yongchang Ye, Hongliang Fang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

TUP1.PL.2
Board PL.2
CHARACTERIZING TROPICAL SECONDARY FOREST BIOPHYSICAL PARAMETERS WITH HYPERION/EO-1
Veraldo Liesenberg, Santa Catarina State University (UDESC), Brazil

TUP1.PL.3
Board PL.3
EVALUATION OF THREE METHODS FOR ESTIMATING DIAMETER AT BREAST HEIGHT FROM TERRESTRIAL LASER SCANNING DATA
Junjie Zhou, Guiyun Zhou, Hongqiang Wei, Xiaodong Zhang, Xinmeng Wang, University of Electronic Science and Technology of China, China

TUP1.PL.4
Board PL.4
A NEW METHOD OF INDIVIDUAL TREE DETECTION USING UAV PHOTOGRAMMETRIC DATA
Jianli Liu, Xiaohan Liao, Wenjian Ni, Huanyin Yue, Chinese Academy of Sciences, China

TUP1.PL.5
Board PL.5
FOREST STAND HEIGHT ESTIMATION USING ZIYUAN-3 TRI-STEREO IMAGERY AND LIDAR
Shiming Li, Qingwang Liu, Chinese Academy of Forestry, China; Ning Wang, China Academy of Launch Vehicle Technology, China; Zengyuan Li, Erxue Chen, Yong Pang, Lin Si, Xin Tian, Chinese Academy of Forestry, China

TUP1.PL.6
Board PL.6
ESTIMATION OF HIGH RESOLUTION CORN VEGETATION WATER CONTENT BASED ON AIRBORNE CASI/SASI HYPERSPECTRAL DATA
Jianwei Ma, Yayong Sun, China Institute of Water Resources and Hydropower Research (IWHR), China; Qiang Teng, Beijing Institute of Technology, China; Kun Yang, Shifeng Huang, Yongmin Yang, He Zhu, Wenbin Zang, Peng Zhu, China Institute of Water Resources and Hydropower Research (IWHR), China

TUP1.PL.7
Board PL.7
APPLYING LIDAR AND QUICKBIRD DATA FOR CROWN SEVERITY CLASSIFICATION AT TREE LEVEL IN CONIFER FOREST
Carine Klauberg, Federal University of São João Del Rei, Brazil; Andrew Thomas Hudak, US Forest Service (USDA), United States; Carlos Silva, NASA Goddard Space Flight Center, United States; Sarah A. Lewis, Peter R. Robichaud, Terrie B. Jain, US Forest Service (USDA), United States

TUP1.PL.8
Board PL.8
POSSIBLE INACCURACY OF CANOPY HEIGHT MODEL ESTIMATION FOR DENSE AND SPARSE BOREAL FOREST WITH TANDEM-X DSM AND ALOS PALSAR DEM FUSION, CASE STUDY FROM THE BAIKAL LAKE REGION, RUSSIA
Tumen Chimitdorzhiev, Aleksey Dmitriev, Irina Kirbizhekova, Alena Sherkhoeva, Arcadii Baltukhaev, Pavel Dagurov, Institute of Physical Materials Science, SB RAS, Russia

TUP1.PL.9
Board PL.9
SENSITIVITY OF BRDF SAMPLING TO ALBEDO AND ANGLE INDEX BASED ON AIRBORNE MULTIANGLE DATA
Xiaoning Zhang, Ziti Jiao, Yadong Dong, Siyang Yin, Lei Cui, Beijing Normal University, China; Hu Zhang, Anxin Ding, Tianjin Normal University, China; Yaxuan Chang, Rui Xie, Jing Guo, Beijing Normal University, China

TUP1.PL.10
Board PL.10
QUANTIFYING THE EFFECT OF THE WIND ON THE ABILITY OF INTERFEROMETRIC SYNTHETIC APERTURE RADAR SYSTEMS TO ACCURATELY ESTIMATE FOREST CANOPY HEIGHT
Michael Benson, Leland Pierce, Kamal Sarabandi, University of Michigan, United States

TUP1.PL.11
Board PL.11
ESTIMATION OF FOREST STRUCTURE WITH THE VEGETATION STRUCTURE PERPENDICULAR INDEX (VSPI) FOR DYNAMIC FIRE SPREAD SIMULATIONS
Andrea Massetti, Christoph Rüdiger, Monash University, Australia; Marta Yebra, Australian National University, Australia; James Hilton, Commonwealth Scientific and Industrial Research Organisation, Australia

Tuesday, July 30	15:20 - 16:20	Room 501-502: Area L
Session TUP2.PL		Poster

Remote Sensing of Wetlands II

Session Co-Chairs: Amir Behnamian, Environment and Climate Change Canada; Haemi Park, University of Tokyo

TUP2.PL.1
Board PL.1
SPATIO-TEMPORAL VARIATION OF EVAPOTRANSPIRATION OVER THE LARGEST FRESHWATER LAKE REGION IN CHINA DURING THE RESENT TEN YEARS
Xin Pan, Liangliang Shan, Hohai University, China; Yuanbo Liu, Guojing Gan, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, China; Yingbao Yang, Yuehong Chen, Mi Jiang, Hohai University, China

TUP2.PL.2
Board PL.2
INSAR MONITORING OF MARSH WETLANDS FLOW DYNAMICS IN GREAT LAKES
Zhaohua Chen, Lori White, Sarah Banks, Amir Behnamian, Benoit Montpetit, Jon Pasher, Jason Duffe, Environment and Climate Change Canada, Canada

TUP2.PL.3
Board PL.3
SENTINEL-1A SAR IMAGES TO DETECT FLOODING AREAS IN SOUTH EASTERN MEXICO
Jesus Soria-Ruiz, INIFAP, Mexico; Yolanda Margarita Fernandez -Ordoñez, COLPOS-Campus Montecillo, Mexico

TUP2.PL.4
Board PL.4
ANALYZING CHLOROPHYLL FLUORESCENCE IN JUNCUS ROEMERIANUS BY PULSE AMPLITUDE MODULATED (PAM) FLUOROMETER AT DIFFERENT PLANT HEIGHTS
Lishen Mao, Deepak R. Mishra, David L. Cotten, Jessica O'Connell, Caroline R. Narron, Peter A. Hawman, University of Georgia, United States

TUP2.PL.5
Board PL.5
ESTIMATION OF CARBON DIOXIDE BUDGET FROM PEATLAND IN INDONESIA WITH SITE-LEVEL VALIDATION
Haemi Park, Wataru Takeuchi, University of Tokyo, Japan; Kazuhito Ichii, Chiba University, Japan

TUP2.PL.6
Board PL.6
MONITORING ANDEAN HIGH ALTITUDE WETLANDS IN CENTRAL CHILE WITH SEASONAL SENTINEL-2 IMAGERY
Rocío Araya-López, Javier Lopatin, Fabian Fassnacht, karlsruhe Institute of Technology (KIT), Germany; Jaime Hernández, University of Chile, Chile

TUP2.PL.7
Board PL.7
USING LANDSAT 8 IMAGES FOR THE WETLAND WATER STRESS CALCULATION: UPPER BIEBRZA CASE STUDY
Wojciech Ciężkowski, Małgorzata Kleniewska, Jarosław Chormański, Warsaw University of Life Sciences, Poland

TUP2.PL.8
Board PL.8
EARLY DETECTECTION OF SONNERATIAN IN MAI PO USING REMOTELY SENSED DATA WITH DEEP LEARNING
Luoma Wan, Hongsheng Zhang, Mingfeng Liu, Chinese University of Hong Kong, China

TUP2.PL.9
Board PL.9
WETLAND MONITORING WITH GNSS-R/IR: THEORETICAL SIMULATIONS WITH FIRST-ORDER RADIATIVE TRANSFER EQUATION MODEL
Xuerui Wu, Chifeng University, China; Junming Xia, National Space Science Center, Chinese Academy of Sciences, China; Shuanggen Jin, Weihua Bai, Jiandong Liu, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China

TUP2.PL.10
Board PL.10
EXPLORING THE CAPABILITIES OF COMBINING THE SENTINEL-2 MSI DATA AND HIGH RESOLUTION GOOGLE EARTH IMAGE FOR MAPPING MANGROVE SPECIES
Hongzhong Li, Yu Han, Jinsong Chen, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

TUESDAY POSTER

Tuesday, July 30 09:40 - 10:40 Room 501-502: Area M	Tuesday, July 30 15:20 - 16:20 Room 501-502: Area M
Session TUP1.PM Poster	**Session TUP2.PM** Poster

Forest Classification and Parameter Estimation

Session Chair: Yumi Miura, Tohoku University

TUP1.PM.1
Board PM.1
AN ANALYSIS OF IMPROVED ROSS-LI MODELS ON THE ABILITY OF ESTIMATIONG ALBEDO UNDER LARGE SOLAR ZENITH ANGLE BY POLDER DATASETS
Yaxuan Chang, Ziti Jiao, Xiaoning Zhang, Yadong Dong, Siyang Yin, Lei Cui, Anxin Ding, Jing Guo, Rui Xie, Beijing Normal University, China

TUP1.PM.2
Board PM.2
BURN SEVERITY ESTIMATION IN NORTHERN AUSTRALIA TROPICAL SAVANNAS USING RADIATIVE TRANSFER MODEL AND SENTINEL-2 DATA
Changming Yin, Binbin He, University of Electronic Science and Technology of China, China; Marta Yebra, Australian National University, Australia; Xingwen Quan, University of Electronic Science and Technology of China, China; Andrew Edwards, Charles Darwin University, Australia; Xiangzhuo Liu, Zhanmang Liao, Kaiwei Luo, University of Electronic Science and Technology of China, China

TUP1.PM.3
Board PM.3
STATIC FIRE RISK INDEX FOR THE FOREST RESOURCES OF KARNATAKA
Preethi Konkathi, Amba Shetty, Venkatesh Kolluru, Yathish P.H, Pruthviraj U, National Institue of Technology, Karnataka, India

TUP1.PM.4
Board PM.4
DOWNSCALING GNSS-R BASED VEGETATION WATER CONTENT PRODUCT USING RANDOM FOREST MODEL
Shuwen Li, Qiangqiang Yuan, Wuhan University, China; Linwei Yue, China University of Geosciences, China; Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

TUP1.PM.5
Board PM.5
WOODLAND DETECTION USING MOST-SURE STRATEGY TO FUSE SEGMENTATION RESULTS OF DEEP LEARNING
Yuanyuan Gui, Beijing University of Chemical Technology, China; Wei Li, Beijing Institute of Technology, China; Yanan Wang, Beijing University of Chemical Technology, China; Anzhi Yue, Chinese Academy of Sciences, China; Ying Pu, Xinyun Chen, Chinese Academy of Forest Inventory and Planning, China

TUP1.PM.6
Board PM.6
DOES CANOPY SHADOWS AFFECT SPECIES CLASSIFICATION IN VERY-HIGH SPATIAL RESOLUTION REMOTE SENSING?
Javier Lopatin, Klara Dolos, Teja Kattenborn, Fabian Fassnacht, karlsruhe Institute of Technology (KIT), Germany

TUP1.PM.7
Board PM.7
TROPICAL NATURAL FOREST CLASSIFICATION USING TIME-SERIES SENTINEL-1 AND LANDSAT-8 IMAGES IN HAINAN ISLAND
Lu Zhang, Key Laboratory of Earth Observation Hainan Province, China; Xiangxing Wan, Chinese Academy of Forestry, China; Bing Sun, Beihang University, China

TUP1.PM.8
Board PM.8
FOREST EXTRACTION ON SEMIMOUNTAINOUS RURAL AREA WITH A COMBINATION OF FULL POLARIMETRIC SAR IMAGE AND LIDAR DATA
Yumi Miura, Chinatsu Yonezawa, Tohoku University, Japan

TUP1.PM.9
Board PM.9
WEIGHTED SUPPORT VECTOR MACHINES FOR TREE SPECIES CLASSIFICATION USING LIDAR DATA
Hoang Minh Nguyen, Fondazione E. Mach, Italy; Begum Demir, Technische Universität Berlin, Germany; Michele Dalponte, Fondazione E. Mach, Italy

TUP1.PM.10
Board PM.10
ASSESSING CHLOROPHYLL CONTENT IN THE AMAZON FOREST USING FIELD SPECTROSCOPY AND HYPERSPECTRAL SATELLITE IMAGES
Paul Arellano, YachayTech University, Ecuador; Dimitris Stratoulias, Singapore MIT Alliace for Research and Technology, Singapore

TUP1.PM.11
Board PM.11
FILL INVALID PIXELS OF THEMATIC MAP USING COMPOSITED IMAGE
Yong Pang, Zengyuan Li, Shunxiang Fan, Shili Meng, Chinese Academy of Forestry, China

TUP1.PM.12
Board PM.12
THE REPRODUCIBILITY OF GROSS PRIMARY PRODUCTION ESTIMATION FROM GPP CAPACITY AND CANOPY CONDUCTANCE INDEX IN DRY AREA
Kanako Muramatsu, Nara Women's Univ., Japan

Remote Sensing of Inland Waters I

Session Chair: Takeo Tadono, Japan Aerospace Exploration Agency

TUP2.PM.1
Board PM.1
TIME-SERIES ANALYSIS OF EVAPOTRANSPIRATION IN SEMI-ARID AREA
Xiaomei Jin, Xiaoqian Zhu, Xucai Zhang, China University of Geosciences (Beijing), China

TUP2.PM.2
Board PM.2
EXTRACTING LAND SURFACE WATER FROM FY/MERSI IMAGE BASED ON SPECTRAL MATCHING OF DISCRETE PARTICLE SWARM OPTIMIZATION AND LINEAR FEATURE ENHANCEMENT
Xueru Zhang, Wenbo Xu, University of Electronic Science and Technology of China, China; Yue Hu, Second Research Institute of Civil Aviation Administration of China, China; Xinyi Li, Jinsheng Ren, Xixu He, Yuwei Jin, University of Electronic Science and Technology of China, China

TUP2.PM.3
Board PM.3
EVAPOTRANSPIRATION ESTIMATION IN TROPICAL MONSOON REGIONS USING IMPROVED ETMONITOR ALGORITHM
Chaolei Zheng, Li Jia, Guangcheng Hu, Jing Lu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP2.PM.4
Board PM.4
TIME SERIES WATER LEVEL PREDICTION IN URMIA LAKE USING ARTIFICIAL NEURAL NETWORK
Mahboubeh Boueshagh, Mahdi Hasanlou, Ali Azizi, College of Engineering, University of Tehran, Iran

TUP2.PM.5
Board PM.5
ATMOSPHERIC CORRECTION AND WATER SURFACE ISSUES FOR AQUATIC APPLICATIONS OF LANDSAT 8
Fuqin Li, Geoscience Australia, Australia; David Jupp, CSIRO, Australia; Stephen Sagar, Geoscience Australia, Australia; Thomas Schroeder, CSIRO, Australia

TUP2.PM.6
Board PM.6
RESEARCH ON WATER BODY EXTRACTION FROM GAOFEN-3 IMAGERY BASED ON POLARIMETRIC DECOMPOSITION AND MACHINE LEARNING
Xingli Qin, Jie Yang, Pingxiang Li, Weidong Sun, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China

TUP2.PM.7
Board PM.7
EXTRACTION OF BLACK AND ODOROUS WATER BASED ON AERIAL HYPERSPECTRAL CASI IMAGE
Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgical Geological Bureau, China; Jianchun Zheng, Beijing Research Center of Urban System Engineering, China

TUP2.PM.8
Board PM.8
VOLUMETRIC VAIRATIONS OF INLAND WATER BODY: A CASE STDY OF MANCHAR LAKE
Ramsha Muzaffar, Rao Zahid Khalil, Saad ul Haque, Institute of Space Technology, Pakistan; Arjumand Zaidi, Mehran University of Engineering and Technology, Pakistan; Sumera Zafar, Asian Institute of Technology, Thailand

TUP2.PM.9
Board PM.9
A COMPARATIVE ANALYSIS OF ALTIMETRY DERIVED WATER LEVELS WITH IN-SITU GAUGE DATA ON RIVER INDUS
Shoaib Jamro, Talal Naseer, Dr. Arjumand Zaidi, Mehran University of Engineering and Technology, Pakistan; Dr. Stefano Vignudelli, Consiglio Nazionale delle Ricerche (CNR), Italy

TUP2.PM.10
Board PM.10
ANALYSIS OF SURFACE TEMPERATURE TRENDS OF WORLD'S MAJOR LAKES AND THEIR RELATIONSHIP WITH LAND COVER CHANGES
Abdou Bah, Hamid Norouzi, Cho May Than, Patty Arunyavikul, Ronaldo Carhuaricra, Sergio Carrillo, Christopher Beale, Reginald Blake, City University of New York, United States

TUP2.PM.11
Board PM.11
ADVANCEMENT IN BEDFAST LAKE ICE MAPPING FROM SENTINEL-1 SAR DATA
Claude Duguay, University of Waterloo, Canada; Junqian Wang, H2O Geomatics Inc., Canada

TUP2.PM.12
Board PM.12
CANADIAN WATER MICROSATELLITE MISSION - CONCEPT DESIGN
Kiana Zolfaghari, Marie Hoekstra, Claude R. Duguay, David Rudolph, University of Waterloo, Canada; Ian D'Souza, Honeywell Aerospace, Canada

TUESDAY POSTER

133

Tuesday, July 30	09:40 - 10:40 Room 501-502: Area N
Session TUP1.PN	Poster

Topography, Geology and Geomorphology II

Session Co-Chairs: Gladimir Baranoski, University of Waterloo; René Booysen, Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology

TUP1.PN.1
Board PN.1
WORLDVIEW-3 AND SENTINEL-2 IMAGERY FOR MAPPING NATURALLY OCCURRING ASBESTOS (NOA) IN SERPENTINITES ROCKS IN SOUTHERN ITALY.
Simone Pascucci, Stefano Pignatti, Claudia Belviso, Francesco Cavalcante, CNR, Italy; Maria Paola Bogliolo, Italian Workers Compensation Authority - INAIL, Italy

TUP1.PN.2
Board PN.2
APPLICATION OF CONSTRAINED ENERGY MINIMIZATION (CEM) ALGORITHM TO ASTER DATA FOR ALTERATION MINERAL MAPPING
Amin Beiranvand Pour, Tae-Yoon S. Park, Yongcheol Park, Jong Kuk Hong, Korea Polar Research Institute (KOPRI), Korea (South); Biswajeet Pradhan, University of Technology Sydney, Australia

TUP1.PN.3
Board PN.3
RESEARCH ON INFORMATION EXTRACTION TECHNOLOGY OF IRON OXIDE BASED ON AIRBORNE HYPERSPECTRAL DATA
Kai Qing, Ying-Jun Zhao, Xin Cui, Beijing Research Institute of Uranium Geology, China

TUP1.PN.4
Board PN.4
CO-SEISMIC DEFORMATION AND SOURCE MODEL OF THE 25 APRIL 2015 MW 7.8 NEPAL EARTHQUAKE AND THE 12 MAY 2015 MW 7.2 AFTERSHOCK
Jianming Kuang, Linlin Ge, University of New South Wales, Australia; Alex Hay-Man Ng, Guangdong University of Technology, China

TUP1.PN.5
Board PN.5
TECTONIC BELT EXTRACTION BASED ON DEM AT THE MARGIN OF QINGHAI-TIBET PLATEAU
Tian Tian, Lixia Gong, Wenliang Jiang, Jingfa Zhang, Qiang Li, Hongbo Jiang, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP1.PN.6
Board PN.6
GEOMETRIC AND GEOMORPHIC FEATURES OF ACTIVE TECTONICS BASED ON HIGH-RESOLUTION REMOTE SENSING IMAGE
Wenliang Jiang, Jingfa Zhang, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP1.PN.7
Board PN.7
A NEW UNDERSTANDING ABOUT MARE BASALTS IN MOSCOVIENSE BASIN DEMONSTRATED BY CE-2 CELMS DATA
Zhiguo Meng, Huihui Wang, Jilong Lu, Shengbo Chen, Jilin University, China; Yongchun Zheng, National Astronomical Observatory, China; Shuanggen Jin, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; Xiangbo Gong, Jilin University, China

TUP1.PN.8
Board PN.8
INTEGRATING HYPERSPECTRAL AND RADIOMETRIC REMOTE SENSING, SPATIAL TOPOGRAPHIC ANALYSIS AND SURFACE GEOCHEMISTRY TO ASSIST MINERAL EXPLORATION IN SOUTHERN AUSTRALIA
Alicia S Caruso, Ken D Clarke, University of Adelaide, Australia; Caroline J Tiddy, University of South Australia, Australia; Megan M Lewis, University of Adelaide, Australia

TUP1.PN.9
Board PN.9
DETECTION OF SURFACE DISPLACEMENT FROM LARGE BASELINE DATA PAIRS BY MULTI-TEMPORAL D-INSAR WITH APPLICATION TO BANDUNG BASIN, INDONESIA
Panggea Ghiyats Sabrian, Kyoto University, Japan; Asep Saepuloh, Bandung Institute of Technology, Indonesia; Katsuaki Koike, Kyoto University, Japan

TUP1.PN.10
Board PN.10
UAV-BASED 3D OUTCROP ANALOG MODELS FOR OIL AND GAS EXPLORATION AND PRODUCTION
Emmanuel Dujoncquoy, AGeoS, Total, France; Pierre Masse, Total, France; Yann Nicol, Total, AGeoS, France; Alterga Supomo Putra, Jeroen Kenter, Séverine Russo, Damien Dhont, Total, France

TUP1.PN.11
Board PN.11
AN ANALYSIS RESEARCH OF TERRAIN CORRECTION METHODS CONSIDERING THE SLOPE RANGES BASED ON OLI IMAGE
Ying Zhang, Wei Xia, Shikai Sun, Xuejiao Bai, Lin Wang, China Transport Telecommunications & Information Center, China

Tuesday, July 30	15:20 - 16:20 Room 501-502: Area N
Session TUP2.PN	Poster

Satellite Missions I

Session Chair: Jorge Nicolas-Alvarez, Universitat Politecnica de Catalunya

TUP2.PN.1
Board PN.1
PRECISE ORBIT OBSERVATION TECHNIQUES FOR GEOSYNCHRONOUS SYNTHETIC APERTURE RADAR (GEOSAR)
Jorge Nicolas-Alvarez, Antoni Broquetas, Albert Aguasca, Universitat Politècnica de Catalunya (UPC), Spain

TUP2.PN.2
Board PN.2
ARCHITECTING OPTIMIZED SPACEBORNE EARTH OBSERVATION MISSIONS
David Llaveria, Carles Araguz, Adriano Camps, Eduard Alarcón, Universitat Politècnica de Catalunya (UPC), Spain

TUP2.PN.3
Board PN.3
THE INFLUENCE OF MOON-BASED SENSOR'S LOCATION ON MOON-BASED EARTH OBSERVATION
Guozhuang Shen, Huadong Guo, Guang Liu, Lu Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP2.PN.5
Board PN.5
ADVANCED TERAHERTZ ATMOSPHERIC PROFILING SOUNDER ON NEXT GENERATION CHINESE METEOROGICAL SATELLITE
Shengwei Zhang, Jieying He, Zhenzhan Wang, Yu Zhang, Na Li, National Space Science Center, Chinese Academy of Sciences, China

TUP2.PN.6
Board PN.6
NON-METEOROLOGICAL APPLICATION OF NEW GENERATION GEOSTATINARY SATELLITES
Satya Kalluri, Ivan Csiszar, Shobha Kondragunta, Istvan Laszlo, NOAA/NESDIS/STAR, United States

TUP2.PN.7
Board PN.7
ASCAT-C COMMISSIONING: FIRST CROSS-COMPARISON AND VALIDATION RESULTS
Francesca Ticconi, Craig Anderson, Stefanie Linow, Julian Wilson, EUMETSAT, Germany

TUP2.PN.8
Board PN.8
AN OVERVIEW OF NOAA'S GCOM-W1/AMSR-2 PRODUCT PROCESSING AND UTILIZATION
Paul Chang, Zorana Jelenak, Suleiman Alsweiss, Joseph Sapp, Patrick Meyers, Ralph Ferraro, NOAA/NESDIS, United States

TUP2.PN.9
Board PN.9
APPLICATIONS OF KHALIFASAT MISSION
Saeed Al Mansoori, Meera AlShamsi, Alya AlMaazmi, Fatima AlMarzouqi, Shaikha AlBesher, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

TUP2.PN.10
Board PN.10
A PROPOSAL FOR SATELLITE OBSERVATION OF THE WHOLE ATMOSPHERE - SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER (SMILES-2)
Masato Shiotani, Akinori Saito, Takatoshi Sakazaki, Kyoto University, Japan; Satoshi Ochiai, Philippe Baron, National Institute of Information and Communications Technology (NICT), Japan; Toshiyuki Nishibori, Makoto Suzuki, Takumi Abe, Japan Aerospace Exploration Agency (JAXA), Japan; Hiroyuki Maezawa, Osaka Prefecture University, Japan; Shinichiro Oyama, Nagoya University, Japan

TUP2.PN.11
Board PN.11
CONCEPTUAL STUDY OF SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER-2 (SMILES-2) RECEIVER
Satoshi Ochiai, Philippe Baron, Yoshihisa Irimajiri, National Institute of Information and Communications Technology (NICT), Japan; Toshiyuki Nishibori, Yutaka Hasegawa, Japan Aerospace Exploration Agency (JAXA), Japan; Yoshinori Uzawa, National Astronomical Observatory of Japan, Japan; Hiroyuki Maezawa, Takeshi Manabe, Osaka Prefecture University, Japan; Akira Mizuno, Tomoo Nagahama, Kimihiro Kimura, Nagoya University, Japan; Makoto Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan; Akinori Saito, Masato Shiotani, Kyoto University, Japan

Tuesday, July 30	09:40 - 10:40 Room 501-502: Area O
Session TUP1.PO	**Poster**

Topography, Geology and Geomorphology III

Session Chair: Ülo Suursaar, University of Tartu

TUP1.PO.1
Board PO.1
EFFECTS OF ATTENUATION ON SEISMIC REFLECTIONS
Haixia Zhao, Xi'an Jiaotong University, China; Jingrui Luo, Xi'an University of Technology, China; Yijie Zhang, Xiaokai Wang, Xi'an Jiaotong University, China

TUP1.PO.2
Board PO.2
APPLICATION OF THE STRUCTURE FROM MOTION METHOD IN ACTIVE TECTONICS RESEARCH: A CASE STUDY OVER THE ALTYN TAGH FAULT
Haiyun Bi, China Earthquake Administration, China; Wenjun Zheng, Sun Yat-Sen University, China; Jiangyuan Zeng, Chinese Academy of Sciences, China

TUP1.PO.3
Board PO.3
ANALYSIS OF THE KERNEL-DRIVEN BRDF MODEL OVER RUGGED TERRAINS
Kai Yan, China University of Geosciences, China; Yiyi Tong, Wanjuan Song, Beijing Normal University, China; Yelu Zeng, Stanford University, China; Zhao Liu, Tsinghua University, China; Xihan Mu, Guangjian Yan, Beijing Normal University, China

TUP1.PO.4
Board PO.4
IDENTIFYING USERS BY ASYNCHRONOUS MOBILITY TRAJECTORIES
Mengjun Qi, Zhongyuan Wang, Zheng He, Wuhan University, China; Tao Lu, Wuhan Institute of Technology, China

TUP1.PO.5
Board PO.5
A FAST AND SIMPLE ALGORITHM FOR CALCULATING FLOW ACCUMULATION MATRICES FROM RASTER DIGITAL ELEVATION MODELS
Guiyun Zhou, Wenyan Dong, Hongqiang Wei, University of Electronic Science and Technology of China, China

TUP1.PO.6
Board PO.6
POTENTIAL PREDICTION OF COALBED METHANE ANOMALY REGION UTILIZING LANDSAT8 OLI AND GF-2 IMAGES
Li Chen, Wei Li, Ling Chen, Mengfei Wang, Weijie Jia, China Aero Geophysical Survey and Remote Sensing Center for Natural Resources, China

TUP1.PO.7
Board PO.7
IDENTIFICATION OF ALTERED MINERAL USING HYPERION HYPERSPECTRAL IMAGE IN SOUTH OF TIBET, CHINA
Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgical Geological Bureau, China; Jianchun Zheng, Beijing Research Center of Urban System Engineering, China

TUP1.PO.8
Board PO.8
PRESENT VERTICAL CRUSTAL MOVEMENT IN NORTH SEGMENT OF NORTH–SOUTH TECTONIC BELT DERIVED FROM GNSS
Jing Wang, Earthquake Agency of Ningxia Hui Autonomous Region, China; Mengjia Xu, Research Center for Ecological Protection and Climate Change Response, China; Heqing Ma, Earthquake Agency of Ningxia Hui Autonomous Region, China; Shiyang Liu, Ecological Environment Protection Office of Ningxia Hui Autonomous Region, China; Xinyan Li, Earthquake Agency of Ningxia Hui Autonomous Region, China

TUP1.PO.9
Board PO.9
MOSIS V2: IMMERSIVE VIRTUAL OUTCROP MODELS
Pedro Rossa, Rafael Kenji Horota, Alysson Soares Aires, Ademir Marques Jr, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil; Eniuce Menezes de Souza, Universidade do Vale do Rio dos Sinos, Brazil; Gabriel Kannenberg, Jean Lucca de Fraga, Leonardo Santana, Demetrius Nunes Alves, Julia Boesing Ponticelli, Luiz Gonzaga Jr, Mauricio Roberto Veronez, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil; Caroline Lessio Cazarin, Petróleo Brasileiro SA, Brazil

TUP1.PO.10
Board PO.10
MAPPING AND MONITORING OF SOIL SALINIZATION USING REMOTE SENSING AND REGRESSION TECHNIQUES: A CASE STUDY IN THE BAHARIYA DEPRESSION, WESTERN DESERT, EGYPT
Mohamed El-Horiny, Tanta University, Egypt

TUP1.PO.11
Board PO.11
DRONE THERMAL IMAGING TO OBTAIN HEAT FLOWS OF JINLUM GEOTHERMAL SITE, SOUTHEAST TAIWAN
Jin-King Liu, Taiwan Group on Earth Observations, Taiwan; Ming-Chee Wu, National Cheng-Kung University, Taiwan; Ching-Fang Lee, Sinotech Engineering Consultants, Inc., Taiwan

TUP1.PO.12
Board PO.12
MAPPING OF TALC DEPOSITS USING HYPERSPECTRAL IMAGES
Shinsuke Kodama, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Yasushi Yamaguchi, Nagoya University, Japan

Tuesday, July 30	15:20 - 16:20 Room 501-502: Area O
Session TUP2.PO	**Poster**

Missions, Sensors and Calibration

Session Chair: Sharmila Padmanabhan, NASA Jet Propulsion Laboratory

TUP2.PO.1
Board PO.1
INTRODUCTION OF GF-5 SATELLITE AND ABILITY OF MONITORING NO2 AND O3 COLUMN DENSITY FROM EMI
Chunyan Zhou, Qing Li, Sihan Liu, Shaohua Zhao, Satellite Environmental Center, China; Liangxiao Cheng, Chao Yu, Liangfu Chen, State Key Laboratory of Remote Sensing Science, China; Zhongting Wang, Lianhua Zhang, Satellite Environmental Center, China; Zunjian Bian, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Yingxia He, LinYi Environmental Monitoring Station, China

TUP2.PO.2
Board PO.2
GOES-17 ADVANCED BASELINE IMAGER PERFORMANCE RECOVERY SUMMARY
Joel McCorkel, NASA Goddard Space Flight Center, United States; John Van Naarden, Harris Corporation, United States; Daniel Lindsey, NOAA/NESDIS, United States; Boryana Efremova, GeoThinkTank LLC, United States; Monica Coakley, Mason Black, Massachusetts Institute of Technology, Lincoln Laboratory, United States; Alexander Krimchansky, NASA Goddard Space Flight Center, United States

TUP2.PO.3
Board PO.3
SMAP RFI CHANGE DETECTION
Priscilla Mohammed, Giovanni De Amici, Jinzheng Peng, Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States

TUP2.PO.4
Board PO.4
IMPACT OF THE RFI GENERATED BY ACTIVE LEO SYSTEMS ON A NEARLY-GEOSTATIONARY SAR SYSTEM
Antonio Leanza, Andrea Monti Guarnieri, Politecnico di Milano, Italy; Marco Di Clemente, Giancarlo Varacalli, Roberto Formaro, Agenzia Spaziale Italiana (ASI), Italy

TUP2.PO.5
Board PO.5
ATMOSPHERE-SPACE INTERACTIONS MONITOR, INSTRUMENT AND FIRST RESULTS
Steen Savstrup Kristensen, Jan E. Balling, Peter Brauer, Carl Budtz-Jørgensen, Olivier Chanrion, Freddy Christiansen, Krystallia Dimitriadou, Lasse Husbjerg, Niels Christian Jessen, Irfan Kuvvetli, Torsten Neubert, Carol Anne Oxborrow, Søren Møller Pedersen, Josef Polny, Ib Lundgaard Rasmussen, Technical University of Denmark, Denmark; Victor Reglero, University of Valencia, Spain; Christian Stoltze, Denis Tcherniak, Per Lundahl Thomsen, Technical University of Denmark, Denmark; Nikolai Østgaard, University of Bergen, Norway

TUP2.PO.6
Board PO.6
PERFORMANCE OF THE SNPP AND NOAA-20 CRIS SENSOR DATA RECORD PRODUCTS
Flavio Iturbide-Sanchez, National Oceanic and Atmospheric Administration, United States; Yong Chen, University of Maryland, United States; Denis Tremblay, Xin Jin, Global Science and Technology, Inc., United States; David Tobin, Henry Revercomb, University of Wisconsin-Madison, United States; Larrabee Strow, University of Maryland, Baltimore County, United States; David Johnson, National Aeronautics and Space Administration (NASA), United States; Joe Predina, Logistikos Engineering LLC, United States; Joe Taylor, University of Wisconsin-Madison, United States; Mark Esplin, Utah State University, United States; Banghua Yan, Changyong Cao, Satya Kalluri, National Oceanic and Atmospheric Administration, United States

TUP2.PO.7
Board PO.7
SENSITIVITY VARIATION OF ASTER DERIVED FROM MOON AND DEEPSPACE OBSERVATIONS IN 2003 AND 2017
Toru Kouyama, Satoshi Tsuchida, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Fumihiro Sakuma, Tetsushi Tachikawa, Japan Space Systems, Japan; Hirokazu Yamamoto, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Kenta Obata, Aichi Prefectural University, Japan; Soushi Kato, Remote Sensing Technology Center of Japan, Japan; Masakuni Kikuchi, Japan Space Systems, Japan; Ryosuke Nakamura, National Institute of Advanced Industrial and Science and Technology (AIST), Japan

TUP2.PO.8
Board PO.8
AEROSOL MODELS FROM AERONET FOR THE EVALUATION OF THE LAND SURFACE REFLECTANCE FUNDAMENTAL CLIMATE DATA RECORD
Jean-claude Roger, University of Maryland, United States; Eric Vermote, National Aeronautics and Space Administration (NASA), United States; Sergii Skakun, Belen Franch, University of Maryland, United States; Oleg Dubovik, University of Lille 1, France; Holben Brent, National Aeronautics and Space Administration (NASA), United States; Chris Justice, University of Maryland, United States

TUP2.PO.9
Board PO.9
PERFORMANCE OF 2-D DEFORMATION MEASUREMENTS BY THE MULTI-STATIC HARMONY (STEREOID) MISSION
Yuanhao Li, Paco Lopez-Dekker, Lorenzo Iannini, Delft University of Technology, Netherlands; Pau Prats-Iraola, German Aerospace Center (DLR), Germany

TUP2.PO.10
Board PO.10
EVALUATION OF THE SURFACE REFLECTANCE LONG-TERM DATA RECORD FROM AVHRR OVER MULTIPLE LAND SURFACE TYPES
Andrés Santamaría-Artigas, Belén Franch, Jean Claude Roger, University of Maryland, United States; Eric Vermote, National Aeronautics and Space Administration (NASA), United States; Christopher Justice, University of Maryland, United States

TUP2.PO.11
Board PO.11
THE POLAR RADIENT ENERGY IN THE FAR INFRARED EXPERIMENT (PREFIRE)
Sharmila Padmanabhan, Brian Drouin, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Tristan L'Ecuyer, University of Wisconsin-Madison, United States; Mary White, Boon Lim, Matthew Kenyon, Giacomo Mariani, James McGuire, Nasrat Raouf, Omar De Santos, Rudi Bendig, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TUESDAY POSTER

Tuesday, July 30	09:40 - 10:40	Room 503: Area Q
Session TUP1.PQ		**Poster**

Numerical Weather Prediction and Data Assimilation II

Session Co-Chairs: Fuzhong Weng, State Key Laboratory of Severe Weather; V Chandrasekar, Colorado State University

TUP1.PQ.1
Board PQ.1
INSAR REMOTE SENSING OF ATMOSPHERE: BRIDGING HIGH RESOLUTION DATA AND NWP MODELS
Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Pedro Mateus, João Catalão, Instituto Dom Luiz (IDL), Universidade de Lisboa, Portugal

TUP1.PQ.2
Board PQ.2
A COMPREHENSIVE VORTEX INITIALIZATION ASSIMILATING SATELLITE MICROWAVE DERIVED HURRICANE WARM CORES USING A 4D-VAR APPROACH
Xiaoxu Tian, Xiaolei Zou, University of Maryland, College Park, United States

TUP1.PQ.3
Board PQ.3
ASSIMILATION AND DIRECT INSERTION OF SENTINEL PRODUCTS IN THE WRF WEATHER FORECAST MODEL
Martina Lagasio, Luca Pulvirenti, Antonio Parodi, Agostino Meroni, CIMA Research Foundation, Italy

TUP1.PQ.4
Board PQ.4
EVALUATION OF GROUND-BASED MICROWAVE RADIOMETER DATA USED IN NUMERICAL WEATHER PREDICTION
Wenying He, LAGEO, Institute of Atmospheric Physics, Chinese Academy of Sciences, China

TUP1.PQ.5
Board PQ.5
AN ADVANCED WORKFLOW FOR SIMULATING HIGH RESOLUTION WIND FIELDS OVER COMPLEX URBAN TERRAIN INCLUDING SINGLE TREE OBJECTS
Maximilian Langheinrich, German Aerospace Center (DLR), Germany; Katja Seifert, Hochschule für Angdewandte Wissenschaften, Würzburg, Germany

Tuesday, July 30	15:20 - 16:20	Room 503: Area Q
Session TUP2.PQ		**Poster**

Monitoring and Damage Assessment of Earthquake and Volcanic Activity

Session Co-Chairs: Yo Fukushima, Tohoku University; Gulab Singh, Indian Institute of Technology, Bombay

TUP2.PQ.1
Board PQ.1
CASE STUDIES OF UTILIZING SATELLITE REMOTE SENSING FOR DISASTER RESPONSE
Keita Hikichi, Ayumi Fukushima, Kenichi Honda, Norichika Asada, Naruo Mushiake, Tomohiro Nishimura, Sakae Mukoyama, Kokusai Kogyo Co., Ltd., Japan

TUP2.PQ.2
Board PQ.2
SENSITIVITY OF LAND COVERS ON PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE
Feng Jing, Institute of Earthquake Forecasting, China Earthquake Administration, China; Ramesh P Singh, Chapman University, China

TUP2.PQ.3
Board PQ.3
DETECTION OF BRIGHTNESS TEMPERATURE ANOMALIES USING MULTIPLE METHODS BEFORE THE 2009 L'AQUILA EARTHQUAKE
Xinyan Li, Earthquake Agency of Ningxia Hui Autonomous Region, China; Xinjian Shan, Chunyan Qu, Institute of Geology, China Earthquake Administration, China; Heqing Ma, Earthquake Agency of Ningxia Hui Autonomous Region, China; Weiying Wu, Institute of Geology, China Earthquake Administration, China

TUP2.PQ.4
Board PQ.4
POST-EARTHQUAKE DAMAGE MAPPING USING ARTIFICIAL NEURAL NETWORK AND SUPPORT VECTOR MACHINE CLASSIFIERS AT PALU, INDONESIA
Mutiara Syifa, Subin Ryoo, Chang-Wook Lee, Kangwon National University, Korea (South)

TUP2.PQ.5
Board PQ.5
NIGHT LIGHT REMOTE SENSING APPLICATION IN DISASTER AND REHABILITATION: A CASE STUDY OF MUZAFFARABAD 2005 EARTHQUAKE
Muhammad Luqman, University of the Melbourne, Australia; Urooj Saeed, The Urban Unit, Pakistan; Sajid Rashid Ahmad, Iqra Khalid, College of Earth and Environmental Sciences, University of the Punjab, Pakistan; Anam Munawar, The Urban Unit, Pakistan

TUP2.PQ.6
Board PQ.6
ANALYSIS ON ECOLOGICAL ENVIRONMENT QUALITY OF WENCHUAN COUNTY IN THE PAST 10 YEARS AFTER WENCHUAN EARTHQUAKE
Qiang Li, Jingfa Zhang, Hongbo Jiang, Dan Geng, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP2.PQ.7
Board PQ.7
DISASTER DAMAGE ASSESSMENT USING POLARIMETRIC SAR IMAGE ANALYSIS: CASE OF NEPAL EARTHQUAKE
Shubham Jaiswal, Willis Towers Watson, Mumbai, India; Gulab Singh, Indian Institute of Technology Bombay, India; Anugrah Anilkumar Nagaich, School of Planning and Architechture Bhopal, India

TUP2.PQ.8
Board PQ.8
TECTONIC SHIFT MEASUREMENT WITH GEODETIC SAR PROCESSING
Hartmut Runge, Ulrich Balss, Steffen Suchandt, Michael Eineder, German Aerospace Center (DLR), Germany

TUP2.PQ.9
Board PQ.9
CHANGES IN CHLOROPHYLL CONCENTRATIONS ASSOCIATED WITH THE 5.1 LA HABRA EARTHQUAKE, CALIFORNIA OF 29 MARCH 2014
Ramesh P. Singh, Chapman University, United States; Feng Jing, Institute of Earthquake Forecasting, China Earthquake Administration, China; Qing Ye, China Earthquake Network Center, China Earthquake Administration, China

TUP2.PQ.10
Board PQ.10
EARTHQUAKE-INDUCED BUILDING DAMAGE ASSESSMENT BASED ON SAR CORRELATION AND TEXTURE
Lixia Gong, Qiang Li, Institute of Crustal Dynamics, China Earthquake Administration, China; Fan Wu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Jingfa Zhang, Tian Tian, Hongbo Jiang, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP2.PQ.11
Board PQ.11
DIGITAL ELEVATION MODELS OF VOLCANIC PLUMES
Marcello de Michele, Daniel Raucoules, Michael Foumelis, BRGM - French Geological Survey, France

TUESDAY POSTER

Tuesday, July 30 09:40 - 10:40 Room 503: Area R	Tuesday, July 30 15:20 - 16:20 Room 503: Area R
Session TUP1.PR Poster	Session TUP2.PR Poster

GNSS-R Sensors, Techniques and Applications I

Session Co-Chairs: Hugo Carreno-Luengo, Centre Tecnòlogic de Telecommunicacions de Catalunya (CTTC/CERCA); Rashmi Shah, NASA Jet Propulsion Laboratory; Xianyi Wang, Beijing Key Laboratory of Space Environment Exploration, National Space Science Center, Chinese Academy of Sciences

TUP1.PR.1
Board PR.1
EFFECTS OF ROUGH TOPOGRAPHY IN GNSS-R: A PARAMETRIC STUDY BASED ON A DIGITAL ELEVATION MODEL
Hugo Carreno-Luengo, Guido Luzi, Michele Crosetto, Centre Tecnòlogic de Telecomunicacions de Catalunya (CTTC/CERCA), Spain

TUP1.PR.2
Board PR.2
GRSA: INTEGRATED ASIC FOR SPACEBORNE GNSS REMOTE SENSING
Xianyi Wang, Yusen Tian, Dongwei Wang, Yueqiang Sun, Yuerong Cai, Qifei Du, Weihua Bai, Chunjun Wu, Tongsheng Qiu, Cheng Liu, Fu Li, Hao Qiao, Beijing Key Laboratory of Space Environment Exploration, National Space Science Center, Chinese Academy of Sciences, China

TUP1.PR.3
Board PR.3
MULTIFUNCTIONAL GNSS-R PROCESSING SOFTWARE FOR GNOS II
Yusen Tian, Xianyi Wang, Yueqiang Sun, Dongwei Wang, Chunjun Wu, Weihua Bai, Junming Xia, Qifei Du, National Space Science Center, Chinese Academy of Sciences, China

TUP1.PR.4
Board PR.4
SOIL MOISTURE RETRIEVAL BASED ON SBAS AND BEIDOU GEO SIGNALS
Wei Ban, Kegen Yu, China University of Mining and Technology, China

TUP1.PR.5
Board PR.5
BIOMASS ESTIMATION OVER TROPICAL RAINFORESTS USING GNSS-R ON-BOARD THE CYGNSS MICROSATELLITES CONSTELLATION
Hugo Carreno-Luengo, Guido Luzi, Michele Crosetto, Centre Tecnòlogic de Telecomunicacions de Catalunya (CTTC/CERCA), Spain

TUP1.PR.6
Board PR.6
FOREST BIOMASS ESTIMATE ON LOCAL AND GLOBAL SCALES THROUGH GNSS REFLECTOMETRY TECHNIQUES
Emanuele Santi, Simonetta Paloscia, Simone Pettinato, Giacomo Fontanelli, Institute of Applied Physics - National Research Council (IFAC - CNR), Italy; Maria Paola Clarizia, Deimos Space UK, United Kingdom; Leila Guerriero, Università di Roma Tor Vergata, Italy; Nazzareno Pierdicca, Sapienza University of Rome, Italy

TUP1.PR.7
Board PR.7
ANALYSIS OF WETLAND EXTENT RETRIEVAL ACCURACY USING CYGNSS
Eric Loria, Andrew O'Brien, Ohio State University, United States; Valery Zavorotny, CIRES/ University of Colorado Boulder/NOAA/ESRL, United States; Marco Lavalle, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Clara Chew, University Corporation for Atmospheric Research, United States; Rashmi Shah, Cinzia Zuffada, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

TUP1.PR.8
Board PR.8
MAXIMUM SUSTAINED SURFACE WINDS RETRIEVAL USING THE CYCLONE GLOBAL NAVIGATION SATELLITE SYSTEM (CYGNSS) CONSTELLATION
Mohammad Al-Khaldi, Joel Johnson, Ohio State University, United States; Steven Katzberg, NASA Langley Research Center / South Carolina State University, United States; Alexandra Bringer, Ethan Kubatko, Ohio State University, United States

TUP1.PR.9
Board PR.9
EVOLVING OCEAN MONITORING WITH GNSS-R: PROMISES IN SURFACE WIND SPEED AND PROSPECTS FOR RAIN DETECTION
Milad Asgarimehr, German Research Centre for Geosciences GFZ, Germany; Valery Zavorotny, NOAA Earth System Research Laboratory, United States; Irina Zhelavskaya, German Research Centre for Geosciences GFZ, Germany; Giuseppe Foti, National Oceanography Centre, United Kingdom; Jens Wickert, German Research Center for Geosciences GFZ, Germany; Sebastian Reich, University of Potsdam, Germany

TUP1.PR.10
Board PR.10
SPACEBORNE GNSS-R OBSERVATIONS OF MESOSCALE OCEAN EDDIES; PRELIMINARY RESULTS FROM CYGNSS MISSION
Mostafa Hoseini, Norwegian University of Science and Technology, Norway; Milad Asgarimehr, German Research Centre for Geosciences GFZ, Germany; Hossein Nahavandchi, Norwegian University of Science and Technology, Norway; Jens Wickert, German Research Centre for Geosciences GFZ, Germany

TUP1.PR.12
Board PR.12
RESEARCH ON ATTITUDE CONTROL METHOD OF AGILE SATELLITE BASED ON VARIABLE STRUCTURE CONTROL ALGORITHM
Jian Liangjian, Yang Zhao, HeFen Zhang, Beijing Institute of Spacecraft System Engineering, China

Monitoring and Damage Assessment of Landslide and Surface Deformation I

Session Co-Chairs: Masato Ohki, Aerospace Exploration Agency; Tomohito Asaka, Nihon University; Junichi Susaki, Kyoto University

TUP2.PR.1
Board PR.1
IMPACT OF THE VARIATION OF OBSERVABLE AREAS ON LANDSLIDE STUDY USING INSAR TECHNIQUE
Yan Yan, University of Electronic Science and Technology of China, China; Yong Wang, East Carolina University, United States

TUP2.PR.2
Board PR.2
MEASURING RAPID LANDSLIDE DISPLACEMENTS WITH OPTIMAL ESTIMATION WINDOW OFFSET TRACKING: APPLICATION TO THE BAIGE LANDSLIDE
Hongying Jia, Yingjie Wang, Yunkai Deng, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

TUP2.PR.3
Board PR.3
ON THE EFFECT OF INTERFEROMETRIC PAIRS SELECTION FOR MEASURING FAST MOVING LANDSLIDES
Michael Foumelis, Daniel Raucoules, Bastien Colas, Marcello De Michele, BRGM - French Geological Survey, France

TUP2.PR.4
Board PR.4
DEVELOPMENT OF SMART STICK FOR SOIL EROSION MONITORING
Tzu-Hsuan Lin, Jing-Xuan Peng, Chun-Yao Wen, Yan-Ting Wang, Jing-Ting Huang, National Central University, Taiwan

TUP2.PR.5
Board PR.5
TIME-SERIES LANDSLIDE MONITORING BASED ON STAMPS-SBAS: A CASE STUDY IN LUSHAN, TAIWAN
Yanan Du, Lin Liu, Guangzhou University, China; Guangcai Feng, Xing Peng, Central South University, China; Hongyu Liang, Hong Kong polytechnic University, China; Yuanhui Zhu, Guangzhou University, China

TUP2.PR.6
Board PR.6
CONDITIONING FACTORS DETERMINATION FOR LANDSLIDE SUSCEPTIBILITY MAPPING USING SUPPORT VECTOR MACHINE LEARNING
Bahareh Kalantar, Naonori Ueda, RIKEN Center for Advanced Intelligence Project, Goal-Oriented Technology Research Group, Disaster Resilience Science Team, Japan; Usman Salihu Lay, Universiti Putra Malaysia, Malaysia; Husam Abdulrasool H. Al-Najjar, Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS), Faculty of Engineering and IT, University of Technology Sydney, Australia; Alfian Abdul Halin, Universiti Putra Malaysia, Malaysia

TUP2.PR.7
Board PR.7
INSAR APPLICATION TO BAIGE LANDSLIDE EVENT, CHINA, FROM FAST RESCUE TO CATCHMENT INVESTIGATION
Chaoying Zhao, Xiaojie Liu, Qin Zhang, Chengsheng Yang, Liquan Chen, Chang'an University, China

TUP2.PR.8
Board PR.8
MOUNTAINOUS LANDSLIDE RECOGNITION BASED ON GAOFEN-3 POLARIMETRIC SAR IMAGERY
Yi Ding, Ming Liu, Suju Li, Dan Jia, National Disaster Reduction Center of China, China; Lei Zhou, Beijing University of Civil Engineering and Architecture, China; Bin Wu, Dong Fang Hong Satellite Corporation Limited, China; Yani Wang, Beijing University of Civil Engineering and Architecture, China

TUP2.PR.9
Board PR.9
LANDSLIDE DISPLACEMENT MONITORING WITH TIME SERIES INSAR BY COMBANDING BOTH PS AND DS TARGETS
Yanan Jiang, Qiang Xu, Minggao Tang, Chengdu University of Technology, China

TUP2.PR.10
Board PR.10
LANDSLIDE DISPLACEMENT MONITORING WITH TIME SERIES INSAR BY COMBANDING BOTH PS AND DS TARGETS
Yanan Jiang, Qiang Xu, Minggao Tang, Chengdu University of Technology, China

TUESDAY POSTER

137

Tuesday, July 30	09:40 - 10:40	Room 503: Area S
Session TUP1.PS		Poster

GNSS-R Sensors, Techniques and Applications II

Session Co-Chairs: Hyuk Park, Universitat Politècnica de Catalunya; Zorana Jelenak, National Oceanic and Atmospheric Administration / UCAR; Estel Cardellach, Institut de Ciencies de l'Espai (CSIC-IEEC)

TUP1.PS.1
Board PS.1
A MACHINE LEARNING FRAMEWORK FOR REAL DATA GNSS-R WIND SPEED RETRIEVAL
Yunxiang Liu, Jun Wang, Ian Collett, Jade Morton, University of Colorado Boulder, United States

TUP1.PS.2
Board PS.2
A 'TRACK-WISE' WIND RETRIEVAL ALGORITHM FOR THE CYGNSS MISSION
Faozi Said, National Oceanic and Atmospheric Administration / Global Science & Technology, United States; Zorana Jelenak, National Oceanic and Atmospheric Administration / UCAR, United States; Jeonghwang Park, National Oceanic and Atmospheric Administration / Global Science & Technology, United States; Seubson Soisuvarn, National Oceanic and Atmospheric Administration / UCAR, United States; Paul Chang, National Oceanic and Atmospheric Administration, United States

TUP1.PS.3
Board PS.3
IMPACT OF SPECULAR POINT ESTIMATION INACCURACIES ON TECHODEMOSAT-1 GNSS-REFLECTOMETRY OBSERVABLES OVER OCEANS
Giuseppe Grieco, Ad Stoffelen, Royal Dutch Meteorological Institute, Netherlands; Marcos Portabella, Marine Science Institute (ICS-CSIC), Spain

TUP1.PS.4
Board PS.4
A PATCH MODEL BASED ON NUMERICAL SOLUTIONS OF MAXWELL EQUATIONS FOR GNSS-R LAND APPLICATIONS
Jiyue Zhu, Leung Tsang, Haokui Xu, Weihui Gu, University of Michigan, United States

TUP1.PS.5
Board PS.5
ON-ORBIT TRENDING OF CYGNSS DATA
Darren McKague, Christopher Ruf, University of Michigan, United States

TUP1.PS.6
Board PS.6
A REAL-TIME EIRP LEVEL 1 CALIBRATION ALGORITHM FOR THE CYGNSS MISSION USING THE ZENITH MEASUREMENTS
Tianlin Wang, Christopher Ruf, University of Michigan, United States; Scott Gleason, University Corporation for Atmospheric Research, United States; Bruce Block, Darren McKague, University of Michigan, United States; Andrew O'Brien, Ohio State University, United States

TUP1.PS.7
Board PS.7
THE PSEUDO MONOSTATIC POINT FOR GNSS-R
Benjamin Southwell, Andrew Dempster, ACSER, University of New South Wales, Australia

TUP1.PS.8
Board PS.8
AN ADAPTIVE WINDOW FOR GNSS-R STARE PROCESSING
Benjamin Southwell, Andrew Dempster, ACSER, University of New South Wales, Australia

TUP1.PS.9
Board PS.9
COHERENT REFLECTIONS USING CLOSED-LOOP PLL PROCESSING OF CYGNSS IF DATA
Yang Wang, Jade Morton, University of Colorado Boulder, United States

TUP1.PS.10
Board PS.10
CHARACTERIZATION OF COHERENCE PROPERTIES OF SIGNALS OF OPPORTUNITY OVER LAND SURFACE
Rashmi Shah, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jade Morton, Yang Wang, Ian Collett, University of Colorado Boulder, United States

TUP1.PS.11
Board PS.11
GENETIC ALGORITHM BASED GNSS-R SNOW WATER EQUIVALENT ESTIMATION
Yunwei Li, Xin Chang, Shuyao Wang, Taoyong Jin, Wuhan University, China; Kegen Yu, China University of Mining and Technology, China

TUP1.PS.12
Board PS.12
DIGITAL SYSTEM DESIGN OF AN AIRBONE L/S/C-BAND MIR(MICROWAVE INTERFEROMETRIC RADIOMETER)
Tianshu Guo, University of Chinese Academy of Sciences; Key laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China; Hao Liu, Hao Lu, Changxing Huo, Lijie Niu, Key laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China

Tuesday, July 30	15:20 - 16:20	Room 503: Area S
Session TUP2.PS		Poster

Monitoring and Damage Assessment of Landslide and Surface Deformation II

Session Co-Chairs: Takashi Nonaka, Nihon University; Shoichiro Kojima, NICT

TUP2.PS.1
Board PS.1
LANDSLIDE GEOHAZARD ASSESSMENT WITH CONVOLUTIONAL NEURAL NETWORKS USING SENTINEL-2 IMAGERY DATA
Silvia Liberata Ullo, University of Sannio, Italy; Maximillian Shen Langenkamp, Tuomas Petteri Oikarinen, Massachusetts Institute of Technology, United States; Maria Pia Del Rosso, Alessandro Sebastianelli, Federica Piccirillo, Stefania Sica, University of Sannio, Italy

TUP2.PS.2
Board PS.2
LANDSLIDE SUSCEPTIBILITY MAPPING USING LOGISTIC REGRESSION MODEL BASED ON INFORMATION VALUE FOR THE REGION ALONG CHINA-THAILAND RAILWAY FROM SARABURI TO SIKHIO, THAILAND
Chi Xu, Wanchang Zhang, Yaning Yi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Qi Xu, Institute of Karst Geology, Chinese Academy of Geological Sciences, China

TUP2.PS.3
Board PS.3
MAPPING SURFACE DISPLACEMENTS AND AQUIFER CHARACTERISTICS AROUND THE KUMAMOTO PLAIN, JAPAN, USING PERSISTENT SCATTERER INTERFEROMETRY
Kazuya Ishitsuka, Kyoto University, Japan; Takeshi Tsuji, Kyushu University, Japan

TUP2.PS.4
Board PS.4
UNSUPERVISED AND AUTOMATIC GENERATION OF DINSAR CO-SEISMIC DISPLACEMENT MAPS BY MEANS OF SENTINEL-1 DATA
Fernando Monterroso, University of Naples Parthenope, Italy; Manuela Bonano, Claudio de Luca, Vincenzo De Novellis, Riccardo Lanari, Michele Manunta, Mariarosaria Manzo, Giovanni Onorato, Institute of Remote for Electromagnetic Sensing of the Environment -IREA-, National Research Council -CNR-, Italy; Emanuella Valerio, University of Rome "La Sapienza", Italy; Ivana Zinno, Francesco Casu, Institute of Remote for Electromagnetic Sensing of the Environment -IREA-, National Research Council -CNR-, Italy

TUP2.PS.5
Board PS.5
AUTOMATIC IDENTIFICATION OF POTENTIAL LANDSLIDES BY INTEGRATING REMOTE SENSING, DEM AND DEFORMATION MAP
Zhangyuan Xun, Chaoying Zhao, Xiaojie Liu, Chang'an University, China; Yuanyuan Liu, East China University of Technology, China

TUP2.PS.6
Board PS.6
ALOS-2 OBSERVATIONS OF SUBSIDENCE IN SHENZHEN
Peng Liu, Xiaofei Chen, Jiankuan Xu, Southern University of Science and Technology, China; Chisheng Wang, Zhongwen Hu, Shenzhen University, China

TUP2.PS.7
Board PS.7
A NEW METHOD FOR URBAN SUBSIDENCE MONITORING USING TIME SERIES INSAR COMBINING TANDEM:A CASE STUDY OF PAZHOU ISLAND
Changhui Li, Guangzhou Urban Planning Design & Survey Research Institute, China; Qi Liu, Central South University, China; Yang Song, Chenyue Chen, Guangzhou Urban Planning Design & Survey Research Institute, China

TUP2.PS.8
Board PS.8
MULTI-TEMPORAL AND MULTI-SENSOR INSAR RESULTS TO SUPPORT GEOHAZARD ASSESSMENT IN THE BANDUNG AREA, (WESTERN JAVA, INDONESIA)
Cristiano Tolomei, Stefano Salvi, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Angga T. Yuherdha, Deltares Indonesia, Indonesia; Geert Prinsen, Deltares, Netherlands; Giuseppe Pezzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Joost Beckers, Deltares, Netherlands; Simone Atzori, Istituto Nazionale di Geofisica e Vulcanologia, Italy

TUP2.PS.9
Board PS.9
SPATIAL ASSESSMENT OF LAND DEGRADATION SENSITIVE AREAS IN KORLA
Jinchen Ding, Yunzhi Chen, Xiaoqin Wang, Meiqin Cao, Key Lab. of Spatial Data Mining & Information Sharing of Ministry of Education, National & Local Joint Engineering Research Center of Satellite Geospatial Information Technology, Fuzhou University, China

TUP2.PS.10
Board PS.10
MEASURING THE BOUNDARY OF CRUSTAL DEFORMATION AREA BY INSAR
Meng Zhu, Qiming Zeng, Jian Jiao, School of Earth and Space Sciences, Peking University, China

Wednesday, July 31	09:40 - 10:40	Room 503: Sprint Area
Session WEP1.SPR		SPRINT Presentation

WEP1 SPRINT Session

WEP1.SPR.1
09:50
A SEMI-SUPERVISED APPROACH TOWARDS LAND COVER MAPPING WITH SENTINEL-2 DESNSE TIME-SERIES IMAGERY
Ting Hu, Xin Huang, Jiayi Li, Wuhan University, China; Jón Atli Benediktsson, University of Iceland, Iceland; Jiansi Yang, Jianya Gong, Wuhan University, China

WEP1.SPR.2
09:55
CAL/VAL PHASE FOR THE SWIM INSTRUMENT ONBOARD CFOSAT
Raquel Rodriguez Suquet, Laura Hermozo, Cédric Tourain, Céline Tison, CNES, France; Danièle Hauser, Patricia Schippers, Lauriane Delaye, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Lotfi Aouf, Alice Dalphinet, Météo-France, France; Alexis Mouche, Bertrand Chapron, Fabrice Collard, Ifremer, France; Christophe Dufour, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Flavien Gouillon, CNES, France; Annabelle Ollivier, CLS, France; Gilles Guitton, Ifremer, France; Jean-Michel Lachiver, CNES, France

WEP1.SPR.3
10:00
CONSTRAINED DISTANCE BASED K-MEANS CLUSTERING FOR SATELLITE IMAGE TIME-SERIES
Thomas Lampert, Baptiste Lafabregue, Pierre Gançarski, University of Strasbourg, France

WEP1.SPR.4
10:05
MICROWAVE SINGLE PIXEL IMAGER (MSPI) ANTENNA ASSEMBLY
Justin Bobak, Scott Rudolph, Michael Nurnberger, Hatim Alqadah, US Naval Research Laboratory, United States

Wednesday, July 31	15:20 - 16:20	Room 503: Sprint Area
Session WEP2.SPR		SPRINT Presentation

WEP2 SPRINT Session

WEP2.SPR.1
15:30
SMOS INSTRUMENT PERFORMANCE AFTER MORE THAN 9 YEARS IN ORBIT
Manuel Martín-Neira, Roger Oliva, European Space Agency (ESA), Netherlands; Ignasi Corbella, Francesc Torres, Nuria Duffo, Israel Durán, Polytechnic University of Catalonia, Spain; Juha Kainulainen, Harp Technologies, Finland; Josep Closa, Albert Zurita, Airbus Defence and Space, Spain; François Cabot, Ali Khazaal, Eric Anterrieu, Philippe Richaume, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Jose Barbosa, Research and Development in Aerospace, Switzerland; Gonçalo Lopes, DEIMOS, Portugal; Joe Tenerelli, OceanDataLab, France; Raúl Díez-García, Telespazio VEGA-UK, Spain; Jorge Fauste, European Space Agency (ESA), Spain; Antonio Turiel, Verónica González-Gambau, SMOS Barcelona Expert Centre, Spain; Raffaele Crapolicchio, European Space Agency (ESA), Italy; Giovanni Macelloni, Marco Brogioni, Institute of Applied Physics, Italy; Pierre Vogel, Martin Suess, European Space Agency (ESA), Netherlands

WEP2.SPR.2
15:35
ARCTIC SEA SURFACE SALINITY RETRIEVAL FROM SMOS MEASURES
Justino Martinez, Carolina Gabarró, Estrella Olmedo, Veronica Gonzalez-Gambau, Cristina Gonzalez-Haro, Antonio Turiel, Institute of Marine Sciences (ICM-CSIC), Spain; Roberto Sabia, Telespazio-Vega, Italy; Wenquing Tang, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEDNESDAY POSTER

139

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area A
Session WEP1.PA		**Poster**

Clouds and Precipitation: Data Products and Retrievals II

Session Co-Chairs: David Kunkee, The Aerospace Corporation; Gail Skofronick Jackson, NASA; Nofel Lagrosas, Center for Environmental Remote Sensing (CEReS), Chiba University; Saurabh Das, Indian Institute of Technology, Indore

WEP1.PA.1
Board PA.1
A FULLY SENSITIVE PROTOTYPE OF THE DOPPLER RADAR CLOUD PROFILER
Dirk Klugmann, S&AO Ltd, United Kingdom

WEP1.PA.2
Board PA.2
CAUSE ANALYSIS OF A THUNDERSTORM GALE IN HEFEI
Houfu Zhou, Anhui Institute of Meteorological Sciences, China; Naichao Shan, Baoliang Chu, Anhui Sub-bureau of East China Regional Traffic Management Bureau, China; Qian Zhao, Anhui Institute of Meteorological Sciences, China

WEP1.PA.3
Board PA.3
MAPPING SPATIO-TEMPORAL DYNAMICS OF RAINSTORMS IN RECENT 20 YEARS OF CHINA USING TRMM DATA
Chang Huang, Shiqiang Zhang, Northwest University, China; Zucheng Wang, Northeast Normal University, China

WEP1.PA.4
Board PA.4
NIGHTTIME CLOUD BASE HEIGHT AND AVERAGE PIXEL VALUES OF IMAGES: OBSERVATIONS FROM LIDAR AND A CAMERA WITHOUT IR FILTER
Nofel Lagrosas, Hiroaki Kuze, Center for Environmental Remote Sensing (CEReS), Chiba University, Japan

WEP1.PA.5
Board PA.5
TEMPORAL DOWNSCALING OF TRMM PRECIPITATION PRODUCTS USING AMSR2 SOIL MOISTURE DATA
Dong Fan, Xiaoguang Jiang, University of Chinese Academy of Sciences, China; Hua Wu, Chinese Academy of Sciences, China; Huazhu Xue, Henan Polytechnic University, China; Guotao Dong, Yellow River Institute of Hydraulic Research, China; Caixia Gao, Chinese Academy of Sciences, China; Xiaoping Zhang, University of Chinese Academy of Sciences, China; Jiehai Cheng, Henan Polytechnic University, China

WEP1.PA.6
Board PA.6
DROUGHT ASSESSMENT IN BELT AND ROAD AREA BASED ON ERA5 REANALYSES
Changdi Xue, Lu Niu, University of Chinese Academy of Sciences, China; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Xiaoguang Jiang, Dong Fan, University of Chinese Academy of Sciences, China

WEP1.PA.7
Board PA.7
CLOUD COVERAGE EFFECT OF EARTH OUTGOING LONGWAVE RADIATION VIEWED FROM A MOON-BASED PLATFORM
Jing Huang, Huadong Guo, Guang Liu, Guozhuang Shen, Hairong Wang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP1.PA.8
Board PA.8
DROUGHT MONITORING USING QUANTITATIVE PRECIPITATION ESTIMATION IN NORTHEASTERN ARIZONA
Delbert Willie, Northern Arizona University, United States

WEP1.PA.9
Board PA.9
FAST FOURIER TRANSFORM SPARSITY FOR HIGH QUALITY WEATHER RADAR RECONSTRUCTION
Rita Purnamasari, Bandung Institute of Technology and Telkom University, Indonesia; Andriyan Bayu Suksmono, Ian Joseph Matheus Edward, Irma Zakia, Bandung Institute of Technology, Indonesia

WEP1.PA.10
Board PA.10
A MACHINE LEARNING APPROACH TO RE-CLASSIFICATION OF CLIMATE ZONES BASED ON MULTIPLE RAIN FEATURES OVER INDIA
Saurabh Das, Chandrani Chatterjee, Indian Institute of Technology, Indore, India; Swastika Chakraborty, Sikkim Manipal Institute of Technology, India

WEP1.PA.11
Board PA.11
SUITABILITY OF THE TRMM SATELLITE RAINFALLS FOR ESTIMATION OF RAINFALL EROSIVITY IN THE POYANG LAKE BASIN, CHINA
Xianghu Li, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, China

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area A
Session WEP2.PA		**Poster**

Aerosols II

Session Co-Chairs: Mourad Hamidouche, German Aerospace Center (DLR); Guillaume Bigeard, CNRM, Université de Toulouse, Météo-France, CNRS

WEP2.PA.1
Board PA.1
COMPARISON OF AEROSOL CHARACTERISTICS DERIVED FROM SONET, AERONET VERISION 2 AND VERISION 3
Kaitao Li, Zhengqiang Li, Fengxun Zheng, Donghui Li, Hua Xu, Yisong Xie, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PA.2
Board PA.2
ARCTIC AEROSOL TIMING ANALYSIS BASED ON MODIS AEROSOL PRODUCTS
Zheng Shi, Jie Guang, Chinese Academy of Sciences, China; Yong Xue, University of Derby, China; Yanqing Xie, Cheng Fan, Yahui Che, Chinese Academy of Sciences, China

WEP2.PA.3
Board PA.3
MODIS AEROSOL INVERSION UNDER COMPLEX BACKGROUND CONDITIONS SUPPORTED BY BRDF/ALBEDO PRODUCTS
Wenhua Zhang, Qufu Normal University, China; Lin Sun, Shandong University of Science and Technology, China; Lishu Lian, Qufu Normal University, China; Yikun Yang, Beijing Normal University, China; Yixin Zhang, Qufu Normal University, China

WEP2.PA.4
Board PA.4
A SPACE BORNE LIDAR INSTRUMENT FOR METHANE: INSTRUMENT MONITORING & QUALITY ASSURANCE
Mourad Hamidouche, Günter Lichtenberg, Bernd Aberle, Thomas Trautmann, German Aerospace Center (DLR), Germany

WEP2.PA.5
Board PA.5
A METHOD FOR MULTI-PARAMETER CONSISTENT ESTIMATION FROM GOES-R TOP OF ATMOSPHERE REFLECTANCE DATA
Hengbin Xiong, Zhiqiang Xiao, Hanyu Shi, Beijing Normal University, China

WEP2.PA.6
Board PA.6
DRIVING FORCE OF TOTAL OZONE IN THE NORTHERN MIDLATITUDES: AN ANALYSIS BASED ON DATA FROM TWO STATIONS
Jingmei Yang, Key Laboratory of Middle Atmosphere and Global Environment Observation (LAGEO), China

WEP2.PA.7
Board PA.7
AN AOD MONITORING OF AIR POLLUTION PROCESS IN BEIJING BASED ON GOCI DATA
Yuhuan Zhang, Pengfei Ma, Lijuan Zhang, Qing Li, Zhongting Wang, Ministry of Environmental Protection of the People's Republic of China, China

WEP2.PA.8
Board PA.8
IMPROVING THE REPRESENTATION OF AGRICULTURAL AMMONIA EMISSIONS FOR A BETTER AIR QUALITY FORECASTING OVER FRANCE: A SIMPLE MODEL TO ESTIMATE FERTILIZATION DATES FROM METEOROLOGICAL CONSTRAINTS
Guillaume Bigeard, Joaquim Arteta, Matthieu Plu, CNRM, Université de Toulouse, Météo-France, CNRS, France

WEP2.PA.9
Board PA.9
EVALUATION OF THE HIMAWARI-8 AEROSOL PRODUCTS
Haining Wei, Weizhen Wang, Feinan Xu, Jiaojiao Feng, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

WEP2.PA.10
Board PA.10
MONITORING VOLCANIC ASH WITH THE CHEMISTRY-TRANSPORT MODEL MOCAGE: IMPROVEMENTS OF SOURCE TERM AND ASSIMILATION OF OBSERVATIONS
Guillaume Bigeard, Bojan Sic, Laaziz El Amraoui, Matthieu Plu, CNRM-GAME, Météo-France – CNRS, UMR3589, France

Wednesday, July 31 09:40 - 10:40 Room 501-502: Area B	Wednesday, July 31 15:20 - 16:20 Room 501-502: Area B
Session WEP1.PB Poster	Session WEP2.PB Poster

Clouds and Precipitation: Calibration and Modelling I

Session Chair: Gail Skofronick Jackson, NASA

WEP1.PB.1
Board PB.1
A RECONSTRUCTION METHOD FOR CLOUDY REMOTE SENSING IMAGES
Meng Xu, Sen Jia, Shenzhen University, China; Mark Pickering, Xiuping Jia, University of New South Wales, Canberra, Australia

WEP1.PB.2
Board PB.2
MERGING SATELLITE-BASED AND GAUGE-BASED PRECIPITATION DATA FOR HYDROLOGICAL FORECASTING
Ying Zhang, Jinliang Hou, Yunchen Wang, Chunlin Huang, Weizhen Wang, Chinese Academy of Sciences, China

WEP1.PB.3
Board PB.3
THE EFFECTS OF TEMPERATURE DIFFERENCE BETWEEN CLOUD BASE AND CLOUD TOP ON SURFACE LONGWAVE RADIATION ESTIMATE BASED ON CALIPSO AND REANALYSIS DATA
Feng Yang, Jie Cheng, Qi Zeng, Beijing Normal University, China

WEP1.PB.4
Board PB.4
PRECIPITATION CHANGE DURING THE SNOW PERIOD IN THE NORTHERN XINJIANG, A TYPICAL ARID REGION
Weiguo Wang, Hongyi Li, Jian Wang, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

WEP1.PB.5
Board PB.5
USING QUANTILE MAPPING TO CORRECT WRF PRECIPITATION FOR IMPROVEMENT OF RUNOFF SIMULATION IN MANAS RIVER BASIN
Jiapei Ma, Hongyi Li, Jian Wang, Huajin Lei, Key Laboratory of Remote Sensing of Gansu Province, Heihe Remote Sensing Experimental Research Station, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

WEP1.PB.6
Board PB.6
PHENOMENOLOGY OF THE MESOAMERICAN RAINY SEASON
Danielle Groenen, Mark Bourassa, Florida State University, United States

WEP1.PB.7
Board PB.7
APPLICATION OF A PHYSICALLY BASED RADAR RAINFALL SYSTEM OVER SOUTHWEST CHINA
Yabin Gou, Hangzhou Meteorological Bureau, China; Haonan Chen, NOAA/Earth System Research Laboratory / Colorado State University, United States; Jieying He, Key Laboratory of Microwave Remote Sensing, National Space Science Center, China; Qiulei Xia, Chengdu University of Information Technology, China

WEP1.PB.8
Board PB.8
PATH INTEGRATED ATTENUATION AS A FUNCTION OF PRECIPITATION VARIABILITY ACROSS SATELLITE FIELD-OF-VIEWS
Christopher Williams, University of Colorado Boulder, United States

WEP1.PB.10
Board PB.10
GLOBAL PRECIPITATION SENSITIVITY ANALYSIS USING THE MWHTS AND MWTS ON FY-3D SATELLITE
Na Li, Jieying He, Shengwei Zhang, Chinese Academy of Sciences, China

Aerosols III

Session Co-Chairs: Jonathan Li, University of Waterloo; Itaru Sano, Kindai University

WEP2.PB.1
Board PB.1
THE ROLE OF AEROSOLS AND LAND SURFACE ALBEDO IN COUPLING THE LAND – ATMOSPHERE SYSTEM IN THE TIBET PLATEAU
Massimo Menenti, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, China; Yerong Wu, Hunan University of Science and Technology, China; Laure Roupioz, Office National d'Etudes et de Recherches Aérospatiales,ONERA, France; Lian Liu, Weiqiang Ma, Junru Jia, Chinese Academy of Sciences, China

WEP2.PB.2
Board PB.2
AEROSOL PROPERTIES DURING CANADIAN WILDFIRE EVENT IN SUMMER OF 2018
Itaru Sano, Kindai University, Japan; Sonoyo Mukai, Kyoto College of Graduate Studies for Informatics, Japan; Makiko Nakata, Kindai University, Japan

WEP2.PB.3
Board PB.3
LATITUDINAL VARIATION OF CLOUD EFFECTIVE RADIUS AND AEROSOL OPTICAL DEPTH FROM MODIS DATA
Neel Sarkar, Arijit De, Netaji Subhash Engineering College, India

WEP2.PB.4
Board PB.4
LONG-TERM TREND OF GROUND-LEVEL PM2.5 CONCENTRATIONS OVER 2012-2017 IN CHINA
Ming Liu, University of Waterloo, Canada; Gaoxiang Zhou, China University of Geosciences, China; Rebecca Saari, Jonathan Li, University of Waterloo, Canada

WEP2.PB.5
Board PB.5
ESTIMATING PM2.5 CONCENTRATIONS OF HIGH-RESOLUTION IN TAIWAN ISLAND USING GF-1 WFV DATA
Xiaoqin Wang, Feng Wang, Liangliang Jia, Hua Su, Mengjing Lin, Fuzhou University, China

WEP2.PB.6
Board PB.6
HOURLY GROUND LEVEL PM2.5 ESTIMATION FOR THE SOUTHEAST OF CHINA BASED ON HIMAWARI-8 OBSERVATION DATA
Ying Li, Chinese Academy of Sciences, China; Yong Xue, University of Derby, United Kingdom; Jie Guang, Lu She, Guili Chen, Cheng Fan, Chinese Academy of Sciences, China

WEP2.PB.7
Board PB.7
ESTIMATION AND EVALUATION OF AIR QUALITY DEGRADATION BY THE SUDDEN BURNING ACTIVITIES
Kwonho Lee, Gangneung-Wonju National University, Korea (South)

WEP2.PB.8
Board PB.8
SPATIAL SIMULATION OF SECONDARY ORGANIC AEROSOL FORMATION FROM THE REACTION OF BVOCS AND NITROGEN OXIDES IN GUANGDONG, CHINA
Yangcheng Zheng, Lili Li, Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

Wednesday, July 31 09:40 - 10:40 Room 501-502: Area C	**Wednesday, July 31** 15:20 - 16:20 Room 501-502: Area C
Session WEP1.PC Poster	**Session WEP2.PC** Poster

Image Formation I

Session Co-Chairs: Ryo Natsuaki, German Aerospace Center (DLR); Peng Liu, Fudan University

WEP1.PC.1
Board PC.1
INVESTIGATIONS ON THE OPTIMUM COMBINATION OF AZIMUTH PHASE CODING AND UP- AND DOWN-CHIRP MODULATION FOR RANGE AMBIGUITY SUPPRESSION
Ryo Natsuaki, Nida Sakar, Nestor Yague-Martinez, Muriel Pinheiro, Pau Prats-Iraola, German Aerospace Center (DLR), Germany

WEP1.PC.2
Board PC.2
SUB-IMAGE BLOCKS BASED JOINT SPARSE RECONSTRUCTION ALGORITHM FOR MULTI-PASS SAR IMAGES FEATURE ENHANCEMENT
Chunxiao Wu, Si Gao, Zenghui Zhang, Wenxian Yu, Shanghai Key Laboratory of Intelligent Sensing and Recognition, China

WEP1.PC.3
Board PC.3
A DEPENDENT DOPPLER PARAMETERS CORRECTION METHOD BASED ON TWO-STEP EQUIVALENT RANGE MODEL IN DIVING HIGH SQUINT IMAGING WITH CURVED TRAJECTORY
Yanfeng Dang, Yi Liang, Jianxin Wu, YuHong Zhang, Xidian University, China

WEP1.PC.4
Board PC.4
A PROCESSING STRATEGY FOR VARIABLE PRF SAR WITH DIGITAL BEAMFORMING IN AZIMUTH
Mayu Miyamoto, Masayoshi Tsuchida, Mitsubishi Electric Corporation, Information Technology R&D Center, Japan; Shohei Nakamura, Yuya Yokota, Mitsubishi Electric Corporation, Kamakura Works, Japan; Kei Suwa, Mitsubishi Electric Corporation, Information Technology R&D Center, Japan

WEP1.PC.5
Board PC.5
PROCESSING OF SAR ON HIGH-SPEED PLATFORM WITH ACCELERATION USING NONLINEAR TIME SCALING ALGORITHM
Chunhui Lin, Shiyang Tang, Linrang Zhang, Xidian University, China; Ping Guo, Xi'an University of Science and Technology, China; Gaogao Liu, Bo Jiu, Xidian University, China

WEP1.PC.6
Board PC.6
A NEW GROUND MOVING TARGET IMAGING ALGORITHM FOR HIGH-RESOLUTION AIRBORNE CSSAR-GMTI SYSTEMS
Yongkang Li, Laisen Nie, Northwestern Polytechnical University, China

WEP1.PC.7
Board PC.7
FOCUSING IMPROVEMENT FOR GROUND MOVING TARGET IN HIGH-SQUINT SYNTHETIC APERTURE RADAR IMAGERY
Lei Ran, Zheng Liu, Rong Xie, Jibin Zheng, Hui Ma, Hongwei Liu, Xidian University, China

WEP1.PC.8
Board PC.8
LINEAR ARRAY SAR IMAGING AND AUTOFOCUS APPROACH
Yangyang Wang, Xiaoling Zhang, Liming Zhou, Xingyue Zhang, University of Electronic Science and Technology of China, China

WEP1.PC.9
Board PC.9
CZT CORRECTION OF RANGE-DEPENDENT RESIDUAL-RCM FOR AIRBORNE SAR MOTION COMPENSATION
Jianlai Chen, Buge Liang, De-Gui Yang, Dang-Jun Zhao, Xue-lin Yuan, Wei Shi, Jin-jun Mo, School of Aeronautics and Astronautics, Central South University, China

WEP1.PC.10
Board PC.10
COMPARISON OF REAL AND SIMULATED SAR IMAGERY OF SHIP WITH OCEANOGRAPHIC MEASURED DATA
Peng Liu, Fudan University, China; Peng Chen, Second Institute of Oceanography, Ministry of Natural Resources, China

Multi-Channel SAR

Session Co-Chairs: Marc Rodriguez Cassola, German Aerospace Center (DLR); Robert Wang, Institute of Electronics, Chinese Academy of Sciences

WEP2.PC.1
Board PC.1
JOINT WIRELESS COMMUNICATION AND HIGH RESOLUTION SAR IMAGING USING AIRBORNE MIMO RADAR SYSTEM
Jie Wang, Nanjing University of Information Science and Technology, China; Xing-Dong Liang, Long-Yong Chen, Institute of Electronics, Chinese Academy of Sciences, China; Li-Na Wang, Sai-Nan Shi, Nanjing University of Information Science and Technology, China

WEP2.PC.2
Board PC.2
THREE DIMENSIONAL IMAGING ALGORITHM FOR SYNTHETIC APERTURE RADAR WITH METAMATERIAL APERTURES-BASED ANTENNA
ZhenHua Wu, National Laboratory of Radar Signal Processing, Xidian University, China; Lei Zhang, School of Electronics and Communication Engeering, Sun Yat-sen University, China; Shaopeng Wei, HongWei Liu, National Laboratory of Radar Signal Processing, Xidian University, China

WEP2.PC.3
Board PC.3
INTEGRATION OF COMMUNICATION AND SAR RADAR BASED ON OFDM WITH CHANNEL ESTIMATION IN HIGH SPEED SCENARIO
Gaogao Liu, Haonan Niu, Minhua Zheng, Dan Bao, Jingjing Cai, Guodong Qin, Bin Wu, Peng Li, Nan Liu, Xidian University, China

WEP2.PC.4
Board PC.4
EFFECT OF GAPS BETWEEN TELESCOPES ON APERTURE SYNTHESIS IN MULTI-CHANNEL SAL SYSTEM
Shuai Wang, University of Chinese Academy of Sciences, China; Bingnan Wang, Institute of Electronics, Chinese Academy of Sciences, China; Maosheng Xiang, University of Chinese Academy of Sciences, China; Liangjiang Zhou, Institute of Electronics, Chinese Academy of Sciences, China; Yirong Wu, University of Chinese Academy of Sciences, China

WEP2.PC.5
Board PC.5
AN IMAGING METHOD FOR CO-PRIME-SAMPLING SPACEBORNE SAR
Wanwan Zhao, Pengbo Wang, Beihang University, China; Wei Liu, University of Sheffield, United Kingdom; Xinkai Zhou, Beihang University, China

WEP2.PC.6
Board PC.6
PHASE MISMATCH CALIBRATION FOR MULTICHANNEL SLIDING SPOTLIGHT SAR IMAGING WITH EXTENDED AZIMUTH CROSS CORRELATION
Huaitao Fan, Zhimin Zhang, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

WEP2.PC.7
Board PC.7
AN EXTENDED D-TOMOSAR SYSTEM FOR THE RETRIEVAL OF THREE-DIMENSIONAL SURFACE DEFORMATION
Zhigui Wang, Mei Liu, Kunfeng Lv, Harbin Institute of Technology, China

WEP2.PC.8
Board PC.8
TWO-DIMENSIONAI IMAGING WITH STATIONARY NONUNIFORM FREQUENCY DIVERSE ARRAY TRANSMITTER
Liu Xiangrong, Mao Wei, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China; Wu Lei, University of Electronic Science and Technology of China, China

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area D
Session WEP1.PD		**Poster**

Earth Observation

Session Co-Chairs: Bruce Chapman, NASA Jet Propulsion Laboratory; Linlin Ge, University of New South Wales

WEP1.PD.1
Board PD.1
POWER TRANSMISSION TOWER CFAR DETECTION ALGORITHM BASED ON INTEGRATED SUPERPIXEL WINDOW AND ADAPTIVE STATISTICAL MODEL
Xin Zhou, Xiuguo Liu, Qihao Chen, Zhengjia Zhang, China University of Geosciences (Wuhan), China

WEP1.PD.2
Board PD.2
BILGE DUMP AUTOMATIC ALERT SYSTEM IN SOUTHERN AFRICA OCEANS
Lizwe Mdakane, Council for Scientific and Industrial Research, South Africa; Waldo Kleynhans, University of Pretoria, South Africa; Colin Schwegmann, Rory Meyer, Council for Scientific and Industrial Research, South Africa

WEP1.PD.3
Board PD.3
LONG TERM LAND SUBSIDENCE ANALYSIS BY FUSING MULTI-SENSOR TIME SERIES INSAR RESULTS
Jiayu Li, Lianhuan Wei, Qiuyue Feng, Shanjun Liu, College of Resources and Civil Engineering, Northeastern University, China

WEP1.PD.4
Board PD.4
ANALYSIS OF IONOSPHERIC SCINTILLATION IMPACT ON SPACE-BORNE P-BAND SLIDING SPOTLIGHT SAR SYSTEM
Lei Yu, Yongsheng Zhang, Yifei Ji, Qilei Zhang, Zhen Dong, National University of Defense Technology, China

WEP1.PD.5
Board PD.5
ICE VELOCITY MEASUREMENTS OF NARSSAP SERMIA IN GREENLAND USING MULTI-TEMPORAL TERRASAR-X/TANDEM-X SAR OBSERVATIONS
Seong-Woo Jung, Seo-Woo Park, Sang-Hoon Hong, Pusan National University, Korea (South)

WEP1.PD.6
Board PD.6
VOLUME CHANGE OF THE QUARRY IN THE 2015 SHENZHEN LANDSLIDE MONITORED BY SAR SHAPE FROM SHADING
Chisheng Wang, Zhongwen Hu, Shenzhen University, China; Peng Liu, Southern University of Science and Technology, China

WEP1.PD.7
Board PD.7
MEASUREMENTS OF FOLIAGE-INDUCED SIGNAL MODULATION AT L-BAND
Alvin Goh, Mark Preiss, Elliot Hansen, Defence Science and Technology Group, Australia

WEP1.PD.8
Board PD.8
FUSION OF POLARIMETRIC AND TEXTURE INFORMATION FOR EARTHQUAKE-INDUCED LANDSLIDE EXTRACTION FROM "GAOFEN-3" FULLY POLARIMETRIC SAR IMAGERY
Qiang Li, Jingfa Zhang, Hongbo Jiang, Institute of Crustal Dynamics, China Earthquake Administration, China; Dan Geng, Beijing Liwei Huanyu Technology Co., Ltd, China; Lixia Gong, Tian Tian, Institute of Crustal Dynamics, China Earthquake Administration, China

WEP1.PD.9
Board PD.9
SAR IMAGE CHANGE DETECTION BASED ON MEAN SHIFT PRE-CLASSIFICATION AND FUZZY C-MEANS
Ronghua Shang, Kaize Xie, Michael Aggrey Okoth, Licheng Jiao, Xidian University, China

WEP1.PD.10
Board PD.10
ASSESSMENT OF THE SOIL MOISTURE ESTIMATION AT THE KOREA PENINSULA: CASE STUDY FOR AGRICULTURE AND MOUNTAINOUS AREAS
Seongkeun Cho, Jaehwan Jeong, Jongjin Baik, Minha Choi, Sungkyunkwan University, Korea (South)

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area D
Session WEP2.PD		**Poster**

Image Formation II

Session Co-Chairs: Saibun Tjuatja, University of Texas at Arlington; Brian Hawkins, Jet Propulsion Laboratory / Caltech

WEP2.PD.1
Board PD.1
FOCUS IMPROVEMENT FOR HIGHLY SQUINTED ONE-STATIONARY BISAR IMAGING BASED ON A RANGE EQUIVALENT MODEL
Hua Zhong, Guangyong Zheng, State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information Systems, China; Ronghua Zhao, Zongqi Ye, Guojin Chen, Aibo Yan, Hangzhou Dianzi University, China

WEP2.PD.2
Board PD.2
AIRBORNE FMCW-SAR SIGNAL PROCESSING USING BACK-PROJECTION ALGORITHM CORRECTING CONTINUOUS MOTION EFFECT
Seung-Chul Lee, Duk-jin Kim, Ji-hwan Hwang, Seoul National University, Korea (South)

WEP2.PD.3
Board PD.3
ISAR MANEUVERING TARGET IMAGING BASED ON CONVOLUTIONAL NEURAL NETWORK
Shaoyin Huang, Jiang Qian, Yong Wang, Xiaobo Yang, University of Electronic Science and Technology of China, China; Lei Yang, Civil Aviation University of China, China

WEP2.PD.4
Board PD.4
A NEW TWO-STEP IMAGING ALGORITHM FOR HIGH-RESOLUTION LOW-FREQUENCY SPACEBORNE SAR
Xiangwei Pan, Jie Chen, Pengbo Wang, Jian Wang, Beihang University, China

WEP2.PD.5
Board PD.5
FORWARD-LOOKING RADAR SUPER-RESOLUTION IMAGING COMBINED TSVD WITH L1 NORM CONSTRAINT
Zhaowei Shu, Zhulin Zong, Libing Huang, Limei Huang, University of Electronic Science and Technology of China, China

WEP2.PD.6
Board PD.6
ANALYSIS FOR INTEGRATION TIME AND DOPPLER CHARACTERISTICS IN AIRBORNE SAR WITH CONSTANT ACCELERATION
Yun Zhang, Haojian Zhang, Harbin Institute of Technology, China; Chaojie Liang, Beijing Institute of Aerospace Systems Engineering, China; Hongbo Li, Huilin Mu, Harbin Institute of Technology, China

WEP2.PD.7
Board PD.7
APPLICATIONS OF BASEBAND AZIMUTH SCALING ON HIGH SQUINT BEAM STEERING SAR IMAGING WITH CONTANT ACCELERATION
Bowen Bie, Guang-Cai Sun, Mengdao Xing, Xidian University, China

WEP2.PD.8
Board PD.8
A FINELY FOCUSING METHOD OF SAR USING VERY DEEP NEURAL NETWORK
Guangkai Qiao, Jingwei Dai, Kaizhi Wang, Yiran Jin, Shanghai Jiao Tong University, China

WEP2.PD.9
Board PD.9
SAR IMAGE SUPER-RESOLUTION BASED ON NOISE-FREE GENERATIVE ADVERSARIAL NETWORK
Feng Gu, Hong Zhang, Chao Wang, Fan Wu, Chinese Academy of Sciences, China

WEP2.PD.10
Board PD.10
EXTENSION OF POLAR FORMAT ALGORITHM TO CSAR IMAGING FOR ARBITRARY REGION OF INTEREST
Shuliang Gui, Jin Li, Jubo Hao, Feng Zuo, Yiming Pi, University of Electronic Science and Technology of China, China

WEP2.PD.11
Board PD.11
ISAR IMAGING IN THE PRESENCE OF QUASI-RANDOM MULTIPLICATIVE NOISE USING CONVOLUTIONAL DEEP LEARNING
Jon Mitchell, Saibun Tjuatja, University of Texas at Arlington, United States

WEP2.PD.12
Board PD.12
AN IMPROVED FAST TIME-DOMAIN ALGORITHM FOR BISTATIC FORWARD-LOOKING SAR IMAGING
Song Zhou, School of Information Engineering, Nanchang University, China; Lei Yang, Tianjin Key Lab for Advanced Signal Processing, Civil Aviation University of China, China; Lifan Zhao, Nanyang Technological University, Singapore; Yuhao Wang, Chaoqun Zhang, School of Information Engineering, Nanchang University, China

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area E
Session WEP1.PE		**Poster**

SAR Interference Mitigation

Session Co-Chairs: Franz Meyer, Univ. Alaska Fairbanks; Manabu Watanabe, Tokyo Denki University

WEP1.PE.1
Board PE.1
MULTI-TARGETS DECEPTION JAMMING FOR ISAR WITH FREQUENCY DIVERSE ARRAY
Libing Huang, Zhulin Zong, Hui Wang, Limei Huang, Zhaowei Shu, University of Electronic Science and Technology of China, China

WEP1.PE.2
Board PE.2
A NOVEL DECEPTIVE JAMMING METHOD VIA FREQUENCY DIVERSE ARRAY
Wei Mao, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China; Hui Wang, Shunsheng Zhang, Research Institute of Electronic Science and Technology, University of Electronic Science and Technology of China, China; Xiangrong Liu, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China

WEP1.PE.3
Board PE.3
NARROWBAND INTERFERENCE SUPPRESSION ON SINGLE-CHANNEL SAR SYSTEMS VIA REWEIGHTED TENSOR NUCLEAR NORM MINIMIZATION
Yan Huang, Southeast University, China; Lan Lan, Xidian University, China; Lei Zhang, Sun Yat-Sen University, China; Yu Zhou, Xidian University, China; Gang Xu, Southeast University, China; Cai Wen, Northwest University, China

WEP1.PE.4
Board PE.4
AN NOVEL IMAGING ALGORITHM FOR MEB SAR SYSTEMS WITH CHANNEL ERRORS
Yong Zhang, Taoli Yang, Xingyu Lu, University of Electronic Science and Technology of China, China

WEP1.PE.5
Board PE.5
REMOVAL OF DIFFERENT TYPES OF NOISES IN SYNTHETIC APERTURE RADAR (SAR) IMAGES FOR IMPROVED SHIP DETECTION
Ju-Han Park, Chan-Su Yang, Ahmed Harun-Al-Rashid, Korea Institute of Ocean Science & Technology, Korea (South); Kazuo Ouchi, IHI Corporation, Japan

WEP1.PE.6
Board PE.6
SAR INTERFERENCE SUPPRESSION BASED ON SIGNAL SYNTHESIS FROM JOINT TIME-FREQUENCY DISTRIBUTION
Jia Su, Mingliang Tao, Jian Xie, Northwestern Polytechnical University, China; Cai Wen, Northwest University, China; Guimei Zheng, Air Force Engineering University, China

WEP1.PE.7
Board PE.7
TEMPORAL STABILITY OF GROUND NOTCHED IMAGES
Mauro Mariotti d'Alessandro, Politecnico di Milano, Italy; Yu Bai, Wuhan University, China; Stefano Tebaldini, Politecnico di Milano, Italy

WEP1.PE.8
Board PE.8
MICRO-MOTION DECEPTION JAMMING ON SAR USING FREQUENCY DIVERSE ARRAY
Zhulin Zong, Libing Huang, Hui Wang, Limei Huang, Zhaowei Shu, University of Electronic Science and Technology of China, China

WEP1.PE.9
Board PE.9
GPU-ACCELERATED FEATURE EXTRACTION AND TARGET CLASSIFICATION FOR HIGH-RESOLUTION SAR IMAGES
Yang-Lang Chang, Sina Hadipour, Cheng-Yen Chiang, National Taipei University of Technology, Taiwan; Hirokazu Kobayashi, Osaka Institute of Technology, Japan

WEP1.PE.10
Board PE.10
A COMPLEX DECONVOLUTION METHOD BASED ON DOPPLER CENTROID ESTIMATION
Yigui Huang, Deqing Mao, Yang Wu, Yongchao Zhang, Yin Zhang, Jianyu Yang, University of Electronic Science and Technology of China, China

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area E
Session WEP2.PE		**Poster**

Analysis of SAR/POLSAR Data

Session Chair: Florence Tupin, Télécom ParisTech

WEP2.PE.1
Board PE.1
LOCAL COMPETITIVE WISHART CLASSIFIER FOR POLARIMETRIC SAR IMAGES
Xiyun Liu, Junjun Yin, Tao Wang, University of Science and Technology Beijing, China

WEP2.PE.2
Board PE.2
PLASTIC-MULCHED FARMLAND CLASSIFICATION COMPARISONS BETWEEN X AND C-BAND POLARIMETRIC SAR DATA
Chang-An Liu, Zhongxin Chen, Shangrong Wu, Key Laboratory of Agricultural Remote Sensing, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China

WEP2.PE.3
Board PE.3
CLASSIFICATION OF HUNSHANDAKE SANDY LAND BASED ON POLARIMETRIC SAR DATA
Weixian Tan, Tingting He, Pingping Huang, Wei Xu, Inner Mongolia University of Technology, China

WEP2.PE.4
Board PE.4
UNSUPERVISED CATEGORIZATION OF FOREST-COVER USING MULTI-SPECTRAL AND HYBRID POLARIMETRIC SAR IMAGES
Shashaank M Aswatha, Rajeswari Mahapatra, Jayanta Mukhopadhyay, Prabir K. Biswas, Subhas Aikat, Indian Institute of Technology Kharagpur, India; Arundhati Misra, Indian Space Research Organization, India

WEP2.PE.5
Board PE.5
REGION-BASED CLASSIFICATION OF GF-3 POLSAR IMAGERY USING DEEP REINFORCEMENT LEARNING METHOD
Wen Nie, Jie Yang, Pingxiang Li, Lingli Zhao, Jinqi Zhao, Kui Huang, Xiaomeng Geng, Wuhan University, China

WEP2.PE.6
Board PE.6
UNSUPERVISED CLASSIFICATION OF HIGH-RESOLUTION SAR IMAGES USING MULTILAYER LEVEL SET METHOD
Chuan Xu, Haigang Sui, Junyi Liu, Kaimin Sun, Wuhan University, China; Li Hua, Huazhong Agricultural University, China

WEP2.PE.7
Board PE.7
SAR IMAGE CLASSIFICATION VIA CNN WITH STATISTICAL POOLING
Chudi Hu, LIESMARS, Wuhan University, China; Xin Su, Wuhan University, China; Bin Luo, LIESMARS, Wuhan University, China

WEP2.PE.8
Board PE.8
JOINT CONVOLUTIONAL NEURAL NETWORK FOR SMALL-SCALE SHIP CLASSIFICATION IN SAR IMAGES
Yanxia Wu, Ye Yuan, Jian Guan, Harbin Engineering University, China; Libo Yin, China Industrial Control Systems Cyber Emergency Response Team, China; Jinyong Chen, The 54th Research Institute of China Electronics Technology Group Corporation, China; Ge Zhang, China Industrial Control Systems Cyber Emergency Response Team, China; Pengming Feng, State Key Laboratory of Space-Ground Integrated Information Technology, China

WEP2.PE.9
Board PE.9
INFORMATION ACQUISITION ABILITY OF LFMW FOR SAR
Jiawei Zhang, Huaping Xu, Zhaohong Li, Jingwen Li, Beihang University, China

WEP2.PE.10
Board PE.10
A STUDY ON THE FREQUENCY AND AZIMUTH COHERENCE OF HIGH-RESOLUTION SAR IMAGE
Wenji Xing, Xiaolan Qiu, Chibiao Ding, Key Laboratory of Technology in Geo-spatial Information Processing and Application System, Institute of Electronics, Chinese Academy of Sciences, China

WEP2.PE.11
Board PE.11
DEEP LEARNING SOLUTIONS FOR TANDEM-X-BASED FOREST CLASSIFICATION
Antonio Mazza, University Federico II of Naples, Italy; Francescopaolo Sica, German Aerospace Center (DLR), Germany

WEP2.PE.12
Board PE.12
FOREST CLASSIFICATION AND DEFORESTATION MAPPING BY MEANS OF SENTINEL-1 INSAR STACKS
Francescopaolo Sica, Andrea Pulella, Paola Rizzoli, German Aerospace Center (DLR), Germany

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area F
Session WEP1.PF		Poster

Time-Series / Change Detection

Session Chair: Pasquale Iervolino, University of Surrey

WEP1.PF.1
Board PF.1
HIGH LEVEL SEMANTIC LAND COVER CLASSIFICATION OF MULTITEMPORAL SAR IMAGES USING SYNERGIC PIXEL-BASED AND OBJECT-BASED METHODS
Donato Amitrano, Raffaella Guida, Pasquale Iervolino, University of Surrey, United Kingdom

WEP1.PF.2
Board PF.2
CROP CLASSIFICATION USING MULTITEMPORAL LANDSAT 8 IMAGES
Jingduo Song, Minfeng Xing, University of Electronic Science and Technology of China, China; Yichuan Ma, Wuhan University, China; Long Wang, Kaiwei Luo, Xingwen Quan, University of Electronic Science and Technology of China, China

WEP1.PF.3
Board PF.3
RANDOM FOREST CLASSIFICATION OF RICE PLANTING AREA USING MULTI-TEMPORAL POLARIMETRIC RADARSAT-2 DATA
Wanshan Peng, Shihua Li, Ze He, Silan Ning, Yuhan Liu, Zhonghua Su, University of Electronic Science and Technology of China, China

WEP1.PF.4
Board PF.4
WHAT INFORMATION IS IMPORTANT? A SPATIOTEMPORAL INFERENCE FOR CLASSIFICATION OF SATELLITE IMAGE TIME SERIES
Wenqiang Xi, Shihong Du, Peking University, China

WEP1.PF.5
Board PF.5
CONSTRAINED DISTANCE BASED K-MEANS CLUSTERING FOR SATELLITE IMAGE TIME-SERIES
Thomas Lampert, Baptiste Lafabregue, Pierre Gançarski, University of Strasbourg, France

WEP1.PF.6
Board PF.6
A SEMI-SUPERVISED APPROACH TOWARDS LAND COVER MAPPING WITH SENTINEL-2 DESNSE TIME-SERIES IMAGERY
Ting Hu, Xin Huang, Jiayi Li, Wuhan University, China; Jón Atli Benediktsson, University of Iceland, Iceland; Jiansi Yang, Jianya Gong, Wuhan University, China

WEP1.PF.7
Board PF.7
CHANGE DETECTION AND TRANSFER LEARNING APPROACH FOR UPDATING THE HABITAT MAPS IN UAE
Prajowal Manandhar, Prashanth Marpu, Khalifa University, United Arab Emirates

WEP1.PF.8
Board PF.8
TIME SERIES OF SENTINEL IMAGES AND DECISION FOREST FOR CLASSIFICATION OF LAND COVER OF PAYS DE BREST (FRANCE)
Simona Niculescu, Université de Bretagne Occidentale, France; Junshi Xia, RIKEN Center for Advanced Intelligence Project, Japan

WEP1.PF.9
Board PF.9
AUTOMATED SEASONAL DETECTION OF COAL SURFACE MINE REGIONS FROM LANDSAT 8 OLI IMAGES
Jit Mukherjee, Jayanta Mukhopadhyay, Debashish Chakravarty, Subhas Aikat, Indian Institute of Technology Kharagpur, India

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area F
Session WEP2.PF		Poster

Natural Disasters / Monitoring of the Environment

Session Co-Chairs: Fan Wu, Chinese Academy of Sciences; Mauro Dalla Mura, GIPSA-lab, Grenoble Institute of Technology

WEP2.PF.1
Board PF.1
COMPRESSIVE SENSING BASED RECONSTRUCTION AND PIXEL-LEVEL CLASSIFICATION OF VERY HIGH-RESOLUTION DISASTER SATELLITE IMAGERY USING DEEP LEARNING
Rajat Shinde, Abhishek Potnis, Surya Durbha, Prakash Andugula, Indian Institute of Technology Bombay, India

WEP2.PF.2
Board PF.2
LANDSLIDE IMAGE CLASSIFICATION USING SEMI-SUPERVISED LEARNING
Shi He, Haitao Jing, Henan Polytechnic University, China; Hong Tang, Beijing Normal University, China; Li Shen, Southwest Jiaotong University, China; Liangliang Tao, Nanjing University of Information Science and Technology, China; Jiehai Cheng, Henan Polytechnic University, China

WEP2.PF.3
Board PF.3
DISCRIMINATION OF COLLAPSED BUILDINGS FROM REMOTE SENSING IMAGERY USING DEEP NEURAL NETWORKS
Fan Wu, Chao Wang, Bo Zhang, Hong Zhang, Lixia Gong, Chinese Academy of Sciences, China

WEP2.PF.4
Board PF.4
THE RESEARCH OF BUILDING EARTHQUAKE DAMAGE OBJECT-ORIENTED SEGMENTATION BASED ON MULTI FEATURE COMBINATION WITH REMOTE SENSING IMAGE
Yan Zhao, China Transport Telecommunications & Information Center / Peking University, China; Huazhong Ren, Peking University, China; Danyang Geng, China Transport Telecommunications & Information Center / Peking University, China; Jinxin Guo, Shanshan Chen, Peking University, China

WEP2.PF.5
Board PF.5
RAPID EARTHQUAKE DAMAGE DETECTION USING DEEP LEARNING FROM VHR REMOTE SENSING IMAGES
Ujwala Bhangale, K. J. Somaiya College of Engineering, India; Surya Durbha, Abhishek Potnis, Rajat Shinde, I.I.T. Bombay, India

WEP2.PF.6
Board PF.6
CO-FEATURE AND SHAPE PRIOR BASED SALIENCY ANALYSIS FOR OIL TANK DETECTION IN REMOTE SENSING IMAGES
Congyang Liu, Libao Zhang, Shiyi Wang, Beijing Normal University, China

WEP2.PF.7
Board PF.7
APLICABILITY OF MULTIFRACTAL FEATURES AS DESCRIPTORS OF THE COMPLEX TERRAIN SITUATION IN IDP/REFUGEE CAMPS
Małgorzata Jenerowicz, Anna Wawrzaszek, Michał Krupiński, Space Research Centre, Polish Academy of Sciences, Poland; Wojciech Drzewiecki, AGH University of Science and Technology, Poland; Sebastian Aleksandrowicz, Space Research Centre, Polish Academy of Sciences, Poland

WEP2.PF.8
Board PF.8
EFFECTIVE CLASSIFICATION OF LOCAL CLIMATE ZONES BASED ON MULTI-SOURCE REMOTE SENSING DATA
Hao Jing, Yingchao Feng, Wenkai Zhang, Yue Zhang, Institute of Electronics, Chinese Academy of Sciences, China; Siyue Wang, Northeastern University, China; Kun Fu, Kaiqiang Chen, Institute of Electronics, Chinese Academy of Sciences, China

WEP2.PF.9
Board PF.9
EVALUATION OF CORAL REEFS MAPPING IN KERAMA ISLANDS BY SATELLITE-BASED CLASSIFICATION
Emiko Ariyasu, Satomi Kakuta, Kotaro Goto, Takio Sano, Asia Air Survey, Japan

WEP2.PF.10
Board PF.10
SUPPORT VECTOR MACHINE (SVM) CLASSIFIER WITH SMALL TRAINING SAMPLES FOR MAPPING SALTMARSH WETLAND AT SPECIES LEVEL
Sikdar M.M. Rasel, Department of Primary Industries, Australia; Hsing-Chung Chang, Macquarie University, Australia; Israt Diti, Rajshahi University, Bangladesh; Tim Glasby, Department of Primary Industries, Australia

WEP2.PF.11
Board PF.11
TOWARD AN UNSUPERVISED COLORIZATION FRAMEWORK FOR HISTORICAL LAND USE CLASSIFICATION
Rémi Ratajczak, Carlos Crispim-Junior, Université Lumière Lyon 2, France; Elodie Faure, Béatrice Fervers, Centre Léon Bérard, France; Laure Tougne, Université Lumière Lyon 2, France

WEP2.PF.12
Board PF.12
IMAGE ANALYSIS BASED ON COGNITIVE COLOR ATTRIBUTES FOR CLASSIFICATION OF ENVIRONMENTAL REMOTE SENSING SCENES
Daniel Zanotta, Fabiano Dias, Letícia Sartório, IFRS, Brazil

WEDNESDAY POSTER

145

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area G
Session WEP1.PG		**Poster**

Data Analysis with UAV

Session Chair: Marwan Younis, German Aerospace Center (DLR)

WEP1.PG.1
Board PG.1
UAV-BASED IDENTIFICATION OF ACHNATHERUM SPLENDENS COMMUNITY COMBINING K-MEANS AND ARTIFICIAL FISH SWARM ALGORITHM
Jinling Zhao, Yan Fang, Qi Hong, Anhui University, China; Zhenggao Pan, Suzhou University, China; Linsheng Huang, Dongyan Zhang, Anhui University, China

WEP1.PG.2
Board PG.2
TWO-BRANCH NEURAL NETWORK FOR LEARNING MULTI-LABEL CLASSIFICATION IN UAV IMAGERY
Yakoub Bazi, King Saud University, Saudi Arabia

WEP1.PG.3
Board PG.3
RESEARCH ON UAV IMAGE REGISTRATION BASED ON SIFT ALGORITHM ACCELERATION
Wei Li, Changhui Li, Feng Wang, Guangzhou Urban Planning Design & Survey Research Institute, China

WEP1.PG.4
Board PG.4
FULLY CONVOLUTIONAL SVM FOR CAR DETECTION IN UAV IMAGERY
Youyou Li, University of Electronic Science and Technology of China, China; Farid Melgani, University of Trento, Italy; Binbin He, University of Electronic Science and Technology of China, China

WEP1.PG.5
Board PG.5
EXTRACTING CADASTRAL BOUNDARIES FROM UAV IMAGES USING FULLY CONVOLUTIONAL NETWORKS
Xue Xia, Mila Koeva, Claudio Persello, University of Twente, Netherlands

WEP1.PG.6
Board PG.6
DEEP LEARNING FOR SEMANTIC SEGMENTATION OF UAV VIDEOS
Yiwen Wang, Ye Lyu, University of Twente, Netherlands; Yanpeng Cao, Zhejiang University, China; Michael Ying Yang, University of Twente, Netherlands

WEP1.PG.7
Board PG.7
AN EMPIRICAL APPROACH ON SHADOW REDUCTION OF UAV IMAGERY IN FORESTS
Xavier Pons, Joan-Cristian Padró, Universitat Autònoma de Barcelona, Spain

WEP1.PG.8
Board PG.8
WEED DETECTION USING CONVOLUTIONAL NEURAL NETWORKS BASED ON U-NET IN RGB UAV IMAGES
Hossein Leilaz Mehrabadi, Mahdi Hasanlou, College of Engineering, University of Tehran, Iran; Mehdi Ravanbakhsh, University of Western Australia, Australia

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area G
Session WEP2.PG		**Poster**

Hyperspectral Remote Sensing I

Session Co-Chairs: Andrea Marinoni, University of Tromsø; Josée Lévesque, DRDC Valcartier Research Center

WEP2.PG.1
Board PG.1
MINERAL MAPPING OF DRILL CORE HYPERSPECTRAL DATA WITH EXTREME LEARNING MACHINES
Cecilia Contreras, Mahdi Khodadadzadeh, Pedram Ghamisi, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Helmholtz Institute Freiberg for Resource Technology, Germany

WEP2.PG.2
Board PG.2
SEMI-SUPERVISED CLASSIFICATION FOR HYPERSPECTRAL IMAGES USING EDGE-CONDITIONED GRAPH CONVOLUTIONAL NETWORKS
Anshu Sha, Bin Wang, Xiaofeng Wu, Liming Zhang, Bo Hu, Jian Qiu Zhang, Fudan University, China

WEP2.PG.3
Board PG.3
SPECTRAL-SPATIAL CLUSTERING OF HYPERSPECTRAL IMAGE BASED ON LAPLACIAN REGULARIZED DEEP SUBSPACE CLUSTERING
Meng Zeng, Yaoming Cai, Xiaobo Liu, Zhihua Cai, Xiang Li, China University of Geosciences (Wuhan), China

WEP2.PG.4
Board PG.4
CORRELATION ALIGNMENT BASED ON SPARSE MATRIX TRANSFORM FOR UNSUPERVISED DOMAIN ADAPTATION IN HYPERSPECTRAL IMAGE CLASSIFICATION
Tianhui Wei, Wenqi Fan, Jiangtao Peng, Hubei University, China; Weiwei Sun, Ningbo University, China

WEP2.PG.5
Board PG.5
KNOWLEDGE GUIDED CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON HIERARCHICAL CLASS TREE
Xiaorui Ma, Hongyu Wang, Dalian University of Technology, China; Yi Liu, Norwegian University of Science and Technology, Norway; Sheng Ji, Qinghua Gao, Dalian University of Technology, China; Jie Wang, Dalian Maritime University, China

WEP2.PG.6
Board PG.6
MULTISCALE SPECTRAL-SPATIAL UNIFIED NETWORKS FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Sifan Wu, Junping Zhang, Chongxiao Zhong, Harbin Institute of Technology, China

WEP2.PG.7
Board PG.7
SUPERVISED HYPERSPECTRAL IMAGE CLASSIFICATION VIA SPARSE SEPARABLE CONVOLUTIONAL FEATURE LEARNING
Mengfei Song, Jie Song, Liang Xiao, Nanjing University of Science and Technology, China

WEP2.PG.8
Board PG.8
HYPERSPECTRAL IMAGE CLASSIFICATION WITH BACKGROUND
Xiaodi Shang, Meiping Song, Chunyan Yu, Dalian Maritime University, China; Chein-I Chang, University of Maryland, United States

WEP2.PG.9
Board PG.9
PIXEL DAG-RECURRENT NEURAL NETWORK FOR SPECTRAL-SPATIAL HYPERSPECTRAL IMAGE CLASSIFICATION
Xiufang Li, Qigong Sun, Lingling Li, Zhongle Ren, Fang Liu, Licheng Jiao, Xidian University, School of Artifical Intelligence, China

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area H
Session WEP1.PH		Poster

Analysis of LIDAR Data

Session Co-Chairs: Uwe Stilla, Technical University of Munich (TUM); Pedram Ghamisi, Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology

WEP1.PH.1
Board PH.1
SEMI-SUPERVISED PYRAMID FEATURE CO-TRAINING NETWORK FOR LIDAR DATA CLASSIFICATION
Zexin Wang, Haoran Wang, Licheng Jiao, Xu Liu, Xidian University, China

WEP1.PH.2
Board PH.2
COLLABORATIVE CLASSIFICATION OF HYPERSPECTRAL AND LIDAR DATA WITH INFORMATION FUSION AND DEEP NETS
Chen Chen, Beijing University of Chemical Technology, China; Xudong Zhao, Wei Li, Ran Tao, Beijing Institute of Technology, China; Qian Du, Mississippi State University, China

WEP1.PH.3
Board PH.3
LAND COVER CLASSIFICATION USING REMOTE SENSING IMAGES AND LIDAR DATA
Shouji Du, Shihong Du, Peking University, China

WEP1.PH.4
Board PH.4
A NOVEL LIDAR DATA CLASSIFICATION ALGORITHM COMBINED DENSENET WITH STN
Aili Wang, Minhui Wang, Kaiyuan Jiang, Lanfei Zhao, Harbin University of Science and Technology, China; Yuji Iwahori, Chubu University, Japan

WEP1.PH.5
Board PH.5
LIDAR DATA CLASSIFICATION ALGORITHM BASED ON GENERATIVE ADVERSARIAL NETWORK
Aili Wang, Yao Li, Kaiyuan Jiang, Lanfei Zhao, Harbin University of Science and Technology, China; Yuji Iwahori, Chubu University, Japan

WEP1.PH.6
Board PH.6
VOXEL-BASED ATTRIBUTE PROFILES ON LIDAR DATA FOR LAND COVER MAPPING
Florent Guiotte, LETG-Rennes, France; Sébastien Lefèvre, IRISA, France; Thomas Corpetti, LETG-Rennes, France

WEP1.PH.7
Board PH.7
AN UNSUPERVISED OUTLIER DETECTION METHOD FOR 3D POINT CLOUD DATA
Emon Kumar Dey, Mohammad Awrangjeb, Bela Stantic, Griffith University, Australia

WEP1.PH.8
Board PH.8
EXTRACTION OF MULTI-SCALE GEOMETRIC FEATURES FOR POINT CLOUD CLASSIFICATION
Rong Huang, Yusheng Xu, Uwe Stilla, Technical University of Munich (TUM), Germany

WEP1.PH.9
Board PH.9
AN AUXILIARY PARKING METHOD BASED ON AUTOMOTIVE MILLIMETER WAVE SAR
Rufei Wang, Jifang Pei, Yongchao Zhang, Minghui Li, Yulin Huang, Junjie Wu, University of Electronic Science and Technology of China, China

WEP1.PH.10
Board PH.10
A NOVEL COMPOSITE KERNEL APPROACH FOR MULTISENSOR REMOTE SENSING DATA FUSION
Pedram Ghamisi, Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Germany; Behnood Rasti, University of Iceland, Germany; Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Germany

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area H
Session WEP2.PH		Poster

Hyperspectral Remote Sensing II

Session Chair: Tianzhu Liu, Harbin Institute of Technology

WEP2.PH.1
Board PH.1
IMPROVING HYPERSPECTRAL IMAGE CLASSIFICATION WITH UNSUPERVISED KNOWLEDGE LEARNING
Jinyang Zhang, Wei Wei, Northwestern Polytechnical University, China; Lei Zhang, Inception Institute of Artificial Intelligence (IIAI), United Arab Emirates; Yanning Zhang, Northwestern Polytechnical University, China

WEP2.PH.2
Board PH.2
SUB-PIXEL MAPPING WITH MULTIPLE SHIFTED HYPERSPECTRAL IMAGES BASED ON MULTIOBJECTIVE EVOLUTIONARY ALGORITHM
Mi Song, Yanfei Zhong, Ailong Ma, Wuhan University, China; Qiqi Zhu, China University of Geosciences, China; Liqin Cao, Liangpei Zhang, Wuhan University, China

WEP2.PH.3
Board PH.3
SEGMENTATION-AWARE HYPERSPECTRAL IMAGE CLASSIFICATION
Berkan Demirel, Omer Ozdil, Yunus Emre Esin, Safak Ozturk, HAVELSAN Inc., Turkey

WEP2.PH.4
Board PH.4
HYPERSPECTRAL IMAGE DENOISING VIA NON-LOCAL SPARSE SUBSPACE CLUSTERING
Lei Zhou, Chen Wang, Xiao Bai, Beihang University, China; Jun Zhou, Griffith University, Australia

WEP2.PH.5
Board PH.5
COLLABORATIVE REPRESENTATION ENSEMBLE USING BAGGING FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Yao Yu, Hongjun Su, Hohai University, China

WEP2.PH.6
Board PH.6
ITERATIVE RANDOM TRAINING SAMPLE SELECTION FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Chia-Chen Liang, Yi-Mei Kuo, Kenneth Yeonkong Ma, University of Maryland, Baltimore County, United States; Peter F. Hu, University of Maryland School of Medicine, United States; Chein-I Chang, University of Maryland, Baltimore County, United States

WEP2.PH.7
Board PH.7
DATA AUGMENTATION AND REFINING WITH STEERING STENCILS FOR SUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGE
Qichao Liu, Liang Xiao, Nanjing University of Science and Technology, China; Pengfei Liu, Nanjing University of Posts and Telecommunications, China; Nan Huang, Nanjing University of Science and Technology, China

WEP2.PH.8
Board PH.8
CLASSIFICATION BASED ON CAPSULE NETWORK WITH HYPERSPECTRAL IMAGE
Yi Ma, Yunnan Power Grid Co., Ltd, China; Zezhong Zheng, Zhengqiang Guo, Fan Mou, University of Electronic Science and Technology of China, China; Fangrong Zhou, Yunnan Power Grid Co., Ltd, China; Rui Kong, Ankai Hou, University of Electronic Science and Technology of China, China; Mingcang Zhu, Department of Natural Resources of Sichuan Province, China; Yong He, Juan Ren, Sichuan Institute of Geo-Environment Monitoring, China; Huaixin Chen, University of Electronic Science and Technology of China, China; Zhigang Liu, Beijing Normal University, China; Guoqing Zhou, Guilin University of Technology, China; Jiang Li, Old Dominion University, United States

WEP2.PH.9
Board PH.9
FAST KERNEL COLLABORATIVE REPRESENTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Yan Xu, Qian Du, Nicolas Younan, Mississippi State University, United States

WEDNESDAY POSTER

147

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area I
Session WEP1.PI		Poster

Soil Moisture and Related Variables Extraction

Session Co-Chairs: Juha Lemmetyinen, Finnish Meteorological Institute; Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

WEP1.PI.1
Board PI.1
SOIL ORGANIC MATTER ESTIMATION USING HYPERSPECTRAL REMOTE SENSING TECHNIQUES IN A WATER-LEVEL-FLUCTUATING ZONE AROUND GUANTING RESERVOIR, BEIJING, CHINA
Zhaoning Gong, Qiwei Wang, Cheng Zhang, Hongliang Guan, Capital Normal University, China

WEP1.PI.2
Board PI.2
ON THE LIGHT PENETRATION IN NATURAL SANDS
Gladimir Baranoski, Bradley Kimmel, Petri Varsa, Mark Iwanchyshyn, University of Waterloo, Canada

WEP1.PI.3
Board PI.3
RELATIONS BETWEEN LANDSAT SPECTRAL REFLECTANCES AND LAND SURFACE EMISSIVITY OVER BARE SOILS
Albert Olioso, INRA, France; Xavier Briottet, Sophie Fabre, ONERA, France; Frédéric Jacob, IRD, France; Aurélie Michel, Simon Nativel, ONERA, France; Vincent Rivalland, Jean-Louis Roujean, CNRS, France

WEP1.PI.4
Board PI.4
INFLUENCE OF QUALITY FILTERING APPROACHES IN BEC SMOS L3 SOIL MOISTURE PRODUCTS
Miriam Pablos, Institut of Marine Sciences - Spanish Research Council (ICM - CSIC), Spain; Mercè Vall-llossera, Universitat Politècnica de Catalunya (UPC), Spain; María Piles, Universitat de València, Spain; Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Cristina González-Haro, Antonio Turiel, Institut of Marine Sciences - Spanish Research Council (ICM - CSIC), Spain; Christoph Josef Herbert, David Chaparro, Gerard Portal, Universitat Politècnica de Catalunya (UPC), Spain

WEP1.PI.5
Board PI.5
A SIMPLE, PHYSICALLY-BASED SOIL MOISTURE INDEX FROM SMAP RADIOMETER OBSERVATIONS
Jiangyuan Zeng, Kun-Shan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Chenyang Cui, Suzhou Industrial Park Surveying, Mapping and Geoinformation Co., Ltd., Suzhou, China; Shuang Liang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP1.PI.6
Board PI.6
EVALUATION OF SMAP L2/L3 PASSIVE SOIL MOISTURE PRODUCTS USING IN-SITU DATA FROM A DENSE OBSERVATION NET-WORK OVER AGRICULTURAL AREA IN NORTHEAST CHINA
Xingming Zheng, Northeast Institue of Geography and Agriculture, Chinese Academy of Sciences, China; Yu Bai, Jilin University, China; Tao Jiang, Northeast Institue of Geography and Agriculture, Chinese Academy of Sciences, China; Xiaowei Zhao, Jilin University, China; Kai Zhao, Northeast Institue of Geography and Agriculture, Chinese Academy of Sciences, China

WEP1.PI.7
Board PI.7
OVERVIEW AND INITIAL RESULTS OF SOIL MOISTURE EXPERIMENT IN THE LUAN RIVER
Tianjie Zhao, Jiancheng Shi, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Hongxin Xu, Liqing Lv, Shanghai Academy of Spaceflight Technology, China; Qian Cui, Deqing Chen, Information Center of Ministry of Water Resources of China, China

WEP1.PI.8
Board PI.8
SOIL MOISTURE RETRIEVAL USING A MODIFIED DECOMPOSITION METHOD AND MULTI-INCIDENCE POLARIMETRIC SAR DATA
Hongtao Shi, Jie Yang, Lingli Zhao, Lei Shi, Pingxiang Li, Jinqi Zhao, Wensong Liu, Lei Wang, Wuhan University, China

WEP1.PI.9
Board PI.9
ESTIMATION OF SOIL MOISTURE THROUGH WATER CLOUD MODEL USING SENTINEL -1A SAR DATA
Vijay Pratap Yadav, Rajendra Prasad, Ruchi Bala, Ajeet Kumar Vishwakarma, Indian Institute of Technology BHU (Banaras Hindu University), India

WEP1.PI.10
Board PI.10
EVALUATION OF SATELLITE-DERIVED SOIL MOISTURE PRODUCTS USING GROUND-BASED OBSERVATIONS ACROSS CANADA AND CHINA
Ally Toure, Ramata Magaggi1 Magaggi, Kalifa Goita, Hongquan Wang, University of Sherbrooke, Canada

WEP1.PI.11
Board PI.11
GROUND OBSERVATION EXPERIMENTS OF SOIL MOISTURE BASED ON DIFFERENT VEGETATION COVERAGE
Rui Zhao, Engineering University of CAPF, China; Tianjie Zhao, Shangnan Li, Jiancheng Shi, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Hao Lou, Engineering University of CAPF, China; Lu Hu, Aerospace Information Research Institute, Chinese Academy of Sciences, China

WEP1.PI.12
Board PI.12
SIMULATED MULTI-ANGULAR MICROWAVE RADIATION OF MONTAINOUS AREA
Shaojie Zhao, Beijing Normal University, China; Tao Zhang, Ministry of Natural Resources of P.R.China, China; Yunqing Li, Beijing City University, China

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area I
Session WEP2.PI		Poster

Super-resolution and Multiresolution Fusion Techniques I

Session Chair: Andrea Garzelli, University of Siena

WEP2.PI.1
Board PI.1
SUPER-RESOLUTION OF FORWARD-LOOKING SCANNING RADAR BASED ON LOW-RANK AND SPARSE CONSTRAINTS
Wentao Zhang, Wenchao Li, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

WEP2.PI.2
Board PI.2
VIDEO SATELLITE IMAGERY SUPER-RESOLUTION VIA A DEEP RESIDUAL NETWORK
Jiemin Wu, Zhi He, Li Zhuo, Sun Yat-Sen University, China

WEP2.PI.3
Board PI.3
IMPROVING THE PERFORMANCES OF TWO PANSHARPENING METHODS BASED ON REMOTE SENSING PHSICS
Hui Li, Linhai Jing, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PI.4
Board PI.4
HYPERSPECTRAL IMAGE SUPER-RESOLUTION BASED ON MULTI-SCALE WAVELET 3D CONVOLUTIONAL NEURAL NETWORK
Jingxiang Yang, Yongqiang Zhao, Research & Development Institute of Northwestern Polytechnical University in Shenzhen, China; Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

WEP2.PI.5
Board PI.5
GRADIENT-BASED ADAPTIVE IMAGE SUPER RESOLUTION
Achmad Junaidi, Chao-Hung Lin, Yi-Hsing Tseng, National Cheng Kung University, Taiwan; Li-Hsueh Chang, Shin-Chia Peng, Satellite Image Division, National Space Organization, Taiwan

WEP2.PI.6
Board PI.6
IMPROVED MULTIRESOLUTION ANALYSIS METHOD FOR HYPERSPECTRAL PANSHARPENING
Xiuxiu Hu, Beijing University of Chemical Technology, China; Yan Shi, Beijing Institute of Technology, China; Wei Li, Beijing University of Chemical Technology, China; Ran Tao, Beijing Institute of Technology, China

WEP2.PI.7
Board PI.7
HIGH RESOLUTION SAR IMAGE SYNTHESIS WITH HIERARCHICAL GENERATIVE ADVERSARIAL NETWORKS
Henghua Huang, Fan Zhang, Yongsheng Zhou, Qiang Yin, Wei Hu, Beijing University of Chemical Technology, China

WEP2.PI.8
Board PI.8
A MULTI-SCALE DENSELY DEEP LEARNING METHOD FOR PANSHARPENING
Zhikang Xiang, Liang Xiao, Nanjing University of Science and Technology, China; Pengfei Liu, Nanjing University of Posts and Telecommunications, China; Yufei Zhang, Nanjing University of Science and Technology, China

WEP2.PI.9
Board PI.9
PAN-SHARPENING VIA ROG-BASED FILTERING
Zi-Yao Zhang, Ting-Zhu Huang, Liang-Jian Deng, Jie Huang, Hong-Xia Dou, University of Electronic Science and Technology of China, China

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area J
Session WEP1.PJ		Poster

Alternative Approaches for Soil Moisture Estimation

Session Co-Chairs: Yuei-An Liou, National Central University; Rajat Bindlish, NASA Goddard Space Flight Center

WEP1.PJ.1
Board PJ.1
RETRIEVAL PERFORMANCE ANALYSIS FOR TIME SERIES RETRIEVALS OF SOIL MOISTURE UNDER DYNAMIC VEGETATION CANOPIES AND HETEROGENEOUS LAND COVER USING THE CYGNSS CONSTELLATION
Mohammad Al-Khaldi, Shanka Wijesundara, Joel Johnson, Ohio State University, United States

WEP1.PJ.2
Board PJ.2
REMOTE SENSING OF SOIL MOISTURE FOR VEGETATION/FORESTS WITH
LARGE VWC USING NMM3D FULL WAVE SIMULATIONS
Huanting Huang, Leung Tsang, University of Michigan, United States; Andreas Colliander, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEP1.PJ.3
Board PJ.3
ESTIMATING SOIL MOISTURE FROM SAR INTERFEROMETRY WITH CLOSURE PHASES
Giorgio Gomba, Francesco De Zan, German Aerospace Center (DLR), Germany

WEP1.PJ.4
Board PJ.4
APPLYING A MACHINE LEARNING METHOD TO OBTAIN LONG TIME AND SPATIO-TEMPORAL CONTINUOUS SOIL MOISTURE OVER THE TIBETAN PLATEAU
Yaokui Cui, Wentao Xiong, Ling Hu, Institute of Remote Sensing and GIS, School of Earth and Space Sciences, Peking University, China; Ronghua Liu, China Institute of Water Resources and Hydropower Research (IWHR), China; Xi Chen, Institute of Remote Sensing and GIS, School of Earth and Space Sciences, Peking University, China; Xiaozhuang Geng, Peking University, China; Feng Lv, Wenjie Fan, Yang Hong, Institute of Remote Sensing and GIS, School of Earth and Space Sciences, Peking University, China

WEP1.PJ.5
Board PJ.5
SPATIOTEMPORAL TREND ANALYSIS OF SOIL MOISTURE RETRIEVED FROM THREE NLDAS-BASED ADVANCED LAND SURFACE MODELS OVER THE UNITED STATES: A COMPARATIVE STUDY
Tingli Wang, Dagang Wang, Sun Yat-Sen University, China; Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

WEP1.PJ.6
Board PJ.6
MULTI-PLATFORM RADIOMETER SYSTEMS FOR SURFACE SOIL MOISTURE RETRIEVAL
Xiaoling Wu, Nan Ye, Jeff Walker, Monash University, Australia; James Hills, University of Tasmania, Australia; Francois Jonard, Institute of Bio- and Geosciences - Agrosphere, Germany; Valentijn Pauwels, Monash University, Australia

WEP1.PJ.7
Board PJ.7
ESTIMATING SURFACE SOIL MOISTURE FROM AMSR2 TB WITH ARTIFICIAL NEURAL NETWORK METHOD AND SMAP PRODUCTS
Panpan Yao, Hui Lu, Siyu Yue, Fan Yang, Haobo Lyu, Kun Yang, Tsinghua University, China; Kaighin A Mccoll, Dan Gianotti, Dara Entekhabi, Massachusetts Institute of Technology, United States

WEP1.PJ.8
Board PJ.8
RETRIEVAL OF SOIL SURFACE PARAMETERS VIA HELICOPTER-BORNE P-BAND POLARIMETRIC SAR DATA ACQUIRED ALONG ANTIPARALLEL FLIGHT TRACKS
Antonio Natale, Carmen Esposito, Paolo Berardino, Riccardo Lanari, Istituto per il Rilevamento Elettromagnetico dell'Ambiente (IREA), Italy; Perna Stefano, Università degli Studi di Napoli, Italy

WEP1.PJ.9
Board PJ.9
DOWNSCALING SMAP PASSIVE SOIL MOISTURE PRODUCT WITH MODIS PRODUCTS OVER MOUNTAINOUS REGION
Wei Zhao, Fengping Wen, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China; Lisheng Song, School of Geographical Sciences, Southwest University, China; Xinjuan Li, Ainong Li, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China

WEP1.PJ.10
Board PJ.10
ESTIMATING SOIL MOISTURE USING THE OPTICAL TRAPEZOID MODEL (OPTRAM) IN A SEMI-ARID AREA OF SONGNEN PLAIN, CHINA BASED ON LANDSAT-8 DATA
Fang Huang, Ping Wang, Yue Ren, Rong Liu, Northeast Normal University, China

WEP1.PJ.11
Board PJ.11
SOIL MOISTURE ESTIMATION USING CYGNSS CONSTELLATION
Mehrez Zribi, Mireille Huc, Sebastian Antokoletz, CNRS, France; Michel Le Page, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Nazzareno Pierdicca, University of Roma, Italy; Nicolas Baghdadi, IRSTEA, France

WEP1.PJ.12
Board PJ.12
SOIL MOISTURE ACQUISITION THROUGH MULTISPECTRAL SENSORS COUPLED TO UNMANNED AERIAL VEHICLE (UAV)
Beto Saraiva dos Reis, Leonardo Campos Inocencio, Maurício Roberto Veronez, Luiz Gonzaga da Silveira Jr., Fabiane Bordin, Rafael Kenji Horota, Ademir Marques Jr., Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area J
Session WEP2.PJ		Poster

Data Fusion Techniques for Image Registration and Classification

Session Chair: Olena Dubovyk, University of Bonn

WEP2.PJ.1
Board PJ.1
A ROBUST IMAGE SEQUENCE REGISTRATION ALGORITHM FOR VIDEOSAR COMBINING SURF WITH INTER-FRAME PROCESSING
Zihan Li, Zhen Dong, Anxi Yu, Zhihua He, Xiaoxiang Zhu, National University of Defense Technology, China

WEP2.PJ.2
Board PJ.2
TEXTURING BUENOS AIRES BUILDINGS WITH WORLDVIEW3 IMAGES
Marie d'Autume, Enric Meinhardt-Llopis, CMLA, ENS Cachan, CNRS, Université Paris-Saclay, France

WEP2.PJ.3
Board PJ.3
SAR AND OPTICAL IMAGE FUSION FOR COASTAL SURVEILLANCE
Li Zheng, Jifang Pei, Yin Zhang, Jianyu Yang, Wu Junjie, Yulin Huang, University of Electronic Science and Technology of China, China

WEP2.PJ.4
Board PJ.4
COMPARATIVE ANALYSIS OF LANDUSE LAND COVER BETWEEN OPTICAL AND FUSED IMAGE WITH SAR
Khusharah Khusharah Aslam, Rao Zahid Khalil, Saad Ul Haque, Institute of Space Technology, Pakistan

WEP2.PJ.5
Board PJ.5
JOINT CLASSIFICATION OF MULTIRESOLUTION AND MULTISENSOR DATA USING A MULTISCALE MARKOV MESH MODEL
Alessandro Montaldo, Luca Fronda, University of Genoa, Italy; Ihsen Hedhli, Universite Laval, Canada; Gabriele Moser, University of Genoa, Italy; Josiane Zerubia, Inria, UCA, France; Sebastiano Serpico, University of Genoa, Italy

WEP2.PJ.6
Board PJ.6
A NOVEL DEEP CLASSIFICATION FRAMEWORK FOR HIGH RESOLUTION REMOTE SENSING IMAGES BY OPEN DATA
Yiqing Qin, Mingmin Chi, Fudan University, China

WEP2.PJ.7
Board PJ.7
MAIZE GROWTH AND CONDITION MONITORING WITH MULTISENSOR REMOTELY SENSED TIME SERIES
Gohar Ghazaryan, Olena Dubovyk, Jonas Schreier, Valerie Graw, Jürgen Schellberg, University of Bonn, Germany

WEP2.PJ.8
Board PJ.8
A TOPOLOGICAL DATA ANALYSIS GUIDED FUSION ALGORITHM: MAPPER-REGULARIZED MANIFOLD ALIGNMENT
Jingliang Hu, Danfeng Hong, German Aerospace Center (DLR), Germany; Yuanyuan Wang, Technische Universität München, Germany; Xiao Xiang Zhu, German Aerospace Center (DLR), Germany

WEP2.PJ.9
Board PJ.9
EVALUATION ON BJ-2 IMAGE FUSION ALGORITHMS FOR SATELLITE IMAGES OF COASTAL AQUACULTURE SEA AREAS
Jialan Chu, Yanlong Chen, Jianhua Zhao, Fei Wang, National Marine Environmental Monitoring Center, China

WEDNESDAY POSTER

149

Wednesday, July 31 09:40 - 10:40 **Room 501-502: Area K**	**Wednesday, July 31** 15:20 - 16:20 **Room 501-502: Area K**
Session WEP1.PK Poster	**Session WEP2.PK** Poster

Agricultural Applications of Soil Moisture

Session Chair: Brian Hornbuckle, Iowa State University

WEP1.PK.1
Board PK.1
SENTINEL-1 AND SENTINEL-2 DATA FOR SOIL MOISTURE AND IRRIGATION MAPPING OVER SEMI-ARID REGION
Safa Bousbih, Mehrez Zribi, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Mohammad El Hajj, Nicolas Baghdadi, IRSTEA, UMR TETIS, University of Montpellier, France; Zohra Chabaane Lili, INAT, Tunisia; Pascal Fanise, Gilles Boulet, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

WEP1.PK.2
Board PK.2
SURFACE SOIL MOISTURE RETRIEVAL OVER IRRIGATED WHEAT CROPS IN SEMI-ARID AREAS USING SENTINEL-1 DATA
Nadia Ouaadi, Cadi Ayyad University, Morocco; Lionel Jarlan, Institut de recherche pour le développement, France; Jamal Ezzahar, Cadi Ayyad University, Morocco; Mehrez Zribi, Institut de recherche pour le développement, France; Saïd Khabba, Elhoussaine Bouras, Cadi Ayyad University, Morocco; Pierre-Louis Frison, University of Paris-Est marne la vallée, France

WEP1.PK.3
Board PK.3
STUDY OF BRIGHTNESS TEMPERATURE AND SOIL MOISTURE DOWNSCALING USING AIRBORNE PASSIVE MICROWAVE OBSERVATIONS
Tao Zhang, Guanghui Wang, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China; Shaojie Zhao, State Key Laboratory of Earth Surface Processes and Resource Ecology, Faculty of Geographical Science, Beijing Normal University, China; Yu Liu, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China; Yunqing Li, School of Urban Construction, Beijing City University, China

WEP1.PK.4
Board PK.4
FARMLAND SOIL MOISTURE DETECTION BASED ON MULTI-TEMPORAL RADARSAT-2 AND LANDSAT-8 DATA
Fengkai Lang, China University of Mining and Technology, China; Ting Jiang, China West Normal University, China; Min Zhang, Shiyong Yan, China University of Mining and Technology, China

WEP1.PK.5
Board PK.5
DOWNSCALING OF SMAP SOIL MOISTURE PRODUCTS OVER GENHE AREA IN CHINA
Huizhen Cui, Lingmei Jiang, Jian Wang, Gongxue Wang, Jianwei Yang, Xu Su, Beijing Normal University, China

WEP1.PK.6
Board PK.6
SMAP SOIL MOISTURE RETRIEVAL USING SINGLE CHANNEL ALGORITHM OVER AGRICULTURAL AREA
Swati Suman, Prashant K Srivastava, Banaras Hindu University, India; Dharmendra Kumar Pandey, Space Application Centre, India; Rajendra Prasad, Indian Institute of Technology BHU (Banaras Hindu University), India

WEP1.PK.7
Board PK.7
SOIL MOISTURE MONITORING OF AGRICULTURAL FIELDS IN BURKINA FASO USING DUAL POLARIZED SENTINEL-1A DATA
Yumi Miura, Tohoku University, Japan; Leif Eriksson, Chalmers University of Technology, Sweden; Madelene Ostwald, University of Gothenburg / Chalmers University of Technology, Sweden; Martin Karlson, Linköping University, Sweden; Hugues Bazié, Université de Ouagadougou, Burkina Faso; Maciej Soja, MJ Soja Consulting, Australia; Josias Sanou, Institut de l'Environnement et de la Recherche Agricole (INERA), Burkina Faso; Jules Bayala, World Agroforestry Centre (ICRAF), Mali; Heather Reese, University of Gothenburg, Sweden

WEP1.PK.8
Board PK.8
DOWNSCALING SMAP SOIL MOISTURE RETRIEVALS OVER AN AGRICULTURAL REGION IN CENTRAL MEXICO USING MACHINE LEARNING
Juan Carlos Hernandez-Sanchez, Alejandro Monsiváis-Huertero, Instituto Politécnico Nacional, ESIME Ticoman, Mexico; Jasmeet Judge, University of Florida, Mexico; José Carlos Jiménez-Escalona, Instituto Politécnico Nacional, Mexico

WEP1.PK.9
Board PK.9
APPLICATION OF COSMIC-RAY NEUTRON SENSING TO MONITOR SOIL WATER CONTENT IN AGROECOSYSTEM IN NORTH CHINA PLAIN
Jing Tian, Shangkun Song, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

WEP1.PK.10
Board PK.10
USING SATELLITE REMOTE SENSING AND REGIONAL CLIMATE CHANGE SCENARIO DATA FOR PROJECTING SOIL EROSION RISK. A CASE STUDY IN CRETE, GREECE.
Dimitrios Alexakis, Foundation for Research and Technology Hellas, Greece; Efie Tampakopoulou, Manolis Grilllakis, Ioannis Tsanis, Technical University of Crete, Greece

WEP1.PK.11
Board PK.11
SPATIAL EVALUATION OF SOIL MOISTURE AND LAND SURFACE TEMPERATURE DYNAMICS DURING THE SMAPVEX12 EXPERIMENT
Hao Sun, Ximin Cui, Jinbao Jiang, Wenbin Sun, Debao Yuan, Zhihua Xu, China University of Mining and Technology (Beijing), China

Synergistic Approaches for Soil Moisture Estimation

Session Co-Chairs: Yann Kerr, CESBIO; Xiaolong Dong, Chinese Academy of Sciences

WEP2.PK.1
Board PK.1
A FRAMEWORK FOR RETRIEVING A TIME-VARYING EFFECTIVE SCATTERING ALBEDO FROM SATELLITE MICROWAVE MEASUREMENTS
Andrew Feldman, Dara Entekhabi, Massachusetts Institute of Technology, United States

WEP2.PK.2
Board PK.2
STUDY ON THE SOIL MOISTURE CONTENT MODELLING AND DATA ASSIMILATION BASED ON REMOTE SENSING AND LAND SURFACE MODEL
He Zhu, Shifeng Huang, Kun Yang, Jianwei Ma, Yongmin Yang, Yayong Sun, China Institute of Water Resources and Hydropower Research (IWHR), China

WEP2.PK.3
Board PK.3
NUMERICAL STUDY ON THE EFFECTIVE DIELECTRIC PERMITTIVITY OF MULTIPHASE MIXTURE
Chen Guo, Nianru Ma, Chang'an University, China; Bowen Ling, Stanford University, United States

WEP2.PK.4
Board PK.4
A MERGED SMAP – SENTINEL-1 SOIL MOISTURE PRODUCT USING ARTIFICIAL NEURAL NETWORKS: A CASE STUDY IN CENTRAL ITALY
Emanuele Santi, Simonetta Paloscia, Simone Pettinato, Giacomo Fontanelli, Institute of Applied Physics - National Research Council (IFAC - CNR), Italy; Sara Modanesi, Luca Brocca, Luca Ciabatta, Christian Massari, Research Institute for Geo-Hydrological Protection - National Research Council, Italy

WEP2.PK.5
Board PK.5
PHYSICAL MODELS FOR SOIL SALINITY MAPPING OVER ARID LANDSCAPE USING LANDSAT-OLI AND FIELD DATA: VALIDATION AND COMPARISON
Zahraa Al-Ali, Abderrazak Bannari, Nadir Hameid, Arabian Gulf University, Bahrain; Ali El-Battay, International Center for Biosaline Agriculture, United Arab Emirates

WEP2.PK.6
Board PK.6
IMPROVING THE AMSR-E/NASA SOIL MOISTURE DATA PRODUCT USING IN-SITU MEASUREMENTS IN THE TIBETAN PLATEAU
Qiuxia Xie, Massimo Menenti, Li Jia, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PK.7
Board PK.7
HIGH-RESOLUTION SOIL MOISTURE ESTIMATES USING C- AND L-BAND ACTIVE PASSIVE OBSERVATIONS AND THE THEX-MEX'15 DATASET
Alejandro Monsiváis-Huertero, Juan Carlos Hernández-Sánchez, Daniel Enrique Constantino-Recillas, José Carlos Jiménez-Escalona, Instituto Politécnico Nacional, Mexico

WEP2.PK.8
Board PK.8
SOIL MOISTURE RETRIEVAL USING MULTI-TEMPORAL SENTINEL-1 SAR DATASETS IN ZOIGE WETLAND, CHINA
Yuanyuan Yang, Yong Wang, University of Electronic Science and Technology of China, China

WEP2.PK.9
Board PK.9
VALIDATION OF SOIL MOISTURE RETRIEVAL IN DESERT STEPPE AREA
Jun'e Fu, Zhiguo Pang, Jingxuan Lu, Lin Li, Tianjie Lei, Wei Qu, Xiaotao Li, China Institute of Water Resources and Hydropower Research (IWHR), China

WEP2.PK.10
Board PK.10
COMPARISON OF SURFACE SOIL MOISTURE SIMULATED BY THE ORCHIDEE LAND SURFACE MODEL WITH MULTI-SOURCE GLOBAL SATELLITE PRODUCTS
Hiroki Mizuochi, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Amen Al-Yaari, Jean-Pierre Wigneron, INRA, France; Agnes Ducharne, Sorbonne University, France

Wednesday, July 31 09:40 - 10:40 Room 501-502: Area L	
Session WEP1.PL	**Poster**

Ocean Biology and Water Quality II

Session Chair: Xiaofeng Yang, RADI, Chinese Academy of Sciences

WEP1.PL.1
Board PL.1
RECALIBRATION OF OFFSHORE CHLOROPHYLL CONTENT BASED ON VIRTUAL SATELLITE CONSTELLATION
Miaofen Huang, Xufeng Xing, Weijian Luo, Zhonglin Wang, Guangdong Ocean University, China

WEP1.PL.2
Board PL.2
SPATIAL AND SEASONAL VARIATIONS OF THE UPPER OCEAN CHLOROPHYLL CONCENTRATION IN THE EASTERN NORTH PACIFIC
Tao Wang, Jue Ning, Qing Xu, Hohai University, China

WEP1.PL.3
Board PL.3
RECONSTRUCT OCEANIC CHLOROPHYLL AND REFLECTANCE DATA BASED ON AN IMPROVED VE-DINEOF METHOD
Bo Ping, Tianjin University, China; Yunshan Meng, National Marine Data and Information Service, China

WEP1.PL.4
Board PL.4
THE VALIDATION OF RADIOMETRIC PRODUCT DERIVED FROM VIIRS AROUND CHINA SEA FROM CLEAN WATER TO TURBID WATER
Jun Li, Bing Han, Tongji Li, Jianhua Zhu, Anan Yang, Fei Gao, Weiwei Li, Zhifeng Li, Di Jia, Kai Guo, Xiaocan Huang, National Ocean Technology Center, China

WEP1.PL.5
Board PL.5
EFFECTS OF ENVIRONMENTAL FACTORS ON PHYTOPLANKTON DYNAMICS DURING BLOOM CONDITIONS IN THE PEARL RIVER ESTUARY, CHINA
Jun Zhao, Jiahui Liu, Bin Ai, Jin Guo, School of Marine Sciences, Sun Yat-sen University, China; Liqiao Tian, Wuhan University, China

WEP1.PL.6
Board PL.6
LONG-TIME-SCALE INVESTIGATION OF PHYTOPLANKTON BIOMASS THROUGH RECONSTRUCTED CHLOROPHYLL-A DATA USING DINEOF METHOD
Rebekah S, A B Inamdar, Shirish S Gedam, Indian Institute of Technology Bombay, India

WEP1.PL.7
Board PL.7
OCEAN COLOR ATMOSPHERIC CORRECTION OF SENTINEL-3 OLCI USING SWIR METHOD
Huizeng Liu, Hong Kong Baptist University, China; Guofeng Wu, Qingquan Li, Shenzhen University, China; Qiming Zhou, Hong Kong Baptist University, China

WEP1.PL.8
Board PL.8
INVESTIGATION OF THE CHLOROPHYLL-A CONCENTRATION RESPONSE TO SEA SURFACE TEMPERATURE (SST) IN THE EAST CHINA SEA
Chenxu Ji, Nanjing University of Information Science and Technology, China; Yuanzhi Zhang, Chinese University of Hong Kong, China

WEP1.PL.9
Board PL.9
WATER QUALITY MONITORING ALONG THE GIZZRI CREEK: AN APPLICATION OF OLS REGRESSION USING LANDSAT OLI IMAGERY
Abdul Basit, Rao Zahid Khalil, Saad Malik, Institute of Space Technology, Pakistan; Ibrahim Zia, National Institute of Oceanography, Pakistan

Wednesday, July 31 15:20 - 16:20 Room 501-502: Area L	
Session WEP2.PL	**Poster**

Applications of Soil Moisture Measurements

Session Chair: Jeffrey Walker, Monash University

WEP2.PL.1
Board PL.1
EXPERIMENTAL INVESTIGATION OF THE COUPLED HYDRAULIC AND LOW-FREQUENCY DIELECTRIC BEHAVIOR OF THE ARCTIC PERMAFROST ACTIVE LAYER ORGANIC SOIL
Kazem Bakian-Dogaheh, Richard Chen, Mahta Moghaddam, Alireza Tabatabaeenejad, University of Southern California, United States

WEP2.PL.2
Board PL.2
SENSITIVITY OF BACKSCATTER TO SOIL WATER CONTENT AT L-, S-, C-, AND X-BANDS IN SEMI-FLOODED AREA
Lei He, Chengdu University of Information Technology, China; Yuxia Li, University of Electronic Science and Technology of China, China; Yuzhen Li, Chengdu Software Industry Development Center, China; Huanping Wu, National Climate Center, China

WEP2.PL.3
Board PL.3
EVALUATION OF DENGUE DISEASE IN BRAZIL: MULTIVARIABLE ANALYSIS
Luciana Rossato Spatafora, Mohamed El Khayati, Mercè Vall-llossera, Universitat Politècnica de Catalunya (UPC), Spain; Helen Gurgel, University of Brasilia, Brazil; Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Carlos Frederico Angelis, National Centre for Monitoring and Early Warning of Natural Disasters, Brazil; Gerard Portal, David Chaparro, Universitat Politècnica de Catalunya (UPC), Spain

WEP2.PL.4
Board PL.4
A FRAMEWORK OF IMPROVING SATELLITE PRECIPITATION PRODUCTS BY UTILIZING SOIL MOISTURE AND TEMPERATURE INFORMATION
Wei Wang, Changjiang Institute of Survey, Planning, Design and Research, China; Hui Lu, Fan Yang, Kun Yang, Tsinghua University, China

WEP2.PL.5
Board PL.5
A DOWNSCALING SCHEME FOR DERIVING SPATIALLY CONTINUOUS FINE-RESOLUTION SOIL MOISTURE DATA BASED ON GAP-FREE LAND SURFACE TEMPERATURE
Fengping Wen, Wei Zhao, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China; Wei Wang, College of Earth Sciences, Chengdu University of Technology, China

WEP2.PL.6
Board PL.6
LEAK DETECTION IN WATER TRANSMISSION SYSTEMS BY MULTISPECTRAL REMOTE SENSING WITH AIRPLANE AND UAV
Christian Chatelard, ONERA, France; Javier Sanchis Muñoz, Galileo Geosystems S.L, Spain; Jean-Claude Krapez, ONERA, France; Christophe Mazel, Vincent Olichon, Air Marine, France; Juan Barba Polo, Galileo Geosystems S.L, Spain; Yves-Michel Frédéric, Franck Hélias, Philippe Barillot, ONERA, France; Isabelle Le Goff, Guillaume Serra, Société du Canal de Provence, France

WEP2.PL.7
Board PL.7
STUDY AND APPLICATION OF METHODS OF SOIL MOISTURE CONTENT DATA ASSIMILATION FOR REGIONS PARTIALLY LACKING OF OBSERVATION DATA
He Zhu, Kun Yang, Shifeng Huang, Jianwei Ma, Yongmin Yang, Yayong Sun, China Institute of Water Resources and Hydropower Research (IWHR), China

WEP2.PL.8
Board PL.8
EVALUATION OF A PHYSICALLY-BASED PASSIVE MICROWAVE LAND SURFACE TEMPERATURE RETRIEVAL ALGORITHM USING MODIS DATA
Cheng Huang, University of Chinese Academy of Sciences, China; Si-Bo Duan, Chinese Academy of Agricultural Sciences, China; Xiao-Guang Jiang, University of Chinese Academy of Sciences, China; Zhao-Liang Li, Hua Wu, Chinese Academy of Sciences, China; Xiao-Jing Han, Pei Leng, Maofang Gao, Chinese Academy of Agricultural Sciences, China; Yazhen Jiang, Xiaoping Zhang, University of Chinese Academy of Sciences, China; Caixia Gao, Chinese Academy of Sciences, China

WEP2.PL.9
Board PL.9
IMPACTS OF THE TERRESTRIAL CARBON CYCLE ON ATMOSPHERIC CO2 GROWTH RATES INFERRED FROM CCDAS USING REMOTELY SENSED SOIL MOISTURE
Mousong Wu, Nanjing University, China; Marko Scholze, Lund University, Sweden; Thomas Kaminski, Michael Vossbeck, The Inversion Lab, Germany

WEP2.PL.10
Board PL.10
CHARACTERIZATION OF SENTINEL-MSI AND LANDSAT-OLI FILTERS RESPONSIVITIES DIFFERENCES FOR SOIL SALINITY DYNAMIC MONITORING IN AN ARID LANDSCAPE
Abderrazak Bannari, Nadir Hameid, Arabian Gulf University, Bahrain

WEP2.PL.11
Board PL.11
MEASURING COMPLEX PERMITTIVITY OF SOILS BY WAVEGUIDE TRANSMISSION/REFLECTION METHOD
Shan Liao, Bo Gao, Ling Tong, Xun Yang, Yu Li, Ming Li, University of Electronic Science and Technology of China, China

WEP2.PL.12
Board PL.12
PRELIMINARY APPLICABILITY ANALYSIS OF SOIL DIELECTRIC CONSTANT MODEL OF THE DIFFERENT SOIL TEXTURE CONDITION
Yayong Sun, Jianwei Ma, China Institute of Water Resources and Hydropower Research (IWHR), China; Jie Peng, China University of Geosciences, China; Shifeng Huang, Kun Yang, Peng Zhu, He Zhu, China Institute of Water Resources and Hydropower Research (IWHR), China

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area M

Session WEP1.PM — Poster

Ocean Surface Winds and Currents I

Session Chair: Alexander Fore, Jet Propulsion Laboratory

WEP1.PM.1
Board PM.1
CFOSAT SCATTEROMETER DATA LEVEL-1 PROCESSING AND PRELIMINARY RESULTS
Risheng Yun, Xiaolong Dong, National Space Science Center, Chinese Academy of Sciences, China; Lei Zhang, DFH Satellite co., Ltd, China; Di Zhu, Zhisen Wang, Jianying Ma, National Space Science Center, Chinese Academy of Sciences, China

WEP1.PM.2
Board PM.2
CAL/VAL PHASE FOR THE SWIM INSTRUMENT ONBOARD CFOSAT
Raquel Rodriguez Suquet, Laura Hermozo, Cédric Tourain, Céline Tison, CNES, France; Danièle Hauser, Patricia Schippers, Lauriane Delaye, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Lotfi Aouf, Alice Dalphinet, Météo-France, France; Alexis Mouche, Bertrand Chapron, Fabrice Collard, Ifremer, France; Christophe Dufour, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Flavien Gouillon, CNES, France; Annabelle Ollivier, CLS, France; Gilles Guitton, Ifremer, France; Jean-Michel Lachiver, CNES, France

WEP1.PM.3
Board PM.3
THE PRELIMINARY RESULTS OF HY-2B MICROWAVE SCATTEROMETER DATA
Juhong Zou, Yi Zhang, National Satellite Ocean Application Service, China; Qingliu Bao, Beijing Piesat Information Technology Co. Ltd, China; Zhixiong Wang, Nanjing University of Information Science and Technology, China; Xuetong Xie, School of Geographical Sciences, Guangzhou University, China; Mingsen Lin, Yarong Zou, National Satellite Ocean Application Service, China

WEP1.PM.4
Board PM.4
WIND RETRIEVAL ACCURACY ANALYSIS OF HY-2B MICROWAVE SCATTEROMETER
Qian Feng, Juhong Zou, National Satellite Ocean Application Service, China; Qingliu Bao, Beijing Piesat Information Technology Co. Ltd, China; Mingsen Lin, National Satellite Ocean Application Service, China

WEP1.PM.5
Board PM.5
SYNERGY OF EXPERIMENTAL, THEORETICAL AND NUMERICAL APPROACHES FOR A BETTER UNDERSTANDING OF SKIM NEAR NADIR KA-BAND DOPPLER MEASUREMENTS.
Frederic Nouguier, Bertrand Chapron, Ifremer, France; Fabrice Collard, OceanDataLab, France; Fabrice Ardhuin, CNRS, France

WEP1.PM.6
Board PM.6
A SST-DEPENDENT GEOPHYSICAL MODEL FUNCTION FOR HY-2A MICROWAVE SCATTEROMETER
Xuetong Xie, Guangzhou University, China; Dongxuan Tian, Institute of Space Radio Technology, China; Kehai Chen, Zhifeng Wu, Songhua Tan, Guangzhou University, China

WEP1.PM.7
Board PM.7
SEA SURFACE WIND RETRIEVAL FROM SYNTHETIC APERTURE RADAR DATA BY DEEP CONVOLUTIONAL NEURAL NETWORKS
Dongliang Shen, Coastal Carolina University, United States; Bin Liu, Shanghai Ocean University, China; Xiaofeng Li, National Oceanic and Atmospheric Administration, United States

WEP1.PM.8
Board PM.8
NOAA SCATTEROMETER WIND RETRIEVALS FROM THE SCATSAT-1 MISSION
Seubson Soisuvarn, NOAA/NESDIS-UCAR, United States; Zorana Jelenak, Faozi Said, Jeonghwan Park, Qi Zhu, Paul Chang, NOAA/NESDIS, United States

WEP1.PM.9
Board PM.9
ANALYSIS OF CYGNSS WIND CHARACTERISTICS WITH NOAA L2 RETRIEVALS AND TES METHOD
Jeonghwan Park, Faozi Said, NOAA / Global Science & Technology, Inc., United States; Stephen J. Katzberg, NASA Langley Research Center, United States; Seubson Soisuvarn, Zorana Jelenak, NOAA/UCAR, United States; Paul S. Chang, NOAA, United States

WEP1.PM.10
Board PM.10
EXPERIMENTAL STUDY OF THE SURFACE WAVES PARAMETERS INFLUENCE ON THE BACKSCATTERED DOPPLER SPECTRUM CHARACTERISTICS
Yuriy Titchenko, Eugeniy Meshkov, Vladimir Karaev, Institute of Applied Physics, Russian Academy of Science, Russia

WEP1.PM.11
Board PM.11
NEW OPPORTUNITIES FOR MULTISTATIC REMOTE SENSING OF WATER SURFACE USING RECEIVERS WITH DIFFERENT ANTENNA PATTERNS
Yuriy Titchenko, Vladimir Karaev, Institute of Applied Physics, Russian Academy of Science, Russia

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area M

Session WEP2.PM — Poster

Microwave Radiometer Instruments and Calibration II

Session Co-Chairs: Martti Hallikainen, Aalto University; Gail Skofronick Jackson, NASA

WEP2.PM.1
Board PM.1
A DESIGN OF HYPERSPECTRAL MICROWAVE RADIOMETER SUBSYSTEM FOR SOUNDING ATMOSPHERE
Yangjin Luo, Shengwei Zhang, National Space Science Center, Chinese Academy of Sciences, China

WEP2.PM.2
Board PM.2
CHARACTERIZATION OF THE X-BAND FPASMR AIRBORNE EXPERIMENT
Xiaojiao Yang, Guangnan Song, Hailiang Lu, Pengfei Li, Yinan Li, Jiakun Wang, Xi'an Institute of Space Radio Technology, China

WEP2.PM.3
Board PM.3
RESEARCH ON WATER ICE IN LUNAR POLES BASED ON THE SVD METHOD FROM CHANG'E-2 MRM DATA
Yi Lian, Xinghan Wang, Tianjin Normal University, China; Zhiguo Meng, Jilin University, China; Jingsong Ping, National Astronomical Observatories of the Chinese Academy of Sciences, China; Xingmei Chen, Pengfei Liu, Hu Zhang, Tianjin Normal University, China

WEP2.PM.4
Board PM.4
ANALYSIS OF NON-STATIONARY RADIOMETER GAIN VIA ENSEMBLE DETECTION
Mustafa Aksoy, University at Albany, State University of New York, United States; Paul E. Racette, NASA Goddard Space Flight Center, United States; John W. Bradburn, University at Albany, State University of New York, United States

WEP2.PM.5
Board PM.5
THE CALIBRATION AND STABILITY ANALYSIS OF THE JPL ULTRA-WIDE P/L-BAND RADIOMETER
Mehmet Ogut, Sidharth Misra, Xavier Bosch-Lluis, Carl Felten, Isaac Ramos-Perez, Barron Latham, Tong Lee, Simon Yueh, Shannon Brown, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEP2.PM.6
Board PM.6
ARTIFACTS SUPPRESSION OF PASSIVE MILLIMETER-WAVE SAIR IMAGING
Xiaotao Shao, Caike Wei, Yan Shen, Beijing Jiaotong University, China; Caiyun Wang, Chinese Academy of Sciences, China; Xiaoli Hao, Ya-Li Hou, Beijing Jiaotong University, China; Xinmin Wang, Beijing Institute of Radio Measurement, China

WEP2.PM.7
Board PM.7
FIELD OF VIEW OF MIRRORED APERTURE SYNTHESIS RADIOMETERS
Yufang Li, Qingxia Li, Liangqi Gui, Huazhong University of Science and Technology, China; Li Feng, Hubei University of Technology, China; Haofeng Dou, Yuanchao Wu, Zhenyu Lei, Huazhong University of Science and Technology, China

WEP2.PM.8
Board PM.8
A MULTI-BAND PASSIVE RADIOMETER FOR SEA SALINITY, SOIL MOISTURE AND CRYOSPHERE STUDIES
Ludovic Bruckner, Giovanni De Amici, Emmanel Dinnat, David Le Vine, Jeff Piepmeier, NASA Goddard Space Flight Center, United States

WEP2.PM.9
Board PM.9
SIMULATION SENSITIVITY OF GROUND-BASED MICROWAVE RADIOMETER DURING INTENSIVE OBSERVATION PERIOD
Reno K.-Y. Choi, National Institute of Meteorological Sciences, Korea (South); Byungsuk Lee, Do-Youn Kim, ARA Consulting & Technology Ltd, Korea (South); Ki-hoon Kim, Kijun Park, National Institute of Meteorological Sciences, Korea (South)

WEDNESDAY POSTER

Ocean Surface Winds and Currents II

Session Chair: Duk-Jin Kim, Seoul National University

WEP1.PN.1
Board PN.1
SENTINEL-1, WW3 AND BUOY SPECTRAL COMPARISONS IN THE SOUTHERN OCEAN
Salman Khan, Emilio Echevarria, Mark Hemer, CSIRO, Australia

WEP1.PN.2
Board PN.2
USING SENTINEL-1 OCEAN DATA FOR MAPPING SEA SURFACE CURRENTS ALONG THE SOUTHERN NORWEGIAN COAST
Anis Elyouncha, Leif Eriksson, Chalmers University of Technology, Sweden; Harald Johnsen, Northern Research Institute, Sweden; Lars Ulander, Chalmers University of Technology, Sweden

WEP1.PN.3
Board PN.3
APPLICATION OF SENTINEL-1A DATA IN OFFSHORE WIND FIELD RETRIEVAL IN GUANGDONG PROVINCE
Pinghao Wu, Kaiwen Zhong, Hongda Hu, Yi Zhao, Jianhui Xu, Yunpeng Wang, Guangzhou Institute of Geography, Guangdong Academy of Sciences, China

WEP1.PN.4
Board PN.4
HIGH RESOLUTION SENTINEL-1 AND RADARSAT-2 SAR OBSERVATIONS OF TROPICAL CYCLONES
Alexis Mouche, Clément Combot, Léo Vinour, Swen Jullien, Bertrand Chapron, IFREMER, France; Biao Zhang, Nanjing University of Information Science & Technology, China; Yili Zhao, NOTC, China

WEP1.PN.5
Board PN.5
ALONG-TRACK INTERFEROMETRIC SYNTHETIC APERTURE RADAR DOPPLER MEASUREMENT CORRECTION BY USING A SURFACE SCATTERING MODEL
Shadi Aslebagh, John Sahr, University of Washington, United States; Gordon Farquharson, Capella Space Corporation, United States; Roland Romeiser, University of Miami, United States

WEP1.PN.6
Board PN.6
NEW INVESTIGATIONS OF TEN-YEAR ENVISAT/ASAR WAVE MODE FOR GLOBAL OCEAN WAVES
Huimin Li, Alexis Mouche, Ifremer, Univ. Brest, CNRS, IRD, LOPS, France; Justin Stopa, University of Hawaii at Manoa, United States; Bertrand Chapron, Ifremer, Univ. Brest, CNRS, IRD, LOPS, France

WEP1.PN.7
Board PN.7
RECONSTRUCTION OF OCEAN SURFACE CURRENTS USING NEAR SIMULTANEOUS SATELLITE IMAGERY
Alexander Osadchiev, Roman Sedakov, Shirshov Institute of Oceanology, Russian Academy of Sciences, Russia

WEP1.PN.8
Board PN.8
EFFECT OF WIND DIRECTION ON WIND SPEED ERRORS DERIVED FROM SENTINEL-1A/B IW MODE DATA IN KOREAN COASTAL REGION
Kyung-Ae Park, Jae-Cheol Jang, Jae-Jin Park, Seoul National University, Korea (South)

WEP1.PN.9
Board PN.9
UPDATED EDDY STATISTICS FOR THE WESTERN MEDITERRANEAN BASED ON THREE YEARS OF SENTINEL-1A SAR IMAGERY
Martin Gade, Annika Stuhlmacher, Universität Hamburg, Germany

WEP1.PN.10
Board PN.10
EFFECTS OF PROBING SPECTRAL WIDTH ON BISTATIC RADAR SCATTERING FROM SEA SURFACE
Yu Liu, Kun-Shan Chen, Deng-Feng Xie, Ying Yang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP1.PN.11
Board PN.11
AIRBORNE SAR OBSERVATION OF WIND DIRECTION DEPENDENCE OF OCEAN SURFACE BACKSCATTERING
Akitsugu Nadai, National Institute of Information and Communications Technology (NICT), Japan

Microwave Radiometer Instruments and Calibration III

Session Co-Chairs: Adriano Camps, Universitat Politècnica de Catalunya; Paolo de Matthaeis, NASA Goddard Space Flight Center; Xinxin Xie, Shanghai Spaceflight Institute of TT&C and Telecommunication

WEP2.PN.1
Board PN.1
INITIAL PERFORMANCE OF THE HAIYANG-2B SCANNING MICROWAVE RADIOMETER
ShuBo Liu, Xv Jin, Xi'an Institute of Space Radio Technology, China; Wu Zhou, National Satellite Ocean Application Service, China; XiaoNing Wang, Rui Yv, YanMing Li, HongXing Dang, XiaoMin Tan, Xi'an Institute of Space Radio Technology, China

WEP2.PN.2
Board PN.2
ALONG-SCAN BIAS OF FENGYUN-3C MICROWAVE RADIATION IMAGER
Xinxin Xie, Shanghai Spaceflight Institute of TT&C and Telecommunication, China; Mu Qiao, Shanghai Academy of Spaceflight Technology, China; Jiakai He, Hongxin Xu, Shanghai Spaceflight Institute of TT&C and Telecommunication, China

WEP2.PN.3
Board PN.3
CALIBRATION OF NOAA-20 ADVANCED TECHNOLOGY MICROWAVE SOUNDER
Quanhua (Mark) Liu, NOAA/NESDIS/STAR, United States; Hu Yang, ESSIC, United States; Ninghai Sun, GST, United States

WEP2.PN.4
Board PN.4
INTER-CALIBRATION OF PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE OBSERVED BY FY-3B/MWRI AND AQUA/AMSR-E ON ARCTIC
Haihua Chen, Xiaotong Tang, Lele Li, Lei Guan, Ocean University of China, China

WEP2.PN.5
Board PN.5
INTERCALIBRATION OF FY-3C MWRI BRIGHTNESS TEMPERATURE AGAINST GMI MEASUREMENTS BASED ON OCEAN MICROWAVE RADIATIVE TRANSFER MODEL
Zi-Qian Zeng, Geng-Ming Jiang, Ya-Qiu Jin, Fudan University, China

WEP2.PN.6
Board PN.6
IMPROVEMENT OF FY-3D/MWRI HOT REFLECTOR BACK LOBE CORRECTION
Shengli Wu, National Satellite Meteorological Center, China Meteorological Administration, China

WEP2.PN.7
Board PN.7
CALIBRATION AND SCANNING STRATEGY OF TROPOSPHERIC WATER AND CLOUD ICE (TWICE) INSTRUMENT FOR 6U-CLASS CUBESATS
Yuriy Goncharenko, Braxton Kilmer, Steven Reising, Colorado State University, United States; Pekka Kangaslahti, Richard Cofield, Anders Skalare, Erich Schlecht, Mehmet Ogut, Joelle Cooperrider, Jonathan Jiang, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; William Deal, Alex Zamora, Caitlyn Cooke, Northrop Grumman Corp, United States

WEP2.PN.8
Board PN.8
SMOS INSTRUMENT PERFORMANCE AFTER MORE THAN 9 YEARS IN ORBIT
Manuel Martín-Neira, Roger Oliva, European Space Agency (ESA), Netherlands; Ignasi Corbella, Francesc Torres, Nuria Duffo, Israel Durán, Polytechnic University of Catalonia, Spain; Juha Kainulainen, Harp Technologies, Finland; Josep Closa, Albert Zurita, Airbus Defence and Space, Spain; François Cabot, Ali Khazaal, Eric Anterrieu, Philippe Richaume, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Jose Barbosa, Research and Development in Aerospace, Switzerland; Gonçalo Lopes, DEIMOS, Portugal; Joe Tenerelli, OceanDataLab, France; Raúl Díez-García, Telespazio VEGA-UK, Spain; Jorge Fauste, European Space Agency (ESA), Spain; Antonio Turiel, Verónica González-Gambau, SMOS Barcelona Expert Centre, Spain; Raffaele Crapolicchio, European Space Agency (ESA), Italy; Giovanni Macelloni, Marco Brogioni, Institute of Applied Physics, Italy; Pierre Vogel, Martin Suess, European Space Agency (ESA), Netherlands

WEP2.PN.9
Board PN.9
CORRECTION FOR CALIBRATION ERROR IN HY-2B SCANNING MICROWAVE RADIOMETER
Xu Jin, ShuBo Liu, PengJu Dang, Rui Yu, HongXing Dang, XiaoMin Tan, Academy of Space Electronic Information Technology, China

WEP2.PN.10
Board PN.10
RECEIVER DEVELOPMENT FOR THE MICROWAVE OZONE PROFILING INSTRUMENT MOPI 5
Mikko Kotiranta, University of Bern, Switzerland; R. Michael Gomez, Gerald E. Nedoluha, United States Naval Research Laboratory, United States; Niklaus Kämpfer, Axel Murk, University of Bern, Switzerland

WEP2.PN.11
Board PN.11
5 YEAR TECHNOLOGY ROADMAP FOR VLBI GLOBAL OBSERVING SYSTEM (VGOS)
Lawrence Hilliard, Leonid Petrov, Frank Lemoine, NASA Goddard Space Flight Center, United States; Ganesh Rajagopalan, Pedro Elosegui, Chester Ruszczyk, Massachusetts Institute of Technology, United States; John Gipson, David Horsley, NVI, United States; Gary Brown, NASA Goddard Space Flight Center, United States

WEP2.PN.12
Board PN.12
THE RESEARCH ON AN IN-ORBIT EXTERNAL CALIBRATION METHOD OF APERTURE SYNTHETIC RADIOMETER
Jiakun Wang, Wenxin Chen, Yinan Li, Pengju Jin, Xi'an Institute of Space Radio Technology, China; Hailiang Lu, Xiaojiao Yang, Guangnan Song, Pengfei Li, Xi'an Institute of Space Radio Technology, China

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area O
Session WEP1.PO		**Poster**

Ocean Surface Winds and Currents III

Session Co-Chairs: Mingsen Lin, National Satellite Ocean Application Service; Wenqing Tang, Jet Propulsion Laboratory

WEP1.PO.1
Board PO.1
ESTIMATE OF WIND AND RAIN RATE INSIDE TROPICAL CYCLONE USING SPACEBORNE C- AND X- BAND PASSIVE MICROWAVE RADIOMETER MEASUREMENTS
Mingsen Lin, National Satellite Ocean Application Service, China; Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd, China; Wu Zhou, Chaofei Ma, Yufei Zhang, National Satellite Ocean Application Service, China

WEP1.PO.2
Board PO.2
ACTIVE/PASSIVE GEOPHYSICAL MODEL FUNCTIONS FOR OCEAN VECTOR WIND RETRIEVALS FROM TRMM
Alamgir Hossan, University of Central Florida, United States; Maria Jacob, Universidad Nacional de Córdoba, Argentina; W. Linwood Jones, University of Central Florida, United States

WEP1.PO.3
Board PO.3
TRMM ACTIVE/PASSIVE OCEAN VECTOR WIND RETRIEVALS
Maria Jacob, Universidad Nacional de Córdoba, Argentina; Alamgir Hossan, W Linwood Jones, University of Central Florida, United States

WEP1.PO.4
Board PO.4
MEAN SQUARE SLOPES OF SEA WAVES IN CYCLONE AREA FROM DUAL-FREQUENCY PRECIPITATION RADAR AND MICROWAVE RADIOMETER
Vladimir Karaev, Institute of Applied Physics, Russian Academy of Science, Russia; Leonid Mitnik, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russia; Maria Panfilova, Maria Ryabkova, Eugeny Meshkov, Yury Titchenko, Anton Yablokov, Institute of Applied Physics, Russian Academy of Science, Russia

WEP1.PO.5
Board PO.5
UNDEWATER ACOUSTIC WAVE GAUGE MEASUREMENTS OF SEA WAVE PARAMETERS: TEST EXPERIMENT AND MODELING
Maria Ryabkova, Eugeny Meshkov, Vladimir Karaev, Maria Panfilova, Institute of Applied Physics, Russian Academy of Science, Russia

WEP1.PO.6
Board PO.6
THE EFFECTS OF MSATD AND MWS ON THE COUPLING COEFFICIENT BETWEEN SATDA AND WSA
Yifan Wang, Ocean University of China, China; Yunhua Wang, Yanmin Zhang, Ocean University Of China, China

WEP1.PO.7
Board PO.7
WIND RETRIEVALFOR CFOSCAT EDGE AND NADIR OBSERVATIONS BASED ON NEURAL NETWORKS AND IMPROVED PRINCIPLE COMPONENT ANALYSIS
Xingou Xu, Key Laboratory of Microwave Remote Sensing, China; Ad Stoffelen, Royal Netherlands Meteorological Institute (KNMI), Netherlands

WEP1.PO.8
Board PO.8
THE EFFECTS OF WIND TRANSFER ERROR ON CURRENT RETRIEVAL
Yuanjing Miao, Xiaolong Dong, Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China; Qingliu Bao, Beijing Piesat Information Technology Co. Ltd, China; Di Zhu, Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China

WEP1.PO.9
Board PO.9
OBSERVATION OF TYPHOON MERANTI WITH HIGH FREQUENCY RADAR SYSTEM
Heng Zhou, Xiongbin Wu, Xianchang Yue, School of Electronic Information, Wuhan University, China

WEP1.PO.10
Board PO.10
A STUDY ON POLARIMETRIC SCATTEROMETER SIMULATION AND WIND VECTOR RETRIEVAL
Dongxuan Tian, Institute of Space Radio Technology, China; Xuetong Xie, Guangzhou University, China

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area O
Session WEP2.PO		**Poster**

Big Data and Machine Learning - Neural Network in Remote Sensing I

WEP2.PO.1
Board PO.1
WEED MAPPING USING VERY HIGH RESOLUTION SATELLITE IMAGERY AND FULLY CONVOLUTIONAL NEURAL NETWORK
Yannik Rist, Iurii Shendryk, Foivos Diakogiannis, Shaun Levick, CSIRO, Australia

WEP2.PO.2
Board PO.2
DEEP CONVOLUTIONAL NEURAL NETWORKS FOR PLANE IDENTIFICATION ON SATELLITE IMAGERY BY EXPLOITING TRANSFER LEARNING WITH A DIFFERENT OPTIMIZER
Patcharin Kamsing, King Mongkut's Institute of Technology Ladkrabang, Thailand; Peerapong Torteeka, National Astronomical Research Institute of Thailand, Thailand; Soemsak Yooyen, King Mongkut's Institute of Technology Ladkrabang, Thailand

WEP2.PO.3
Board PO.3
SEMI-SUPERVISED VARIATIONAL GENERATIVE ADVERSARIAL NETWORKS FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Hao Wang, Chao Tao, Ji Qi, HaiFeng Li, YuQi Tang, Central South University, China

WEP2.PO.4
Board PO.4
P-WAVE IDENTIFICATION WITH DEEP NEURAL NETWORK
Wei Zhu, Xin Li, Chang Liu, Xiong Xu, Weiping Ni, Northwest Institute of Nuclear Technology, China

WEP2.PO.5
Board PO.5
DEEP LEARNING ROAD EXTRACTION MODEL BASED ON SIMILARITY MAPPING RELATIONSHIP
Haoyu Li, Yunping Chen, Yue Yang, Peixin Liu, Chuanqi Zhong, University of Electronic Science and Technology of China, China

WEP2.PO.6
Board PO.6
AERIAL IMAGE AND MAP SYNTHESIS USING GENERATIVE ADVERSARIAL NETWORKS
Jun Gu, Yue Zhang, Wenkai Zhang, Hongfeng Yu, Institute of Electronics, Chinese Academy of Sciences, China; Siyue Wang, Northeastern University, China; Yaoling Wang, Lei Wang, Institute of Electronics, Chinese Academy of Sciences, China

WEP2.PO.7
Board PO.7
A DEEP LEARNING ARCHITECTURE FOR HETEROGENEOUS AND IRREGULARLY SAMPLED REMOTE SENSING TIME SERIES
Corrado Avolio, Alessia Tricomi, Claudio Mammone, Massimo Zavagli, Mario Costantini, e-GEOS - Italian Space Agency / Telespazio, Italy

WEP2.PO.8
Board PO.8
IMPROVED SEARCH AND DETECTION OF SURFACE-TO-AIR MISSILE SITES USING SPATIAL FUSION OF COMPONENT OBJECT DETECTIONS FROM DEEP NEURAL NETWORKS
Alan Cannaday, Curt Davis, Grant Scott, University of Missouri, United States

WEP2.PO.9
Board PO.9
AN EXTENSIBLE AND EASY-TO-USE TOOLBOX FOR DEEP LEARNING BASED ANALYSIS OF REMOTE SENSING IMAGES
Raian Vargas Maretto, Thales Sehn Körting, Leila Maria Garcia Fonseca, National Institute for Space Research (INPE), Brazil

WEDNESDAY POSTER

154

Wednesday, July 31	09:40 - 10:40	Room 501-502: Area P
Session WEP1.PP		**Poster**

Small Satellite Technology II

Session Co-Chairs: William Blackwell, MIT Lincoln Laboratory; Sharmila Padmanabhan, NASA Jet Propulsion Laboratory

WEP1.PP.1
Board PP.1
MICROWAVE SINGLE PIXEL IMAGER (MSPI) OVERVIEW AND IMAGING ALGORITHM
Justin Bobak, Hatim Alqadah, Michael Nurnberger, Scott Rudolph, David Truesdale, US Naval Research Laboratory, United States

WEP1.PP.2
Board PP.2
MICROWAVE SINGLE PIXEL IMAGER (MSPI) ANTENNA ASSEMBLY
Justin Bobak, Scott Rudolph, Michael Nurnberger, Hatim Alqadah, US Naval Research Laboratory, United States

WEP1.PP.3
Board PP.3
DESIGN AND ANALYSIS OF RADIOMETRIC CALIBRATION MISSION IN-ORBIT FOR ENVIRONMENT AND DISASTERS MONITORING SATELLITE
Yang Zhu, Jun Zhu, Zhaoguang Bai, Jun Dong, Bin Wu, Min Huang, Huan Yin, Qipeng Cao, Dong Fang Hong Satellite Corporation Limited, China; Jin Hong, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, China; Dexin Sun, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China; Xuebin Liu, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, China; Lifeng Jin, Beijing Institute of Space Mechanics & Electricity, China

WEP1.PP.4
Board PP.4
ON STUDY OF ATMS GEOMETRIC CALIBRATION BY USING TWO-DIMENSION LUNAR SCAN OBSERVATIONS
Jun Zhou, Hu Yang, University of Maryland, United States

WEP1.PP.5
Board PP.5
A FEASIBLE SATELLITE ATTITUDE MANEUVER STRATEGY FOR HIGH RESOLUTION SLIDING SPOTLIGHT SAR
Chaowei Zhou, Zhenfang Li, Xidian University, China; Zhibin Wang, Beijing Institute of Spacecraft System Engineering, China; Feng Tian, Xidian University, China

WEP1.PP.6
Board PP.6
LONG-WAVELENGTH INFRARED DIGITAL FOCAL PLANE ARRAYS FOR EARTH REMOTE SENSING APPLICATIONS
Sarath Gunapala, Sir Rafol, David Ting, Alexander Soibel, Arezou Khoshakhlagh, Sam Keo, Brian Pepper, Anita Fisher, Edward Luong, Cory Hill, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Arvind D'Souza, Christopher Masterjohn, DRS Network & Imaging Systems, Inc., United States; Sachidananda Babu, Parminder Ghuman, NASA Earth Science Technology Office, United States

WEP1.PP.7
Board PP.7
ULID: AN UNCONNECTED L-BAND INTERFEROMETER DEMONSTRATOR
Francois Cabot, Eric Anterrieu, Centre d'Etude Spatial de la BIOsphère (CESBIO), France; Thierry Amiot, CNES, France; Yann Kerr, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

WEP1.PP.8
Board PP.8
A PLAYBACK SOFTWARE APPLIED TO REMOTE SENSING VIDEO INFORMATION DISPLAY
Feng Wang, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China

WEP1.PP.9
Board PP.9
³CAT-4 MISSION: A 1-UNIT CUBESAT FOR EARTH OBSERVATION WITH A L-BAND RADIOMETER AND A GNSS-REFLECTOMETER USING SOFTWARE DEFINED RADIO
Joan A. Ruiz-de-Azua, Joan F. Muñoz, Lara Fernandez, Marc Badia, David Llavería, Carlos Díez, Andrea Aguilella, Adrián Pérez, Oriol Milian, Marco Sobrino, Angel Navarro, Héctor Lleó, Miquel Sureda, Manel Soria, Anna Calveras, Adriano Camps, Technical University of Catalonia (UPC), Spain

WEP1.PP.10
Board PP.10
PROOF-OF-CONCEPT OF A FEDERATED SATELLITE SYSTEM BETWEEN TWO
6-UNIT CUBESATS FOR DISTRIBUTED EARTH OBSERVATION SATELLITE SYSTEMS
Joan A. Ruiz-de-Azua, Lara Fernandez, Joan F. Muñoz, Marc Badia, Ricard Castellà, Carlos Diez, Andrea Aguilella, Technical University of Catalonia (UPC), Spain; Simone Briatore, Nicola Garzaniti, Skolkovo Institute of Science and Technology, Russia; Anna Calveras, Technical University of Catalonia (UPC), Spain; Alessandro Golkar, Skolkovo Institute of Science and Technology, Russia; Adriano Camps, Technical University of Catalonia (UPC), Spain

WEP1.PP.11
Board PP.11
ARCHITECTURES AND SYNCHRONIZATION TECHNIQUES FOR COHERENT DISTRIBUTED REMOTE SENSING SYSTEMS
Juan Carlos Merlano-Duncan, Jorge Querol, University of Luxembourg, Luxembourg; Adriano Camps, Universitat Politécnica de Catalunya-BarcelonaTech and IEEC/CTE-UPC, Spain; Symeon Chatzinotas, Bjorn Ottersten, University of Luxembourg, Luxembourg

WEP1.PP.12
Board PP.12
ENABLING TECHNOLOGIES FOR NEXT GENERATION MIR (MICROWAVE INTERFEROMETRIC RADIOMETER) SYSTEMS
Hao Liu, Lijie Niu, Wei Chen, Hao Lu, Ji Wu, National Space Science Center, Chinese Academy of Sciences, China

Wednesday, July 31	15:20 - 16:20	Room 501-502: Area P
Session WEP2.PP		**Poster**

Big Data and Machine Learning - Machine Learning for Land Application

Session Chair: Zhengwei Yang, USDA National Agricultural Statistics Service

WEP2.PP.1
Board PP.1
EVALUATION OF MACHINE LEARNING-BASED URBAN SURFACE MAPPING USING A NEW MODERATE-RESOLUTION SATELLITE IMAGERY DATASET
Xin Luo, Xiaohua Tong, Runjie Wang, Haiyan Pan, Tongji University, China

WEP2.PP.2
Board PP.2
COMPARATIVE ASSESSMENT OF MACHINE LEARNING TECHNIQUES FOR LAND USE/LAND COVER CLASSIFICATION IN THE BRAZILIAN SAVANNA USING ALOS-2/PALSAR-2 POLARIMETRIC IMAGES
Flavio Fortes Camargo, Edson Eyji Sano, University of Brasilia, Brazil; Jose Claudio Mura, Claudia Maria de Almeida, National Institute for Space Research (INPE), Brazil; Tati de Almeida, University of Brasilia, Brazil

WEP2.PP.3
Board PP.3
CLOUD DETECTION AND CLASSIFICATION FOR S-NPP FSR CRIS DATA USING SUPERVISED MACHINE LEARNING
Miao Tian, Hao Chen, Guanghui Liu, University of Electronic Science and Technology of China, China

WEP2.PP.4
Board PP.4
CROPLAND MAPPING IN FRAGMENTED AGRICULTURAL LANDSCAPE USING MODIFIED PYRAMID SCENE PARSING NETWORK
Junwen Yang, Jinshui Zhang, Shuang Zhu, Qing Xu, Feng Zhang, Beijing Normal University, China; Zhijiang Yang, Beijing Institute of Space Launch Technology, China; Zheng Dong, Beijing Vocational College of Transportation, China

WEP2.PP.5
Board PP.5
OPEN MULTI-PROCESSING ACCELERATION FOR UNSUPERVISED LAND COVER CATEGORIZATION USING PROBABILISTIC LATENT SEMANTIC ANALYSIS
Sergio Bernabe Garcia, Carlos Garcia, Complutense University of Madrid, Spain; Ruben Fernandez-Beltran, University Jaume I, Spain; Mercedes E. Paoletti, Juan M. Haut, Javier Plaza, Antonio Plaza, University of Extremadura, Spain

WEP2.PP.6
Board PP.6
DIMENSIONALITY REDUCTION IN THE PRESENCE OF HIGHLY CORRELATED VARIABLES FOR RANDOM FORESTS: WETLAND CASE STUDY
Amir Behnamian, Sarah Banks, Lori White, Koreen Millard, Darren Pouliot, Jon Pasher, Jason Duffe, Environment and Climate Change Canada, Canada

WEP2.PP.7
Board PP.7
SEQUENTIAL RECURRENT ENCODERS FOR LAND COVER MAPPING IN THE BRAZILIAN AMAZON USING MODIS IMAGERY AND AUXILIARY DATASETS
Alejandro Coca-Castro, King's College London, United Kingdom; Marc Rußwurm, Technical University of Munich, Germany; Louis Reymondin, International Center for Tropical Agriculture, Colombia; Mark Mulligan, King's College London, United Kingdom

WEP2.PP.8
Board PP.8
CAN A DEEP NETWORK UNDERSTAND THE LAND COVER ACROSS SENSORS?
Zhongling Huang, Chinese Academy of Sciences, Germany; Corneliu Octavian Dumitru, German Aerospace Center (DLR), Germany; Zongxu Pan, Bin Lei, Chinese Academy of Sciences, China; Mihai Datcu, German Aerospace Center (DLR), Germany

WEP2.PP.9
Board PP.9
DEEP CONVOLUTIONAL NETWORKS FOR CLOUD DETECTION USING RESOURCESAT-2 DATA
Debvrat Varshney, Prasun Gupta, Indian Institute of Remote Sensing, India; Claudio Persello, University of Twente, Netherlands; Bhaskar Nikam, Indian Institute of Remote Sensing, India

WEP2.PP.10
Board PP.10
PREDICTING IMPERVIOUS LAND EXPANSION USING DEEP DECONVOLUTIONAL NEURAL NETWORKS
Pariya Pourmohammadi, Donald Adjeroh, Michael Strager, West Virginia University, United States

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 503: Area Q
Session WEP1.PQ		**Poster**

Monitoring and Damage Assessment of Landslide and Surface Deformation III

Session Co-Chairs: Chinatsu Yonezawa, Tohoku University; Jungkyo Jung, Jet Propulsion Laboratory

WEP1.PQ.1
Board PQ.1
ESTIMATING LAND SUBSIDENCE IN RELATION TO URBAN EXPANSION IN SEMARANG CITY, INDONESIA, USING INSAR AND OPTICAL CHANGE DETECTION METHODS
Magaly Koch, Boston University, United States; Ahmed Gaber, Noura Darwish, Port-Said University, Egypt; Juliette Bateman, Sucharita Gopal, Boston University, United States; Muhammad Helmi, Diponegoro University, Indonesia

WEP1.PQ.2
Board PQ.2
GROUND DEFORMATION DISASTER MONITORING FOR THE KOREA BY SENTINEL-1
Junghum Yu, Hyewon Yun, National Disaster Management Research Institute, Korea (South); Jaehee Lee, SeLab, Korea (South); Jinyoung Kim, National Disaster Management Research Institute, Korea (South)

WEP1.PQ.3
Board PQ.3
POTENTIAL OF SENTINEL-1 TIME SERIES DATA FOR MONITORING SINKHOLE FORMATION IN FARMLANDS USING SBAS METHOD
Sajjad Sajedizadeh, Mahdi Khoshlahjeh Azar, Yasser Maghsoudi, K.N.Toosi University of Technology, Iran; Amir Shemshaki, Geological Survey of Iran, Iran

WEP1.PQ.4
Board PQ.4
APPLICATION OF D-INSAR TECHNOLOGY ON RISK ASSESSMENT OF MINING AREA
Zhiliang Zhang, Qiming Zeng, Jian Jiao, Peking University, China

WEP1.PQ.5
Board PQ.5
SURFACE CHANGE OF THE 6TH NUCLEAR TEST OF NORTH KOREA ON 3 SEPTEMBER 2017 DETECTED BY USING SAR IMAGES
Jisang Yoon, Hoonyol Lee, Kangwon National University, Korea (South)

WEP1.PQ.6
Board PQ.6
THE DEFORMING ETNA VOLCANO IMAGED THROUGH SBAS-DINSAR ANALYSIS: ITS LONG TERM BEHAVIOUR AND THE RECENT SEISMO-VOLCANIC CRISIS OF DECEMBER 2018
Giuseppe Solaro, CNR-IREA, Italy; Manuela Bonano, CNR-IMAA, Italy; Raffaele Castaldo, Francesco Casu, Claudio De Luca, Vincenzo De Novellis, Riccardo Lanari, Michele Manunta, Mariarosaria Manzo, Giovanni Onorato, Susi Pepe, Pietro Tizzani, Giovanni Zeni, Ivana Zinno, CNR-IREA, Italy

WEP1.PQ.7
Board PQ.7
AUTOMATIC EXTRACTION OF POTENTIAL DEBRIS FLOW BASED ON GF-2 SATELLITE DATA
Chao He, Bei Ye, China University of Geosciences (Beijing), China

WEP1.PQ.8
Board PQ.8
MULTISOURCE DATA BASED APPROACH TO MAPPING EXPOSURE AND SEISMIC VULNERABILITY OF BUILDINGS IN TANGSHAN CENTER, CHINA
Wenhua Qi, Guiwu Su, Institute of Geology, China Earthquake Administration, China

WEP1.PQ.9
Board PQ.9
TAILINGS RESERVOIR DISASTER AND ENVIRONMENTAL MONITORING USING THE UAV-GROUND HYPERSPECTRAL JOINT OBSERVATION AND PROCESSING: A CASE OF STUDY IN XINJIANG, THE BELT AND ROAD
Yuting Wan, Xin Hu, Yanfei Zhong, Ailong Ma, Wuhan University, China; Lifei Wei, Hubei University, China; Liangpei Zhang, Wuhan University, China

Wednesday, July 31	15:20 - 16:20	Room 503: Area Q
Session WEP2.PQ		**Poster**

Monitoring and Damage Assesment of Storm and Weather

Session Co-Chairs: Ryota Nakamura, Toyohashi University of Technology; MinJeong Jo, USRA/NASA-GSFC

WEP2.PQ.1
Board PQ.1
MULTIPLE SATELLITE MICROWAVE RETRIEVAL OF TROPICAL CYCLONE RAIN RATE AND WARM CORE STRUCTURE
Shuyan Liu, Colorado State University, United States; Christopher Grassotti, University of Maryland, United States; Quanhua Liu, NOAA, United States; Yong-Keun Lee, University of Maryland, United States; Ryan Honeyager, I.M. Systems Group, United States

WEP2.PQ.2
Board PQ.2
THE INFLUENCE OF SATELLITE OBSERVATION ANGLE ON TROPICAL CYCLONE INTENSITY ESTIMATION USING THE DEVIATION ANGLE VARIANCE TECHNIQUE
Liang Hu, Elizabeth Ritchie, University of New South Wales, Australia; Scott Tyo, School of Engineering and IT, Australia

WEP2.PQ.3
Board PQ.3
HURRICANE BUILDING DAMAGE ASSESSMENT USING POST-DISASTER UAV DATA
Junho Yeom, Youkyung Han, Kyungpook National University, Korea (South); Anjin Chang, Jinha Jung, Texas A&M University Corpus Christi, United States

WEP2.PQ.4
Board PQ.4
A DEEP LEARNING BASED METHOD FOR TYPHOON RECOGNITION AND TYPHOON CENTER LOCATION
Xue Yang, Zongqian Zhan, Wuhan University, China; Junping Shen, Beijing Piesat Information Technology Co. Ltd, China

WEP2.PQ.5
Board PQ.5
HURRICANE OBSERVATIONS WITH GNSS-REFLECTOMETRY FROM CYGNSS MISSION - CASE STUDY OF HURRICANE IRMA 2017
Dongliang Guan, Nanjing Tech University, China; Adriano Camps, Hyuk Park, Universitat Politècnica de Catalunya (UPC), Spain

WEP2.PQ.6
Board PQ.6
BERTISS PROJECT - BALKAN-MEDITERRANEAN REAL TIME SEVERE WEATHER SERVICE
Haris Haralambous, Frederick University, Frederick Research Center, Cyprus; Christina Oikonomou, Frederick Research Center, Cyprus; Christos Pikridas, Aristotle University of Thessaloniki, Greece; Kostas Lagouvardos, Vasiliki Kotroni, National Observatory of Athens, Greece; Guergana Guerova, Sofia University St. Kliment Ohridski, Bulgaria; Filippos Tymvios, Cyprus Department of Meteorology, Cyprus; Tsvetelina Dimitrova, Hail Suppression Agency, Bulgaria

WEP2.PQ.7
Board PQ.7
THE ARCTIC PORTAL AS AN INSTRUMENT FOR POLAR LOW OPERATIONAL DETECTION AND FORECAST OF THEIR EVOLUTION
Kirill Khvorostovsky, Karina Kortikova, Elizaveta Zabolotskikh, Ekaterina Balashova, Kirill Yarusov, Russian State Hydrometeorological University, Russia; Bertrand Chapron, French Research Institute for Exploitation of the Sea, France

WEP2.PQ.8
Board PQ.8
FUTURE EXTREME CLIMATE PREDICTION IN WESTERN JILIN PROVINCE BASED ON STATISTICAL DOWNSCALING MODEL
Ping Zhang, Demin Yin, Jilin University, China; Peter M. Atkinson, Lancaster University, United Kingdom

WEP2.PQ.9
Board PQ.9
VERIFICATION OF POLAR LOW MODELING RESULTS WITH SATELLITE DATA
Kirill Khvorostovsky, Kirill Yarusov, Elizaveta Zabolotskikh, Russian State Hydrometeorological University, Russia

WEP2.PQ.10
Board PQ.10
STUDY ON THE CALCULATION STRATEGIES OF IONOSPHERIC SCINTILLATION INDEX ROTI FROM GPS
Wei Wei, Administration Office of China Satellite Navigation Systems (CSNO), China; Wei Li, Shuli Song, Lengleng Shao, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China

WEP2.PQ.11
Board PQ.11
SPATIO-TEMPORAL ANALYSIS OF LIGHTNING DISTRIBUTION IN GOLDEN GATE HIGHLANDS NATIONAL PARK (GGHNP) USING GEOSPATIAL TECHNOLOGY
Dipuo Mofokeng (Molaudzi), Samuel Adelabu, Kayode Adepoju, University of the Free State, South Africa; Elhadi Adam, University of the Witwatersrand, South Africa

WEDNESDAY POSTER

Wednesday, July 31	09:40 - 10:40	Room 503: Area R
Session WEP1.PR		Poster

Monitoring and Damage Assessment of Flood I

Session Co-Chairs: Daniel Raucoules, BRGM; Bahareh Kalantar, RIKEN

WEP1.PR.2
Board PR.2
IMPROVEMENT OF FLOOD RISK MANAGEMENT THROUGH A WEB FLOOD INFORMATION SYSTEM
Mohit Mohanty, Subhankar Karmakar, Subimal Ghosh, Indian Institute of Technology Bombay, India

WEP1.PR.3
Board PR.3
SCENARIO OF FLASH FLOOD CAUSED BY HYPOTHETICAL FAILURE OF MOSUL DAM IN IRAQ USING HEC-GEORAS MODEL AND GIS
Abderrazak Bannari, Ghadeer Kadhem, Arabian Gulf University, Bahrain

WEP1.PR.4
Board PR.4
IMPROVEMENT OF EXTRACTION METHOD OF FLOOD AREA USING SATELLITE IMAGE AFTER DISASTER AND GIS DATA BY THE 2018.07 HEAVY RAINFALL
Masashi Sonobe, Hideki Hashiba, Nihon University, Japan

WEP1.PR.5
Board PR.5
CHANGE DETECTION BASED FLOOD MAPPING OF 2015 FLOOD EVENT OF
CHENNAI CITY USING SENTINEL-1 SAR IMAGES
Venkata Sai Krishna Vanama, Y. S. Rao, IIT Bombay, India

WEP1.PR.6
Board PR.6
COOPERATIVE EMERGENCY MONITORING AND ASSESSMENT OF FLOOD DISASTERS BASED ON THE INTEGRATED GROUND-AIR-SPACE REMOTE SENSING
Tianjie Lei, Hui Cheng, Aili Li, Wei Qu, Zhiguo Pang, June Fu, Lin Li, Xiaotao Li, Jingxuan Lu, China Institute of Water Resources and Hydropower Research (IWHR), China

WEP1.PR.7
Board PR.7
ACCURACY ASSESSMENT OF FLOOD INUNDATION MAPS GENERATED USING DIGITAL TERRAIN MODELS OF VARYING SPATIAL RESOLUTIONS
Jennifer Marqueso, Jojene Santillan, Amor Gingo, Arthur Amora, Linbert Cutamora, Meriam Makinano-Santillan, Caraga State University, Philippines

WEP1.PR.8
Board PR.8
MULTI-CLASS SEGMENTATION OF URBAN FLOODS FROM MULTISPECTRAL IMAGERY USING DEEP LEARNING
Abhishek Potnis, Rajat Shinde, Surya Durbha, Indian Institute of Technology Bombay, India; Kuldeep Kurte, Oak Ridge National Laboratory, United States

WEP1.PR.9
Board PR.9
FLOOD DETECTION IN URBAN AREAS: ANALYSIS OF TIME SERIES OF COHERENCE DATA IN STABLE SCATTERERS
Luca Pulvirenti, CIMA Research Foundation, Italy; Marco Chini, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Nazzareno Pierdicca, Sapienza University of Rome, Italy; Giorgio Boni, CIMA Research Foundation, Luxembourg

WEP1.PR.10
Board PR.10
EELGRASS BEDS AND OYSTER FARMING IN A LAGOON BEFORE AND AFTER THE GREAT EAST JAPAN EARTHQUAKE OF 2011: POTENTIAL FOR APPLYING DEEP LEARNING AT A COASTAL AREA
Takehisa Yamakita, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan

Wednesday, July 31	15:20 - 16:20	Room 503: Area R
Session WEP2.PR		Poster

Monitoring and Damage Assesment of Natural Disaster and Hazards I

Session Co-Chairs: Hiroyoshi Yamada, Niigata University; Yuliang Nie, Peking University

WEP2.PR.1
Board PR.1
FIRST ASSESSMENT OF DUAL POLARIZATION SENTINEL-1A DATA FOR FUEL MOISTURE CONTENT RETRIEVAL
Long Wang, Binbin He, Xingwen Quan, Minfeng Xing, Hongguo Zhang, University of Electronic Science and Technology of China, China

WEP2.PR.2
Board PR.2
PRELIMINARILY ANALYSIS OF THE RELATION BETWEEN SATELLITE DERIVED FUEL MOISTURE CONTENT AND WILDFIRE ACTIVITY IN SOUTHWESTERN CHINA
Kaiwei Luo, Binbin He, Xingwen Quan, Xiangzhuo Liu, Chongbo Wen, University of Electronic Science and Technology of China, China

WEP2.PR.3
Board PR.3
EVALUATION OF SATELLITE PRECIPITATION DATA FOR DROUGHT MONITORING IN BUNDELKHAND REGION, INDIA
Varsha Pandey, Prashant K Srivastava, Banaras Hindu University, India

WEP2.PR.4
Board PR.4
HYDROLOGICAL DROUGHT MEASUREMENT USING GRACE TERRESTRIAL WATER STORAGE ANOMALY
Aihong Cui, Jianfeng Li, Qiming Zhou, Hong Kong Baptist University, China; Guofeng Wu, Qingquan Li, Shenzhen University, China

WEP2.PR.5
Board PR.5
USE OF NDVI AND SPI INDICES FOR DROUGHT ASSESSMENT IN PAKISTAN
Badar Ghauri, Rao Zahid Khalil, Abdul Basit, Institute of Space Technology, Pakistan; Maham Ghauri, FAST National University, Pakistan

WEP2.PR.6
Board PR.6
ADAPTABLITY OF SIX GLOBAL DROUGHT INDICES OVER CHINA
Jing Lu, Li Jia, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Jie Zhou, Central China Normal University, China; Chaolei Zheng, Guangcheng Hu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PR.7
Board PR.7
DROUGHT IMPACT AND RECOVERY A CASE STUDY OF RAINFED AREA OF PUNJAB, PAKISTAN
Shoaib Jamro, Zaki Zaidi, Saima Awan, Arjumand Zaidi, Mehran University of Engineering and Technology, Pakistan

WEP2.PR.8
Board PR.8
SATELLITE-DERIVED SYTHENTIC DROUGHT MODEL FOR MONGOLIA GRASSLAND
Sheng Chang, Bingfang Wu, Nana Yan, Bulgan Davdai, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Hong Chen, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources, Beijing, China; Elbegjargal Nasanbat, Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), Mongolia; Battsetseg Tuvdendorj, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PR.9
Board PR.9
ESTIMATION OF FUEL MOISTURE CONTENT BASED ON QUAD POLARIMETRIC DECOMPOSITION PARAMETERS OF RADARSAT-2 DATA
Long Wang, Binbin He, Xingwen Quan, Minfeng Xing, Xiangzhuo Liu, University of Electronic Science and Technology of China, China

WEP2.PR.10
Board PR.10
SYNTHETIC APERTURE RADAR AND OPTICAL REMOTE SENSING OF CROP
DAMAGE ATTRIBUTED TO SEVERE WEATHER IN THE CENTRAL UNITED STATES
Jordan Bell, Esayas Gebremichael, University of Alabama Huntsville, United States; Andrew Molthan, NASA Marshall Space Flight Center, United States; Lori Schultz, University of Alabama Huntsville, United States; Franz Meyer, Geophysical Institute, University of Alaska Fairbanks, United States; Suravi Shrestha, University of Alabama Huntsville, United States

WEP2.PR.11
Board PR.11
ECOLOGICAL ENVIRONMENT ASSESSMENT OF MINING AREA BY USING MOVING WINDOW-BASED REMOTE SENSING ECOLOGICAL INDEX
Dongyu Zhu, Tao Chen, Ruiqing Niu, China University of Geosciences (Wuhan), China; Na Zhen, Geological Environment Monitoring Institute of Henan Province, China

WEP2.PR.12
Board PR.12
SEMANTIC FRAMEWORK FOR SPATIAL QUERY REFORMULATION FOR DISASTER MONITORING APPLICATIONS
Kuldeep Kurte, Oak Ridge National Laboratory, United States; Abhishek Potnis, Surya Durbha, Rajat Shinde, Indian Institute of Technology Bombay, India

WEDNESDAY POSTER

Wednesday, July 31 09:40 - 10:40 **Room 503: Area S**	**Wednesday, July 31** 15:20 - 16:20 **Room 503: Area S**
Session WEP1.PS Poster	**Session WEP2.PS** Poster

Monitoring and Damage Assessment of Flood II

Session Co-Chairs: Motofumi Arii, Mitsubishi Space Software Corporation; Wataru Takeuchi, University of Tokyo

WEP1.PS.1
Board PS.1
RISK ASSESSMENT OF MOUNTAIN TORRENTS DISASTER IN JIANGXI PROVINCE, CHINA BASED ON RANDOM FOREST ALGORITHM
Xiuqin Fang, Xiaojun Wu, Chao Zhou, Taoying Wu, Xiaotong Du, Wei Wang, School of Earth Sciences and Engineering, Hohai University, China

WEP1.PS.2
Board PS.2
FLOODED AREAS EVALUATION FROM AERIAL IMAGES BASED ON CONVOLUTIONAL NEURAL NETWORK
Loretta Ichim, Dan Popescu, University POLITEHNICA of Bucharest, Romania

WEP1.PS.3
Board PS.3
SONGHUA RIVER BASIN FLOOD MONITORING USING MULTI-SOURCE SATELLITE REMOTE SENSING DATA
Wei Zheng, Jiali Shao, Hao Gao, National Satellite Meteorological Center, China Meteorological Administration, China

WEP1.PS.4
Board PS.4
RAPID GENERATION OF FLOOD MAPS USING DUAL-POLARIMETRIC SYNTHETIC APERTURE RADAR IMAGERY
MinJeong Jo, Batuhan Osmanoglu, NASA Goddard Space Flight Center, United States

WEP1.PS.5
Board PS.5
OIL SPILLS TRACKING THROUGH TEXTURE ANALYSIS FROM MODIS IMAGERY
Fuqiang Lei, CSSC Systems Engineering Research Institute;CSSC (Zhe Jiang) Ocean Technology CO., LTD, China; Wenliang Wang, Wei Zhang, CSSC (Zhe Jiang) Ocean Technology CO., LTD, China; Kaisheng Li, CSSC Systems Engineering Research Institute, China; Zhihua Xu, China University of Mining & Technology, Beijing, China

WEP1.PS.6
Board PS.6
RESEARCH ON OBJECT-ORIENTED DECISION FUSION FOR OIL SPILL DETECTION ON SEA SURFACE
Jun Fang Yang, Jian Hua Wan, China University of Petroleum, China; Yi Ma, First Institute of Oceanography, Ministry of Natural Resources of China, China; Ya Bin Hu, Dalian Maritime University, China

WEP1.PS.7
Board PS.7
STUDY ON RAPID EXTRACTION OF OIL SPILL INFORMATION FROM REMOTE SENSING MONITORING OF "SANGJI OIL TANKER"
Yarong Zou, Chao Liang, National Satellite Ocean Application Service, China

WEP1.PS.8
Board PS.8
HUGE OIL SPILL IN THE DESERT: FAKE NEWS OR REALITY? THE REMOTE SENSING PERSPECTIVE
Dominique Dubucq, TOTAL S.A., France

Monitoring and Damage Assesment of Natural Disaster and Hazards II

Session Co-Chairs: Ferdaous Chaabane, Higher School of Communication of Tunis SUP'COM; Junjun Yin, University of Science and Technology Beijing

WEP2.PS.1
Board PS.1
GLOBAL ANALYSIS OF BURNED AREAS FOR CLIMATE ASSESSMENT: EXPERIENCES FROM THE FIRE_CCI PROJECT
Emilio Chuvieco, University of Alcala, Spain

WEP2.PS.2
Board PS.2
A METHOD OF AUTOMATICALLY EXTRACTING FOREST FIRE BURNED AREAS USING GF-1 REMOTE SENSING IMAGES
Bin Wu, Dong Fang Hong Satellite Corporation Limited, China; Ming Liu, Dan Jia, Suju Li, National Disaster Reduction Center of China, China; Qiang Cong, Chao Wang, Yang Zhu, Huan Yin, Jun Zhu, Dong Fang Hong Satellite Corporation Limited, China

WEP2.PS.3
Board PS.3
L-BAND POLARIMETRIC CHANGE DETECTION ON SAR IMAGES : FIRE BURN SCARS IN CALIFORNIA
Thibault Taillade, Laetitia Thirion-Lefevre, Régis Guinvarc'h, SONDRA/CentraleSupelec, France

WEP2.PS.4
Board PS.4
SPATIO-TEMPORAL ASSESSMENT OF FIRE SEVERITY AND VEGETATION RECOVERY UTILISING SENTINEL-2 IMAGERY IN NEW SOUTH WALES, AUSTRALIA
Shahriar Rahman, Hsing-Chung Chang, Christina Magill, Kerrie Tomkins, Macquarie University, Australia; Warwick Hehir, NSW Rural Fire Service, Australia

WEP2.PS.5
Board PS.5
FEATURE-LEVEL FUSION OF LANDSAT-8 OLI-SWIR AND TIR IMAGES FOR FINE BURNED AREA CHANGE DETECTION
Sicong Liu, Yongjie Zheng, Tongji University, China; Michele Dalponte, Fondazione E. Mach, Italy; Xiaohua Tong, Qian Du, Tongji University, China

WEP2.PS.6
Board PS.6
THE POTENTIAL OF CHANNEL SPECIFIC REFLECTANCE IN LANDSAT 8 OLI SENSOR FOR RETRIEVING COAL FIRE AFFECTED PIXELS
Raktim Ghosh, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Netherlands / Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India; Prasun Kumar Gupta, Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India; Valentyn Tolpekin, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Netherlands; S.K. Srivastav, Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India; Sayantan Majumdar, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Netherlands / Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India

WEP2.PS.7
Board PS.7
FIRE BEHAVIOR MONITORING AND ASSESSMENT IN CALIFORNIA WITH MULTI-SENSOR SATELLITE OBSERVATIONS
Yufang Jin, Erica Scaduto, Bin Chen, University of California, Davis, United States

WEP2.PS.8
Board PS.8
HYPERSPECTRAL AND POLARIMETRIC REMOTE SENSING FOR THE CHARACTERIZATION OF FIRE PROCESSES FROM THE NASA ER-2 AIRCRAFT
Olga Kalashnikova, Le Kuai, Glynn Hulley, Feng Xu, Huikyo Lee, Michael Garay, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEP2.PS.9
Board PS.9
OBJECT-BASED BURNED AREA MAPPING USING SENTINEL-2 IMAGERY AND SUPERVISED LEARNING GUIDED BY EMPIRICAL RULES
Nikos Georgopoulos, Dimitris Stavrakoudis, Ioannis Gitas, Aristotle University of Thessaloniki, Greece

WEP2.PS.10
Board PS.10
DETECTING ACTIVE FIRES WITH HIMAWARI-8 GEOSTATIONARY SATELLITE DATA
Soo Chin Liew, National University of Singapore, Singapore

WEP2.PS.11
Board PS.11
ESTIMATION OF FUEL BIOMASS FOR GRASSLANDS USING DATA ASSIMILATION TECHNIQUE
Yang Zhang, Qidi Shu, Long Wang, Xingwen Quan, Xiangzhuo Liu, University of Electronic Science and Technology of China, China; Biao Lu, Sichuan Bureau of Geology & Mineral Resources Sichuan, China

WEP2.PS.12
Board PS.12
A FAST 3D IMAGING METHOD FOR SUBSURFACE METAL TARGETS USING TIME-DOMAIN ELECTROMAGNETIC DEVICE
Wupeng Xie, Xiaojuan Zhang, Yaoxin Zheng, Yaxin Mu, Key Laboratory of Electromagnetic Radiation and Sensing Technology, Institute of Electronics, Chinese Academy of Sciences, China

WEDNESDAY POSTER

Wednesday, July 31   15:20 - 16:20   **Room 503: Area T**
Session WEP2.PT   Poster

Ocean Surface Salinity and Temperature I

Session Co-Chairs: Wenqing Tang, Jet Propulsion Laboratory; Yan Soldo, NASA Goddard Space Flight Center

WEP2.PT.1
Board PT.1
OCEAN THERMODYNAMICS AND HYDRODYNAMICS OF SUMMER MONSOON ONSET
W Timothy Liu, Xiaosu Xie, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEP2.PT.2
Board PT.2
ESTIMATING OCEAN SUBSURFACE SALINITY FROM REMOTE SENSING DATA BY MACHINE LEARNING
Hua Su, Xin Yang, Fuzhou University, China; Xiao-Hai Yan, University of Delaware, United States

WEP2.PT.3
Board PT.3
SEA SURFACE SALINITY RETRIEVALS FROM AQUARIUS USING NEURAL NETWORKS
Yan Soldo, NASA Goddard Space Flight Center / Chapman University / Universities Space Research Association, United States; David Le Vine, National Aeronautics and Space Administration (NASA), United States; Emmanuel Dinnat, NASA Goddard Space Flight Center / Chapman University, United States

WEP2.PT.4
Board PT.4
L-BAND SEAWATER DIELECTRIC MODEL FUNCTION BASED ON IMPROVED MEASUREMENT DATA SET
Yiwen Zhou, Roger Lang, George Washington University, United States; Emmanuel Dinnat, David Le Vine, National Aeronautics and Space Administration (NASA), United States

WEP2.PT.5
Board PT.5
COMPARISON OF SENTINEL-3 SLSTR SST PRODUCT WITH SHIPBOARD SKIN SST MEASUREMENTS
Liqin Qu, Lei Guan, Minglun Yang, Ocean University of China, China

WEP2.PT.6
Board PT.6
ARCTIC SEA SURFACE SALINITY RETRIEVAL FROM SMOS MEASURES
Justino Martinez, Carolina Gabarró, Estrella Olmedo, Veronica Gonzalez-Gambau, Cristina Gonzalez-Haro, Antonio Turiel, Institute of Marine Sciences (ICM-CSIC), Spain; Roberto Sabia, Telespazio-Vega, Italy; Wenqing Tang, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WEP2.PT.7
Board PT.7
PREDICTION OF SEA SURFACE TEMPERATURE IN THE SOUTH CHINA SEA BY ARTIFICIAL NEURAL NETWORKS
Li Wei, Lei Guan, Liqin Qu, Lele Li, Ocean University of China, China

WEP2.PT.8
Board PT.8
INFLUENCE OF NUCLEAR POWER PLANT ON SPATIO-TEMPORAL PATTERNS OF SEA SURFACE TEMPERATURE IN DAYA BAY, CHINA
Ke Zhang, Jue Huang, Tao Jiang, Hongchun Zhu, Shandong University of Science and Technology, China

WEP2.PT.9
Board PT.9
SPATIO-TEMPORAL DISTRIBUTION OF CARBON DIOXIDE PARTIAL PRESSURE IN THE BAY OF BENGAL
Lekshmi K, Rishikesh Bharti, Chandan Mahanta, IIT Guwahati, India

WEP2.PT.10
Board PT.10
VALIDATION OF AVHRR SEA SURFACE TEMPERATURE IN THE NORTHWEST PACIFIC
Yan Chen, Liqin Qu, Lei Guan, Ocean University of China, China

WEP2.PT.11
Board PT.11
PRELIMINARY ESTIMATE OF SEA SURFACE TEMPERATURE FROM THE SCANNING MICROWAVE RADIOMETER ONBOARD HY-2B SATELLITE
Wu Zhou, Mingsen Lin, National Satellite Ocean Application Service, China; Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd, China; Xiaofeng Ma, Lei Huang, National Satellite Ocean Application Service, China; Shishuai Wang, Beijing Piesat Information Technology Co. Ltd, China; Chaofei Ma, Yufei Zhang, National Satellite Ocean Application Service, China

WEP2.PT.12
Board PT.12
INFLUENCE OF CIRRUS CLOUDS ON THE ESTIMATE OF SEA SURFACE TEMPERATURE
Xiwei Fan, Gaozhong Nie, Yan Deng, Jiwen An, Junxue Zhou, Chaoxu Xia, Institute of Geology, China Earthquake Administration, China

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 503: Sprint Area
Session THP1.SPR		SPRINT Presentation

THP1 SPRINT Session

THP1.SPR.1
09:50
PIECEWISE HORIZONTAL 3D ROOF RECONSTRUCTION FROM AERIAL LIDAR
Slim Namouchi, RIADI-ENSI, Tunisia; Bruno Vallet, IGN, France; Imed Riadh Farah, RIADI-ENSI, Tunisia; Haythem Ismail, CNCT (Centre National de la Cartographie et de la Télédétection), Tunisia

THP1.SPR.2
09:55
POTENTIAL OF RED EDGE SPECTRAL BANDS IN FUTURE LANDSAT SATELLITES ON AGROECOSYSTEM CANOPY CHLOROPHYLL CONTENT RETRIEVAL
Zhaoyu Cui, John Kerekes, Rochester Institute of Technology, United States

Thursday, August 1	15:20 - 16:20	Room 503: Sprint Area
Session TH2.SPR		SPRINT Presentation

TH2 SPRINT Session

THP2.SPR.1
15:30
DEPENDENCE OF POLARIMETRIC CHARACTERISTICS ON SAR RESOLUTIONS: EXPERIMENTAL ANALYSIS
Hyunsoo Kim, Jungmin Song, Ryo Natsuaki, Akira Hirose, University of Tokyo, Japan

THP2.SPR.2
15:35
MAPPING DIGITAL DRAINAGE NETWORK USING GEOPROCESSING: A CASE STUDY OF KALI GANDAKI RIVER BASIN, NEPAL HIMALAYA
Feiyu Chen, Bingwei Tian, Basanta Adhikari, Xiaoyun Gou, Sichuan University, China

THP2.SPR.3
15:40
NEW INSIGHTS OF GROUND-BASED LAND SURFACE TEMPERATURE MEASUREMENTS PROTOCOLS FOR IMPROVING VALIDATION OF THERMAL INFRARED SATELLITE DATA
Jean-Pierre Lagouarde, Mark Irvine, Institut National de la Recherche Agronomique (INRA), France; Pierre Guillevic, University of Maryland, United States

Thursday, August 1 09:40 - 10:40 Room 501-502: Area A	**Thursday, August 1** 15:20 - 16:20 Room 501-502: Area A
Session THP1.PA Poster	**Session THP2.PA** Poster

Electromagnetic Modeling of the Sea, Land, Atmosphere

Session Chair: Honglei ZHENG, Ocean University of China

THP1.PA.1
Board PA.1
ELECTROMAGNETIC SCATTERING FROM TWO-DIMENSIONAL DIELECTRIC ROUGH SEA SURFACES WITH SHIP-INDUCED KELVIN WAKE
Rui Wu, Peng-Ju Yang, Xin-Cheng Ren, Yu-Qiang Zhang, Yu-Qing Wang, Yanan University, China

THP1.PA.2
Board PA.2
STUDY ON THE SPECTRAL WIDTH CHARACTERISTIC OF SCATTERING CLUTTER FROM SEA SURFACE
Lijia Ji, Yanmin Zhang, Yunhua Wang, College of Information Science & Engineering, Ocean University of China, China

THP1.PA.3
Board PA.3
STUDY ON THE DOPPLER SPECTRUM OF THE SEA SURFACE COVERED BY VERY THIN OIL-FILM BASED ON EXTENDED PHYSICAL OPTICS METHOD
Rui Wang, Yao Wang, Lixin Guo, Guangbin Guo, Xidian University, China

THP1.PA.4
Board PA.4
INVESTIGATION OF DOPPLER PROPERTIES OF S-BAND IN-PLANE BISTATIC SEA ECHOES THROUGH NUMERICAL MONTE CARLO SIMULATIONS: EXACT SOLUTION, TWO-SCALE MODEL, AND SMALL SLOPE APPROXIMATION
Jakov Toporkov, Jeffrey Ouellette, US Naval Research Laboratory, United States

THP1.PA.5
Board PA.5
STOCHASTIC DYNAMICS OF SEA CLUTTER FOR APPLICATIONS TO REMOTE SENSING
Clément Roussel, Arnaud Coatanhay, Alexandre Baussard, ENSTA Bretagne, France

THP1.PA.6
Board PA.6
NUMERICAL MODELING OF WAKE DUE TO AN UNDERWATER MOVING BODY AND ITS ELECTROMAGTNIC SCATTERING PROPERTY
Hai-Li Zhang, University of Electronic Science and Technology of China, China; Zhi-Hua Xu, Yi-Xin Sha, Ming-Yao Xia, Peking University, China

THP1.PA.7
Board PA.7
MICROWAVE AND TERAHERTZ EM WAVE SCATTERING FROM OIL-WATER COMPLEX SEA SURFACE AT SMALL INCIDENT ANGLES
Honglei Zheng, Yanmin Zhang, Yunhua Wang, Ocean University of China, China; Ali Khenchaf, ENSTA-Bretagne, France

THP1.PA.8
Board PA.8
A REMOTE SENSING MODEL FOR RETRIEVING OIL CONCENTRATION IN WATER BASED ON ABSORPTION COEFFICIENT OF REFERENCE BAND
Miaofen Huang, Guangdong Ocean University, China; Yang Liu, PetroChina Exploration & Development Research Institute, China; Xufeng Xing, Guangdong Ocean University, China; Zulong Zhao, Weihai Fishery Technology Promotion Station, China

THP1.PA.9
Board PA.9
POLARIZED REFLECTANCE AT TOP OF ATMOSPHERE BASED ON MONTE CARLO SIMULATIONS
Wei Chen, Huimin Tian, Aijia Li, Hengyang Wang, Qinmin Fu, Shuang Bai, Lina Yi, Hao Sun, Hengqian Zhao, China University of Mining & Technology, Beijing, China

THP1.PA.10
Board PA.10
PROGRESSES ON GNSS-R/IR LAND SURFACE SCATTERING MODELS
Xuerui Wu, Chifeng University, China; Junming Xia, National Space Science Center, Chinese Academy of Sciences, China; Shuanggen Jin, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; Weihua Bai, National Space Science Center, Chinese Academy of Sciences, China; Wei Shang, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China

THP1.PA.11
Board PA.11
THE EFFECT OF LEAF INCLINATION ANGLE ON MICROWAVE EMISSION OF CORN AT C- AND X- BANDS
Jing Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Paolo Ferrazzoli, Leila Guerriero, Tor Vergata University of Rome, Italy; Junhua Bai, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PA.12
Board PA.12
NUMERICAL SIMULATION AND QUANTITATIVE STUDY OF POLARIZATION RADAR ECHOES FROM ROUGH LUNAR SURFACE
Hongxia Ye, Zihao Zhao, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, China

Neural Networks in Polarimetry

Session Chair: Kostas Papathanassiou, German Aerospace Center (DLR)

THP2.PA.1
Board PA.1
POLSAR IMAGE CLASSIFICATION BASED ON POLARIMETRIC SCATTERING CODING AND SPARSE SUPPORT MATRIX MACHINE
Xu Liu, Licheng Jiao, Dan Zhang, Fang Liu, Xidian University, China

THP2.PA.2
Board PA.2
AN ACTIVE DEEP LEARNING APPROACH FOR MINIMALLY-SUPERVISED POLSAR IMAGE CLASSIFICATION
Haixia Bi, University of Derby, United Kingdom; Feng Xu, Fudan University, China; Zhiqiang Wei, Xi'an Electronics and Engineering Institute, China; Yibo Han, Nanyang Institute of Technology, China; Yuanlong Cui, Yong Xue, University of Derby, United Kingdom; Zongben Xu, Xi'an Jiaotong University, China

THP2.PA.3
Board PA.3
A REVIEW OF POLSAR IMAGE CLASSIFICATION: FROM POLARIMETRY TO DEEP LEARNING
Haipeng Wang, Feng Xu, Ya-Qiu Jin, Fudan University, China

THP2.PA.4
Board PA.4
COMPLEX-VALUED WISHART STACKED AUTO-ENCODER NETWORK FOR POLSAR IMAGE CLASSIFICATION
Wen Xie, Gaini Ma, Wenqiang Hua, Feng Zhao, Xi'an University of Posts and Telecommunications, China

THP2.PA.5
Board PA.5
SEMI-SUPERVISED RECURRENT COMPLEX-VALUED CONVOLUTION NEURAL NETWORK FOR POLSAR IMAGE CLASSIFICATION
Feng Zhao, Gaini Ma, Wen Xie, Xi'an University of Posts and Telecommunications, China; Hanqiang Liu, Shaanxi Normal University, China

THP2.PA.6
Board PA.6
DUAL-CHANNEL CONVOLUTIONAL NEURAL NETWORK FOR POLARIMETRIC SAR IMAGES CLASSIFICATION
Wenqiang Hua, Xi'an University of Posts and Telecommunications, China; Shuang Wang, Xidian University, China; Wen Xie, Xi'an University of Posts and Telecommunications, China; Yanhe Guo, Xidian University, China; Xiaomin Jin, Xi'an University of Posts and Telecommunications, China

THP2.PA.7
Board PA.7
POLARIMETRIC SAR IMAGE SUPER-RESOLUTION VIA DEEP CONVOLUTIONAL NEURAL NETWORK
Liupeng Lin, Jie Li, Qiangqiang Yuan, Huanfeng Shen, Wuhan University, China

THP2.PA.8
Board PA.8
POLSAR IMAGE CLASSIFICATION VIA COMPLEX-VALUED CONVOLUTIONAL NEURAL NETWORK COMBINING MEASURED DATA AND ARTIFICIAL FEATURES
Xianxiang Qin, Tao Hu, Information and Navigation College, Air Force Engineering University, China; Huanxin Zou, College of Electronic Science, National University of Defense Technology, China; Wangsheng Yu, Peng Wang, Information and Navigation College, Air Force Engineering University, China

THP2.PA.9
Board PA.9
POLSAR TERRAIN CLASSIFICATION BASED ON DENOISING-CNN
Yanhe Guo, Shuang Wang, Guoxin Song, Yongqiang Zhao, Xidian University, China; Wenqiang Hua, Xi'an University of Posts and Telecommunication, China; Feihang Liu, Xidian University, China

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area B		Thursday, August 1	15:20 - 16:20	Room 501-502: Area B
Session THP1.PB		Poster		Session THP2.PB		Poster

Topics in Electromagnetic Modeling

Session Co-Chairs: Hanyu Shi, Beijing Normal University; Xiaolan Xu, NASA Jet Propulsion Laboratory

THP1.PB.1
Board PB.1
A SIMULATION METHOD OF GENERATING THE OUTPUT OF MAGNETOMETER FOR AEROMAGNETIC COMPENSATION
Zhiyuan Hang, Futong He, Zhifang Wang, School of Electronic Engineering, Heilongjiang University, China; Qi Han, School of Computer Science and Technology, Harbin Institute of Technology, China

THP1.PB.2
Board PB.2
UPDATES OF THE 6S RADIATIVE TRANSFER MODEL: A CASE STUDY OF 6S+PROSAIL
Hanyu Shi, Zhiqiang Xiao, Beijing Normal University, China

THP1.PB.3
Board PB.3
RADIALLY POLARIZED PARTIALLY COHERENT VORTEX BEAM IN NON-KOLMOGOROV TURBULENCE
Jiangting Li, Jiachao Li, Lixin Guo, Mingjian Cheng, Xidian University, China

THP1.PB.4
Board PB.4
EMISSIVITY IMAGE SIMULATION FOR A HIGH RESOLUTION THERMAL INFRARED SATELLITE CONCEPT
Yao Liu, Dandan Wei, Tao Zhang, Hongzhao Tang, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China

THP1.PB.5
Board PB.5
3-D ELECTROMAGNETIC-MODEL-BASED ABSOLUTE ATTITUDE ESTIMATION USING DEEP NEURAL NETWORK
Xiaoliang Yang, Weiping Ni, Weidong Yan, Hui Bian, Han Zhang, Junzheng Wu, Northwest Institute of Nuclear Technology, China

THP1.PB.6
Board PB.6
UNIDIRECTIONAL SPARSE TENSOR BASED MODEL FOR THE NOISE REMOVAL OF REMOTE SENSING IMAGE
Hong-Xia Dou, Ting-Zhu Huang, Liang-Jian Deng, Zi-Yao Zhang, University of Electronic Science and Technology of China, China

THP1.PB.7
Board PB.7
TDPO FOR NEAR-FIELD SCATTERING FROM PEC TARGET ILLUMINATED BY FAR-FIELD SOURCES
GuangBin Guo, LiXin Guo, Rui Wang, School of Physics and Optoelectronic Engineering, China

POLSAR Applications I

Session Co-Chairs: Kostas Papathanassiou, German Aerospace Center (DLR); Tom Ainsworth, NRL

THP2.PB.1
Board PB.1
A MODIFIED RMOG MODEL FOR FOREST HEIGHT INVERSION USING L-BAND REPEAT-PASS POL-INSAR DATA
Qi Zhang, Linlin Ge, Zheyuan Du, University of New South Wales, Australia

THP2.PB.2
Board PB.2
OPTIMAL POLARIMETRIC DETECTION FILTER AND ITS STATISTICAL TESTS FOR A SHIP DETECTOR
Tao Liu, Ricardo Y. C. L. Dias, Naval University of Engineering, China; Jian Yang, Tsinghua University, China; Armando Marino, University of Stirling, United Kingdom; Gui Gao, Southwest Jiaotong University, China

THP2.PB.3
Board PB.3
POLARIMETRIC SAR IMAGE CLASSIFICATION VIA THE COMBINATION OF A REGION GROWING TECHNIQUE AND A PIXEL-BASED CLASSIFIER
Xiaoshuang Ma, Penghai Wu, Anhui University, China

THP2.PB.4
Board PB.4
TREE HEIGHT ESTIMATION USING THE THREE-STAGE ALGORITHM AND HH+HV DUAL-POLARIZATION DATA
Dingfeng Duan, Yong Wang, University of Electronic Science and Technology of China, China; Hong Li, East Carolina University, United States

THP2.PB.5
Board PB.5
A NOVEL APPROACH FOR THE RETRIEVAL OF SNOW WATER EQUIVALENT USING SAR DATA
Akshay Patil, IITB-Monash Research Academy, India; Gulab Singh, Indian Institute of Technology Bombay, India; Christoph Rüdiger, Monash University, Australia

THP2.PB.6
Board PB.6
SPARSE POLYNOMIAL CHAOS EXPANSION FOR CORRELATED FEATURES: THE CROP STAGE ESTIMATION CASE STUDY
Esra Erten, The Open University, United Kingdom

THP2.PB.7
Board PB.7
A HIERARCHICAL EXTENSION OF ADAPTIVE GENERAL FOUR-COMPONENT SCATTERING POWER DECOMPOSITION WITH UNITARY TRANSFORMATION OF COHERENCY MATRIX
Yu Wang, School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, China; Chunle Wang, Weidong Yu, Institute of Electronics, Chinese Academy of Sciences, China

THP2.PB.8
Board PB.8
SEMI-SUPERVISED COMPLEX-VALUED GAN FOR POLARIMETRIC SAR IMAGE CLASSIFICATION
Qigong Sun, Xiufang Li, Lingling Li, Xu Liu, Fang Liu, Licheng Jiao, Xidian University, School of Artifical Intelligence, China

THP2.PB.9
Board PB.9
DOMINANT PHYSICAL SCATTERING MECHANISM ANALYSIS FOR GF-3 TYPICAL GROUND OBJECTS BY POLARIMETRIC DECOMPOSITION
Yan Jin, Xiaolan Qiu, Lijia Huang, Institute of Electronics, Chinese Academy of Sciences, China

THP2.PB.11
Board PB.11
SEPARATION AND CHARACTERISATION OF MINERAL OIL SLICKS AND NEWLY FORMED SEA ICE IN L-BAND SYNTHETIC APERTURE RADAR
Malin Johansson, Martine Espeseth, Camilla Brekke, Stine Skrunes, Arctic University of Norway, Norway

Thursday, August 1	09:40 - 10:40	Room 501-502: Area C	
Session THP1.PC			**Poster**

SAR Systems

Session Chair: Robert Wang, Institute of Electronics, Chinese Academy of Sciences

THP1.PC.1
Board PC.1
A NEW IMAGING METHOD FOR QUASI GEOSTATIONARY SAR CONSTELLATION USING SPECTRUM GAP FILLING
Yukun Guo, Ze Yu, Jingwen Li, Beihang University, China

THP1.PC.2
Board PC.2
SYNTHETIC APERTURE RADAR IMAGING WITH FREQUENCY SCANNING IN AZIMUTH DIRECTION
Takahiro Goto, Kengo Tsushima, Japan Radio Co., Ltd., Japan; Josaphat Tetuko Sri Sumantyo, Chiba university, Japan

THP1.PC.3
Board PC.3
BISTATIC SYNTHETIC APERTURE RADAR IMAGING WITH MULTI-GNSS TRANSMITTERS
Yun Zhang, Xin Qi, Hongbo Li, Huilin Mu, Harbin Institute of Technology, China

THP1.PC.4
Board PC.4
IMAGING EXPERIMENT OF AIRBORNE UHF ULTRA-WIDEBAND SYNTHETIC APERTURE RADAR
Hongtu Xie, Jun Hu, Keqing Duan, Zengping Chen, Shiyou Xu, Yiquan Lin, Nannan Zhu, Bin Xi, Sun Yat-Sen University, China; Daoxiang An, National University of Defense Technology, China; Guoqian Wang, Sun Yat-Sen University, China

THP1.PC.5
Board PC.5
SPACE-MISSILE BORNE BISTATIC SAR GEOMETRY AND IMAGING PROPERTIES ANALYSIS
Ping Guo, Xiaoyang Jiao, Anyi Wang, Jing Wang, Xi'an University of Science and Technology, China; Shiyang Tang, Xidian University, China; Yang Liu, Xi'an University of Science and Technology, China

THP1.PC.6
Board PC.6
THE DISTRIBUTED SAR IMAGING METHOD FOR CYLINDER TARGET
Yujie Fan, Xinliang Chen, Yangkai Wei, Zegang Ding, Yan Wang, Yuhan Wen, Weiming Tian, Beijing Institute of Technology, China

THP1.PC.7
Board PC.7
OFF-GRID SPARSE STEPPED-FREQUENCY SAR IMAGING WITH ADAPTIVE BASIS
Limei Huang, Zhulin Zong, Libing Huang, Zhaowei Shu, University of Electronic Science and Technology of China, China

THP1.PC.8
Board PC.8
ANALYSIS OF STEERING APPROACH FOR HIGH RESOLUTION SPACEBORNE SYNTHETIC APERTURE RADAR WITH LARGE SCANNING ANGLE
Wei Wang, Robert Wang, Weidong Yu, Yunkai Deng, Pei Wang, Institute of Electronics, Chinese Academy of Sciences, China

THP1.PC.9
Board PC.9
THROUGH-THE-WALL RADAR SUPER-RESOLUTION IMAGING BASED ON CASCADE U-NET
Shaoyin Huang, Jiang Qian, Yong Wang, Xiaobo Yang, University of Electronic Science and Technology of China, China; Lei Yang, Civil Aviation University of China, China

THP1.PC.10
Board PC.10
PRELIMINARY ANALGSIS OF GEOMETRIC POSITIONING ACCURACY BASED ON GAOFEN-3 DATA
Mengfei Yu, Fei Li, Yunkai Deng, Heng Zhang, Weidong Yu, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

Thursday, August 1	15:20 - 16:20	Room 501-502: Area C	
Session THP2.PC			**Poster**

POLSAR Applications II

Session Chair: Giuseppe Parrella, German Aerospace Center (DLR)

THP2.PC.1
Board PC.1
NOVEL FORMALISM AND INTERPRETATION METHODS FOR GENERAL COMPACT POLARIMETRIC SAR
Junjun Yin, University of Science and Technology Beijing, China; Jian Yang, Tsinghua University, China

THP2.PC.2
Board PC.2
LOG-CUMULANTS OF THE FINITE MIXTURE MODEL AND THEIR APPLICATION TO STATISTICAL ANALYSIS OF UAVSAR DATA
Xinping Deng, Jinsong Chen, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; Carlos López-Martínez, Luxembourg Institute of Science and Technology (LIST), Luxembourg

THP2.PC.3
Board PC.3
ADAPTIVE SPATIAL CONSTRAINT SPARSE REPRESENTATION FOR TARGET DETECTION IN POLSAR IMAGE
Xiao Wang, Lamei Zhang, Harbin Institute of Technology, China; Sha Zhu, Institute of Beijing Remote Sensing Information, China

THP2.PC.4
Board PC.4
POLSAR IMAGE EDGE DETECTION VIA STRUCTURE TENSOR ANALYSIS
Xiangrong Liu, Wei Mao, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China; Shunsheng Zhang, Lei Wu, Wen-Qin Wang, University of Electronic Science and Technology of China, China

THP2.PC.5
Board PC.5
ANALYSIS OF COASTAL AQUACULTURE AREAS USING ALOS–2 PALSAR–2 FULL POLARIMETRIC DATA: A STUDY CASE IN HIROTA BAY, IWATE, JAPAN
Hiroki Murata, Graduate School of Agricultural Science, Tohoku University, Japan; Shuhei Sawayama, Teruhisa Komatsu, Atmosphere and Ocean Research Institute, The University of Tokyo, Japan; Chinatsu Yonezawa, Graduate School of Agricultural Science, Tohoku University, Japan

THP2.PC.6
Board PC.6
POLARIMETRIC SAR RADIOMETRIC TERRAIN CORRECTION METHOD BASED ON RATIONAL POLYNOMIAL COEFFICIENT MODEL
Lei Zhao, Erxue Chen, Zengyuan Li, Institute of Forest Resources Information Technique, Chinese Academy of Forestry, China; Wangfei Zhang, College of Forestry, Southwest Forestry University, China; Junpeng Zhao, Zhe Wen, Institute of Forest Resources Information Technique, Chinese Academy of Forestry, China

THP2.PC.7
Board PC.7
CHANGES OF SCATTERING MECHANISMS IN BOREAL FORESTS UNDER FREEZING CONDITIONS BY MEANS OF SAR POLARIMETRY
Liudmila Zakharova, Kotel'nikov Institute of Radioengineering and Electronics, Fryazino Branch, Russia

THP2.PC.8
Board PC.8
STOKES-VECTOR-BASED DISCRIMINATOR FOR DISTINGUISHING CONIFEROUS AND BROAD-LEAVED FORESTS WITH L BAND POLSAR DATA
Taiga Saito, Fang Shang, Naoto Kishi, University of Electro-Communications, Japan

THP2.PC.9
Board PC.9
DEPENDENCE OF POLARIMETRIC CHARACTERISTICS ON SAR RESOLUTIONS: EXPERIMENTAL ANALYSIS
Hyunsoo Kim, Jungmin Song, Ryo Natsuaki, Akira Hirose, University of Tokyo, Japan

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area D
Session THP1.PD		**Poster**

SAR Statistics

Session Co-Chairs: Lars Ulander, Chalmers University of Technology; Howard Zebker, Stanford University

THP1.PD.1
Board PD.1
SAR IMAGE DESPECKLING WITH THE MULTI-SCALE NONLOCAL LOW-RANK MODEL
Dongdong Guan, National University of Defense Technology, China; Deliang Xiang, Canbin Hu, Zuoyang Zhong, National Innovation Institute of Technology, China

THP1.PD.2
Board PD.2
COHERENT SIGNAL MODEL FOR ANGULAR SUPERRESOLUTION IN SCANNING RADAR IMAGING
Yueli Li, National University of Defense Technology, China; Jianguo Liu, Imperial College London, United Kingdom; Xiaoqing Jiang, Xiaotao Huang, National University of Defense Technology, China

THP1.PD.3
Board PD.3
SIMULATION OF EFFECT OF PERIODICALLY MISSING SAMPLES ON DECODING IN PASSIVE SYNTHETIC APERTURE RADAR SYSTEM USING OFDM
Anders Haglund, Per-Olov Frölind, Lars M. H. Ulander, Swedish Defence Research Agency (FOI), Sweden

THP1.PD.4
Board PD.4
A MODIFIED KALMAN-FILTER METHOD FOR SCALLOPING SUPPRESSION WITH GAOFEN-3 SAR IMAGES
Yihan Li, Wei Yang, Jie Chen, Chunsheng Li, Beihang University, China; Fei Zou, Beijing Institute of Remote Sensing Information, China; Yu Guo, Beihang University, China

THP1.PD.5
Board PD.5
A PRACTICAL APPROACH FOR SAR IMAGE DESPECKLING USING DEEP LEARNING
Khilan Ravani, Shivam Saboo, Jignesh Bhatt, Indian Institute of Information Technology Vadodara, India

THP1.PD.6
Board PD.6
PHASE UNWRAP USING NONLINEAR KALMAN FILTERING FOR SAR SYSTEMS
Tao Chen, Yongfei Ding, Ruifan Pang, Cheng Gong, Dinghai Xu, Aviation Industry of China (AVIC), China; Hengyang Zhang, Air force Engineering University, China; Bo Chen, Shanghai University, China

THP1.PD.7
Board PD.7
SAR IMAGE STATISTICS BY BANDWIDTH USING A MIXTURE DISTRIBUTION OF PERSISTENT SCATTERER AND CLUTTER DISTRIBUTIONS
Stacey Huang, Howard Zebker, Stanford University, United States

THP1.PD.8
Board PD.8
COMPARISON BETWEEN RESOLUTION FEATURES OF BPA AND PFA THROUGH WAVENUMBER DOMAIN ANALYSIS FOR GENERAL SPOTLIGHT SAR
Yuxuan Miao, University of Electronic Science and Technology of China, China; Huayu Gao, Beijing Institute of Astronautical Systems Engineering, China; Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China, China

THP1.PD.9
Board PD.9
MOSAIC SAR IMAGING ALGORITHM USING SPECAN TECHNIQUE
Yi Liao, Zhi Zheng, Shunsheng Zhang, University of Electronic Science and Technology of China, China

Thursday, August 1	15:20 - 16:20	Room 501-502: Area D
Session THP2.PD		**Poster**

Hyperspectral Remote Sensing IV

Session Chair: Zhuo Zheng, Wuhan university

THP2.PD.1
Board PD.1
S3NET: TOWARDS REAL-TIME HYPERSPECTRAL IMAGERY CLASSIFICATION
Zhuo Zheng, Yanfei Zhong, Wuhan University, China

THP2.PD.2
Board PD.2
EXPONENTIAL WEIGHTED RANDOM FOREST FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Vikas Jain, Ashish Phophalia, Indian Institute of Information Technology Vadodara, India

THP2.PD.3
Board PD.3
DENSITY PEAK BASED COVARIANCE MATRIX FOR HYPERSPECTRAL IMAGES CLASSIFICATIUON
Bing Tu, Nanying Li, Wenlan Kuang, Jinping Wang, Chengle Zhou, Hunan Institute of Science and Technology, China

THP2.PD.4
Board PD.4
CROSS-DOMAIN EXTREME LEARNING MACHINE FOR CLASSIFICATION OF HYPERSPECTRAL IMAGES
Duo Shen, Li Ma, China University of Geosciences, China

THP2.PD.5
Board PD.5
HYPERSPECTRAL IMAGE CLASSIFICATION BY PARAMETERS PREDICTION NETWORKS
Sheng Ji, Xiaorui Ma, Dalian University of Technology, China; Weibin Wang, Li Yu, Northeast China Grid Company Limited, China; Jie Geng, Northwestern Polytechnical University, China; Hongyu Wang, Dalian University of Technology, China

THP2.PD.6
Board PD.6
HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON JOINT SUPERPIXEL-CONSTRAINED AND WEIGHTED SPARSE REPRESENTATION
Jun Rong, Hang Fu, Aizhu Zhang, Genyun Sun, Hui Huang, Yanling Hao, China University of Petroleum (East China), China

THP2.PD.7
Board PD.7
MINERAL IDENTIFICATION AND CLASSIFICATION BY COMBINING USE OF HYPERSPECTRAL VNIR/SWIR AND MULTISPECTRAL TIR REMOTELY SENSED DATA
Li Ni, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

THP2.PD.8
Board PD.8
IS PRETRAINING NECESSARY FOR HYPERSPECTRAL IMAGE CLASSIFICATION?
Hyungtae Lee, Sungmin Eum, Booz Allen Hamilton Inc., United States; Heesung Kwon, U.S. Army Research Laboratory, United States

THP2.PD.9
Board PD.9
ISOTROPIC TOTAL VARIATION MINIMIZATION FOR SUB-PIXEL MAPPING
Bouthayna Msellmi, Ensi-RIADI, Tunisia; Daniele Picone, Mauro Dalla Mura, gipsa-lab, France; Zouhaier Ben Rabah, CNCT (Centre National de la Cartographie et de la Télédétection), Tunisia; Imed Riadh Farah, Ensi-RIADI, Tunisia

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area E
Session THP1.PE		**Poster**

Hyperspectral Remote Sensing III

Session Co-Chairs: Shutao Li, Hunan University; Marco Chini, LIST-Luxemburg

THP1.PE.1
Board PE.1
HYPERSPECTRAL IMAGE CLASSIFICATION THROUGH USING 3D CONVOLUTIONAL PROTOTYPE LEARNING
Bobo Xi, Jiaojiao Li, Yunsong Li, Xidian University, China; Ying Zhang, Northwestern Polytechnical University, China

THP1.PE.2
Board PE.2
THE UTILIZATION OF MULTI-LABEL SAMPLES FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Qiaobo Hao, Shutao Li, Xudong Kang, Hunan University, China

THP1.PE.3
Board PE.3
GEOLOGIC BODY CLASSIFICATION OF HYPERSPECTRAL DATA BASED ON DILATED CONVOLUTION NEURAL NETWORK AT TIANSHAN AREA
Jin Qin, Ying Zhan, Cong Dai, Wang Yao, Kang Wu, Wei Liu, Beijing Normal University, China; Ying Cao, Beijing Institute of Geology, China; Xi Zhang, Yasmine Medjadba, Beijing Normal University, China; Yuntao Wang, RunCheng Jiao, Beijing Institute of Geology, China; Dan Hu, Beijing Normal University, China; Yuanfei Zhang, China Non-ferrous Metals Resource Geological Survey, China; Xianchuan Yu, Beijing Normal University, China

THP1.PE.4
Board PE.4
MINERAL MAPPING WITH HYPERSPECTRAL IMAGE BASED ON AN IMPROVED K-MEANS CLUSTERING ALGORITHM
Zhongliang Ren, Lin Sun, Shandong University of Science and Technology, China; Qiuping Zhai, Linyi University, China; XiRong Liu, Shandong University of Science and Technology, China

THP1.PE.5
Board PE.5
A STUDY OF UNSUPERVISED CLASSIFICATION TECHNIQUES FOR HYPERSPECTRAL DATASETS
Himanshi Yadav, Alberto Candela, David Wettergreen, Carnegie Mellon University, United States

THP1.PE.6
Board PE.6
HYPERSPECTRAL IMAGE CLASSIFICATION VIA JOINT SPARSE REPRESENTATION
Pai-Hui Hsu, Ying-Ying Cheng, National Taiwan University, Taiwan

THP1.PE.7
Board PE.7
HYPERSPECTRAL IMAGE SUPER-RESOLUTION CLASSIFICATION WITH A SMALL TRAINING SET USING SPECTRAL VARIATION EXTENDED ENDMEMBER LIBRARY
Yifan Zhang, Tianqing Zhao, Bobo Xie, Shaohui Mei, Northwestern Polytechnical University, China

THP1.PE.8
Board PE.8
HYPERSPECTRAL CLASSIFICATION VIA LOW-RANK COMPONENT INDUCED SPATIAL-SPECTRAL KERNEL
Le Sun, Fei Yan, Nanjing University of Information Science and Technology, China; Tianming Zhan, Nanjing Audit University, China

THP1.PE.9
Board PE.9
HYBRID SPECTRAL UNMIXING IN LAND-COVER CLASSIFICATION
Razieh Kaviani Baghbaderani, Fanqi Wang, University of Tennessee, Knoxville, United States; Craig Stutts, Applied Research Associates, United States; Ying Qu, Hairong Qi, University of Tennessee, Knoxville, United States

Thursday, August 1	15:20 - 16:20	Room 501-502: Area E
Session THP2.PE		**Poster**

Data Analysis Methods: Feature Extraction and Reduction

Session Co-Chairs: Mauro Dalla Mura, GIPSA-lab, Grenoble Institute of Technology; Qiang Chen, Beijing University of Civil Engineering and Architecture

THP2.PE.1
Board PE.1
EMPIRICALLY COMPARING TWO DIMENSIONALITY REDUCTION TECHNIQUES – PCA AND FFT: A SETTLEMENT DETECTION CASE STUDY IN THE GAUTENG PROVINCE OF SOUTH AFRICA
Trienko Grobler, Stellenbosch University, South Africa; Waldo Kleynhans, Brian Salmon, University of Pretoria, South Africa

THP2.PE.2
Board PE.2
ANALYSIS OF RIVER NETWORK IN JIUYUANGOU BASIN USING MEAN CHANGE POINT METHOD AND D8-DINF ALGORITHM
Mengyuan Zhang, China University of Mining and Technology (Beijing), China; Qiang Chen, Jie Jiang, Mingyi Du, Beijing University of Civil Engineering and Architecture, China

THP2.PE.3
Board PE.3
SEGMENTATION OF MULTISPECTRAL DATA SIMULATED FROM HYPERSPECTRAL IMAGERY
Michal Marcinkiewicz, Netguru, Poland; Michal Kawulok, Jakub Nalepa, KP Labs, Silesian University of Technology, Poland

THP2.PE.4
Board PE.4
RANDOMIZED LOCALITY-PRESERVING DISCRIMINANT ANALYSIS FOR DIMENSIONALITY REDUCTION AND HYPERSPECTRAL IMAGE CLASSIFICATION
Vineetha Menon, University of Alabama Huntsville, United States

THP2.PE.5
Board PE.5
A GEOHASH BASED PLACE2VEC MODEL
Jiaqi Jin, ZhuoJian Xiao, Qiang Qiu, Jinyun Fang, Institute of Computing Technology, Chinese Academy of Sciences, China

THP2.PE.6
Board PE.6
GEOMETRICAL MODEL FOR THE LAYOVER OF GABLE-ROOFED BUILDINGS AND ITS APPLICATION IN BUILDING RECONSTRUCTION
Yue Zhang, Zhirui Wang, Liangjin Zhao, Wenkai Zhang, Menglong Yan, Xian Sun, Institute of Electronics, Chinese Academy of Sciences, China

THP2.PE.7
Board PE.7
STUDY ON FULL-DUPLEX CHANNEL CHARACTERISTIC FOR SIMULTANEOUS TRANSMIT AND RECEIVE USED IN PHASED ARRAY
Jie Zhang, The 14th Research Institute of CETC, China

THP2.PE.8
Board PE.8
MENTAL RETRIEVAL OF LARGE-SCALE SATELLITE IMAGES VIA LEARNED SKETCH-IMAGE DEEP FEATURES
Fang Xu, Ruixiang Zhang, Wen Yang, Guisong Xia, Wuhan University, China

THP2.PE.9
Board PE.9
ROAD SAFETY EVALUATION USING REMOTE SENSING TECHNIQUES
Kamil Faisal, King Abdulaziz University, Saudi Arabia

THP2.PE.10
Board PE.10
PATCH-BASED AND TENSOR-PATCH-BASED DIMENSION REDUCTION METHODS FOR HYPERSPECTRAL IMAGES
Boyu Feng, Jinfei Wang, Kaizhong Zhang, University of Western Ontario, Canada

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area F
Session THP1.PF		Poster

Deep Learning Techniques

Session Chair: Begüm Demir, Technische Universität Berlin

THP1.PF.1
Board PF.1
HIGH-ORDER SELF-ATTENTION NETWORK FOR REMOTE SENSING SCENE CLASSIFICATION
Nanjun He, Leyuan Fang, Yi Li, Hunan University, China; Antonio Plaza, University of Extremadura, Spain

THP1.PF.2
Board PF.2
FEATURE SPARSITY IN CONVOLUTIONAL NEURAL NETWORKS FOR SCENE CLASSIFICATION OF REMOTE SENSING IMAGE
Wei Huang, Qi Wang, Xuelong Li, Northwestern Polytechnical University, China

THP1.PF.3
Board PF.3
A NOVEL DEEP FEATURE FUSION NETWORK FOR REMOTE SENSING SCENE CLASSIFICATION
Yangyang Li, Qi Wang, Xiaoxu Liang, Licheng Jiao, Xidian University, China

THP1.PF.4
Board PF.4
LEARNING DEEP NETWORKS UNDER NOISY LABELS FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Yansheng Li, Yongjun Zhang, Wuhan University, China; Zhihui Zhu, Johns Hopkins University, United States

THP1.PF.5
Board PF.5
FUSING DEEP LOCAL AND GLOBAL FEATURES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Keli Yan, Shaohui Mei, Mingyang Ma, Feng Yan, Northwestern Polytechnical University, China

THP1.PF.6
Board PF.6
EXTRACTION OF A SPECIFIC LAND-COVER CLASS FROM VERY HIGH SPATIAL RESOLUTION IMAGERY USING POSITIVE AND UNLABELED LEARNING WITH CONVOLUTIONAL NEURAL NETWORKS
Khelifa Djerriri, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria; Reda Adjoudj, Djillali Liabes University, Algeria

THP1.PF.7
Board PF.7
PERFORMANCE COMPARISON OF TWO POOLING STRATEGIES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Maoxiong Wu, Gong Cheng, Xiwen Yao, Xiaoliang Qian, Junwei Han, Lei Guo, Northwestern Polytechnical University, China

THP1.PF.8
Board PF.8
SUPERVISED GENERATIVE ADVERSARIAL NETWORK BASED SAMPLE GENERATION FOR SCENE CLASSIFICATION
Wei Han, Ruyi Feng, Lizhe Wang, Jia Chen, China University of Geosciences, China

THP1.PF.9
Board PF.9
MSPPF-NETS: A DEEP LEARNING ARCHITECTURE FOR REMOTE SENSING IMAGE CLASSIFICATION
Rui Yang, Yun Zhang, Pengfei Zhao, Zhenyuan Ji, Weibo Deng, Harbin Institute of Technology, China

THP1.PF.10
Board PF.10
VERY HIGH RESOLUTION IMAGE SCENE CLASSIFICATION WITH CAPSULE NETWORK
Souleyman Chaib, Mohammed El Amin Larabi, Centre des Techniques Spatiales, Algeria; Yanfeng Gu, Harbin Institute of Technology, China; Khadidja Bakhti, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria

THP1.PF.11
Board PF.11
LAND PRICE ASSESMENT BASED ON DEEP NEURAL NETWORK
Ankai Hou, Jiaxi Liu, Yuxuan Tao, Shaobin Jiang, Kai Li, Zezhong Zheng, University of Electronic Science and Technology of China, China; Jun Xia, Wuhan University, China; Yong He, Sichuan Research Institute for Eco-system Restoration & Geo-disaster Prevention, China; Mingcang Zhu, Department of Natural Resources of Sichuan Province, China; Guoqing Zhou, Guilin University of Technology, China; Hongsheng Zhang, Chinese University of Hong Kong, China; Jiang Li, Old Dominion University, China

THP1.PF.12
Board PF.12
CLASSIFICATION PERFORMANCE EVALUATION OF DEEP LEARNING ARCHITECTURES FOR COMPLEX OBJECT BASED FACILITY RECOGNITION
Krishna Karthik Gadiraju, Bharathkumar Ramachandra, Ranga Raju Vatsavai, North Carolina State University, United States

Thursday, August 1	15:20 - 16:20	Room 501-502: Area F
Session THP2.PF		Poster

Data Fusion with Deep Learning Techniques

Session Co-Chairs: Mauro Dalla Mura, GIPSA-lab, Grenoble Institute of Technology; Ronny Hänsch, Technische Universität Berlin

THP2.PF.1
Board PF.1
SAR IMAGES ENHANCEMENT VIA DEEP MULTI-SCALE ENCODER-DECODER NEURAL NETWORK
Xiaqing Yang, Yuanyuan Zhou, Chen Wang, Jun Shi, University of Electronic Science and Technology of China, China

THP2.PF.2
Board PF.2
CONVOLUTIONAL NEURAL NETWORK FOR NATURAL COLOR VISUALIZATION OF HYPERSPECTRAL IMAGES
Puhong Duan, Xudong Kang, Shutao Li, Hunan University, China

THP2.PF.3
Board PF.3
GEOSR: A COMPUTER VISION PACKAGE FOR DEEP LEARNING BASED SINGLE-FRAME REMOTE SENSING IMAGERY SUPER-RESOLUTION
Zhiling Guo, Guangming Wu, Xiaodan Shi, Mingzhou Sui, University of Tokyo, Japan; Xiaoya Song, Harbin Institute of Technology, China; Yongwei Xu, Xiaowei Shao, Shibasaki Ryosuke, University of Tokyo, Japan

THP2.PF.4
Board PF.4
SEMANTIC CLASSIFICATION OF URBAN BUILDINGS USING DEEP LEARNING AND VGI INFORMATION
Wenzhi Zhao, Jiage Chen, Yanchen Bo, Beijing Normal University, China

THP2.PF.5
Board PF.5
NON-LOCAL COMPRESSIVE NETWORK FOR HYPERSPECTRAL AND MULTISPECTRAL DATA FUSION
Junbo Hao, Ying Wang, Jie Li, Xinbo Gao, School of Electronic Engineering, Xidian University, Xi'an, China, China

THP2.PF.6
Board PF.6
FUSION OF HYPERSPECTRAL AND LIDAR DATA BASED ON DUAL-BRANCH CONVOLUTIONAL NEURAL NETWORK
Jinzhe Wang, Junping Zhang, Qingle Guo, Tong Li, Harbin Institute of Technology, China

THP2.PF.7
Board PF.7
SYNTHESIZING CLOUD-FREE REMOTE SENSING IMAGES WITH CONDITIONAL GANS
Daoyu Lin, Guangluan Xu, Yang Wang, Xiaoke Wang, Institute of Electronics, Chinese Academy of Sciences, China

THP2.PF.8
Board PF.8
CLOUD REMOVAL OF OPTICAL REMOTE SENSING IMAGERY WITH MULTITEMPORAL SAR-OPTICAL DATA USING X-MTGAN
Yu Xia, Hongyan Zhang, Liangpei Zhang, Zhiyu Fan, Wuhan University, China

Thursday, August 1	09:40 - 10:40	Room 501-502: Area G
Session THP1.PG		**Poster**

Advanced Information Processing

Session Chair: Mauro Dalla Mura, GIPSA-lab, Grenoble Institute of Technology

THP1.PG.1
Board PG.1

HIGH-RESOLUTION REMOTE SENSING IMAGE SCENE UNDERSTANDING: A REVIEW

Qiqi Zhu, China University of Geosciences, China; Xiongli Sun, Yanfei Zhong, Liangpei Zhang, Wuhan University, China

THP1.PG.2
Board PG.2

GRAPH OPTIMIZED LOCALITY PRESERVING PROJECTION VIA HEURISTIC OPTIMIZATION ALGORITHMS

Oguzhan Ceylan, Kadir Has University, Turkey; Gulsen Taskin, Istanbul Technical University, Turkey

THP1.PG.3
Board PG.3

USING PANSHARPENING TECHNIQUE IMPROVES INTERPOLATION-BASED SUBPIXEL MAPPING

Peng Wang, Gong Zhang, Taiyue Guo, Peilan Chen, Nanjing University of Aeronautics and Astronautics, China

THP1.PG.4
Board PG.4

A NOVEL SUB-PIXEL MAPPING MODEL BASED ON PIXEL AGGREGATION DEGREE FOR SMALL-SIZED LAND-COVER

Shangrong Wu, Peng Yang, Jianqiang Ren, Zhongxin Chen, Changan Liu, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences / Key Laboratory of Agricultural Remote Sensing, Ministry of Agriculture and Rural Affairs, China

THP1.PG.5
Board PG.5

A SUPER-RESOLUTION MAPPING USING A CONVOLUTIONAL NEURAL NETWORK

Teerasit Kasetkasem, Kasetsart University, Thailand

THP1.PG.6
Board PG.6

FINE CLASSIFICATION COMPARSION OF GF-1 GF-5 AND LANDSAT-8 REMOTE SENSING DATA BASED ON OPTIMIZED SAMPLE SELECTION METHOD

Gang Yang, Leilei Jiao, Weiwei Sun, Huimin Lu, Xiangchao Meng, Ningbo University, China; Yinnian Liu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China

THP1.PG.7
Board PG.7

MARGIN-BASED RANDOM FOREST FOR IMBALANCED LAND COVER CLASSIFICATION

Wei Feng, Chinese Academy of Sciences, China; Samia Boukir, Bordeaux Institute of Technology, France; Wenjiang Huang, Chinese Academy of Sciences, China

THP1.PG.8
Board PG.8

A CONSTRAINED BOX ALGORITHM FOR IMBALANCED DATA IN SATELLITE IMAGES

Wajira Abeysinghe, Michael Wong, Chih-Cheng Hung, Kennesaw State University, United States; Slim Bechikh, University of Tunis, Tunisia

THP1.PG.9
Board PG.9

IDENTIFYING AND CORRECTING MISLABELED SATELLITE IMAGE DATA BY ITERATIVE ORDERING OF ENSEMBLE MARGINS

Samia Boukir, Bordeaux Institute of Technology, France; Wei Feng, Chinese Academy of Sciences, China

THP1.PG.10
Board PG.10

RECOGNITION OF THE REMOTE SENSING SCENES FROM UNSEEN CLASSES

Yaxuan Zhao, Tingwei Wang, Hui Li, Peng Ren, China University of Petroleum (East China), China

THP1.PG.11
Board PG.11

FEATURE-BASED PHASE CORRELATION IN IMAGE REGISTRATION

Victor J. D. Tsai, National Chung Hsing University, Taiwan

Thursday, August 1	15:20 - 16:20	Room 501-502: Area G
Session THP2.PG		**Poster**

Signal Processing and Data Fusion

Session Co-Chairs: Clément Mallet, IGN - University Paris Est; Claudia Paris, University of Trento

THP2.PG.1
Board PG.1

SCALABLE EVALUATION OF 3D CITY MODELS

Oussama Ennafii, Arnaud Le Bris, IGN - University Paris Est, France; Florent Lafarge, INRIA Sophia Antipolis, France; Clément Mallet, IGN - University Paris Est, France

THP2.PG.2
Board PG.2

A NOVEL HYPERSPECTRAL DENOISING METHOD BASED ON WAVELET TRANSFORM AND THREE SPLINE INTERPOLATION UNDER THE FRAMEWORK OF EMPIRICAL MODE DECOMPOSITION

Miao Zhang, Ruilin Yuan, Xinxin Li, Yi Shen, Harbin Institute of Technology, China

THP2.PG.3
Board PG.3

POWERFUL SITUATION AWARENESS USING HIGH RESOLUTION OPTICAL SATELLITES 'ASNARO-1' AND RADAR SATELLITES 'ASNARO-2'

Tetsuya Kawasaki, Masanori Miyawaki, Tsunekazu Kimura, Kazutsuna Hebiishi, Toshiaki Ogawa, NEC Corporation, Japan

THP2.PG.4
Board PG.4

COMPOSITE GEOLOCATING OF ZY-3-02 LASER ALTIMETRY DATA AND OPTICAL SATELLITE STEREO IMAGERY

Junfeng Xie, Fen Hu, Zhenming Wang, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China; Ming He, Hohai University, China; Ying Zhen, LiaoNing Technical University, China; Hong Zhu, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China

THP2.PG.5
Board PG.5

GRIDLESS SPARSE METHODS BASED ON FOURTH-ORDER CUMULANT FOR DOA ESTIMATION

Yuying Zhang, Gong Zhang, Nanjing University of Aeronautics and Astronautics, China; Henry Leung, Electrical and Computer Engineering University of Calgary, Canada

THP2.PG.6
Board PG.6

SPLIT WINDOW ALGORITHM CALIBRATION AND VALIDATION FOR TASI SENSOR

Victoria Ionca, Institute of Methodologies for Environmental Analysis, CNR-IMAA, Italy; Maria Paola Bogliolo, INAIL, Italian Workers Compensation Authority, Italy; Giovanni Laneve, University of Rome, Italy; Gian Luigi Liberti, Istituto di Scienze dell'Atmosfera e del Clima, ISAC-CNR, Italy; Angelo Palombo, Stefano Pignatti, Institute of Methodologies for Environmental Analysis, CNR-IMAA, Italy

THP2.PG.7
Board PG.7

A CLUSTERING METHOD FOR RAIN-CELL DETECTION IN WEATHER NOWCASTING APPROACHES

Felipe Minotta-Zapata, Rafael A. Rodríguez-Solís, University of Puerto Rico at Mayaguez, United States

THP2.PG.8
Board PG.8

THE PRELIMINARY STUDY ON THE SEASONAL FPAR REMOTE SENSING PRODUCT WITH A 30-M RESOLUTION AND LONG TIME SERIES

Dailiang Peng, Wenjiang Huang, Fubao Xu, Helin Zhang, Liwei Li, Key Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Jing Zhang, Capital Normal University, China; Bing Zhang, Key Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area H
Session THP1.PH		**Poster**

Super-resolution and Multiresolution Fusion Techniques III

Session Co-Chairs: Andrea Garzelli, University of Siena; Shutao Li, Hunan University

THP1.PH.1
Board PH.1
A CNN-BASED PANSHARPENING METHOD WITH PERCEPTUAL LOSS
Sergio Vitale, Università Parthenope, Italy

THP1.PH.2
Board PH.2
DEEP SPATIAL-SPECTRAL INFORMATION EXPLOITATION FOR RAPID HYPERSPECTRAL IMAGE SUPER-RESOLUTION
Jing Hu, Xi'an University of Technology, China; Yunsong Li, Xi'dian University, China; Minghua Zhao, Yaling Zhang, Xi'an University of Technology, China

THP1.PH.3
Board PH.3
DUAL 1D-2D SPATIAL-SPECTRAL CNN FOR HYPERSPECTRAL IMAGE SUPER-RESOLUTION
Jiaojiao Li, Ruxing Cui, Xidian University, China; Bo Li, Northwestern Polytechnical University, China; Yunsong Li, Xidian University, China; Shaohui Mei, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, United States

THP1.PH.4
Board PH.4
UNSUPERVISED REMOTE SENSING IMAGE SUPER-RESOLUTION USING CYCLE CNN
Pengrui Wang, Haopeng Zhang, Beihang University, China; Feng Zhou, DFH Satellite Co., Ltd., China; Zhiguo Jiang, Beihang University, China

THP1.PH.5
Board PH.5
SIMULTANEOUS SUPER-RESOLUTION AND SEGMENTATION FOR REMOTE SENSING IMAGES
Sen Lei, Zhenwei Shi, Xi Wu, Bin Pan, Xia Xu, Beihang University, China; Hongxun Hao, Civil Aviation University of China, China

THP1.PH.6
Board PH.6
ON TRAINING DEEP NETWORKS FOR SATELLITE IMAGE SUPER-RESOLUTION
Michal Kawulok, Silesian University of Technology, Poland; Szymon Piechaczek, Krzysztof Hrynczenko, Future Processing, Poland; Pawel Benecki, Daniel Kostrzewa, Jakub Nalepa, Silesian University of Technology, Poland

THP1.PH.7
Board PH.7
PANCHROMATIC SHARPENING OF MULTISPECTRAL SATELLITE IMAGERY VIA AN EXPLICITLY DEFINED CONVEX SELF-SIMILARITY REGULARIZATION
Chia-Hsiang Wang, Chia-Hsiang Lin, National Central University, Taiwan; Jose Bioucas Dias, Universidade de Lisboa, Portugal; Wei-Cheng Zheng, Kuo-Hsin Tseng, National Central University, Taiwan

THP1.PH.8
Board PH.8
SPECTRAL-DRIVEN PANSHARPENING USING ADAPTIVE IMAGE SEGMENTATION TO REDUCE COLOR DISTORTION
Jiao Jiao, Xiangwu Gong, Lingda Wu, Xiangli Meng, Space Engineering University, China

THP1.PH.9
Board PH.9
HYPERSPECTRAL AND MULTISPECTRAL IMAGE FUSION BASED ON SPECTRAL LOW RANK AND NON-LOCAL SPATIAL SIMILARITIES
Renwei Dian, Shutao Li, Hunan University, China

THP1.PH.10
Board PH.10
SSCNET: SPECTRAL-SPATIAL CONSISTENCY OPTIMIZATION OF CNN FOR PANSHARPENING
Kento Doi, Akira Iwasaki, University of Tokyo, Japan

Thursday, August 1	15:20 - 16:20	Room 501-502: Area H
Session THP2.PH		**Poster**

Geographic Information Science II

Session Co-Chairs: Leyuan Fang, Hunan University; Juan Mario Haut, University of Extremadura

THP2.PH.1
Board PH.1
A VISUALIZATION-ORIENTED TRAJECTORY DATA COMPRESSION METHOD
Yan Zhou, Manna Huang, Fan Jiang, Chengcheng Jiang, University of Electronic Science and Technology of China, China; Baoyu Shan, Unit 69006 of Xinjiang Military Region, China

THP2.PH.2
Board PH.2
GBSS: AN INTEGRATED MANAGEMENT SYSTEM FOR BICYCLE SHARING IN CHINA
Weixin Zhai, Kun Qi, Peking University, China; Shuhua Song, Jiangsu Zhitu Technology Co.,Ltd., China; Chengqi Cheng, Peking University, China

THP2.PH.3
Board PH.3
AN OPTIMAL SAMPLING DESIGN FOR LAND SURFACE TEMPERATURE VALIDATION WITH SPATIAL AND DIURNAL VARIATIONS
Jing Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Li Ni, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Zhao-Liang Li, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China; Yong-Gang Qian, Academy of Opto-Electronics, Chinese Academy of Sciences, China; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

THP2.PH.4
Board PH.4
SPATIAL DISTRIBUTION PATTERN OF COUNTY-LEVEL MULTIDIMENSIONAL POVERTY
Wenping Qi, Yanhui Wang, Zhaoning Gong, Fuzhou Duan, Wenxin Teng, College of Resources Environment & Tourism, Capital Normal University, China

THP2.PH.5
Board PH.5
THE DUAL-ASPECT GEOMETRIC TERRAIN CORRECTION METHOD USING GF-3 SATELLITE DATA
Jiayin Liu, Xiaolan Qiu, Baoquan Zhang, Feng Wang, Lei Liu, Chinese Academy of Sciences, China

THP2.PH.6
Board PH.6
AN IMPROVED ALGORITHM FOR TERRAIN RENDERING
Wei Cao, Lin Huang, Yunfeng Hu, Duanyang Xu, Hongyan Ren, Junxing Yang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

THP2.PH.7
Board PH.7
GEOMORPHIC SPATIO-TEMPORAL CHANGE DETECTION OF INDUS DELTA PAKISTAN, USING SATELLITE LANDSAT DATA
Gohar Ali Mahar, Federal Urdu University of Arts, Sciences and Technology, Pakistan

THP2.PH.8
Board PH.8
IMPACT OF IN-SITU OBSERVATION SITES CONFIGURATION ON SPATIAL INTERPOLATION: A CASE STUDY ON AIR TEMPERATURE
Yujiu Xiong, Sun Yat-Sen University, China

THP2.PH.9
Board PH.9
RESEARCH ON EXTRACTION AND EVALUATION OF ECOLOGICAL CORRIDOR BASED ON REMOTE SENSING AND GIS
Chengyun Yang, Shenzhen Urban Planning and Land Resource Research Center, China; Hongga Li, Xiaoxia Huang, Xia Li, Yilan Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Wuyang Hong, Shenzhen Urban Planning and Land Resource Research Center, China; Yarong Zou, National Satellite Ocean Application Service, China

Super-resolution and Multiresolution Fusion Techniques IV

Session Co-Chairs: Moussa Sofiane Karoui, Centre des Techniques Spatiales; Magnus O. Ulfarsson, University of Iceland

THP1.PI.1
Board PI.1
IMPROVING SPECTRAL RESOLUTION OF MULTISPECTRAL DATA USING CONVOLUTIONAL NEURAL NETWORK
Mingyuan Peng, Lifu Zhang, Xuejian Sun, Yi Cen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PI.2
Board PI.2
SPECTRAL MODULATION FOR FUSION OF HYPERSPECTRAL AND MULTISPECTRAL IMAGES
Xiaochen Lu, Xiangzhen Yu, Wenming Tang, Bingqi Zhu, Shanghai Radio Equipment Research Institute, China

THP1.PI.3
Board PI.3
HYPERSPECTRAL AND MULTISPECTRAL IMAGE FUSION VIA TENSOR SPARSITY REGULARIZATION
Jize Xue, Yongqiang Zhao, Research & Development Institute of Northwestern Polytechnical University in Shenzhen, China; Wenzhi Liao, Wilfried Philips, Image Processing and Interpretation, IMEC, Research Group at Ghent University, Belgium

THP1.PI.4
Board PI.4
GRADIENT-BASED JOINT-VARIABLES NONNEGATIVE MATRIX FACTORIZATION FOR MULTI-SHARPENING HYPERSPECTRAL REMOTE SENSING DATA
Moussa Sofiane Karoui, Fatima Zohra Benhalouche, Issam Boukerch, Centre des Techniques Spatiales, Algeria

THP1.PI.5
Board PI.5
LEARNING SPECTRAL AND SPATIAL FEATURES BASED ON GENERATIVE ADVERSARIAL NETWORK FOR HYPERSPECTRAL IMAGE SUPER-RESOLUTION
Ruituo Jiang, Xu Li, Ang Gao, Lixin Li, Northwestern Polytechnical University, China; Hongying Meng, Brunel University London, United Kingdom; Shigang Yue, University of Lincoln, United Kingdom; Lei Zhang, East China Normal University, China

THP1.PI.6
Board PI.6
ADVANCES ON CNN-BASED SUPER-RESOLUTION OF SENTINEL-2 IMAGES
Massimiliano Gargiulo, University Federico II, Italy

THP1.PI.7
Board PI.7
SPATIAL CONSTRAINED HYPERSPECTRAL RECONSTRUCTION FROM RGB INPUTS USING DICTIONARY REPRESENTATION
Yunhao Geng, Shaohui Mei, Jin Tian, Yifan Zhang, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, China

THP1.PI.8
Board PI.8
SUPER-RESOLUTION IMAGING OF REAL-BEAM SCANNING RADAR BASE ON ACCELERATED MAXIMUM A POSTERIORI ALGORITHM
Wenchao Li, Meihua Niu, Yongchao Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP1.PI.9
Board PI.9
OPTIMAL COMPONENT SUBSTITUTION AND MULTI-RESOLUTION ANALYSIS PANSHARPENING METHODS USING A CONVOLUTIONAL NEURAL NETWORK
Frosti Palsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland

Geographic Information Science III

Session Co-Chairs: Pengfei Liu, School of Geographic and Environmental Sciences; Mercedes Paoletti, University of Extremadura

THP2.PI.1
Board PI.1
ASSESSING IMPACTS OF TRAFFIC FLOWS ON THE SPATIAL DISTRIBUTION OF EARLY DENGUE IN GUANGZHOU SUBDISTRICTS
Haiyan Tao, Yuan Liu, Keli Wang, Li Zhuo, Sun Yat-Sen University, China

THP2.PI.2
Board PI.2
COLLAPSING GULLIES SUSCEPTIBILITY MAPPING BASED ON ENTROPY INFORMATION VALUE IN JIANGXI PROVINCE OF CHINA
Yuanling Zhao, Dongbing Cheng, Changjiang River Scientific Research Institute, China

THP2.PI.3
Board PI.3
INFLUENCE OF SUBSURFACE FLOW BY LIDAR DEM AND PHYSICAL SOIL STRENGTH FOR SHALLOW LANDSLIDE INSTABILITY ANALYSIS
Minseok Kim, Korea Institute of Geoscience and Mineral Resources, Korea (South); Hyunuk An, Chungnam National University, Korea (South); Jisu Kim, Korea Institute of Geoscience and Mineral Resources, Korea (South)

THP2.PI.4
Board PI.4
MAPPING DIGITAL DRAINAGE NETWORK USING GEOPROCESSING: A CASE STUDY OF KALI GANDAKI RIVER BASIN, NEPAL HIMALAYA
Feiyu Chen, Bingwei Tian, Basanta Adhikari, Xiaoyun Gou, Sichuan University, China

THP2.PI.5
Board PI.5
INFLUENCE FACTORS ANALYSIS OF GEOLOGICAL DISASTERS IN SOUTHEASTERN TIBET BASED ON GEOGRAPHICAL DETECTOR
Weijie Jia, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences / University of the Chinese Academy of Sciences / China Aero Geophysical Survey and Remote Sensing Center for Natural Resource, China; Mengfei Wang, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources, China; Zhihua Wang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

THP2.PI.6
Board PI.6
A DISTRIBUTED STORAGE STRATEGY FOR TRAJECTORY DATA BASED ON NOSQL DATABASE
Yan Zhou, Qifan Chen, University of Electronic Science and Technology of China, China; Baoyu Shan, Unit 69006 of Xinjiang Military Region, China; Jiang Fan, Yuling Pang, University of Electronic Science and Technology of China, China

THP2.PI.7
Board PI.7
RESEARCH ON KEY TECHNOLOGY OF QUICK COPY AND RANDOM ACCESSING OF MASSIVE MAP TILES
Pengfei Liu, Qian Wang, Zun Wang, Hu Zhang, Yiquan Song, School of Geographic and Environmental Sciences, Tianjin Engineering Center for Geospatial Information Technology, China

THP2.PI.8
Board PI.8
SPATIAL ANALYSIS OF SOIL EROSION BASED ON SATELLITE REMOTE SENSING: A CASE STUDY FROM YOUYANG COUNTY OF CHINA
Xujun Lyu, Huazhong Agricultural University, China

THURSDAY POSTER

Thursday, August 1	09:40 - 10:40	Room 501-502: Area J
Session THP1.PJ		**Poster**

Coastal Zones II

Session Chair: Ken Clarke, University of Adelaide

THP1.PJ.1
Board PJ.1
ACCURACY OF SSH MEASUREMENT BY USV EQUIPPED WITH GPS -A COMPARISON WITH THE GPS BUOY
Zhai Wanlin, Yan Longhao, Wang He, National Ocean Technology Center, China; Qiao Jiguo, Liang Hao, Tian Jin Center for Marine Geological Survey, China

THP1.PJ.2
Board PJ.2
SPATIAL AND SOCIAL ASPECT OF TRANSFORMATION LIVE CORAL TO DEAD CORAL AT INHABITAT AND UNINHABITAT ISLAND IN SPERMONDE ARCHIPELAGO
Nurjannah Nurdin, Supriadi Supriadi, Dwia Aries Tina Pulubuhu, Mahatma Lanuru, Agus Aris, Hasanuddin University, Indonesia; Teruhisa Komatsu, University of Tokyo, Japan

THP1.PJ.3
Board PJ.3
APPLICATION OF HY-1C SATELLITE COASTAL ZONE IMAGER IN ISLAND REEF MONITORING
Yarong Zou, Chao Liang, National Satellite Ocean Application Service, China; Shengli Zhang, Beijing International Studies University, China; Juhong Zou, National Ocean Satellite Application Service, China

THP1.PJ.4
Board PJ.4
BATHYSENT - A METHOD TO RETRIEVE COASTAL BATHYMETRY FROM SENTINEL-2
Daniel Raucoules, Marcello de Michele, Deborah Idier, Farid Smai, Michael Foumelis, Faiza Boulahya, BRGM - French Geological Survey, France; Espen Volden, European Space Agency (ESA), Italy; Vivi Drakopoulou, Hellenic Center For Marine Research, Greece; Mujta Przemysław, Cloudferro, Poland

THP1.PJ.5
Board PJ.5
COASTLINES CHANGE OF THE PEARL RIVER ESTUARY IN THE PAST 40 YEARS USING LANDSAT DATASET AND ITS ENVIRONMENTAL IMPLICATIONS
Xinyi Hu, Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

THP1.PJ.6
Board PJ.6
ON THE USE OF SATELLITE-BASED DIGITAL ELEVATION MODELS TO DETERMINE COASTAL TOPOGRAPHY
Harold Diaz, Rafael Almar, LEGOS-IRD, France; Erwin W. J. Bergsma, CNES-LEGOS, France; Fabien Leger, LEGOS, France

THP1.PJ.7
Board PJ.7
ON THE APPLICATION OF A TWO-DIMENSION SPATIO-TEMPORAL CROSS-CORRELATION METHOD TO INVERSE COASTAL BATHYMETRY FROM WAVES USING A SATELLITE-BASED VIDEO SEQUENCE
Rafael Almar, Erwin W.J. Bergsma, LEGOS, France; Philippe Maisongrande, Alain Giros, CNES, France; Luis Pedro Almeida, Universidade Federal do Rio Grande do Sul, France

THP1.PJ.8
Board PJ.8
PRELIMINARY ANALYSIS OF WIND RESOURCES AND WIND ENERGY RESERVES IN THE OFF-SHORE REGION OF GUANGDONG PROVINCE
Yufei Zhang, Mingsen Lin, Bin Zou, National Satellite Ocean Application Service, China; Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd, China; Ting Liu, Wu Zhou, National Satellite Ocean Application Service, China

THP1.PJ.9
Board PJ.9
TWO-DIMENSIONAL SHIP VELOCITY RETRIEVAL FROM THE KOMPSAT-5 SAR
Minyoung Back, Joong-Sun Won, Yonsei University, Korea (South)

THP1.PJ.10
Board PJ.10
IMPROVING COASTAL BENTHOS MAPPING WITH HYPERSPECTRAL IMAGERY
Ken Clarke, Andrew Hennessy, University of Adelaide, Australia; Milena Fernandes, South Australian Water Corporation, Australia; Megan Lewis, University of Adelaide, Australia

THP1.PJ.11
Board PJ.11
A STUDY ON RELIABLE SHORELINE EXTRACTION METHOD BY WAY OF DETERMINATION OF OPTIMUM VERTEX INTERVAL
Heesook Woo, Kwang seok Kwon, Byung guk Kim, Inha University, Korea (South)

THP1.PJ.12
Board PJ.12
SHALLOW WATER BATHYMETRY DERIVED BY MACHINE LEARNING AND MULTI-TEMPORAL SATELLITE IMAGES
Tatsuyuki Sagawa, Remote Sensing Technology Center of Japan, Japan; Yuta Yamashita, Bestmateria, Japan; Toshio Okumura, Tsutomu Yamanokuchi, Remote Sensing Technology Center of Japan, Japan

Thursday, August 1	15:20 - 16:20	Room 501-502: Area J
Session THP2.PJ		**Poster**

Passive Sensors

Session Co-Chairs: Taeyoung Choi, National Oceanic Atmospheric Administration / Global Sciences and Technology; Jean-Claude Roger, University of Maryland, College Park

THP2.PJ.1
Board PJ.1
AN ERROR-BASED BLOCK ADJUSTMENT METHOD FOR MULTI-ANGLE SATELLITE IMAGERY WITHOUT GROUND CONTROL POINTS
Niangang Jiao, Feng Wang, Hongjian You, Kun Hu, Mudan Yang, Key Laboratory of Technology in Geo-Spatial Information Processing and Application Systems, China

THP2.PJ.2
Board PJ.2
FIRST RESULTS FROM LASER-BASED SPECTRAL CHARACTERIZATION OF LANDSAT 9 OPERATIONAL LAND IMAGER-2
Joel McCorkel, Brendan McAndrew, NASA Goddard Space Flight Center, United States; Julia Barsi, SSAI, United States; Brian Markham, NASA Goddard Space Flight Center, United States; James Pharr, a.i. Solutions, Inc., United States; Michael Rodriguez, Hexagon US Federal, United States; Tim Shuman, FiberTek, United States; Andrei Sushkov, Genesis Engineering Corp, United States; Barbara Zukowski, Ball Aerospace, United States

THP2.PJ.3
Board PJ.3
THE EFFECTS OF SUN-VIEWER GEOMETRY ON SUN-INDUCED FLUORESCENCE AND ITS RELATIONSHIP WITH GROSS PRIMARY PRODUCTION
Qian Zhang, Yongguang Zhang, Zhaohui Li, Ji Li, Xiaokang Zhang, Nanjing University, China

THP2.PJ.4
Board PJ.4
MISSION STATUS OF A GEOSTATIONARY ENVIRONMENTAL MONITORING SPECTROMETER: THE DEVELOPMENT OF A GROUND STATION SYSTEM
Jaehoon Jeong, Ara Cho, Jongmin Yoon, National Institute of Environmental Research, Korea (South); Minseok Nam, Goo Kim, National Instititue of Environmental Research, Korea (South); Deakrae Kim, Sangkyun Kim, National Institute of Environmental Research, Korea (South)

THP2.PJ.5
Board PJ.5
EXPERIMENTAL COMPARISON AND ANALYSIS OF BLOCK BUNDLE ADJUSTMENT MODELS FOR CHINESE ZY-3 OPTICAL SATELLITE IMAGERY
Wenping Song, Shijie Liu, Xiaohua Tong, Tongji University, China; Changling Niu, Qingdao West Coast Geomatics Center, China; Yanmin Jin, Tongji University, China

THP2.PJ.6
Board PJ.6
NOAA-20 VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS) ON-ORBIT BAND-TO-BAND REGISTRATION ESTIMATION FOR REFLECTIVE SOLAR BAND (RSB) USING SCHEDULED LUNAR COLLECTIONS
Taeyoung Choi, National Oceanic Atmospheric Administration / Global Sciences and Technology, United States; Xi Shao, National Oceanic Atmospheric Administration / University of Maryland, United States; Changyong Cao, National Oceanic Atmospheric Administration, United States

THP2.PJ.7
Board PJ.7
INTELLIGENT ONBOARD PROCESSING AND MULTICHANNEL TRANSMISSION TECHNOLOGY FOR INFRARED REMOTE SENSING DATA
Fan Mo, Beijing Institute of Spacecraft System Engineering, China; Hua Li, State Key Laboratory of Remote Sensing Science, Chinese Academy of Sciences, China; Xinyu Yao, Qianying Wang, Quan Jing, Xinwei Zhang, Beijing Institute of Spacecraft System Engineering, China; Limin Zhao, Zunjian Bian, State Key Laboratory of Remote Sensing Science, Chinese Academy of Sciences, China

THP2.PJ.8
Board PJ.8
IMPROVING THE AVHRR'S BRDF CORRECTION USING MODIS
Jose Luis Villaescusa-Nadal, Belen Franch, University of Maryland, College Park, United States; Eric Vermote, NASA Goddard Space Flight Center, United States; Jean-Claude Roger, Chris Justice, University of Maryland, College Park, United States

THP2.PJ.9
Board PJ.9
A MULTI-SATELLITE REGIONAL IMAGING MISSION PLANNING METHOD BASED ON MOOM FOR EMERGENCY SURVEYING AND MAPPING
Yaxin Chen, Xin Shen, Shixue Li, Guo Zhang, Miaozhong Xu, Yulin Liu, Junfei Xu, Wuhan University, China

THP2.PJ.10
Board PJ.10
LATEST IMPROVEMENTS FOR CRIS SENSOR DATA RECORDS
Yong Chen, University of Maryland, College Park, United States; Denis Tremblay, Global Science & Technology, Inc, United States; Mark Esplin, Utah State University, United States; Flavio Iturbide-Sanchez, NOAA, United States

THP2.PJ.11
Board PJ.11
HYPERSPECTRAL CAMERA FOCUS SETTING WITH SPECTRAL DERIVATIVE ANALYSIS
Yunus Emre Esin, Omer Ozdil, Safak Ozturk, Berkan Demirel, HAVELSAN Inc., Turkey

Thursday, August 1 09:40 - 10:40 Room 501-502: Area K	**Thursday, August 1** 15:20 - 16:20 Room 501-502: Area K
Session THP1.PK **Poster**	**Session THP2.PK** **Poster**

Coastal Zones III

Session Co-Chairs: Francisco Eugenio, Universidad de Las Palmas de Gran Canaria; Duk-Jin Kim, Seoul National University

THP1.PK.1
Board PK.1
SPATIAL STRUCTURE AND RELATIONSHIP BETWEEN PORTS AND PORT CITIES ALONG THE MARITIME SILK ROAD
Li Zhang, Yu Gu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Graciela Metternicht, School of Biological, Earth and Environmental Sciences, University of New South Wales, Australia; Min Yan, Sen Bi, Mohammad Emran Hasan, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PK.2
Board PK.2
MULTIPLATFORM EARTH OBSERVATION SYSTEMS FOR THE MONITORING AND CONSERVATION OF VULNERABLE NATURAL ECOSYSTEMS
Francisco Eugenio, Monica Alfaro, Javier Martin, Javier Marcello, Universidad de Las Palmas de Gran Canaria, Spain

THP1.PK.3
Board PK.3
BATHYMETRY MAPPING USING VERY HIGH RESOLUTION SATELLITE MULTISPECTRAL IMAGERY IN SHALLOW COASTAL WATERS OF PROTECTED ECOSYSTEMS
Ferran Marques, Universitat Politecnica de Catalunya BarcelonaTECH, Spain; Francisco Eugenio, Universidad de Las Palmas de Gran Canaria, Spain; Monica Alfaro, Universitat Politecnica de Catalunya BarcelonaTECH, Spain; Javier Marcello, Universidad de Las Palmas de Gran Canaria, Spain

THP1.PK.4
Board PK.4
SUN GLINT MITIGATION FOR THE SABIA-MAR MISSION
Roberto Alonso, Jose Kuba, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Robert Frouin, Scripps Institution of Oceanography, University of California San Diego, United States

THP1.PK.5
Board PK.5
BATHYMETRY MAPPING WITH MULTISPECTRAL REMOTE SENSING USING A PHYSICS-BASED MODELLING APPROACH
Christopher Olayinka Ilori, Simon Fraser University, Canada; Anders Knudby, University of Ottawa, Canada

THP1.PK.6
Board PK.6
RANDOM FOREST CLASSIFICATION SCENARIOS FOR BENTHIC HABITAT MAPPING USING PLANETSCOPE IMAGE
Pramaditya Wicaksono, Wahyu Lazuardi, Universitas Gadjah Mada, Indonesia

THP1.PK.7
Board PK.7
MEASUREMENT OF COASTAL WATER QUALITY INDICATORS USING SENTINEL-2; AN EVALUATION OVER HONG KONG AND THE PEARL RIVER ESTUARY
Sidrah Hafeez, Man Sing Wong, Hong Kong Polytechnic University, China

THP1.PK.8
Board PK.8
THE GF-2 CAPABILITY ANALYSIS IN SHALLOW WATER REMOTE SENSING BATHYMETRY
Wei Shen, Qian Ji, Yaowei Qiu, Shanghai Ocean University, China; Zhongqiang Wu, Nanjing University, China

THP1.PK.9
Board PK.9
STUDY ON CRUDE OIL AND ITS EMULSIFICATION CHARACTERISTICS
Jie Guo, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences;Key Laboratory of Coastal Zone Environmental Processes, CAS; Shandong Provincial Key Laboratory of Coastal Zone Environmental Processes, China; Youming Luo, Fan Ge, Danhua Wang, Mingxia Diao, Qixia Yang, School Environmental and Material Engineering, Yantai University, China; Yan Liu, Yantai Marine Environment Monitoring Central Station, State Oceanic Administration, 11 Ningbo Road, Fushan District, Yantai 264006, P. R. China, China; Zhi Qu, China National Offshore Oil Corporation Limited, China; Tianlong Zhang, University of the Chinese Academy of Sciences, China

THP1.PK.10
Board PK.10
SEA SURFACE CURRENT VELOCITY VECTORS FROM PASSIVE REMOTE SENSING IMAGERY
Guillermo Martínez-Flores, Oleg Zaitzev, Enrique H. Nava-Sánchez, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas, Mexico

THP1.PK.11
Board PK.11
ANALYSIS FOR THE CHANGE OF AQUACULTURE AREA AND WATER QUALITY IN SANSHA BAY DURING 2010-2018
Yunzhi Chen, Yushuang Wang, Tingting Xie, MingHui Zhang, Fuzhou University, China

THP1.PK.12
Board PK.12
TWO-DIMENSIONAL SHIP VELOCITY RETRIEVAL FROM THE KOMPSAT-5 SAR
Minyoung Baek, Joong-Sun Won, Yonsei University, Korea (South)

UAV Platforms and Applications

Session Chair: José Marcato, Federal University of Mato Grosso do Sul

THP2.PK.1
Board PK.1
COMPENSATION METHOD FOR MULTI-ROTOR UAV-MAGNETOMETER SYSTEM
Yaxin Mu, Xiaojuan Zhang, Luzhao Chen, Yaoxin Zheng, Wupeng Xie, Chinese Academy of Sciences, China

THP2.PK.2
Board PK.2
MICRO-DOPPLER AIDED TRACK-BEFORE-DETECT FOR UAV DETECTION
Yuansheng Li, Ping Wei, Lin Gao, Wen Sun, Huaguo Zhang, Guchong Li, University of Electronic Science and Technology of China, China

THP2.PK.3
Board PK.3
EVALUATING THE APPLICABILITY OF RTK-UAV FOR FIELD MANAGEMENT
Hiroyuki Obanawa, Seiichi Sakanoue, Takanori Yagi, National Agriculture and Food Research Organization, Japan

THP2.PK.4
Board PK.4
THE IMPACT OF GROUND CONTROL POINT QUANTITY ON AREA AND VOLUME MEASUREMENTS WITH UAV SFM PHOTOGRAMMETRY APPLIED IN OPEN PIT MINES
Henrique Siqueira, José Marcato Junior, Edson Matsubara, Federal University of Mato Grosso do Sul, Brazil; Anette Eltner, Technische Universität Dresden, Brazil; Reinaldo Colares, Fabio Santos, HorusGeo, Brazil

THP2.PK.5
Board PK.5
ZONING THE FIRE-RISK IN PROTECTED AREAS IN BRAZIL WITH DRONES:
A STUDY CASE FOR THE BRASÍLIA NATIONAL PARK
Manuel Ferreira, Ila Araújo, Federal University of Goiás, Brazil; Felipe Avino, World Wildlife Fund, Brazil; João Costa, Federal University of Goiás, Brazil; Marcelo Oliveira-da-Costa, World Wildlife Fund, Brazil; Rafael Albuquerque, Universidade de São Paulo, Brazil; Enrique Balbuena, Ministério do Meio Ambiente, Brazil

THP2.PK.6
Board PK.6
RESOURCE ALLOCATION OPTIMIZATION OF DISTRIBUTED RADAR IMAGING SYSTEM BASED ON SPATIAL SPECTRUM ANALYSIS
Fanyun Xu, Rufei Wang, Deqing Mao, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP2.PK.7
Board PK.7
UNMANNED AERIAL VEHICLE (UAV) APPLICATIONS IN PRECISION AGRICULTURE
Ram Avtar, Stanley Anak Suab, Hokkaiod University, Japan; Kanichiro Matsumura, Tokyo University of Agriculture, Japan; Satoshi Inoue, National Agriculture and Food Research Organization, Japan

THP2.PK.8
Board PK.8
ESTIMATING AREA AND WATER VOLUME OF RURAL RESERVOIRS USING DRONES
João Vitor Silva Costa, Manuel Eduardo Ferreira, Federal University of Goiás, Brazil; Marcia Macedo, Woods Hole Research Center, United States

THP2.PK.9
Board PK.9
A UAS PLATFORM FOR ASSESSING SPECTRAL, STRUCTURAL, AND THERMAL PATTERNS OF ARCTIC TUNDRA VEGETATION
Ran Meng, Huazhong Agricultural University / Brookhaven National Laboratory, China; Dedi Yang, Andrew McMahon, Brookhaven National Laboratory, United States; Wouter Hantson, Dan Hayes, University of Maine, United States; Amy Breen, University of Alaska Fairbanks, United States; Shawn Serbin, Brookhaven National Laboratory, United States

THP2.PK.10
Board PK.10
UAV IMAGE MOSAIC BASED ON NON-RIGID MATCHING AND BUNDLE ADJUSTMENT
Linbo Luo, Quan Xu, Jun Chen, China University of Geosciences, China; Tao Lu, Wuhan Institute of Technology, China; Yong Wang, China University of Geosciences, China

THP2.PK.11
Board PK.11
EXTRACT ROW-STRCTURE PARAMETERS OF THE MAIZE FROM UAV IMAGERIES
Xiaofeng Li, Northeast Institue of Geography and Agriculture, Chinese Academy of Sciences, China; Tao Jiang, Xingming Zheng, Kai Zhao, NEIGAE, China; Bolun Li, Nanjing University of Information Science & Technology, China; Lei Li, Xiangkun Wan, NEIGAE, China

THURSDAY POSTER

171

Thursday, August 1	09:40 - 10:40	Room 501-502: Area L
Session THP1.PL		**Poster**

Ocean Altimetry I

Session Co-Chairs: Fabien Léger, LEGOS (University of Toulouse, IRD, CNES, CNRS, UPS); Bertrand Chapron, IFREMER

THP1.PL.1
Board PL.1
X-TRACK/ALES REGIONAL ALTIMETER PRODUCT FOR COASTAL APPLICATION: TOWARD A NEW MULTI-MISSION ALTIMETRY PRODUCT AT HIGH RESOLUTION
Fabien Léger, Florence Birol, Fernando Niño, LEGOS (University of Toulouse, IRD, CNES, CNRS, UPS), France; Marcello Passaro, DGFI-TUM, Germany; Florence Marti, Anny Cazenave, LEGOS (University of Toulouse, IRD, CNES, CNRS, UPS), France

THP1.PL.2
Board PL.2
MULTI-SOURCE OCEAN GRAVITY ANOMALY DATA FUSION PROCESSING METHOD
Jixiang Zhao, Jianhua Wan, Qinting Sun, Shanwei Liu, China University of Petroleum (East China), China

THP1.PL.3
Board PL.3
IMPACTS OF NORTH ATLANTIC LONG-TERM SEA LEVEL VARIABILITY ON U.S. EAST COAST
Yongcun Cheng, Shenzhen AeroImgInfo Technology Co., Ltd., China; Qing Xu, College of Oceanography, Hohai University, China; Bin Zou, Ting Liu, Lijian Shi, National Satellite Ocean Application Service (NSOAS), Key Laboratory of Space Ocean Remote Sensing and Application, State Oceanic Administration, China; Xiaobin Yin, Shenzhen AeroImgInfo Technology Co., Ltd., China

THP1.PL.4
Board PL.4
DATA QUALITY ASSESSMENT OF JASON-3 ALTIMETER DATA BASED ON JASON-2 SYNCHRONOUS DATA
Shanwei Liu, Yinlong Li, Qinting Sun, Jianhua Wan, China University of Petroleum (East China), China

THP1.PL.5
Board PL.5
STUDY ON NEUTRAL NETWORKS OF IONOSPHERE DELAY CORRECTIONS OF SATELLITE ALTIMETERS
Xiafeng Huang, Hongli Miao, Wenwen Xue, Xiangying Miao, Guizhong Wang, Ocean University of China, China

THP1.PL.6
Board PL.6
VALIDATION OF HY-2A SATELLITE SEA LEVEL MEASUREMENTS OFFSHORE HONG KONG USING JASON-2 SATELLITE AND TIDE GAUGE DATA
Xi-Yu Xu, Ke Xu, Mao-Fei Jiang, Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China; Ying Xu, National Satellite Ocean Application Service, China

THP1.PL.7
Board PL.7
AN INNOVATIVE APPROACH FOR THE CALIBRATION OF WIDE SWATH ALTIMETERS
Xi-Yu Xu, Yi-Hua Zhan, Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences, China

THP1.PL.8
Board PL.8
RESEARCH PROGRESS OF SATELLITE ALTIMETER CALIBRATION IN CHINA
Xinghua Zhou, Lei Yang, Yanhong Wang, First Institute of Oceanography, Ministry of Natural Resources of China, China; Lin Zhu, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Science / University of Science and Technology of China, China; Yanguang Fu, Shandong University of Science and Technology, China; Feng Li, Qingdao iSpatial Ocean Technology Co., China

THP1.PL.9
Board PL.9
CALIBRATION OF HY-2A SATELLITE ALTIMETER BASED ON GPS BOUY
Zhai Wanlin, Zhu Jianhua, Chen Chuntao, Yan Longhao, Huang Xiaoqi, National Ocean Technology Center, China

THP1.PL.10
Board PL.10
CURRENT STATUS OF THE HY-2B SATELLITE RADAR ALTIMETER AND ITS PROSPECT
Yongjun Jia, Mingsen Lin, Youguang Zhang, National Ocean Satellite Application Service, China; Wentao An, Xiaoqing Lu, National Satellite Ocean Application Service, China

THP1.PL.11
Board PL.11
THE EFFECTS OF RANDOM ERROR ON THE MEASUREMENT RESULTS OF WIDE-SWATH INTERFEROMETRIC IMAGING RADAR ALTIMETER
Yining Bai, Yunhua Wang, Yanmin Zhang, Chaofang Zhao, Ocean University of China, China

THP1.PL.12
Board PL.12
RANGE NOISE LEVEL ESTIMATION OF HY-2B RADAR ALTIMETER AND ITS COMPARISON WITH JASON-2 AND JASON-3 ALTIMETERS
Maofei Jiang, Ke Xu, Xiyu Xu, Lingwei Shi, Xiufen Yu, Peng Liu, National Space Science Center, Chinese Academy of Sciences, China

Thursday, August 1	15:20 - 16:20	Room 501-502: Area L
Session THP2.PL		**Poster**

Airborne Platforms

Session Chair: Simon Yueh, NASA Jet Propulsion Laboratory

THP2.PL.1
Board PL.1
AIRBORNE APERTURE SYNTHESIS RADIOMETERS WITH CONFORMAL ANTENNA ARRAYS
Li Feng, Lin Wei, Hubei University of Technology, China; Yufang Li, Huazhong University of Science and Technology, China; Fengcong Li, Pengcheng Gong, Jie Li, Hubei University of Technology, China

THP2.PL.2
Board PL.2
FENYX: LARGE AIRCRAFT FOR RESEARCH AND EXPERIMENTATION
Bertín Calvo Otero, Rodrigo Corzo Martínez, Laura Sánchez Muñoz, Estefanía Gómez Méndez, Ana Corrales Sierra, Jesús Ortiz Serrano, Bartolomé Marqués Balaguer, Instituto Nacional de Técnica Aeroespacial - INTA, Spain

THP2.PL.3
Board PL.3
AIRBORNE POLARIMETRIC AND REPEAT-PASS SAR INTERFEROMETRY CAMPAIGN: L-BAND RESULTS
Xuelian Zhong, Li Tao, Jiajia Zhang, Xi Chen, Mingxing Shen, Rengli Liu, Hong Hu, No.38 Research Institute, China Electronics Technology Group Corporation, China; Jianli Liu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

THP2.PL.4
Board PL.4
PRECISE AUTOFOCUS FOR SAR IMAGING BASED ON JOINT MULTI-REGION OPTIMIZATION
Liming Zhou, Xiaoling Zhang, Yangyang Wang, Chen Wang, Hao Su, Jun Shi, Shunjun Wei, University of Electronic Science and Technology of China, China

THP2.PL.5
Board PL.5
DEVELOPMENT OF AN AIRBORNE RADIATIVE TRANSFER SPECTRAL SCANNER FOR A SINGLE-ENGINE AIRCRAFT
Tetsuya Jitsufuchi, National Research Institute for Earth Science and Disaster Resilience, Japan

THP2.PL.6
Board PL.6
BEAM-RECURSIVE ITERATIVE ADAPTIVE APPROACH FOR SCANNING RADAR ANGULAR SUPERRESOLUTION
Yongwei Zhang, Yongchao Zhang, Deqing Mao, Yao Kang, Yin Zhang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP2.PL.7
Board PL.7
USING AIRBORNE AND UAS AERIAL IMAGES TO EVALUATE COASTAL CHANGE AND IMPACTS TO ARCHAEOLOGICAL SITES ALONG LOÍZA'S COAST, PUERTO RICO
Loderay Bracero-Marrero, University of Puerto Rico, Rio Piedras Campus, United States

THP2.PL.8
Board PL.8
A NEW EFFICIENT AIRBORNE VIDEO DEHAZE SYSTEM FOR UCAV
Jian Wang, Chun-Xia Qin, Ke Yang, Jie Zhen, Ping Ren, Northwestern Polytechnical University, China

THP2.PL.9
Board PL.9
A NOVEL METHOD TO ELIMINATE GRATING NOTCH IN UNIFORM SUBARRAY FOR AIRBORNE RADAR
Fengde Jia, Zishu He, Zhihang Wang, Guohao Sun, University of Electronic Science and Technology of China, China

THP2.PL.10
Board PL.10
A NEW MODTRAN INTERROGATION TECHNIQUE TO SIMULATE ATMOSPHERIC TRANSFER FUNCTIONS FOR PROXIMAL SENSING APPLICATIONS
Neus Sabater, University of Valencia, Spain; Jorge Vicent, Magellium, France; Pekka Kolmonen, Finnish Meteorological Institute, Finland; Luis Alonso, José Moreno, University of Valencia, Spain

THP2.PL.11
Board PL.11
DIFFERENCES AND SIMILARITIES IN THE PROCESSING OF AIRBORNE AND SPACEBORNE HYPERSPECTRAL DATA SHOWN ON HYSPEX AND ENMAP PROCESSING CHAINS
Mathias Schneider, Andreas Baumgartner, Peter Schwind, Emiliano Carmona, Tobias Storch, German Aerospace Center (DLR), Germany

Thursday, August 1	09:40 - 10:40 Room 501-502: Area M
Session THP1.PM	Poster

Lidar Methods and Techniques

Session Chair: Georgios Tzeremes, European Space Agency

THP1.PM.1
Board PM.1
RECONSTRUCTION OF AIRBORNE LASER SCANNER TRAJECTORY FROM DATA
Florian de Boissieu, Marc Lang, Jean-Baptiste Féret, Jean-Matthieu Monnet, Sylvie Durrieu, IRSTEA, France

THP1.PM.2
Board PM.2
NON-REFERENCE QUALITY EVALUATION FOR INDOOR 3D POINT CLOUDS
Yuhan Lian, Chenglu Wen, Cheng Wang, Jonathan Li, Xiamen University, China

THP1.PM.3
Board PM.3
RETRIEVAL OF THE FOREST LEAF AREA INDEX BASED ON THE LASER PENETRATION RATIO FROM THE GLAS WAVEFORM LIDAR DATA
Lei Cui, Ziti Jiao, Mei Sun, Yadong Dong, Xiaoning Zhang, Siyang Yin, Yaxuan Chang, Anxing Ding, Rui Xie, Jing Guo, Beijing Normal University, China

THP1.PM.4
Board PM.4
GEOMETRIC-SPECTRA-BASED POINT CLOUD SEGMENTATION FOR HYPERSPECTRAL LIDAR
Biwu Chen, Shuo Shi, Jia Sun, Wei Gong, Wuhan University, China; Lin Du, Jian Yang, China University of Geosciences, China; Kuanghui Guo, Binhui Wang, Bowen Chen, Wuhan University, China

THP1.PM.5
Board PM.5
STRUCTURAL OPTIMIZATION OF RECEIVING SYSTEM BASED ON OPTIMAL FIELD OF VIEW FOR SHALLOW SEA LASER MEASUREMENT
Guoqing Zhou, Jiandong Wei, Xiang Zhou, Wei Huang, Jinlong Chen, Yizhi Tan, Haocheng Hu, Guilin University of Technology, China

THP1.PM.6
Board PM.6
SLAM-BASED MULTI-SENSOR BACKPACK LIDAR SYSTEMS IN GNSS-DENIED ENVIRONMENTS
Dedong Zhang, Zheng Gong, University of Waterloo, Canada; Yiping Chen, Xiamen University, China; John Zelek, Jonathan Li, University of Waterloo, Canada

THP1.PM.7
Board PM.7
DENOISING ALGORITHM BASED ON LOCAL DISTANCE WEIGHTED STATISTICS FOR PHOTON COUNTING LIDAR POINT DATA
Weiqi Lian, Shaoning Li, Wuhan University, China; Guo Zhang, Xinyang Chen, Whhan University, China; Zixuan Li, University of Science and Technology LiaoNing, China

THP1.PM.8
Board PM.8
PIECEWISE HORIZONTAL 3D ROOF RECONSTRUCTION FROM AERIAL LIDAR
Slim Namouchi, RIADI-ENSI, Tunisia; Bruno Vallet, IGN, France; Imed Riadh Farah, RIADI-ENSI, Tunisia; Haythem Ismail, CNCT (Centre National de la Cartographie et de la Télédétection), Tunisia

Thursday, August 1	15:20 - 16:20 Room 501-502: Area M
Session THP2.PM	Poster

Ground Based Systems I

Session Co-Chairs: Yu Okada, Mitsubishi Electric Cooperation; Motoyuki Sato, Tohoku University

THP2.PM.1
Board PM.1
JOINT DESIGN OF TRANSMIT AND RECEIVE BEAMFORMING FOR MIMO RADAR
Ziyang Cheng, University of Electronic Science and Technology of China, China; Bin Liao, Shenzhen University, China; Jun Li, Julan Xie, University of Electronic Science and Technology of China, China

THP2.PM.2
Board PM.2
AN INVESTIGATION OF AN OPERATIONALLY VIABLE SOLUTION FOR MITIGATING WIND TURBINE CLUTTER BASED ON DUAL POLARIZATION WEATHER RADAR SIGNATURES
Amit Dutta, Colorado State University, United States; Evan Ruzanski, Vaisala, Inc., United States; V Chandrasekar, Colorado State University, United States

THP2.PM.3
Board PM.3
DESIGN OF A DIGITAL LOW-FREQUENCY GEOPHONE BASED ON 4TH-ORDER SIGMA-DELTA MODULATOR AND VELOCITY FEEDBACK
Xiaopeng Zhang, Xin Li, Tongdong Wang, Weiguo Xiao, Northwest Institute of Nuclear Technology, China

THP2.PM.4
Board PM.4
A RADAR FORWARD-LOOKING SUPER-RESOLUTION METHOD BASED ON SINGULAR VALUE WEIGHTED TRUNCATION
Xingyu Tuo, Yin Zhang, Deqing Mao, Yao Kang, Yulin Huang, University of Electronic Science and Technology of China, China

THP2.PM.5
Board PM.5
NEW INSIGHTS OF GROUND-BASED LAND SURFACE TEMPERATURE MEASUREMENTS PROTOCOLS FOR IMPROVING VALIDATION OF THERMAL INFRARED SATELLITE DATA
Jean-Pierre Lagouarde, Mark Irvine, Institut National de la Recherche Agronomique (INRA), France; Pierre Guillevic, University of Maryland, United States

THP2.PM.6
Board PM.6
PROPOSAL OF THREE-PORT DIELECTRIC WAVEGUIDE PROBES FOR HUMAN BLOOD GLUCOSE MONITORING
Seko Nagae, Akira Hirose, University of Tokyo, Japan

THP2.PM.7
Board PM.7
MULTI-UAV ARCHITECTURE FOR GROUND DATA COLLECTION
Emilian Vlasceanu, Dan Popescu, Loretta Ichim, University POLITEHNICA of Bucharest, Romania

THP2.PM.8
Board PM.8
VALIDATING GCOM-C TERRESTRIAL ECOLOGY PRODUCTS: HOW SHOULD IN-SITU OBSERVATION BE PERFORMED AT SATELLITE SCALE?
Tomoko Akitsu, Kenlo Nasahara, University of Tsukuba, Japan; Tatsuro Nakaji, Hokkaido University, Japan; Hajime Kobayashi, Tetsuo Okano, Shinsyu University, Japan; Nobuko Saigusa, National Institute for Environmental Studies, Japan; Masato Hayashi, Japan Aerospace Exploration Agency (JAXA), Japan; Reiko Ide, National Institute for Environmental Studies, Japan; Yoshiaki Honda, Koji Kajiwara, Chiba University, Japan; Kaoru Tachiiri, Hideki Kobayashi, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan; Kazuho Matsumoto, University of the Ryukyus, Japan; Toshiyuki Kobayashi, Japan Aerospace Exploration Agency (JAXA), Japan

THURSDAY POSTER

173

Thursday, August 1	09:40 - 10:40	Room 501-502: Area N
Session THP1.PN		Poster

Calibration

Session Chair: Toshiyoshi Kimura, Japan Aerospace Exploration Agency

THP1.PN.1
Board PN.1
EXTREME CASE OF SPECTRAL BAND DIFFERENCE CORRECTION BETWEEN THE OSIRIS-REX-NAVCAM2 AND DSCOVR-EPIC IMAGERS
Benjamin Scarino, SSAI, United States; David Doelling, National Aeronautics and Space Administration (NASA), United States; Conor Haney, Rajendra Bhatt, Arun Gopalan, SSAI, United States

THP1.PN.2
Board PN.2
SPECTRAL CALIBRATION OF NOAA-20 OMPS SENSOR DATA RECORD
Chunhui Pan, University of Maryland, United States; Lihang Zhou, Changyong Cao, Lawrence Flynn, Satya Kalluri, NOAA, United States

THP1.PN.3
Board PN.3
CALIBRATION AND VALIDATION OF CERES FM-6 ON NOAA-20 UTILIZING ONBOARD CALIBRATION SUBSYSTEMS FIRST 12 MONTHS OF OPERATIONS
Kory Priestley, National Aeronautics and Space Administration (NASA), United States; Susan Thomas, Nathaniel Smith, Robert Wilson, Science Systems and Applications, Inc., United States

THP1.PN.4
Board PN.4
RADIOMETRIC CROSS-CALIBRATION OF ZY3 SATELLITE WITH GF1 PMS/WFV AND LANDSAT-8 OLI
Hongzhao Tang, Junfeng Xie, Xinming Tang, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources, China; Qi Li, Peking University, China

THP1.PN.5
Board PN.5
CORRECTION OF THE BRDF EFFECTS ON SENTINEL-2 OCEAN IMAGES
Maria Kremezi, Vassilia Karathanassi, National Technical University of Athens, Greece

THP1.PN.6
Board PN.6
IMPROVED VICARIOUS RADIOMETRIC CALIBRATION METHOD CONSIDERING ADJACENCY EFFECT FOR HIGH RESOLUTION OPTICAL SENSORS
Lingling Ma, Ning Wang, Yongguang Zhao, Yaokai Liu, Xinhong Wang, Academy of Opto-Electronics, Chinese Academy of Sciences, China; Zhihong Ma, Chuanrong Li, Lingli Tang, Key Laboratory of Quantitative Remote Sensing Information Technology, Academy of Opto-Electronics, Chinese Academy of Sciences, China; Yonggang Qian, Academy of Opto-Electronics, Chinese Academy of Sciences, China

THP1.PN.7
Board PN.7
NOAA-20 VIIRS ON-ORBIT CALIBRATION AND PERFORMANCE UPDATE
Xiaoxiong (Jack) Xiong, NASA Goddard Space Flight Center, United States; Amit Angal, Science Systems and Applications, Inc., United States; James Butler, NASA Goddard Space Flight Center, United States; Kwofu (Vincent) Chiang, Ning Lei, Yonghong Li, Kevin Twedt, Science Systems and Applications, Inc., United States

THP1.PN.8
Board PN.8
GROUND SURFACE CALIBRATION SOURCES FOR EARTH OBSERVATION SEGMENTED TELESCOPE
Seichi Sato, Toshiyoshi Kimura, Japan Aerospace Exploration Agency (JAXA), Japan

THP1.PN.9
Board PN.9
CROSS-CALIBRATION OF FY-3C/MERSI BAND 1 USING SEAWIFS DATA
Xingwei He, Qi Han, Ning Kang, Qiang Guo, Yi Peng, National Satellite Meteorological Center, China Meteorological Administration, China

THP1.PN.10
Board PN.10
INTER-CALIBRATION OF NIGHTTIME LIGHT DATA BETWEEN DMSP/OLS AND NPP/VIIRS IN THE ECONOMIC CORRIDORS OF BELT AND ROAD INITIATIVE
Jinhu Bian, Ainong Li, Guangbin Lei, Zhengjian Zhang, Xi Nan, Li Liang, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China

THP1.PN.11
Board PN.11
CROSS-CALIBRATION OF CHINA MODERATE-HIGH RESOLUTION REMOTELY SENSED DATA WITH WIDE VIEW ANGLE
Aixia Yang, Bo Zhong, Shanlong Wu, Junjun Wu, Qinhuo Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth of Chinese Academy of Sciences, China; Qing Xiao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PN.12
Board PN.12
EVALUATION OF SUPERVIEW-1 ON-ORBIT RADIOMETRIC CALIBRATION WITH AIRBORNE HYPERSPECTROMETER
Yaokai Liu, Ning Wang, Yonggang Qian, Yongguang Zhao, Lingling Ma, Caixia Gao, Shi Qiu, Chuanrong Li, Lingli Tang, Academy of Opto-Electronics, Chinese Academy of Sciences, China

Thursday, August 1	15:20 - 16:20	Room 501-502: Area N
Session THP2.PN		Poster

UAV Sensors

Session Chair: Claude Rene Duguay, University of Waterloo

THP2.PN.1
Board PN.1
OPERATING PROCEDURES AND CALIBRATION OF A HYPERSPECTRAL SENSOR ONBOARD A REMOTELY PILOTED AIRCRAFT SYSTEM FOR WATER AND AGRICULTURE MONITORING
Kevin (Kyung-Kuk) Kang, H2O Geomatics Inc., Canada; Marie Hoekstra, Marzieh Foroutan, Amir Masoud Chegoonian, Kiana Zolfaghari, Claude Rene Duguay, University of Waterloo, Canada

THP2.PN.2
Board PN.2
EXPLORATION METICULOUS VARIATION FEATURES OF URBAN SURFACE TEMPERATURE BASED ON UAV THERMAL THERMOGRAPHY
Li Feng, Huihui Tian, Menmen Zhao, Youjing Zhang, Song Guo, Yanxia Liu, Hohai University, China

THP2.PN.3
Board PN.3
UAV-BASED POLARIMETRIC SYNTHETIC APERTURE RADAR FOR MINE DETECTION
Ralf Burr, Ulm University of Applied Sciences, Germany; Markus Schartel, Ulm University, Germany; Winfried Mayer, Endress+Hauser SE+Co. KG, Germany; Thomas Walter, Ulm University of Applied Sciences, Germany; Christian Waldschmidt, Ulm University, Germany

THP2.PN.4
Board PN.4
DRONE IMAGE STITCHING GUIDED BY ROBUST ELASTIC WARPING AND LOCALITY PRESERVING MATCHING
Linbo Luo, Qi Wan, Jun Chen, Yongtao Wang, China University of Geosciences, China; Xiaoguang Mei, Wuhan University, China

THP2.PN.5
Board PN.5
PARKING SPACE INFORMATION MONITORING BY MILLIMETER WAVE SAR BASED ON UNMANNED AERIAL VEHICLE
Minghui Li, Yongchao Zhang, Rufei Wang, Junjie Wu, Yulin Huang, Yin Zhang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP2.PN.6
Board PN.6
A NOVEL MOSAIC METHOD FOR UAV-BASED HYPERSPECTRAL IMAGES
Junyong Fang, Xiao Wang, Tianyi Zhu, Xue Lie, Xiaohong Zhang, Dong Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP2.PN.7
Board PN.7
ASSESSING VIS CALCULATED FROM UAS-ACQUIRED MULTISPECTRAL IMAGING TO DETECT IRON CHLOROSIS IN GRAIN SORGHUM
Isabel A. Garcia, Michael J. Starek, Texas A&M University Corpus Christi, United States; Michael J. Brewer, Texas A&M AgriLife Research and Extension Center, United States

THP2.PN.8
Board PN.8
RICE LODGING AREA EXTRACTION BASED ON YCBCR SPATIAL AND TEXTURE FEATURES
Yang Ding, Dongyan Zhang, Xin Zhao, Dong Liang, National Engineering Research Center for Agro-Ecological Big Data Analysis & Application, China; Shizhou Du, Institute of Crops. Anhui Academy of Agricultural Sciences Hefei, China

THP2.PN.9
Board PN.9
LOBE DIFFERENCING CORRELATING RADIOMETER (LDCR) DIGITAL CORRELATOR SPECTRAL CALIBRATION AND CHARACTERIZATION
Aravind Venkitasubramony, Eryan Dai, Albin Gasiewski, University of Colorado, United States; Maciej Stachura, Jack Elston, Blackswift Technologies LLC, United States

THP2.PN.10
Board PN.10
A UAV-BASED MULTI-SENSOR SYSTEM FOR EXPLORING VERTICAL DISTRIBUTION OF AEROSOLS
Shuang Liu, Fangjie Yu, Ge Chen, Ocean University of China, China

THP2.PN.11
Board PN.11
MONITORING THE BRAZILIAN SAVANNA WITH LIDAR AND RGB SENSORS ONBOARD REMOTELY PILOTED AIRCRAFT SYSTEMS
Manuel Ferreira, Leomar Alves Júnior, Federal University of Goiás, Brazil; Rafael Albuquerque, Universidade de São Paulo, Brazil; Eben Broadbent, University of Florida, United States; Danilo de Almeida, Escola Superior Luiz de Queiroz, Brazil; Felipe Avino, World Wildlife Fund, Brazil; Cassio Cezare, Federal University of Goiás, Brazil; Angelica Zambrano, Ben Wilkinson, University of Florida, United States; Marcelo Oliveira-da-Costa, World Wildlife Fund, Brazil

THP2.PN.12
Board PN.12
ACCURACY ESTIMATION OF A LOW-COST GPS RECEIVER USING LANDMARKS ON AERIAL IMAGES
Raul A. Garcia-Huerta, Ivan E. Villalon-Turrubiates, Luis E. González-Jiménez, Instituto Tecnológico y de Estudios Superiores de Occidente, Mexico; Gerardo Allende-Alba, German Aerospace Center (DLR), Germany

Thursday, August 1	09:40 - 10:40	Room 501-502: Area O
Session THP1.PO		**Poster**

Data Management and Systems I

Session Co-Chairs: Reginald Blake, New York City College of Technology; Qian Zhan, China University of Geosciences

THP1.PO.1
Board PO.1
AN IMPROVED REMOTE SENSING IMAGE RETRIEVAL USING ENSEMBLE NEURAL NETWORKS
Caihong Ma, Jianbo Duan, Chen Fu, Jianbo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PO.2
Board PO.2
QUANTITATIVE EVALUATION FOR THE BLOOMING EFFECT OF NIGHTTIME LIGHT DATA IN CHINA
Yang Hu, Xin Cao, Jin Chen, Beijing Normal University, China

THP1.PO.3
Board PO.3
A MODEL REPRESENTATION APPORACH BASED ON COMPUTATIONAL CHARACTERISTICS FOR DISASTER MONITORING
Quan Zou, Southwest University, China; Guoqing Li, Wenyang Yu, Chinese Academy of Sciences, China

THP1.PO.4
Board PO.4
TOWARDS INGESTION PROCESSES OF KOMPSAT DATA IN OPEN DATA CUBE ON OPEN SOURCE CLOUD COMPUTING ENVIRONMENT
Kwangseob Kim, Kiwon Lee, Hansung University, Korea (South)

THP1.PO.5
Board PO.5
ADVERSARIAL HASH-CODE LEARNING FOR REMOTE SENSING IMAGE RETRIEVAL
Chao Liu, Jingjing Ma, Xu Tang, Xiangrong Zhang, Licheng Jiao, Xidian University, China

THP1.PO.6
Board PO.6
ANALYSIS OF THE THERMAL ENVIRONMENT IN PEDESTRIAN SPACE USING 3D THERMOGRAPHY GENERATED WITH UNMANNED AERIAL VEHICLES AND INFRARED CAMERAS
Xuexiu Zhao, Jiang He, Yanwen Luo, Nanxiong Huang, Yilan Ni, College of Civil Engineering and Architecture, Guangxi University, China

THP1.PO.7
Board PO.7
OPERATIONAL LARGE AREA MARITIME MONITORING USING SYNTHETIC APERTURE RADAR AND TRANSPONDER DATA: A SOUTH AFRICAN PERSPECTIVE
Colin Schwegmann, Council for Scientific and Industrial Research, South Africa; Waldo Kleynhans, University of Pretoria, South Africa; Brian Salmon, University of Tasmania, Australia; Lizwe Mdakane, Rory Meyer, Arno Duvenhage, Faheem Sima, Council for Scientific and Industrial Research, South Africa

THP1.PO.8
Board PO.8
THREE-DIMENSIONAL INTEGRATED SYSTEM FOR MULTI-SOURCE HETEROGENEOUS DATA
Ling Ding, Institute of Earthquake Forecasting, China Earthquake Administration, China; Hongyi Li, Changmiao Hu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Wenlong Liu, First Monitoring and Application Center, China Earthquake Administration, China

THP1.PO.9
Board PO.9
THE DATA PREPARATION RESEARCH ON GLOBAL MULTI-SOURCE SYNERGIZED QUANTITATIVE REMOTE SENSING PRODUCTION SYSTEM
Hongyi Li, Ping Tang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PO.10
Board PO.10
A RAPID ALBEDO INVERSION METHOD FROM NADIR REFLECTANCE BASED ON MODIS BRDF PRODUCT
Hu Zhang, Lei Chen, Yi Lian, Pengfei Liu, Tianjin Normal University, China; Yadong Dong, Beijing Normal University, China; Da Qian, Tianjin Normal University, China

Thursday, August 1	15:20 - 16:20	Room 501-502: Area O
Session THP2.PO		**Poster**

Remote Sensing Data Policy and Decisions II

Session Co-Chairs: Qiming Zhang, University of Electronic Science and Technology of China; Kenji Ose, IRSTEA

THP2.PO.1
Board PO.1
THE SURFACE URBAN HEAT ISLAND IN 285 CHINESE CITIES: SPATIAL PATTERN AND DRIVER
Yi'na Hu, Kun Qi, Arizona State University, United States; Tao Hu, Huazhong Agricultural University, China

THP2.PO.2
Board PO.2
USING DMSP/OLS NIGHTTIME LIGHT TO ESTIMATE ELECTRIC POWER CONSUMPTION: PERSPECTIVE FROM TRANSFERABILITY ACROSS YEARS
Kun Qi, Yi'na Hu, Arizona State University, United States; Weixin Zhai, Chengqi Cheng, Bo Chen, Peking University, China

THP2.PO.3
Board PO.3
DYNAMIC EVOLUTION OF SURFACE URBAN HEAT ISLAND IN BEIJING
Tao Hu, Huazhong Agricultural University, China; Yi'na Hu, Kun Qi, Arizona State University, United States

THP2.PO.4
Board PO.4
DELIMITING THE RED LINE OF ECOLOGICALLY FUNCTIONAL SPACE FOR MANAGEMENT AND CONTROL IN COASTAL DEVELOPMENT ZONE—— CASE STUDY OF DAFENG DISTRICT, JIANGSU PROVINCE
Zhifeng Jin, Jing Wang, Wuhan University, China; Fengwu Zhu, Jiangsu Research Centre of Land and Resources, China; Xuesong Kong, Wuhan University, China; Zhenshan Wang, Ministry of Land and Resource, China

THP2.PO.5
Board PO.5
NPP-BASED EVALUATION OF ECOLOGICAL ASSETS IN CHINA'S ECOLOGICAL CONSERVATION REDLINE AREA
Mengjia Xu, Yan Wang, Changxin Zou, Dong Liu, Nanjing Institute of Environmental Sciences, Ministry of Ecology and Environment, China

THP2.PO.6
Board PO.6
THE INFLUENCE OF DIFFERENT URBAN AND RURAL SELECTION METHODS ON THE SPATIAL VARIATION OF URBAN HEAT ISLAND INTENSITY
Qiming Zhang, Min Zhang, University of Electronic Science and Technology of China, China; Weiqi Zhou, Chinese Academy of Sciences, China; Wenbo Xu, Jian Zhang, University of Electronic Science and Technology of China, China

THP2.PO.7
Board PO.7
RURAL LAND SURFACE TEMPERATURE GRADIENT CHANGE AND ITS MECHANISM ANALYSIS IN 32 CITIES IN CHINA
Qiming Zhang, Min Zhang, University of Electronic Science and Technology of China, China; Weiqi Zhou, Chinese Academy of Sciences, China; Wenbo Xu, University of Electronic Science and Technology of China, China

THP2.PO.8
Board PO.8
REMOTE SENSING FOR ASSESSING NATURAL CAPITAL IN INCLUSIVE WEALTH OF NATIONS: CURRENT CAPABILITIES AND GAPS
Eric Magliarditi, Afreen Siddiqi, Olivier de Weck, Massachusetts Institute of Technology, United States

THP2.PO.9
Board PO.9
USING REMOTE SENSING TO MONITOR THE WATER CHANGE OF XIONG'AN NEW AREA
Xiaoya Wang, Weiguo Jiang, Jing Li, Jianjun Wu, Yunhao Chen, Adu Gong, Hong Tang, Jianwei Yue, Beijing Normal University, China

THP2.PO.10
Board PO.10
ENVIRONMENTAL POLICIES ASSESSMENT OF AIR POLLUTION AND SPATIO-TEMPORAL CHANGE OF TROPOSPHERIC NO2 COLUMN DENSITY OF '2+26' CITIES IN THE PAST NINE YEARS BASED ON OMI PRODUCT
Chunyan Zhou, Qing Li, Zhongting Wang, Lianhua Zhang, Pengfei Ma, Hui Chen, Satellite Environmental Center, China; Jun Sun, Lin Ge, Jinan Environmental Monitoring Center Station, China; Sihan Liu, Yuhuan Zhang, Satellite Environmental Center, China; Zunjian Bian, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Yingxia He, LinYi Environmental Monitoring Station, China

THP2.PO.11
Board PO.11
WATER SURFACE MONITORING OF QINGTONGXIA WEST MAIN CANAL BY SENTINEL-2 SATELLITE OBSERVATIONS
Rui Li, Jiancheng Shi, Tianjie Zhao, Jinmei Pan, Aerospace Information Research Institute, Chinese Academy of Sciences, China

THP2.PO.12
Board PO.12
THE IEEE GRSS FARS TECHNICAL COMMITTEE DOCUMENT ON THE WORLD RADIOCOMMUNICATION CONFERENCE 2019 AGENDA ITEMS AFFECTING REMOTE SENSING
Paolo de Matthaeis, NASA Goddard Space Flight Center, United States; Sandra Cruz-Pol, National Science Foundation, United States; Roger Oliva, European Space Agency (ESA), United States; Yan Soldo, NASA Goddard Space Flight Center, United States

THURSDAY POSTER

175

Thursday, August 1	09:40 - 10:40	Room 501-502: Area P
Session THP1.PP		Poster

Data Management and Systems II

Session Co-Chairs: Weiguo Han, University Corporation for Atmospheric Research; Reginald Blake, New York City College of Technology

THP1.PP.1
Board PP.1
SKEWNESS-ADJUSTED ROBUST STATISTICAL ASSESSMENT ON GOOGLES EARTH 3D MODELS: RAPPLEE RIDGE
Ademir Marques Junior, Rafael Kenji Horota, Eniuce Menezes de Souza, Pedro Rossa, Alysson Soares Aires, Maurício Roberto Veronez, Luiz Gonzaga Jr, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil; Caroline Lessio Cazarin, Petróleo Brasileiro SA, Brazil

THP1.PP.2
Board PP.2
THOUGHTS ON THE CONSTRUCTION OF UNIFIED SPATIAL DATA MANAGE SYSTEM FOR ECO-ENVIRONMENTAL PROTECTION
Nan Lu, Ecology Environment Ministration, China; Haijian Ma, China Earthquake Administration, China; Jianchao Wang, Ministry of Ecology and Environment of China, China

THP1.PP.3
Board PP.3
BIG DATA ANALYSIS OF REMOTE SENSING MONITORING OF LAND COVER IN WUHAN CITY FROM 2000 TO 2017
Zhipeng Wang, Jining Yan, Luxiao Cheng, Xiaohui Huang, Liang Huang, Lizhe Wang, China University of Geosciences (Wuhan), China

THP1.PP.4
Board PP.4
A SPATIO-TEMPORAL COUPLED METHOD FOR RETRIEVING REMOTE SENSING IMAGE DATA OF REPEATING SUN-SYNCHRONOUS ORBIT SATELLITES
Meng Jin, Yuqi Bai, Tsinghua University, China

THP1.PP.5
Board PP.5
PRACTICES AND EXPERIENCES IN HIGH VOLUMES OF SATELLITE DATA MANAGEMENT
Weiguo Han, University Corporation for Atmospheric Research, United States; Matthew Jochum, National Oceanic and Atmospheric Administration, United States

THP1.PP.6
Board PP.6
BUILDING AND DYNAMICALLY MANAGING WORKFLOWS FOR PROCESSING REMOTE SENSING DATA IN DISTRIBUTED HIGH-THROUGHPUT ENVIRONMENT
Ruobing Zheng, University of Chinese Academy of Sciences, China; Yingchao Piao, Ze Luo, Baoping Yan, Computer Network Information Center, Chinese Academy of Sciences, China; Miron Livny, University of Wisconsin-Madison, United States

THP1.PP.7
Board PP.7
ADDITIONAL RAIN GAUGE SITE APPROPRIATION FOR MONITORING PRECIPITATION IN SINDH, PAKISTAN USING GEOSPATIAL TECHNIQUES & MULTI-CRITERIA DECISION MAKING
Sadaf Sadiq, Rao Zahid Khalil, Saad Malik, Saad ul Haque, Institute of Space Technology, Pakistan

THP1.PP.8
Board PP.8
AUTOMATED BURNED AREA DETECTION AND VIOLATION MONITORING USING LANDSAT-TM AND VHR DATA: AN ENGINEERING AND ECONOMIC STUDY TO ANALYSE LOCAL GOVERNANCE PERFORMANCE IN SARDINIA (ITALY)
Davide De Santis, Gabriele Beccari, Fabio Del Frate, Luisa Corrado, Germana Corrado, Giovanni Schiavon, University of Rome Tor Vergata, Italy

THP1.PP.9
Board PP.9
REMOTE SENSING OF VEGETATION CANOPY FLUORESCENCE WITH WIDE-AREA IMAGE ACQUISITION
Kenji Masuda, Shizuoka University, Japan; Naohiro Manago, Hiroaki Kuze, Chiba University, Japan

Thursday, August 1	09:40 - 10:40	Room 503: Area Q
Session THP1.PQ		Poster

Remote Sensing for Crop Classification, Mapping and Monitoring II

Session Co-Chairs: Seungbum Kim, NASA Jet Propulsion Laboratory; Kuniaki Uto, Tokyo Institute of Technology

THP1.PQ.1
Board PQ.1
ASSESSMENT OF AGRICULTURAL PRACTICES FROM SENTINEL 1 & 2 IMAGES APPLIED ON RICE FIELDS TO GET A FARM TYPOLOGY IN THE CAMARGUE REGION
Dominique Courault, Laure Hossard, Fabrice Flamain, INRA, France; Emile Ndikumana, Dinh Ho Tong Minh, Nicolas Baghdadi, IRSTEA, France; Valérie Demarez, Centre d'Etude Spatial de la BIOsphère (CESBIO), France

THP1.PQ.2
Board PQ.2
NDVI-BASED WINTER WHEAT RESPONSES TO HEATWAVE IN THE NORTH CHINA PLAIN
Zengfeng Zhang, Jiangsu JinNingDa Real Estate Appraisal Planning Surveying and Consulting Co. Ltd, China; Lian Song, Shulin Deng, Qian Zhang, Nanjing University, China; Ji Jian, Chengdu University of Technology, China

THP1.PQ.3
Board PQ.3
LAND SURFACE TEMPERATURE DECOMPOSITION IN OASIS UTILIZING A TWO-SOURCE ENERGY BALANCE MODEL BASED ON THE PRIESTLEY-TAYLOR APPROACH
Runke Wang, Jian Wang, Hongyi Li, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China; Donghang Shao, University of Electronic Science and Technology of China, China; Xiaohua Hao, Weiguo Wang, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

THP1.PQ.4
Board PQ.4
MONITORING SPATIAL VARIANCE OF WINTER WHEAT GROWTH VIA CHRIS IMAGE
Xiaohe Gu, Meiyan Shu, Guijun Yang, Xiaoyu Song, Xingang Xu, Beijing Research Center for Information Technology in Agriculture, China

THP1.PQ.5
Board PQ.5
POTENTIAL OF RED EDGE SPECTRAL BANDS IN FUTURE LANDSAT SATELLITES ON AGROECOSYSTEM CANOPY CHLOROPHYLL CONTENT RETRIEVAL
Zhaoyu Cui, John Kerekes, Rochester Institute of Technology, United States

THP1.PQ.6
Board PQ.6
AN ATTEMPT TO EXTRACT PADDY FIELDS USING POLARIMETRIC DECOMPOSITION OF PALSAR-2 DATA
Chinatsu Yonezawa, Tohoku University, Japan

THP1.PQ.7
Board PQ.7
EFFICIENT CORN CULTIVATED AREA IDENTIFICATION WITH MULTITEMPORAL SYNTHETIC APERTURE RADAR AND OPTICAL IMAGE IN GOOGLE EARTH ENGINE CLOUD PLATFORM
Fuyou Tian, Bingfang Wu, Hongwei Zeng, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PQ.8
Board PQ.8
PLOT-SCALE RICE GRAIN YIELD ESTIMATION USING UAV-BASED REMOTELY SENSED IMAGES VIA CNN WITH TIME-INVARIANT DEEP FEATURES DECOMPOSITION
Qi Yang, Liangsheng Shi, Lin Lin, Wuhan University, China

THP1.PQ.9
Board PQ.9
CROP PHENOLOGY CLASSIFICATION USING A REPRESENTATION LEARNING NETWORK FROM SENTINEL-1 SAR DATA
Subhadip Dey, Dipankar Mandal, Vineet Kumar, Biplab Banerjee, Indian Institute of Technology Bombay, India; Juan Manuel Lopez-Sanchez, University of Alicante, Spain; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Avik Bhattacharya, Indian Institute of Technology Bombay, India

THP1.PQ.10
Board PQ.10
FRESHNESS OF PLEUROTUS DETERMINED BY ANALYSIS OF NEAR-INFRARED SPECTRA
Bing-Hong Hong, Chao-Cheng Wu, National Taipei University of Technology, Taiwan; Hsian-Min Chen, Veterans General Hospital, Taiwan; Wei-Shen Lo, Tsang-Sen Liu, Horng-Yuh Guo, Taiwan Agriculture Research Institute, Taiwan; Yen-Chieh Ouyang, National Chung Hsing University, Taiwan; Hsiao-Chi Li, Fu Jen Catholic University, Taiwan

THP1.PQ.11
Board PQ.11
DETECTION OF THE RESPONSE OF CHLOROPHYLL FLUORESCENCE TO WATER STRESS THROUGH THE EXPERIMENT AND SATELLITE DATA
Zhuoya Ni, National Satellite Meteorological Center, China Meteorological Administration, China; Hongyuan Huo, Beijing University of Technology, China

Thursday, August 1	15:20 - 16:20	Room 503: Area Q
Session THP2.PQ		Poster

New Remote Sensing Methods for Estimating Crop Properties

Session Chair: Liping Di, George Mason University

THP2.PQ.1
Board PQ.1
COMPARISON OF TWO MODELING APPROACHES TO SIMULATE RICE PRODUCTION IN THE CAMARGUE REGION USING SENTINEL 2 DATA
Dominique Courault, UMR 1114 EMMAH INRA, UAPV University of Avignon, France; Valérie Demarez, Centre d'Etude Spatial de la BIOsphère (CESBIO) / University of Paul Sabatier, France; Laure Hossard, INRA, UMR 951 Innovation, France; Fabrice Flamain, INRA, université d'Avignon et des pays du Vaucluse, France; Emile Ndikumana, Din Ho-Tong-Minh, Nicolas Baghdadi, IRSTEA, University of Montpellier, France; Françoise Ruget, INRA, université d'Avignon et des pays du Vaucluse, France

THP2.PQ.2
Board PQ.2
COMPARISON RADAR VEGETATION INDEX (RVI) WITH CONVENTIONAL METHODS FOR PADDY RICE FIELD, LOTUS POND AND SOYBEAN
Yasuharu Yamada, National Agriculture and Food Research Organization, Japan

THP2.PQ.3
Board PQ.3
EXPLOITING THE TEXTURAL INFORMATION OF UAV MULTISPECTRAL IMAGERY TO MONITOR NITROGEN STATUS IN RICE
Hengbiao Zheng, Meng Zhou, Yan Zhu, Tao Cheng, Nanjing Agricultural University, China

THP2.PQ.4
Board PQ.4
MACHINE LEARNING METHODOLOGIES FOR PADDY YIELD ESTIMATION IN INDIA: A CASE STUDY
Ranjini B Guruprasad, Kumar Saurav, Sukanya Randhawa, IBM, India

THP2.PQ.5
Board PQ.5
A HEURISTIC EXPLORATION OF BRIDGING PHENOLOGY-BASED AND MACHINE LEARNING-BASED METHODS FOR PADDY RICE MAPPING WITH SENTINEL-2 IMAGES
Chengkang Zhang, Hongyan Zhang, Wuhan University, China; Yi Liu, NTNU-Norwegian University of Science and Technology, Norway; Liangpei Zhang, Wuhan University, China

THP2.PQ.6
Board PQ.6
MULTI OUTPUT REGRESSIONS FOR ESTIMATING CANOLA BIOPHYSICAL PARAMETERS FROM POLSAR DATA
Z.Meltem Sahin, Esra Erten, Gülsen Kaya, Istanbul Technical University, Turkey

THP2.PQ.7
Board PQ.7
DRONE-BASED OPTICAL, THERMAL, AND 3D SENSING FOR DIAGNOSTIC INFORMATION IN SMART FARMING – SYSTEMS AND ALGORITHMS –
Yoshio Inoue, University of Tokyo, Japan; Masaki Yokoyama, Institute for Agro-Environmental Sciences, NARO (NIAES), Japan

THP2.PQ.8
Board PQ.8
LINKING CLOUD COVER PATTERNS TO LAND SURFACE TEMPERATURE CHANGE IN LANDSAT 8 IMAGES
Shifeng Li, Zhihao Qin, Wenhui Du, Chinese Academy of Agricultural Sciences, China; Jinlong Fan, National Satellite Meteorological Center, China Meteorological Administration, China; Shuhe Zhao, Nanjing University, China; Offer Rozenstein, Agricultural Research Organization, Volcani Center, Israel

THP2.PQ.9
Board PQ.9
TEMPORAL DETECTION OF PESTICIDE RESIDUES IN TEA LEAVES USING HYPERSPECTRAL SENSING
Jayantrao Mohite, Suryakant Sawant, Tata Consultancy Services, India; Kailyanjeet Borah, Amalgamated Plantations Private Limited, India; Srinivasu Pappula, Tata Consultancy Services, India

THP2.PQ.10
Board PQ.10
STABILITY ESTIMATION OF A SAMPLE SIZE FOR INTERANNUAL MONITORING USING MICRO SATELLITES
Shinya Odagawa, Daisuke Seguchi, Toshio Okumura, Remote Sensing Technology Center of Japan, Japan

THP2.PQ.11
Board PQ.11
MULTISPECTRAL AND MODIFIED CAMERAS COMPARISON IN AGRICULTURAL MAPPING WITH UNMANNED AERIAL VEHICLE (UAV)
Rodrigo Raupp Bosque, Leonardo Campos Inocencio, Maurício Roberto Veronez, Luiz Gonzaga da Silveira Jr., Fabiane Bordin, Ademir Marques Jr., Rafael Kenji Horota, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil

THURSDAY POSTER

177

Thursday, August 1 09:40 - 10:40 Room 503: Area R	**Thursday, August 1** 15:20 - 16:20 Room 503: Area R
Session THP1.PR Poster	**Session THP2.PR** Poster

Remote Sensing for Crop Classification, Mapping and Monitoring III

Session Co-Chairs: Subit Chakrabarti, Indigo; Alejandro Monsiváis Huertero, Instituto Politécnico Nacional, ESIME Ticoman

THP1.PR.1
Board PR.1
ESTIMATION OF BIOMASS IN WINTER WHEAT (TRITICUM AESTIVUM L.) USING POLARIMETRIC WATER-CLOUD MODEL
Wangfei Zhang, Southwest Forestry University, China; Erxue Chen, Zengyuan Li, Lei Zhao, Zhihai Gao, Chinese Academy of Forestry, China

THP1.PR.2
Board PR.2
ESTIMATION OF THE LEAF AREA INDEX USING A MODIFIED TRIANGULAR DIFFERENCE VEGETATION INDEX
Linsheng Huang, Jing Jiang, Furan Song, Jinling Zhao, Anhui University, China; Wenjiang Huang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PR.3
Board PR.3
CROP PHENOLOGY RETRIEVAL FROM POLARIMETRIC DECOMPOSITION AND RANDOM FOREST ALGORITHM DURING SMAPVEX16-MB CAMPAIGN
Hongquan Wang, Ramata Magagi, Kalifa Goïta, Melanie Trudel, University of Sherbrooke, Canada; Heather McNairn, Jarrett Powers, Agriculture and Agri-Food Canada, Canada

THP1.PR.4
Board PR.4
TEXTURE AND SHAPE FEATURES FOR GRASS WEED CLASSIFICATION USING HYPERSPECTRAL REMOTE SENSING IMAGES
Adnan Farooq, University of New South Wales, Australia; Jun Zhou, Griffith University, Australia; Xiuping Jia, University of New South Wales, Australia

THP1.PR.5
Board PR.5
ESTIMATION MODEL OF WINTER WHEAT YIELD BASED ON UAV HYPERSPECTRAL DATA
Siqi Yang, Ling Hu, Haobo Wu, Wenjie Fan, Huazhong Ren, Peking University, China

THP1.PR.6
Board PR.6
THE IMPACT OF CANOPY STRUCTURE ASSUMPTION ON THE RETRIEVAL OF GAI AND LEAF CHLOROPHYLL CONTENT FOR WHEAT AND MAIZE CROPS
Jingyi Jiang, Marie Weiss, Shouyang Liu, Frederic Baret, Institut National de la Recherche Agronomique (INRA), France

THP1.PR.7
Board PR.7
OLIVE TREES STRESS DETECTION USING SENTINEL-2 IMAGES
Ioannis Navrozidis, Thomas Alexandridis, Dimitrios Moshou, Xanthoula Eirini Pantazi, Afroditi Alexandra Tamouridou, Centre for Research and Technology Hellas, Greece; Dmitrii Kozhukh, Plan4all, Czech Republic; Fabien Castel, Atos Origin Integration SAS, France; Anastasia Lagopodi, Aristotle University of Thessaloniki, Greece; Zois Zartaloudis, Agroecosystem LP, Greece; Spiros Mourelatos, Ecodevelopment SA, Greece; Francisco Javier Nieto de Santos, Atos Spain SA, Spain

THP1.PR.8
Board PR.8
GARLIC MAPPING FOR SENTINEL-2 TIME-SERIES DATA USING A RANDOM FOREST CLASSIFIER
Zhaoyang Chai, Hongyan Zhang, Wuhan University, China; Xiong Xu, Tongji University, China; Liangpei Zhang, Wuhan University, China

THP1.PR.9
Board PR.9
ESTIMATING THE NUMBER OF HARVESTS PER RICE PADDY FIELD
Caitlin Kontgis, Kornelijus Survila, Rick Chartrand, Dylan Rich, Descartes Labs, United States

THP1.PR.10
Board PR.10
THE WHEAT BIOMASS ESTIMATION BASED ON GENETIC ALGORITHM FEATURE SELECTION METHOD USING C-BAND POLSAR DATA
Kunpeng Xu, Erxue Chen, Zengyuan Li, Lei Zhao, Institute of Forest Resources Information Technique, Chinese Academy of Forestry, China; Wangfei Zhang, College of Forestry, Southwest Forestry University, China; Xiangxing Wan, Institute of Forest Resources Information Technique, Chinese Academy of Forestry, China

THP1.PR.11
Board PR.11
MAIZE CROP AND WEEDS SPECIES DETECTION BY USING UAV VNIR HYPERPECTRAL DATA
Stefano Pignatti, Institute of Methodologies for Environmental Analysis IMAA–CNR, Italy; Raffaele Casa, Antoine Harfouche, University of Tuscia, Italy; Wenjiang Huang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Angelo Palombo, Simone Pascucci, Institute of Methodologies for Environmental Analysis IMAA–CNR, Italy

THP1.PR.12
Board PR.12
KORE APPLICATION: POTATOES YIELD ASSESSMENT
Nina Sofia Wyniawskyj, Milena Napiorkowska, David Petit, Pritimoy Podder, Deimos Space UK, United Kingdom; Jim Wilson, Doug Woods, Soil Essentials, United Kingdom

Remote Sensing for Crop Classification, Mapping and Monitoring IV

Session Co-Chairs: Heather McNairn, Agriculture and Agri-Food Canada; Mehdi Hosseini, Carleton Univeristy

THP2.PR.1
Board PR.1
EVALUATING YIELD VARIABILITY OF CORN AND SOYBEAN USING LANDSAT-8, SENTINEL-2 AND MODIS IN GOOGLE EARTH ENGINE
Feng Gao, Martha Anderson, USDA Agricultural Research Service, United States

THP2.PR.2
Board PR.2
ESTIMATING PADDY RICE AREA IN SOUTHREN CHINA WITH MULTI-TEMPORAL MODIS DATA
Shilei Feng, Binbin He, Hongguo Zhang, Minfeng Xing, Yanru Zhou, University of Electronic Science and Technology of China, China

THP2.PR.3
Board PR.3
CORN BIOMASS ESTIMATION USING SENTINEL-2 AND VENμS DATA BASED ON A SIMPLE LIGHT USE EFFICIENCY METHOD
Chunhua Liao, Jinfei Wang, University of Western Ontario, Canada; Bo Shan, A&L Canada Laboratories Inc., Canada

THP2.PR.4
Board PR.4
MAPPING RICE CULTIVATED AREA WITH TIME-SERIES NDVI IMAGERY AND AUTOMATIC THRESHOLDING ALGORITHM IN THE MIDDLE-LOWER YANGTZE RIVER REGION OF CHINA
Bolun Li, Chengye Li, Rongrong Li, Runping Shen, Nanjing University of Information Science and Technology, China; Xiaofeng Li, Northeast Institue of Geography and Agriculture, Chinese Academy of Sciences, China; Zongliang Yang, University of Texas at Austin, China

THP2.PR.5
Board PR.5
MONITORING MAIZE LODGING DISASTER VIA MULTI-TEMPORAL REMOTE SENSING IMAGES
Xiaohe Gu, Qian Sun, Guijun Yang, Xiaoyu Song, Xingang Xu, Beijing Research Center for Information Technology in Agriculture, China

THP2.PR.6
Board PR.6
REMOTE SENSING FOR ASSESSING DROUGHT INSURANCE CLAIMS IN CENTRAL EUROPE
Konrad Heidler, Technische Universität München, Germany; Arnaud Fietzke, itestra GmbH, Germany

THP2.PR.7
Board PR.7
VIRTUAL CONSTELLATION OF X-C AND L BAND SAR IMAGES TO ASSESS SOIL AND VEGETATION WATER CONTENT IN AGRICULTURAL AREAS
Giovanni Cuozzo, Felix Greifeneder, Antonio Padovano, Eurac Research, Italy; Romina Solorza, Argentinean Space Agency, Argentina; Giacomo Bertoldi, Claudia Notarnicola, Eurac Research, Italy

THP2.PR.8
Board PR.8
IDENTIFICATION OF PRECISION VEGETATION VARIATIONS OF CHINESE CABBAGE USING UAV AND SENSORS
Dong-Ho Lee, Heong-Sup Shin, Jong-Hwa Park, Chungbuk National University, Korea (South)

THP2.PR.9
Board PR.9
CROP CLASSIFICATION WITH AIRBORNE HYPERSPECTRAL IMAGES FROM CONCAVE GRATING SYSTEM
Hsuan Ren, Chih-Hsuan Huang, National Central University, Taiwan

THP2.PR.10
Board PR.10
NEW MODIS VEGETATION INDEX FOR BORO RICE MODEL USING 3D PLOT AND K-NN: BANGLADESH HAOR REGION PERSPECTIVE
Kazi A. Kalpoma, Anik Chowdhury, Nowshin Nawar Arony, Mehjabin Nowshin, Ahsanullah University of Science and Technology, Bangladesh; Jun-ichi Kudoh, Tohoku University, Japan

THP2.PR.11
Board PR.11
BORO RICE MODEL FOR HAOR REGION OF BANGLADESH BASED ON MODIS NDVI IMAGES
Kazi A. Kalpoma, Nowshin Nawar Arony, Anik Chowdhury, Mehjabin Nowshin, Ahsanullah University of Science and Technology, Bangladesh; Jun-ichi Kudoh, Tohoku University, Japan

THP2.PR.12
Board PR.12
BORO RICE YIELD ESTIMATION MODEL USING MODIS NDVI DATA FOR BANGLADESH
Md. Samiul Alam, Kazi Kalpoma, Md. Sanaul Karim, Abdullah Al Sefat, Ahsanullah University of Science and Technology, Bangladesh; Jun-ichi Kudoh, Tohoku University, Japan

Thursday, August 1	09:40 - 10:40	Room 503: Area S
Session THP1.PS		**Poster**

Big Data and Machine Learning - Machine Learning for SAR and Meteorology

Session Chair: Shilei Fu, Key Lab for Information Science of Electromagnetic Waves (MoE), Fudan University

THP1.PS.1
Board PS.1
SAR IMAGE SIMULATION BY GENERATIVE ADVERSARIAL NETWORKS
Xianjie Bao, Zongxu Pan, Lei Liu, Bin Lei, Institute of Electronics, Chinese Academy of Sciences, China

THP1.PS.3
Board PS.3
SAR IMAGE GENERATION WITH SEMANTIC-STATISTICAL CONVOLUTION
Dong-Xiao Yue, Feng Xu, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, China; Alejandro C. Frery, Federal University of Alagoas, Brazil; Ya-Qiu Jin, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, China

THP1.PS.4
Board PS.4
ARCTIC OCEAN SURFACE TYPE CLASSIFICATION USING SAR IMAGES AND MACHINE LEARNING ALGORITHMS.
Ekaterina Balashova, Elizaveta Zabolotskikh, Kirill Khvorostovsky, Russian State Hydrometeorological University, Russia; Bertrand Chapron, Ifremer, France

THP1.PS.5
Board PS.5
A TENSOR NETWORK FOR TROPICAL CYCLONE WIND SPEED ESTIMATION
Xingxing Yu, Zhao Chen, Guangchen Chen, He Zhang, Junfeng Zhou, School of Computer Science and Technology, Donghua University, China

THP1.PS.6
Board PS.6
ESTIMATING TYPHOON INTENSITY WITH CONVOLUTIONAL NEURAL NETWORK
Chong Wang, Qing Xu, Hohai University, China; Gang Zheng, Second Institute of Oceanography, Ministry of Natural Resources, China; Xiaofeng Li, Key Laboratory of Ocean Circulation and Waves, Institute of Oceanography, Chinese Academy of Sciences and Center for Ocean Mega-Science, United States

THP1.PS.7
Board PS.7
A FULLY AUTOMATIC AND CLOUD-BASED P-SBAS DINSAR PIPELINE FOR SENTINEL-1 PROCESSING
Claudio De Luca, Institute for Electromagnetic Sensing of Environment, Italy; Manuela Bonano, Institute of Methodologies for Environmental Analysis, Italy; Francesco Casu, Michele Manunta, Mariarosaria Manzo, Institute for Electromagnetic Sensing of Environment, Italy; Franz Meyer, University of Alaska Fairbanks, Italy; Giovanni Onorato, Ivana Zinno, Riccardo Lanari, Institute for Electromagnetic Sensing of Environment, Italy

THP1.PS.8
Board PS.8
LEARNING PHYSICAL SCATTERING PATTERNS FROM POLSAR IMAGES BY USING COMPLEX-VALUED CNN
Juanping Zhao, Mihai Datcu, German Aerospace Center (DLR), Germany; Zenghui Zhang, Huilin Xiong, Wenxian Yu, Shanghai Jiao Tong University, China

THP1.PS.9
Board PS.9
A COMPLEX-VALUED CNN FOR DIFFERENT ACTIVATION FUNCTIONS IN POLARSAR IMAGE CLASSIFICATION
Yun Zhang, Qinglong Hua, Dan Xu, Hongbo Li, Yan Bu, Pengfei Zhao, Harbin Institude of Technology, China

THP1.PS.10
Board PS.10
REMOTE SENSING IMAGE SYNTHESIS VIA GRAPHICAL GENERATIVE ADVERSARIAL NETWORKS
Guangxing Wang, Guoshuai Dong, Hui Li, Lirong Han, Xuanwen Tao, Peng Ren, China University of Petroleum (East China), China

Thursday, August 1	15:20 - 16:20	Room 503: Area S
Session THP2.PS		**Poster**

Forest and Vegetation Obervation by SAR and LiDAR

Session Co-Chairs: Johan E.S. Fransson, Swedish University of Agricultural Sciences; Sassan Saatchi, Jet Propulsion Laboratory, California Institute of Technology

THP2.PS.1
Board PS.1
FUSING AIRBORNE LASER SCANNING AND RAPIDEYE SENSOR PARAMETERS FOR TROPICAL FOREST BIOMASS ESTIMATION OF NEPAL
Kashi Ram Yadav, University of Twenty (ITC) and Indian Institute of Remote Sensing, India; Subrata Nandy, Ritika Srinet, Indian Institute of Remote Sensing (IIRS), India; Raja Ram Aryal, Forest Research and Training Centre, Nepal; Michael Ying Yang, University of Twente, Netherlands

THP2.PS.2
Board PS.2
ESTIMATE FOREST BIOMASS DYNAMICS USING MULTI-TEMPORAL LIDAR AND SINGLE-DATE INVENTORY DATA
Trung H Nguyen, Simon Jones, Mariela Soto-Berelov, RMIT University, Australia; Andrew Haywood, European Forest Institute, Spain; Samuel Hislop, RMIT University, Australia

THP2.PS.3
Board PS.3
RETRIEVAL OF LEAF AREA INDEX FROM AIRBORNE WAVEFORM LIDAR DATA BASED ON GORT MODEL
Xiao Zhu, Jinling Song, Beijing Normal University, China

THP2.PS.4
Board PS.4
ASSESSING POST-FIRE TREE MORTALITY AND BIOMASS CHANGE BY INTEGRATING LIDAR AND HYPERSPECTRAL DATA
Feng Zhao, Central China Normal University, China; Ran Meng, Huazhong Agricultural University, China; Huan Gu, Clark University, United States; Shawn Serbin, Brookhaven National Laboratory, United States

THP2.PS.5
Board PS.5
GEOSPATIAL CLOUD COMPUTING AND MACHINE LEARNING FOR THE ASSESSMENT OF CARBON STORAGE BY URBAN TREES
Juan Manuel Carrillo Garcia, University of Waterloo, Canada; Diana Borda Beltran, Cisgeo, Colombia; Derek T Robinson, University of Waterloo, Canada

THP2.PS.6
Board PS.6
THE POTENTIAL OF FOREST BIOMASS INVERSION BASED ON CANOPY-INDEPENDENT STRUCTURE METRICS TESTED BY AIRBORNE LIDAR DATA
Qiang Wang, Heilongjiang Institute of Technology, China; Wenge Ni-Meister, Hunter College of the City University of New York, United States; Wenjian Ni, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Yong Pang, Chinese Academy of Forestry, China

THP2.PS.7
Board PS.7
MULTI-TEMPORAL SENTINEL-1 DATA FOR WALL-TO-WALL HERBACEOUS BIOMASS MAPPING IN KRUGER NATIONAL PARK, SOUTH AFRICA — FIRST RESULTS
Christian Berger, Stefan Werner, University of Jena, Germany; Corli Wigley-Coetsee, Izak Smit, South African National Parks, South Africa; Christiane Schmullius, University of Jena, Germany

THP2.PS.8
Board PS.8
PEATLAND CARBON EMISSIONS ESTIMATES BY ALOS-2 PALSAR-2 INTERFEROMETRY IN BORNEO
Masato Hayashi, Takahiro Abe, Japan Aerospace Exploration Agency (JAXA), Japan; Takashi Hirano, Hokkaido University, Japan; Ryuichi Hirata, Tomohiro Shiraishi, National Institute for Environmental Studies, Japan; Lulie Melling, Sarawak Tropical Peat Research Institute, Malaysia

THP2.PS.9
Board PS.9
EVALUATION OF NISAR BIOMASS ALGORITHM IN TEMPERATE AND BOREAL FORESTS
Sassan Saatchi, Liang Xu, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Yan Yang, University of California, Los Angeles, United States; Yifan Yu, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

THURSDAY POSTER

179

Thursday, August 1 09:40 - 10:40 **Room 503: Area T**	**Thursday, August 1** 15:20 - 16:20 **Room 503: Area T**
Session THP1.PT Poster	**Session THP2.PT** Poster

Big Data and Machine Learning - New Trends in Remote Sensing I

Session Chair: Mesay Belete Bejiga, University of Trento

THP1.PT.1
Board PT.1
EXTRACTING HIGH-VOLUME TRAFFIC ROUTES FROM AIS SPATIAL DISTRIBUTION MAPS
Trienko Grobler, Stellenbosch University, South Africa; Waldo Kleynhans, University of Pretoria, South Africa

THP1.PT.2
Board PT.2
REMOTE SENSING SATELLITE JITTER DETECTION BASED ON IMAGE REGISTRATION AND CONVOLUTIONAL NEURAL NETWORK FUSION
Zhaoxiang Zhang, Akira Iwasaki, University of Tokyo, Japan; Guodong Xu, Harbin Institute of Technology, China

THP1.PT.3
Board PT.3
MULTI-SCALE CROPPING MECHANISM FOR REMOTE SENSING IMAGE CAPTIONING
Xueting Zhang, Qi Wang, Northwestern Polytechnical University, China; Shangdong Chen, Northwest University, China; Xuelong Li, Northwestern Polytechnical University, China

THP1.PT.4
Board PT.4
MACHINE LEARNING LIFECYCLE FOR EARTH SCIENCE APPLICATION: A PRACTICAL INSIGHT INTO PRODUCTION DEPLOYMENT
Manil Maskey, Rahul Ramachandran, NASA Marshall Space Flight Center, United States; Iksha Gurung, Brian Freitag, Jeffrey Miller, Muthukumaran Ramasubramanian, University of Alabama Huntsville, United States; Drew Bollinger, Ricardo Mestre, Development Seed, United States; Daniel Cecil, Andrew Molthan, Christopher Hain, NASA Marshall Space Flight Center, United States

THP1.PT.5
Board PT.5
BUILDING TYPE CLASSIFICATION FROM SOCIAL MEDIA TEXTS VIA GEO-SPATIAL TEXTMINING
Matthias Häberle, Technical University of Munich (TUM), Germany; Martin Werner, Xiao Xiang Zhu, German Aerospace Center (DLR), Germany

THP1.PT.6
Board PT.6
FUNDAMENTAL MATRIX ESTIMATION FROM STEREO CORRESPONDENCES USING MULTI-OBJECTIVE PARTICLE SWARM OPTIMIZATION APPROACH
Manimala Mahato, Shirishkumar Gedam, Krishna Mohan Buddhiraju, Indian Institute of Technology Bombay, India

THP1.PT.7
Board PT.7
A MULTI-TASK ARCHITECTURE FOR REMOTE SENSING BY JOINT SCENE CLASSIFICATION AND IMAGE QUALITY ASSESSMENT
Cong Zhang, Qi Wang, Xuelong Li, Northwestern Polytechnical University, China

THP1.PT.8
Board PT.8
SEA SURFACE DYNAMICS RECONSTRUCTION USING NEURAL NETWORKS BASED KALMAN FILTER
Said Ouala, Ronan Fablet, IMT-Atlantique/LAB-STICC, France; Cédric Herzet, IMT-Atlantique/INRIA Bretagne-Atlantique, France; Lucas Drumetz, IMT-Atlantique/LAB-STICC, France; Bertrand Chapron, Ifremer, France; Ananda Pascual, IMEDEA, Spain; Fabrice Collard, Lucile Gaultier, OceanDataLab, France

THP1.PT.9
Board PT.9
LEVERAGING STARE FOR CO-ALIGNED DATA LOCALITY WITH NETCDF AND PYTHON MPI
Kwo-Sen Kuo, NASA Goddard Space Flight Center, United States; Hongfeng Yu, Yu Pan, University of Nebraska Lincoln, United States; Michael Rilee, NASA Goddard Space Flight Center, United States

THP1.PT.10
Board PT.10
EXPLORATORY SEARCH METHODOLOGY FOR SENTINEL 2 DATA: A PROSPECT OF BOTH VISUAL AND LATENT CHARACTERISTICS.
Corina Vaduva, Florin Andrei Georgescu, Andreea Griparis, Iulia Neagoe, Alexandru Cosmin Grivei, Mihai Datcu, University Politehnica of Bucharest, Romania

THP1.PT.11
Board PT.11
RESEARCH ON RESOURCE ALLOCATION METHOD OF THE SIN BASED ON SDN
Xiangli Meng, Lingda Wu, Jiao Jiao, Xiangwu Gong, Space Engineering University, China

THP1.PT.12
Board PT.12
THE USE OF MASSIVE DEFORMATION DATASETS FOR THE ANALYSIS OF SPATIAL AND TEMPORAL EVOLUTION OF MAUNA LOA VOLCANO (HAWAI'I)
Susi Pepe, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Luca D'Auria, Istituto Volcanòlogico de Canarias, Tenerife, Spain; Raffaele Castaldo, Francesco Casu, Claudio De luca, Vincenzo De Novellis, Eugenio Sansosti, Giuseppe Solaro, Pietro Tizzani, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy

Forest Parametrization with SAR and Optics

Session Co-Chairs: Sassan Saatchi, Jet Propulsion Laboratory, California Institute of Technology; Nereida Rodriguez-Alvarez, California Institute of Technology, NASA Jet Propulsion Laboratory

THP2.PT.1
Board PT.1
INTEGRATING REMOTE SENSE DATA WITH PROCESS-BASED HYDRO-ECOLOGICAL MODEL FOR CONTINUOUS GRID SIMULATION OF CARBON FLUX OVER MOUNTAINOUS AREAS
Xinyao Xie, Ainong Li, Jinhu Bian, Zhengjian Zhang, Research Center for Digital Mountain and Remote Sensing Application, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China

THP2.PT.2
Board PT.2
FOREST HEIGHTS ESTIMATION BASED ON ARTIFICIAL NEURAL NETWORK BY USING GLAS AND LANDSAT DATA
Xiliang Ni, Chunxiang Cao, Aerospace Information Research Institute, Chinese Academy of Sciences, China

THP2.PT.3
Board PT.3
ESTIMATION OF FOREST GROSS PRIMARY PRODUCTIVITY IN NORTH-EAST CHINA BY A PHYSIOLOGICALLY-BASED MODEL DRIVEN WITH REMOTE SENSING DATA
Yanan Liu, Wuhan University, China; Weishu Gong, University of Maryland, United States; Xiangyun Hu, Wuhan University, China

THP2.PT.4
Board PT.4
PARAMETERIZATION AND VALIDATION OF A REMOTE SENSING MODEL FOR GROSS PRIMARY PRODUCTION ESTIMATION IN EVERGREEN BROADLEAF FORESTS WITH CLIMATE CLASSIFICATION
Shangrong Lin, Jing Li, Qinhuo Liu, Jing Zhao, Wentao Yu, Chinese Academy of Sciences, China

THP2.PT.5
Board PT.5
DIVERGENCE OF WATER YIELD AND GROSS ECOSYSTEM PRODUCTIVITY UNDER THE CHANGING VEGETATION COVER AND CLIMATE IN THE POYANG LAKE WATERSHED
LinLing Tang, Wuhan University, China; Xiaobin Cai, Chinese Academy of Sciences, China; Xiaoling Chen, Jialin Wang, Wuhan University, China

THP2.PT.6
Board PT.6
LONG-TERM RELATIONSHIPS OF NDVI-BASED FOREST GROWTH WITH CLIMATIC VARIABLES ACROSS THE NORTH HEMISPHERE
Jiaxin Jin, Hohai University, China; Ying Wang, Sanjiang University, China; Bin Yong, Hohai Universtiy, China

THP2.PT.7
Board PT.7
COMPARISON OF NET PRIMARY PRODUCTIVITY SIMULATED FROM TWO DIFFERENT BIOSPHERIC MODELS IN A PLANTATION SITE IN INDIA
Poonam Tripathi, International Centre for Integrated Mountain Development, Nepal; Natoo Patel, Satya Prakash Singh Kushwaha, Indian Institute of Remote Sensing, Dehradun, India

THP2.PT.8
Board PT.8
SENSITIVITY ANALYSIS OF SMAP-REFLECTOMETRY (SMAP-R) SIGNALS TO VEGETATION WATER CONTENT
Nereida Rodriguez-Alvarez, Sidharth Misra, Mary Morris, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

THP2.PT.9
Board PT.9
RESPONSES OF FOREST WATER-USE EFFICIENCY TO GROWING SEASON LENGTH ACROSS EASTERN CHINA
Fengsheng Guo, Jiaxin Jin, Yong Bin, Hohai University, China

THURSDAY POSTER

riday, August 2 09:40 - 10:40 Room 503: Sprint Area	FFriday, August 2 09:40 - 10:40 Room 501-502: Area A
Session FRP1.SPR SPRINT Presentation	Session FRP1.PA Poster

THP1 SPRINT Session

FRP1.SPR.1
09:50
THE USE OF FIELD SPECTROSCOPY FOR THE IMPLEMENTATION OF VEGETATION INDICES FOR THE SATELLITE REMOTE SENSING DETECTION OF UNDERGROUND MILITARY STRUCTURES IN CYPRUS
George Melillos, Kyriacos Themistocleous, Athos Agapiou, Silas Michaelides, Cyprus University of Technology, Cyprus; George Papadavid, Ministry of Agriculture, Cyprus; Diofantos G. Hadjimitsis, Cyprus University of Technology, Cyprus

FRP1.SPR.2
09:55
UNSUPERVISED DISCRIMINATIVE DIMENSION REDUCTION FOR HYPERSPECTRAL CHEMICAL PLUME SEGMENTATION
James Murphy, Tufts University, United States; Mauro Maggioni, Johns Hopkins University, United States

FRP1.SPR.3
10:00
ESTIMATING SNOW-DEPTH BY FUSING SATELLITE AND STATION OBSERVATIONS: A DEEP LEARNING APPROACH
Jiwen Wang, Qiangqiang Yuan, Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

FRP1.SPR.4
10:05
RESULTS FROM THE FIRST ULTRAWIDEBAND MICROWAVE BRIGHTNESS TEMPERATURE CAMPAIGN IN ANTARCTICA: THE ISSIUMAX PROJECT
Marco Brogioni, IFAC-CNR, Italy; Mark Andrews, Ohio State University, United States; Stefano Urbini, INGV, Italy; Joel Johnson, Kenneth Jezek, Ohio State University, United States; Giovanni Macelloni, IFAC-CNR, Italy; Alexandra Bringer, Oguz Demir, Ohio State University, United States; Lars Kaleschke, Alfred Wegener Institute (AWI), Germany; Marion Leduc-Leballeur, Francesco Montomoli, Giacomo Fontanelli, IFAC-CNR, Italy; Leung Tsang, University of Michigan, United States; Shurun Tan, Zhejiang University/University of Illinois at Urbana-Champaign Institute, China; Massimo Frezzotti, ENEA, Italy

Bistatic and Digital Beamforming SAR I

Session Chair: Marwan Younis, German Aerospace Center (DLR)

FRP1.PA.1
Board PA.1
A NOVEL GEOSYNCHRONOUS SPACEBORNE-AIRBORNE BISTATIC MULTICHANNEL SAR FOR GROUND MOVING TARGETS INDICATION
Xichao Dong, Beijing Institute of Technology, China; Wei Xiong, Ying Zhang, Space Engineering University, China; Cheng Hu, Feifeng Liu, Beijing Institute of Technology, China

FRP1.PA.2
Board PA.2
NUFFT-BASED ALGORITHM FOR BISTATIC SAR IMAGING VIA COOPERATIVE HIGH-ORBIT AND LOW-ORBIT SATELLITES
Yu Zhu, Zheng Lv, Beijing Institute of Spacecraft System Engineering, China; Wen-Qin Wang, Yi Liao, Shunsheng Zhang, Zhi Zheng, University of Electronic Science and Technology of China, China

FRP1.PA.3
Board PA.3
A SPATIAL SPECTRUM PROJECTION ALGORITHM FOR AIRBORNE BISTATIC RADAR EFFICIENT IMAGING
Deqing Mao, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China; Ruochen Zhao, NUAA, China

FRP1.PA.4
Board PA.4
A RADARGRAMMETRIC APPROACH FOR SPACEBORNE TRANSMITTER-STATIONARY RECEIVER BISTATIC SAR
Madalina Ciuca, Andrei Anghel, University Politehnica of Bucharest, Romania; Remus Cacoveanu, EOS Electronic Systems / University Politehnica of Bucharest, Romania; Bjorn Rommen, European Space Agency (ESA), Netherlands; Mihai Datcu, German Aerospace Center (DLR) / University Politehnica of Bucharest, Germany

FRP1.PA.5
Board PA.5
FAST FACTORIZED BACK PROJECTION IMAGING ALGORITHM INTEGRATED WITH MOTION ERROR ESTIMATION FOR BISTATIC FORWARD-LOOKING SAR
Yuebo Zha, Institute 38 of CETC, China; Wei Pu, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PA.6
Board PA.6
END-TO-END BISTATIC INSAR RAW DATA SIMULATION FOR TWINSAR-L MISSION
Heng Zhang, Yunkai Deng, Robert Wang, Wei Wang, Xiaoxue Jia, Dacheng Liu, Chuang Li, Institute of Electronics, Chinese Academy of Sciences, China

FRP1.PA.7
Board PA.7
A NOVEL ANTI-DECEPTIVE JAMMING METHOD FOR MULTISTATIC SAR
Wenjing Wang, University of Electronic Science and Technology of China, China; Chaojie Liang, Beijing Institute of Astronautical Systems Engineering, China; Junjie Wu, Yi Li, Jifang Pei, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PA.8
Board PA.8
FREQUENCY REFERENCE ERROR ANALYSIS FOR BISTATIC SAR
Yi Li, Wenchao Li, Zhongyu Li, Junjie Wu, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PA.9
Board PA.9
EMPIRICAL NOISE ESTIMATION IN TIME-DOMAIN BACK-PROJECTED BISTATIC SAR IMAGES
Franklin Turner, Gerald Patterson, Robert Jensen, Johns Hopkins University Applied Physics Laboratory, United States; Davide Castelletti, Dustin Schroeder, Stanford University, United States

FRP1.PA.10
Board PA.10
HIGH RESOLUTION WIDE SWATH – THE NEXT GENERATION X-BAND MISSION
Juergen Janoth, Markus Jochum, Lutz Petrat, Thiemo Knigge, Airbus Defence and Space GmbH, Germany

Friday, August 2	09:40 - 10:40	Room 501-502: Area B
Session FRP1.PB		**Poster**

Subsurface Sensing

Session Chair: Waymond Scott, Georgia Institute of Technology

FRP1.PB.2
Board PB.2
ASSESSING SUB-WAVELENGTH VHF RADAR SCATTERING LOSSES IN DRY TERRAINS: APPLICATION TO KARST ENVIRONMENTS
Giovanni Scabbia, Qatar Environment and Energy Research Institute (QEERI), Qatar; Essam Heggy, Qatar Environment and Energy Research Institute / University of Southern California, United States

FRP1.PB.3
Board PB.3
ELECTROMAGNETIC INDUCTION SENSOR WITH A SPINNING MAGNET EXCITATION
Waymond Scott, Georgia Institute of Technology, United States

FRP1.PB.4
Board PB.4
ANALYSIS OF SUBSURFACE HYPOTHESES THROUGH SIMULATION OF RIME RADARGRAMS BASED ON AVAILABLE ANALOGOUS DATA
Sanchari Thakur, University of Trento, Italy; Andrea Vettor, University of Trento, University of Padua, Italy; Lorenzo Bruzzone, University of Trento, Italy

FRP1.PB.5
Board PB.5
SUPER-TEMPORAL RESOLUTION VELOCITY VECTOR ESTIMATION BY KERNEL BASED DOPPLER ESTIMATION FOR UWB-TWI RADARS
Masafumi Setsu, Shouhei Kidera, University of Electro-Communications, Japan

FRP1.PB.6
Board PB.6
AN AUTOMATIC METHOD TO ESTIMATE THE CALIBRATION QUALITY OF THE AEROMAGNETIC COMPENSATION
Yizhen Wang, Qi Han, Kai Hu, Dechen Zhan, Harbin Institute of Technology, China

FRP1.PB.7
Board PB.7
SPARSE RECOVERY METHOD FOR ESTIMATION OF WALL PARAMETERS IN THROUGH-THE-WALL RADAR
Lele Qu, Zhongli Fang, Tianhong Yang, Yanpeng Sun, Lili Zhang, Shenyang Aerospace University, China

FRP1.PB.8
Board PB.8
IMPROVED CONFIGURATION ADAPTABILITY BASED ON IAA FOR DISTRIBUTED RADAR IMAGING
Fanyun Xu, Deqing Mao, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PB.9
Board PB.9
NUMERICAL SIMULATIONS OF THE SOIL MOISTURE RETRIEVAL BY MEASURING ANGULAR DEPENDENCE OF THE REFLECTION COEFFICIENT
Alexander Voronovich, NOAA/Earth System Research Laboratory, United States

FRP1.PB.10
Board PB.10
THE USE OF FIELD SPECTROSCOPY FOR THE IMPLEMENTATION OF VEGETATION INDICES FOR THE SATELLITE REMOTE SENSING DETECTION OF UNDERGROUND MILITARY STRUCTURES IN CYPRUS
George Melillos, Kyriacos Themistocleous, Athos Agapiou, Silas Michaelides, Cyprus University of Technology, Cyprus; George Papadavid, Ministry of Agriculture, Cyprus; Diofantos G. Hadjimitsis, Cyprus University of Technology, Cyprus

Friday, August 2	09:40 - 10:40	Room 501-502: Area C
Session FRP1.PC		**Poster**

GPR

Session Co-Chairs: Masahiko Nishimoto, Kumamoto University; Kazunori Takahashi, OYO cooperation

FRP1.PC.1
Board PC.1
A COMPARATIVE STUDY OF RADAR IMAGING OF THE TARGET OBSCURED BY RANDOM MEDIA
Tie-Yan Yi, Kun-Shan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PC.2
Board PC.2
MULTI-CLASS CREVASSE DETECTION USING GROUND PENETRATING RADAR AND FEATURE-BASED MACHINE LEARNING
Benjamin Walker, Laura Ray, Dartmouth College, United States

FRP1.PC.3
Board PC.3
ROBUST SUBSURFACE VELOCITY CHANGE DETECTION METHOD WITH YAKUMO MULTISTATIC GPR SYSTEM
Kazutaka Kikuta, Tohoku University, Japan; Li Yi, Osaka University, Japan; Lilong Zou, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Motoyuki Sato, Tohoku University, Japan

FRP1.PC.4
Board PC.4
EXPERIMENTAL MULTISTATIC IMAGING VIA THE LINEAR SAMPLING METHOD
Michele Ambrosanio, Università degli studi di Napoli Parthenope, Italy; Martina Teresa Bevacqua, Tommaso Isernia, Università Mediterranea di Reggio Calabria, Italy; Vito Pascazio, Università degli studi di Napoli Parthenope, Italy

FRP1.PC.5
Board PC.5
3-D IMAGING OF A PLANAR INTERFACE CLOSE TO A BOREHOLE WITH AN ARRAY-TYPE DIRECTIONAL BOREHOLE RADAR
Satoshi Ebihara, Shyuhei Kotani, Kengo Fujiwara, Osaka Electro-Communication University, Japan

FRP1.PC.6
Board PC.6
CORRELATION BETWEEN ROOT DENSITY AND SOIL MOISTURE OF CARAGANA MICROPHYLLA IN XILINHOT GRASSLAND
Zheng Zhang, Xihong Cui, Jin Chen, Beijing Normal University, China

FRP1.PC.7
Board PC.7
ROADWAY INTERFACE ANALYSIS WITH A SUPPORT VECTOR REGRESSION BASED LINEAR PREDICTION METHOD USING STEPPED-FREQUENCY RADAR
Cédric Le Bastard, Cerema, France; Jingjing Pan, Yide Wang, IETR-University of Nantes, France; Shreedhar Savant Todkar, Amine Ihamouten, Cerema, France; Xavier Dérobert, IFSTTAR, France; David Guilbert, Cerema, France; Meng Sun, Shangai Maritime University, China

FRP1.PC.8
Board PC.8
TARGET CLUSTERING IN THREE-DIMENSIONAL GROUND PENETRATING RADAR BASED ON TIME-DOMAIN PHASE INFORMATION AND COMPLEX-VALUED SELF-ORGANIZING MAP
Soshi Shimomura, Akira Hirose, University of Tokyo, Japan

FRP1.PC.9
Board PC.9
HYBRID GPR LAYER PICKING METHOD USING AVERAGE SQUARE DIFFERENCE FUNCTION
Austin Lines, Joshua Elliott, Thayer School of Engineering at Dartmouth College, United States; Gabriel Lewis, Guarini School of Graduate and Advanced Studies at Dartmouth College, United States; Laura Ray, Thayer School of Engineering at Dartmouth College, United States

FRP1.PC.10
Board PC.10
ESTIMATION OF CONCRETE CORROSION STATE USING ULTRA-WIDEBAND RADAR SIGNATURES
Masahiko Nishimoto, Budiman P.A. Rohman, Kumamoto University, Japan; Yoshihiro Naka, Kyushu University of Health and Welfare, Japan

FRP1.PC.11
Board PC.11
TIME DELAY AND INTERFACE ROUGHNESS ESTIMATION OF PAVEMENTS BY MODIFIED MUSIC WITH OPM: EXPERIMENTAL RESULTS
Meng Sun, Shanghai Maritime University, China; Ziwei Xu, Jingjing Pan, University of Nantes, France; Cédric Le Bastard, Cerema, France; Nicolas Pinel, Icam School of Engineering, France; Yide Wang, University of Nantes, France

Friday, August 2	**09:40 - 10:40 Room 501-502: Area D**
Session FRP1.PD	**Poster**

Tomography and 3D Mapping I

Session Co-Chairs: Matteo Pardini, German Aerospace Center (DLR); Gilda Schirinzi, University of Naples Parthenope

FRP1.PD.1
Board PD.1
CHARACTERIZATION OF DOUBLE-BOUNCE SCATTERING IN RVOG SCENARIOS USING CONTROLLED HR-POLTOMSAR EXPERIMENTS
Ray Abdo, Laurent Ferro-Famil, Frederic Boutet, Lekhmissi Harkati, IETR - Université de Rennes 1, France

FRP1.PD.2
Board PD.2
TOMOSAR APPLICATION FOR EARLY WARNING IN INFRASTRUCTURE HEALTH MONITORING
Alessandra Budillon, Giampaolo Ferraioli, Angel C. Johnsy, Vito Pascazio, Gilda Schirinzi, University of Naples Parthenope, Italy

FRP1.PD.3
Board PD.3
SAR TOMOGRAPHY BASED ON DEEP LEARNING
Alessandra Budillon, Angel C. Johnsy, Gilda Schirinzi, Sergio Vitale, University of Naples Parthenope, Italy

FRP1.PD.4
Board PD.4
MULTIPLE VIEW GEOMETRY IN REMOTE SENSING: AN EMPIRICAL STUDY BASED ON PLEIADES SATELLITE IMAGES
Roland Perko, Mathias Schardt, Joanneum Research, Austria; Livia Piermattei, Technical University of Vienna, Austria; Stefan Auer, German Aerospace Center (DLR), Germany; Peter Roth, Graz University of Technology, Austria

FRP1.PD.5
Board PD.5
MULTIPLE SCATTERER DETECTION OVER ARTIFICIAL MEDIA USING SAR TOMOGRAPHY AND HIGH-RESOLUTION SPECTRAL ESTMATION TECHNIQUES
Yue Huang, Laurent Ferro-Famil, University of Rennes 1, France

FRP1.PD.6
Board PD.6
AN IMPROVED STAGEWISE WEAK ORTHOGONAL MATCHING PURSUIT METHOD FOR ELECTRIC POWER TRANSMISSION TOWER EVALUATION USING DIFFERENTIAL SAR TOMOGRAPHY
Jing Chen, Yan Chen, University of Electronic Science and Technology of China, China; Lei Wu, Deep Blue Remote Sensing Technology Co, Ltd, China; YunPing Chen, Min Du, University of Electronic Science and Technology of China, China

FRP1.PD.7
Board PD.7
IMPROVED DERAMPING METHOD BASED ON D-TOMOSAR FOR EXTRACTING DEFORMATION OF TRANSMISSION TOWERS IN MOUNTAIN AREA
Min Du, Yan Chen, University of Electronic Science and Technology of China, China; Lei Wu, Deep Blue Remote Sensing Technology Co, Ltd, China; Yunping Chen, Jing Chen, Xuan Huang, University of Electronic Science and Technology of China, China

FRP1.PD.8
Board PD.8
SAR TOMOGRAPHIC IMAGING DEMONSTRATION USING GF-3 DATA
Hongliang Lu, University of Chinese Academy of Sciences, China; Yunkai Deng, Heng Zhang, Weidong Yu, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China

FRP1.PD.9
Board PD.9
A NEW STRUCTURE-BASED COREGISTRATION METHOD FOR NEAR-FIELD GROUND-BASED MIMO TOMOGRAPHIC SAR
Gen Li, Beijing Institute of Technology, China; Yu Zhu, Chinese Academy of Space Technology, China; Liangbo Zhao, Beijing Institute of Spacecraft System Engineering, China; Zegang Ding, Yan Wang, Linghao Li, Minkun Liu, Beijing Institute of Technology, China

FRP1.PD.10
Board PD.10
THE SAME RANGE LINE CELLS BASED FAST TWO-DIMENSIONAL COMPRESSIVE SENSING FOR AIRBORNE MIMO ARRAY SAR 3-D IMAGING
Chunxiao Wu, Zenghui Zhang, Shanghai Key Laboratory of Intelligent Sensing and Recognition, China; Longyong Chen, Microwave Imaging Laboratory, Institute of Electronics, China; Wenxian Yu, Shanghai Key Laboratory of Intelligent Sensing and Recognition, China

Friday, August 2	**09:40 - 10:40 Room 501-502: Area E**
Session FRP1.PE	**Poster**

Tomography and 3D Mapping II

Session Co-Chairs: Fabrizio Lombardini, Universita di Pisa; Matteo Pardini, German Aerospace Center (DLR)

FRP1.PE.1
Board PE.1
3D LANDSCAPE MODELLING FOR ASSESSING EFFECTIVENESS OF VEGETATION CONSERVATION ON AN URBAN NATURE RESERVE
Chris Munyati, Thabiso Moeti, Northwest University, South Africa

FRP1.PE.2
Board PE.2
ACCURATE MODELING AND ANALYSIS OF TEMPORAL-SPATIAL VARIANT IONOSPHERIC INFLUENCES ON GEOSYNCHRONOUS SAR TOMOGRAPHY
Cheng Hu, Bin Zhang, Xichao Dong, Feifeng Liu, Beijing Institute of Technology, China

FRP1.PE.3
Board PE.3
TOMOSAR FOCUSING BY MEANS OF A VARIANT OF TIKHONOV REGULARIZED METHOD
Jinwei Xie, Xidian University, China; Zhibin Wang, Beijing Institute of Spacecraft System Engineering, China; Zhenfang Li, Xidian University, China

FRP1.PE.4
Board PE.4
SA-BILASAR DOWN-LOOKING 3-D IMAGING BASED ON SPARSE BAYESIAN RECONSTRUCTION
Min Yan, Shunjun Wei, Hao Su, Xiaoling Zhang, Jun Shi, University of Electronic Science and Technology of China, China

FRP1.PE.5
Board PE.5
STOCHASTIC RADIATION RADAR 3-D HIGH RESOLUTION IMAGING TECHNIQUE
Deqing Mao, Yin Zhang, Yongchao Zhang, Chenxi Yu, Xiaobo Yang, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PE.6
Board PE.6
DENSE MATCHING FOR DSM GENERATION FROM ZY-3 SATELLITE IMAGERY
Wenhuan Yang, Xin Li, Bo Yang, Yuhui Yang, Yang Yan, Wuhan University, China

FRP1.PE.7
Board PE.7
TEXTURED BUILDING MODEL BOTTOM BOUNDARY RECTIFICATION BASED ON DEM
Tianshuo Li, Fei Deng, Wuhan University, China

FRP1.PE.8
Board PE.8
GENERATING 3D POINT CLOUDS FROM A SINGLE SAR IMAGE USING 3D RECONSTRUCTION NETWORK
Lingxiao Peng, Suzhou Institution, Institute of Electronics, Chinese Academy of Sciences, China; Xiaolan Qiu, Chibiao Ding, Institute of Electronics, Chinese Academy of Sciences, China; Wenjie Tie, Suzhou Institution, Institute of Electronics, Chinese Academy of Sciences, China

FRP1.PE.9
Board PE.9
3D SCATTERING DISTRIBUTION RECONSTRUCTION FOR AIR TARGETS VIA RADAR NETWORK
Qun Zhang, Xiao-wen Liu, Yu-fu Yin, Zhi-qiang Ma, Yi-jie Lu, Institute of Information and Navigation, Air Force Engineering University, China

Friday, August 2	09:40 - 10:40	Room 501-502: Area F
Session FRP1.PF		Poster

Monitoring of the Vegetation, Optical/Hyperspectral Sensor

Session Chair: Wenzhi Liao, Ghent University

FRP1.PF.1
Board PF.1
COMPARISON FEATURE SELECTION METHODS FOR SUBTROPICAL VEGETATION CLASSIFICATION WITH HYPERSPECTRAL DATA
Qiaosi Li, Frankie Kwan Kit Wong, Tung Fung, Chinese University of Hong Kong, China

FRP1.PF.2
Board PF.2
MORPHOLOGICAL ANALYSIS FOR BANANA DISEASE DETECTION IN CLOSE RANGE HYPERSPECTRAL REMOTE SENSING IMAGES
Wenzhi Liao, Ghent University, Belgium; Daniel Ochoa, Escuela Superior Politécnica del Litoral, Ecuador; Lianru Gao, Bing Zhang, Chinese Academy of Sciences, China; Wilfried Philips, Ghent University, Belgium

FRP1.PF.3
Board PF.3
DETECTION OF ANOMALOUS GRAPEVINE BERRIES USING ALL-CONVOLUTIONAL AUTOENCODERS
Laurenz Strothmann, Uwe Rascher, Forschungszentrum Jülich GmbH, Germany; Ribana Roscher, University of Bonn, Germany

FRP1.PF.4
Board PF.4
AUTOMATIC EXTRACTION METHOD OF SARGASSUM BASED ON SPECTRAL-TEXTURE FEATURES OF REMOTE SENSING IMAGES
Yanlong Chen, China University of Petroleum (East China) / National Marine Environmental Monitoring Center, China; Jianhua Wan, Jie Zhang, China University of Petroleum (East China), China; Jianhua Zhao, National Marine Environmental Monitoring Center, China; Feng Ye, State Key Laboratory of Satellite Ocean Environment Dynamics, China; Zizhu Wang, National Marine Environmental Monitoring Center, China; Shanwei Liu, China University of Petroleum (East China), China

FRP1.PF.5
Board PF.5
USING THE CBERS-04 MULTISPECTRAL DATA TASSELED CAP TRANSFORMATION TO DETECT THE QUASI-CIRCULAR VEGETATION PATCHES
Qingsheng Liu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

FRP1.PF.6
Board PF.6
RESEARCH ON TREE SPECIES BAND RECOGNITION METHOD BASED ON HYPER-SPECTRUM
Jingjing Shi, Ying Pu, Academy of Forest Inventory and Planning, State Forestry and Grassland Administration, China; Liyun Zhang, Beijing Geoway Software CO,LTD, China; Wei Wang, Academy of Forest Inventory and Planning, State Forestry and Grassland Administration, China

FRP1.PF.7
Board PF.7
HIERARCHICAL CLASSIFICATION OF BRAZILIAN SAVANNA PHYSIOGNOMIES USING VERY HIGH SPATIAL RESOLUTION IMAGE, SUPERPIXEL AND GEOBIA
Alana Kasahara Neves, Thales Sehn Körting, Cesare Di Girolamo Neto, Anderson Reis Soares, Leila Maria Garcia Fonseca, National Institute for Space Research (INPE), Brazil

FRP1.PF.8
Board PF.8
ASSESSMENT OF SENTINEL-1 AND SENTINEL-2 SATELLITE IMAGERY FOR CROP CLASSIFICATION IN INDIAN REGION DURING KHARIF AND RABI CROP CYCLES
Jitendra Singh, IBM, India; Aniruddha Mahapatra, Indian Institute of Technology Roorkee, India; Saurav Basu, IBM, India; Biplab Banerjee, Indian Institute of Technology Bombay, India

FRP1.PF.9
Board PF.9
COST EFFECTIVE APPROACH FOR MAPPING PROSOPIS INVASION IN ARID SOUTH AFRICA USING SPOT-6 IMAGERY AND TWO MACHINE LEARNING CLASSIFIERS
Nyasha Florence Mureriwa, Elhadi Adam, University of the Witwatersrand, South Africa; Samuel Adelabu, University of the Free State, South Africa

FRP1.PF.10
Board PF.10
CROP IDENTIFICATION AND DISCRIMINATION USING AVIRIS-NG HYPERSPECTRAL DATA BASED ON DEEP LEARNING TECHNIQUES
Hetul Patel, Nirma University, India; Nita Bhagia, Indian Space Research Organisation, India; Tarjni Vyas, Nirma University, India; Bimal Bhattacharya, Indian Space Research Organisation, India; Kinjal Dave, Nirma University, India

FRP1.PF.11
Board PF.11
SCALING DEEP LEARNING BASED CROP CLASSIFICATION ON MODERN INTEL XEON PROCESSORS
Bharathkumar Ramachandra, Krishna Gadiraju, Ranga Raju Vatsavai, North Carolina State University, United States; Jaime Puente, Lenovo, United States

FRP1.PF.12
Board PF.12
IMAGE SPECTRAL DATA CLASSIFICATION USING PIXEL-PURITY KERNEL GRAPH CUTS AND SUPPORT VECTOR MACHINES: A CASE STUDY OF VEGETATION IDENTIFICATION IN INDIAN PINE EXPERIMENTAL AREA
Mengfei Wang, Weijie Jia, China Aero Geophysical Survey and Remote Sensing Center for Natural Resources, China; Qingjie Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Fengxian Miao, STATE Grid AC Engineering Construction Company, China

Friday, August 2	09:40 - 10:40	Room 501-502: Area G
Session FRP1.PG		Poster

SAR and Radar Data Analysis

Session Chair: Lamei Zhang, Harbin Institute of Technology

FRP1.PG.1
Board PG.1
LOW-RANK AND CONTINUOUS TARGET FEATURE ENHANCEMENT FOR SAR OBJECT RECOGNITION
Lin Chen, Xue Jiang, Shanghai Jiao Tong University, China; Zhou Li, Beijing Institute of Remote Sensing Information, China; Xingzhao Liu, Shanghai Jiao Tong University, China; Zhixin Zhou, Space Engineering University, China

FRP1.PG.2
Board PG.2
SAR EDGE DETECTOR WITH HIGH LOCALIZATION ACCURACY
Qian-Ru Wei, Yu-Ke Wang, Peng-Yi Xie, School of Software and Microelectronics, Northwestern Polytechnical University, China

FRP1.PG.3
Board PG.3
RADAR HRRP TARGET RECOGNITION BASED ON STACKED FRAME MAXIMUM LIKELIHOOD PROFILE-TRAJECTORY SIMILARITY AUTOENCODERS
Wenbo Liu, Gong Zhang, Wangcai Chen, Cheng Hang, Nanjing University of Aeronautics and Astronautics, China

FRP1.PG.4
Board PG.4
ANALYSIS OF SEA CLUTTER USING DYNAMIC MODE DECOMPOSITION
Yanming Zhang, Lijun Jiang, University of Hong Kong, China; Hong Tat Ewe, Universiti Tunku Abdul Rahman, Malaysia

FRP1.PG.5
Board PG.5
3-D SCATTERING CENTER EXTRACTION BASED ON BPDN FOR COMPLEX RADAR TARGETS
Xiangyin Quan, Xuan Zhao, Jian Yang, Xiaoyang Xie, Wenzhuo Bao, China Academy of Launch Vehicle Technology, China; Bingchen Zhang, Yirong Wu, Aerospace Information Research Institute, Chinese Academy of Sciences, China

FRP1.PG.6
Board PG.6
A METHOD FOR MICRO-DOPPLER EXTRACTION UNDER PASSIVE RADAR BASED ON COMMUNICTION SIGNAL
Kai-ming Li, Xiao-yu Qu, Institute of Information and Navigation, Air Force Engineering University, China; Yong Wu, Shaanxi Institute of Metrology Science, China; Yu-he Xia, Wang-yang Li, Institute of Information and Navigation, Air Force Engineering University, China

FRP1.PG.7
Board PG.7
DENSELY CONNECTED CONVOLUTIONAL NEURAL NETWORK BASED POLARIMETRIC SAR IMAGE CLASSIFICATION
Hongwei Dong, Lamei Zhang, Bin Zou, Harbin Institute of Technology, China

FRP1.PG.8
Board PG.8
POLSAR IMAGE CLASSIFICATION BASED ON AN IMPROVED BOW MODEL WITH MID-LEVEL SEMANTIC FEATURES
Bin Zou, Yu Zhang, Lamei Zhang, Harbin Institute of Technology, China

FRP1.PG.9
Board PG.9
VEHICLE AZIMUTH ANGLE ESTIMATION OF SAR IMAGE BASED ON TARGET RESTORATION
Lamei Zhang, Wuxia Miao, Bin Zou, Harbin Institute of Technology, China

FRP1.PG.10
Board PG.10
RESEARCH OF BACKSCATTERING PROPERTIES OF VEGETATION FIRE BASED ON GROUND-BASED SCATTEROMETER MEASUREMENT
Longfei Tan, Sichuan Fire Research Institute of Ministry of Emergency Management, China; Wanruo Zhang, Glasgow College, University of Electronic Science and Technology of China, China; Zejiang Zhang, Hang Yin, Sichuan Fire Research Institute of Ministry of Emergency Management, China; Xun Yang, Ling Tong, School of Automation Engineering, University of Electronic Science and Technology of China, China

FRP1.PG.11
Board PG.11
TARGET RECOGNITION IN SAR IMAGE VIA SPARSE REPRESENTATION IN TRANSFORMED DOMAIN
Ganggang Dong, Hongwei Liu, Bo Jiu, Jibin Zheng, Junkun Yan, Xidian University, China

FRP1.PG.12
Board PG.12
TOWARDS A ML BASED GLOBAL CROP IDENTIFICATION MODEL USING LIMITED SAR DATA - THAT IS SCALABLE ACROSS DATA-SPARSE GEOGRAPHIES
Sukanya Randhawa, Jitendra Singh, Jagabondhu Hazra, IBM Research, India

Friday, August 2	09:40 - 10:40	Room 501-502: Area H
Session FRP1.PH		**Poster**

Hyperspectral Band Selection

Session Chair: Ailong Ma, Wuhan University

FRP1.PH.1
Board PH.1
ANOMALY DETECTION-ORIENTED BAND SELECTION FOR HYPERSPECTRAL IMAGE
Lang Ren, Liaoying Zhao, Hangzhou Dianzi University, China; Xiaorun Li, Zhejiang University, China

FRP1.PH.2
Board PH.2
GLOBAL SELF-LABELED DISTRIBUTION ANALYSIS FOR HYPERSPECTRAL BAND SELECTION
Xinyi Tong, Jihao Yin, Beihang University, China; Limin Wu, Beijing Institute of Space Mechanics & Electricity, China; Hui Qv, Beihang University, China

FRP1.PH.3
Board PH.3
HYPERSPECTRAL REMOTE SENSING IMAGE BAND SELECTION VIA MULTI-OBJECTIVE SINE COSINE ALGORITHM
Yuting Wan, Yanfei Zhong, Ailong Ma, Liangpei Zhang, Wuhan University, China

FRP1.PH.4
Board PH.4
ROBUST MULTI-FEATURE SPECTRAL CLUSTEIRNG FOR HYPERSPECTRAL BAND SELECTION
Weiwei Sun, Gang Yang, Jialin Li, Ningbo University, China

FRP1.PH.5
Board PH.5
HYPERSPECTRAL BAND SELECTION BASED ON TERNARY WEIGHT CONVOLUTIONAL NEURAL NETWORK
Jie Feng, Di Li, Jiantong Chen, Xiangrong Zhang, Xu Tang, Xiande Wu, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education, Xidian University, China

FRP1.PH.6
Board PH.6
PARTICLE SWARM OPTIMIZATION-BASED HOTSPOT ANALYSIS AND IMPURITY FUNCTION BAND PRIORITIZATION USING MULTIPLE ATTRIBUTE DECISION-MAKING MODEL FOR BAND SELECTION OF HYPERSPECTRAL IMAGES
Yang-Lang Chang, Amare Anagaw Ayele, Min-Yu Huang, Haw Yuan, National Taipei University of Technology, Taiwan; Lena Chang, National Taiwan Ocean University, Taiwan; Wen-Yen Chang, National Dong Hwa University, Taiwan

FRP1.PH.7
Board PH.7
BAND SELECTION USING SEGMENTED PCA AND COMPONENT LOADINGS FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Munmun Baisantry, Defence Terrain Research Laboratory, India; Anil Kumar Sao, Indian Institute of Technology Mandi, India

FRP1.PH.8
Board PH.8
UNIFORM BAND INTERVAL DIVIDED BAND SELECTION
Fang Li, Hongju Cao, Xiaodi Shang, Meiping Song, Chunyan Yu, Chein-I Chang, Dalian Maritime University, China

FRP1.PH.9
Board PH.9
ATTENTION NETWORKS FOR BAND WEIGHTING AND SELECTION IN HYPERSPECTRAL REMOTE SENSING IMAGE CLASSIFICATION
Jing Wang, Chinese Academy of Sciences /University of Chinese Academy of Sciences, China / Griffith University, Australia; Jun Zhou, Griffith University, Australia; Weiqing Huang, Chinese Academy of Sciences, China; Jackie Chen, William G. Enloe Magnet High School, United States

FRP1.PH.10
Board PH.10
A BAND SELECTION BASED 1D-CNN TO CLASSIFIY OIL FILM THICKNESS
Bingxin Liu, Gang Guo, Donglai Wu, Guannan Li, Ying Li, Dalian Maritime University, China

FRP1.PH.11
Board PH.11
UNSUPERVISED DISCRIMINATIVE DIMENSION REDUCTION FOR HYPERSPECTRAL CHEMICAL PLUME SEGMENTATION
James Murphy, Tufts University, United States; Mauro Maggioni, Johns Hopkins University, United States

FRP1.PH.12
Board PH.12
A DISCRIMINATIVELY LEARNED CNN EMBEDDING FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Wen Wang, University of Electronic Science and Technology of China, China; Lijun Du, Leshan Normal University, China; Yinxing Gao, Yanzhou Su, Feng Wang, Jian Cheng, University of Electronic Science and Technology of China, China

Friday, August 2	09:40 - 10:40	Room 501-502: Area I
Session FRP1.PI		**Poster**

Image Segmentation I

Session Chair: Sebastiano Serpico, University of Genoa

FRP1.PI.1
Board PI.1
TOWARDS AUTOMATED DELINEATION OF SMALLHOLDER FARM FIELDS FROM VHR IMAGES USING CONVOLUTIONAL NETWORKS
Claudio Persello, Valentyn Tolpekin, John Ray Bergado, Rolf de By, University of Twente, Netherlands

FRP1.PI.2
Board PI.2
SEA-LAND SEGMENTATION WITH RES-UNET AND FULLY CONNECTED CRF
Zhengquan Chu, Tian Tian, Ruyi Feng, Lizhe Wang, China University of Geosciences, China

FRP1.PI.3
Board PI.3
THE MODIFIED ENCODER-DECODER NETWORK BASED ON DEPTHWISE SEPARABLE CONVOLUTION FOR WATER SEGMENTATION OF REAL SAR IMAGERY
Jinsong Zhang, Mengdao Xing, Guangcai Sun, Xidian University, China

FRP1.PI.4
Board PI.4
AN EFFECTIVE VARIATIONAL WATERLINE SEGMENTATION METHOD
Yong Meng, Zeming Zhou, Yudi Liu, Qixiang Luo, Chenjing Tian, Xiaofeng Zhao, National University of Defense Technology, China

FRP1.PI.5
Board PI.5
A MARKOV RANDOM FIELD MOEL WITH ALTERNATING GRANULARITIES FOR SEGMENTATION OF HIGH SPATIAL RESOLUTION REMOTE SENSING IMAGERY
Chen Zheng, Min Zhang, Xiaohui Chen, Henan University, China; Leiguang Wang, Southwest Forestry University, China

FRP1.PI.6
Board PI.6
SEMANTIC SEGMENTATION OF HIGH RESOLUTION REMOTE SENSING IMAGE BASED ON BATCH-ATTENTION MECHANISM
Yanzhou Su, University of Electronic Science and Technology of China, China; Yongjian Wu, Northeastern University, China; Min Wang, Feng Wang, Jian Cheng, University of Electronic Science and Technology of China, China

FRP1.PI.7
Board PI.7
SIMULTANEOUS SEGMENTATION AND EDGE DETECTION FOR HYPERSPECTRAL IMAGE VIA A DEEP SUPERVISED AND BOUNDARY-CONSTRAINED NETWORK
Yonghao Xu, Bo Du, Liangpei Zhang, Wuhan University, China

FRP1.PI.8
Board PI.8
FULL-RESOLUTION IMAGE SEGMENTATION MODEL COMBINING MULTI-SOURCE INPUT INFORMATION
Chenxiao Feng, Xili Wang, Shaanxi Normal University, China; Xiyuan Wang, Ningxia University, China; Ming Liu, Jie Wu, Shaanxi Normal University, China

FRP1.PI.9
Board PI.9
REGION-BASED IMAGE-KEY-ELEMENT DECOMPOSITION FOR LARGE-SCALE SAR IMAGES
Weike Li, Bin Zou, Lamei Zhang, Harbin Institute of Technology, China; Yu Xin, Beijing Institute of Remote Sensing Information, China

FRP1.PI.10
Board PI.10
SEGMENTATION OF SENTINEL-2 IMAGES ON SNAP - AN EVALUATION WITH SITEF
Andre R S Marcal, Faculdade de Ciencias, Universidade do Porto, Portugal

FRP1.PI.11
Board PI.11
A SIMPLE ROTATIONAL EQUIVARIANCE LOSS FOR GENERIC CONVOLUTIONAL SEGMENTATION NETWORKS: PRELIMINARY RESULTS
Kangcheng Lin, Bohao Huang, Leslie Collins, Duke University, United States; Kyle Bradbury, Energy Initiative, Duke University, United States; Jordan Malof, Duke University, United States

FRP1.PI.12
Board PI.12
PIPELINE SEGMENTATION USING LEVEL-SET METHOD
Apinya Leangaramkul, Teerasit Kasetkasem, Yodyium Tipsuwan, Kasetsart University, Thailand; Tsuyoshi Isshiki, Tokyo Institute of Technology, Japan; Thitiporn Chanwimaluang, National Electronics and Computer Technology Center (NECTEC), Thailand; Phakhachon Hoonsuwan, PTT Exploration and Production Public Company Limited (PTTEP), Thailand

Friday, August 2	09:40 - 10:40	Room 501-502: Area J
Session FRP1.PJ		**Poster**

Image Segmentation II

Session Co-Chairs: Begüm Demir, Technische Universität Berlin; Naoto Yokoya, RIKEN

FRP1.PJ.1
Board PJ.1
DEEP LEARNING MODEL FOR WATER/ICE/LAND CLASSIFICATION USING LARGE-SCALE MEDIUM RESOLUTION SATELLITE IMAGES
Vinayaraj Poliyapram, AIST-Tokyo Tech Real World Big-Data Computation Open Innovation Laboratory (RWBC-OIL), Japan; Nevrez Imamoglu, Ryousuke Nakamura, National Institute of Advanced Industrial and Science and Technology (AIST), Japan

FRP1.PJ.2
Board PJ.2
A LEVEL SET BASED METHOD FOR LAND MASKING IN SHIP DETECTION USING SAR IMAGES
Ziwei Wang, Wei Yang, Jie Chen, Chunsheng Li, Beihang University, China

FRP1.PJ.3
Board PJ.3
A DEEP LEARNING FOREST TYPES CLASSIFICATION METHOD FOR HIGH SPATIAL RESOLUTION REMOTE SENSING IMAGE: DUAL-FCN8S-CRF
Ying Guo, Zengyuan Li, Erxue Chen, Xu Zhang, Lei Zhao, Yan Chen, Yahui Wang, Chinese Academy of Forestry, China

FRP1.PJ.4
Board PJ.4
OPTICAL REMOTE SENSING WATER-LAND SEGMENTATION REPRESENTATION BASED ON PROPOSED SNS-CNN NETWORK
Shan Dong, Long Pang, Communication University of China, China; Yin Zhuang, Peking University, China; Wenchao Liu, Beijing Institute of Technology, China; Zhanxin Yang, Communication University of China, China; Teng Long, Beijing Institute of Technology, China

FRP1.PJ.5
Board PJ.5
SEA-LAND SEGMENTATION FOR HARBOUR IMAGES WITH SUPERPIXEL CRF
Bin Sun, Shutao Li, Jie Xie, Hunan University, China

FRP1.PJ.6
Board PJ.6
TRAINING A SINGLE MULTI-CLASS CONVOLUTIONAL SEGMENTATION NETWORK USING MULTIPLE DATASETS WITH HETEROGENEOUS LABELS: PRELIMINARY RESULTS
Fanjie Kong, Cheng Chen, Bohao Huang, Leslie Collins, Duke University, United States; Kyle Bradbury, Energy Initiative, Duke University, United States; Jordan Malof, Duke University, United States

FRP1.PJ.7
Board PJ.7
A REVERSIBLE GENERATIVE ADVERSARIAL NETWORKS FOR SAR IMAGERY CLUTTER SUPPRESSION
Qian Zhang, Li Zheng, Yulin Huang, Yin Zhang, Jianyu Yang, Junjie Wu, Haiguang Yang, University of Electronic Science and Technology of China, China

FRP1.PJ.8
Board PJ.8
EFFECTIVE FUSION OF MULTI-MODAL DATA WITH GROUP CONVOLUTIONS FOR SEMANTIC SEGMENTATION OF AERIAL IMAGERY
Kaiqiang Chen, University of Chinese Academy of Sciences, China; Kun Fu, Xin Gao, Menglong Yan, Wenkai Zhang, Yue Zhang, Xian Sun, Chinese Academy of Sciences, China

FRP1.PJ.9
Board PJ.9
APPLICATION OF UNET FULLY CONVOLUTIONAL NEURAL NETWORK TO IMPERVIOUS SURFACE SEGMENTATION IN URBAN ENVIRONMENT FROM HIGH RESOLUTION SATELLITE IMAGERY
Joe McGlinchy, Brian Johnson, Brian Muller, Maxwell Joseph, Jeremy Diaz, University of Colorado Boulder, United States

FRP1.PJ.10
Board PJ.10
AN AUTOMATIC LAND COVERS IDENTIFICATION BASED ON DEMPSTER-SHAFER THEORY FOR MULTI-SPECTRAL IMAGES
Na Li, University of Rennes 1 - TOTAL, France; Arnaud Martin, University of Rennes 1, France; Remi Estival, Total, France

Friday, August 2	09:40 - 10:40	Room 501-502: Area K
Session FRP1.PK		**Poster**

Roads and Buildings

Session Chair: Yang Xu, Nanjing University of Science and Technology

FRP1.PK.1
Board PK.1
ROAD NETWORK EXTRACTION FROM SATELLITE IMAGES USING CNN BASED SEGMENTATION AND TRACING
Yao Wei, Kai Zhang, Shunping Ji, Wuhan University, China

FRP1.PK.2
Board PK.2
D-RESUNET: RESUNET AND DILATED CONVOLUTION FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION
Zhiqun Liu, Ruyi Feng, China University of Geosciences (Wuhan), China; Lizhe Wang, Yanfei Zhong, Wuhan University, China; Liqin Cao, School of Printing and Packaging, Wuhan University, China

FRP1.PK.3
Board PK.3
ROAD CENTERLINES EXTRACTION FROM HIGH RESOLUTION REMOTE SENSING IMAGE
Shikai Sun, Wei Xia, Bingqi Zhang, Ying Zhang, China Transport Telecommunications & Information Center, China

FRP1.PK.4
Board PK.4
NEW NEURAL NETWORK AND AN IMAGE POSTPROCESSING METHOD FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION
Yuxia Li, Bo Peng, Kunlong Fan, Lang Yuan, Ling Tong, University of Electronic Science and Technology of China, China; Lei He, Chengdu University of Information Technology, China

FRP1.PK.5
Board PK.5
NEW NETWORK BASED ON D-LINKNET AND DENSENET FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION
Bo Peng, Yuxia Li, Kunlong Fan, Lang Yuan, Ling Tong, University of Electronic Science and Technology of China, China; Lei He, Chengdu University of Information Technology, China

FRP1.PK.6
Board PK.6
ROAD MATERIAL INFORMATION EXTRACTION BASED ON MULTI-FEATURE FUSION OF REMOTE SENSING IMAGE
Chao Yang, Yuxia Li, Bo Peng, Yuan Cheng, Ling Tong, University of Electronic Science and Technology of China, China

FRP1.PK.7
Board PK.7
MULTI-SCALE ENHANCED DEEP NETWORK FOR ROAD DETECTION
Xiaoyan Lu, Yanfei Zhong, Wuhan University, China; Ji Zhao, China University of Geosciences, China

FRP1.PK.8
Board PK.8
LOCATION-SPECIFIC EMBEDDING LEARNING FOR THE SEMANTIC SEGMENTATION OF BUILDING FOOTPRINTS ON A GLOBAL SCALE
Benjamin Bischke, Patrick Helber, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany

FRP1.PK.9
Board PK.9
WEAKLY SUPERVISED BUILDING SEGMENTATION FROM AERIAL IMAGES
Muhammad Usman Rafique, Nathan Jacobs, University of Kentucky, United States

FRP1.PK.10
Board PK.10
BUILDINGS EXTRACTION FROM REMOTE SENSING DATA USING DEEP LEARNING METHOD BASED ON IMPROVED U-NET NETWORK
Yiru Duan, Lin Sun, Shandong University of Science and Technology, China

FRP1.PK.11
Board PK.11
CONVOLUTION BASED SPECTRAL PARTITIONING ARCHITECTURE FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Ringo S. W. Chu, University College London, United Kingdom; Ho-Cheung Ng, Imperial College London, United Kingdom; Xiwei Wang, China Academy of Space Technology, China; Wayne Luk, Imperial College London, United Kingdom

Friday, August 2 09:40 - 10:40 Room 501-502: Area L	**Friday, August 2** 09:40 - 10:40 Room 501-502: Area M
Session FRP1.PL Poster	**Session FRP1.PM** Poster

Optical Remote Sensing of Snow

Session Co-Chairs: Linmei Jiang, Beijing Normal University; Siri Jodha Khalsa, Univ. of Colorado, Boulder

FRP1.PL.1
Board PL.1
FORWARD SIMULATION OF SNOW ALBEDO BASED ON SNICAR MODEL
Donghang Shao, Wenbo Xu, University of Electronic Science and Technology of China, China; Hongyi Li, Jian Wang, Xiaohua Hao, Haojie Li, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China; Yuwei Jin, University of Electronic Science and Technology of China, China

FRP1.PL.2
Board PL.2
A VIRTUAL AIRBORNE MISSION SIMULATOR AT X- AND KU-BANDS DRIVEN BY SNOWEX 2017 DATA
Dohyuk Kang, University of Maryland, College Park / NASA Goddard Space Flight Center, United States; Jiyue Zhu, University of Michigan, United States; Shurun Tan, Zhejiang University/University of Illinois at Urbana-Champaign Institute, China; Leung Tsang, University of Michigan, Ann Arbor, United States; Edward Kim, NASA Goddard Space Flight Center, United States

FRP1.PL.3
Board PL.3
ASSESSING PERFORMANCE OF THE KERNEL-DRIVEN BRDF MODELS IN RETRIEVING SNOW ALBEDO BASED ON THE BIC-PT MODEL
Anxin Ding, Ziti Jiao, Yadong Dong, Xiaoning Zhang, Lei Cui, Siyang Yin, Yaxuan Chang, Jing Guo, Rui Xie, Beijing Normal University, China

FRP1.PL.4
Board PL.4
A DEVICE TO MEASURE SNOW SPECIFIC SURFACE AREA USING SWIR REFLECTANCE
Joshua Elliott, Austin Lines, Laura Ray, Mary Albert, Thayer School of Engineering at Dartmouth College, United States

FRP1.PL.5
Board PL.5
EVALUATION OF THERMAL DETECTOR TECHNOLOGY CAPABILITIES FOR THE COMPACT THERMAL IMAGER: RESULTS FROM THE QWIP INFRARED CAMAERA FROM SNOWEX'17
Alicia Joseph, Murzy Jhabvala, Donald Jennings, Dorothy Hall, Nicolo DiGirolamo, Larry Stock, NASA Goddard Space Flight Center, United States

FRP1.PL.6
Board PL.6
ESTIMATION OF FRACTIONAL SNOW COVER FROM FY-4A/AGRI
Gongxue Wang, Lingmei Jiang, Xiaojing Liu, Huizhen Cui, Jianwei Yang, Jian Wang, Beijing Normal University, China

FRP1.PL.7
Board PL.7
GREENLAND ALBEDO REANALYSIS PRODUCT AND PRELIMINARY ACCURACY ASSESSMENT
Yixiang Tian, Han Qi, Rongxing Li, Tongji University, China

FRP1.PL.8
Board PL.8
IMPROVING MODIS FRACTIONAL SNOW COVER PRODUCTS VIA BLOCK-BASED NONLOCAL SPATIO-TEMPORAL FILTERING
Jinliang Hou, Chunlin Huang, Ying Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

FRP1.PL.9
Board PL.9
AN EFFECTIVE ALGORITHM OF SNOW, CLOUDS AND CLOUD SHADOW DETECTION FOR MODIS IMAGERY
Rongjuan Yang, Ronggao Liu, Yang Liu, Xuexin Wei, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

FRP1.PL.10
Board PL.10
SNOW GRAIN SIZE ESTIMATION OF A SITE IN THE INDIAN HIMALAYAN REGION USING HYPERSPECTRAL REMOTE SENSING : AVIRIS-NG DATA
Anmol Jalali, Dericks Praise Shukla, Indian Institute of Technology (IIT), Mandi, India

FRP1.PL.11
Board PL.11
AREA CHANGE OF SNOW AND ICE IN THE BABAO RIVER BASIN, TIBETAN PLATEAU
Haojie Li, Key Laboratory of Remote Sensing of Gansu Province, Heihe Remote Sensing Experimental Research Station, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences / University of Chinese Academy of Sciences, China; Hongyi Li, Jian Wang, Key Laboratory of Remote Sensing of Gansu Province, Heihe Remote Sensing Experimental Research Station, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

FRP1.PL.12
Board PL.12
SNOW AREA MAPPING USING FEATURE-ORIENTED PRINCIPAL COMPONENT ANALYSIS
Pooja Patel, Sandeep Kumar Mondal, Rishikesh Bharti, Indian Institute of Technology Guwahati, India

Microwave Remote Sensing of Snow Cover

Session Chair: Juha Lemmetyinen, Finnish Meteorological Institute

FRP1.PM.1
Board PM.1
RETRIEVING DRY SNOW DEPTH BASED ON CO-POLARIZED PHASE DIFFERENCE OF X-BAND RADAR IMAGE
Pengfeng Xiao, Yue Zhuo, Xueliang Zhang, Xuezhi Feng, Yina Song, Nanjing University, China

FRP1.PM.2
Board PM.2
EVALUATING THE PERFORMANCE OF TWO SWE RETRIEVAL METHODS OVER US
Shadi Oveisgharan, Daniel Esteban-Fernandez, Duane Waliser, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Xubin Zeng, University of Arizona, United States; Randall R Friedl, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Patrick Broxton, University of Arizona, United States

FRP1.PM.3
Board PM.3
A BACKSCATTERING MODEL AT L-BAND FOR THE SNOW COVER ON THE GROUND
Pavel Dagurov, Tumen Chimitdorzhiev, Aleksey Dmitriev, Institute of Physical Materials Science, SB RAS, Russia; Sergey Dobrynin, Buryat Institute of Infocommunications (branch) SibSUTIS, Russia

FRP1.PM.4
Board PM.4
X-BAND POLARIMETRIC SAR COPOLAR PHASE DIFFERENCE FOR FRESH SNOW DEPTH ESTIMATION IN THE NORTHWESTERN HIMALAYAN WATERSHED
Sayantan Majumdar, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Netherlands / Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India; Praveen K. Thakur, Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India; Ling Chang, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Netherlands; Shashi Kumar, Indian Institute of Remote Sensing (IIRS), Indian Space Research Organisation (ISRO), India

FRP1.PM.5
Board PM.5
SUBBANDED PROCESSING FOR ULTRAWIDEBAND FMCW RADAR FOR SNOW MEASUREMENT
Shashank Wattal, Jie-Bang Yan, University of Alabama, United States

FRP1.PM.6
Board PM.6
ESTIMATING SNOW-DEPTH BY FUSING SATELLITE AND STATION OBSERVATIONS: A DEEP LEARNING APPROACH
Jiwen Wang, Qiangqiang Yuan, Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China

FRP1.PM.7
Board PM.7
A FRAME ON SNOW DEPTH RECONSTRUCTION BASED ON MACHINE LEARNING TECHNIQUE
Jianwei Yang, Lingmei Jiang, Gongxue Wang, Jian Wang, Huizhen Cui, Xu Su, Beijing Normal University, China

FRP1.PM.8
Board PM.8
BUILDING LONG-TERM SNOW DEPTH DATASETS FROM PASSIVE MICROWAVE OBSERVATIONS——A CASE STUDY IN THE UNITED STATES
Xiaojing Liu, Lingmei Jiang, Gongxue Wang, Beijing Normal University, China; Shu Wang, National Meteorological Information Center, China

FRP1.PM.9
Board PM.9
RETRIEVAL OF SNOW WATER EQUIVALENT BY GAMMA
Yuan Ma, Hongyi Li, Jian Wang, Xiaohua Hao, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China

FRP1.PM.10
Board PM.10
INVESTIGATING LAKE ICE PHENOLOGY IN TIBETAN PLATEAU USING SATELLITE DATA
Linan Guo, Yanhong Wu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PM.11
Board PM.11
YELLOW RIVER ICE DECISION TREE CLASSIFICATION METHOD BASED ON POLARIMETRIC SAR DATA
Pingping Huang, Qiang Shi, Weixian Tan, Wei Xu, Inner Mongolia University of Technology, China

FRIDAY POSTER

Friday, August 2	09:40 - 10:40	Room 501-502: Area N
Session FRP1.PN		**Poster**

Ice Sheets and Glaciers I

Session Chair: Hongxing Liu, University of Alabama

FRP1.PN.1
Board PN.1
RESULTS FROM THE FIRST ULTRAWIDEBAND MICROWAVE BRIGHTNESS TEMPERATURE CAMPAIGN IN ANTARCTICA: THE ISSIUMAX PROJECT
Marco Brogioni, IFAC-CNR, Italy; Mark Andrews, Ohio State University, United States; Stefano Urbini, INGV, Italy; Joel Johnson, Kenneth Jezek, Ohio State University, United States; Giovanni Macelloni, IFAC-CNR, Italy; Alexandra Bringer, Oguz Demir, Ohio State University, United States; Lars Kaleschke, Alfred Wegener Institute (AWI), Germany; Marion Leduc-Leballeur, Francesco Montomoli, Giacomo Fontanelli, IFAC-CNR, Italy; Leung Tsang, University of Michigan, United States; Shurun Tan, Zhejiang University/University of Illinois at Urbana-Champaign Institute, China; Massimo Frezzotti, ENEA, Italy

FRP1.PN.2
Board PN.2
RADAR SCATTERING IN FIRN AND ITS IMPLICATIONS FOR VHF/UHF ORBITAL ICE SOUNDING
Riley Culberg, Dustin M. Schroeder, Stanford University, United States

FRP1.PN.3
Board PN.3
RESEARTH ON THE DETECTION METHOD OF ANTARCTIC ICE SHEET FREEZING AND THAWING BASED ON GEE AND SENTINEL-1 DATA
Cheng Yun, Xi'an University of Science and Technology, China; Zhang Lu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Chen Huiqian, Northeast Agricultural University, China; Bing Sun, School of Electronics and Information Engineering, China

FRP1.PN.4
Board PN.4
ANALYSIS OF FLOW VELOCITY AND SURFACE STRUCTURE OVER NORTHERN LARSEN ICE SHELF USING TIME SERIES SATELLITE IMAGES
Hongxing Liu, University of Alabama, United States; Shujie Wang, Columbia University, United States

FRP1.PN.5
Board PN.5
VELOCITY ANOMALY OF DAVID GLACIER, EAST ANTARCTICA, OBSERVED BY DOUBLE-DIFFERENTIAL INSAR
Heejeong Seo, Kangwon National University, Korea (South); Hyangsun Han, Korea Polar Research Institute (KOPRI), Korea (South); Hoonyol Lee, Kangwon National University, Korea (South)

FRP1.PN.6
Board PN.6
GLACIER MASS BALANCE IN THE KANGRI KARPO MOUNTAINS BY ZY-3 STEREO IMAGES AND SRTM DEMS BETWEEN 2000 AND 2017
Shaoting Ren, Massimo Menenti, Li Jia, Jing Zhang, Jingxiao Zhang, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, China

FRP1.PN.7
Board PN.7
IMAGING OF SNOW/ICE SUBSURFACE FEATURES FROM AIRBORNE SAR AT UHF, L AND X BAND. THE ONERA SAR CAMPAIGN IN SOUTH GREENLAND.
Hubert Cantalloube, ONERA, France

FRP1.PN.8
Board PN.8
A COMPACT MULTI-CHANNEL RADAR FOR >1MA OLD ICE CORE SITE IDENTIFICATION IN EAST ANTARCTICA
Fernando Rodriguez-Morales, Hugo Ailon, Sebastian Alvarez, David Braaten, Krishna Teja Karidi, Aaron Paden, John Paden, Jiaxuan Shang, University of Kansas, United States; Torry Akins, James Carswell, Remote Sensing Solutions, United States; Prasad Gogineni, Ryan Taylor, Jie Yan, University Alabama, United States; Ayako Abe-Ouchi, University of Tokyo, Japan; Shuji Fujita, Kenji Kawamura, National Institute of Polar Research, Japan; Shun Tsutaki, University of Tokyo, Japan; Brice Van Liefferinge, Kenichi Matsuoka, Norwegian Polar Institute, Norway

FRP1.PN.9
Board PN.9
APPLICATION OF GLACIAL ISOSTATIC ADJUSTMENT MODELS AT THE EDGE OF THE FENNOSCANDIAN ICE SHEET
Ülo Suursaar, University of Tartu, Estonia; Holger Steffen, Lantmäteriet, Sweden; Tarmo Kall, Estonian University of Life Sciences, Estonia

FRP1.PN.10
Board PN.10
MONITORING GLACIER RETREAT IN THE CHILEAN SOUTHERN PATAGONIAN ICE FIELD
Nestor Sáez, Guido Staub, Rodrigo Abarca del Rio, University of Concepción, Chile

FRP1.PN.11
Board PN.11
FLUCTUATIONS OF THE ICE FLOW VELOCITY OF SHIRASE GLACIER AND ITS SURROUNDING LANDFAST ICE DISPLACEMENT IN EAST ANTARCTICA DERIVED FROM ALOS-2/PALSAR-2 IMAGE CORRELATION
Kazuki Nakamura, Nihon University, Japan; Shigeru Aoki, Hokkaido University, Japan; Tsutomu Yamanokuchi, Remote Sensing Technology Center of Japan, Japan; Takeshi Tamura, Shuki Ushio, Koichiro Doi, National Institute of Polar Research, Japan

FRP1.PN.12
Board PN.12
IMPACT OF WINDOW SIZE IN REMOTE SENSING BASED GLACIER FEATURE TRACKING – A STUDY ON CHHOTA SHIGRI GLACIER, WESTERN HIMALAYAS, INDIA
Sangita Kumari, Indian institute of Technology, Bombay, India / Monash University, Australia; RAAJ. Ramsankaran, Indian institute of Technology, Bombay, India; Jeffrey Walker, Monash University, Australia

Friday, August 2	09:40 - 10:40	Room 501-502: Area O
Session FRP1.PO		**Poster**

Ice Sheets and Glaciers II

Session Chair: Jean Tournadre, IFREMER

FRP1.PO.1
Board PO.1
IMPACT OF LOCAL TOPOGRAPHY ON THE EVOLUTION OF GLACIER LAKES IN INDIAN HIMALAYA
Pratima Pandey, Indian Institute of Remote Sensing, India; Prayati Sharma, Indian Institute of Hydrology, India; Gulab Singh, Indian Institute of Technology, Powai, India; S Nawaz Ali, Birbal Sahni Institute of Paleosciences, India; Prashant K. Champatiray, Indian Institute of Technology, Powai, India

FRP1.PO.2
Board PO.2
DETECTION OF THICKNESS CHANGE OF GLACIERS IN SIKKIM-HIMALAYAN REGION USING FREE DEM DATA
Vishakha Pandey, Gulab Singh, IIT Bombay, India

FRP1.PO.3
Board PO.3
GLACIER MOVEMENT ESTIMATION OF BENCHMARK GLACIERS IN CHANDRA BASIN USING DIFFERENTIAL SAR INTERFEROMETRY (DINSAR) TECHNIQUE
Bala Nela, Gulab Singh, IIT Bombay, India; Anil Kulkarni, IISC Bangalore, India

FRP1.PO.4
Board PO.4
INVESTIGATING THE POTENTIAL TO ESTIMATE INSAR PENETRATION DEPTH OVER ICE SHEETS FROM POL-INSAR DATA
Georg Fischer, Giuseppe Parrella, Konstantinos Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR), Germany

FRP1.PO.5
Board PO.5
CROSS SPECTRAL ASSESSMENT OF OLI AND MSI REFLECTANCE DATA ON MOUNTAINOUS CLEAR ICE GLACIER SURFACE
Najam ul Hassan Syed, Mohd Nadzri Md. Reba, Universiti Teknologi Malaysia, Malaysia

FRP1.PO.6
Board PO.6
GLACIER VELOCITY MEASUREMENTS WITH LANDSAT-8 OLI DATA: CASE STUDY ON YANONG GLACIER IN TIBETAN PLATEAU OF CHINA
Jing Zhang, Li Jia, Massimo Menenti, Shaoting Ren, Jingxiao Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PO.7
Board PO.7
MONITORING LAKE ICE IN NORTHERN ALASKA WITH BACKSCATTERING AND INTERFEROMETRIC APPROACHES USING SENTINEL-1 SAR DATA
Hiroyuki Wakabayashi, Kazushige Motohashi, Naotake Maezawa, Nihon University, Japan

Friday, August 2	09:40 - 10:40	Room 501-502: Area P
Session FRP1.PP		**Poster**

Sea and Lake Ice

Session Chair: jiyue Zhu, University of Michigan

FRP1.PP.1
Board PP.1
SUPERPOSITION OF SEA ICE CLASSIFICATION BASED ON SYNTHETIC APERTURE RADAR IMAGES CONSIDERING UNDERLYING DRIFT
Maurice Wiercioch, Anja Frost, Suman Singha, German Aerospace Center (DLR), Germany

FRP1.PP.2
Board PP.2
COMPARISON OF REMOTELY SENSED SEA ICE CONCENTRATIONS WITH REANALYSIS DATASET IN POLAR REGIONS
Shuang Liang, Jiangyuan Zeng, Zhen Li, Kun-Shan Chen, Ping Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Haiyun Bi, Institute of Geology, China Earthquake Administration, China

FRP1.PP.3
Board PP.3
ASSIMILATION OF HIGH-RESOLUTION ICE CHARTS IN A COUPLED OCEAN-SEA-ICE MODEL
Sindre Fritzner, Rune Graversen, Arctic University of Norway, Norway; Kai Christensen, Keguang Wang, MET Norway, Norway

FRP1.PP.4
Board PP.4
OPEN WATER SEASON CHANGES OVER THE KARA SEA COASTAL ZONE: MARRESALYA EXAMPLE
Pavel Shabanov, Shirshov Institute of Oceanology, Russian Academy of Sciences, Russia; Natalia Shabanova, Lomonosov Moscow State University, Russia

FRP1.PP.5
Board PP.5
ROSS SEA ICE PRODUCTION AND FAST-ICE EDGE USING SENTINEL-1 SAR IMAGES
Liyun Dai, Tao Che, Xiaohong Deng, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

FRP1.PP.6
Board PP.6
TOWARDS OPERATIONAL SEA ICE TYPE RETRIEVAL USING L-BAND SYNTHETIC APERTURE RADAR
Suman Singha, German Aerospace Center (DLR), Germany; A. Malin Johansson, Anthony Paul Doulgeris, Arctic University of Norway, Norway

FRP1.PP.7
Board PP.7
RETRIEVING SEA ICE FREEBOARD FROM MABEL DATA
Xiaoyan Wang, Lanzhou University, China

FRP1.PP.8
Board PP.8
SUPER RESOLUTION RECONSTRUCTION TECHNIQUE IN PASSIVE MICROWAVE IMAGES OF ARCTIC SEA ICE
Xiaomin Liu, Tiantian Feng, Junqiao Zhao, Rongxing Li, Tongji University, China

FRP1.PP.9
Board PP.9
COMPARISON OF SENTINEL-1 SAR AND SENTINEL-3 ALTIMETRY DATA FOR SEA ICE TYPE DISCRIMINATION
Wiebke Aldenhoff, Leif E.B. Eriksson, Chalmers University of Technology, Sweden; Céline Heuzé, University of Gothenburg, Sweden

FRP1.PP.10
Board PP.10
STUDY ON THE RETRIEVAL OF SEA ICE CONCENTRATION FROM FY3B/MWRI IN THE ARCTIC
Lele Li, Haihua Chen, Xiaoyu Wang, Lei Guan, Ocean University of China, China

FRP1.PP.11
Board PP.11
PASSIVE MICROWAVE REMOTE SENSING OF LAKE ICE FREEZING IN HIGH ASIA
Yubao Qiu, Huadong Guo, Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Juha Lemmetyinen, Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China / Arctic Research Center, Finnish Meteorological Institute, Finland; Xingxing Wang, Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PP.12
Board PP.12
APPLICABILITY ASSESSMENT OF AREAL AND FEATURE-BASED ALGORITHMS FOR SEA ICE TRACKING FROM SAR IMAGES USING TEXTURE ENTROPY ANALYSIS
Denis Demchev, Arctic and Antarctic Research Institute, Russia / Chalmers University of Technology, Sweden; Vasily Smolyanitsky, Petr Korobov, Vladislav Alekseev, Arctic and Antarctic Research Institute, Russia

Friday, August 2	09:40 - 10:40	Room 503: Area Q
Session FRP1.PQ		**Poster**

Machine Learning Applications for Urban Remote Sensing

Session Chair: Francesca Cecinati, University of Bath

FRP1.PQ.1
Board PQ.1
SAR-IMAGE BASED URBAN CHANGE DETECTION IN BANGKOK, THAILAND USING DEEP LEARNING
Raveerat Jaturapitpornchai, Masashi Matsuoka, Tokyo Institute of Technology, Japan; Naruo Kanemoto, National Institute of Advanced Industrial and Science and Technology (AIST), Japan; Shigeki Kuzuoka, Space Shift, Japan; Riho Ito, Ryosuke Nakamura, National Institute of Advanced Industrial and Science and Technology (AIST), Japan

FRP1.PQ.2
Board PQ.2
IDENTIFY URBAN AREA FROM REMOTE SENSING IMAGE USING DEEP LEARNING METHOD
Jinxin Guo, Huazhong Ren, Yitong Zheng, Jing Nie, Shanshan Chen, Yuanheng Sun, Qiming Qin, Peking University, China

FRP1.PQ.3
Board PQ.3
DELINEATION OF THE URBAN FRINGE USING MULTI-INDICATORS AND DEEP NEURAL NETWORK
Renbo Luo, Xingnan Liu, Zhifeng Wu, Yingbiao Chen, Guangzhou University, China

FRP1.PQ.4
Board PQ.4
COMBINED MULTISCALE CONVOLUTIONAL NEURAL NETWORKS AND SUPERPIXELS FOR BUILDING EXTRACTION IN VERY HIGH-RESOLUTION IMAGES
Hui Huang, Genyun Sun, Aizhu Zhang, Yanling Hao, Jun Rong, China University of Petroleum (East China), China; Li Zhang, Key Laboratory of Poyang Lake Wetland and Watershed Research, Ministry of Education, Jiangxi Normal University, China

FRP1.PQ.5
Board PQ.5
ON ANOMALOUS DEFORMATION PROFILE DETECTION THROUGH SUPERVISED AND UNSUPERVISED MACHINE LEARNING
Stefan-Adrian Toma, Bogdan Sebacher, Adrian Focsa, Mihai-Lica Pura, Military Technical Academy, Romania

FRP1.PQ.6
Board PQ.6
LEARNING SELF-ADAPTIVE SCALES FOR EXTRACTING URBAN FUNCTIONAL ZONES FROM VERY-HIGH-RESOLUTION SATELLITE IMAGES
Xiuyuan Zhang, Shihong Du, Peking University, China

FRP1.PQ.7
Board PQ.7
BUILDING SHADOW DETECTION BASED ON DBM
Guoqing Zhou, Hongjun Sha, Haoyu Wang, Tao Yue, Bin Jia, Guilin University of Technology, China

FRP1.PQ.8
Board PQ.8
URBAN ROADS NETWORK DETECTION FROM HIGH RESOLUTION REMOTE SENSING
Lisa Yang, Afreen Siddiqi, Olivier de Weck, Massachusetts Institute of Technology, United States

FRP1.PQ.9
Board PQ.9
URBAN-RURAL FRINGE RECOGNITION WITH THE INTEGRATION OF OPTICAL AND NIGHTTIME LIGHTS DATA
Xiaolin Chen, Xiuping Jia, Mark Pickering, School of Engineering and Information Technology, University of New South Wales, Australia

Friday, August 2	09:40 - 10:40	Room 503: Area R
Session FRP1.PR		Poster

Urban Remote Sensing I

Session Chair: Ian Adams, NASA Goddard Space Flight Center

FRP1.PR.1
Board PR.1
ESTIMATION OF PM2.5 CONCENTRATION IN BEIJING-TIANJIN-HEBEI REGION THROUGH GLOBAL RESOLVED DATASETS
Yani Wang, Siyu Wang, Lei Zhou, Qiang Chen, Mingyi Du, Changfeng Jing, Beijing University of Civil Engineering and Architecture, China; Ming Liu, National Disaster Reduction Center of China, China; Yang Liu, Beijing University of Civil Engineering and Architecture, China

FRP1.PR.2
Board PR.2
DIURNAL LAND SURFACE TEMPERATURE CHARACTERISTICS OF LOCAL CLIMATE ZONES: A CASE STUDY IN BEIJING, CHINA
Jinling Quan, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China

FRP1.PR.3
Board PR.3
EFFECTS OF URBANIZATION ON LONG-TERM SURFACE ALBEDO VARIATION USING LANDSAT DATA
Tao He, Tianci Guo, Jun Lu, Wuhan University, China; Danxia Song, Central China Normal University, China

FRP1.PR.4
Board PR.4
IMPACT OF URBAN SPATIAL FORM ON DAYTIME LAND SURFACE TEMPERATURE IN COMMUNITIES OF WUHAN
Tao Wang, Huifang Li, Huanfeng Shen, Meiling Gao, School of Resource and Environmental Sciences, Wuhan University, China

FRP1.PR.5
Board PR.5
SATELLITE-DERIVED PM2.5 AND ITS CORRELATION WITH URBAN FORM IN GUANGDONG, CHINA
Lili Li, Yangcheng Zheng, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China; Tao Chen, South China Normal University, China; Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

FRP1.PR.6
Board PR.6
REMOTE SENSING AND DIRECT OBSERVATION OF THE ATMOSPHERIC BOUNDARY LAYER STRUCTURE DURING HAZE EPISODE IN BEIJING
Yu Shi, Fei Hu, State Key Laboratory of Atmospheric Boundary Layer Physics and Atmospheric Chemistry, Institute of Atmospheric Physics, Chinese Academy of Sciences, China; Guangqiang Fan, Key Laboratory of Environmental Optics and Technology, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, China

FRP1.PR.7
Board PR.7
ACCURACY ASSESSMENT OF THE URBAN LAND SURFACE TEMPERATURE CALCULATION BASED ON LANDSAT-8/OLI DATA (CASE STUDY: COYHAIQUE, CHILE)
Konstantin Verichev, Universidad Austral de Chile, Chile; Polina Mikhaylyukova, Lomonosov Moscow State University, Russia; Alisa Salimova, Tsinghua University, China; Cristian Salazar, Universidad Austral de Chile, Chile; Manuel Carpio, Pontificia Universidad Católica de Chile, Chile

FRP1.PR.8
Board PR.8
A NEW METHOD FOR NOISE REMOVAL IN NPP-VIIRS MONTHLY NIGHTTIME LIGHT IMAGERY OVER THE SAHEL REGION
Xiaotian Yuan, Li Jia, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; Jie Zhou, Central China Normal University, China; Massimo Menenti, Qiting Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PR.9
Board PR.9
INTRODUCING SATELLITE DATA BASED BIOSPHERE MODEL BEAMS TO IMPROVE REGIONAL TRANSPORT MODEL AIST-MM FOR ESTIMATING CARBON DIOXIDE EMISSION FROM MEGA-CITY TOKYO
Qiao Wang, Ryoichi Imasu, Satoshi Ito, University of Tokyo, Japan; Takahiro Sasai, Tohoku University, Japan; Hiroaki Kondo, National Institute of Advanced Industrial and Science and Technology (AIST), Japan

FRP1.PR.10
Board PR.10
DOWNSCALING OF SATELLITE LAND SURFACE TEMPERATURE DATA OVER URBAN ENVIRONMENTS
Anna F. Vaculik, City College of New York, United States; Abdou Rachid Bah, CUNY-Graduate Center, United States; Hamid Norouzi, Christopher Beale, Makini Valentine, Justine Ginchereau, Reginald Blake, New York City College of Technology, United States

FRP1.PR.11
Board PR.11
URBAN THERMAL ENVIRONMENT OBSERVATION USING HIMAWARI-8/AHI DATA
Toshiro Sugimura, Yuuki Uchida, Keishi Iwashita, College of Industrial Technology, Nihon University, Japan

FRP1.PR.12
Board PR.12
NEAREST NEIGHBOR METHOD TO ESTIMATE URBAN AREAS USING MODIS NDVI TIME SERIES
Osmar Luiz de Carvalho, Renato Guimarães, Roberto Gomes, Osmar Abílio de Carvalho Junior, Cristiano Silva, University of Brasilia, Brazil

Friday, August 2	09:40 - 10:40	Room 503: Area S
Session FRP1.PS		Poster

Urban Mapping

Session Co-Chairs: Lu Jiang, Nanjing University; Francesca Bovolo, Fondazione Bruno Kessler

FRP1.PS.1
Board PS.1
MAPPING FINE-SCALE URBAN SPATIAL POPULATION DISTRIBUTION BASED ON HIGH-RESOLUTION REMOTE SENSING IMAGES
Min Xu, Chunxiang Cao, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Hongquan Yun, National Key Laboratory of Science and Technology on Aerospace Intelligence Control, China; Tianyu Yang, Aerospace Information Research Institute, Chinese Academy of Sciences, China; Peng Jia, Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, Netherlands

FRP1.PS.2
Board PS.2
URBAN GREEN SPACE ACCESSIBILITY EVALUATION USING AGE-BASED 2-STEP FLOATING CATCHMENT AREA METHOD
Jingyuan Qiu, Yuqi Bai, Tsinghua University, China; Yichun Hu, Yichang Smart City Construction Office, China; Tianhao Wang, Yichang Big Data Management Center, China; Pei Zhang, Chengzhong Xu, Yichang Center for Disease Control and Prevention, China

FRP1.PS.3
Board PS.3
AUTOMATIC WORKFLOW FOR THE GENERATION OF TRUE ORTHOIMAGES FROM VERY HIGH-RESOLUTION SATELLITE DATA
Aleš Marsetič, Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia

FRP1.PS.4
Board PS.4
ANALYSIS OF ECOLOGICAL FACTORS AFFECTING BEIJING CITY BASED ON GEOGRAPHICAL DETECTOR
Xiaoming Deng, Xiaohan Liao, Chenchen Xu, Huanyin Yue, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

FRP1.PS.5
Board PS.5
ASSESSING AND PREDICTING CHANGES OF THE ECOSYSTEM SERVICE VALUES BASED ON LAND USE/LAND COVER CHANGES IN QINGDAO, CHINA
Xiaochuan Qin, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China; Bihong Fu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

FRP1.PS.6
Board PS.6
LAND SUITABILITY ANALYSIS FOR URBAN LAND DEVELOPMENT IN PENDIK, TURKEY
Eda Ustaoglu, Arif Cagdas Aydınoglu, Gebze Technical University, Turkey

FRP1.PS.7
Board PS.7
MONITORING DISPLACEMENT ON NATIONAL ROUTE AND RAILWAY WITH PALSAR-1 DATA BY USING MULTI-TEMPORAL DISPLACEMENT DECOMPOSITION IN CHIBA PREFECTURE, JAPAN
Fumitaka Ogushi, Masashi Matsuoka, Tokyo Institute of Technology, Japan

FRP1.PS.8
Board PS.8
URBAN EXPANSION ANALYSIS OF CHINA'S PREFECTURE LEVEL CITY FROM 2000 TO 2016 USING HIGH-PRECISION URBAN BOUNDARY
Hao Wang, Xiaogang Ning, Chinese Academy of Surveying and Mapping, China; Hanchao Zhang, Wuhan University, China; Yafei Liu, Chinese Academy of Surveying and Mapping, China

FRP1.PS.9
Board PS.9
A REMOTE SENSING-BASED VACANCY AREA INDEX FOR ESTIMATING HOUSING VACANCY AND GHOST CITIES IN CHINA
Huan Li, School of Earth and Space Sciences, Peking University, China; Chao Zeng, School of Resource and Environmental Sciences, Wuhan University, China; Wei Wan, Yaokui Cui, Yang Hong, Wenjie Fan, School of Earth and Space Sciences, Peking University, China

FRP1.PS.10
Board PS.10
FIRE NUMERICAL SIMULATION ANALYSIS FOR LARGE-SCALE PUBLIC BUILDING IN 3D GIS
Xiaoxia Huang, Hongga Li, Xia Li, Lin Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

Author and Session Chair Index

I

M

N

O

P

U

V

X

Notes

Notes

Notes

Notes

<div align="center">

CALL FOR PAPERS
IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special Issue on
"IEEE 2019 International Geoscience and Remote Sensing Symposium (IGARSS 2019)"

</div>

The IEEE 2019 International Geoscience and Remote Sensing Symposium (IGARSS 2019) is being held in Yokohama, Japan, on July 28 - August 2, 2019. This is the premier symposium of the IEEE Geoscience and Remote Sensing Society (GRSS). IGARSS is a major scientific and technical event in remote sensing.

As tradition, a special issue of the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (J-STARS) is planned in conjunction with IGARSS 2019.

Papers submitted to J-STARS should NOT be the IGARSS conference paper. A 2 to 3 times longer paper is typically expected, with a more detailed presentation of the work, and possibly to include additional data sets and comparisons in an enhanced experimental section.

In the cover letter, please provide the corresponding paper number of IGARSS 2019. If this information is not provided, the paper will be considered as a regular submission.

Format
All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on http://mc.manuscriptcentral.com/jstars, using the Manuscript Central interface and select the "IGARSS2019" special issue manuscript type. Prospective authors should consult the site http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7416303 for guidelines and information on paper submission. All submissions must be formatted using the IEEE standard format (double column, single spaced). For a template in this format please see http://www.ieee.org/publications_standards/publications/authors/author_templates.html. Please note that as of Jan. 1, 2020, IEEE J-STARS will become a fully open-access journal charging a flat publication fee $1250 per paper.

Schedule
Sept. 1, 2019:   Submission system opening
Feb. 28, 2020:   Submission system closing
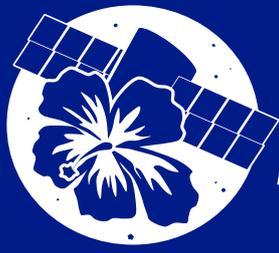2020:   Publication date

Guest Editors
Akira Hirose, The University of Tokyo, Japan (ahirose@ee.t.u-tokyo.ac.jp)
Irena Hajnsek, ETH, Zurich (irena.hajnsek@dlr.de)
Akira Iwasaki, The University of Tokyo, Japan (aiwasaki@sal.rcast.u-tokyo.ac.jp)
Hiroyoshi Yamada, Niigata University, Japan (yamada@ie.niigata-u.ac.jp)

IGARSS

IEEE · **GRSS**

2020 *IEEE International Geoscience and Remote Sensing Symposium*

19 – 24 July 2020 · Waikoloa, Hawaii, USA

Call for Papers

Hosted by the IEEE Geoscience and Remote Sensing Society, the 2020 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2020) will be held Sunday, 19 July through Friday, 24 July, 2020 at the Hilton Waikoloa Village in Waikoloa, Hawaii, USA. The main theme of the 2020 symposium is "Remote Sensing: Global Perspectives for Local Solutions".

On behalf of the IEEE Geoscience and Remote Sensing Society and the IGARSS 2020 Organizing Committee, we invite you to participate in IGARSS 2020, the world's premier symposium on geoscience, remote sensing and related topics. We look forward to meeting you in Waikoloa during IGARSS 2020.

Important Dates

|	
Invited Session Proposal Deadline	4 October 2019
Invited Session Proposal Results	4 November 2019
Paper Submission System On-Line	11 November 2019
Tutorial Proposal Deadline	11 November 2019
Tutorial Proposal Results	9 December 2019
Paper Submission Deadline	15 January 2020
Student Paper Competition Deadline	15 January 2020
Travel Support Application Deadline	15 January 2020
Submission Status Available Online	17 April 2020
Registration Open	20 April 2020
Final Submission Deadline	29 May 2020
Early Registration Deadline	29 May 2020
IGARSS 2020	**19–24 July 2020**

Organizing Committee

General Chair	Bill Emery, University of Colorado
General Co-Chair	Adriano Camps, UPC-BarcelonaTech
Technical Program Co-Chairs	Jasmeet Judge, University of Florida
	Paolo Gamba, University of Pavia
	Jiancheng Shi, Chinese Academy of Sciences
Finance Chair	Paul Rosen, JPL
Publicity Chair	Steve Reising, Colorado State University
Exhibits Chair and Industry Liaison	Fabio Pacifici, Digital Globe
Government Liaison	Gail Skofronick Jackson, NASA GSFC
Local Arrangements Chair	Ryan Perroy, University of Hawaii Hilo
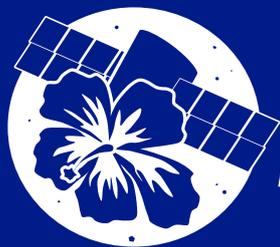
Technical Program

IGARSS is a premier event in remote sensing and provides an ideal forum for obtaining up-to-date information about the latest developments, exchanging ideas, identifying future trends and making networking with the international geoscience and remote sensing community.

The IGARSS 2020 technical program will include the following general themes:

- Data Analysis Methods, Classification, and Data Mining
- Atmosphere
- Cryosphere
- Oceans
- Land
- Missions, Sensors and Calibration
- Data Management and Education

In addition, special scientific themes will be addressed, including:

- Monitoring and damage assessment of volcanoes and other natural disasters
- Monitoring and Preservation of Natural Reserves
- Coastal environment, its change and the impact of rising sea levels
- The Great Pacific Garbage Patch
- NewSpace in Remote Sensing
- Artificial Intelligence in Remote Sensors

Student Paper Competition

IEEE Geoscience and Remote Sensing Society student members are invited to submit a paper to the IGARSS Student Paper Competition. The selection of the finalist papers will be done by a committee of experts, and the selected students will present their papers during a special session at the Symposium.

Publication of Proceedings

Accepted papers will be published in the proceedings on IEEE Xplore® only if presented at the Symopsium by one of the listed authors, duly registered.

Paper Submission

Authors who wish to give a presentation are requested to submit a paper (minimum of 2 pages; maximum of four pages). A link to submit the paper online will be available at the Symposium website beginning 11 November 2019.

Welcome to Waikoloa, Hawaii!

IGARSS 2020 - Remote Sensing: Global Perspectives for Local Solutions – is to be held on the Big Island of Hawaii. This island – over 4,000 square miles – has 10 of the world's 14 climate zones and lends itself to discovery for our diverse global viewpoints and discussions. You will also find the longest running active volcano in the world (continuous since 1983.)

The IGARSS 2020 conference will be held at the Hilton Waikoloa Village on 62 oceanfront acres along the Kohala Coast. It is 20 minutes north of the Kona International Airport. This property offers tropical gardens, wildlife, Asian and Polynesian art, golf courses, tennis courts, shopping, restaurants, snorkeling, a nearby white sand beach (anaeho'omalu bay), salt-water lagoon, fresh water swimming pools, waterfalls and slides, dolphin encounters, sea turtles, and much more.

IGARSS 2020 is offering unique perspectives, discussions, research, solutions, and an opportunity to network in a beautiful environment.

Sponsors

Co-Sponsors

IEEE Geoscience and Remote Sensing

Science Council of Japan

Technical Co-Sponsors (Alphabetical)

The Geodetic Society of Japan

IEEE AESS Japan Chapter

IEEE APS Japan Chapter

IEEE GRSS Japan Chapter

Institute of Electronics, Information and Communication Engineers (IEICE), Communication Society

Institute of Electronics, Information and Communication Engineers (IEICE), Electronics Society

Japan Geoscience Union (JpGU), Atmospheric and Hydrospheric Sciences Section

National Institute of Information and Communications Technology (NICT)

Japan Society of Photogrammetry and Remote Sensing (JSPRS)

Remote Sensing Society of Japan (RSSJ)

The Society of Instrument and Control Engineers (SICE)

Conference Grants (Alphabetical)

City of Yokohama

National Institute of Information and Communications Technology (NICT)

Obayashi Foundation

SECOM Science and Technology Foundation

Society for Promotion of Space Science

The Murata Science Foundation