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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,

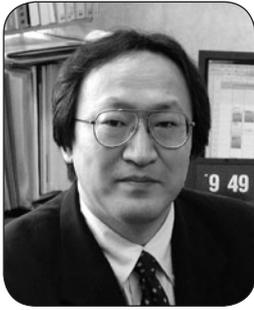
or government, the opportunity to create communities that fuel innovation, facilitate knowledge sharing, and provide support through a session designed to foster discussion and collaboration.

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 Hajsek
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 Parashapering: 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: Potential, 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		M03.R3 Advancing Remote Sensing in the Geosciences through Standardization I	M03.R4 Radio Frequency Interference (RFI) in Passive Instruments	M03.R5 Object Detection in SAR Imaging I	M03.R6 Urban Land Use and Land Cover Change	M03.R7 Global Precipitation Measurement Mission I	M03.R9 TanDEM-X and Innovative Applications I	TIE Education in Action	M03.R11 Change Detection Techniques in Multitemporal SAR Images I	M03.R12 Land Use Applications I	M03.R13 International Spaceborne Imaging Spectroscopy Missions: Updates and News I	M03.R8 NewSpace Initiatives in Remote Sensing	
15:20 - 16:20	Poster Sessions & Break												
16:20 - 18:00		M04.R3 Advancing Remote Sensing in the Geosciences through Standardization II	M04.R4 Radio Frequency Interference (RFI) and Spectrum Management Issues	M04.R5 Object Detection in Urban Areas II	M04.R6 Land Use and Land Cover Change in Vegetated Terrains	M04.R7 Global Precipitation Measurement Mission II	M04.R9 TanDEM-X and Innovative Applications II	M04.R10 SAR Instruments and Calibration III	M04.R11 Analysis of Multitemporal SAR Images	M04.R12 Recent Developments in LAI and FAPAR Estimation and Validation	M04.R13 International Spaceborne Imaging Spectroscopy Missions: Updates and News II	M04.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

	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 / LEG-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 / LEG-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 Liar: Missions, Technologies and Observations I	TU3.R5 Deep Learning for Object Detection II	TU3.R6 Forest Methods using Lidar Sensors	TU3.R7 Analytics on Databases & Analysis Ready Earth Data - supported by GRSS ESJ, 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 Liar: 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

08:00 - 09:40	Room 211 + 212 WE1.R1 Mapping Planetary Bodies through Remote Sensing I	Room 213 WE1.R2 Clouds and Precipitation: Data Products and Retrievals I	Room 311 + 312 WE1.R3 SAR Polarimetry: Theory and Applications I	Room 313 + 314 WE1.R4 Deep Learning for Multispectral Image Analysis I	Room 315 WE1.R5 Hyperspectral Image Classification I	Room 411 + 412 WE1.R6 Soil Moisture Modelling and Retrievals	Room 413 WE1.R7 IEEE GRSS Data Fusion Contest I	Room 414 + 415 WE1.R8 Monitoring and Damage Assessment of Earthquake	Room 416 + 417 WE1.R9 Differential SAR Interferometry: Applications II	Room 418 WE1.R10 Technology Validation and Science using CubeSat Platforms I	Room 419 WE1.R11 Target and Anomaly Detection in Hyperspectral Images	Room 421 WE1.R12 Ocean Biology and Water Quality I	Room 511 + 512 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 Multifrequency 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
Poster Sessions & Break													
09:40 - 10:40	Walking Tour 2 (Half day with Chinese Lunch)												
10:25 - 13:45	Poster Sessions & Break												
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
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
Poster Sessions & Break													
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

	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 Cytosphere 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 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 Cytosphere 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 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 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.R5 Image Segmentation III	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

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	Estimation Methods for Hyperspectral and Multispectral Data
	TUP1.PI	Poster Area I	Remote Sensing of Leaf Area Index and Clumping
	TUP1.PJ	Poster Area J	Monitoring Temporal Variability of Vegetation
	TUP1.PK	Poster Area K	Spatial Structure and Health Monitoring 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	Atmospheric 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

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
	Room 503 09:40 - 10:40	WEP1.PQ	Poster Area Q
WEP1.PR		Poster Area R	Monitoring and Damage Assessment of Flood I
WEP1.PS		Poster Area S	Monitoring and Damage Assessment of Flood II

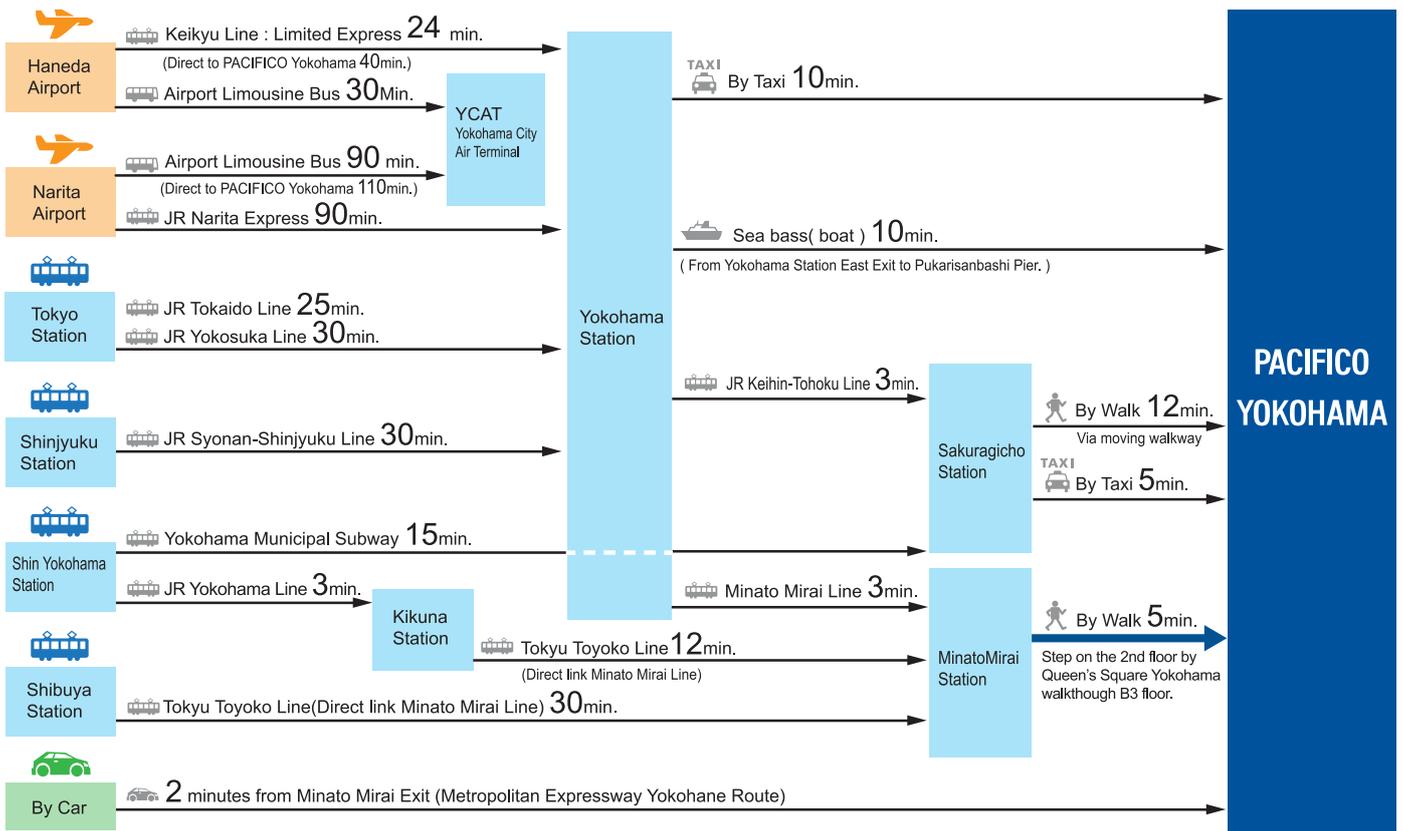
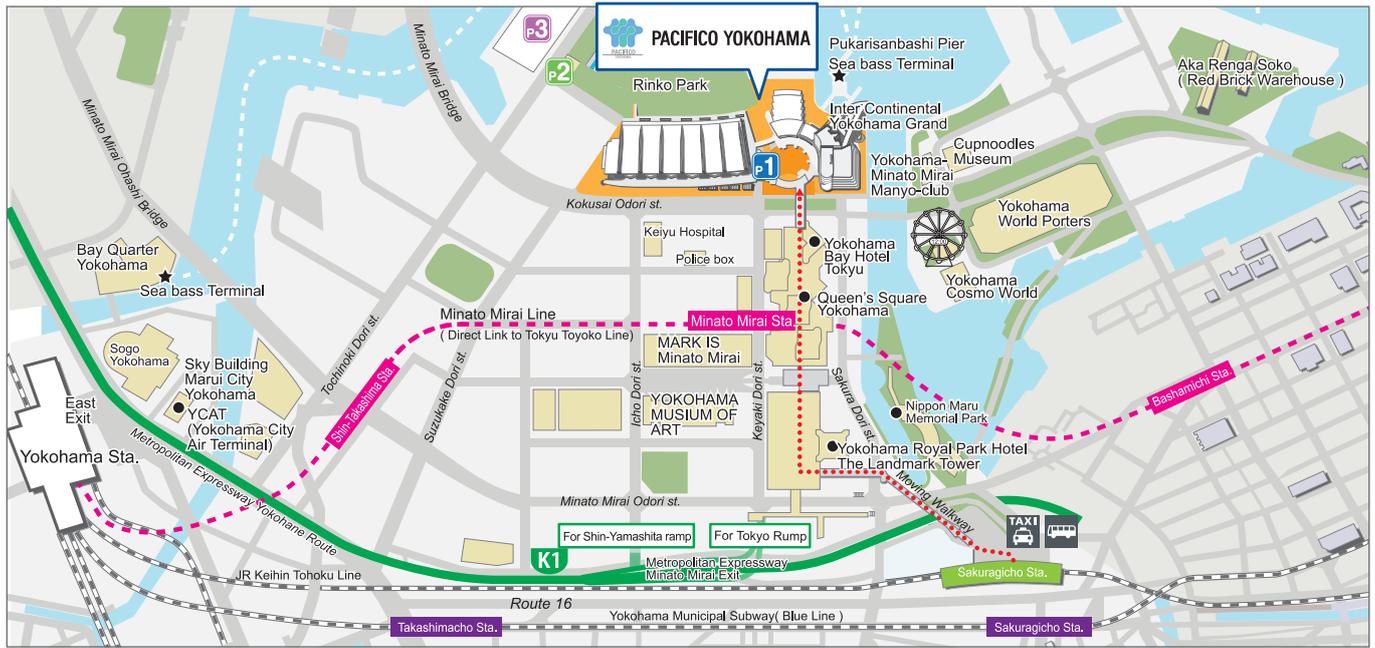
Wednesday, July 31			
	Session Code	Poster Area Name	Session Name
Room 501-502 15:20 - 16:20	WEP2.PA	Poster Area A	Aerosols II
	WEP2.PB	Poster Area B	Aerosols III
	WEP2.PC	Poster Area C	Multi-Channel SAR
	WEP2.PD	Poster Area D	Image Formation II
	WEP2.PE	Poster Area E	Analysis of SAR/POLSAR Data
	WEP2.PF	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 Assessment of Storm and Weather
	WEP2.PR	Poster Area R	Monitoring and Damage Assessment of Natural Disaster and Hazards I
	WEP2.PS	Poster Area S	Monitoring and Damage Assessment of Natural Disaster and Hazards II
	WEP2.PT	Poster Area T	Ocean Surface Salinity and Temperature I

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
THP2.PR		Poster Area R	Remote Sensing for Crop Classification, Mapping and Monitoring IV
THP2.PS		Poster Area S	Forest and Vegetation Observation 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

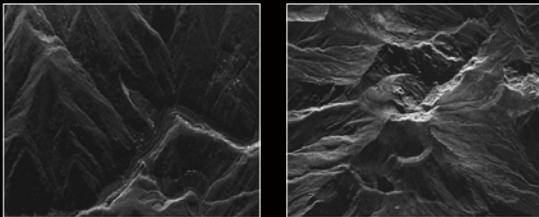
Environment

Resource Exploration

Agriculture and Fishery



Satellite Operation



Simulated Images by NEC



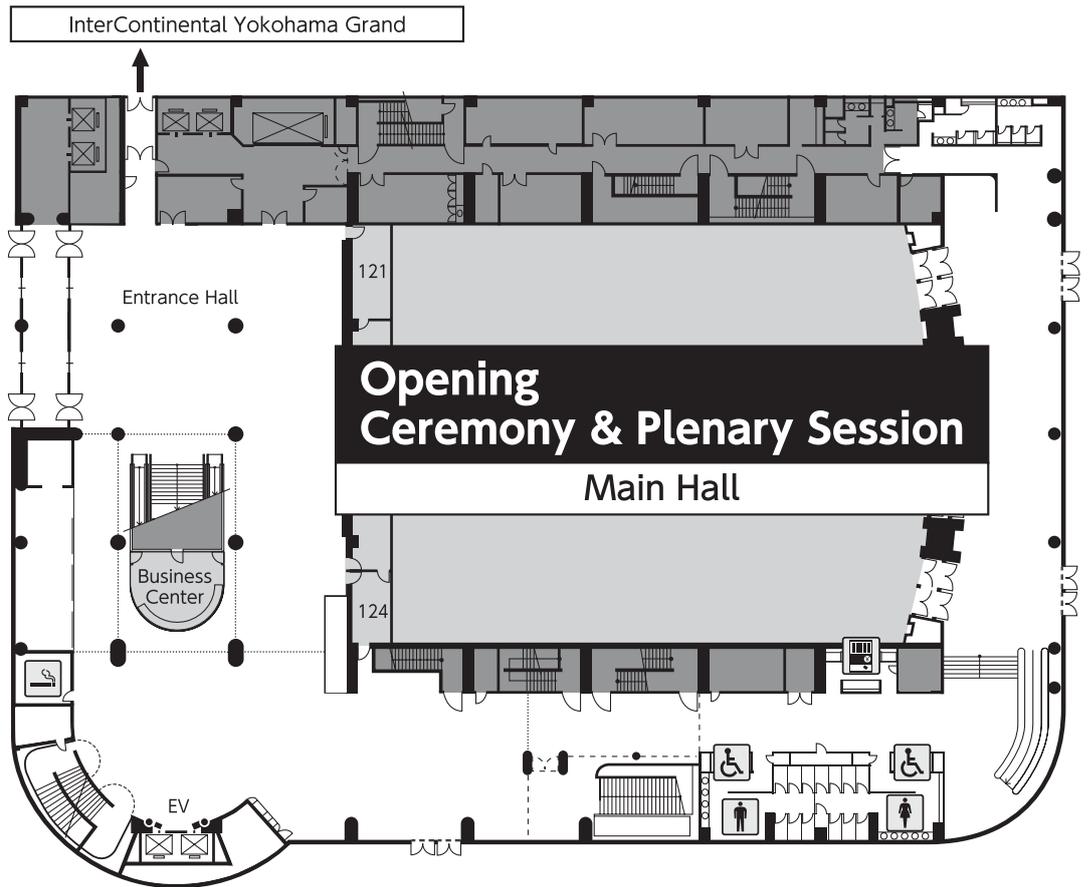
NEC Satellite Operation Center

Satellite Design / Integration



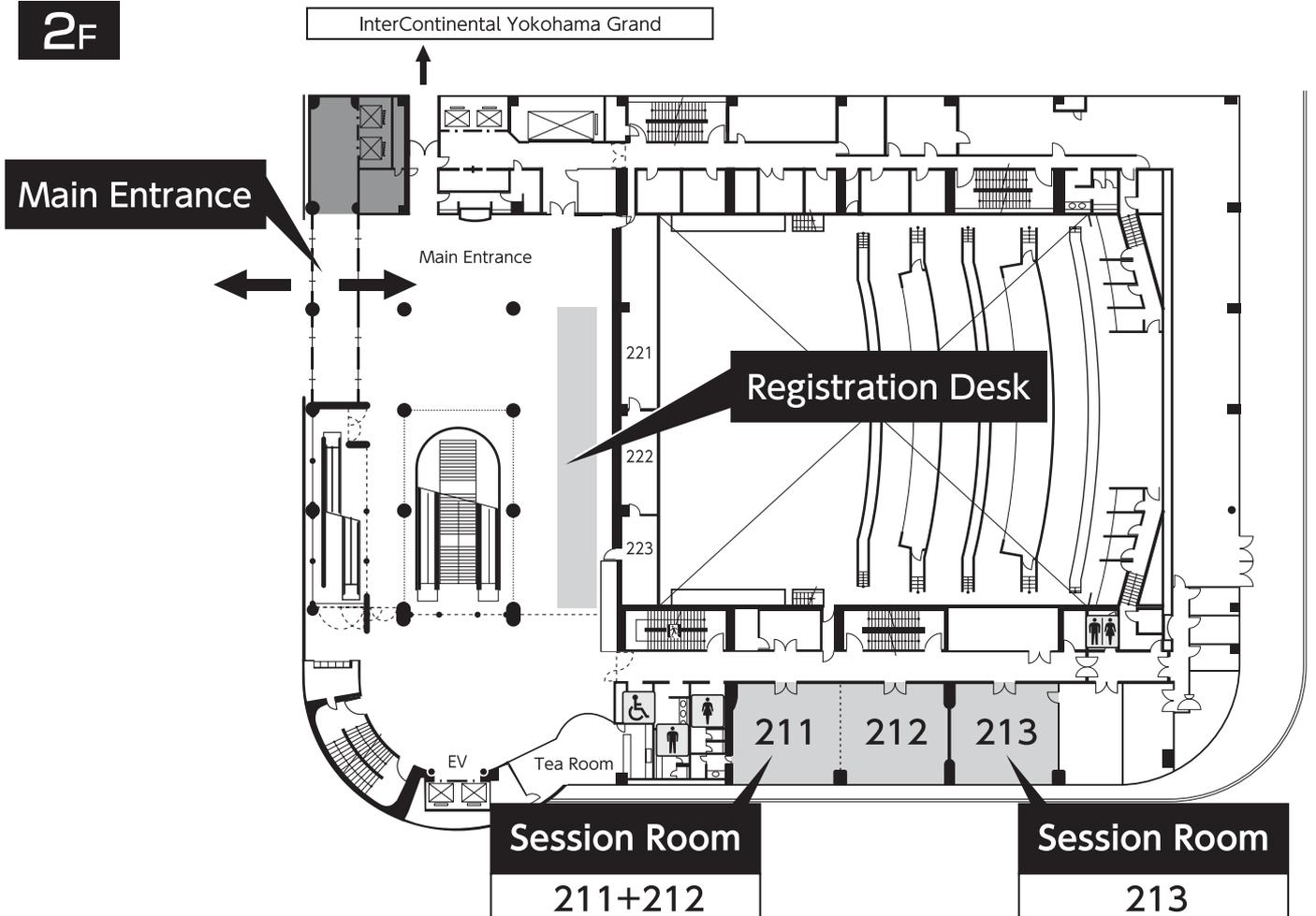
PACIFICO Yokohama – 1st Floor

1F



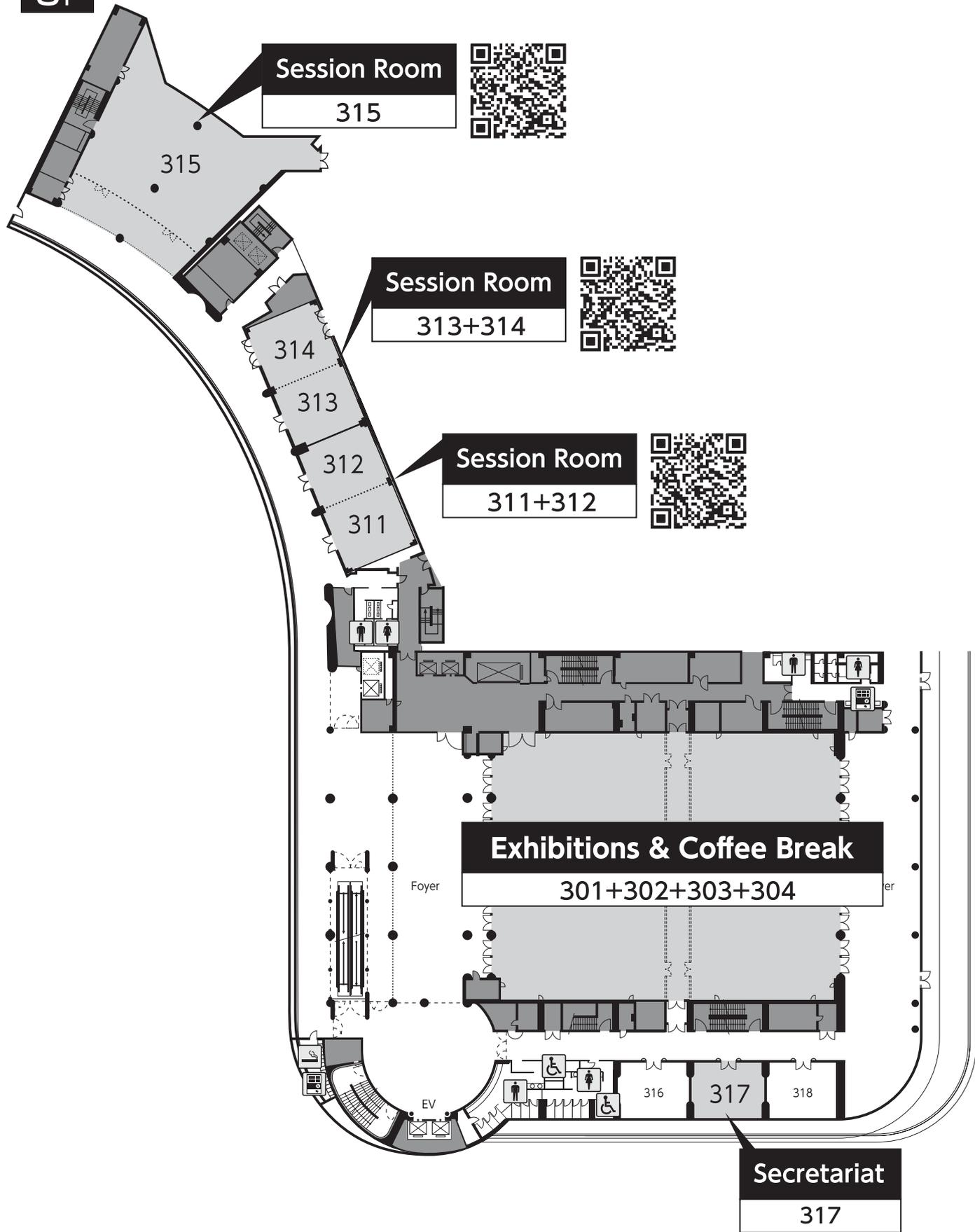
PACIFICO Yokohama – 2nd Floor

2F

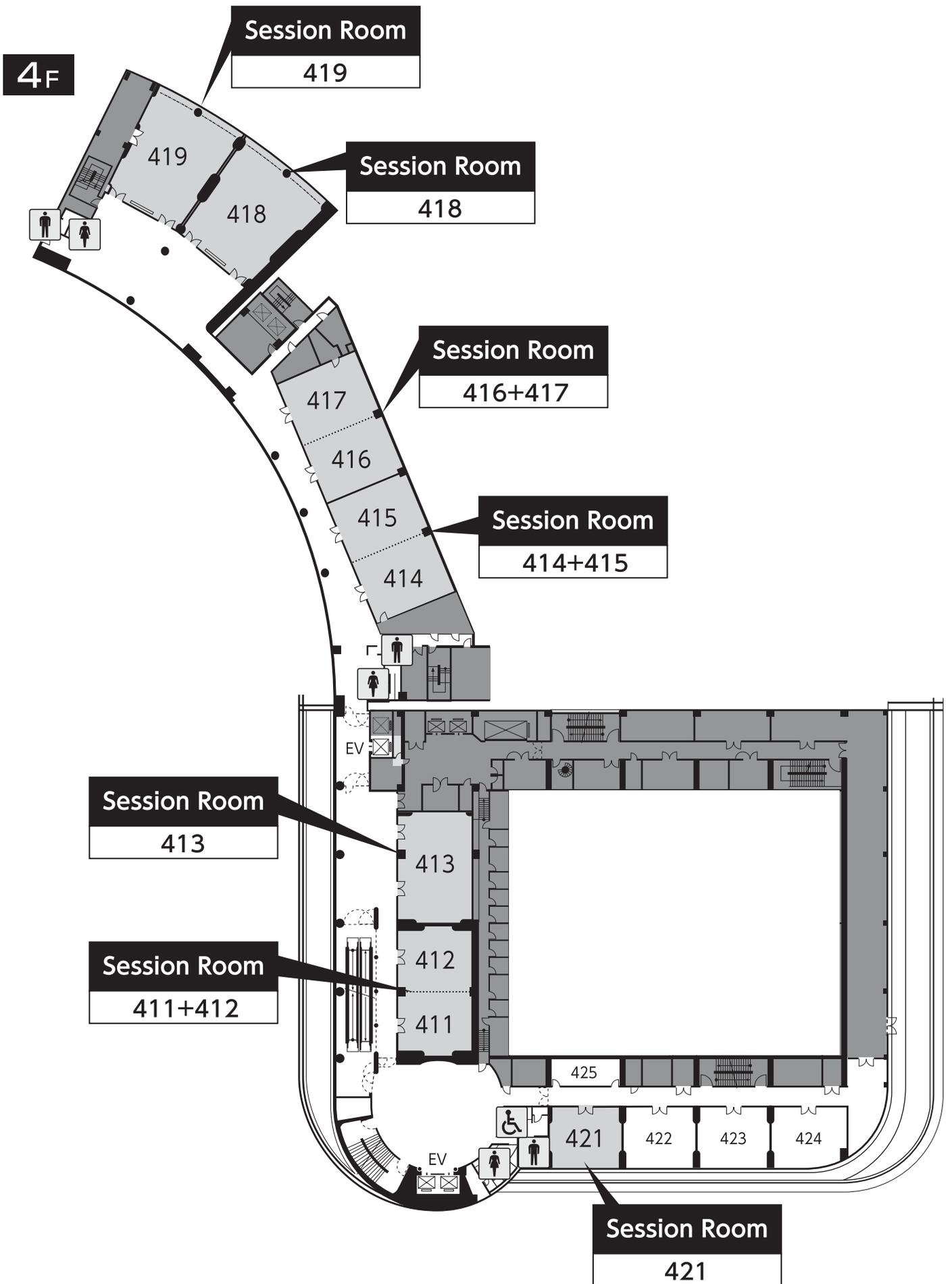


PACIFICO Yokohama – 3rd Floor

3F



PACIFICO Yokohama – 4th Floor





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<http://www.MitsubishiElectric.com/bu/space/>

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for a greener tomorrow

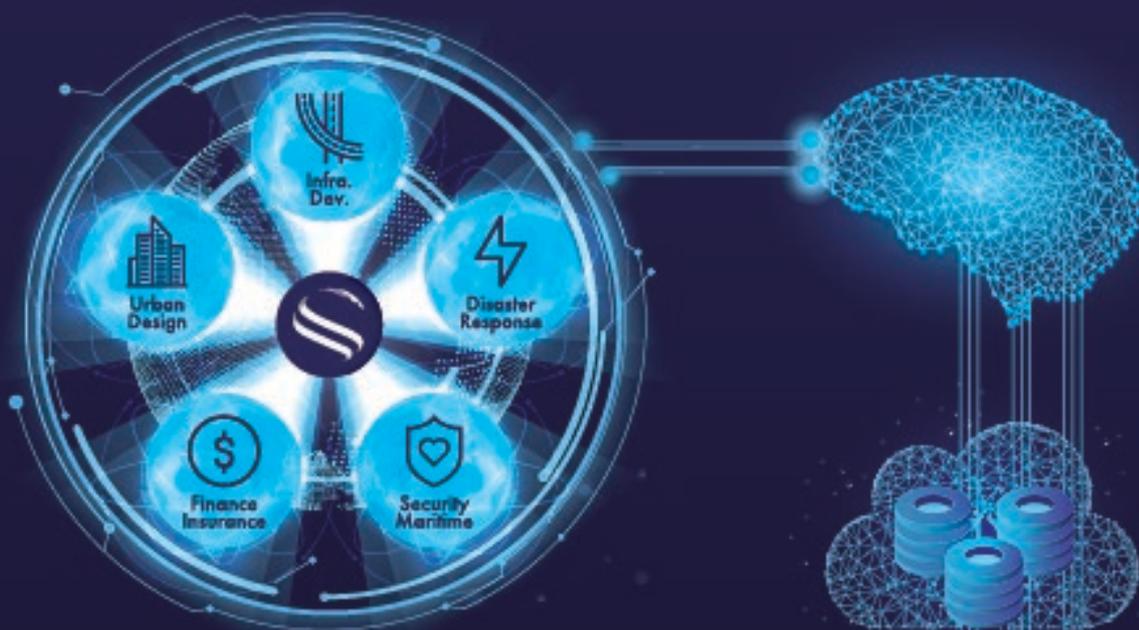
 **MITSUBISHI
ELECTRIC**
Changes for the Better



Synspective

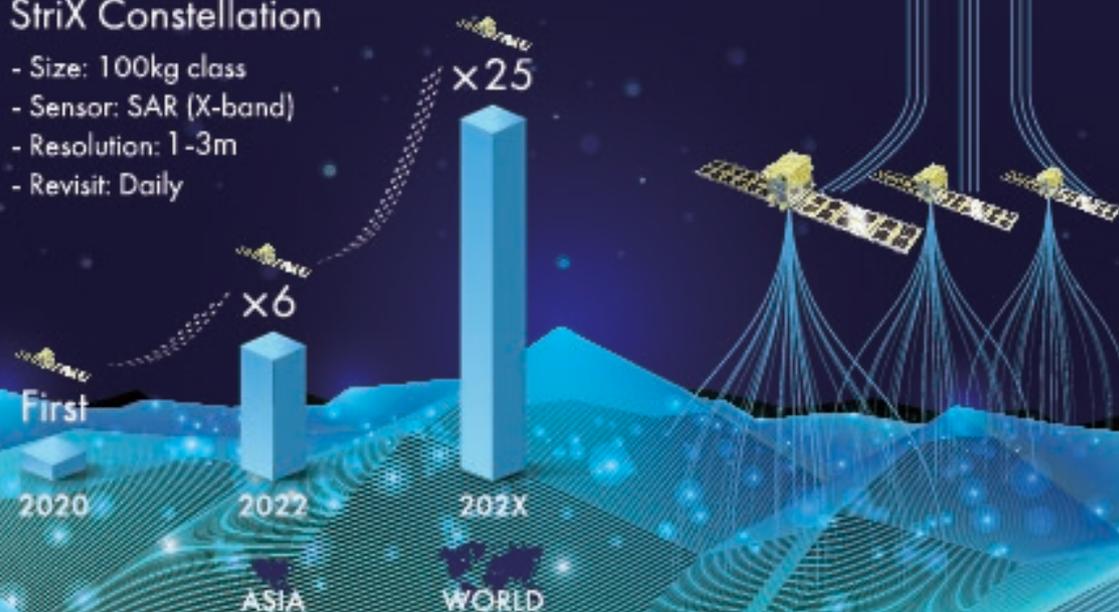
Synspective is a Japanese startup company that will establish a synthetic aperture radar (SAR) satellite constellation and provide one-stop geo-solutions based on satellite imagery.

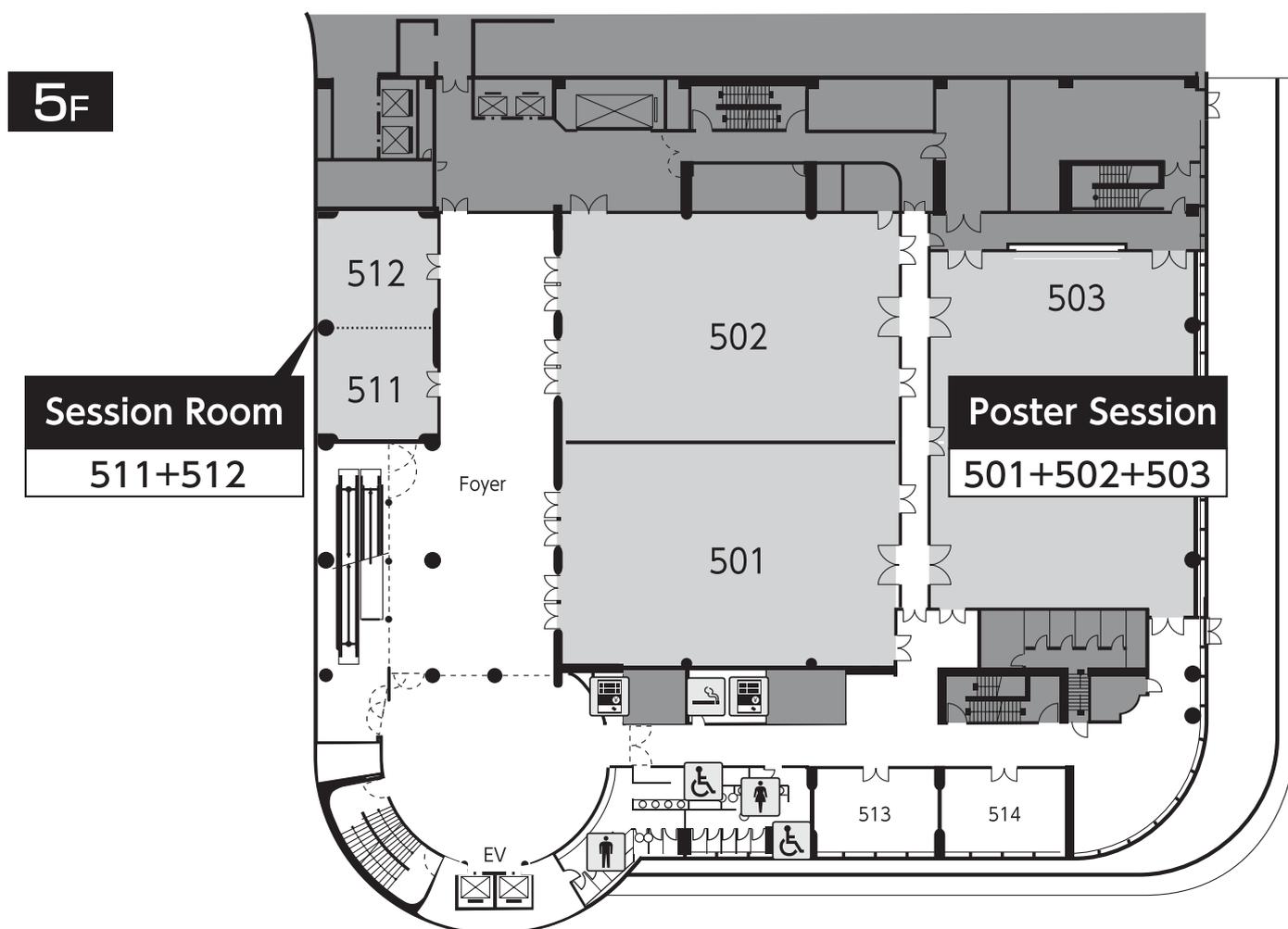
One-stop Geo Solution; Earth observation for anywhere anytime



StriX Constellation

- Size: 100kg class
- Sensor: SAR (X-band)
- Resolution: 1-3m
- Revisit: Daily



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.

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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.

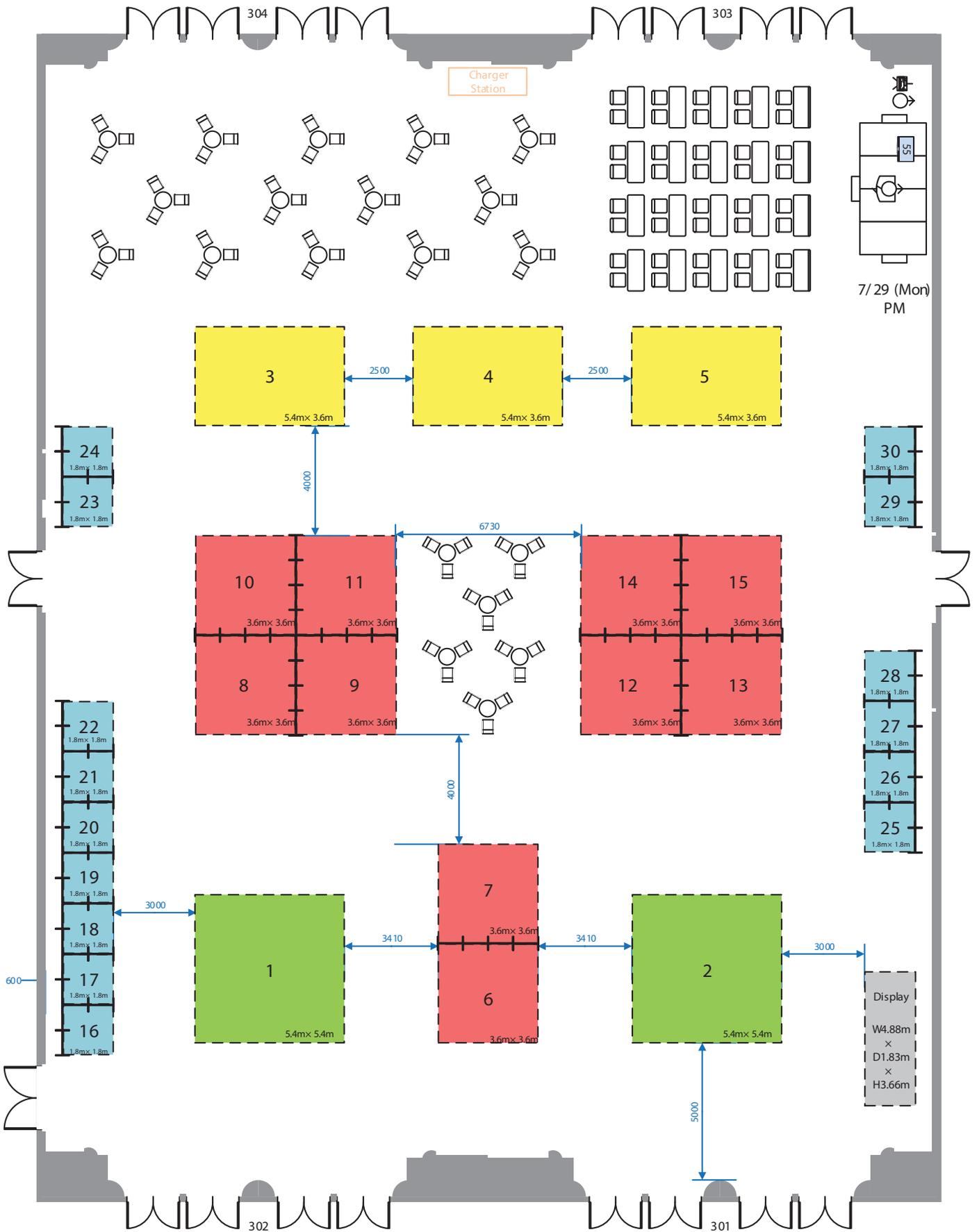
GRSS web site: <http://www.grss-ieee.org>



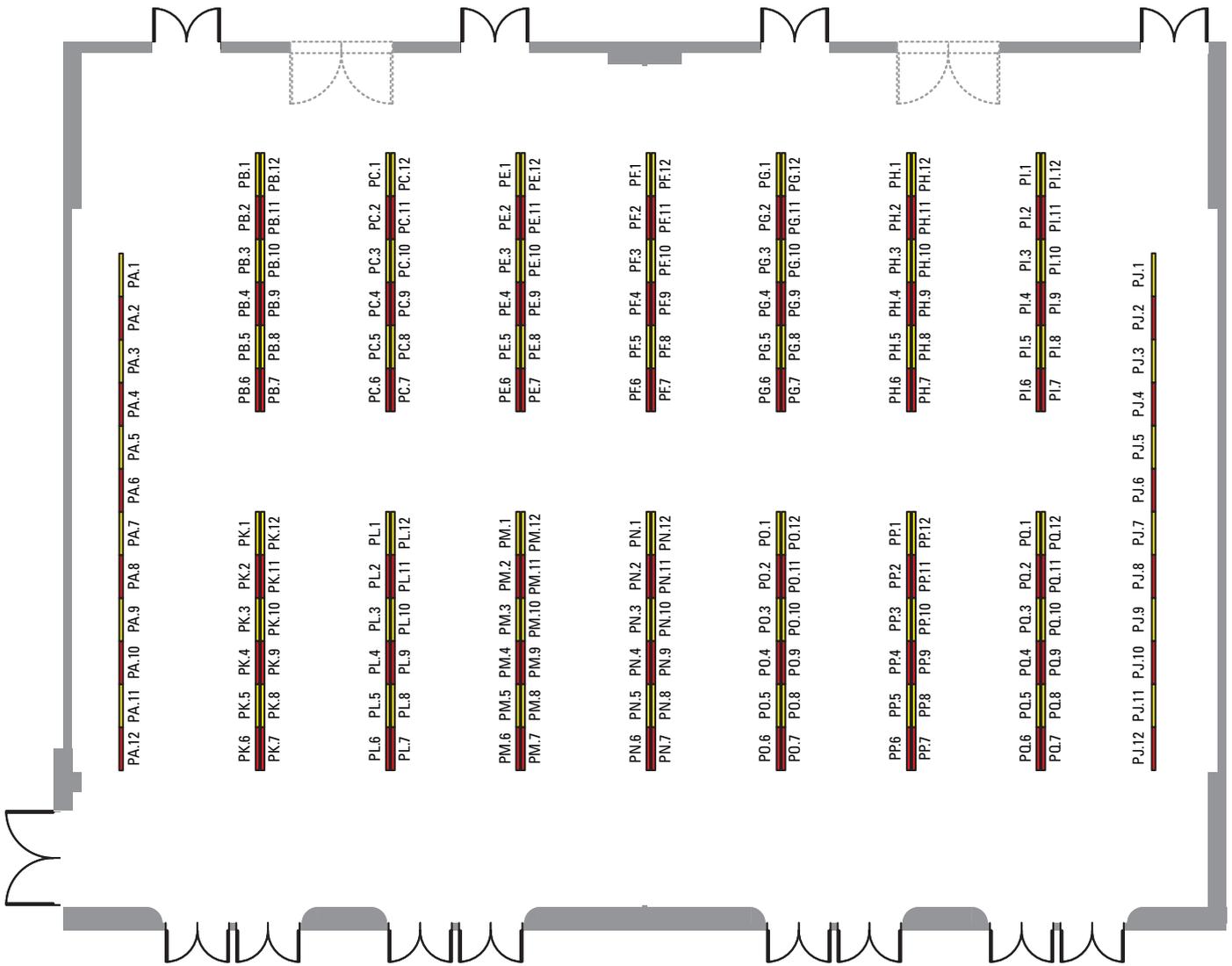
GRSS membership:

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

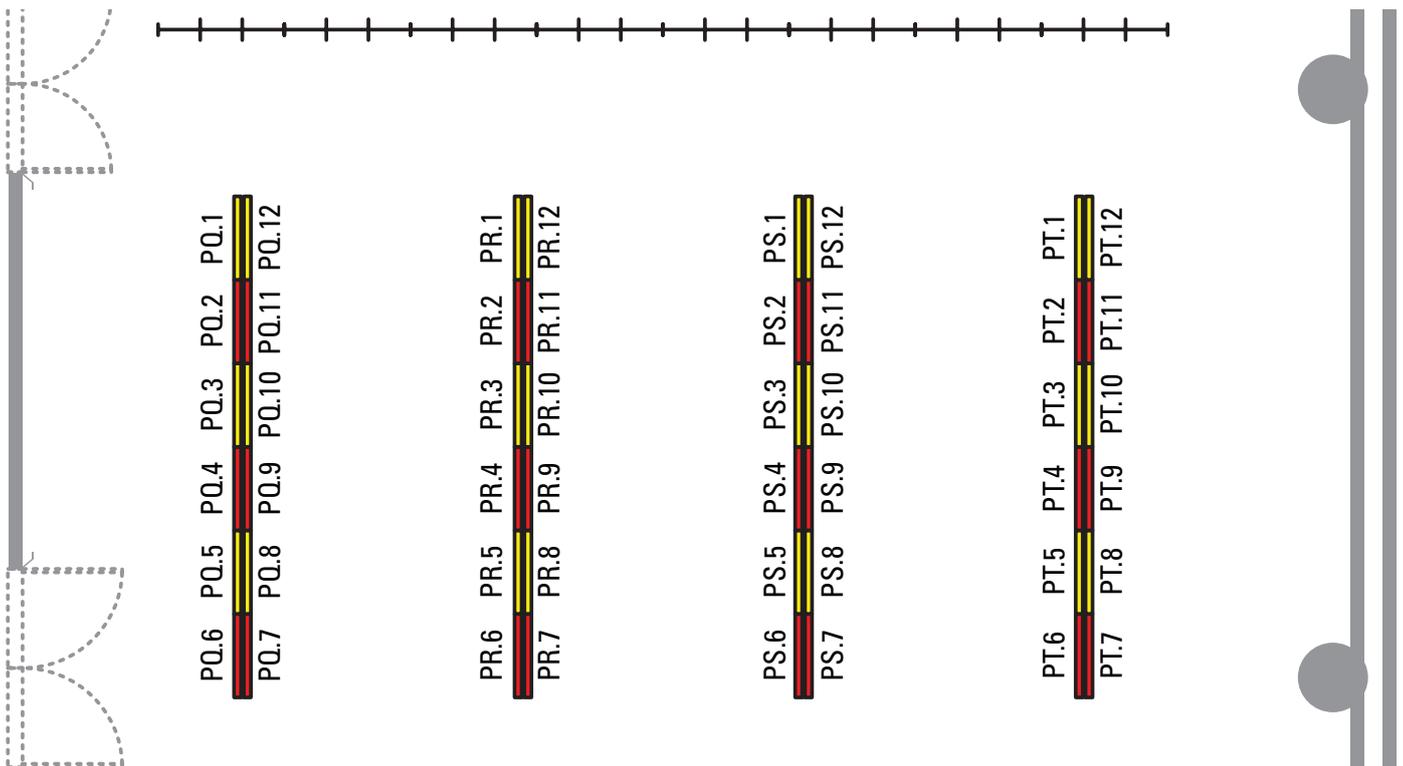
PACIFICO Yokohama – Exhibit Hall, Rooms 301-304

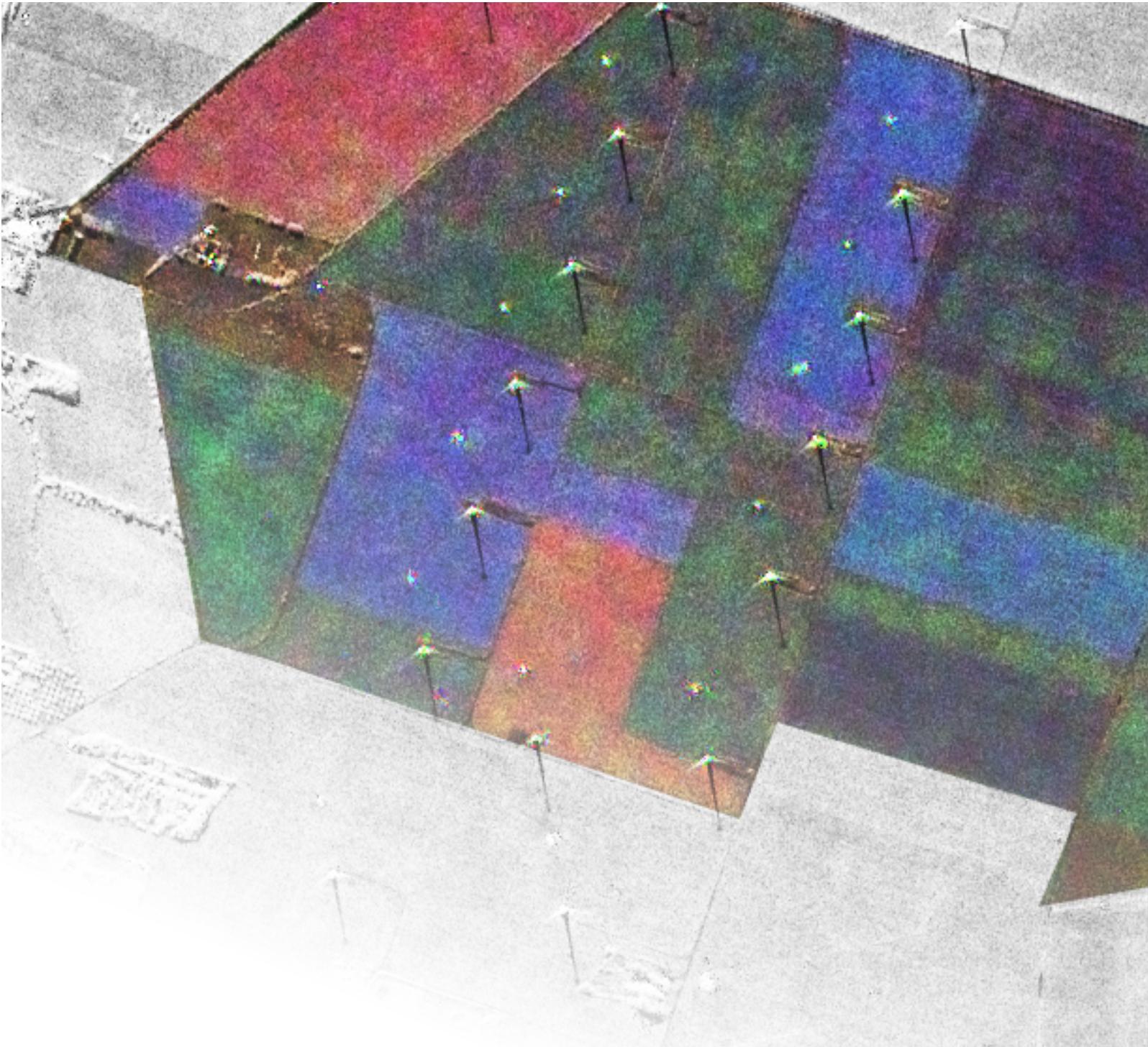


PACIFICO Yokohama – Poster Area Detail, Room 501-502



PACIFICO Yokohama – Poster Area Detail, Room 503





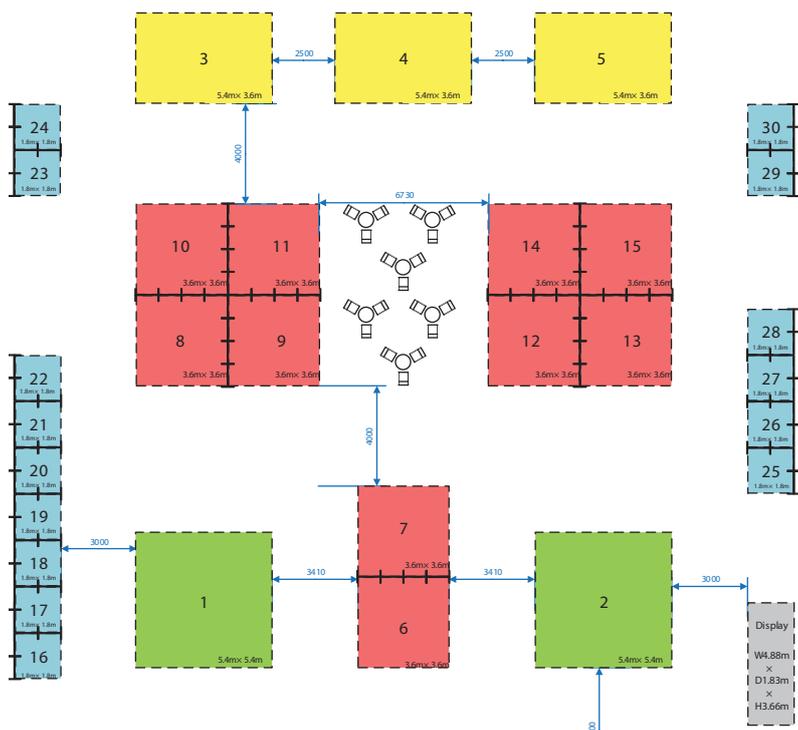
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FROM SAR DATA.

HARRIS® TECHNOLOGY TO CONNECT,
INFORM AND PROTECT™

HarrisGeospatial.com

Exhibits — Rooms 301-304

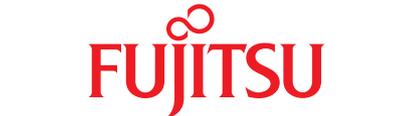


Exhibition Hours:
 Monday, July 29..... 08:30 - 17:30
 Tuesday, July 30 08:30 - 17:30
 Wednesday, July 25..... 08:30 - 17:30
 Thursday, July 26..... 08:30 - 17:30
 Friday, July 28..... 08:30 - 11:00

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
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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. (JEOS)
	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

 <p>Japan Aerospace Exploration Agency</p>	<p>Japan Aerospace Exploration Agency (JAXA)</p> <p>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.</p> <p>http://global.jaxa.jp/</p>
	<p>Synspective Inc.</p> <p>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</p> <p>https://synspective.com/</p>
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 <p>Antenna Giken Co.,Ltd.</p>	<p>Antenna Giken Co., Ltd. Antenna Giken, located in the north-east of the Tokyo metropolitan area, provides wide variety of antennas and communication devices for professional and industrial use. Our products contribute to the disaster community wireless systems, fire-fighting radio systems, broadcasting, and public transportation networks as well as satellites and defense applications. In the IGARSS 2019, we are demonstrating our expertise by showing corner reflectors to be used in the calibration process of earth observational satellites and a millimeter wave parabolic antenna developed for broadcasting systems. And a GPS antenna is introduced as our contribution to the ocean-floor observation AUV (Autonomous Underwater Vehicle). http://www.antenna-giken.co.jp/</p>
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 <p>Headwall</p>	<p>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/</p>
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 <p>FUJITSU</p>	<p>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-area" and "Periodic" data. https://www.fujitsu.com/jp/</p>
 <p>JEOSS Japan EO-Sats Service</p>	<p>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.) JOESS 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/</p>

 <p>KARI 한국항공우주연구원 KOREA AEROSPACE RESEARCH INSTITUTE</p>	<p>Korea Aerospace Research Institute, KARI</p> <p>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.</p> <p>http://www.kari.re.kr/eng.do</p>
 <p>MDPI Academic Open Access Publishing since 1996</p>	<p>MDPI</p> <p>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).</p> <p>https://www.mdpi.com/</p>
 <p>Ministry of Environment National Institute of Environmental Research</p>	<p>National Institute of Environmental Research (NIER)</p> <p>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 Cheollion Satellite, which is planned to be launched in 2019.</p> <p>http://www.nier.go.kr/</p>
 <p>Norderelbe GmbH</p>	<p>Norderelbe GmbH</p> <p>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.</p> <p>http://www.norderelbe-gmbh.de/</p>
 <p>PCI GEOMATICS</p>	<p>PCI Geomatics</p> <p>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.</p> <p>http://www.pci-geomatics.com/</p>
 <p>SIIS SI Imaging Services</p>	<p>SI Imaging Services</p> <p>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.</p> <p>http://www.si-imaging.com/</p>
 <p>SPACE SHIFT</p>	<p>Space Shift, Inc.</p> <p>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.</p> <p>https://www.spcsf.com/</p>
 <p>IEEE GRSS Geoscience and Remote Sensing Society</p>	<p>Geoscience and Remote Sensing Society (GRSS)</p> <p>The GRSS is the organizer of the IGARSS conference. It is a technical society of the IEEE</p> <p>http://www.grss-ieee.org/</p>
 <p>IGARSS 2020</p>	<p>IGARSS 2020 Waikoloa, Hawaii</p> <p>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.</p> <p>http://igarss2020.org/</p>
 <p>NASA</p>	<p>NASA</p> <p>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.</p> <p>http://www.nasa.gov/</p>

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 (APRSAP). 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).



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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

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Xianjun Hao	Alicia T. Joseph	Jacqueline Le Moigne	Tom Lukowski
Charlotte Hasager	Jasmeet Judge	Bertrand Le Saux	Kari Luoju
Danièle Hauser	Andreea Julea	David M. Le Vine	Guido Luzi
Brian Hawkins	Tim Kane	Francois Leduc	Zhenkui Ma
Linda Hayden	Xudong Kang	Jong-Sen Lee	Giovanni Macelloni
Liming He	Zhizhong Kang	Ken Yoong Lee	Ramata Magagi
Uta Heiden	Konstantinos Karantzas	Kwangjae Lee	Animesh Maitra
Geoffrey Henebry	N. Gökhan Kasapoglu	Seung-Kuk Lee	Clement Mallet
Scott Hensley	Akira Kato	Sebastien Lefevre	Jordi J. Mallorqui
Joon Heo	Taskin Kavzoglu	Justin Legarsky	Dr. Fanar Mansour Abed
Laura Hess	Shawn Carlisle Kefauver	Liping Lei	Kebiao Mao
Robert Hewson	Josef Kellndorfer	Yan Lei	Andre R.S. Marcal
Yasumasa Hirata	John Kerekes	Josée Lévesque	Javier Marcello
Murakami Hiroshi	Stefan Kern	Guido Levrini	Andrea Marinoni
Yoshiaki Honda	Yann Kerr	Gang Li	Andrea Marinoni
Liang Hong	Siri Khalsa	Heng-Chao Li	Brian Markham
Wen Hong	Shohei Kidera	Jiaojiao Li	Prashanth Reddy Marpu
Ye Hong	Duk-jin Kim	Jonathan Li	Paulo Marques
Brian Hornbuckle	Edward J. Kim	Jun Li	Arnaud Martin
Jochen Horstmann	Seungbum Kim	Kun Li	Guillermo Martínez-Flores
Stephen Howell	Yeonjoo Kim	Li Li	Manuel Martin-Neira
Baoxin Hu	Hiroshi Kimura	Peijun Li	Frank S. Marzano
Zhuowei Hu	Toshiyoshi Kimura	Qi Li	Nelson Delfino d'Ávila
Chengquan Huang	Hideki Kobayashi	Shutao Li	Mascarenhas
Chunlin Huang	Magaly Koch	Wei Li	Philippa Jane Mason
Huaguo Huang	Jacqueline Kohn	Xiaofeng Li	Christian Massari
Hung-Lung Allen Huang	Katsuaki Koike	Xin Li	Tsuneo Matsunaga
Jingfeng Huang	Shoichiro Kojima	Xinwu Li	Takeshi Matsuoka
Weimin Huang	Nickolai Kolev	Xuanli Li	Karim Mattar
Xin Huang	George Komar	Yongchen Li	Francesco Mattia
Heinrich Huehnerfuss	Alexandra Konings	Yuanxiang Li	Frederic Maussang
Alfredo R. Huete	Rob Koopman	Cunren Liang	John Elton McFee
Chih-Cheng Hung	Jun-ichi KUDOH	Ding Liang	Darren McKague
Chunlei Huo	Manoj Kumar Kukreja	Xinlian Liang	Stephen McNeill
Paul Hwang	Krzysztof Kulpa	Liang Liao	Gary McWilliams
Toshiaki Ichinose	Kiichiro Kumagai	Veraldo Liesenberg	Lizwe Mdakane
Emmett Ientilucci	David Kunkee	Hwee San Lim	Peter Meadows
Eastwood Im	Klaus Kunzi	K S Lim	Farid Melgani
Keiji Imaoka	Kwo-Sen Kuo	Sanghun Lim	Massimo Menenti
Ryoichi Imasu	Tatiana Kuplich	Chinsu Lin	Stephane MERIC
Pasquale Imperatore	Mehmet Kurum	Mingsen Lin	Franz Meyer
Michael Inggs	Nataliia Kussul	Feng Ling	Eckart Michaelsen
Jordi Inglada	Hiroaki Kuze	Yuei-An Liou	Thierry Michel
Melina Ioannidou	Andy Kwarteng	Jorge Lira	Maurizio Migliaccio
Steve Iris	Teodosio Lacava	Michael Little	Heinrich Miller
Flavio Iturbide-Sanchez	Jennifer Lacey	Jane Liu	Fernando Pellon de Miranda
Akira Iwasaki	Jean-Pierre Lagouarde	Jian Guo Liu	Sidharth Misra
Tom Jackson	Pierre Lahaie	Ronggao Liu	Josef Mittermayer
Frederic Jacob	William Lahoz	Wei-Min Liu	
Thomas Jagdhuber		Pierfrancesco Lombardo	

Tomoaki Miura	Giuseppe Parrella	Tod Rubin	Josaphat Tetuko Sri
Miguel Moctezuma-Flores	Chakrapani Patnaik	Christopher Ruf	Sumantyo
Priscilla Mohammed	Swarnajyoti Patra	Brian Salmon	Gordon Staples
Katrin Molch	Derek Peddle	Denis Salvadeo	Michael Starek
Matthieu Molinier	Ramona Pelich	Mercedes Salvia	Susan Steele-Dunne
Alejandro Monsivais	Antonio Pepe	Luis E. Samaniego	Sindy Sterckx
Albert R. Monteith	George Percivall	Alim Samat	James Stiles
Andrea Monti Guarnieri	Augusto José Pereira Filho	Arturo Sanchez-Azofeifa	Uwe Stilla
Mario Montopoli	Stefano Perna	Edson Sano	Erich Stocker
Carsten Montzka	William Perrie	Veronica Santalla del Rio	Thomas Stone
Wooil M. Moon	Claudio Persello	Emanuele Santi	Tazio Strozzi
David I. Morales Avila	Henrik J. Persson	Jojene Santillan	Hongbo Su
Alberto Moreira	Walter Petersen	Maurizio Santoro	Lihong Su
Jose Moreno	Birgit Peterson	Makoto Satake	Robert Sundberg
Keith Morrison	Simone Pettinato	Dinesh Sathyamoorthy	Junichi Susaki
Gabriele Moser	Stuart Phinn	Motoyuki Sato	Kei Suwa
Mahdi Motagh	Jose Antonio Piedra	Ryoichi Sato	John J. Szymanski
Arii Motofumi	Fernandez	Mathias Schardt	Kaoru Tachiiri
Syedmohammad Mousavi	Nazzareno Pierdicca	Rolf Scheiber	Takeo Tadono
Ury Naftaly	Stefano Pignatti Morano	Bernd Scheuchl	Tetsuya Tagawa
Shin Nagai	María Piles	Paul Scheunders	Nobuhiro Takahashi
Raissouni Naoufal	Pedro Pina	Gilda Schirinzi	Wataru Takeuchi
Adib Nashashibi	Antonio Plaza	Michael Schmitt	Bingxiang TAN
Ryo Natsuaki	Javier Plaza	Dustin Schroeder	Shojiro Tanaka
Catherine M Naud	Pierre Potin	Marcus Schwaebisch	Simone Tanelli
Enrique A. Navarro	Scott Powell	Evan Seed	Gulsen Taskin
Thomas Neff	Pau Prats-Iraola	Rashmi Shah	Ryutaro Tateishi
Reza Nekovei	Mark Preiss	Jie Shan	Trevor Taylor
wenjian Ni	Ruiliang Pu	Yun Shao	Ana Claudia Teodoro
Giovanni Nico	Eldon Puckrin	Nimmi C. Parikh Sharma	Medhavy Thankappan
Allan Aasbjerg Nielsen	Yuntao Qian	Andrii Shelestov	Christian Thiel
Ryuei Nishii	Marco Quartulli	Jiancheng Shi	Christian Thom
Masahiko Nishimoto	Julien Radoux	Yosio Edemir Shimabukuro	Werner Peter Thomas
Sima Noghianian	Abdullah Rahman	Masanobu Shimada	Kurt Thome
Yoo-jeong Noh	Nareenart Raksuntorn	Michal Shimoni	James C. Tilton
Jean-Francois Nouvel	Rahul Ramachandran	Gustavo H X. Shiroma	Saibun Tjuatja
Ferdinando Nunziata	Hampapuram Ramapriyan	Fridon Shubitidze	Hideyuki Tonooka
Ferdinando Nunziata	Keith Raney	Claudionor Silva	Konstantinos Topouzelis
Andrew O'Brien	Diego Reale	Jean-Robert Simard	Ramón Torres
Kenta Ogawa	Alberto Refice	Elizabeth L. Simms	Sugimura Toshiro
Yisok Oh	Andreas Reigber	Steven Simske	Ridha Touzi
Yu Okada	John A Richards	Ramesh Singh	Robert Treuhaft
Roger Oliva	Philippe Richaume	Upendra Singh	Emmanuel Trouvé
Hakan Olsson	Rafael Rincon	Vern Singhroy	Melanie Trudel
Peggy O'Neill	Sarah Ringerud	Andreia Siqueira	Leung Tsang
Helene Oriot	Fabio Rocca	Andrew Skidmore	Devis Tuia
Roberto Orosei	Nemesio Rodriguez-	Gail Skofronick-Jackson	Florence Tupin
Sharmila Padmanabhan	Fernandez	Mark Sletten	Caroline Turcotte
Mahesh Pal	Jean-Claude Roger	David Small	Kalum Priyanath
Francesco Palazzo	Filomena Romano	Anne Smith	Udagapola
Simonetta Paloscia	Peter Romanov	Jose A. Sobrino	Lars Ulander
Gintautas Palubinskas	Roland Romeiser	Shinichi Sobue	Silvia Liberata Ullo
Paolo Pampaloni	Petri Rönholm	Yady Tatiana Solano-	Kuniaki Uto
Ovidiu Pancrati	Rafael Rosa	Correa	Rajesh Kumar
Konstantinos	Paul Rosen	Yan Soldo	Vaidyanathan
Papathanassiou	Philip Rosenkranz	Domenico Solimini	Mercedes Vall-Hlossera
Matteo Pardini	Stanley Rotman	Lin-Ping Song	Enric Valor
Eulogio Pardo-Igúzquiza	Helmut Rott	Jesus Soria-Ruiz	Jan Van Aardt
Mario Parente	Jean-Louis Roujean	Boularbah Souissi	Douglas Vandemark
Sang-Eun Park	Hélène Roussel	Claudia Spinetti	Deborah Vane
Dimitris Paronis	Eric Rowell		Gabriel Vasile

Jorge Vazquez	Shimon Wdowinski	Jian Yang	Ke Zhang
Niko E.C. Verhoest	Urs Wegmüller	Wenli Yang	Lefei Zhang
Eric Vermote	Matthias Weiß	Xiaofeng Yang	Liangpei Zhang
Jochem Verrelst	David Weissman	Xiguang Yang	Lifu Zhang
Stefano Vignudelli	Qihao Weng	Tian Yao	Lujun Zhang
Ivan E. Villalon-Turrubiates	James West	Herve Yesou	Peng Zhang
Massimo Vincini	H. Peter White	Yonghong Yi	Xiangrong Zhang
Anthony Vodacek	Werner Wiesbeck	Naoto Yokoya	Xiaoyang Zhang
Peter Voelger	Ketut Wikantika	Chinatsu Yonezawa	Xin Zhang
Slobodan Vucetic	David Williams	Hiroki Yoshioka	Ying Zhang
Wolfgang Wagner	Joong Sun Won	Nicolas Younan	Yongqin Lisa Zhang
Hiroyuki Wakabayashi	Fan Wu	Marwan Younis	Yun Zhang
Jeffrey Walker	Hao Wu	Fangjie Yu	Tianjie Zhao
Ingo Walterscheid	Jindong Wu	Qian Yu	Yindi Zhao
Chao Wang	XiaoLiang Wu	Wenxian Yu	Yongqiang Zhao
Feng Wang	Junshi Xia	Xiaolei Yu	Yujie Zheng
Haipeng Wang	George Xian	Jinchun Yuan	Yanfei Zhong
He Wang	Feiqin Xie	Peng Yue	Guoqing Zhou
Jinfei Wang	Xiaoxiong Xiong	Simon Yueh	Ji Zhou
Robert Wang	Feng Xu	Simon Yueh	Jun Zhou
Wenhui Wang	Lijun Xu	Igor Zakharov	Yaping Zhou
Xi Li Wang	Qing Xu	Evan Zaugg	Yuyu Zhou
Xiaoqin Wang	John Yackel	Valery Zavorotny	Xiao Xiang Zhu
Yanting Wang	Hiroyoshi Yamada	Howard Zebker	Yan Zhu
Yong Wang	Yoshiki Yamagata	Wanlin Zhai	Maciel Zortea
Yunpeng Wang	Yasushi Yamaguchi	Biao Zhang	Weibao Zou
Zhuosen Wang	Yoshio Yamaguchi	Bing Zhang	Mehrez Zribi
Bjoern Waske	Fumio Yamazaki	Fengli Zhang	Simon Zwieback
Manabu Watanabe	Wai Yeung Yan	Junping Zhang	

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 Sagami-hara 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, Synspecive
- Julie Baker - co-founder and COO, Ursa Space
- Kimberly Scott - co-founder and VP of Data Science, Astraera

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, Astraera
- 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 RESPONSE: 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 Events**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 Tabatabaeejad, 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 Politècnica 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 Mattheis (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

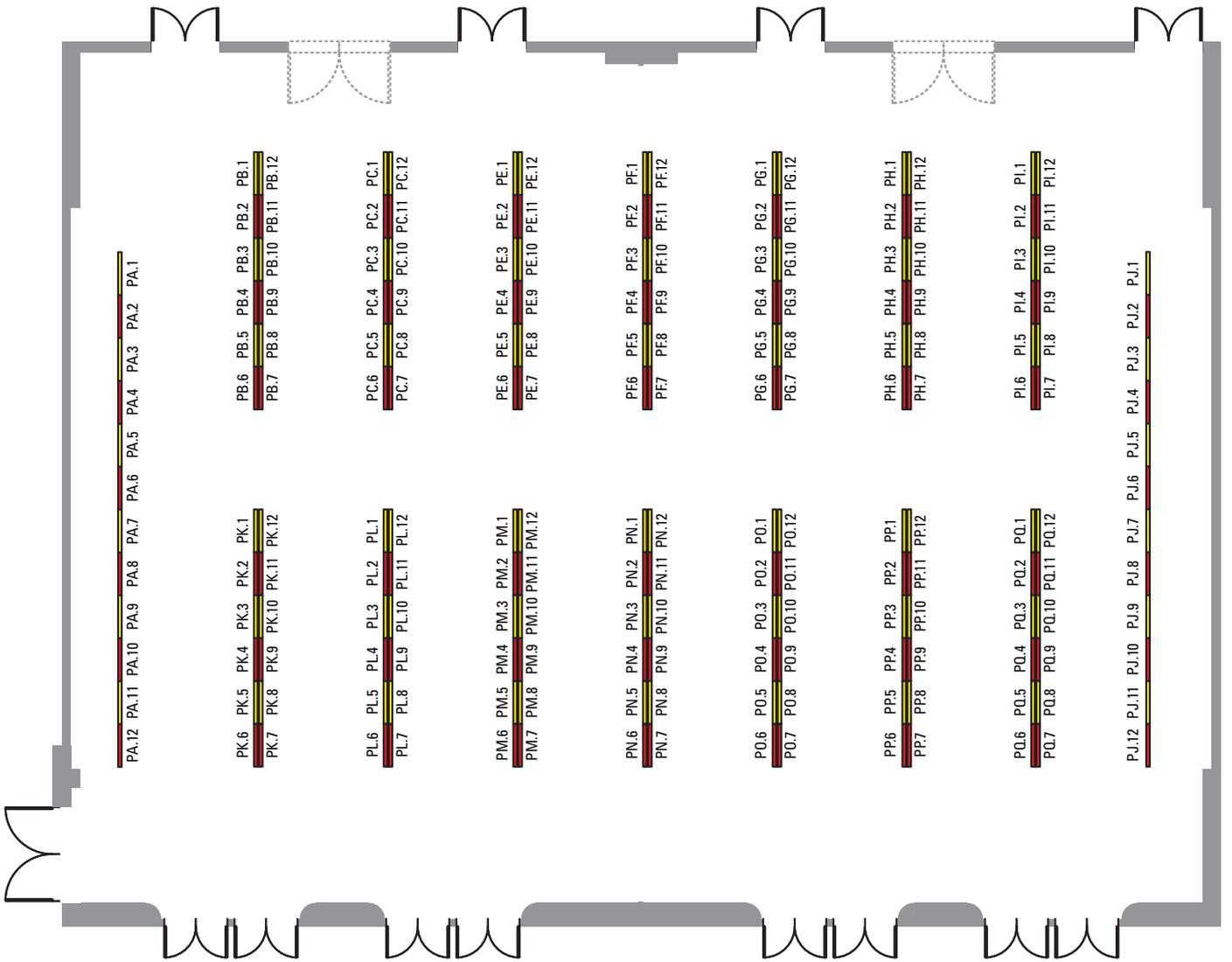
- LECTURE organized by Remote Sensing Technology Center of Japan (RESTEC)
 - Satellite for earth observation
 - Japan and overseas seen from space
 - Introduction of remote sensing technique
 - Paper craft globe making
- HYPER-WALL SHOW given by Dr. Gail Skofronick-Jackson, NASA
 - NASA Remote Sensing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

Location: PACIFICO Yokohama 301-304

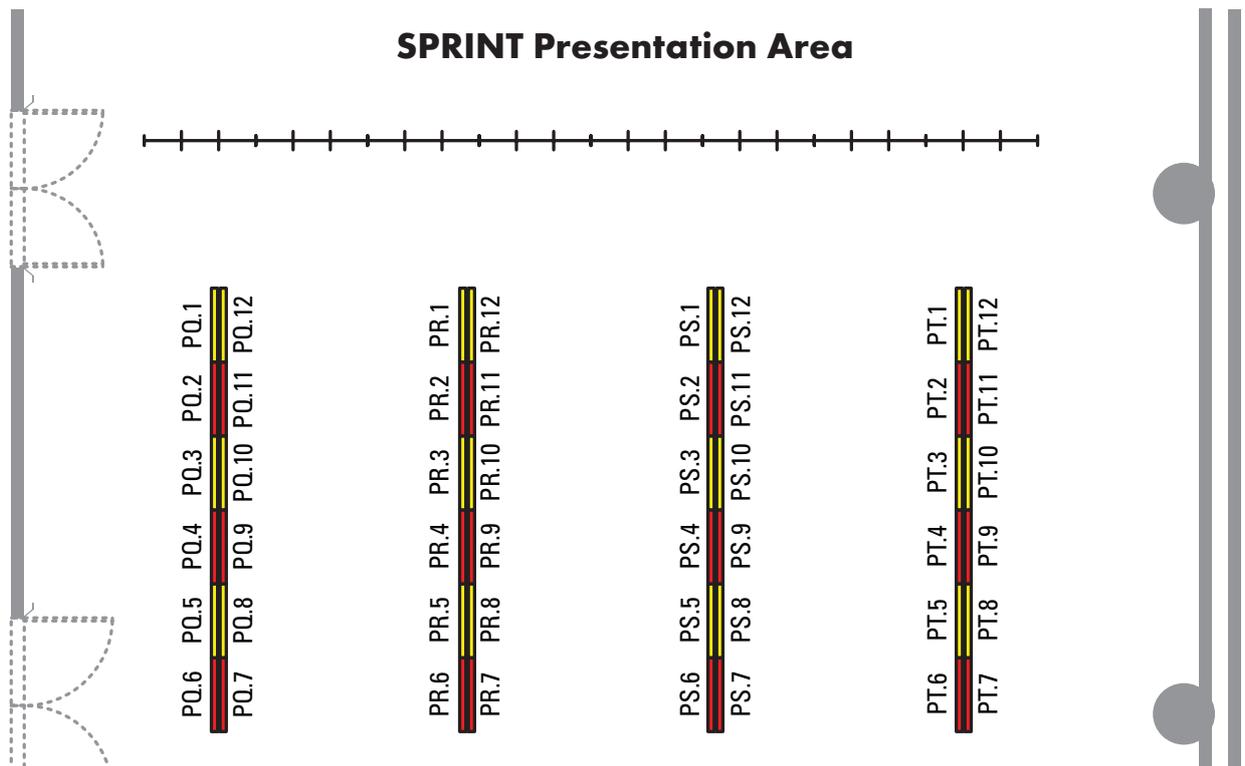
Date/Time: Monday, July 29, 13:30-15:00, 15:30-17:00

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



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 "cms" 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 Presenting Interactive 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, 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 ADDRESS SOCIETAL NEEDS**
13:40
Siri Jodha Khalsa, University of Colorado, Boulder, United States
- MO3.R3.2 IEEE P4001 HYPERSPECTRAL STANDARD: PROGRESS AND COOPERATION**
14:00
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 STANDARD IN MATLAB**
14:40
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 AND ANALYSIS READY DATA DISCOVERY IN THE CLOUD**
15:00
Ingo Simonis, Open Geospatial Consortium, Germany

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 FUTURE INTERFEROMETRY MISSIONS.**
13:40
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 RADIOMETRY RFI MITIGATION ALGORITHMS**
14:00
Raúl Díez-García, Adriano Camps, Universitat Politècnica de Catalunya - BarcelonaTech, Spain
- MO3.R4.3 DEVELOPMENTS OF RFI DETECTION ALGORITHMS AND THEIR APPLICATION TO FUTURE EUROPEAN SPACEBORNE SYSTEMS**
14:20
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 EXTENDED INTERFERENCE CAUSED BY BROADCASTING SATELLITE HOME-TV RECEIVERS**
14:40
Elena Daganzo, Roger Oliva, European Space Agency (ESA), Netherlands; Philippe Richaume, Centre d'Etude Spatial de la Biosphère (CESBIO), France; Álvaro 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 INTERFERENCE IN PASSIVE RADIOMETER DATA**
15:00
David Draper, Ball Aerospace, United States; Paolo de Matthaeis, NASA Goddard Space Flight Center / Universities Space Research Association, United States

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 STANDARDIZATION AND RESEARCH EFFORTS IN PROGRESS**
17:20
Naresh Kumar Mallenahalli, Hari Priya Sakethapuram, National Remote Sensing Centre, India
- MO4.R3.5 DEVELOPMENT OF AN IEEE STANDARD FOR CALIBRATION OF MICROWAVE RADIOMETERS**
17:40
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 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 Matthaeis, 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 THE ROLE OF THE COMMITTEE ON RADIO FREQUENCIES (CORF)**
16:40
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 PROTECTED PORTION OF L-BAND**
17:20
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 COLLOCATION TECHNIQUE**
17:40
Roger Oliva, Zenithal Blue Technologies, Spain; Veronica Gonzalez-Gambau, Antonio Turiel, BEC and Institute of Marine Sciences, Spain

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 Gamba, German Aerospace Center (DLR)

- MO3.R5.1 SCALE-TRANSFERRABLE PYRAMID NETWORK FOR MULTI-SCALE SHIP DETECTION IN SAR IMAGES**
13:40
Nengyuan Liu, Zongyong Cui, Zongjie Cao, Yiming Pi, Hai Lan, University of Electronic Science and Technology of China, China
- MO3.R5.2 MULTISCALE SHIP DETECTION BASED ON DENSE ATTENTION PYRAMID NETWORK IN SAR IMAGES**
14:00
Qi Li, Rui Min, Zongyong Cui, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China
- MO3.R5.3 WEIGHT OPTIMIZATION FOR MULTI-TASK SPARSE REPRESENTATION IN SAR IMAGE TARGET RECOGNITION**
14:20
Zhi Zhou, Zongjie Cao, Yalan Zhang, Yiming Pi, Nengyuan Liu, University of Electronic Science and Technology of China, China
- MO3.R5.4 A HIERARCHICAL SALIENCY BASED TARGET DETECTION METHOD FOR HIGH-RESOLUTION SAR IMAGES**
14:40
Lan Du, Lu Li, Zhaocheng Wang, National Laboratory of Radar Signal Processing, Xidian University, China
- MO3.R5.5 SAR TARGET DETECTION BASED ON PSIFT FEATURE CLUSTERING**
15:00
Lina Zeng, Deyun Zhou, Qian Pan, Chao Lu, Ying Zhou, Northwestern Polytechnical University, China

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 TOWARDS A SENTINEL-2 BASED HUMAN SETTLEMENT LAYER**
13:40
Patrick Helber, Benjamin Bischke, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany
- MO3.R6.2 A MODIFIED STARFM METHOD FOR HETEROGENEOUS AREA BASED ON MULTI-SPECTRAL DATA**
14:00
Yunshan Meng, National Marine Data and Information Service, China; Bo Ping, Tianjin University, China
- MO3.R6.3 URBAN LAND-COVER CLASSIFICATION WITH FAÇADE FEATURE FROM OBLIQUE IMAGES**
14:20
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 CHARACTERIZING URBAN EXPANSION OF SMALL CITIES IN NIGERIA AND DEMOCRATIC REPUBLIC OF THE CONGO USING LANDSAT TIME SERIES**
14:40
Baohui Chai, Peijun Li, Peking University, China; Karen Seto, Yale University, United States
- MO3.R6.5 ANALYSIS OF IMPERVIOUS SURFACE CHANGE AND ECONOMY IN TIANJIN, CHINA USING LANDSAT TIME SERIES DATA**
15:00
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 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 EXPERIMENT ON THE IMPACT OF SPATIAL RESOLUTION ON BUILDING EXTRACTION ACCURACY**
16:20
Jean-Samuel Proulx-Bourque, Lucie Mathieu, Charles Papisodoro, Daniel Pilon, Nouri Sabo, Mathieu Turgeon-Pelchat, Natural Resources Canada, Canada
- MO4.R5.2 AUTOMATIC VECTORIZATION EXTRACTION OF FLAT-ROOFED HOUSES USING HIGH-RESOLUTION REMOTE SENSING IMAGES**
16:40
Guorui Ma, Qinjie He, Xiaodan Shi, Xiaojie Fan, Wuhan University, China
- MO4.R5.3 BUILDING EXTRACTION FROM REMOTE SENSING IMAGE WITH PRIVILEGED INFORMATION**
17:00
Xue Li, Bo Du, Liangpei Zhang, Wuhan University, China
- MO4.R5.4 IMPROVED DEEP FULLY CONVOLUTIONAL NETWORK WITH SUPERPIXEL-BASED CONDITIONAL RANDOM FIELDS FOR BUILDING EXTRACTION**
17:20
Wenqing Feng, Haigang Sui, Wuhan University, China; Li Hua, Huazhong Agricultural University, China; Chuan Xu, Wuhan University, China
- MO4.R5.5 ASPHALT POTHOLE DETECTION IN UAV IMAGES USING CONVOLUTIONAL NEURAL NETWORKS**
17:40
Yuri Becker, Henrique Siqueira, Edson Matsubara, Wesley Gonçalves, José Marcato Jr., Universidade Federal de Mato Grosso do Sul, Brazil

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 MAPPING SPATIO-TEMPORAL VARIATIONS OF CONVERTING FARMLAND TO FOREST/GRASSLAND ON THE LOESS PLATEAU USING ALL AVAILABLE LANDSAT TIME-SERIES IMAGES**
16:20
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 MONITORING OF INDONESIA TROPICAL RAINFORESTS AND LAND COVER CHANGE USING HYBRID APPROACH OF TIME SERIES LANDSAT DATA**
16:40
Arief Wijaya, Rizky Firmansyah, Zuraidah Said, Benita Nathania, WRI Indonesia, Indonesia
- MO4.R6.3 MONITORING THE HISTORICAL DEVELOPMENT OF OIL PALM PLANTATIONS WITH COMBINED USE OF LANDSAT TIME SERIES, MULTITEMPORAL GOOGLE EARTH IMAGES AND ALOS-2/PALSAR-2**
17:00
Atsushi Tomita, Baruch College, the City University of New York, United States
- MO4.R6.4 COMPARISON OF PASTURE AREAS OVER BRAZIL BIOMES USING GLOBAL AND NATIONAL LAND COVER MAPS**
17:20
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 DERIVATION OF GLOBAL SURFACE TYPE PRODUCTS FROM VIIRS**
17:40
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 PRECIPITATION EXTREMES MONITORING USING GLOBAL SATELLITE MAPPING OF PRECIPITATION (GSMAP) PRODUCTS**
13:40 Tomoko Tashima, Takuji Kubota, Riko Oki, Japan Aerospace Exploration Agency (JAXA), Japan
- MO3.R7.2 FEASIBILITY STUDY OF GPM/DPR WIDE SWATH OBSERVATION**
14:00 Kosuke Yamamoto, Kinji Furukawa, Japan Aerospace Exploration Agency (JAXA), Japan; Nabuhiro Takahashi, Nagoya University, Japan; Takuji Kubota, Japan Aerospace Exploration Agency (JAXA), Japan
- MO3.R7.3 IMPROVEMENTS OF GPM DPR RAIN TYPE CLASSIFICATION ALGORITHM**
14:20 Jun Awaka, Tokai University, Japan; Stacy Brodzik, University of Washington, United States
- MO3.R7.4 EVALUATION OF INSTANTANEOUS RAIN RATE ESTIMATES IN DPR VERSION-06 PRODUCTS WITH RAIN GAUGE DATASET OVER JAPAN**
14:40 Shinta Seto, Nagasaki University, Japan

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 Lavallo, NASA Jet Propulsion Laboratory

- MO3.R8.1 THE CAPELLA X-BAND SAR CONSTELLATION FOR RAPID IMAGING**
13:40 Craig Stringham, Gordon Farquharson, Davide Castelletti, Eric Quist, Lucas Riggi, Duncan Eddy, Scott Soenen, Capella Space Corporation, United States
- MO3.R8.2 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**
14:00 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 SATELLITE PRECIPITATION ESTIMATES (SPES) AND THEIR VALIDATION USING GROUND-BASED MEASUREMENTS: A CASE STUDY IN UTTARAKHAND STATE, INDIA**
14:20 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 IMPACT OF LUNAR TERRAIN ON MOON-BASED EARTH OBSERVATION**
14:40 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 OBSERVATION ANGULAR ANALYSIS FROM A MOON-BASED EARTH OBSERVATION PLATFORM**
15:00 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 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 HIGH RESOLUTION GSMAP WITH HIMAWARI 8**
16:20 Tomoo Ushio, Tomoaki Mega, Tokyo Metropolitan University, Japan
- MO4.R7.2 DETECTION OF VEGETATION DYNAMICS USING SPACEBORNE PRECIPITATION RADARS**
16:40 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 ACTIVE AND PASSIVE RADIATIVE TRANSFER SIMULATIONS FOR GPM-RELATED FIELD CAMPAIGNS**
17:00 Ian S. Adams, S. Joseph Munchak, Kwo-Sen Kuo, Craig Pelissier, Thomas Clune, Rachael Kroodsmo, Adrian Loftus, Xiaowen Li, NASA Goddard Space Flight Center, United States
- MO4.R7.4 STUDY OF VERTICAL FEATURES OF SNOW, GRAUPEL AND HAIL ON A GLOBAL SCALE USING GPM PRODUCTS**
17:20 Minda Le, V. Chandrasekar, Colorado State University, United States
- MO4.R7.5 SNOWFALL OBSERVATIONS DURING THE WINTER OLYMPICS OF 2018 CAMPAIGN USING THE D3R RADAR**
17:40 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 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 ERA5: STATE-OF-THE-ART GLOBAL ATMOSPHERIC REANALYSIS AT ECMWF**
16:20 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 ESTIMATING AGRICULTURAL CROP TYPES AND FALLOW LANDS USING MULTI TEMPORAL SENTINEL-2A IMAGERIES**
16:40 Sakshi Saraf, Indian Agricultural Research Institute, India; Sujit Ghosh, Mukund Behera, IIT Kharagpur, India
- MO4.R8.3 ENSEMBLE SATELLITE LAND PRODUCTS DEEPEN THE INTERPRETATION OF DROUGHT IMPACTS ON TERRESTRIAL CARBON CYCLE IN EUROPE OVER 2001-2015**
17:00 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 MONITORING VEGETATION DYNAMICS IN JAPAN USING HIMAWARI GEOSTATIONARY SATELLITE**
17:20 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 EARTH REFLECTOR TYPE CLASSIFICATION BASED ON MULTISPECTRAL REMOTE SENSING IMAGE**
17:40 Wanjuan Song, Beijing Normal University, China; Yuri Knyazikhin, Boston University, United States; Matti Mötus, VTT Technical Research Centre of Finland, Finland; Xihan Mu, Guangjian Yan, Beijing Normal University, China

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 TANDEM-X: MISSION STATUS AND SCIENCE ACTIVITIES**
13:40
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 GENERATION OF THE TANDEM-X CHANGE DEM FROM THE NEW GLOBAL ACQUISITIONS (2017-2019)**
14:00
Marie Lachaise, Markus Bachmann, Thomas Fritz, Martin Huber, Barbara Schweisshelm, Birgit Wessel, German Aerospace Center (DLR), Germany
- MO3.R9.3 USING THE TWO-LEVEL MODEL WITH TANDEM-X FOR LARGE-SCALE FOREST MAPPING**
14:20
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 A STRUCTURE-BASED FRAMEWORK FOR THE COMBINATION OF GEDI AND TANDEM-X MEASUREMENTS OVER FOREST SCENARIOS**
14:40
Changhyun Choi, Matteo Pardini, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany
- MO3.R9.5 SPACEBORNE DATA FUSION FOR LARGE-SCALE FOREST PARAMETER ESTIMATION: GEDI LIDAR & TANDEM-X INSAR MISSIONS**
15:00
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 GLACIER DETACHMENT HAZARD ANALYSIS IN THE WEST KUNLUN SHAN MOUNTAINS**
16:20
Silvan Leinss, Cyril Willmann, Irena Hajnsek, ETH Zürich, Switzerland
- MO4.R9.2 CALVING DYNAMICS OF TWO OUTLET GLACIERS OF THE SOUTH PATAGONIAN ICEFIELD DERIVED FROM TERRASAR-X AND TANDEM-X**
16:40
Erling Johnson, Dana Floricioiu, German Aerospace Center (DLR), Germany
- MO4.R9.3 SEA ICE TOPOGRAPHIC HEIGHT RETRIEVAL FROM TANDEM-X INTERFEROMETRIC SAR DATA**
17:00
Temesgen Gebrie Yitayew, NORCE, Norwegian Research Centre, Norway; Wolfgang Dierking, Alfred Wegener Institute (AWI), Germany; Dmitry V. Divine, Norwegian Polar Institute, Norway; Torbjørn Eltoft, Jean Negrel, Arctic University of Norway, Norway
- MO4.R9.4 DETECTING RETROGRESSIVE THAW SLUMPS USING SINGLE-PASS BISTATIC TANDEM-X OBSERVATIONS**
17:20
Philipp Bernhard, ETH Zürich, Switzerland; Simon Zwieback, University Guelph, Canada; Irena Hajnsek, ETH Zürich / German Aerospace Center (DLR), Germany
- MO4.R9.5 COMBINING TANDEM-X WITH MULTI-TEMPORAL, MULTI-SOURCE SATELLITE DATA FOR THE RECONSTRUCTION OF THE BRONZE AGE LANDSCAPES OF THE INDUS CIVILISATION**
17:40
Hector A. Orengo, Catalan Institute of Classical Archaeology, Spain; Arnau Garcia-Malsosa, 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 THE COST OF OPPORTUNITY FOR GAPLESS IMAGING**
16:20
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 THE SPACE EXPLORATION SYNTHETIC APERTURE RADAR**
16:40
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 UNDER SAMPLING TECHNIQUE FOR DOWNSIZING IN ALOS-4**
17:00
Akira Karasawa, Yuya Yokota, Masanobu Shibata, Makoto Matsuki, Hiroaki Fujihara, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihiko Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan
- MO4.R10.4 PHASE SPOILING TECHNIQUE FOR HIGH POWER AND WIDE BEAM IN ALOS-4**
17:20
Makoto Matsuki, Yuya Yokota, Masanobu Shibata, Akira Karasawa, Hiroaki Fujihara, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihiko Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan
- MO4.R10.5 PALSAR CALIBRATION WITH DISTRIBUTED TARGETS**
17:40
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 BITEMPORAL FULLY POLARIMETRIC SAR IMAGES CHANGE DETECTION VIA NEAREST REGULARIZED JOINT SPARSE AND TRANSFER DICTIONARY LEARNING

13:40

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 GEOMETRICALLY ACCURATE CHANGE MAPPING FROM VHR SAR IMAGES

14:00

Andrea Garzelli, Claudia Zoppetti, University of Siena, Italy

MO3.R11.3 MULTIREOLUTION AND MULTIMODALITY SAR DATA FUSION BASED ON MARKOV AND CONDITIONAL RANDOM FIELDS FOR UNSUPERVISED CHANGE DETECTION

14:20

David Solama, Gabriele Moser, Sebastiano Serpico, University of Genoa, Italy

MO3.R11.4 SUBSIDENCE MONITORING WITH INSAR TECHNIQUES AIDED BY LASER SCANNING DATA AND TOPOGRAPHIC MAP: A CASE STUDY OF ROTTERDAM RECLAIMED AREA

14:40

Ling Chang, University of Twente, Netherlands

MO3.R11.5 STABILITY IN SAR CHANGE DETECTION RESULTS USING BIVARIATE RAYLEIGH DISTRIBUTION FOR STATISTICAL HYPOTHESIS TEST

15:00

Viet Thuy Vu, Mats Pettersson, Blekinge Institute of Technology, Sweden; Natanael Rodrigues Gomes, Federal University of Santa Maria, Brazil

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 LAND COVER MAPPING WITHOUT HUMAN ANNOTATION

13:40

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 AN OPERATIONAL PIPELINE FOR GENERATING DIGITAL SURFACE MODELS FROM MULTI-STEREO SATELLITE IMAGES FOR REMOTE SENSING APPLICATIONS

14:00

Rongjun Qin, Ohio State University, United States

MO3.R12.3 BISTATIC SCATTERING FORWARD MODEL VALIDATION USING GNSS-R OBSERVATIONS

14:20

Amir Azemati, Mahta Moghaddam, University of Southern California, United States; Arvind Bhat, Intelligent Automation INC. (IAI), United States

MO3.R12.4 THE USE OF HYPERSPECTRAL REMOTE SENSING TO DETECT PCB CONTAMINATED SOILS IN THE 0.35 TO 12 MICRON SPECTRAL RANGE

14:40

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 SOIL MOISTURE EVALUATION USING MACHINE LEARNING TECHNIQUES ON SYNTHETIC APERTURE RADAR (SAR) AND LAND SURFACE MODEL

15:00

Kalyan Dasgupta, Kamal Das, Manikandan Padmanaban, IBM Research, India

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 AGGREGATED PRIMARY DETECTORS FOR GENERIC CHANGE DETECTION IN SATELLITE IMAGES

16:20

Vincent Vidal, MAP5, Université Paris Descartes, France; Matthieu Limbert, Tugdual Ceillier, Earthcube, France; Lionel Moisan, MAP5, Université Paris Descartes, France

MO4.R11.2 SURF-BASED REGISTRATION FOR HYPERSPECTRAL IMAGES

16:40

Álvaro Ordóñez, Dora B. Heras, Francisco Argüello, Universidade de Santiago de Compostela, Spain

MO4.R11.3 ATTENTION-BASED DOMAIN ADAPTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION

17:00

Robiul Hossain Md. Rafi, Bo Tang, Qian Du, Nicolas Younan, Mississippi State University, United States

MO4.R11.4 AN ADAPTABLE APPROACH FOR PIXEL-BASED COMPOSITING AND CROP TYPE/TREE SPECIES MAPPING

17:20

Sebastian Preidl, Maximilian Lange, Daniel Doktor, Helmholtz Centre for Environmental Research GmbH - UFZ, Germany

MO4.R11.5 SEMI-SUPERVISED CHANGE DETECTION BASED ON GRAPHS WITH GENERATIVE ADVERSARIAL NETWORKS

17:40

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 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 IMPROVING SEASONAL VARIATION OF LAI RETRIEVAL OF CONIFER FORESTS BY CONSIDERING NEEDLE LIFE SPAN AND CHLOROPHYLL CONTENT

16:20

Jing Chen, Rong Wang, Alemu Gonsamo, Holly Craft, 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 THE P2S2 VALIDATION DATABASE FOR DECAMETRIC RESOLUTION CROP PRODUCTS: GREEN AREA INDEX, FRACTION OF INTERCEPTED LIGHT, GREEN FRACTION AND CHLOROPHYLL CONTENT

16:40

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; Benoît 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 GBOV (GROUND-BASED OBSERVATION FOR VALIDATION): A COPERNICUS SERVICE FOR VALIDATION OF VEGETATION LAND PRODUCTS

17:00

Gabriele Bai, ACRIST, 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, ACRIST, France; Marco Clerici, Nadine Gobron, European Commission Joint Research Center, Italy

MO4.R12.4 VALIDATION AND COMPARISON OF CROPLAND LEAF AREA INDEX RETRIEVALS FROM SENTINEL-2/MSI DATA USING SL2P PROCESSOR AND VEGETATION INDICES MODELS

17:20

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 VALIDATION OF MODIS AND GEOV2 LEAF AREA INDEX (LAI) PRODUCTS OVER CROPLANDS IN NORTHEASTERN CHINA

17:40

Hongliang Fang, Yinghui Zhang, Shanshan Wei, Wenjuan Li, Yongchang Ye, Tao Sun, Weiwei Liu, Chinese Academy of Sciences, China

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 Science and Technology (AIST), Japan; Jun Tanii, Osamu Kashimura, J-spacesystems, Japan; Ryosuke Nakamura, Hirokazu Yamamoto, National Institute of Advanced Industrial 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 INTERNATIONAL SPACE STATION
14:00
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 DELIVERY
15:00
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 OBJECTIVES TO DATA PRODUCTS
16:20
Jose Moreno, University of Valencia, Spain

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

MO4.R13.3 STATUS: COPERNICUS HYPERSPECTRAL IMAGING MISSION FOR THE ENVIRONMENT (CHIME)
17:00
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 APPLICATIONS
17:20
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 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 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, University 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, Institut 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 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 VARDHAH 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 **JRSS 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 Barnett, STC, Inc., United States
- TU4.R2.2** 16:40 **OBSERVING CLOUDS, CONVECTION AND PRECIPITATION WITH A GEOSTATIONARY MICROWAVE SOUNDER**
Bjom Lambriqtsen, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- TU4.R2.3** 17:00 **OBSERVATIONS AND FORECASTING 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, 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 THE USE OF REMOTELY SENSED INFORMATION WITHIN A FLOOD RISK MANAGEMENT AND ANALYSIS TOOL (GARI)**
08:00
Karem Chokmani, Khalid Oubennaceur, Marion Tanguy, Jimmy Poulin, Yves Gauthier, Romain Latapie, Monique Bernier, INRS - Centre Eau Terre Environnement, Canada
- TU1.R3.2 FLOOD DETECTION IN BUILT-UP AREA USING INTERFEROMETRIC SAR DATA BY PALSAR-2**
08:20
Masato Ohki, Japan Aerospace Exploration Agency (JAXA), Japan; Masanobu Shimada, Tokyo Denki University, Japan
- TU1.R3.3 PROBABILISTIC URBAN FLOOD MAPPING USING SAR DATA**
08:40
Marco Chini, Renaud Hostache, Ramona Pelich, Patrick Matgen, Luxembourg Institute of Science and Technology (LIST), Luxembourg; Luca Pulvirenti, CIMA Research Foundation, Italy; Nazzarena Pierdicca, Sapienza University of Rome, Italy
- TU1.R3.4 FLOOD EXTENT FORECASTING USING SYNCHRONIZED FLOODWATER INDEX COUPLING WITH IN-SITU DATA**
09:00
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 APPLICATIONS OF A SAR-BASED FLOOD MONITORING SERVICE DURING DISASTER RESPONSE AND RECOVERY**
09:20
Franz J Meyer, Olaniji A Ajadi, University of Alaska Fairbanks, United States; Lori Schultz, Jordan Bell, University of Alabama Huntsville, United States; Kenneth Arnault, 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 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 ADVANCING AUSTRALIA'S IMAGING RADAR CAPABILITY UNDER THE NOVASAR-1 PARTNERSHIP**
13:40
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 PROCESSING AND PERFORMANCE ANALYSIS OF NASA-ISRO SAR (NISAR) STAGGERED DATA**
14:00
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 NASA'S NEXT GENERATION SURFACE DEFORMATION AND CHANGE OBSERVING SYSTEM ARCHITECTURE**
14:20
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 Klovdstad, NASA Langley Research Center, United States; Gerald Bawden, National Aeronautics and Space Administration (NASA), United States
- TU3.R3.4 HARMONY: AN EARTH EXPLORER 10 MISSION CANDIDATE TO OBSERVE LAND, ICE, AND OCEAN SURFACE DYNAMICS**
14:40
Paco Lopez Dekker, Delft University of Technology, Netherlands; Helmut Roit, 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 DEVELOPMENT OF ALOS-4 HARDWARE SYSTEM**
15:00
Yuka Yokota, Masanobu Shibata, Akira Karasawa, Makoto Matsuki, Fujihara Hiroaki, Shohei Nakamura, Mitsubishi Electric Corporation, Japan; Yukihira Kankaku, Takeshi Motohka, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan

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 DETECTION OF FLOOD AREA USING L-BAND SYNTHETIC APERTURE RADAR DATA APPLIED ON A CASE OF HURRICANE IRMA, 2017**
10:40
Hiroto Nagai, Waseda University, Japan; Masato Ohki, Takahiro Abe, Japan Aerospace Exploration Agency (JAXA), Japan
- TU2.R3.2 FLOODPLAIN INUNDATION MAPPING USING SAR SCATTERING COEFFICIENT THRESHOLDING AND OBSERVED DISCHARGE DATA**
11:00
Tomasz Berezowski, Tomasz Bielinski, Jakub Osowski, Gdańsk University of Technology, Poland
- TU2.R3.3 IMPROVING FLOOD DETECTION IN VEGETATED AREAS THROUGH MULTI-FREQUENCY, POLARIMETRIC AND INTERFEROMETRIC SAR DATA**
11:20
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 DEVELOPMENT OF PROTOTYPE FOR WATER HAZARD INFORMATION PLATFORM USING VARIOUS OBSERVATION SYSTEM**
11:40
Eui Ho Hwang, Hyo Sok Chae, Wan Sik Yu, Dae Sun Kim, Gwang Ha Park, Kwater Institute / Kwater, Korea (South)
- TU2.R3.5 MIGRATION OF INDIGENOUS COASTAL COMMUNITIES DUE TO COASTAL FLOODING IN INDUS DELTA AFTER NANUK TROPICAL CYCLONE**
12:00
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, July 30 16:20 - 18:00 Room 311-312
Session TU4.R3 Oral

Satellite Missions II

Session Chair: Yann Kerr, CESBIO

- TU4.R3.1 THE LAST ADVANCED VERY HIGH RESOLUTION RADIOMETER**
16:20
Satya Kalluri, Changyong Cao, Andrew Heidinger, Alexander Ignatov, Jeffrey Key, NOAA/NESDIS/STAR, United States
- TU4.R3.2 SMOS-HR: A HIGH RESOLUTION L-BAND PASSIVE RADIOMETER FOR EARTH SCIENCE AND APPLICATIONS**
16:40
Nemesio Rodriguez-Fernandez, Eric Anterieu, 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 Khazaaal, 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 THE NOVASAR UK BACKGROUND MISSION**
17:00
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 THE EUROPEAN COPERNICUS ANTHROPOGENIC CO2 MONITORING MISSION**
17:20
Jean-Loup Bezy, Bernd Sierk, Armin Loescher, Yasjka Meijer, Herbert Netti, Valerie Fernandez, European Space Agency (ESA), Netherlands
- TU4.R3.5 DEVELOPMENT OF OPERATIONAL APPLICATIONS OF TERRASAR-X PAZ CONSTELLATION**
17:40
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 ROBUST LOW-RANK CHANGE DETECTION FOR SAR IMAGE TIME SERIES**
08:00
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**
08:20
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**
08:40
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**
09:00
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**
09:20
Richard Chen, Kazem Bakian-Dogaheh, Alireza Tabatabaenejad, 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 PRELIMINARY RESULTS FROM THE ICE, CLOUD AND LAND ELEVATION SATELLITE-2 (ICESAT-2)**
13:40
Richard Slonaker, Michael Freilich, Eric Lanson, Sandra Cauffman, Steve Neeck, Thomas Wagner, NASA Headquarters, United States; Douglas McLennan, John Leon, Mark Seidleck, Mark Flanagan, Thorsten Markus, Thomas Neumann, Donya Douglas-Bradshaw, Cathy Richardson, Anthony Martino, John Cavanaugh, NASA Goddard Space Flight Center, United States
- TU3.R4.3 AEOLUS - 1 YEAR AFTER LAUNCH**
14:20
Thomas Kanitz, Anne Grete Straume, European Space Agency (ESA), Netherlands; Jonathan Marshall, Olivier Lecrenier, Valentina Sachhieri, Oliver Reitebuch, Michael Rennie, Denny Wernham, Airbus Stevenage, Netherlands
- TU3.R4.4 ACTIVE OPTICAL REMOTE SENSING SENSORS AND INSTRUMENTATION FOR NASA'S FUTURE EARTH AND SPACE SCIENCE MEASUREMENTS/ MISSIONS**
14:40
Upendra Singh, NASA Langley Research Center, United States
- TU3.R4.5 ALTIMETRY, IMAGING AND LANDING LOCATION SELECTION LIDARS FOR ESA SPACE APPLICATIONS**
15:00
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 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 USING DEEP LEARNING TO COUNT ALBATROSSES FROM SPACE**
10:40
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**
11:00
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**
11:20
Kien Th. Nguyen, Audrey 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**
11:40
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**
12:00
Samuel Prager, Mahta Moghaddam, University of Southern California, United States

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 RESULTS OF VIBRATIONAL AND THERMAL TEST FOR MOLI LASER TRANSMITTER**
16:20
Daisuke Sakaizawa, Rei Mitsuhashi, Junpei Murooka, Tadashi Imai, Toshiyoshi Kimura, Japan Aerospace Exploration Agency (JAXA), Japan
- TU4.R4.2 RECENT RESEARCH AND DEVELOPMENT OF 2- μ M LASER FOR FUTURE SPACE-BASED DOPPLER WIND LIDAR IN JAPAN**
16:40
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 INTEGRATED MICRO-PHOTONICS FOR REMOTE EARTH SCIENCE SENSING (IMPRESS) LIDAR**
17:00
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 FREQUENCY CONTROL OF MULTI-PULSE 2-MICRON LASER TRANSMITTER FOR ATMOSPHERIC CARBON DIOXIDE MEASUREMENT**
17:20
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 GROUND TESTING OF 2-UM TRIPLE-PULSE IPDA LIDAR FOR CARBON DIOXIDE AND WATER VAPOR MEASUREMENTS**
17:40
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 TRANSFER LEARNING WITH SAS-IMAGE CONVOLUTIONAL NEURAL NETWORKS FOR IMPROVED UNDERWATER TARGET CLASSIFICATION**
08:00
David Williams, NATO STO, Italy
- TU1.R5.2 RECOGNIZING SUBMERGED MATERIALS WITH FLUORESCENCE LIDAR WITHOUT KNOWLEDGE OF ENVIRONMENTAL CONDITIONS**
08:20
Stefania Matteoli, National Research Council of Italy, Italy; Giovanni Corsini, University of Pisa, Italy; Marco Diani, Italian Naval Academy, Italy
- TU1.R5.3 DEEP-LEARNING FOR LOD1 BUILDING RECONSTRUCTION FROM AIRBORNE LIDAR DATA**
08:40
Tea-Ann Teo, National Chiao Tung University, Taiwan
- TU1.R5.4 DEVELOPMENT OF HIGH-PERFORMANCE DETECTOR TECHNOLOGY FOR UV AND IR APPLICATIONS**
09:00
Ashok Sood, John Zeller, Magnalia 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 AN AUTOMATIC TECHNIQUE FOR DECIDUOUS TREES DETECTION IN HIGH DENSITY LIDAR DATA BASED ON DELAUNAY TRIANGULATION**
09:20
Daniele Marinelli, Claudia Paris, Lorenzo Bruzzone, University of Trento, Italy

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 MERGENET: FEATURE-MERGED NETWORK FOR MULTI-SCALE OBJECT DETECTION IN REMOTE SENSING IMAGES**
13:40
Paijin Wang, Xian Sun, Wenhui Diao, Kun Fu, Institute of Electronics, Chinese Academy of Sciences, China
- TU3.R5.2 QUANTIZED CONVOLUTIONAL NEURAL NETWORK BASED OPTICAL REMOTE SENSING IMAGE OBJECT DETECTION MODEL**
14:00
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 MULTI-SCALE SHIPS DETECTION IN HIGH-RESOLUTION REMOTE SENSING IMAGE VIA SALIENCY-BASED REGION CONVOLUTIONAL NEURAL NETWORK**
14:20
Zezhong Li, Yanan You, Fang Liu, Beijing University of Posts and Telecommunications, China
- TU3.R5.4 DEEP LEARNING MODEL FOR TARGET DETECTION IN REMOTE SENSING IMAGES FUSING MULTILEVEL FEATURES**
14:40
Xili Wang, Yue Ban, Shaanxi Normal University, China; Huimin Guo, Nanyang Technological University, Singapore; Ling Hong, Shaanxi Normal University, China
- TU3.R5.5 EVALUATING DEEP CONTEXTUAL DESCRIPTION OF SUPERPIXELS FOR DETECTION IN AERIAL IMAGES**
15:00
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 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 GEOSEG: A COMPUTER VISION PACKAGE FOR AUTOMATIC BUILDING SEGMENTATION AND OUTLINE EXTRACTION**
10:40
Guangming Wu, Zhiling Guo, Xiaowei Shao, Ryosuke Shibasaki, University of Tokyo, Japan
- TU2.R5.2 MULTI-SCALE OBJECT DETECTION IN SATELLITE IMAGERY BASED ON YOLT**
11:00
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 MULTICLASS VESSEL DETECTION FROM HIGH RESOLUTION OPTICAL SATELLITE IMAGES BASED ON DEEP NEURAL NETWORKS**
11:20
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 EVALUATION OF CLOUD TYPE CLASSIFICATION BASED ON SPLIT WINDOW ALGORITHM USING HIMAWARI-8 SATELLITE DATA**
11:40
Babag Purbantoro, Jamrud Aminuddin, Naohiro Manago, Kaichi Toyoshima, Nofel Lagrosas, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Chiba University, Japan
- TU2.R5.5 SEA ICE LEADS DETECTED FROM SENTINEL-1 SAR IMAGES**
12:00
Dmitrii Murashkin, Gunnar Spreen, University of Bremen, Germany

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 SPATIAL ENHANCED-SSD FOR MULTICLASS OBJECT DETECTION IN REMOTE SENSING IMAGES**
16:20
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 AIRCRAFT DETECTION FROM REMOTE SENSING IMAGE BASED ON A WEAKLY SUPERVISED ATTENTION MODEL**
16:40
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 OBJECT DETECTION IN VHR IMAGE USING TRANSFER LEARNING WITH DEFORMABLE CONVOLUTION**
17:00
Zeyu Cao, Xiaorun Li, Zhejiang University, China; Liaoying Zhao, Hangzhou Dianzi University, China
- TU4.R5.4 MULTI-SCALE FEATURE FUSION NETWORK FOR OBJECT DETECTION IN VHR OPTICAL REMOTE SENSING IMAGES**
17:20
Wenhua Zhang, Licheng Jiao, Xu Liu, Xidian University, China; Jia Liu, Nanjing University of Science and Technology, China
- TU4.R5.5 POLARIMETRIC HRRP TARGET RECOGNITION BASED ON CONVLMSTM**
17:40
Wei Chen, Liang Zhang, Ying Xi, Yanhua Wang, Yang Li, School of Information and Electronics, Beijing Institute of Technology, China

TUESDAY
ORAL

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 BIOMASS L2 PROTOTYPE PROCESSOR: CURRENT STATUS**
08:00
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 MONITORING AND COMPARISON OF BIOPHYSICAL PARAMETERS OF PLANTATION SPECIES IN TROPICAL REGION USING POLARIMETRIC SAR DATA**
08:20
Ram Avtar, Stanley Anak Suab, Hokkaido University, Japan
- TU1.R6.3 TIME-SERIES ANALYSIS AND BACKSCATTER MODELING OF L-BAND UAVSAR RADAR OBSERVATIONS OVER FORESTED SITES IN SMAPVEX12**
08:40
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 ESTIMATION OF TROPICAL FOREST STRUCTURE AND BIOMASS FROM AIRBORNE P-BAND BACKSCATTER AND TOMOSAR MEASUREMENTS**
09:00
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 Sheffield, 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 WATER CLOUD MODEL FOR ABOVE GROUND BIOMASS RETRIVAL IN SAVANNA WOODLANDS**
09:20
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 13:40 - 15:20 Room 411-412
Session TU3.R6 Oral

Forest Methods using Lidar Sensors

Session Chair: Francesca Bovolo, Fondazione Bruno Kessler

- TU3.R6.1 AN EFFECTIVE APPROACH TO 3D STEM MODELING AND BRANCH-KNOT LOCALIZATION IN MULTISCAN TLS DATA**
13:40
Aravind Harikumar, Francesca Bovolo, Fondazione Bruno Kessler, Italy; Xinlian Liang, Finnish Geospatial Research Institute, Finland
- TU3.R6.2 ESTIMATION OF FOLIAGE STRUCTURE PROPERTIES USING TLS DATA**
14:00
Ameni Mkaouer, 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 MAPPING LAI AND VERTICAL LAI PROFILE FROM AIRBORNE LIDAR IN TEMPERATE FORESTS**
14:20
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 MEASURING LEAF EQUIVALENT WATER THICKNESS OF SHORT-ROTATION COPPICE WILLOW CANOPY USING TERRESTRIAL LASER SCANNING**
14:40
Ahmed Elsherif, Rachel Gaulton, Jon Mills, Newcastle University, United Kingdom
- TU3.R6.5 TREE SKELETON EXTRACTION FROM LASER SCANNED POINTS**
15:00
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 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 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**
10:40
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 SEASONAL CONTRIBUTIONS OF UNDERSTORY TO FOREST REFLECTANCE FOR SIX FOREST TYPES IN CHINA**
11:00
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 SIMULATING SPECTRAL IMAGES WITH LESS MODEL THROUGH A VOXEL-BASED PARAMETERIZATION OF AIRBORNE LIDAR DATA**
11:20
Jianbo Qi, Donghui Xie, Guangjian Yan, Beijing Normal University, China; Jean-Philippe Gastellu-Etchegorry, Université de Toulouse, France
- TU2.R6.4 CLASSIFICATION OF FOREST VEGETATION TYPE USING FUSED NDVI TIME SERIES DATA BASED ON STNLFMM**
11:40
Jialin Wang, Wuhan University, China; Xiaobin Cai, Chinese Academy of Sciences, China; Xiaoling Chen, Zhan Zhang, Linling Tang, Wuhan University, China
- TU2.R6.5 SENSITIVITY OF VEGETATION SHORTWAVE ALBEDO TO TOPOGRAPHY**
12:00
Dalei Hao, Jianguang Wen, Qing Xiao, Wentao Yu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, 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 LIDAR-BASED INDIVIDUAL TREE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK**
16:20
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 LASER SCANNING ADVANCING 3D FOREST ECOLOGY**
16:40
Yi Lin, Peking University, China; Miao Jiang, China Metallurgical Geology Bureau, China; Kerstin Wiegand, University of Göttingen, Germany
- TU4.R6.3 A PHYSICALLY-BASED MODEL FOR CANOPY WATER CONTENT RETRIEVAL**
17:00
Cong Zhao, Qiming Qin, Institute of Remote Sensing and Geographical Information System, School of Earth and Space Science, Peking University, China
- TU4.R6.4 LIVE FUEL MOISTURE ESTIMATION USING SMAP SOIL MOISTURE AND MODIS VEGETATION INDICES IN SOUTHERN CALIFORNIA, USA**
17:20
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 SAR-ASSISTED FUEL MOISTURE CONTENT ESTIMATION**
17:40
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** **JAPANESE ALOS L-SAR MISSIONS**
 08:00 *Shinichi Sobue, Takao Fukuda, Haruchika Kamimura, Osamu Ochiai, Akiko Noda, Tomoki Miyashita, Japan Aerospace Exploration Agency (JAXA), Japan*
- TU1.R7.3** **RADARSAT CONSTELLATION MISSION FOR DISASTER MANAGEMENT**
 08:40 *Daniel De Lisle, Steve Iris, Guennadi Kroupnik, Canadian Space Agency, Canada*
- TU1.R7.4** **COSMO SKY-MED - SECOND GENERATION**
 09:00 *Luigi Dini, Italian Space Agency (ASI), Japan*
- TU1.R7.5** **INVESTIGATION OF COMPACT SAR L AND C BAND COMPLEMENTARITY FOR PERMAFROST CHARACTERIZATION IN ARCTIC REGIONS**
 09:20 *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 **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** **FROM SENSOR-CENTRIC TO USER-CENTRIC - WHEN ARE DATA ANALYSIS-READY?**
 13:40 *Peter Baumann, Jacobs University, Germany*
- TU3.R7.2** **FROM ARDS TO AODS: FUTURE OF ANALYTICS FOR EARTH OBSERVATIONS**
 14:00 *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** **MASSIVELY DISTRIBUTED DATACUBE PROCESSING**
 14:20 *Vlad Mercicariu, Peter Baumann, Jacobs University, Germany*
- TU3.R7.4** **SPATIOTEMPORAL DATA CUBE MODELING FOR INTEGRATED ANALYSIS OF MULTI-SOURCE SENSING DATA**
 14:40 *Jing Zhao, Peng Yue, Wuhan University, China*
- TU3.R7.5** **COMPUTATIONAL DOMAIN DECOMPOSITION IN PARALLEL GEOPROCESSING - THE CASE ON GENERATING DEM FROM LIDAR POINT CLOUD**
 15:00 *Peng Yue, Fan Gao, Zheren Yan, Wuhan University, China*

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** **ALOS AND RADARSAT SYNERGIES IN GEOLOGICAL INVESTIGATIONS**
 10:40 *Vern Singhroy, Junhua Li, Mary-Anne Fobert, Canada Centre for Remote Sensing, Canada*
- TU2.R7.3** **DEMONSTRATION OF INSAR-BASED THREE DIMENSIONAL CONTINUOUS DEFORMATION MONITORING**
 11:20 *Ryo Natsuaki, University of Tokyo, Japan; Akiko Noda, Japan Aerospace Exploration Agency (JAXA), Japan*
- TU2.R7.4** **EFFECTIVITY OF COMBINATION USE OF MULTIPLE SAR SATELLITES FOR VOLCANO MONITORING - A PRACTICAL LESSON FOR SAR CONSTELLATION**
 11:40 *Tomokazu Kobayashi, Geospatial Information Authority of Japan, Japan*
- TU2.R7.5** **SHIP MONITORING IN JAPAN USING SAR, AIS AND EARTH OBSERVATION SATELLITES**
 12:00 *Shuji Shimizu, Junichiro Ishizawa, Hiroaki Sakamoto, Kazuyoshi Nakamura, Japan Aerospace Exploration Agency (JAXA), Japan*

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 FAR SIDE 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 REVISITED**
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 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 Technology (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 Pashaee, 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 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**
Junxiang 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 Lavallo, 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, Yoncheol 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 16:20 - 18:00 Room 414-415
Session TU4.R8 Oral

Remote Sensing of Inland Waters II

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

- TU4.R8.1** 16:20 **A MULTI-SENSOR TECHNIQUE FOR MONITORING CYANOBACTERIAL HARMFUL ALGAL BLOOMS IN FRESHWATER 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** **OCEAN SURFACE CURRENT MEASUREMENT WITH AN INTERFEROMETRIC UHF SAR**
 08:00 *Mark Sletten, Steven Menk, Jakov Toporkov, US Naval Research Laboratory, United States*
- TU1.R9.2** **THE PERFORMANCE ANALYSIS OF DUAL-ANTENNA SQUINT INTERFEROMETRIC SAR OCEAN CURRENT MEASUREMENT MODE**
 08:20 *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** **BISTATIC SAR IMAGE FORMATION AND INTERFEROMETRIC PROCESSING FOR THE STEREOID EARTH EXPLORER 10 CANDIDATE MISSION**
 08:40 *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** **ON AZIMUTH AMBIGUITIES SUPPRESSION FOR SHORT-BASELINE ALONG-TRACK INTERFEROMETRY: THE STEREOID CASE**
 09:00 *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** **HIGH-RESOLUTION HYBRID SPOTLIGHT-STRIPMAP SAR INTERFEROMETRY VIA COMPRESSIVE SENSING**
 09:20 *Huizhang Yang, Chengzhi Chen, Shengyao Chen, Feng Xi, Zhong Liu, Nanjing University of Science and Technology, 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** **EXPLOITING SPARSITY FOR PHASE UNWRAPPING**
 13:40 *Rick Chartrand, Matthew Calef, Michael Warren, Descartes Labs, United States*
- TU3.R9.2** **GAP-FILLING BASED ON ITERATIVE EOF ANALYSIS OF TEMPORAL COVARIANCE : APPLICATION TO INSAR DISPLACEMENT TIME SERIES.**
 14:00 *Alexandre Hippert-Ferrer, Yajing Yan, Philippe Bolon, LISTIC, Université Savoie Mont Blanc, France*
- TU3.R9.3** **A GENETIC ALGORITHM FOR PHASE UNWRAPPING ERRORS CORRECTION IN THE SBAS-DINSAR APPROACH**
 14:20 *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** **EMI: EFFICIENT TEMPORAL PHASE ESTIMATION AND ITS IMPACT ON HIGH-PRECISION INSAR TIME SERIES ANALYSIS**
 14:40 *Homa Ansari, Francesco De Zan, Giorgio Gomba, Richard Bamler, German Aerospace Center (DLR), Germany*
- TU3.R9.5** **CAR-BORNE AND UAV-BORNE MOBILE MAPPING OF SURFACE DISPLACEMENTS WITH A COMPACT REPEAT-PASS INTERFEROMETRIC SAR SYSTEM AT L-BAND**
 15:00 *Othmar Frey, Gamma Remote Sensing / ETH Zurich, Switzerland; Charles Werner, Gamma Remote Sensing AG, Switzerland; Roberto Coscione, ETH Zürich, Switzerland*

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** **CONTRIBUTION OF DUAL POLARIZED SENTINEL-1A AND TERRASAR-X DATA IN PERSISTENT SCATTERER ANALYSIS**
 10:40 *Yasser Maghsoudi, Saeed Azadnejad, K.N.Toosi University, Iran; Daniele Perissin, Purdue University, United States*
- TU2.R9.2** **MULTITEMPORAL SAR AND MAP FUSION FOR EXTRACTING PERSISTENT SCATTERERS ON ROADS**
 11:00 *Taichi Tanaka, Daisuke Ikefujii, Osamu Hoshuyama, NEC Corporation, Japan*
- TU2.R9.3** **MITIGATION OF POSITIONING BIAS IN PSI POINT CLOUDS**
 11:20 *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** **EVALUATING IONOSPHERIC PHASE DELAY IN L-BAND ALOS-2 SCANSAR: OBSERVATIONS FROM 2016 MW 7.8 ECUADOR EARTHQUAKE**
 11:40 *Zhiyuan Wang, Leibniz University, Germany; Mahdi Motagh, Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences, Germany*
- TU2.R9.5** **NON-FUZZY INTERFEROMETRIC PHASE ESTIMATION METHOD BASED ON DEEP LEARNING**
 12:00 *Shuo Li, Huaping Xu, Shuai Gao, Chunsheng Li, Beihang University, China*

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** **TRAJECTORY UNCERTAINTY IN REPEAT-PASS SAR INTERFEROMETRY: A CASE STUDY**
 16:20 *Roberto Coscione, Irena Hajnsek, Othmar Frey, Eidgenössische Technische Hochschule Zürich (ETHZ), Switzerland*
- TU4.R9.2** **A COMPARISON OF TROPOSPHERIC PATH DELAYS ESTIMATED IN PSI PROCESSING AGAINST DELAYS DERIVED FROM A GNSS NETWORK IN THE SWISS ALPS**
 16:40 *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** **ESTIMATION OF DISPLACEMENT VECTOR BY LINEAR MIMO ARRAYS WITH REDUCED SYSTEM ERROR INFLUENCES**
 17:00 *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** **WIDE AREA DEFORMATION MAPPING THROUGH THE CLOUD-COMPUTING BASED SENTINEL-1 P-SBAS AUTOMATIC PIPELINE**
 17:20 *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** **ANSWERS TO QUESTIONS ABOUT USER-FRIENDLY INSAR DATA PRODUCTS**
 17:40 *Howard Zebker, Stanford University, United States*

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

Scattermeters 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 THE METOP-SG SCA WIND SCATTEROMETER: CDR DEVELOPMENT STATUS AND PERFORMANCE OVERVIEW**
08:00
Friedhelm Rostan, Dieter Ulrich, Christoph Heer, Airbus Defence and Space GmbH, Germany; Allan Ostergaard, European Space Agency ESA-ESTEC, Netherlands
- TU1.R10.2 PHASECODING FOR MITIGATING SECOND-TRIP ECHOES IN D3R WEATHER RADAR**
08:20
Shashank S Jashil, V Chandrasekar, Colorado State University, United States
- TU1.R10.3 THE ESA WIDEBAND MICROWAVE SCATTEROMETER (WBSCAT): DESIGN AND IMPLEMENTATION**
08:40
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 ON THE QUALITY OF CFOSAT SCATTEROMETER WINDS**
09:00
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 PRELIMINARY CALIBRATIONS OF THE CFOSAT SCATTEROMETER**
09:20
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 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 MULTISOURCE LABELED DATA: AN OPPORTUNITY FOR TRAINING DEEP LEARNING NETWORKS**
13:40
Lorenzo Bruzzone, University of Trento, Italy
- TU3.R10.3 LEARNING TO MAP NEARLY ANYTHING**
14:20
Tawfiq Salem, Connor Greenwell, Hunter Blanton, Nathan Jacobs, University of Kentucky, United States
- TU3.R10.4 A COMPUTER VISION PERSPECTIVE ON ANALYZING AND SYNTHESIZING GEOSPATIAL DATA**
14:40
Ilke Demir, DeepScale, United States; Guan Pang, Jing Huang, Facebook, United States
- TU3.R10.5 MULTISENSOR FEATURE FUSION USING LOW-RANK MODELING AND COMPONENT ANALYSIS**
15:00
Behnood Rasti, University of Iceland, Iceland; Pedram Ghamisi, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Germany

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 Ciències de l'Espai (ICE-CSIC) Institut d'Estudis Espacials de Catalunya (IEEC); Nazzareno Pierdicca, Sapienza University of Rome

- TU2.R10.1 INTEGRATION OF CYGNSS WIND AND WAVE OBSERVATIONS WITH THE WAVEWATCH III NUMERICAL MODEL**
10:40
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 FIRST EVIDENCES OF SPACEBORNE CARRIER PHASE ALTIMETRY USING GNSS REFLECTED SIGNALS AT GRAZING ANGLES OF OBSERVATION OVER OPEN SEA WATER**
11:00
Estel Cardellach, Weiqiang Li, Antonio Rius, Institut de Ciències 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 SENSITIVITY TO SOIL MOISTURE AND OBSERVATION GEOMETRY OF SPACEBORNE GNSS-R DELAY-DOPPLER MAPS**
11:20
Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Jordi Castellvi, Universitat Politècnica de Catalunya (UPC), ICGC, Spain; Merce Vall-Hossera, Gerard Portal, Luciana Rossato, Universitat Politècnica de Catalunya (UPC), Spain
- TU2.R10.4 SIMULATIONS OF SPACEBORNE GNSS-R SIGNAL OVER MOUNTAIN AREAS**
11:40
Leila Guerriero, Laura Dente, Tor Vergata University, Italy; Davide Comite, Nazzareno Pierdicca, Sapienza University of Rome, Italy
- TU2.R10.5 ANALYZING ANOMALOUS ARTEFACTS IN TDS-1 DELAY DOPPLER MAPS**
12:00
Changqiang 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 Rizo, University of New South Wales, Sydney, Australia

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 DIFFERENTIAL INFORMATION RESIDUAL CONVOLUTIONAL NEURAL NETWORK FOR PANSHARPENING**
16:20
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; Xinlin 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 MULTI-TASK DEEP LEARNING FOR SATELLITE IMAGE PANSHARPENING AND SEGMENTATION**
16:40
Andrew Khalel, Onur Tasar, Inria Sophia Antipolis, Egypt; Guillaume Charpiat, Inria Saclay, France; Yuliya Tarabalka, LuxCarta Technology, France
- TU4.R10.3 MULTI-SCALE MACHINE LEARNING FOR THE CLASSIFICATION OF BUILDING PROPERTY VALUES**
17:00
Patrick Helber, Benjamin Bischke, Qiushi Guo, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany
- TU4.R10.4 DEEP LEARNING FOR SAR-OPTICAL IMAGE MATCHING**
17:20
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 COMBINING SENTINEL-1 AND SENTINEL-2 TIME SERIES VIA RNN FOR OBJECT-BASED LAND COVER CLASSIFICATION**
17:40
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 MULTISCALE CHANGE ANALYSIS FOR SAR IMAGE TIME SERIES: APPLICATION TO INUNDATION DETECTION**
08:00
Thu Trang Le, Jean-Luc Froger, Alexis Hrysiewicz, Université Clermont Auvergne, France
- TU1.R11.2 MULTIMODAL APPROACH FOR FLOOD MONITORING FROM TIME-SERIES SATELLITE IMAGES COMBINING ATTRIBUTE FILTERS AND KOHONEN MAP**
08:20
Moslem Ouled Sghaier, University of Montreal, Canada; Samuel Foucher, Tom Landry, Computer Research Institute of Montreal (CRIM), Canada
- TU1.R11.3 ATTRIBUTE PROFILES FOR SATELLITE IMAGE TIME SERIES**
08:40
Caglayan Tuna, François Merciol, Sébastien Lefèvre, Université Bretagne Sud, France
- TU1.R11.4 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**
09:00
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 3-D STRUCTURE-FROM-MOTION RETRIEVAL BASED ON CIRCULAR VIDEOSAR SEQUENCES**
09:20
Ying Zhang, Daiyin Zhu, Yingying Kong, Nanjing University of Aeronautics and Astronautics, China

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 LOCAL SPARSE REPRESENTATION BASED SPATIAL PREPROCESSING FOR ENDMEMBER EXTRACTION**
13:40
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 HYPERSPECTRAL OCEANIC REMOTE SENSING WITH ADJACENCY EFFECTS: FROM SPECTRAL-VARIABILITY-BASED MODELING TO PERFORMANCE OF ASSOCIATED BLIND UNMIXING METHODS**
14:00
Yannick Deville, Salah-Eddine Brezini, Fatima Zahra 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 Cham, Sorbonne University, France; Sylvain Jay, Aix Marseille University, France; Audrey Minghelli, Université de Toulon, France; Xavier Briottet, ONERA, France; Marie-Véronique Serfaty, DGA, France
- TU3.R11.3 A SPECTRAL MIXING MODEL ACCOUNTING FOR MULTIPLE REFLECTIONS AND SHADOW**
14:20
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 WEIGHTED BLIND LQ HYPERSPECTRAL UNMIXING**
14:40
Jakob Sigurdsson, Magnus Ulfarsson, Johannes Sveinsson, University Of Iceland, Iceland
- TU3.R11.5 GAUSSIAN MIXTURE MODEL FOR HYPERSPECTRAL UNMIXING WITH LOW-RANK REPRESENTATION**
15:00
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 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 SCENE CHANGE DETECTION VIA DEEP CONVOLUTION CANONICAL CORRELATION ANALYSIS NEURAL NETWORK**
10:40
Yong Wang, Bo Du, Lixiang Ru, Chen Wu, Wuhan University, China; Hui Luo, China University of Geosciences (Wuhan), China
- TU2.R11.2 A DISTRIBUTED AND PARALLEL METHOD OF CHANGE DETECTION IN REMOTE SENSING IMAGE BASED ON FULLY CONNECTED CONDITIONAL RANDOM FIELD**
11:00
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 HOMOGENEOUS TRANSFORMATION BASED ON DEEP-LEVEL FEATURES IN HETEROGENEOUS REMOTE SENSING IMAGES**
11:20
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 CONVOLUTIONAL LONG SHORT-TERM MEMORY NETWORK FOR MULTITEMPORAL CLOUD DETECTION OVER LANDMARKS**
11:40
Gonzalo Mateo-García, Jose E. Adsuara, Adrián Pérez-Suay, Luis Gómez-Chova, University of Valencia, Spain
- TU2.R11.5 DETECTING URBAN CHANGES WITH RECURRENT NEURAL NETWORKS FROM MULTITEMPORAL SENTINEL-2 DATA**
12:00
Maria Papadomanolaki, National Technical University of Athens, Greece; Sagar Verma, Maria Yakalopoulou, CentraleSupélec, Université Paris-Saclay, France; Siddharth Gupta, Granular AI, United States; Konstantinos Karantzalos, National Technical University of Athens, Greece

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 CONVOLUTIONAL AUTOENCODER FOR SPATIAL-SPECTRAL HYPERSPECTRAL UNMIXING**
16:20
Burkni Palsson, Magnus O. Ulfarsson, Johannes R. Sveinsson, University of Iceland, Iceland
- TU4.R11.2 A SEMI-SUPERVISED METHOD FOR NONLINEAR HYPERSPECTRAL UNMIXING**
16:40
Bikram Koirala, Paul Scheunders, University of Antwerp, Belgium
- TU4.R11.3 BLIND UNMIXING OF HYPERSPECTRAL IMAGERY BASED ON GENERALIZED MORPHOLOGICAL COMPONENT ANALYSIS**
17:00
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 HYPERSPECTRAL UNMIXING VIA SIMULTANEOUS DICTIONARY REFINING AND ENHANCED SPARSE REGRESSION**
17:20
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 WU-NET: A WEAKLY-SUPERVISED UNMIXING NETWORK FOR REMOTELY SENSED HYPERSPECTRAL IMAGERY**
17:40
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, 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 RETRIEVAL OF MULTIPLE LAND SURFACE AND ATMOSPHERIC PARAMETERS FROM THE HIMAWARI-8 AHI TOP-OF-ATMOSPHERE OBSERVATIONS**
08:00
Han Ma, Wuhan University, China; Shunlin Liang, University of Maryland, United States
- TU1.R12.2 A PARAMETERIZED DIRECTIONAL THERMAL RADIANCE MODEL FOR ROW CROPS**
08:20
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 MAIZE LEAF AREA INDEX RETRIEVAL USING FY-3B SATELLITE DATA BY LONG SHORT-TERM MEMORY MODEL**
08:40
Mao Zhang, Xia Zhang, Changping Huang, Senlin Tang, Wenchao Qi, Chinese Academy of Sciences, China
- TU1.R12.4 AN OVERVIEW OF LAND SURFACE TEMPERATURE RETRIEVAL FROM CHINESE GAOFEN-5 THERMAL INFRARED IMAGES**
09:00
Huazhong Ren, Institute of Remote Sensing and Geographical Information System, School of Earth and Space Sciences, Peking University, China
- TU1.R12.5 A COMBINED ALGORITHM FOR SOIL AND VEGETATION TEMPERATURES WITH SLSTR DUAL-ANGLE DATA**
09:20
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 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 DOWNSCALING OCEAN SURFACE NET RADIATION AT GLOBAL SCALES WITH RANDOM FOREST**
13:40
Jianglei Xu, Bo Jiang, Beijing Normal University, China
- TU3.R12.2 MAPPING SUBMERGED AQUATIC VEGETATION IN SHALLOW WATER OF ARABIAN GULF USING WATER SPECTRAL INDICES, FIELD OBSERVATIONS AND LANDSAT-OLI DATA**
14:00
Alanoud Alkhatlan, Abderrazak Bannari, Ali Thamer Salim Al-Dawood, Asma Abahussain, Nadir Hameid, Arabian Gulf University, Bahrain
- TU3.R12.3 SPECTRAL MONITORING OF ALGAL BLOOMS IN AN EUTROPHIC LAKE USING SENTINEL-2**
14:20
Alba German, Provincial Administration of Water Resources / National University of Córdoba, Argentina; Anabella Ferral, Carlos Marcelo Scavuzza, 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 SIMULTANEOUS ESTIMATION OF MULTIPLE SHIP PARAMETERS FROM SAR IMAGES USING A FORKED CONVOLUTIONAL NEURAL NETWORK**
14:40
James Imber, Björn Tings, Domenico Velotto, German Aerospace Centre (DLR), Germany
- TU3.R12.5 A NOVEL IONOSPHERIC TEC ESTIMATION METHOD BASED ON L-BAND ISAR SIGNAL PROCESSING**
15:00
Jixiang Fu, Dan Xu, Mengdao Xing, National Laboratory of Radar Signal Processing, Xidian University, 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 OPTICAL IMAGE GAP FILLING USING DEEP CONVOLUTIONAL AUTOENCODER FROM OPTICAL AND RADAR IMAGES**
10:40
Rémi Cresson, Dino Ienco, IRSTEA, France; Raffaele Gaetano, cirad, France; Kenji Ose, Dinh Ho Tong Minh, IRSTEA, France
- TU2.R12.2 HYPERSPECTRAL IMAGE DENOISING VIA CONVEX LOW-FIBERED-RANK REGULARIZATION**
11:00
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 REMOTE SENSING IMAGE MATCHING USING TPS TRANSFORMATION AND LOCAL GEOMETRICAL CONSTRAINT**
11:20
Jun Chen, Huimin Liu, Linbo Luo, Wenping Gong, Xuejiao Li, China University of Geosciences, China
- TU2.R12.4 SPECTRAL-SPATIAL JOINT NOISE ESTIMATION FOR HYPERSPECTRAL IMAGES**
11:40
Minchao Ye, Hong Chen, Chenxi Ji, Ling Lei, China Jiliang University, China; Yuntao Qian, Zhejiang University, China
- TU2.R12.5 WEIGHTED GROUP SPARSITY REGULARIZED LOW-RANK TENSOR DECOMPOSITION FOR HYPERSPECTRAL IMAGE RESTORATION**
12:00
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 16:20 - 18:00 Room 421
Session TU4.R12 Oral

Signal Estimation Techniques I

Session Chair: Flavio Iturbide-Sanchez, NOAA

- TU4.R12.1 MOVING TARGET VELOCITY ESTIMATION USING MULTI-AZIMUTH ANGLE MODE**
16:20
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 WRAPPED INTERFEROMETRIC PHASE REGISTRATION BASED POSITIONING METHOD**
16:40
Yuming Jiang, Jingwen Li, Bing Sun, Beihang University, China; Ran Li, Zhimin He, Beijing Institute of Remote Sensing Equipment, China
- TU4.R12.3 SINGLE RFI LOCALIZATION BASED ON CONJUGATE CROSS-CORRELATION OF DUAL-CHANNEL SAR SIGNALS**
17:00
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 ASSESSING THE SHARPNESS OF SATELLITE IMAGES: STUDY OF THE PLANETSCOPE CONSTELLATION**
17:20
Jérémy Anger, ENS Cachan, France; Carlo de Franchis, ENS Cachan/Kayrros, France; Gabriele Facciolo, ENS Cachan, France
- TU4.R12.5 HYPERSPECTRAL IMAGE RESTORATION USING NONCONVEX HYBRID REGULARIZATION**
17:40
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, Nadoka 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 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 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 JAPANESE 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, Nadoka 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, 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, July 31 08:00 - 09:40 Room 211-212
Session WE1.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 MORPHOMETRIC ANALYSIS OF LUNAR SINUOUS RILLES**
08:00 *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 Padda, University of Cagliari, Italy; Marco Scaioni, Politecnico di Milano, Italy; Angelo Zinzi, ASI, Italy*
- WE1.R1.2 DIVERSE SURFACE MINERALOGY OF MARS FROM HYPERSPECTRAL SENSING**
08:20 *James Wray, Georgia Institute of Technology, United States*
- WE1.R1.3 NEW CRISM DATA PRODUCTS FOR IMPROVED CHARACTERIZATION AND ANALYSIS OF THE MARS2020 LANDING SITE**
08:40 *Mario Parente, Yuki Itoh, Arun Saranathan, University of Massachusetts Amherst, United States*
- WE1.R1.4 HIGH-RESOLUTION GEOLOGICAL MAPPING AND AGE DETERMINATION FOR ILRS SITE CHARACTERIZATION**
09:00 *Zhizhong Kang, Teng Hu, China University of Geosciences, China; Matteo Massironi, Università di Padova, Italy; Harald Hiesinger, University of Munster, Germany*
- WE1.R1.5 MAPPING MINERAL ABUNDANCES ON THE MOON SURFACE USING CHANG'E-1 IIM DATA**
09:20 *David Marzi, University of Pavia, Italy; Andrea Marinoni, Arctic University of Norway, Norway; Paolo Gamba, University of Pavia, Italy*

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

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 TACTICAL AND STRATEGIC DATA ANALYSIS METHODS FOR MULTISPECTRAL IMAGING DATA FROM LANDED MARS MISSIONS**
10:40 *James Bell, Arizona State University, United States*
- WE2.R1.2 TOPOGRAPHY AND ILLUMINATION CONDITIONS OF CHANG'E-4 LANDING AREA**
11:00 *Xiaohua Tong, Shijie Liu, Hao Chen, Ming Hu, Qian Huang, Fan He, Yaqiong Wang, Tongji University, China*
- WE2.R1.3 HIGH PRECISION MAPPING OF CHANG'E-4 AND CHANG'E-5 LANDING SITES**
11:20 *Kaichang Di, Bin Liu, Mengna Jia, Xin Xin, Shengli Niu, Zhaaquin Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China*
- WE2.R1.4 PHOTOCINOMETRY AND PHOTOGRAMMETRY INTEGRATED APPROACH FOR PIXEL-RESOLUTION 3D MAPPING AND APPLICATIONS IN CHINA'S LUNAR LANDING MISSIONS**
11:40 *Bo Wu, Wai Chung Liu, Hong Kong Polytechnic University, China*
- WE2.R1.5 MATISSE FOR MOON MAPPING: EXPLOITING ADVANCED ARCHIVING AND 3D VISUALIZATION SOLUTIONS FOR A JOINT INTERNATIONAL PROJECT**
12:00 *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
Session WE3.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 TEN YEARS OF PATCH-BASED APPROACHES FOR SAR IMAGING: A REVIEW**
13:40 *Florence Tupin, Télécom Paristech, France; Loïc Denis, Université de Lyon, France; Charles Deledalle, CNRS, France; Giampaolo Ferraioli, Parthenope University, Italy*
- WE3.R1.3 THE INFLUENCE OF DISTANCES IN NLM POLSAR FILTERS**
14:20 *Luis Gomez-Deniz, Universidad Las Palmas De Gran Canaria, Spain; Alejandro Frery, Universidade Federal de Alagoas, Brazil*
- WE3.R1.4 FROM PATCHES TO DEEP LEARNING: COMBINING SELF-SIMILARITY AND NEURAL NETWORKS FOR SAR IMAGE DESPECKLING**
14:40 *Loïc Denis, Université de Lyon, France; Charles-Alban Deledalle, CNRS, France; Florence Tupin, Télécom Paristech, France*
- WE3.R1.5 NONLOCAL SAR IMAGE DESPECKLING BY CONVOLUTIONAL NEURAL NETWORKS**
15:00 *Davide Cozzolino, Luisa Verdoliva, Giuseppe Scarpa, Giovanni Poggi, University Federico II of Naples, Italy*

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

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 THE USE OF NON LOCAL FILTERS IN POLSAR APPLICATIONS**
16:20 *Ferdinando Nunziata, Andrea Buono, Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy*
- WE4.R1.2 THE EXPLOITATION OF THE NON LOCAL PARADIGM FOR SAR 3D RECONSTRUCTION**
16:40 *Giampaolo Ferraioli, Università di Napoli Parthenope, Italy; Loïc Denis, CNRS / Université de Saint-Etienne, France; Charles Deledalle, CNRS / Université de Bordeaux, France; Florence Tupin, Télécom Paristech, France*
- WE4.R1.3 NON-LOCAL SAR TOMOGRAPHY FOR LARGE-SCALE URBAN MAPPING**
17:00 *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 ANALYSIS OF OFFSET-COMPENSATED NONLOCAL FILTERING FOR INSAR DEM GENERATION**
17:20 *Francescopaolo Sica, Nicola Gollin, German Aerospace Center (DLR), Germany*
- WE4.R1.5 ROBUST NONLOCAL LOW-RANK SAR STACK DESPECKLING WITH APPLICATION TO CHANGE DETECTION**
17:40 *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 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**
Diana 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**
Sanayo Mukai, Kyoto College of Graduate Studies for Informatics, Japan; Haru 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 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 Kroodma, 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 Kroodma, 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, 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 PM_{2.5} 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 PM_{2.5} 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**
Maria Fernanda García Ferreyra, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Gabriele Curci, Università 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 Lìghezolo, Carlos Marcelo Scavuzza, 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 PM_{2.5} OVER SINGAPORE**
Li Tan, Daniel M. Kalbermatter, Santo V. Salinas, National University of Singapore, Singapore

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 **THREE-DIMENSIONAL POLARIMETRIC COVARIANCE MATRIX VIA INSAR HISTOGRAMS: A CASE STUDY WITH L- AND P-BAND NASA ABOVE CAMPAIGN DATA**

08:00

Marco Lavalle, Gustavo H. X. Shiroma, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE1.R3.2 **THREE-DIMENSIONAL URBAN CHARACTERIZATION USING POLARIMETRIC SAR CORRELATION TOMOGRAPHIC TECHNIQUES AND TSX/TDX IMAGES**

08:20

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 **INTERPRETATION OF POLARIMETRIC AND TOMOGRAPHIC SIGNATURES FROM GLACIER SUBSURFACE: THE K-TRANSECT CASE STUDY**

08:40

Giuseppe Parrella, Georg Fischer, Matteo Pardini, Kostas Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR), Germany

WE1.R3.4 **POLINSAR TWO LAYER MODEL GROUND AND VOLUME RESPONSE SEPARATION**

09:00

Alberto Alonso-Gonzalez, Emanuel Hecht, Kostas Papathanassiou, German Aerospace Center (DLR), Germany

WE1.R3.5 **ON THE GEOMETRICAL DEPENDENCY OF THE POLARIMETRIC BISTATIC SAR OBSERVATION**

09:20

Yanting Wang, Thomas Ainsworth, Jong-Sen Lee, U.S. Naval Research Laboratory, United States

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 **DEVELOPMENTS OF SCATTERING POWER DECOMPOSITION FROM 3 TO 7 COMPONENTS**

13:40

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 **A SCATTERING POWER FACTORIZATION FRAMEWORK USING A GEODESIC DISTANCE FOR MULTI-LOOKED POLSAR DATA**

14:20

Debanshu Ratha, Avik Bhattacharya, Indian Institute of Technology, Bombay, India; Alejandro Frery, Universidade Federal de Alagoas, Brazil; Eric Pottier, University of Rennes 1, France

WE3.R3.4 **ON ICA BASED ICTD CLASSIFICATION OF POLSAR DATA**

14:40

Gabriel Vasile, National Center for Scientific Research (CNRS), France

WE3.R3.5 **POLARIMETRIC L-BAND PALSAR2 FOR DISCONTINUOUS PERMAFROST MAPPING IN PEATLAND REGIONS**

15:00

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 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 **ROLL-INVARIANT FEATURES IN RADAR POLARIMETRY: A SURVEY**

10:40

Si-Wei Chen, Guo-Qing Wu, Da-Hai Dai, Xue-Song Wang, Shun-Ping Xiao, National University of Defense Technology, China

WE2.R3.2 **ASSESSMENT OF MODEL-BASED POLSAR DECOMPOSITIONS**

11:00

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 **THE IMPACT OF DIFFERENT POLARIMETRIC DISTANCE MEASURES FOR THE DESPECKLING OF POLSAR DATA FOLLOWING THE BELTRAMI APPROACH**

11:20

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 **DETECTION OF EARTHQUAKE-INDUCED DAMAGES USING POLARIMETRIC SAR REMOTE SENSING**

11:40

Sang-Eun Park, Yoon-Taek Jung, Keunhoo Cho, Sejong University, Korea (South)

WE2.R3.5 **ADVANCEMENTS FOR SENTINEL-1 BASED VESSEL MONITORING: DUAL-POLARIZATION DETECTION AND SAR-BASED COASTLINE DETECTION**

12:00

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 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 **POLSAR DATA COMPENSATION OF STEEP TERRAIN WITH APPLICATION TO SOIL MOISTURE RETRIEVAL**

16:20

Jong-Sen Lee, Thomas Ainsworth, Yanting Wang, Naval Research Laboratory, United States; Irena Hajnsek, Kostas Pappathanassiou, German Aerospace Center (DLR), Germany

WE4.R3.2 **REVISITING AN ITERATIVE SPECKLE FILTERING TECHNIQUE**

16:40

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 **ASSESSMENT OF POLARIMETRIC VARIABILITY BY DISTANCE GEOMETRY FOR ENHANCED CLASSIFICATION OF OIL SLICKS USING SAR**

17:00

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 **COMPARATIVE ANALYSIS OF THE RELATIVE POLARIMETRIC RADAR SIGNATURE OF VEGETATION AND CITIES DISTRICTS**

17:20

Laelitia Thirion-Lefevre, Régis Guinvarc'h, CentraleSupélec, France; Elise Colin-Koeniguer, ONERA, France

WE4.R3.5 **AIRBORNE-SINGLE PASS X-BAND FMCW INSAR INSTRUMENT FOR THE ACCURATE DEM GENERATION**

17:40

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 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 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, 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
ORAL

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 DEEP FEATURE EXTRACTION BASED ON SIAMESE NETWORK AND AUTO-ENCODER FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
08:00
Jiajia Miao, Bin Wang, Xiaofeng Wu, Liming Zhang, Bo Hu, Jian Qiu Zhang, Fudan University, China
- WE1.R5.2 DECISION FUSION BASED ON JOINT LOW RANK AND SPARSE COMPONENT FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
08:20
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 ROLLING GUIDANCE RECURSIVE FILTERING-BASED MULTIPLE KERNEL LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
08:40
Binge Cui, Liwei Zhong, Xiujuan Tian, Shandong University of Science and Technology, China
- WE1.R5.4 ACCESSIBILITY-FREE ACTIVE LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
09:00
Chenyang 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 SPECTRAL-SPATIAL CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON A JOINT ATTENTION NETWORK**
09:20
Erting Pan, Yong Ma, Xiaoguang Mei, Xiaobing Dai, Fan Fan, Xin Tian, Jiayi Ma, Wuhan University, China

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 HIERARCHICAL DEEP FEATURE REPRESENTATION FOR HIGH-RESOLUTION SCENE CLASSIFICATION**
13:40
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 SCENE CLASSIFICATION OF HIGH RESOLUTION REMOTE SENSING IMAGES VIA SELF-PACED DEEP LEARNING**
14:00
Xiwen Yao, Liuqing Yang, Gong Cheng, Junwei Han, Lei Guo, Northwestern Polytechnical University, China
- WE3.R5.3 REMOTE SENSING SCENE CLASSIFICATION BASED ON RES-CAPSNET**
14:20
Tian Tian, Xiaoyan Liu, Lizhe Wang, China University of Geosciences, China
- WE3.R5.4 LEARNING REGION RESPONSE RANKING FEATURES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION**
14:40
Junyu Yang, Gong Cheng, Xiwen Yao, Junwei Han, Lei Guo, Northwestern Polytechnical University, China
- WE3.R5.5 AN INTROSPECTIVE LEARNING STRATEGY FOR REMOTE SENSING SCENE CLASSIFICATION**
15:00
Jingran Su, Qi Wang, Northwestern Polytechnical University, China; Shangdong Chen, Northwest University, China; Xuelong Li, Northwestern Polytechnical 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 A SEMI-SUPERVISED CROP-TYPE CLASSIFICATION BASED ON SENTINEL-2 NDMI SATELLITE IMAGE TIME SERIES AND PHENOLOGICAL PARAMETERS**
10:40
Yady Tatiana Solano-Correa, Francesca Bovolenta, Fondazione Bruno Kessler, Italy; Lorenzo Bruzzone, University of Trento, Italy
- WE2.R5.2 DEEP LEARNING FOR THE CLASSIFICATION OF SENTINEL-2 IMAGE TIME SERIES**
11:00
Charlotte Pelletier, Geoffrey I Webb, François Petitjean, Monash University, Australia
- WE2.R5.3 IMPROVING HYPERSPECTRAL IMAGE CLASSIFICATION BY COMBINING SPECTRAL AND MULTIBAND COMPACT TEXTURE FEATURES**
11:20
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 COMPARING PHENOMETRICS EXTRACTED FROM DENSE LANDSAT-LIKE IMAGE TIME SERIES FOR CROP CLASSIFICATION**
11:40
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 Sanchez, National Institute for Space Research (INPE), Brazil; Pedro Leitão, Patrick Hostert, Humboldt-Universität zu Berlin, Germany
- WE2.R5.5 DEEP RECURRENT NEURAL NETWORKS FOR LAND-COVER CLASSIFICATION USING SENTINEL-1 INSAR TIME SERIES**
12:00
Shaohua Ge, Nanjing University of Science and Technology, China; Oleg Anropov, 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 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 SOLVING DEEP NEURAL NETWORKS WITH ORDINARY DIFFERENTIAL EQUATIONS FOR REMOTELY SENSED HYPERSPECTRAL IMAGE CLASSIFICATION**
16:20
Mercedes E. Paoletti, Juan M. Haut, Javier Plaza, Antonio Plaza, University of Extremadura, Spain
- WE4.R5.2 DISCRIMINATIVE CNN VIA METRIC LEARNING FOR HYPERSPECTRAL CLASSIFICATION**
16:40
Zhongqi Tian, Northwestern Polytechnical University, China; Zhi Zhang, Chinese Academy of Sciences, China; Shaohui Mei, Ruogao Jiang, Shuai Wan, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, United States
- WE4.R5.3 HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON NON-LOCAL NEURAL NETWORKS**
17:00
Chen Wang, Xiao Bai, Lei Zhou, Beihang University, China; Jun Zhou, Griffith University, Australia
- WE4.R5.4 JOINT MULTILAYER SPATIAL-SPECTRAL CLASSIFICATION OF HYPERSPECTRAL IMAGES BASED ON CNN AND CONVLSTM**
17:20
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 SEMI-SUPERVISED LEARNING WITH GRAPHS: COVARIANCE BASED SUPERPIXELS FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
17:40
Philip Sellars, Angelica Aviles-Rivera, University of Cambridge, United Kingdom; Nicolas Papadakis, Université Bordeaux, France; David Coomes, Anita Faul, Carola-Bibiane Schönlieb, University of Cambridge, United Kingdom

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 Mierniecki, 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 Jada, 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 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 Bogen, 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 Castellví, Adriano Camps, Universitat Politècnica de Catalunya (UPC), Spain; Jordi Corbera, Ramon Alamús, Institut Cartogràfic i Geològic de Catalunya, Spain

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 Collander, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Michael Cosh, USDA Agricultural Research Service, United States; Jarrett Powers, Matthew Friesen, Heather McNair, Agriculture and Agri-Food Canada, Canada; Aaron Berg, University of Guelph, Canada; David Bosch, Chandra Holfield 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 THEMEX-18 DATASET: UNDERSTANDING THE SOIL AND VEGETATION DYNAMICS OF AGRICULTURAL FIELDS IN CENTRAL MEXICO FROM L-BAND SMAP OBSERVATIONS**
Alejandro Monsiváis-Huerta, 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-Ramírez, Ramón Sidonio Aparicio-García, Carlos Rodolfo Sánchez-Villanueva, Victor Manuel Saucedo-Rangel, Instituto Politécnico Nacional, Mexico; Jasmeet Judge, University of Florida, United States

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 Wegmüller, 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, Xiaojin 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 Yeon, 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 2019 IEEE GRSS DATA FUSION CONTEST: LARGE-SCALE SEMANTIC 3D RECONSTRUCTION**
08:00
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 U-NET ENSEMBLE FOR SEMANTIC AND HEIGHT ESTIMATION USING COARSE-MAP INITIALIZATION**
08:20
Saket Kunwar, NestAI, Nepal
- WE1.R7.3 POP-NET: ENCODER-DUAL DECODER FOR SEMANTIC SEGMENTATION AND SINGLE-VIEW HEIGHT ESTIMATION**
08:40
Zhuo Zheng, Yanfei Zhong, Junjue Wang, Wuhan University, China
- WE1.R7.4 MULTI-LEVEL FUSION OF THE MULTI-RECEPTIVE FIELDS CONTEXTUAL NETWORKS AND DISPARITY NETWORK FOR PAIRWISE SEMANTIC STEREO**
09:00
Hongyu Chen, Manhui Lin, Hongyan Zhang, Guangyi Yang, Gui-Song Xia, Xianwei Zheng, Liangpei Zhang, Wuhan University, China
- WE1.R7.5 PAIRWISE STEREO IMAGE DISPARITY AND SEMANTICS ESTIMATION WITH THE COMBINATION OF U-NET AND PYRAMID STEREO MATCHING NETWORK**
09:20
Rongjun Qin, Xu Huang, Wei Liu, Changlin Xiao, Ohio State University, United States

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 Matthaëis, NASA Goddard Space Flight Center

- WE3.R7.1 PULSE AND RANGE DEPENDENT RFI MITIGATION FOR SYNTHETIC APERTURE RADAR USING DIGITAL BEAMFORMING**
13:40
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 CHARACTERIZATION OF TERRAIN SCATTERED INTERFERENCE FROM SPACE-BORNE ACTIVE SENSOR: A CASE STUDY IN SENTINEL-1 IMAGE**
14:00
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 ON THE NEW ARCHITECTURE AND CAPABILITIES OF THE FRONT-END GNSS INTERFERENCE EXCISOR (FENIX)**
14:40
Adrián Pérez, Adriano Camps, Universitat Politècnica de Catalunya Barcelona Tech and IECC/CTE-UPC, Spain; Jorge Querol, University of Luxembourg, Luxembourg
- WE3.R7.5 A SYSTEM DESIGN OF REAL-TIME NARROWBAND RFI DETECTION AND MITIGATION FOR GNSS-R RECEIVER**
15:00
Tongsheng Qiu, Xianyi Wang, Yusen Tian, Qifei Du, Yueqiang Sun, National Space Science Center, Chinese Academy of Sciences, China

Wednesday, July 31 10:40 - 12:20 Room 413
Session WE2.R7 Oral-Invited

IEEE GRSS Data Fusion Contest II

- WE2.R7.1 3D SEMANTIC SEGMENTATION FROM MULTI-VIEW OPTICAL SATELLITE IMAGES**
10:40
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 SEMANTIC 3D RECONSTRUCTION USING MULTI-VIEW HIGH-RESOLUTION SATELLITE IMAGES BASED ON U-NET AND IMAGE-GUIDED DEPTH FUSION**
11:00
Rongjun Qin, Xu Huang, Wei Liu, Changlin Xiao, Ohio State University, United States
- WE2.R7.3 A DENSE POINTNET++ ARCHITECTURE FOR 3D POINT CLOUD SEMANTIC SEGMENTATION**
11:20
Yanchao Lian, Tuo Feng, Jinliu Zhou, Xidian University, China
- WE2.R7.4 A GLOBAL POINT-SIFT ATTENTION NETWORK FOR 3D POINT CLOUD SEMANTIC SEGMENTATION**
11:40
Meixia Jia, Aijin Li, Zhaoyang Wu, Xidian University, 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 DEMONSTRATING THE VIABILITY OF THE TEMPEST-D CUBESAT RADIOMETER FOR SCIENCE APPLICATIONS**
16:20
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 CUBESAT CONSTELLATION CONCEPTS FOR SWATH ALTIMETRY**
16:40
Christopher Buck, European Space Agency (ESA), Netherlands
- WE4.R7.3 LUNAR MICROWAVE BRIGHTNESS TEMPERATURE SPECTRUM BETWEEN 23 TO 183GHZ FOR SMALL SATELLITE CALIBRATION**
17:00
Hu Yang, Jun Zhou, University of Maryland, United States
- WE4.R7.4 SWIRP (SUBMM-WAVE AND LONG WAVE INFRARED POLARIMETER); A NEW TOOL FOR INVESTIGATIONS OF ICE DISTRIBUTION AND SIZE IN CIRRUS CLOUDS**
17:20
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 DEVELOPMENT OF COMPACT SAR SYSTEMS FOR SMALL SATELLITE**
17:40
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 Kediamasiko 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 Öğüzhan Alataş, Gülşen Taşkın, Istanbul Technical University, Turkey

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 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 Helena, 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 Scallo, 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, 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 Müll, 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
ORAL

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** **EVALUATION OF ENSEMBLE COHERENCE AS A MEASURE FOR STOCHASTIC AND SYSTEMATIC PHASE INCONSISTENCIES**
08:00
Homa Ansari, Fernando Rodriguez Gonzalez, Ramon Brac, Francesco De Zan, German Aerospace Center (DLR), Germany
- WE1.R9.2** **INSAR REVEALS THE LONG TERM SUBSIDENCE AND POTENTIAL LANDDEGRADATION IN MEXICO CITY FROM 2004 TO 2018 WITH FIVE SAR SENSORS**
08:20
Zheyuan Du, Linlin Ge, Alex Hay-Man Ng, University of New South Wales, Australia
- WE1.R9.3** **POTENTIAL LANDSLIDE EARLY IDENTIFICATION ALONG NU RIVER WITH TIME SERIES INTERFEROMETRY**
08:40
Jing Wang, Chao Wang, Hong Zhang, Yixian Tang, Wei Duan, Chinese Academy of Sciences, China
- WE1.R9.4** **INFRASTRUCTURE STABILITY ANALYSIS BY COSMO-SKYMED PSP SAR INTERFEROMETRY: SPATIO-TEMPORAL ANALYSIS AND 3D MODELING**
09:00
Salvatore Falco, Federico Minati, Francesco Vecchioli, Mario Costantini, e-GEOS - Italian Space Agency / Telespazio, Italy
- WE1.R9.5** **AUTOMATIC DETECTION OF INSAR DEFORMATION SIGNALS ASSOCIATED WITH HYDROCARBON PRODUCTION AND WASTEWATER INJECTION USING LAPLACIAN OF GAUSSIAN FILTERING**
09:20
Scott Staniewicz, Jingyi Chen, Ellen Rathje, Jon Olson, University of Texas at Austin, United States

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** **AIRBORNE SAR FOCUSING IN THE PRESENCE OF SEVERE SQUINT VARIATIONS**
13:40
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** **AIRBORNE SAR FOR CALIBRATION OF P-BAND TOWER RADAR**
14:00
Lars Ulander, Albert Monteith, Chalmers University of Technology, Sweden; Per-Olov Fröling, Anders Gustavsson, Anders Haglund, Rolf Ragnarsson, Gunnar Stenström, Swedish Defence Research Agency (FOI), Sweden
- WE3.R9.3** **UAVSAR REAL-TIME EMBEDDED GPU PROCESSOR**
14:20
Brian Hawkins, Wayne Tung, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- WE3.R9.4** **THREE-DIMENSIONAL IMAGING OF DRONE FLEET BORNE RADARS USING FREQUENCY-DIVISION SIGNALS**
14:40
Jubo Hao, Jin Li, Shuliang Gui, Xin Fang, Yiming Pi, University of Electronic Science and Technology of China, China
- WE3.R9.5** **DEM EXTRACTION USING C-BAND CIRCULAR SAR DATA**
15:00
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 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** **AN ANISOTROPIC SCATTERING ANALYSIS METHOD BASED ON LIKELIHOOD RATIO USING CIRCULAR SAR DATA**
10:40
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** **IMPACTS OF THE ANISOTROPIC IRREGULAR IONOSPHERE ON SPACEBORNE P-BAND SYNTHETIC APERTURE RADAR IMAGING**
11:00
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** **COSMO-SKYMED FOR UNSUPERVISED URBAN CHANGE DETECTION USING RADAR BACKSCATTERING AND INTERFEROMETRIC COHERENCE**
11:20
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** **ASSESSMENT OF MULTI-FREQUENCY SAR FOR CROP TYPE CLASSIFICATION AND MAPPING**
11:40
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada
- WE2.R9.5** **SOIL SALINITY MAPPING WITH POLARIMETRIC SAR IMAGES IN QINGHAI LAKE WATERSHED**
12:00
Dianji Jia, Tingting Zhang, Yun Shao, Key Laboratory of Target Microwave Properties and Remote Sensing of Zhejiang Province, 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** **AN IMPROVED PARAMETER ESTIMATION OF LFM SIGNAL BASED ON MCKF**
16:20
Tong Gu, Guisheng Liao, Yachao Li, Yinghui Quan, Yifan Guo, Yan Huang, Xidian University, China
- WE4.R9.2** **SIMULTANEOUS NARROWBAND AND WIDEBAND INTERFERENCE SUPPRESSION ON SINGLE-CHANNEL SAR SYSTEM VIA LOW-RANK RECOVERY**
16:40
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** **COMPACT POLARIMETRIC SAR IMAGE SUPER-RESOLUTION THROUGH A MODIFIED NEURO TREE NETWORK**
17:00
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** **RESOLUTION-PRESERVING SPECKLE REDUCTION OF SAR IMAGES: THE BENEFITS OF SPECKLE DECORRELATION AND TARGETS EXTRACTION**
17:20
Rémy Abergel, Laboratoire MAPS (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 MAPS (CNRS UMR 8145), Université Paris Descartes, Sorbonne Paris Cité, France
- WE4.R9.5** **A NOVEL WAVEFORM OPTIMIZATION FRAMEWORK**
17:40
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 PROGRAMATIC OVERVIEW OF NASA SCIENCE WITH SMALL SPACECRAFT
08:00 Charles Norton, National Aeronautics and Space Administration (NASA), United States

WE1.R10.2 RADIOMETER ASSESSMENT USING VERTICALLY ALIGNED NANOTUBES (RAVAN)
08:20 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 RAINCUBE - A NEW PARADIGM TO OBSERVE WEATHER PROCESSES
08:40 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 HYTI: THERMAL HYPERSPECTRAL IMAGING FROM A CUBESAT PLATFORM
09:00 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, SarniaSat Inc., United States; Sarath Gunapala, David Ting, Sir Rafal, Alexander Seibel, 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 CUBERRT: FIRST EVER DEMONSTRATION OF SPACEBORNE ON-BOARD RADIO FREQUENCY INTERFERENCE FILTERING TECHNOLOGY
09:20 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 Cooperider, 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 Jarrot, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Jonathan Kacz, California Institute of Technology, United States; Joseph Knuble, NASA Goddard Space Flight Center, United States; Ervin Kraus, Doug Laczowski, 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 SMAP OBSERVATIONS OF THE FOURTH STOKES PARAMETER AT L-BAND
13:40 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 FIRST RESULTS FROM THE TEMPEST-D IMAGING MICROWAVE RADIOMETER IN A 6U CUBESAT
14:00 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 MIRAS TEMPORAL STABILITY
14:20 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 MULTI-CHANNEL CORRELATOR ARRAY-FED MICROWAVE RADIOMETER
14:40 Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States; Ali Mahmod, 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 MULTIYEAR SEA ICE THICKNESS ESTIMATION USING WIDEBAND P/L-BAND RADIOMETRIC MEASUREMENTS
15:00 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 ADVANCING TECHNOLOGY FOR NASA SCIENCE WITH SMALL SPACECRAFT
10:40 Michael Seabloom, Florence Tan, Charles Norton, Christopher Baker, Pamela Millar, Carolyn Mercer, Daniel Moses, National Aeronautics and Space Administration (NASA), United States

WE2.R10.2 CYGNSS SMALLSAT MISSION DESIGN, ENGINEERING PERFORMANCE AND SCIENCE RESULTS
11:00 Christopher Ruf, Darren McKague, University of Michigan, United States; Scott Gleason, UCAR, United States

WE2.R10.3 GLOBAL OBSERVATIONS PERFORMED BY A WELL-CALIBRATED, STABLE MICROWAVE ATMOSPHERIC SOUNDING RADIOMETER: TEMPORAL EXPERIMENT FOR STORMS AND TROPICAL SYSTEMS DEMONSTRATION (TEMPEST-D) MISSION
11:20 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 Laczowski, Austin Bullard, Blue Canyon Technologies, United States

WE2.R10.4 TECHNOLOGY EVOLUTION TO ENABLE HIGH-PERFORMANCE CUBESAT RADIOMETRY MISSIONS
11:40 William Blackwell, Massachusetts Institute of Technology, Lincoln Laboratory, United States

WE2.R10.5 SNOOPI: A TECHNOLOGY VALIDATION MISSION FOR P-BAND REFLECTOMETRY USING SIGNALS OF OPPORTUNITY
12:00 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 Noid, 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 CALIBRATION OF MULTI-CHANNEL MILLIMETER-WAVE RADIOMETERS OF GEOSYNCHRONOUS FY-4M USING BRIGHTNESS TEMPERATURE OF THE LUNAR SURFACE AT MILLIMETER CHANNELS
16:20 Liu Niutao, Jin Ya-Qiu, Fudan University, China

WE4.R10.2 REFINING THE METHODOLOGY TO CORRECT THE FARADAY ROTATION ANGLE FROM SMOS MEASUREMENTS
16:40 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 Martin-Neira, European Space Agency (ESA), Netherlands

WE4.R10.3 PRELIMINARY SYSTEM STUDIES ON A HIGH-RESOLUTION SMOS FOLLOW-ON: SMOS-HR
17:00 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 COMPARISONS BETWEEN HY-2B SMR AND GMI BRIGHTNESS TEMPERATURE FROM 6 TO 37GHZ OVER THE OCEAN
17:20 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 A NEXT GENERATION MICROWAVE RADIOMETER FOR COLD WATER SALINITY MEASUREMENT
17:40 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 ISOLATION FOREST FOR ANOMALY DETECTION IN HYPERSPECTRAL IMAGES**
08:00
Kunzhong Zhang, Xudong Kang, Shutao Li, Hunan University, China
- WE1.R11.2 A KERNEL BACKGROUND PURIFICATION BASED ANOMALY TARGET DETECTION ALGORITHM FOR HYPERSPECTRAL IMAGERY**
08:20
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 PREDICTION AND ASSESSMENT COMPARISON FOR OPTIMIZING SPECTRAL IMAGING SYSTEM DESIGN**
08:40
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 NONPARAMETRIC TARGET DETECTION WITH TARGET STRENGTH ESTIMATION FOR HYPERSPECTRAL IMAGES**
09:00
Stefania Matteoli, National Research Council of Italy, Italy; Marco Diani, Italian Naval Academy, Italy; Giovanni Corsini, University of Pisa, Italy
- WE1.R11.5 CARBON MONOXIDE (CO) DETECTION IN SHIP GAS PLUME USING IMAGE BASED SIGNATURE EXTRACTION IN MWIR HYPERSPECTRAL IMAGERY**
09:20
Safak Öztürk, Yusuf Artan, Yunus Emre Esin, Ömer Özdiil, Berkan Demirel, HAVELSAN Inc., Turkey

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 LOCAL BLOCK GROUPING WITH NAPCA SPATIAL PREPROCESSING FOR HYPERSPECTRAL REMOTE SENSING IMAGERY SPARSE UNMIXING**
13:40
Ruyi Feng, Lizhe Wang, China University of Geosciences (Wuhan), China; Yanfei Zhong, Wuhan University, China
- WE3.R11.2 FAST LINEAR UNMIXING OF HYPERSPECTRAL IMAGE BY SLOW FEATURE ANALYSIS AND SIMPLEX VOLUME RATIO APPROACH**
14:00
Samiran Das, Sohom Chakraborty, Aurobinda Routray, Alok Kanti Deb, IIT Kharagpur, India
- WE3.R11.3 MULTITASK LEARNING FOR SPATIAL-SPECTRAL HYPERSPECTRAL UNMIXING**
14:20
Burkni Palsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland
- WE3.R11.4 BACKGROUND GUIDED TARGET DETECTION FOR HYPERSPECTRAL IMAGE**
14:40
Chongxiao Zhong, Junping Zhang, Harbin Institute of Technology, China
- WE3.R11.5 A SUB-PIXEL MAPPING METHOD BASED ON LOGISTIC REGRESSION AND PIXEL-SWAPPING MODEL**
15:00
Lijuan Su, Yue Xu, Yan Yuan, Jingyi Yang, Beihang University, China

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 PARAMETERS ESTIMATION OF HIGH SPEED MANEUVERING TARGET WITH MICRO MOTION IN GEOSAR**
10:40
Jindong Yu, Ze Yu, Chunsheng Li, Beihang University, China
- WE2.R11.2 MOVING TARGET TRACKING ON EFFICIENT CONVOLUTION OPERATORS FOR SAR**
11:00
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 SAR SHIP DETECTION FOR ROUGH SEA CONDITIONS**
11:20
Pasquale Iervolino, Raffaella Guida, Donato Amitrano, University of Surrey, United Kingdom; Armando Marino, University of Stirling, United Kingdom
- WE2.R11.4 MOVING TARGET INDICATION IN MODERATE RESOLUTION, PASSIVE MISR SATELLITE IMAGERY**
11:40
Michael Garay, Kiri Wagstaff, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- WE2.R11.5 INTERMITTENT SAMPLING DECEPTIVE JAMMING SUPPRESSION FOR SAR BASED ON AZIMUTH PHASE CODING**
12:00
Zhouyang Tang, Yunkai Deng, Robert Wang, Huifang Zheng, Institute of Electronics, Chinese Academy of Sciences, 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 HYPERSPECTRAL PANSHARPENING BASED ON GUIDED FILTER AND DEEP RESIDUAL LEARNING**
16:20
Yuxuan Zheng, Jiaojiao Li, Yunsong Li, Xidian University, China
- WE4.R11.2 PATCH BASED PANSHARPENING USING WEIGHTED NUCLEAR NORM MINIMIZATION**
16:40
Kai Zhang, Feng Zhang, School of Information Science and Engineering, Shandong Normal University, China
- WE4.R11.3 DEEP SPECTRAL SUPER-RESOLUTION WITH NOISY INPUT**
17:00
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 SUPER-RESOLUTION OF SENTINEL-2 IMAGES BASED ON DEEP CHANNEL-ATTENTION RESIDUAL NETWORK**
17:20
Xi Zhu, Yang Xu, Zhihui Wei, Nanjing University of Science and Technology, China
- WE4.R11.5 HYPERSPECTRAL AND PANCHROMATIC IMAGE FUSION BASED ON WEIGHTED TENSOR MATRIX**
17:40
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 A GENERALIZED CHLOROPHYLL-A ESTIMATION MODEL FOR COMPLEXITY-DIVERSE ARCTIC WATERS
08:00

Katalin Blix, Torbjørn Eltoft, Arctic University of Norway, Norway

WE1.R12.2 COMBINED USE OF SAR AND UNDERWATER GLIDERS FOR OIL SEEPS DETECTION
08:20

Damien Dhont, Romain Jatault, Philippe Lattes, TOTAL SA, France

WE1.R12.3 INVERSION OF CHROMOPHORIC DISSOLVED ORGANIC MATTER USING SPARSE REGRESSION
08:40

Ruihao Zhang, Ruru Deng, Yan Qin, Yeheng Liang, Yingfei Liu, Yongming Liu, Sun Yat-Sen University, China

WE1.R12.4 VIIRS-DERIVED INHERENT OPTICAL PROPERTY DATA OVER GLOBAL COASTAL AND INLAND WATERS USING THE NIR-BASED APPROACH
09:00

Wei Shi, Menghua Wang, NOAA/NESDIS/STAR, United States

WE1.R12.5 PRELIMINARY VALIDATION OF SENTINEL 3A OLCI BIO-OPTICAL PRODUCTS IN SOUTH CHINA SEA
09:20

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 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 THE IMPACT OF RAIN ON L1 GNSS-R RADAR SCATTERING CROSS-SECTION
13:40

Rajeswari Balasubramaniam, Christopher Ruf, University of Michigan, Ann Arbor, United States

WE3.R12.2 FREQUENCY AND DIRECTIONAL RESPONSE OF OCEAN SURFACE FOAM IN MICROWAVE EMISSION
14:00

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 CHARACTERISTICS OF MARINE ATMOSPHERIC BOUNDARY LAYER ROLL VORTICES FROM SENTINEL-1 SAR WAVE MODE
14:20

Chen Wang, Alexis Mouche, Laboratoire d'Océanographie 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 Stapa, 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'Océanographie Physique et Spatiale, Ifremer, France

WE3.R12.4 SPACEBORNE GNSS-R USING THE SMAP RADAR RECEIVER (SMAP-R): OCEAN WIND VECTOR SENSITIVITY INVESTIGATION
14:40

Mary Morris, Sidharth Misra, Nereida Rodriguez-Alvarez, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE3.R12.5 LEARNING DIFFERENTIAL TRANSPORT OPERATORS FOR THE JOINT SUPER-RESOLUTION OF SEA SURFACE TRACERS AND PREDICTION OF SUBGRID-SCALE FEATURES
15:00

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 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 PRELIMINARY RESULTS OF THE CFOSAT SCATTEROMETER
10:40

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 SYNERGISTIC USE OF SATELLITE ACTIVE AND PASSIVE MICROWAVE OBSERVATIONS TO ESTIMATE TYPHOON INTENSITY
11:00

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 ON EXTREME WINDS AT L-BAND WITH THE SMAP SYNTHETIC APERTURE RADAR
11:20

Alexander Fore, Simon Yueh, Bryan Stiles, Wenqing Tang, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE2.R12.4 SENSITIVITY OF GNSS-R DELAY-DOPPLER MAPS TO WIND DIRECTION WITH A DECONVOLUTION APPROACH
11:40

Maurizio di Bisceglie, Carmela Galdi, Generoso Giangregorio, Università degli Studi del Sannio, Italy

WE2.R12.5 AN EVALUATION OF CYGNSS TROPICAL CYCLONE GALE WIND RADII ESTIMATES
12:00

Mary Morris, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Charles Sampson, Naval Research Laboratory, United States

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 THE JPL SMAP SEA SURFACE SALINITY ALGORITHM
16:20

Alexander Fore, Simon Yueh, Wenqing Tang, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

WE4.R12.2 A THEORETICAL ALGORITHM FOR THE RETRIEVAL OF SEA SURFACE SALINITY FROM SMAP OBSERVATIONS
16:40

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 VARIABILITY OF SPACEBASED SEA SURFACE SALINITY AND FRESHWATER CONTENTS IN THE HUDSON BAY
17:00

Wenqing Tang, Simon Yueh, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Daqing Yang, Elsie McLeod, Environment and Climate Change Canada, Canada; Alexander Fore, Akiko Hayashi, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Estrella Olmedo, Justina Martinez, Carolina Gabarró, Barcelona Expert Center, Spain

WE4.R12.4 CHARACTERIZATION AND CORRECTION OF THE LATITUDINAL AND SEASONAL BIAS IN BEC SMOS SEA SURFACE SALINITY MAPS
17:20

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 SATELLITE SEA SURFACE SALINITY: EVALUATION OF PRODUCTS AND IMPACT OF RETRIEVAL ALGORITHMS
17:40

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
ORAL

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 Sjöberg, 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 Sjöberg, Global Science and Technology (GST) Contractor supporting NOAA, United States

WE1.R13.3 JPSS CAPABILITIES PROVIDING CRITICAL SUPPORT TO RECENT STORMS
08:40 Bill Sjöberg, 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 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 Ciències 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 NNSC/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 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 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 Ciències 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, Robulhossain Mdraf, 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 BRAZILIAN SAVANAH**
David Robledo Di Martini, Federal University of Mato Grosso do Sul, Brazil; Everton Castelao 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, Amav 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 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 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, 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, Alysso Soares Aires, Caroline Lessio Cazarin, Maurício 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 ALOS-2 OPERATION STATUS**
08:00 *Shinichi Sobue, Takao Fukuda, Haruchika Kamimura, Osamu Ochiai, Akiko Noda, Tomoki Miyashita, Japan Aerospace Exploration Agency (JAXA), Japan*
- TH1.R3.2 ALOS-4 L-BAND SAR MISSION AND OBSERVATION**
08:20 *Takeshi Motohka, Yukihiko Kankaku, Satoko Miura, Shinichi Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan*
- TH1.R3.3 PALSAR-2 COMPACT ASSESSMENT AND CALIBRATION**
08:40 *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 POLARIMETRIC CALIBRATION OF SPACEBORNE SAR DATA IN THE PRESENCE OF THE IONOSPHERE BY MEANS OF AZIMUTH SUB-BANDS**
09:00 *Jun Su Kim, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany*
- TH1.R3.5 WIND SPEED RETRIEVAL USING L-BAND CROSS-POLARIZATION MEASUREMENT**
09:20 *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 RELATIONSHIP BETWEEN GROUND DISPLACEMENT AND GAS PIPELINE DAMAGE ACCORDING TO INSAR ANALYSIS OF PALSAR-2 IMAGERY**
10:40 *Masashi Matsuoka, Tokyo Institute of Technology, Japan; Takahiro Koyama, Hiroaki Kimura, Tokyo Gas Co., Ltd., Japan*
- TH2.R3.2 IMPROVEMENT OF DEFORESTATION DETECTION ALGORITHMS USED IN JJ-FAST**
11:00 *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 PIXEL-BASED DEFORESTATION DETECTION ALGORITHM FOR ALOS-2/PALSAR-2**
11:20 *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 MAPPING SPATIAL-TEMPORAL FOREST HETEROGENEITY IN THE TROPICAL BELT BY ALOS-2/PALSAR-2 BIG DATA ANALYSIS**
11:40 *Christian Koyama, Manabu Watanabe, Masanobu Shimada, Tokyo Denki University, Japan*
- TH2.R3.5 EVALUATION OF REINFORCED SLOPE DYNAMICS USING ALOS-2/PALSAR-2**
12:00 *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 OVERVIEW OF COPERNICUS SAR SPACE COMPONENT AND ITS EVOLUTION**
13:40 *Ramon Torres, Malcolm Davidson, European Space Agency (ESA), Netherlands*
- TH3.R3.3 COPERNICUS SENTINEL-1 CONSTELLATION MISSION OPERATIONS STATUS**
14:20 *Pierre Potin, Beitem Rosich, Nuno Miranda, Patrick Grimont, Ian Shurmer, Alistair O'Connell, Mike Krassenburg, Jean-Baptiste Gratadour, European Space Agency (ESA), Italy*
- TH3.R3.4 ESA COPERNICUS SENTINEL-1 EXPLOITATION ACTIVITIES**
14:40 *Magdalena Fitzryk, RSAC c/o ESA-ESRIN, Italy; Marcus Engdahl, Diego Fernandez, European Space Agency ESA-ESRIN, Italy*
- TH3.R3.5 EXPLOITATION OF SENTINEL-1 DATA FOR FLOOD MAPPING AND MONITORING WITHIN THE FRAMEWORK OF THE COPERNICUS EMERGENCY CORE AND DOWNSTREAM SERVICES**
15:00 *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 MONITORING GEOHAZARDS USING ON-DEMAND AND SYSTEMATIC SERVICES ON ESA'S GEOHAZARDS EXPLOITATION PLATFORM**
16:20 *Michael Foulmelis, 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 INSAR.NO: A NATIONAL INSAR DEFORMATION MAPPING/MONITORING SERVICE IN NORWAY - FROM CONCEPT TO OPERATIONS**
16:40 *John Dehls, Geological Survey of Norway, Norway; Yngvar Larsen, NORCE, Norway; Petar Marinkovic, PPO.labs, Netherlands; Tom Rune Lauknes, Daniel Støle, NORCE, Norway; Dag Anders Moldestad, Norwegian Space Agency, Norway*
- TH4.R3.3 SATELLITE GEODESY FOR VOLCANO MONITORING IN THE SENTINEL-1 AND SAR CONSTELLATION ERA**
17:00 *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 THE SARVIEWS PROJECT: AUTOMATED PROCESSING OF SENTINEL-1 SAR DATA FOR GEOSCIENCE AND HAZARD RESPONSE**
17:20 *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 SENTINEL-1 CONTRIBUTION TO TROPICAL CYCLONES OBSERVATIONS AT HIGH RESOLUTION**
17:40 *Alexis Mouche, IFREMER, France; François Soulat, CLS, France; Pierre Potin, European Space Agency (ESA), Italy; Luca Martino, Serco Spa for ESA, Italy*

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 NEW OBSERVING STRATEGY (NOS) FOR FUTURE EARTH SCIENCE MISSIONS**
08:00
Jacqueline Le Moigne, Mike Little, National Aeronautics and Space Administration (NASA), United States; Marjorie Cole, SGT, Inc., United States
- TH1.R4.2 MODELING CHALLENGES FOR EARTH OBSERVING SYSTEMS OF SYSTEMS**
08:20
Paul Grogan, Stevens Institute of Technology, United States
- TH1.R4.3 BLOCKCHAIN APPLICATION WITHIN A MULTI-SENSOR SATELLITE ARCHITECTURE**
08:40
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 VALUING NEW EARTH OBSERVATION MISSIONS FOR SYSTEM ARCHITECTURE TRADE-STUDIES**
09:00
Aftreen Siddiqi, Eric Magliarditi, Olivier de Weck, Massachusetts Institute of Technology, United States
- TH1.R4.5 OPEN SOURCE SOFTWARE FOR SIMULATING COLLABORATIVE NETWORKS OF AUTONOMOUS ADAPTIVE SENSORS**
09:20
Ryan Linnabary, Andrew O'Brien, Graeme E. Smith, Christopher Ball, Joel T. Johnson, Ohio State University, United States

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 AN API FOR SPACEBORNE SUB-METER RESOLUTION PRODUCTS FOR EARTH SCIENCE**
13:40
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 PERSPECTIVES FOR VHR BIG DATA IMAGE PROCESSING AND ANALYTICS TOWARD A DEDICATED FRAMEWORK FOR MAJOR DISASTER AND ENVIRONMENT MONITORING FROM SPACE**
14:00
Simon Baillarin, Claire Tinel, Pierre Lassalle, Olivier Melet, David Youssefi, Peter Kettig, Victor Poughon, CNES, France; Vincent Gaudissart, C.S., France
- TH3.R4.3 VISAGE - A VISUALIZATION AND EXPLORATION FRAMEWORK FOR ENVIRONMENTAL DATA**
14:20
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 Singhirunnosorn, University of Alabama Huntsville, United States
- TH3.R4.4 ON THE USE OF CLOUD, ALGORITHM CATALOGS, AND MACHINE LEARNING FOR SAR-BASED HAZARDS MONITORING**
14:40
Hook Hua, Susan Owen, Sang-Ho Yun, Eric Fielding, Gerald Manipan, 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 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**
15:00
Svetla Hristova-Veleva, P. Peggy Li, Brian Knosp, F. Joseph Turk, William L. Poulsen, Quoc Vu, Ziad Haddad, Tsae-Pyng Shen, Bryan Stiles, Bjorn Lambrigtson, 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/AOIML/HRD/RSMAS, United States; Sundararaman Gopalakrishnan, NOAA/AOIML/HRD, United States; Andres Navarro, Francisco Tapiador, Universidad de Castilla-La Mancha, Spain

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 TESTBED REQUIREMENTS TO ENABLE NEW OBSERVING STRATEGIES**
10:40
Michael Little, Jacqueline Le Moigne, National Aeronautics and Space Administration (NASA), United States; Marge Cole, KBR-Wyle, United States
- TH2.R4.2 THE QUAKES CONCEPT FOR OBSERVING AND MITIGATING NATURAL DISASTERS**
11:00
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 CONSTELLATIONS IN THE CLOUD: VIRTUALIZING REMOTE SENSING SYSTEMS**
11:20
Andrew Schmidt, Vivek Venugopalan, Marco Paolieri, Matthew French, University of Southern California, United States
- TH2.R4.4 ANALYTICS CENTER FRAMEWORK FOR ESTIMATING THE CIRCULATION AND CLIMATE OF THE OCEAN**
11:40
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 EARTH OBSERVATION DATA MINING: A USE CASE FOR FOREST MONITORING**
12:00
Corneliu Octavian Dumitru, Gottfried Schwarz, German Aerospace Center (DLR), Germany; Anna Pulak-Siwiek, Bartosz Kulawik, SmallGIS, Poland; Jose Lorenzo, Atos Spain SA, Spain; Mihai Data, German Aerospace Center (DLR), Germany

THURSDAY
ORAL

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 UNSUPERVISED TRANSFER LEARNING USING FOR MULTI-MODEL REMOTE SENSING DATA CLASSIFICATION**
08:00
Wei Liu, Rongjun Qin, Ohio State University, United States
- TH1.R5.2 CLASSIFYING METEOROLOGICAL ECHOES IN WEATHER RADAR IMAGES WITH TRANSFER LEARNING**
08:20
Ryan Gooch, V Chandrasekar, Colorado State University, United States
- TH1.R5.3 SUPERVISED OPTIMAL SCALE PARAMETER ESTIMATION FOR MULTISCALE OBJECT-BASED LANDCOVER CLASSIFICATION**
08:40
Zhongwen Hu, Chisheng Wang, Shenzhen University, China; Peng Liu, Southern University of Science and Technology, China
- TH1.R5.4 A MULTI-VIEW DEEP FEATURE FUSION SQUEEZE-AND-EXCITATION NETWORK FOR MULTIREOLUTION REMOTE SENSING IMAGE CLASSIFICATION**
09:00
Hao Zhu, Lingling Li, Wenping Ma, Fang Liu, Licheng Jiao, School of Artificial Intelligence, Xidian University, China
- TH1.R5.5 MODULATION SENSING IN COMPOSITE RADAR SIGNAL USING TRANSFER LEARNING**
09:20
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 CROSS-SCENE HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON DEEP CONDITIONAL DISTRIBUTION ADAPTATION NETWORKS**
10:40
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 CLASS-SPECIFIC DICTIONARY BASED SEMI-SUPERVISED DOMAIN ADAPTATION FOR LAND-COVER CLASSIFICATION OF AERIAL IMAGES**
11:00
Li Yan, Ruixi Zhu, Yi Liu, Nan Mo, Wuhan University, China
- TH2.R5.3 UNSUPERVISED DOMAIN ADAPTATION IN LAND-COVER CLASSIFICATION UNDER NEURAL APPROACH USING FEATURE-LEVEL ENSEMBLE**
11:20
Shounak Chakraborty, Indrajit Kalita, Moumita Roy, Indian Institute of Information Technology Guwahati, India
- TH2.R5.4 DOMAIN ADAPTATION FOR SEMANTIC SEGMENTATION USING CONVOLUTIONAL NEURAL NETWORKS**
11:40
Fabian Schenkel, Wolfgang Middelmann, Fraunhofer IOSB, Germany
- TH2.R5.5 UNSUPERVISED DEEP DOMAIN ADAPTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
12:00
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 ORTHOGONAL GRAPH-REGULARIZED NON-NEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL IMAGE CLUSTERING**
13:40
Long Tian, Qian Du, Mississippi State University, United States; Ivica Kopriva, Nicolas Younan, Ruđer Bošković Institute, Croatia (Hrvatska)
- TH3.R5.2 LANDMARK-BASED LARGE-SCALE SPARSE SUBSPACE CLUSTERING METHOD FOR HYPERSPECTRAL IMAGES**
14:00
Shaoguang Huang, Ghent University, Belgium; Hongyan Zhang, Wuhan University, China; Aleksandra Pizurica, Ghent University, Belgium
- TH3.R5.3 CLUSTERING HYPERSPECTRAL IMAGES VIA SPARSE DICTIONARY LEARNING WITH JOINT SPARSITY AND SHARED WAVELETS**
14:20
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 GROUND TRUTH SIMULATION FOR DEEP LEARNING CLASSIFICATION OF MID-RESOLUTION VENUS IMAGES VIA UNMIXING OF HIGH-RESOLUTION HYPERSPECTRAL FENIX DATA**
14:40
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 HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON GENERATIVE ADVERSARIAL NETWORKS WITH FEATURE FUSING AND DYNAMIC NEIGHBORHOOD VOTING MECHANISM**
15:00
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 MULTI-SCALE CONVOLUTIONAL SVM NETWORKS FOR MULTI-CLASS CLASSIFICATION PROBLEMS OF REMOTE SENSING IMAGES**
16:20
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 REMOTE SENSING IMAGE RETRIEVAL BASED ON SEMI-SUPERVISED DEEP HASHING LEARNING**
16:40
Xu Tang, Chao Liu, Xiangrong Zhang, Jingjing Ma, Changzhe Jiao, Licheng Jiao, Xidian University, China
- TH4.R5.3 GENERATIVE ADVERSARIAL NETWORK WITH FOLDED SPECTRUM FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
17:00
Wenyue Li, Jihao Yin, Bingnan Han, Hongmei Zhu, Beihang University, China
- TH4.R5.4 (SEMI-) SUPERVISED MIXTURES OF FACTOR ANALYZERS AND DEEP MIXTURES OF FACTOR ANALYZERS DIMENSIONALITY REDUCTION ALGORITHMS FOR HYPERSPECTRAL IMAGES CLASSIFICATION**
17:20
Bin Zhao, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland; Jocelyn Chanussot, Univ. Grenoble Alpes; University of Iceland, France
- TH4.R5.5 MIXTURES OF FACTOR ANALYZERS AND DEEP MIXTURES OF FACTOR ANALYZERS DIMENSIONALITY REDUCTION ALGORITHMS FOR HYPERSPECTRAL IMAGES CLASSIFICATION**
17:40
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 USING DENSE TIME-SERIES OF C-BAND SAR IMAGERY FOR CLASSIFICATION OF DIVERSE, WORLDWIDE AGRICULTURAL SYSTEMS**
08:00
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada; Diego de Abelleira, Santiago Verón, Instituto de Clima y Agua, Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina; Pierre Defourny, Université catholique de Louvain, Belgium; Gueric 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 CROP MAPPING AND MONITORING USING MULTITEMPORAL COMPACT POLSAR DATA IN PREPARATION FOR THE RADARSAT CONSTELLATION MISSION (RCM)**
08:20
Saeid Homayouni, University of Ottawa, Canada; Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Carleton University, Canada; Masoud Mahdianpari, Fariba Mohammadianesh, Memorial University, Canada; Mohammad Rezaee, University of New Brunswick, Canada
- TH1.R6.3 EARLY SEASON WINTER WHEAT IDENTIFICATION USING SENTINEL-1 SYNTHETIC APERTURE RADAR (SAR) AND OPTICAL DATA**
08:40
Claire Boryan, Zhengwei Yang, Patrick Willis, Avery Sandborn, National Agricultural Statistics Service, United States
- TH1.R6.4 SENTINEL'S CLASSIFIER FUSION SYSTEM FOR SEASONAL CROP MAPPING**
09:00
Silvia Valero, Ludovic Arnaud, Milena Planells, Eric Ceschia, Gerard Dedieu, Centre d'Etude Spatial de la Biosphère (CESBIO), France
- TH1.R6.5 TIME-SPACE TRADEOFF IN DEEP LEARNING MODELS FOR CROP CLASSIFICATION ON SATELLITE MULTI-SPECTRAL IMAGE TIME SERIES**
09:20
Vivien Sainte Fare Garnot, Loic Landrieu, Sebastien Giordano, Université Paris-Est, France; Nesrine Chehata, Université Bordeaux Montaigne, France

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 CROP DROUGHT AREA EXTRACTION BASED ON REMOTE SENSING TIME SERIES SPATIAL-TEMPORAL FUSION VEGETATION INDEX**
13:40
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 ANALYSIS OF SENTINEL-1 DERIVED SOIL MOISTURE MAPS OVER OCCITANIE, SOUTH FRANCE**
14:00
Nicolas Baghdadi, Hassan Bazzi, Mohammad El Hajji, IRSTEA, France; Mehrez Zribi, CNRS, France
- TH3.R6.3 ESTIMATING VEGETATION WATER CONTENT AND SOIL SURFACE ROUGHNESS USING PHYSICAL MODELS OF RADAR SCATTERING AND SAR DATA**
14:20
Seungbum Kim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Huaning Huang, University of Michigan, United States; Tienhao Liao, California Institute of Technology, United States
- TH3.R6.4 EVAPOTRANSPIRATION AND EVAPORATION/TRANSPIRATION RETRIEVAL USING DUAL-SOURCE SURFACE ENERGY BALANCE MODELS INTEGRATING VIS/NIR/TIR DATA WITH SATELLITE SURFACE SOIL MOISTURE INFORMATION**
14:40
Gilles Boulet, Centre d'Etude Spatial de la Biosphère (CESBIO) / Université de Toulouse/CNRS/CNRS/IRD/INRA, France; Zoubair Rafi, UCAM, Morocco; Valérie Le Dantec, Centre d'Etude Spatial de la Biosphère (CESBIO) / Université de Toulouse/CNRS/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/CNRS/CNRS/IRD/INRA, France
- TH3.R6.5 ENHANCING FOOD SECURITY THROUGH THE AFRICULTURES PROJECT: DESIGN OF CROP, WATER AND DROUGHT SERVICES**
15:00
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 Kartios, Ioannis Pytharoulis, Dimitrios Moshou, Aristotle University of Thessaloniki, Greece; Sixto Herrera Garcia, 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 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 COTTON LEAF AREA INDEX ESTIMATION USING UNMANNED AERIAL VEHICLE MULTI-SPECTRAL IMAGES**
10:40
Pengfei Chen, Chinese Academy of Sciences, China
- TH2.R6.2 A NOVEL DEEP LEARNING BASED COTTON GENOTYPE SELECTION FRAMEWORK USING MULTI-TEMPORAL UAS DATA**
11:00
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 ESTIMATION OF INDIVIDUAL POTATO PLANTS AREA AND VOLUME FROM UAV-BASED MULTISPECTRAL IMAGES**
11:20
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 Saicedo, Universidad Nacional de Colombia, Colombia
- TH2.R6.4 ESTIMATION OF DIFFUSE COMPONENT OF GLOBAL RADIATION BASED ON LEAF-SCALE CROP IMAGES**
11:40
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 COMPARISON OF MACHINE LEARNING ALGORITHMS AND WATER CLOUD MODEL FOR LEAF AREA INDEX ESTIMATION OVER CORN FIELDS**
12:00
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, 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 THE USE OF LANDSAT 8 AND SENTINEL-2 DATA AND METEOROLOGICAL OBSERVATIONS FOR WINTER WHEAT YIELD ASSESSMENT**
16:20
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 PREDICTION OF SPATIAL DISTRIBUTION OF ANNUAL CROP PLANTING WITH MACHINE LEARNING**
16:40
Liping Di, Chen Zhang, Liying Guo, Li Lin, George Mason University, United States
- TH4.R6.3 COMPARISON OF SMAP, GLDAS AND SIMULATED SOIL MOISTURE DATASETS OVER A MALAYSIAN REGION**
17:00
Kamal Das, Jitendra Singh, Jagabandhu Hazra, IBM Research, India
- TH4.R6.4 COMPARISON OF WINTER WHEAT SPRING PHENOLOGY EXTRACTION BY VARIOUS REMOTE SENSING VEGETATION INDICES AND METHODS**
17:20
Liqin Gan, Xin Cao, Jin Chen, Beijing Normal University, China
- TH4.R6.5 CROP FIELDS CLASSIFICATION BASED ON IN SITU PHENOLOGICAL METRICS**
17:40
Roberto Luciani, Giovanni Laneve, Sapienza University of Rome, Italy; Claudia Arantes Silva, Universidade de Brasília, Brazil

THURSDAY
ORAL

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 Zavoratny, 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**
Zifi 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 Laboratory, 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 GO 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 TRACKING 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 ALGORITHM 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**
Xiaoyang 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 FLOOD MAPPING AND IMPACT ASSESSMENT IN AGUSAN RIVER BASIN, PHILIPPINES USING SENTINEL-1 SAR IMAGES**
08:00
Monalaine Bermoy, Meriam Santillan, Jojene Santillan, Arthur Amora, Joy Casinginan, Janice Baay, Caraga State University, Philippines
- TH1.R8.2 AN UNSUPERVISED SURFACE WATER UN-MIXING METHOD USING LANDSAT AND MODIS IMAGES FOR RAPID INUNDATION OBSERVATION**
08:20
Jiayong Liang, Desheng Liu, Ohio State University, United States
- TH1.R8.3 RECENT AIRBORNE SAR DEMONSTRATIONS FOR MONITORING AND ASSESSMENT OF VOLCANIC LAVA FLOW AND SEVERE FLOODING**
08:40
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 DETECTION OF WATER LEAKAGE FROM CANALS USING SENTINEL-1 SAR DATA**
09:00
Seungbum Kim, California Institute of Technology, NASA Jet Propulsion Laboratory, United States

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 STUDY ON LOCUST DISASTER MONITORING BASED ON SMOS L2 SOIL MOISTURE DATA**
13:40
Na Yang, Xuehao Cui, Henan Polytechnic University, China
- TH3.R8.2 EVALUATING THE SENTINEL-2A SATELLITE DATA FOR FUEL MOISTURE CONTENT RETRIEVAL**
14:00
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 SPATIALLY REFINED BIOMASS AND COMBUSTION EFFICIENCY ESTIMATIONS IN SUPPORT OF FOREST FIRES EMISSIONS QUANTIFICATION**
14:20
Patricia Oliva, Leonardo Duran, Alejandro Venegas, Paulina Vidal, Claudia Montoya, Universidad Mayor, Chile
- TH3.R8.4 SPATIAL ASSESSMENT OF DROUGHT HAZARD IN KAZAKHSTAN: TOWARDS A COUNTRYWIDE DROUGHT MONITORING SYSTEM**
14:40
Olena Dubovyk, Gohar Ghazaryan, Javier Gonzalez, Valerie Graw, University of Bonn, Germany; Fabian Löw, Jonas Schreiber, MapTailor Geospatial Consulting GbR, Germany
- TH3.R8.5 RESEARCH ON DROUGHT MONITORING IN SHANDONG PROVINCE BASED ON MULTI-SOURCE REMOTE SENSING DATA**
15:00
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 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 DETECTING COLLAPSED BUILDINGS AFTER A NATURAL HAZARD ON VHR OPTICAL SATELLITE IMAGERY USING U-NET CONVOLUTIONAL NEURAL NETWORKS**
10:40
Vahid Rashidian, Laurie Baise, Tufts University, United States; Magaly Koch, Boston University, United States
- TH2.R8.2 VHR SATELLITE IMAGE TIME SERIES ANALYSIS FOR ILLEGAL BUILDING MONITORING USING MULTI-DIMENSIONAL HISTOGRAM EARTH MOVER'S DISTANCE**
11:00
Ferdaous Chaabane, Safa Rëjjichi, 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 BUILDING DAMAGE ASSESSMENT FROM POST-EVENT POLSAR IMAGE BASED ON OPCE AND TEMPLATE MATCHING**
11:20
Yulian Nie, Qiming Zeng, Jian Jiao, Peking University, China
- TH2.R8.4 WEB CAMERA SENSOR COUPLED WITH LIDAR DATA FLOOD MAP FOR FLOOD WARNING SYSTEM**
11:40
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 INVESTIGATING EFFECTS OF TYPHOON MANGKHUT ON URBAN VEGETATION USING SENTINEL-2 IMAGES**
12:00
Shuai Xu, Xiaolin Zhu, Hong Kong Polytechnic University, China; Eileen H. Helmer, US Forest Service (USDA), United States; Tao Wei, Shenzhen University, China

Thursday, August 1 16:20 - 18:00 Room 414-415
Session TH4.R8 Oral

Data Analysis Methods in Monitoring and Damage Assessment

Session Co-Chairs: Shouhei Kidera, University of Electro-Communications; Motofumi Arij, Mitsubishi Space Software Corporation

- TH4.R8.1 PROPOSAL OF ADAPTIVE SEARCH-AND-RESCUE RADAR SYSTEM WITH ONLINE COMPLEX-VALUED FREQUENCY-DOMAIN INDEPENDENT COMPONENT ANALYSIS**
16:20
Takahiro Nakanishi, Akira Hirose, University of Tokyo, Japan
- TH4.R8.2 OBJECT-ORIENTED OPEN PIT EXTRACTION BASED ON CONVOLUTIONAL NEURAL NETWORK, A CASE STUDY IN YUZHOU, CHINA**
16:40
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 A STUDY ON FEATURES EXTRACTION FOR HMM BASED ANOMALOUS SIGNAL DETECTION FROM WAVEFORM IMAGES OF ELF MAGNETIC SIGNALS**
17:00
Motoaki Mourj, Aichi University, Japan; Akitoshi Itai, Chubu University, Japan; Hiroshi Yasukawa, Aichi Prefectural University, Japan; Ichi Takumi, Nagoya Institute of Technology, Japan
- TH4.R8.4 HAS GOVERNMENT WATER PROTECTION POLICY TAKEN EFFECT ON PREVENTING HARMFUL ALGAL BLOOMS IN ERHAI LAKE?**
17:20
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, Tai 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

PoSAR Methods

Session Chair: Masanobu Shimada, Tokyo Denki University / JAXA

- TH4.R9.1** 16:20 **A REFLECTION SYMMETRY APPROXIMATION FOR FREEMAN-DURDEN DECOMPOSITION OF POLSAR DATA**
Wentao An, Mingsen Lin, Yongjun Jia, Xiaqing 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; Loic 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 Arij, 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 DATA 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 A NOVEL METHOD TO AUTOMATICALLY FUSE MULTI-VIEW LIDAR DATA IN FOREST ENVIRONMENTS BASED ON TREE LOCATIONS**
08:00
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 MULTIPLE SCATTERING EFFECT ON FOREST PHYSIOLOGICAL PARAMETERS OF MULTI-SPECTRAL LIDAR CANOPY WAVEFORMS**
08:20
Xuebo Yang, Cheng Wang, Xiaohuan Xi, Chinese Academy of Sciences, China
- TH1.R10.3 INTENSITY CALIBRATION OF A MCT-APD SENSOR FOR A FLASH LIDAR SYSTEM**
08:40
Victor Emanuel Saraiva Parahyba, Regis Perrier, Eric de Borniol, CEA-LETI, France; Jocelyn Chanussot, Université Grenoble Alpes, France
- TH1.R10.4 ROBUST BUILDING-BASED REGISTRATION OF AIRBORNE LIDAR DATA AND OPTICAL IMAGERY ON URBAN SCENES**
09:00
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 THE COMPARISON OF DENOISING METHODS FOR PHOTON COUNTING LASER ALTIMETER DATA**
09:20
Dan Ye, Huan Xie, Xiaohua Tong, Zhong Zhang, Tongji University, China; Ming Li, Chinese Academy of Sciences, China

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 UNDERSTANDING OF AEROSOL OPTICAL PROPERTIES OVER HISUI VALIDATION SITES USING GROUND-BASED MEASUREMENTS**
13:40
Hirokazu Yamamoto, Satoshi Tsuchida, National Institute of Advanced Industrial and Science and Technology (AIST), Japan
- TH3.R10.2 RAPID FLUORESCENCE ANALYSIS METHOD FOR MONITORING WATER ENVIRONMENT WITH WIDE CONCENTRATION RANGE BASED ON MULTIDIMENSIONAL PARTIAL LEAST SQUARES METHOD**
14:00
Jing Xu, Beijing Institute of Space Mechanics & Electricity, China
- TH3.R10.3 THE USE OF THE PINNACLES DESERT CALIBRATION SITE FOR CALIBRATION AND VALIDATION OF IMAGING SPECTROSCOPY SENSORS**
14:20
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 Czaplá-Myers, University of Arizona, United States; Peter Fearnis, Ian Lau, Timothy Malthus, CSIRO, Australia; Kurtis Thome, Brian Wenny, National Aeronautics and Space Administration (NASA), United States
- TH3.R10.4 DESIGN OF HIGH-RESOLUTION HYPERSPECTRAL IMAGING SATELLITE WITH LARGE ANGULAR MOTION COMPENSATION**
14:40
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 CALIBRATION AND VALIDATION WORKING GROUP FOR SURFACE BIOLOGY AND GEOLOGY (SBG)**
15:00
Raymond Kokaly, U.S. Geological Survey, United States; Kevin Turpie, National Aeronautics and Space Administration (NASA), United States

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 LUNAR CALIBRATION INTER-COMPARISON OF SGLI, MODIS AND VIIRS**
10:40
Tomoyuki Urabe, Japan Aerospace Exploration Agency (JAXA), Japan; Xiaoxiang 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 NOAA-20 VIIRS SENSOR DATA RECORDS GEOMETRIC AND RADIOMETRIC CALIBRATION PERFORMANCE ONE YEAR IN-ORBIT**
11:00
Wenhui Wang, Global Science & Technology, Inc, United States; Changyong Cao, NOAA, United States
- TH2.R10.3 INTEGRATED INDEPENDENT GEOMETRIC CALIBRATION OF STEREO CAMERAS ABOARD AN OPTICAL SATELLITE**
11:20
Yingdong Pi, Bo Yang, Ru Chen, Xin Li, Wuhan University, China
- TH2.R10.4 ACIX – ATMOSPHERIC CORRECTION INTER-COMPARISON EXERCISE**
11:40
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 FULL SPECTRUM SIMULATION OF PARTLY CLOUDY SCENES**
12:00
Robert Sundberg, Steven Richtsmeier, Spectral Sciences, 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 EVALUATION OF LUNAR BRDF CORRECTION FOR THE RETRIEVAL OF DAILY VIIRS BLACK MARBLE NIGHTTIME LIGHTS**
16:20
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 SENTINEL-2 GLOBAL SURFACE REFLECTANCE LEVEL-2A PRODUCT GENERATED WITH SEN2COR**
16:40
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 A RIGOROUS ON-ORBIT GEOMETRIC CALIBRATION METHOD FOR HIGH-RESOLUTION OPTICAL SENSOR OF CHINESE MAPPING SATELLITE**
17:00
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 RADIOMETRIC CALIBRATION STATUS AND RECALIBRATION OF ASTER THERMAL INFRARED IMAGES**
17:20
Hideyuki Tonoooka, Ibaraki University, Japan; Fumihito Sakuma, Tetsushi Tachikawa, Masakuni Kikuchi, Japan Space Systems, Japan
- TH4.R10.5 LANDSAT 9 THERMAL INFRARED SENSOR 2 SPECTRAL RESPONSE TEST: UPDATES AND PERSPECTIVE**
17:40
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, 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** **LIDAR DATA-AIDED HYPERGRAPH REGULARIZED MULTI-MODAL UNMIXING**
08:00
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** **DATA ASSOCIATION TECHNIQUES FOR NEAR-CONTEMPORANEOUS SAR AND AIS DATASETS FROM NOVASAR-1**
08:20
Maximilian Rodger, Raffaella Guida, University of Surrey, United Kingdom
- TH1.R11.3** **FUSION OF MULTISPECTRAL IMAGE AND AIRBORNE LIDAR DATA FOR THE CLASSIFICATION OF URBAN AREA WITH ROTATION FOREST**
08:40
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** **A NEW CLASSIFICATION METHOD FOR SEMI-ARID REGIONS BASED ON SAR AND LIDAR DATA FUSION**
09:00
Pasquale Iervolino, University of Surrey, United Kingdom; Alessandro Coppola, Università degli Studi di Napoli, Federico II, Italy; Raffaella Guida, University of Surrey, United Kingdom; Daniele Riccio, Università degli Studi di Napoli, Federico II, Italy
- TH1.R11.5** **DOMAIN ADAPTATION OF LANDSAT-8 AND PROBA-V DATA USING GENERATIVE ADVERSARIAL NETWORKS FOR CLOUD DETECTION**
09:20
Gonzalo Mateo-García, Valero Laparra, Luis Gómez-Chova, Universidad de Valencia, Spain

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** **A NEW SPATIO-TEMPORAL FUSION METHOD FOR REMOTELY SENSED DATA BASED ON CONVOLUTIONAL NEURAL NETWORKS**
13:40
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** **REPRODUCIBILITY OF SPECTRAL AND RADIOMETRIC NORMALIZED SIMILARITY INDICES FOR MULTIBAND IMAGES**
14:00
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** **A SPECTRAL MAPPING BASED INTENSITY MODULATION FOR PAN-SHARPENING**
14:20
Xiaofei Zhao, Hongyi Liu, Jun Zhang, Zebin Wu, Zhihui Wei, Nanjing University of Science and Technology, China
- TH3.R11.4** **ROBUST DEEP HYPERSPECTRAL IMAGERY SUPER-RESOLUTION**
14:40
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** **SPECTRAL SUPER-RESOLUTION FOR MULTISPECTRAL IMAGE BASED ON SPECTRAL AND SPATIAL STRATEGIES**
15:00
Chen Yi, Yong-qiang Zhao, Northwestern Polytechnical University, China; Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

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** **CLOUD AND SHADOW REMOVAL FOR SENTINEL-2 BY PROGRESSIVELY SPATIOTEMPORAL PATCH GROUP LEARNING**
10:40
Qiang Zhang, Qiangqiang Yuan, Jie Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China
- TH2.R11.2** **RECONSTRUCTING GEOSTATIONARY SATELLITE LST BASED ON MULTISCALE FEATURE CONNECTED CONVOLUTIONAL NEURAL NETWORK**
11:00
Zhixiang Yin, Penghai Wu, Hui Yang, Xiaoshuang Ma, Yanlan Wu, Anhui University, China
- TH2.R11.3** **DSM BUILDING SHAPE REFINEMENT FROM COMBINED REMOTE SENSING IMAGES BASED ON WNEN-CGANS**
11:20
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** **COLOR ADAPTATION AND CLOUD REMOVAL BETWEEN SATELLITE IMAGES VIA OPTIMAL TRANSPORT**
11:40
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** **REMOTE ESTIMATION OF FREE-FLOW SPEEDS**
12:00
Weilian Song, Tawfiq Salem, Hunter Blanton, Nathan Jacobs, University of Kentucky, United States

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** **ROBUST MUTUAL INFORMATION-BASED MULTI-IMAGE REGISTRATION**
16:20
Dehong Liu, Hassan Mansour, Petros Boufounos, Mitsubishi Electric Research Laboratories, United States
- TH4.R11.2** **A NOVEL ROBUST FEATURE DESCRIPTOR FOR MULTI-SOURCE REMOTE SENSING IMAGE REGISTRATION**
16:40
Song Cui, Yanfei Zhong, Ailong Ma, Liangpei Zhang, Wuhan University, China
- TH4.R11.3** **SAR2OPT: IMAGE ALIGNMENT BETWEEN MULTI-MODAL IMAGES USING GENERATIVE ADVERSARIAL NETWORKS**
17:00
Hisatoshi Toriya, University of Tsukuba, Japan; Ashraf Dewan, Curtin University, Australia; Itaru Kitahara, University of Tsukuba, Japan
- TH4.R11.4** **AUTOMATIC REGISTRATION OF SAR IMAGE AND GIS BUILDING FOOTPRINTS DATA IN DENSE URBAN AREA**
17:20
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** **AUTOMATIC REGISTRATION OF OPTICAL AND SAR IMAGES VIA IMPROVED PHASE CONGRUENCY**
17:40
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 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**
Elirana 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 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 Dalphinnet, Météo-France, France; Daniele Hauser, Lauriane Delaye, CNRS, France; Céline Tison, CNES, France; Bertrand Chapron, IFREMER, France; Laura Hermao, 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, Zhijun 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**
Qinfeng 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 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**
Hongtao 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; Dena 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, 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 SMAP MISSION STATUS AND PLAN
08:00 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 THE SMAP AND COPERNICUS SENTINEL 1A/B MICROWAVE ACTIVE-PASSIVE HIGH RESOLUTION SURFACE SOIL MOISTURE PRODUCT AND ITS APPLICATIONS
08:20 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 SMAP REGULARIZED DUAL-CHANNEL ALGORITHM FOR THE RETRIEVAL OF SOIL MOISTURE AND VEGETATION OPTICAL DEPTH
08:40 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 RETRIEVAL OF VEGETATION WATER CONTENT USING BRIGHTNESS TEMPERATURES FROM THE SOIL MOISTURE ACTIVE PASSIVE (SMAP) MISSION
09:00 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 SEASONAL DEPENDENCE OF SMAP RADIOMETER-BASED SOIL MOISTURE PERFORMANCE AS OBSERVED OVER CORE VALIDATION SITES
09:20 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; José Martínez-Fernández, University of Salamanca, Spain; Karsten Jensen, University of Copenhagen, Denmark; Jun Asanuma, University of Tsukuba, Japan; Mark Seyfried, David Bosch, Patrick Starks, Chandra Holtfield 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 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 SMAP VEGETATION OPTICAL DEPTH RETRIEVALS USING THE MULTI-TEMPORAL DUAL-CHANNEL ALGORITHM
13:40 Andrew Feldman, Dara Entekhabi, Massachusetts Institute of Technology, United States

TH3.R13.2 SATELLITE-BASED VEGETATION OPTICAL DEPTH AS AN INDICATOR OF DROUGHT-DRIVEN TREE MORTALITY
14:00 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, CREAL Campus de Bellaterra (UAB), Spain; Alexandra Konings, Stanford University, United States

TH3.R13.3 SMAP VEGETATION OPTICAL DEPTH IS DIRECTLY PROPORTIONAL TO CROP WATER IN THE US CORN BELT
14:20 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 MAPPING CARBON STOCKS IN CENTRAL AND SOUTH AMERICA WITH SMAP VEGETATION OPTICAL DEPTH
14:40 David Chaparro, Universitat Politècnica de Catalunya (UPC), Spain; Grégory Duveiller, Joint Research Centre (JRC), Italy; Maria Piles, Universitat de València, Spain; Mercè Val-Hussera, 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 ESTIMATION OF VOLUME FRACTION AND GRAVIMETRIC MOISTURE OF WINTER WHEAT BASED ON MICROWAVE ATTENUATION: A FIELD SCALE STUDY
15:00 Thomas Meyer, Forschungszentrum Jülich GmbH, Germany; Thomas Jagdhuber, German Aerospace Center (DLR), Germany; Maria Piles, University of Valencia, Spain; Anke Fluhrer, German Aerospace Center (DLR), Germany; François Jonard, Forschungszentrum Jülich GmbH, Germany

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 VERIFICATION OF THE SMAP LEVEL-4 SOIL MOISTURE ANALYSIS USING RAINFALL OBSERVATIONS IN AUSTRALIA
10:40 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 SMAP L4 ASSESSMENT OF THE US NORTHERN PLAINS 2017 FLASH DROUGHT
11:00 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 INTEGRATED SMAP AND SMOS SOIL MOISTURE OBSERVATIONS
11:20 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 EVALUATING BRIGHTNESS TEMPERATURE INFORMATION FOR ESTIMATING MICROWAVE LAND SURFACE AND VEGETATION PROPERTIES
11:40 Dara Entekhabi, Andrew Feldman, Massachusetts Institute of Technology, United States

TH2.R13.5 SMAP MICROWAVE RADIOMETER CALIBRATION REVISIT
12:00 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 Dimat, 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 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 IS VEGETATION OPTICAL DEPTH NEEDED TO ESTIMATE BIOMASS FROM PASSIVE MICROWAVE RADIOMETERS? A STATISTICAL STUDY USING NEURAL NETWORKS
16:20 Nemesio Rodríguez-Fernández, 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 NOVEL LONG-TERM GLOBAL INDICATORS OF PLANT PRODUCTIVITY FROM MICROWAVE SATELLITES
16:40 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 REDUCED UNCERTAINTIES FROM MULTIFREQUENCY CONSTRAINTS ON TERRESTRIAL CARBON AND WATER PROCESSES
17:00 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 COMBINING L-BAND RADAR AND SMOS L-BAND VOD FOR HIGH RESOLUTION ESTIMATION OF BIOMASS
17:20 Emma Bousquet, Arnaud Mialon, Nemesio Rodríguez-Fernández, Stéphane Mermoz, Alexandre Bouvet, Olivier Merlin, Yann Kerr, Centre d'Etude Spatial de la Biosphère (CESBIO), France

TH4.R13.5 VEGETATION OPTICAL DEPTH AND SENTINEL-1 BACKSCATTER DYNAMICS FOR PHENOLOGY MONITORING: SYNERGIES AND DISCORDANCES.
17:40 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 SPATIOTEMPORAL HEATWAVE RISK MODELING COMBINING MULTIPLE OBSERVATIONS
08:00
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 SPATIALLY DETAIL HEAT STRESS EVALUATION USING PEOPLE FLOW AND GROUND SURFACE TEMPERATURE DATA
08:20
Takahiro Yoshida, Yoshiki Yamagata, National Institute for Environmental Studies, Japan; Daisuke Murakami, Institute of Statistical Mathematics, Japan

FR1.R1.3 SPATIOTEMPORAL HEATWAVE RISK EVALUATION: CONSIDERING HAZARD, EXPOSURE, AND VULNERABILITY
08:40
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 DEVELOPMENT OF BUILDING MICRO GEODATA FOR EARTHQUAKE DAMAGE ESTIMATION
09:00
Yuki Akiyama, Yoshiki Ogawa, University of Tokyo, Japan

FR1.R1.5 EARTHQUAKE DAMAGE ESTIMATION BY SPARSE MODELING USING GEOSPATIAL BIG DATA
09:20
Yoshiki Ogawa, Yuki Akiyama, Yoshihide Sekimoto, Ryosuke Shibasaki, University of Tokyo, Japan

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 RADARSAT CONSTELLATION MISSION
13:40
Steve Iris, Guennadi Kroupnik, Daniel De Lisle, Magdalena Wierus, Canadian Space Agency, Canada

FR3.R1.2 CALIBRATION OF RCM COMPACT MODES
14:00
Ridha Touzi, Canada Centre for Remote Sensing, Canada; Stephane Cote, Canadian Space Agency, Canada

FR3.R1.4 THE IMPACT OF ADDITIVE NOISE ON POLARIMETRIC RADARSAT-2 DATA COVERING OIL SLICKS
14:40
Martine M. Espeseth, Stine Skrunes, Camilla Brekke, Malin Johansson, Arctic University of Norway, Norway

FR3.R1.5 ON THE USE OF MACHINE LEARNING AND POLARIMETRY FOR ESTIMATING SOIL MOISTURE FROM RADARSAT IMAGERY OVER ITALIAN AND CANADIAN TEST SITES
15:00
Emanuele Santi, Institute of Applied Physics - National Research Council (IFAC - CNR), Italy; Mohammed Daboor, 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 Cuzzo, Institute for Earth Observation - EURAC Research, Italy

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 PROCESSING TIME AND REPRODUCIBILITY TOWARD A REAL-TIME SIMULATION SYSTEM FOR FLOOD EVACUATION
10:40
Kei Hiroi, Nagoya University, Japan; Masatoshi Enomoto, Tsubasa Yumura, Toshiyuki Miyachi, National Institute of Information and Communications Technology (NICT), Japan

FR2.R1.2 PROPOSING OF SOFTWARE TESTING PLATFORM WITH FEDERATING SIMULATION AND SOFTWARE EMULATION FOR ROUTE RECOMMENDATION SYSTEM IN THE CASE OF FLOODING
11:00
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 JOOSTAR: HETEROGENEOUS SIMULATOR FEDERATION FOR APPLICATION-IN-THE-LOOP SIMULATION
11:20
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 VERIFICATION ON EVACUATION OF FLOOD DISASTER BY USING GPS: CASE STUDY IN MABI, JAPAN 2018
11:40
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 A GPS-BASED SIMPLE EVALUATION SIMULATION APPROACH: CASE STUDY IN JOSO, JAPAN
12:00
Daisuke Murakami, Tomoko Matsui, Institute of Statistical Mathematics, Japan; Takahiro Yoshida, Yoshiki Yamagata, National Institute for Environmental Studies, Japan

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 iris@canada.ca

FR4.R1.1 ASSESSMENT OF COMPACT POLARIMETRIC SAR PARAMETERS FOR LAKE AND FAST SEA ICE CHARACTERIZATION
15:40
Mohammed Daboor, Mohammed Shokr, Environment and Climate Change Canada, Canada

FR4.R1.2 OIL SLICK CHARACTERIZATION USING RADARSAT CONSTELLATION MISSION SIMULATED DATA
16:00
Gordon Staples, MDA, Canada; Oscar Garcia, WaterMapping, United States

FR4.R1.3 RETRIEVAL OF CROP BIOPHYSICAL PARAMETERS USING C-BAND: PREPARING FOR THE RADARSAT-CONSTELLATION
16:20
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 COMPACT POLARIMETRY FOR AGRICULTURAL MAPPING AND INVENTORY: PREPARATION FOR RADARSAT CONSTELLATION MISSION
16:40
Laura Dingle Robertson, Andrew Davidson, Heather McNairn, Agriculture and Agri-Food Canada, Canada; Mehdi Hosseini, Scott Mitchell, Carleton University, Canada

FR4.R1.5 MONITORING POST LANDSLIDE ACTIVITY FROM RADARSAT CONSTELLATION MISSION
17:00
Vern Singhroy, Junhua Li, Mary-Anne Fobert, Canada Centre for Remote Sensing, Canada; Ching-Fang Lee, Sinotech Engineering Consultants, Inc., Taiwan; Mrinmay 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 AIRBORNE SNOW MEASUREMENTS OVER ALASKA MOUNTAINS AND GLACIERS WITH A COMPACT FMCW RADAR**
08:00
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 ESTIMATION SNOW PARAMETERS USING DIGITAL IMAGERY**
08:20
Ali Nadir Arslan, Cemal Melih Tanis, Finnish Meteorological Institute, Finland; Marco Bongio, Carlo de Michele, Politecnico di Milano, Italy
- FR1.R2.3 A PROTOTYPE ULTRA-WIDEBAND FMCW RADAR FOR SNOW AND SOIL-MOISTURE MEASUREMENTS**
08:40
Ryan A. Taylor, Sivaprasad Gogineni, Sevgi Gurbuz, Shrinivas 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 Liefvering, Kenichi Matsuoka, Norwegian Polar Institute, Norway
- FR1.R2.4 SNOW MICROWAVE COMPLEX PERMITTIVITY MEASURED WITH RESONATOR SENSORS**
09:00
Reza Naderpour, Department of Environmental Systems Science, Switzerland; Mike Schwank, Derek Houtz, Swiss Federal Research Institute WSL, Switzerland
- FR1.R2.5 ATMOSPHERIC CORRECTION OF PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE ON THE ESTIMATION OF SNOW DEPTH**
09:20
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 13:40 - 15:20 Room 213
Session FR3.R2 Oral

Sea Ice

Session Chair: Son V. Nghiem, NASA Jet Propulsion Laboratory

- FR3.R2.1 SATELLITE MONITORING OF THE AMUNDSEN AND PINE ISLAND POLYNYAS (2014-2019)**
13:40
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 AUTOMATED SEA ICE CLASSIFICATION USING SENTINEL-1 IMAGERY**
14:00
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 POLAR SEA ICE THICKNESS AND MELT POND FRACTION MEASUREMENTS WITH MULTI-FREQUENCY BISTATIC RADAR POLARIMETRIC AND INTERFEROMETRIC REFLECTOMETRY**
14:20
Son Nghiem, California Institute of Technology, NASA Jet Propulsion Laboratory, United States; Donald Perovich, Dartmouth College, United States; Christopher Paloshenski, 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 SAR DOPPLER CALIBRATION AND APPLICATION FOR SEA ICE DRIFT ESTIMATION**
14:40
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 THE COUPLING CHARACTERISTICS OF ARCTIC SEA ICE CONCENTRATION AND SEA ICE MOTION IN WINTER**
15:00
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 10:40 - 12:20 Room 213
Session FR2.R2 Oral

Ice Sheets and Glaciers III

Session Chair: Jean Tournadre, IFREMER

- FR2.R2.1 ICEBERG STUDIES USING SATELLITE ALTIMETER DATA**
10:40
Jean Tournadre, Anastasia Tarasenko, IFREMER, France
- FR2.R2.2 RETRIEVALS OF SNOW PROPERTIES OVER GREENLAND FROM L-BAND RADIO METRY**
11:00
Derek Houtz, Reza Naderpour, Mike Schwank, Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Switzerland
- FR2.R2.3 APPLICATIONS OF HISTORICAL OPTICAL DISP IMAGES IN ANTARCTICA STUDY**
11:20
Yixiang Tian, Menglian Xia, Xuwei Li, Gang Qiao, Rongxing Li, Tongji University, China
- FR2.R2.4 IMPROVED DELINEATION OF INDIVIDUAL OUTLET GLACIER DRAINAGE BASINS FROM TANDEM-X ELEVATIONS AND SENTINEL-1 VELOCITIES**
11:40
Lukas Krieger, Dana Floricioiu, German Aerospace Center (DLR), Germany
- FR2.R2.5 ICESAT-2 OVER THE POLAR REGIONS: INITIAL OBSERVATIONS OF LAND ICE FROM NASA'S NEWEST LASER ALTIMETRY MISSION**
12:00
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 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 CHARACTERIZATION OF THE LAND SURFACE FREEZE/THAW STATE WITH SMAP-REFLECTOMETRY (SMAP-R)**
15:40
Nereida Rodriguez-Alvarez, Erika Podest, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- FR4.R2.2 VALIDATION AND ANALYSIS OF THE SMAP AND AMSR2 FREEZE/THAW DATASET OVER CHINA**
16:00
Jian Wang, Lingmei Jiang, Huizhen Cui, Jianwei Yang, Gongxue Wang, Xiaojing Liu, Xu Su, Beijing Normal University, China
- FR4.R2.3 DEVELOPING A SOIL INVERSION MODEL FRAMEWORK FOR REGIONAL PERMAFROST MONITORING**
16:20
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 SEMI-AUTOMATED DETECTION OF THAW LAKES IN PERMAFROST AREAS IN QINGHAI-TIBET PLATEAU FROM SENTINEL-2 IMAGES USING MARKOV RANDOM FIELD**
16:40
Yuanyuan Qin, Ping Lu, Tongji University, China; Zhongbin Li, South Dakota State University, United States
- FR4.R2.5 OPERATIONAL LAKE MAPPING ON THE SOUTHERN TIBET USING SENTINEL-1 DATA**
17:00
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, 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 Szantai, 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 Jenkens, 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 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 Dubuca, 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 Dubuca, Total, France
- FR3.R3.4** 14:40 **OIL SLICK VOLUME ESTIMATION FROM COMBINED USE OF AIRBORNE HYPERSPECTRAL AND POOL EXPERIMENT DATA**
Laure Roupioz, Françoise Viallefont-Robinet, ONERA, France; Veronique Miegbielle, 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 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, H-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, 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 Dubuca, 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, Saied 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 **AIRBORNE 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; Veronique Miegbielle, 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 Miegbielle, 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 Dubuca, 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 BIG EARTH DATACUBE SERVICES: CONCEPTS, STANDARDS, TOOLS**
08:00 Peter Baumann, Jacobs University, Germany
- FR1.R4.2 INTERCONNECTING SENSOR DATA AND DATACUBES**
08:20 Katharina Schleidt, DataCove e.U., Austria; Peter Baumann, Jacobs University Bremen, Germany
- FR1.R4.3 EXTENDING OGC STANDARDS FOR SUPPORTING BIG-EARTH DATA RETRIEVAL AND ANALYTICS**
08:40 Konstantinos Apostolopoulos, Georgios Kakaletis, Communication & Information Technologies Experts, Greece; Panagiota Koltsida, National and Kapodistrian University of Athens, Greece
- FR1.R4.4 SMART HANDOFFS: PRESERVING USER CONTEXT BETWEEN TOOLS AND SERVICES RELATED TO NASA'S EOSDIS DATA ARCHIVE**
09:00 Doug Newman, Raytheon, United States; Christopher Lynnes, National Aeronautics and Space Administration (NASA), United States
- FR1.R4.5 APPLYING MACHINE LEARNING TO EARTH OBSERVATIONS IN A STANDARDS BASED WORKFLOW**
09:20 Tom Landry, David Byrns, Francis Charette-Migneault, Mario Beaulieu, Pierre-Luc St-Charles, Samuel Foucher, Claude Chapdelaine, Ayoub Tili, 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 A CLOUD-ENABLED GEOSPATIAL BIG DATA PLATFORM FOR DISASTER INFORMATION SERVICES**
10:40 Lianlian He, Hubei University of Education, China; Peng Yue, Wuhan University, China
- FR2.R4.2 DATACUBE MANIPULATION EXTENSIONS TO SQL LANGUAGE - ISO IS 9075-15:2018**
11:00 Dimitar Misev, Peter Baumann, Jacobs University Bremen, Germany
- FR2.R4.3 COPERNICUS EO BIG DATA INTELLIGENT PROCESSING UNDER OGC DISCRETE GLOBAL GRID SYSTEM STANDARDS**
11:20 Zaheir Sabour, Gianluca Correndo, Andrew Rawson, University of Southampton, United Kingdom
- FR2.R4.4 AN APPLICATION DEVELOPMENT FRAMEWORK FOR OPEN GEOSPATIAL CONSORTIUM DISCRETE GLOBAL GRID SYSTEM STANDARD**
11:40 Perry Peterson, Camosun College / Global Grid Systems, Canada; Idan Shatz, Global Grid Systems, Canada
- FR2.R4.5 DESPITE OPEN DATA: HOW TO SECURE PIXELS APPROPRIATELY?**
12:00 Dimitar Misev, Peter Baumann, Jacobs University Bremen, Germany

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 SENTINEL-3 A, B, C, D: DEVELOPMENT, COMMISSIONING AND OPERATIONS OF AN ENVIRONMENTAL AND CLIMATE MONITORING OBSERVATION SYSTEM**
13:40 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 FUTURE NOAA LEO AND GEO SATELLITE OBSERVING SYSTEM ARCHITECTURE AND THE WAY-AHEAD**
14:00 Karen St. Germain, Frank Gallagher III, David Spencer, NOAA, United States; Mark Maier, Phillip Jasper, The Aerospace Corporation, United States
- FR3.R4.3 LANDSAT 9: MISSION STATUS AND PRELAUNCH INSTRUMENT PERFORMANCE CHARACTERIZATION AND CALIBRATION**
14:20 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 Efreanova, 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 IN-ORBIT OBSERVATION OF THE SECOND GENERATION GLOBAL IMAGER (SGLI) AND STUDY TOWARDS FOLLOW-ON IMAGING RADIOMETER**
14:40 Yoshihiko Okamura, Yoshino Yamada, Tomoyuki Urabe, Shigemasa Ando, Kazuhiro Tanaka, Japan Aerospace Exploration Agency (JAXA), Japan
- FR3.R4.5 CHALLENGES AND APPROACHES FOR SENSOR REFLECTIVE SOLAR CALIBRATION**
15:00 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 DEVELOPMENT OF OPTICAL IMAGER FOR ADVANCED OPTICAL SATELLITE (ALOS-3)**
15:40 Kensuke Wada, Saori Sakamoto, Aya Tanaka, Mitsubishi Electric, Japan
- FR4.R4.2 MISSION OVERVIEW OF THE ADVANCED OPTICAL SATELLITE (ALOS-3)**
16:00 Takeo Tadono, Yousei Mizukami, Ayano Oka, Hidenori Watarai, Masakazu Sagisaka, Japan Aerospace Exploration Agency (JAXA), Japan
- FR4.R4.3 PRELAUNCH STATUS OF HYPERSPECTRAL IMAGER SUITE (HISUI)**
16:20 Akira Iwasaki, University of Tokyo, Japan; Jun Tani, Osamu Kashimura, Japan Space Systems (J-spacesystems), Japan; Yoshiyuki Ito, NEC Corporation, Japan
- FR4.R4.4 IMAGING SPECTROMETER SUITE FOR MONITORING THE ANTHROPOCENE REMOTELY FROM SPACE**
16:40 Akihiko Kuze, Hiroshi Suto, Japan Aerospace Exploration Agency (JAXA), Japan
- FR4.R4.5 GEOSTATIONARY EARTH OBSERVATION SATELLITE WITH LARGE SEGMENTED TELESCOPE**
17:00 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** **MULTIPLE-FEATURE IDEAL REGULARIZED KERNEL FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
08:00
Yan Xu, Mississippi State University, United States; Jiangtao Peng, Hubei University, China; Qian Du, Nicolas Younan, Mississippi State University, United States
- FR1.R5.2** **CONVOLUTIONAL NEURAL NETWORK WITH PCA AND BATCH NORMALIZATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
08:20
Aamir Abbasi, Mingyi He, Northwestern Polytechnical University, China
- FR1.R5.3** **SPNET: A SPECTRAL PATCHING NETWORK FOR END-TO-END HYPERSPECTRAL IMAGE CLASSIFICATION**
08:40
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** **GRU WITH SPATIAL PRIOR FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
09:00
Ertong Pan, Yong Ma, Xiaobing Dai, Fan Fan, Jun Huang, Xiaoguang Mei, Jiayi Ma, Wuhan University, China
- FR1.R5.5** **ENSEMBLE MARGIN BASED SEMI-SUPERVISED RANDOM FOREST FOR THE CLASSIFICATION OF HYPERSPECTRAL IMAGE WITH LIMITED TRAINING DATA**
09:20
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 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** **DEEP LEARNING METHODS FOR CROP CLASSIFICATION MAPS FILTRATION**
13:40
Mykola Lavreniuk, Space Research Institute NASU-SSAU, Ukraine
- FR3.R5.2** **A NOVEL STATISTICAL-BASED SCALE-INDEPENDENT APPROACH TO UNSUPERVISED WATER SEGMENTATION OF SAR IMAGES**
14:00
Francesco Asaro, Politecnico di Milano, Italy
- FR3.R5.3** **UNSUPERVISED POLSAR IMAGE FACTORIZATION WITH DEEP CONVOLUTIONAL NETWORKS**
14:20
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, Yang Xue, University of Derby, United Kingdom; Zongben Xu, Xi'an Jiaotong University, China
- FR3.R5.4** **EFFICIENT MULTI-CLASS SEMANTIC SEGMENTATION OF HIGH RESOLUTION AERIAL IMAGERY WITH DILATED LINKNET**
14:40
Qingtian Zhu, Yumin Zheng, Yulai Jiang, Junli Yang, Beijing University of Posts and Telecommunications, China
- FR3.R5.5** **A MULTI-TASK DEEP LEARNING FRAMEWORK COUPLING SEMANTIC SEGMENTATION AND IMAGE RECONSTRUCTION FOR VERY HIGH RESOLUTION IMAGERY**
15:00
Maria Papadomanolaki, Konstantinos Karantzas, National Technical University of Athens, Greece; Maria Vakalopoulou, CentraleSupélec, Université Paris-Saclay, France

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** **OVER-SEGMENTATION OF VHR SATELLITE IMAGES USING NONPARAMETRIC BAYESIAN ITERATIVE CLUSTERING**
10:40
Wei Huang, Hong Tang, Xin Yang, Beijing Normal University, China
- FR2.R5.2** **A MULTISCALE SUPERPIXEL-GUIDED FILTER APPROACH FOR VHR REMOTE SENSING IMAGE CLASSIFICATION**
11:00
Sicong Liu, Qing Hu, Tongji University, China; Alim Samat, Chinese Academy of Sciences, China; Xiaohua Tong, Tongji University, China
- FR2.R5.3** **SEMANTIC LABELING FOR HIGH-RESOLUTION AERIAL IMAGES BASED ON THE DMFFNET**
11:20
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** **SHIP INSTANCE SEGMENTATION FROM REMOTE SENSING IMAGES USING SEQUENCE LOCAL CONTEXT MODULE**
11:40
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** **CLOUD-NET: AN END-TO-END CLOUD DETECTION ALGORITHM FOR LANDSAT 8 IMAGERY**
12:00
Sorour Mahajerani, Parvaneh Saeedi, Simon Fraser University, Canada

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 (UFSC), Brazil

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 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 Iervalino, 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, Hui Feng Shi, State Key Laboratory of Space-Ground Integrated Information Technology, China

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 Ikakou, 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 Kumarnatch, 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, Pulong 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 Booyesen, Robert Zimmermann, Sandra Lorenz, Helmholtz Institute Freiberg for Resource Technology, Germany

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, Tinicum 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**
Genç 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 Šimoni, Signal and Image Center SIGRMA, Belgium; Thibault Croonenborghs, RMA, Belgium; Pierre-Yves Declercq, Royal Belgian Institute of Natural Sciences (RBINS), Belgium; Anastasios Drougkas, Els Verstrynghe, 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 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, Pulong 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, 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**
Emir 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, Carina 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 Rahneemoonfar, Texas A&M University-Corpus Christi

- FR1.R8.1 DEEP ORDINAL CLASSIFICATION FOR AUTOMATIC CLOUD COVER ASSESSMENT**
08:00
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 LEARNING OCEAN DYNAMICAL PRIORS FROM NOISY DATA USING ASSIMILATION-DERIVED NEURAL NETS**
08:20
Said Oualla, 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 SEMANTIC SEGMENTATION OF UNDERWATER SONAR IMAGERY WITH DEEP LEARNING**
08:40
Maryam Rahneemoonfar, Dugan Dobbs, Texas A&M University Corpus Christi, United States
- FR1.R8.4 GENERATIVE ADVERSARIAL NETWORKS TO AUGMENT MICRO-DOPPLER SIGNATURES FOR THE CLASSIFICATION OF HUMAN ACTIVITY**
09:00
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 URBAN FUNCTIONAL REGIONS DISCOVERING BASED ON DEEP LEARNING**
09:20
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 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 A SEMI-SUPERVISED METHOD FOR SAR TARGET DISCRIMINATION BASED ON CO-TRAINING**
13:40
Lan Du, Yan Wang, Weitong Xie, Xidian University, China
- FR3.R8.2 END-TO-END AUTOMATIC SHIP DETECTION AND RECOGNITION IN HIGH-RESOLUTION GAOFEN-3 SPACEBORNE SAR IMAGES**
14:00
Xiyue Hou, Wei Ao, Feng Xu, Fudan University, China
- FR3.R8.3 TRANSLATING SAR TO OPTICAL IMAGES FOR ASSISTED INTERPRETATION**
14:20
Shilei Fu, Feng Xu, Ya-Qiu Jin, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, China
- FR3.R8.4 A NEW RATIO IMAGE BASED CNN ALGORITHM FOR SAR DESPECKLING**
14:40
Sergio Vitale, Giampaolo Ferraioli, Vito Pascozio, Università di Napoli, Italy
- FR3.R8.5 SAR IMAGE REPRESENTATION LEARNING WITH ADVERSARIAL AUTOENCODER NETWORKS**
15:00
Qian Song, Feng Xu, Ya-Qiu Jin, Fudan University, China

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 IMPACT OF NON-PROPORTIONAL TRAINING SAMPLING OF IMBALANCED CLASSES ON LAND COVER CLASSIFICATION ACCURACY WITH SEES DECISION TREE**
10:40
Zhengwei Yang, Claire Boryan, USDA National Agricultural Statistics Service, United States
- FR2.R8.2 MULTISCALE BASED CHARACTERIZATION AND CLASSIFICATION OF URBAN LAND-USE**
11:00
Jacob Arndt, Dalton Lunga, Jeanette Weaver, St. Thomas LeDoux, Sarah Tennille, Oak Ridge National Laboratory, United States
- FR2.R8.3 A CLASS ACTIVATION MAPPING GUIDED ADVERSARIAL TRAINING METHOD FOR LAND-USE CLASSIFICATION AND OBJECT DETECTION**
11:20
Rui Yang, Xin Xu, Wuhan University, China; Zhaazhuo Xu, Stanford University, United States; Chujiang Ding, Fangling Pu, Wuhan University, China
- FR2.R8.4 SPATIAL INFORMATION INFERENCE NET: ROAD EXTRACTION USING ROAD-SPECIFIC CONTEXTUAL INFORMATION**
11:40
Ji Qi, Chao Tao, Hao Wang, Yuqi Tang, Zhenqi Cui, Central South 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 TOWARDS GENERATING REMOTE SENSING IMAGES OF THE FAR PAST**
15:40
Mesay Belete Bejiga, Farid Melgani, University of Trento, Italy
- FR4.R8.2 A 10 M SENTINELS-DERIVED WETLAND EXTENT PRODUCT OF NEWFOUNDLAND ON THE GOOGLE EARTH ENGINE CLOUD COMPUTING PLATFORM**
16:00
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 ALTERNATIVE DATASETS FOR IDENTIFICATION OF EARTH SCIENCE EVENTS AND DATA**
16:20
Kaylin Bugbee, Robert Griffin, Brian Freitag, Jeffrey Miller, University of Alabama Huntsville, United States; Rahul Ramchandran, NASA Marshall Space Flight Center, United States; Jia Zhang, Carnegie Mellon University, United States
- FR4.R8.4 A PROTOTYPE SYSTEM USING LOCATION-BASED TWITTER DATA FOR DISASTER MANAGEMENT**
16:40
Quan Zou, Southwest University, China
- FR4.R8.5 AN INTERACTIVE VISUAL ANALYTICS TOOL FOR BIG EARTH OBSERVATION DATA CONTENT ESTIMATION**
17:00
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, 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 ON THE SEPARATION OF GROUND AND CANOPY SCATTERINGS USING SINGLE POLARIMETRIC MULTI-BASELINE SAR TOMOGRAPHY
08:00
Hossein Aghababae, Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Gilda Schirizzi, Università di Napoli Parthenope, Italy

FR1.R9.2 URBAN AREA EXTRACTION FROM POLSAR DATA USING OPTIMIZED ROLL-INVARIANT FEATURES AND SELECTED HIDDEN POLARIMETRIC FEATURES IN THE ROTATION DOMAIN
08:20
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 BENEFIT OF XPOL FOR URBAN CLASSIFICATION USING SAR IMAGES
08:40
Régis Guinvarc'h, Laetitia Thirion-Lefevre, CentraleSupélec, France; Donald Atwood, Michigan Tech Research Institute, France

FR1.R9.4 THREE-DIMENSIONAL TARGET SCATTERING CLASSIFICATION USING FULL-RANK POLARIMETRIC TOMOGRAPHIC SAR FOCUSING
09:00
Hossein Aghababae, Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Gilda Schirizzi, Università di Napoli Parthenope, Italy

FR1.R9.5 SEMI-SUPERVISED CLASSIFICATION OF POLARIMETRIC SAR IMAGES USING MARKOV RANDOM FIELD AND TWO-LEVEL WISHART MIXTURE MODEL
09:20
Chi Liu, Wenzhi Liao, Ghent University, Belgium; Heng-Chao Li, Rui Wang, Southwest Jiaotong University, China; Wilfried Philips, Ghent University, Belgium

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 TOMOGRAPHY AND GROUND/VOLUME DECOMPOSITION FOR FOREST BIOMASS RETRIEVAL
13:40
Francesco Banda, ARESYS, Italy; Mauro Mariotti d'Alessandro, Stefano Tebaldini, Politecnico di Milano, Italy; Davide Giudici, ARESYS, Italy

FR3.R9.2 SUB-CANOPY GROUND LOCALIZATION FROM MULTI-BASELINE POL-INSAR DATA IN FOREST SCENARIOS
14:00
Matteo Pardini, Konstantinos Papatthanassiou, German Aerospace Center (DLR), Germany

FR3.R9.3 THE IMPACT OF ORBITAL CONTROL ON THE QUALITY OF BIOMASS ESTIMATES THROUGH P-BAND SAR TOMOGRAPHY
14:20
Mauro Mariotti d'Alessandro, Stefano Tebaldini, Politecnico di Milano, Italy

FR3.R9.4 GENERALIZED-CAPON DIFF-TOMO FOR SENSING OF DECORRELATING SCATTERERS: INSIGHTS, CHARACTERIZATION, AND EXPERIMENTS
14:40
Fabrizio Lombardini, University of Pisa, Italy; Francesco Cai, Leonardo S.p.A., Italy

FR3.R9.5 3D MODELING OF EARTH'S SURFACE: STUDY OF THE ANTARCTICA
15:00
Philippe Chiberre, Enric Meinhardt-Llopis, CMLA, France; Carlo De Franchis, CMLA and Kayros, France; Gabriele Facciolo, CMLA, France

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 QUANTITATIVE ANALYSIS OF FULL AND SIMULATED COMPACT POLARIMETRIC SAR DATA FOR WETLAND MAPPING
10:40
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 A NOVEL RADAR VEGETATION INDEX FOR COMPACT POLARIMETRIC SAR DATA
11:00
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 RISAT-1 SAR HRS MODE DATA QUALITY EVALUATION
11:20
Maneesha Gupta, Vaibhav Malhotra, Bankim Shah, Shilpa Prakash, Anuja Sharma, Kartikeyan B, SAC/ISRO, India

FR2.R9.4 SIRV-BASED DUAL-DOMAIN FILTER FOR HIGH-RESOLUTION POLSAR IMAGE
11:40
Yexian Ren, Lingli Zhao, Jie Yang, Pingxiang Li, Wuhan University, China; Xiaoli Ding, Hong Kong Polytechnic University, China

FR2.R9.5 OBSERVING THE GERMAN WADDEN SEA - A NEW APPROACH TO DISTINGUISH SEDIMENTS AND HABITATS USING ALOS-2 PALSAR-2 DATA
12:00
Wensheng Wang, Institute of Electronics, Chinese Academy of Sciences, China; Martin Gade, Universität Hamburg, Germany

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 A VIRTUAL ADAPTIVE BEAMFORMING APPROACH FOR FEATURE ENHANCED SAR TOMOGRAPHY
15:40
Gustavo Daniel Martin-del-Campo-Becerra, Andreas Reigber, Matteo Nannini, German Aerospace Center (DLR), Germany

FR4.R9.2 ROBUST HEIGHT RECONSTRUCTION OF BUILDINGS BASED ON ESPRIT-TOMOSAR
16:00
Masanori Gocho, Hiroyoshi Yamada, Yoshio Yamaguchi, Ryoichi Sato, Niigata University, Japan; Shoichiro Kojima, National Institute of Information and Communications Technology (NICT), Japan; Motofumi Arai, Mitsubishi Electric Corporation, Japan

FR4.R9.3 UAVSAR TOMOGRAPHY OF MUNICH
16:20
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 HIGH RESOLUTION DSM GENERATION FROM ALOS-3 STEREO IMAGERIES
16:40
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 DIRECTION OF ARRIVAL ASSESSMENT IN AIRBORNE ICE-SOUNDING SYNTHETIC APERTURE RADAR
17:00
Alvaro Arenas-Pingarron, Paul Brennan, University College London, United Kingdom; Hugh Corr, British Antarctic Survey, United Kingdom

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 HINOTORI-C2 MISSION : CN235MPA AIRCRAFT ONBOARD CIRCULARLY POLARIZED SYNTHETIC APERTURE RADAR (CP-SAR)

08:00

Josephat Tetuko Sri Sumantyo, Chua Ming Yam, Cahya Edi Santosa, Good Fried Panggabean, Tamora Watanabe, Chiba University, Japan; Bambang Setiadi, Indonesian Institute of Sciences, Indonesia; Kengo Tsushima, Chiba University, Japan; Francisus Dwikoko Sri Sumantyo, Bhayangkara Jakarta Raya University, Indonesia; Karina 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 Widarsono, 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 MIRANDA35 EXPERIMENTS IN PREPARATION FOR SMALL UAV-BASED SAR

08:20

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 AXIS AIRBORNE SAR SYSTEM: FLIGHT-TEST RESULTS

08:40

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 THE ASI P-BAND HELICOPTER-BORNE INTEGRATED SOUNDER-SAR SYSTEM: PRELIMINARY RESULTS OF THE 2018 MOROCCO DESERT CAMPAIGN

09:00

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 Giofaniello, CO.RI.S.T.A., Consortium of Research on Advanced Remote Sensing Systems, Italy; Elena Domini, 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 Novioello, 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; Sanchai Thakur, University of Trento, Italy

FR1.R10.5 AN AIRBORNE MULTI-CHANNEL SAR IMAGING METHOD WITH MOTION COMPENSATION

09:20

Jiayi Guo, Jie Chen, Chunsheng Li, Wei Yang, Beihang University, China

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 FEATURE EXTRACTION OF HYPERSPECTRAL IMAGERY BASED ON DEEP NMF

13:40

Chenxi Ji, Minchao Ye, Huijuan Lu, Futian Yao, China Jiliang University, China; Yuntao Qian, Zhejiang University, China

FR3.R10.2 DUAL DICTIONARY LEARNING FOR MINING A UNIFIED FEATURE SUBSPACE BETWEEN DIFFERENT HYPERSPECTRAL IMAGE SCENES

14:00

Hong Chen, Minchao Ye, Huijuan Lu, Ling Lei, China Jiliang University, China; Yuntao Qian, Zhejiang University, China

FR3.R10.3 APPLICATION OF NONLINEAR FEATURE NORMALIZATION ON COMBINED HYPERSPECTRAL AND LIDAR DATA

14:20

Wolfgang Gross, Dimitri Bulatov, Peter Solbrig, Fraunhofer IOSB, Germany

FR3.R10.4 A METROLOGICAL SPECTRAL DIFFERENCE SPACE FOR THE STATISTICAL MODELLING OF HYPERSPECTRAL IMAGES

14:40

Hilda Deborah, Norwegian University of Science and Technology, Norway; Noël Richard, Laboratory XLIM, JRU CNRS 7252, France; Magnús Órn Úlfarsson, Jón Atli Benediktsson, University of Iceland, Iceland; Jon Yngve Hardeberg, Norwegian University of Science and Technology, Norway

FR3.R10.5 STATISTICAL FUSION-BASED TRANSFER LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION

15:00

Xiaomei Liu, Sen Jia, Meng Xu, Jiasong Zhu, Shenzhen 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 GROUND-BASED BISTATIC POLARIMETRIC INTERFEROMETRIC SYNTHETIC APERTURE RADAR SYSTEM

10:40

Suyun Wang, Weike Feng, Kazutaka Kikuta, Grigory Chernyak, Motoyuki Sato, Tohoku University, Japan

FR2.R10.2 ONLINE HIGH RESOLUTION STOCHASTIC RADIATION RADAR IMAGING USING SPARSE COVARIANCE FITTING

11:00

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 GROUND-BASED RADIATION OBSERVATIONAL METHOD IN MOUNTAINOUS AREAS

11:20

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 LARGE SCALE DIGITAL SURFACE MODEL PRODUCTION ON CLOUD USING BIG DATA TECHNOLOGIES FOR FUTURE EO MISSION

11:40

Olivier Melet, David Youssefi, Julien Michel, Myriam Courmet, Florie Languille, Laurent Lebeque, CNES, France; Cyrille Bouisson, Audrey Paccini, C.S., France

FR2.R10.5 PROVIDING REFERENCE FOREST BIOMASS DATA FOR EO IMAGERY : A COMPARISON OF FOUR IN-SITU RELASCOPE MEASURING DEVICES IN ASTURIAS, SPAIN

12:00

Mathieu Molinier, Renne Terguejoff, 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 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 A NOVEL TENSOR-BASED FEATURE EXTRACTION METHOD FOR POLSAR IMAGE CLASSIFICATION

15:40

Xiayuan Huang, Xiangli Nie, Hong Qiao, Bo Zhang, Chinese Academy of Sciences, China

FR4.R10.3 HYPERSPECTRAL IMAGE CLASSIFICATION VIA TENSOR RIDGE REGRESSION

16:20

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 INFRARED SMALL TARGET DETECTION ALGORITHM BASED ON ROBUST TENSOR DECOMPOSITION MODEL WITHIN BAYESIAN FRAMEWORK

16:40

Yihua Tan, Zhi Li, Yuan Xiao, Na Liu, Huazhong University of Science and Technology, China

FR4.R10.5 HYPERSPECTRAL IMAGE CLASSIFICATION USING TENSOR CP DECOMPOSITION

17:00

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 REVISITING THE LIMITS OF AZIMUTH PROCESSING GAIN FOR RADAR SOUNDING**
08:00
Dustin Schroeder, Davide Castelletti, Isabella Pena, Stanford University, United States
- FR1.R11.2 ASSESSING THE DETECTION PERFORMANCE ON ICY TARGETS ACQUIRED BY AN ORBITING RADAR SOUNDER**
08:20
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 SURFACE-BASED MULTI-CHANNEL RADAR SYSTEMS FOR ICE SHEET MEASUREMENTS**
08:40
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 REPEAT-PASS INTERFEROMETRY APPLIED TO ENGLACIAL LAYER VELOCITY ESTIMATION USING RADAR SOUNDER DATA**
09:00
Davide Castelletti, Dustin Schroeder, Thomas Jordan, Stanford University, United States; Duncan Young, University of Texas at Austin, United States
- FR1.R11.5 TREE TRUNK INSPECTION BY GPR WITH REFLECTION AND TRANSMISSION MEASUREMENTS**
09:20
Kazunori Takahashi, Kunio Aoike, Ken Kajino, Yayoi Ashiba, Kumi Kaneko, Nobuaki Ishizawa, OYO Corporation, Japan

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 MAXIMUM MEMBERSHIP FRACTION BASED PURE PIXEL ASSESSMENT APPROACH FOR HYPERSPECTRAL DATA ANALYSIS USING DEEP LEARNING**
13:40
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 IMPROVED UTILIZATION OF POLSAR POLARIZATION SIGNATURES USING CONVOLUTIONAL-DEEP NEURAL NETS FOR LAND COVER CLASSIFICATION**
14:00
Gopal Phartiyal, Dharmendra Singh, Indian Institute of Technology Roorkee, India; Nicolas Brodu, Hussein Yahia, INRIA, France
- FR3.R11.3 A STEP TOWARDS DIGITAL AGRICULTURE FOR DEVELOPMENT OF OBJECT BASED PHENOLOGY APPROACH TO CLASSIFY SUGARCANE AND PADDY CROPS USING MULTISENSOR DATA**
14:20
Deepak Murugan, Dharmendra Singh, IIT Roorkee, India
- FR3.R11.4 DEVELOPMENT OF MACHINE LEARNING BASED APPROACH FOR COMPUTING OPTIMAL VEGETATION INDEX WITH THE USE OF SENTINEL-2 AND DRONE DATA**
14:40
Ankush Agarwal, Sandeep Kumar, Dharmendra Singh, IIT Roorkee, India
- FR3.R11.5 IN-SEASON PREDICTION OF CROP TYPES IN THE US GREAT PLAINS USING SEQUENCE BASED STOCHASTIC MODELS AND DEEP LEARNING**
15:00
Subit Chakrabarti, Rob Braswell, Nick Malizia, Damien Sulla-Menashe, Tina Cormier, Indigo Agriculture, United States; Mark Friedl, Boston University, United States

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 MACHINE LEARNING TECHNIQUES FOR PREDICTING CROP PRODUCTION IN INDIA**
10:40
Sarthak Agarwal, Naina Narang, Manipal University Jaipur, India
- FR2.R11.2 A STEP FOR DIGITAL AGRICULTURE BY ESTIMATING NEAR REAL TIME SOIL MOISTURE WITH SCATSAT-1 DATA**
11:00
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 DIGITAL DISEASE PHENOTYPING**
11:20
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 ENHANCEMENT OF POLARIZATION MECHANISM IN PIXEL-BY-PIXEL PHASE OPTIMIZATION IN POLINSAR**
11:40
Yuta Otsuka, Ryo Natsuaki, Akira Hirose, University of Tokyo, Japan
- FR2.R11.5 DIFFERENT MODALITY BASED REMOTE SENSING DATA FUSION APPROACH FOR EFFICIENT CLASSIFICATION OF AGRICULTURE AND URBAN SUBCLASSES**
12:00
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 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 CRITICAL ANALYSIS OF FUSION ALGORITHMS FOR DIGITAL AGRICULTURE: AN EFFICIENT APPLICATION OF PALSAR DATA**
15:40
Vikas Mittal, National Institute of Technology Kurukshetra, India; Dharmendra Singh, Indian Institute of Technology Roorkee, India
- FR4.R11.2 MONITORING THE CHANGE IN WATER CLASS OF TWO RIVERS IN SANGAM REGION, PRAYAGRAJ, INDIA USING LANDSAT-8 OLI IMAGERY**
16:00
Vikash Mishra, Triloki Pant, Indian Institute of Information Technology Allahabad, India
- FR4.R11.3 POTENTIAL OF ALPHA ANGLE OF FULLY POLARIMETRIC L-BAND DATA TIME SERIES IN CHARACTERIZING FOREST DYNAMICS**
16:20
Mohamed Musthafa S, Gulab Singh, Indian Institute of Technology Bombay, India
- FR4.R11.4 EFFECT OF SURFACE ROUGHNESS PARAMETER ON SOIL MOISTURE OF WHEAT FIELD IN GROWING STAGE: AN APPLICATION OF SENTINEL-1 SAR DATA**
16:40
Nidhi Verma, Indian Institute of Information Technology Allahabad, India; Pooja Mishra, Neetesh Purohit, Indian Institute of Information Technology, India
- FR4.R11.5 STOCK VOLUME LOSS ESTIMATION IN POPLARS USING REGRESSION MODELS AND ALOS-2/PALSAR-2 BACKSCATTER**
17:00
Gulab Singh, Unmesh Khatri, Indian Institute of Technology Bombay, India; Stefano Tebaldini, Politecnico di Milano, Italy

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** **WHERE DO LABELS COME FROM?**
 08:00 *Jeff Byers, Katarina Doctor, Naval Research Laboratory, United States*
- FR1.R12.3** **THE TRUTH ABOUT GROUND TRUTH: LABEL NOISE IN HUMAN-GENERATED REFERENCE DATA**
 08:40 *Ronny Hänsch, Olaf Hellwich, Technische Universität Berlin, Germany*
- FR1.R12.4** **BUILDING AN OPERATIONALLY RELEVANT DATASET FROM SATELLITE IMAGERY**
 09:00 *Katie Rainey, Naval Information Warfare Center Pacific, United States*
- FR1.R12.5** **LEARNING TO UNDERSTAND EARTH OBSERVATION IMAGES WITH WEAK AND UNRELIABLE GROUND TRUTH**
 09:20 *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** **THE CHALLENGE OF CREATING THE SARPTICAL DATASET**
 10:40 *Yuanyuan Wang, Technical University of Munich, Germany; Xiao Xiang Zhu, German Aerospace Center (DLR) / Technical University of Munich (TUM), Germany*
- FR2.R12.2** **INTERACTIVE COCONUT TREE ANNOTATION USING FEATURE SPACE PROJECTIONS**
 11:00 *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** **AUTOMATIC EXTRACTION OF WEAK LABELED SAMPLES FROM EXISTING THEMATIC PRODUCTS FOR TRAINING CONVOLUTIONAL NEURAL NETWORKS**
 11:20 *Claudia Paris, Lorenzo Bruzzone, University of Trento, Italy*
- FR2.R12.4** **A NOVEL MULTI-ATTENTION DRIVEN SYSTEM FOR MULTI-LABEL REMOTE SENSING IMAGE CLASSIFICATION**
 11:40 *Gencer Sumbul, Begüm Demir, Technische Universität Berlin, Germany*
- FR2.R12.5** **AN OVERVIEW OF LABELS IN DEEP LEARNING**
 12:00 *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 THE AMSR2 SATELLITE-BASED MICROWAVE SNOW ALGORITHM (SMSA): A NEW ALGORITHM FOR ESTIMATING GLOBAL SNOW ACCUMULATION**
08:00
Richard Kelly, Qinghuan Li, Nastaran Saberi, University of Waterloo, Canada
- FR1.R13.3 DEVELOPMENT OF SWE RETRIEVAL METHODS IN THE ESA SNOW CCI PROJECT AND LONG TERM TRENDS IN SEASONAL SNOW MASS**
08:40
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 SPACE-TIME COVERAGE SCENARIOS FOR A GLOBAL SNOW SATELLITE CONSTELLATION**
09:00
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 EVALUATION OF SEASONAL WATER BUDGET COMPONENTS OVER THE MAJOR DRAINAGE BASINS OF NORTH AMERICA USING AN ENSEMBLE-BASED LAND SURFACE MODEL APPROACH**
09:20
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 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 CHANNEL IMBALANCE COMPENSATION WITH IF SIGNAL FOR CHINA'S IDBSAR**
13:40
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 AN ADVANCED NON-INTERRUPTED SYNCHRONIZATION SCHEME FOR BISTATIC SYNTHETIC APERTURE RADAR**
14:00
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 MULTI-APERTURE FOCUSING IN SPACEBORNE TRANSMITTER-STATIONARY RECEIVER BISTATIC SAR**
14:20
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 DOPPLER BASED AZIMUTH RECONSTRUCTION ALGORITHM FOR MULTISTATIC SAR FORMATIONS IN HIGH RESOLUTION WIDE SWATH MODE**
14:40
Nida Sakar, Marc Rodriguez-Cassola, Pau Prats-Iraola, Alberto Moreira, German Aerospace Center (DLR), Germany
- FR3.R13.5 EXPERIMENTAL SAR PROCESSORS FOR BISTATIC CONCEPTS CONSIDERING COMPANION SATELLITES**
15:00
Andrey Giardino, Marco DeFilippi, Paolo Pasquali, sarmap SA, Switzerland; Christopher Buck, European Space Agency ESA-ESTEC, Netherlands

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 A NOVEL APPROACH TO SNOW COVERAGE RETRIEVAL UNDER CLOUD-OBSCURED PIXELS BASED ON MULTITEMPORAL CORRELATION**
10:40
Milad Niroumand-Jadidi, Fondazione Bruno Kessler, Italy; Massimo Santoni, Lorenzo Bruzzone, University of Trento, Italy; Francesca Bovolo, Fondazione Bruno Kessler, Italy
- FR2.R13.2 USING OPTICAL AND THERMAL DATA FOR TRACKING SNOWMELT PROCESSES IN ALPINE AREA**
11:00
Roberto Colombo, Roberto Garzonio, Biagio Di Maura, 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 EXPLOITING THE SYNERGY BETWEEN SENTINEL-1 AND COSMO SKY-MED DATA FOR SNOW MONITORING IN ALPINE AREAS**
11:20
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 A DUAL-FREQUENCY KU-BAND RADAR MISSION CONCEPT FOR SEASONAL SNOW**
11:40
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 ESA SNOWLAB PROJECT: 4 YEARS OF WIDE BAND SCATTEROMETER MEASUREMENTS OF SEASONAL SNOW**
12:00
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

Monday, July 30 15:20 - 16:20 Room 503: Sprint Area
 Session MOP2.SPR SPRINT Presentation

MOP2 SPRINT Session

MOP2.SPR.1 THE USE OF NEAR-REAL-TIME DATA AND HIGH-RESOLUTION SATELLITE IMAGES FOR AREA IDENTIFICATION OF ILLEGAL FOREST CLEARING
 15:30 *Zuraidah Said, Rizky Firmansyah, Benita Nathania, World Resources Institute Indonesia, Indonesia*

MOP2.SPR.2 PRF SAMPLING STRATEGIES FOR SWARMSAR SYSTEMS
 15:35 *Lorenzo Iannini, Alessandro Mancinelli, Paco Lopez-Dekker, Peter Hoogeboom, Yuanhao Li, Faruk Uysal, Alexander Yarovoy, Delft University of Technology, Netherlands*

MOP2.SPR.3 EVALUATION OF GRIDDED CO2 EMISSIONS FROM NIGHT-TIME LIGHTS COMPARED WITH GEOSPATIALLY-DERIVED POPULATION DISTRIBUTIONS FOR VIETNAM, CAMBODIA, AND LAOS
 15:40 *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
Session MOP2.PA Poster

Object Detection in SAR Imaging II

Session Chair: Haipeng Wang, Fudan University

- MOP2.PA.1**
Board PA.1 **AIRCRAFT TARGET DETECTION FROM SPACEBORNE SAR IMAGE**
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**
Board PA.2 **SAR OBJECT DETECTION WITH A SALIENCY METHOD BASED ON PCA AND GLOBAL CONTRAST**
Haixiang Li, Xuelian Yu, Yonghao Tang, Xuegang Wang, University of Electronic Science and Technology of China, China
- MOP2.PA.3**
Board PA.3 **SAR TARGET RECOGNITION VIA MICRO CONVOLUTIONAL NEURAL NETWORK**
Hai Lan, Zongyong Cui, Zongjie Cao, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China
- MOP2.PA.4**
Board PA.4 **SAR TARGET DETECTION USING ADABOOST VIA GPU ACCELERATION**
Rui Min, Hongbin Quan, Zongyong Cui, Zongjie Cao, Yiming Pi, Zhengwu Xu, University of Electronic Science and Technology of China, China
- MOP2.PA.5**
Board PA.5 **SAR ATR WITH ROTATED REGION BASED ON CONVOLUTION NEURAL NETWORK**
Yin Long, Xue Jiang, Xingzhao Liu, Shanghai Jiao Tong University, China; Yuzhe Zhang, Beijing Institute of Remote Sensing Information, China
- MOP2.PA.6**
Board PA.6 **SAR SHIP DETECTION BASED ON RESNET AND TRANSFER LEARNING**
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**
Board PA.7 **A ROBUST MULTISCALE DICTIONARY LEARNING ALGORITHM FOR SAR OBJECT RECOGNITION**
Lei Tao, Xue Jiang, Ye Zhang, Xingzhao Liu, Bin Yuan, Shanghai Jiao Tong University, China
- MOP2.PA.8**
Board PA.8 **BUILT-UP AREAS EXTRACTION FROM POLSAR IMAGERY VIA 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**
Board PA.9 **AN APPROACH OF FEATURE MATCHING FOR MULTI-ANGLE SAR IMAGES 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**
Board PA.10 **ISAR IMAGING BASED ON HOMOTOPY RE-WEIGHTED L1-NORM 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**
Board PA.11 **DISTRIBUTION DISCREPANCY MAXIMIZATION METRIC LEARNING FOR SHIP CLASSIFICATION IN SYNTHETIC APERTURE RADAR IMAGES**
Yongjie Xu, Haitao Lang, Xiaopeng Chai, Beijing University of Chemical Technology, China
- MOP2.PA.12**
Board PA.12 **A FAST INFERENCE NETWORKS FOR SAR TARGET FEW-SHOT LEARNING BASED ON IMPROVED SIAMESE NETWORKS**
Jiaxin Tang, Fan Zhang, Yongsheng Zhou, Qiang Yin, Wei Hu, Beijing University of Chemical Technology, China

Monday, July 29 15:20 - 16:20 Room 501-502: Area B
Session MOP2.PB Poster

Object Detection in Urban Areas I

Session Co-Chairs: Sebastiano Serpico, University of Genoa; Xiao Xiang Zhu, German Aerospace Center (DLR)

- MOP2.PB.1**
Board PB.1 **A ROAD EXTRACTION METHOD USING DUAL-TEMPORAL HIGH-RESOLUTION SAR IMAGES**
Fanghong Xiao, Ling Tong, University of Electronic Science and Technology of China, China
- MOP2.PB.2**
Board PB.2 **DEEP CONVOLUTIONAL NEURAL NETWORK APPLICATION ON ROOFTOP DETECTION FOR AERIAL IMAGE**
Mengge Chen, Jonathan Li, University of Waterloo, Canada
- MOP2.PB.3**
Board PB.3 **POLSAR LAND COVER CLASSIFICATION VIA TENSORIAL EMBEDDING 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**
Board PB.4 **HIGHWAY TRAFFIC MONITORING ON MEDIUM RESOLUTION SATELLITE IMAGES**
Sébastien Drouyer, ENS Paris Saclay, France; Carlo De Franchis, Kayrros, France
- MOP2.PB.5**
Board PB.5 **HIERARCHICAL DETECTION FROM PARKING LOT TO VEHICLE IN 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**
Board PB.6 **A NOVEL DOMINANT FEATURE DRIVEN URBAN ROAD EXTRACTION METHOD**
Mingting Zhou, Haigang Sui, Xiaomeng Cheng, Wuhan University, China
- MOP2.PB.7**
Board PB.7 **GIS-SUPERVISED BUILDING EXTRACTION IN REMOTE SENSING IMAGES WITH NOISY-ADAPTIVE FCN**
Rui Liu, Monash University, China; Mingjie Li, Shanghai Jiao Tong University, China; Qi Wang, China Mobile, China
- MOP2.PB.8**
Board PB.8 **A FINE-GRAINED FULLY CONVOLUTIONAL NETWORK FOR EXTRACTION OF BUILDING ALONG HIGH-SPEED RAIL LINES FROM VHR REMOTE SENSING IMAGE**
Wenfeng 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**
Board PB.9 **ANALYSIS OF THE IMPACT OF GOOGLE MAPS' LEVEL ON OBJECT DETECTION**
Bing Sun, Yi Xu, Chunsheng Li, Junfei Yu, Beihang University, China
- MOP2.PB.10**
Board PB.10 **PARTIAL 3D OBJECT RETRIEVAL AND COMPLETENESS EVALUATION FOR URBAN STREET SCENE**
Yan Guo, Chenglu Wen, Xiaotian Sun, Cheng Wang, Jonathan Li, Xiamen University, China
- MOP2.PB.11**
Board PB.11 **MULTIFRACTAL PARAMETERS FOR SPECTRAL PROFILE DESCRIPTION**
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, 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, Ruijian 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**
Jiaochi 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; Airon 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; Guericc 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, Xiaofeng 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, Yuefeng 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, 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** **MOVING TARGET DETECTION AND MOTION PARAMETER ESTIMATION VIA DUAL-BEAM INTERFEROMETRIC SAR**
Board PE.1
Jinyu Bao, Xiaoling Zhang, Xinxin Tang, Shunjun Wei, Jun Shi, University of Electronic Science and Technology of China, China
- MOP2.PE.2** **HIGH-SPEED AIRCRAFT SINGLE CHANNEL SAR-GMTI BASED ON NEURAL NETWORK**
Board PE.2
Liang Li, Xiaoling Zhang, Chen Wang, Liming Pu, Jun Shi, Shunjun Wei, University of Electronic Science and Technology of China, China
- MOP2.PE.3** **IMPACT ANALYSIS OF INCIDENT ANGLE FACTOR ON HIGH-RESOLUTION SAR IMAGE SHIP CLASSIFICATION BASED ON DEEP LEARNING**
Board PE.3
Yingbo Dong, Chao Wang, Hong Zhang, Yuanyuan Wang, Bo Zhang, Chinese Academy of Sciences, China
- MOP2.PE.4** **AIRPORT AIRCRAFT DETECTION BASED ON LOCAL CONTEXT DPM IN REMOTE SENSING IMAGES**
Board PE.4
Fukun Bi, Zhihua Yang, Mingyang Lei, North China University of Technology, China; Mingming Bian, Beijing Institute of Spacecraft System Engineering, China
- MOP2.PE.5** **JOINT DETECTION OF AIRPLANE TARGETS BASED ON SAR IMAGES AND OPTICAL IMAGES**
Board PE.5
Jitao Qin, Haicheng Qu, Liaoning Technical University, China; Hao Chen, Wen Chen, Harbin Institute of Technology, China
- MOP2.PE.6** **AN AIRCRAFT DETECTION METHOD BASED ON IMPROVED MASK R-CNN IN REMOTELY SENSED IMAGERY**
Board PE.6
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** **DETECTING AND POSITIONING OF WIND TURBINE BLADE TIPS FOR UAV-BASED AUTOMATIC INSPECTION**
Board PE.7
Haowen Guo, Qiangqiang Cui, Jinwang Wang, Fang Xu, Wen Yang, Wuhan University, China; Zhengrong Li, Beijing New3S Technology Co. LTD, China
- MOP2.PE.8** **ROTATION AWARENESS BASED SELF-SUPERVISED LEARNING FOR SAR TARGET RECOGNITION**
Board PE.8
Shuai Zhang, Zaidao Wen, Zhunga Liu, Quan Pan, Northwestern Polytechnical University, China
- MOP2.PE.9** **ROTATION-INVARIANT LATENT SEMANTIC REPRESENTATION LEARNING FOR OBJECT DETECTION IN VHR OPTICAL REMOTE SENSING IMAGES**
Board PE.9
Xiwen Yao, Xiaoxu Feng, Gong Cheng, Junwei Han, Lei Guo, Northwestern Polytechnical University, China
- MOP2.PE.10** **ROTATION AND SCALE-INVARIANT OBJECT DETECTOR FOR HIGH RESOLUTION OPTICAL REMOTE SENSING IMAGES**
Board PE.10
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** **MOTION STATES CLASSIFICATION OF ROTOR TARGET BASED ON MICRO-DOPPLER FEATURES USING CNN**
Board PE.11
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** **LOW-RANK AND COLLABORATIVE REPRESENTATION FOR HYPERSPECTRAL ANOMALY DETECTION**
Board PF.1
Zhaoyue Wu, Hongjun Su, Hohai University, China; Qian Du, Mississippi State University, United States
- MOP2.PF.2** **INFRARED SMALL TARGET DETECTION BASED ON MORPHOLOGICAL FEATURE EXTRACTION**
Board PF.2
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** **A NEW INDEX FOR SANDY LAND DETECTION BASED ON THERMAL INFRARED EMISSIVITY DATA**
Board PF.3
Shanshan Chen, Huazhong Ren, Yunzhu Tao, Yitong Zheng, Yuanheng Sun, Jing Nie, Jinxin Guo, Rongyuan Liu, Wenjie Fan, Peking University, China
- MOP2.PF.4** **INVESTIGATING THE EIGENVECTOR PARAMETRIC SPACE FOR LUNAR REGOLITH CLASSIFICATION USING BISTATIC MINIATURE RADAR DATA**
Board PF.4
Shahwat Shukla, University of Twente, Netherlands; Shashi Kumar, Indian Institute of Remote Sensing, India; Valentyn Tolpekin, University of Twente, Netherlands
- MOP2.PF.5** **SEISMIC SIGNAL CLASSIFICATION USING PERCEPTRON WITH DIFFERENT LEARNING RULES**
Board PF.5
Kou-Yuan Huang, Fajar Abdurrahman, National Chiao Tung University, Taiwan
- MOP2.PF.6** **A TRAINING-FREE, ONE-SHOT DETECTION FRAMEWORK FOR GEOSPATIAL OBJECTS IN REMOTE SENSING IMAGES**
Board PF.6
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** **A REVISED RTM-BASED ALGORITHM TO REMOVE THIN CLOUDS WITHIN VISIBLE BAND DATA OF SENTINEL-2A**
Board PF.7
Yue Gao, Yong Wang, Haitao Lv, Jiang Qian, University of Electronic Science and Technology of China, China
- MOP2.PF.8** **LARGE-SCALE OIL PALM TREE DETECTION FROM HIGH-RESOLUTION REMOTE SENSING IMAGES USING FASTER-RCNN**
Board PF.8
Juepeng Zheng, Tongji University, China; Weijia Li, Maocai Xia, Runmin Dong, Haohuan Fu, Shuai Yuan, Tsinghua University, China
- MOP2.PF.9** **THIN AND THICK CLOUD REMOVAL ON REMOTE SENSING IMAGE BY CONDITIONAL GENERATIVE ADVERSARIAL NETWORK**
Board PF.9
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** **A REVISED ICA ALGORITHM TO REMOVE CIRRUS CLOUD EFFECTS IN SPECTRAL DATA OF LANDSAT-8 BANDS 1-7**
Board PF.10
Haitao Lv, University of Electronic Science and Technology of China, China; Yong Wang, East Carolina University, United States
- MOP2.PF.11** **A THIN-CLOUD REMOVAL APPROACH COMBINING THE CIRRUS BAND AND RTM-BASED ALGORITHM FOR LANDSAT-8 OLI DATA**
Board PF.11
Binxiong Zhou, Yong Wang, University of Electronic Science and Technology of China, China
- MOP2.PF.12** **CLOUD DETECTION BASED ON DEEP LEARNING COMBINING MUTI-FEATURE FOR REMOTE SENSING IMAGES**
Board PF.12
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, 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 DRBOXLIGHT: A LIGHT OBJECT DETECTION MODEL FOR REMOTE SENSING APPLICATIONS**
Board PG.1
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 DRBOX FAMILY: A GROUP OF OBJECT DETECTION TECHNIQUES FOR REMOTE SENSING IMAGES**
Board PG.2
Lei Liu, Zongxu Pan, Guowei Chen, Yizhao Gao, Institute of Electronics, Chinese Academy of Sciences, China
- MOP2.PG.3 GEOSPATIAL OBJECT DETECTION IN REMOTE SENSING IMAGES BASED ON MULTI-SCALE CONVOLUTIONAL NEURAL NETWORKS**
Board PG.3
Qunli Yao, Xian Hu, Hong Lei, University of Chinese Academy of Sciences, China
- MOP2.PG.4 OBJECT DETECTION AND INSTANCE SEGMENTATION IN REMOTE SENSING IMAGERY BASED ON PRECISE MASK R-CNN**
Board PG.4
Hao Su, Shunjun Wei, Min Yan, Chen Wang, Jun Shi, Xiaoling Zhang, University of Electronic Science and Technology of China, China
- MOP2.PG.5 OBJECT-ORIENTED AUTOMATIC AND ACCURATE SHADOW DETECTION FOR VERY HIGH SPATIAL RESOLUTION SATELLITE IMAGES**
Board PG.5
Yuwei Jin, Wenbo Xu, Donghang Shao, Xixu He, Xueru Zhang, University of Electronic Science and Technology of China, China
- MOP2.PG.6 LW-ODF: A LIGHT-WEIGHT OBJECT DETECTION FRAMEWORK FOR OPTICAL REMOTE SENSING IMAGERY**
Board PG.6
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 TARGET DETECTION BASED ON STATISTICAL SALIENCY ANALYSIS AND GEODESIC ACTIVE CONTOUR MODEL FOR SAR IMAGERY**
Board PG.7
Shan Wang, Yanan Liu, Libao Zhang, Beijing Normal University, China
- MOP2.PG.8 FINE-GRAINED GESTURE RECOGNITION BASED ON HIGH RESOLUTION RANGE PROFILES OF TERAHERTZ RADAR**
Board PG.8
Liyang Wang, Zongyong Cui, Zongjie Cao, Shengping Xu, Rui Min, University of Electronic Science and Technology of China, China
- MOP2.PG.9 TARGET DETECTION OF FORWARD-LOOKING SCANNING RADAR BASED ON LOW-RANK AND SPARSE MATRIX DECOMPOSITION**
Board PG.9
Wenchao Li, Wentao Zhang, Qiping Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China
- MOP2.PG.10 WEAKLY SUPERVISED DEEP CONVOLUTIONAL NETWORKS FOR FINE-GRAINED OBJECT RECOGNITION IN MULTISPECTRAL IMAGES**
Board PG.10
Bulut Aygunes, Selim Aksoy, Bilkent University, Turkey; Ramazan Gokberk Cinbis, Middle East Technical University, Turkey
- MOP2.PG.11 AN ADAPTIVE STATISTICAL APPROACH FOR SIMULTANEOUS CLASSIFICATION OF REMOTE SENSING SCENES INCLUDING NATURAL AND URBAN TARGETS**
Board PG.11
Leticia Sartorio, Daniel Zanotta, National Institute for Education, Science and Technology at Rio Grande do Sul, Brazil
- MOP2.PG.12 DYNAMIC THRESHOLD OIL SPILL DETECTION ALGORITHM FOR LANDSAT ETM+**
Board PG.12
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 INTERSEISMIC STRAIN ACCUMULATION ACROSS THE ZEMUHE-DALIANGSHAN FAULT ZONE IN HEAVILY-VEGETATED SOUTHWESTERN CHINA, FROM ALOS-2 INTERFEROMETRIC OBSERVATION**
Board PH.1
Xiaogang Song, Xinjian Shan, Chunyan Qu, Institute of Geology, China Earthquake Administration, China
- MOP2.PH.2 A MEASUREMENT CAMPAIGN IN HARBOR TO DETECT CHANGES OF ACTIVITIES**
Board PH.2
Viet Thuy Vu, Mats Pettersson, Blekinge Institute of Technology, Sweden; Thomas Sjögren, Swedish Defense Research Agency, Sweden; Mattias Dahl, Blekinge Institute of Technology, Sweden
- MOP2.PH.3 RESIDUAL UNET FOR URBAN BUILDING CHANGE DETECTION WITH SENTINEL-1 SAR DATA**
Board PH.3
Lu Li, Chao Wang, Hong Zhang, Bo Zhang, Chinese Academy of Sciences, China
- MOP2.PH.4 ON-BOARD WAVELET BASED CHANGE DETECTION IMPLEMENTATION OF SAR FLOOD IMAGE**
Board PH.4
Lei Shu, Guoqing Zhou, Dequan Liu, Jinjing Huang, Rongting Zhang, Fan Wang, Tianjin University, China
- MOP2.PH.5 A METHOD FOR OBSERVING SEISMIC GROUND DEFORMATION FROM AIRBORNE SAR IMAGES**
Board PH.5
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 A NOVEL ACTIVITY DETECTOR APPLIED TO SENTINEL-1 FOR SURVEILLANCE**
Board PH.6
Axel Davy, Max Dunitz, ENS Paris-Saclay, France
- MOP2.PH.7 A CHANGE DETECTION ALGORITHM FOR SAR IMAGES BASED ON LOGISTIC REGRESSION**
Board PH.7
Ricardo Simao Diniz Dal Molin Junior, Aeronautics Institute of Technology - ITA, Brazil; Rafael Antônio da Silva Rosa, Visioma 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 COHERENCE CHANGE ANALYSIS FOR MULTIPASS INSAR IMAGES BASED ON THE CHANGE DETECTION MATRIX**
Board PH.8
Thu Trang Le, Jean-Luc Froger, Alexis Hysiewicz, Raphael Paris, Université Clermont Auvergne, France
- MOP2.PH.9 MULTI-TEMPORAL QUAD-POLARIMETRIC SAR CLASSIFICATION BASED ON A CHANGE MATRIX**
Board PH.9
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 CHANGE DETECTION BETWEEN HIGH-RESOLUTION AIRBORNE SAR AND MULTISPECTRAL DATA WITH DEMPSTER-SHAFER THEORY**
Board PH.10
Julian Fagir, Max Frioud, Daniel Henke, Remote Sensing Laboratories (RSL), University of Zurich, Switzerland
- MOP2.PH.11 CHANGE DETECTION FROM UNLABELED REMOTE SENSING IMAGES USING SIAMESE ANN**
Board PH.11
Rachid Hedjam, Abdelhamid Abdesselam, Sultan Qaboos University, Oman; Farid Melgani, University of Trento, Italy
- MOP2.PH.12 DETECTION OF LAND USE TYPE USING MULTITEMPORAL SAR IMAGES**
Board PH.12
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 Qian, University of Electronic Science and Technology of China, China

Monday, July 29 15:20 - 16:20 Room 501-502: Area I
Session MOP2.PI 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** HUMAN SETTLEMENT DYNAMICS IN HURRICANE-PRONE ZONES OF CONTERMINOUS U.S.: A VIEW FROM NIGHTTIME REMOTE SENSING
Board PI.1
Xiao Huang, Cuizhen Wang, University of South Carolina, United States
- MOP2.PI.2** ESTIMATION AND PREDICTION OF VEGETATION COVERAGE IN YANCHENG NATIONAL NATURE RESERVE
Board PI.2
Yingkun Du, Wuhan University, China; Yifan Lin, Peking University, China; Jing Wang, Xuesong Kong, Zhifeng Jin, Xiang Zhao, Wuhan University, China
- MOP2.PI.3** UNSUPERVISED CHANGE DETECTION IN MULTITEMPORAL MULTISPECTRAL SATELLITE IMAGES: A CONVEX RELAXATION APPROACH
Board PI.3
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** INTERCOMPARISON OF FIVE TOP-OF-ATMOSPHERE SATELLITE ALBEDO PRODUCTS OVER LAND
Board PI.4
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** EXPLORE URBAN POPULATION DISTRIBUTION USING NIGHTTIME LIGHTS, LAND-USE/LAND-COVER AND POPULATION CENSUS DATA
Board PI.5
Yune La, Hasi Bagan, Shanghai Normal University, China; Wataru Takeuchi, University of Tokyo, Japan
- MOP2.PI.6** EFFECT ANALYSIS IN THE FINE CO-REGISTRATION OF VERY-HIGH-RESOLUTION SATELLITE IMAGES FOR UNSUPERVISED CHANGE DETECTION
Board PI.6
Youkyung Han, Sejung Jung, Kyungpook National University, Korea (South); Sicong Liu, Tongji University, China; Junho Yeom, Kyungpook National University, Korea (South)
- MOP2.PI.7** AN IMPROVED FMASK ALGORITHM IN TROPICAL REGIONS FOR LANDSAT IMAGES
Board PI.7
Mei Sun, Yanchen Bo, Lei Cui, Ruo Yang Li, Beijing Normal University, China
- MOP2.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
Board PI.8
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** RAPID IDENTIFICATION OF SEISMIC LANDSLIDES COMBINING WITH OBJECT-ORIENTED AND INDEPENDENT COMPONENT ANALYSIS TRANSFORMATION :A CASE OF THE MS6.5 EARTHQUAKE IN LUDIAN, YUNNAN
Board PI.9
Yuxue Wang, Shufang Tian, China University of Geosciences (Beijing), China; Chang Liu, Shandong University of Science and Technology, China
- MOP2.PI.10** AUTOMATIC 3D BUILDING CHANGE DETECTION USING UAV IMAGES
Board PI.10
Wenzhuo Li, Kaimin Sun, Chuan Xu, Wuhan University, China
- MOP2.PI.11** FLOOD MAPPING WITH SAR AND MULTI-SPECTRAL REMOTE SENSING IMAGES BASED ON WEIGHTED EVIDENTIAL FUSION
Board PI.11
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** TRANSFER LEARNING FOR CHANGES DETECTION IN OPTICAL REMOTE SENSING IMAGERY
Board PI.12
Larabi Mohammed Amin, Souleyman Chaib, Khadidja Bakhti, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria

Monday, July 29 15:20 - 16:20 Room 501-502: Area J
Session MOP2.PJ Poster

Analysis of Image Time Series I

Session Chair: Matthieu Molinier, VTT Technical Research Centre of Finland Ltd

- MOP2.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
Board PJ.1
Emma Bode, Rick Lawrence, Scott Powell, Amy Trowbridge, Shannon Savage, Montana State University, United States
- MOP2.PJ.2** SOIL MOISTURE ESTIMATION FROM SMAP OBSERVATIONS USING LONG SHORT-TERM MEMORY (LSTM)
Board PJ.2
Ali Ben Abbes, Ramata Magagi, Kalifa Goita, Centre d'applications et de Recherches en Télédétection (CARTEL), Canada
- MOP2.PJ.3** APPLYING SENTINEL-1 TIME SERIES ANALYSIS TO SUGARCANE HARVEST DETECTION
Board PJ.3
Mattia Stasolla, Xavier Neyt, Royal Military Academy, Belgium
- MOP2.PJ.4** LAND-USE/LAND-COVER CHANGE AND DRIVERS OF LAND DEGRADATION IN THE HORQIN SANDY LAND, CHINA
Board PJ.4
Yun Du, Hasi Bagan, Shanghai Normal University, China; Wataru Takeuchi, University of Tokyo, Japan
- MOP2.PJ.5** MONITORING A TIME-SERIES OF LAND SUBSIDENCE IN BUSAN, KOREA USING SPACE-BASED MULTI-TEMPORAL SAR OBSERVATIONS
Board PJ.5
Seo-Woo Park, Seong-Woo Jung, Sang-Hoon Hong, Pusan National University, Korea (South)
- MOP2.PJ.6** DETECTION OF SPATIOTEMPORAL CHANGES OF SURFACE MINING AREA IN CHANGTING COUNTY SOUTHEAST CHINA
Board PJ.6
Bo Wu, Jiangxi Normal University, China; Yindi Zhao, China University of Mining and Technology, China; Chaoyang Fang, Jiangxi Normal University, China
- MOP2.PJ.7** MODIS EVI TIME SERIES BREAKPOINT DETECTION FOR ONLINE DEFORESTATION MONITORING IN CHACO FOREST USING CONVOLUTIONAL NETWORKS
Board PJ.7
Francisco Grings, Esteban Roitberg, Veronica Barraza, Institute of Astronomy and Space Physics (IAFE), Argentina
- MOP2.PJ.8** A COOPERATIVE MULTITEMPORAL SEGMENTATION METHOD FOR SAR AND OPTICAL IMAGES CHANGE DETECTION
Board PJ.8
Ling Wan, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China
- MOP2.PJ.9** RESEARCH AND ANALYSIS OF LAND USE DYNAMIC CHANGE IN QINGDAO BASED ON RS AND GIS IN RECENT TEN YEARS
Board PJ.9
Yafei Wang, Xiaoli Zhao, Zengxiang Zhang, Lijun Zuo, Wang Xiao, Aerospace Information Research Institute, Chinese Academy of Sciences, China
- MOP2.PJ.10** FUSION OF OPTICAL IMAGERY AND SYNTHETIC APERTURE RADAR (SAR) FOR ECOLOGICAL CHANGE DETECTION OF NIPA PALM IN THAILAND
Board PJ.10
Jannet Bencure, Nitin Kumar Tripathi, Asian Institute of Technology, Thailand
- MOP2.PJ.11** EVALUATION OF GRIDDED CO2 EMISSIONS FROM NIGHT-TIME LIGHTS COMPARED WITH GEOSPATIALLY-DERIVED POPULATION DISTRIBUTIONS FOR VIETNAM, CAMBODIA, AND LAOS
Board PJ.11
Andrea Gaughan, University of Louisville, WorldPop, United States; Tomahiro 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
Session MOP2.PK Poster

Analysis of Image Time Series II

Session Chair: Charles Marshak, California Institute of Technology, NASA Jet Propulsion Laboratory

- MOP2.PK.1 OBJECT-ORIENTED MONITORING OF FOREST DISTURBANCES WITH ALOS/PALSAR TIME-SERIES**
Board PK.1
Charles Marshak, Marc Simard, Michael Denbina, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- MOP2.PK.2 SENSITIVITY ANALYSIS OF LAND PRODUCTIVITY CHANGE CALCULATION IN MOZAMBIQUE**
Board PK.2
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 THE IMPACT OF LAND RECLAMATION ON ESTUARINE ENVIRONMENT IN LINGDING BAY, CHINA**
Board PK.3
Bahaa Mohamadi, Shuisen Chen, Chongyang Wang, Xia Zhou, Guangzhou Institute of Geography, China
- MOP2.PK.4 INSHORE SHIP CHANGE DETECTION BASED ON SPATIAL-TEMPORAL SALIENCY**
Board PK.4
Long Ma, Zhengzhou University, China; Wenchao Liu, Zhong Han, Jue Wang, He Chen, Beijing Institute of Technology, China
- MOP2.PK.5 CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL CHANGE DETECTION**
Board PK.5
Alp Ertürk, Kocaeli University, Turkey
- MOP2.PK.6 DETECTION AND ANALYSIS OF FOREST DEGRADATION BY FIRE USING LANDSAT/OLI IMAGES IN GOOGLE EARTH ENGINE**
Board PK.6
Egidio Arai, Yosio Edemir Shimabukuro, Andeise Cerqueira Dutra, Valdete Duarte, National Institute for Space Research (INPE), Brazil
- MOP2.PK.7 EFFECTS OF LONG-TERM FIRE EXCLUSION IN THE MODIS NDVI TIME SERIES IN THE ÁGUAS EMENDADAS ECOLOGICAL STATION, BRAZIL**
Board PK.7
Nickolas Santana, Osmar Carvalho Júnior, Roberto Gomes, Renato Guimarães, Universidade de Brasília, Brazil
- MOP2.PK.8 A NEW PERSPECTIVE ON GLOBAL THERMAL ENVIRONMENT MONITORING**
Board PK.8
Xiao-Jing Han, Huajun Tang, Si-Ba 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 AUTOMATIC CLOUD REMOVAL FROM MULTI-TEMPORAL LANDSAT COLLECTION 1 DATA USING POISSON BLENDING**
Board PK.9
Changmiao Hu, Lianzhi Huo, Zheng Zhang, Ping Tang, Aerospace Information Research Institute, Chinese Academy of Sciences, China
- MOP2.PK.10 IMPROVEMENT OF MULTI-TEMPORAL VEGETATION MODELING USING HYBRID DEEP NEURAL NETWORKS OF MULTISPECTRAL REMOTE SENSING IMAGES**
Board PK.10
Khadidja Bakhtit, Khelifa Djerriri, Mohammed El Amin Arabi, Souleyman Chaib, Moussa Sofiane Karoui, Algerian Space Agency, Center for Space Technology, Algeria
- MOP2.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**
Board PK.11
Victor-Emil Neagoe, Adrian-Dumitru Ciotec, Polytechnic University of Bucharest, Romania; Lorenzo Bruzzone, University of Trento, Italy
- MOP2.PK.12 VISIBILITY DETECTION IN TIME SERIES OF PLANETSCOPE IMAGES**
Board PK.12
Tristan Dagobert, Jean-Michel Morel, Université Paris-Saclay, France; Carlo de Franchis, Kayrros, France; Rafaele Grompone von Gioi, Université Paris-Saclay, France

Monday, July 29 15:20 - 16:20 Room 501-502: Area L
Session MOP2.PL Poster

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 JURISDICTIONAL SCALE ESTIMATES OF TROPICAL DEFORESTATION. CAN ESTABLISHED SOURCES SUPPORT STRATEGIC ENVIRONMENTAL POLICIES?**
Board PL.1
Juan Ardila, Rafael Vargas, Juan Rojas, Earth Innovation Institute, United States
- MOP2.PL.2 THE USE OF NEAR-REAL-TIME DATA AND HIGH-RESOLUTION SATELLITE IMAGES FOR AREA IDENTIFICATION OF ILLEGAL FOREST CLEARING**
Board PL.2
Zuraidah Said, Rizky Firmansyah, Benita Nathania, World Resources Institute Indonesia, Indonesia
- MOP2.PL.3 SPATIO-TEMPORAL PATTERN OF CULTIVATED LAND AND AGRICULTURAL RESOURCES ANALYSIS OF CHONGMING ECO-ISLAND**
Board PL.3
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 CORN FINE CLASSIFICATION WITH GF-3 HIGH-RESOLUTION SAR DATA BASED ON DEEP LEARNING**
Board PL.4
Sisi Wei, Hong Zhang, Chao Wang, Fan Wu, Bo Zhang, Chinese Academy of Sciences, China
- MOP2.PL.5 ASSESSMENT OF LAND USE LAND COVER IN BRAZIL, SOUTH AMERICA, USING FRACTION IMAGES DERIVED FROM PROBA-V DATASETS**
Board PL.5
Yosio Edemir Shimabukuro, Egidio Arai, Valdete Duarte, Andeise Cerqueira Dutra, Brazilian National Institute for Space Research, Brazil
- MOP2.PL.6 MAPPING LAND USE AND LAND COVER IN THE BRAZILIAN NORTHEAST USING FRACTION IMAGES AND MULTI-SENSOR APPROACH**
Board PL.6
Andeise Cerqueira Dutra, Egidio Arai, Valdete Duarte, Yosio Edemir Shimabukuro, National Institute for Space Research (INPE), Brazil
- MOP2.PL.7 REMOTE SENSING INVESTIGATION OF LAND USE STATUS OF IRRAWADDY RIVER BASIN**
Board PL.7
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 DYNAMIC ATTRIBUTION ANALYSIS FOR RUNOFF CHANGE INTEGRATING LANDSAT-DERIVED LAND USE DYNAMICS WITH SWAT MODEL**
Board PL.8
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 SIMULTANEOUS RETRIEVAL OF LAND SURFACE TEMPERATURE AND EMISSIVITY FROM AHI/HIMAWARIB DATA**
Board PL.9
Shugui Zhou, Jie Cheng, Xiangchen Meng, Beijing Normal University, China

Monday, July 29 15:20 - 16:20 Room 501-502: Area M

Session MOP2.PM

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 REMOTE SENSING MONITORING AND INTEGRATED ASSESSMENT FOR THE ECO-ENVIRONMENT ALONG CHINA-PAKISTAN ECONOMIC CORRIDOR
Board PM.1

Ainong Li, Jinhui Bian, Guangbin Lei, Xi Nan, Zhengjian Zhang, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, China

MOP2.PM.2 NEXUS APPROACH FOR CALCULATING SDG INDICATOR 2.4.1 USING REMOTE SENSING AND BIOPHYSICAL MODELING
Board PM.2

Natalia Kussul, Mykola Lavreniuk, Leonid Shumilo, Andrii Kolotii, Space Research Institute NASU-SSAU, Ukraine

MOP2.PM.3 TEMPORAL VARIATIONS OF SURFACE AND ATMOSPHERE CHARACTERISTICS IN TAKLAMAKAN DESERT FROM AMSR2 OBSERVATIONS
Board PM.3

Leonid Mitnik, Vladimir Kuleshov, Maia Mitnik, Elena Khazanava, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russia

MOP2.PM.4 COMPARING ATMOSPHERIC CORRECTION PERFORMANCE FOR SENTINEL-2 AND LANDSAT-8 DATA
Board PM.4

Bringfried Pflug, Rudolf Richter, Raquel de los Reyes, Peter Reinartz, German Aerospace Centre (DLR), Germany

MOP2.PM.5 EVALUATION OF MINE EXPLOITATION INTENSITY BASED ON TOPSIS AND BP NEURAL NETWORK: A CASE STUDY IN FUJIAN PROVINCE, CHINA
Board PM.5

Yujia Chen, Shufang Tian, China University of Geosciences (Beijing), China

MOP2.PM.6 THE CO-SEISMIC SLIP INDUCED BY THE 2018 SULAWESI EARTHQUAKE ON PALU BAY IMAGED BY SAR AND OPTICAL DATA
Board PM.6

Marco Polcari, Cristiano Tolomei, Christian Bignami, Stramondo Salvatore, Istituto Nazionale di Geofisica e Vulcanologia, Italy

MOP2.PM.7 AN IMPROVED FULLY CONVOLUTIONAL NETWORK FOR LEARNING RICH BUILDING FEATURES
Board PM.7

Shuang Wang, Ligang Zhou, Pei He, Dou Quan, Qing Zhao, Xuefeng Liang, Biao Hou, Xidian University, China

MOP2.PM.8 RETRIEVING LAND SURFACE TEMPERATURE FROM HIGH SPATIAL RESOLUTION THERMAL INFRARED DATA OF CHINESE GAOFEN-5
Board PM.8

Xiangchen Meng, Jie Cheng, Shugui Zhou, Beijing Normal University, China

MOP2.PM.9 SURFACE ENERGY FLUXES RETRIEVAL IN THE ARCTIC TUNDRA AND THE BOREAL FOREST USING A THERMAL REMOTE SENSING MODEL
Board PM.9

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

Monday, July 29 15:20 - 16:20 Room 501-502: Area N

Session MOP2.PN

Poster

Land Cover Dynamics for Vegetated Terrains

Session Chair: Chengquan Huang, University of Maryland

MOP2.PN.1 EVALUATION OF FOREST DISTURBANCE AND ITS PATCH SIZE DISTRIBUTION IN CHINA FROM REMOTE SENSING PRODUCT
Board PN.1

Danxia Song, Central China Normal University, China; Tao He, Wuhan University, China; Min Feng, University of Maryland, College Park, United States

MOP2.PN.2 EVOLUTION OF THE VEGETATION COVER IN A COMPLEX MOUNTAIN ECOSYSTEM THROUGH THE PROCESSING OF MULTIPLATFORM REMOTE SENSING DATA
Board PN.2

Francisco Eugenio, Javier Marcella, Universidad de Las Palmas de Gran Canaria, Spain; Ferran Marques, Universitat Politècnica de Catalunya BarcelonaTECH, Spain

MOP2.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
Board PN.3

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 LONG-TERM SPATIOTEMPORAL CHANGES OF SURFACE ALBEDO IN NORTHEAST CHINA: EVALUATION WITH GLASS PHASE-2 SURFACE ALBEDO DATASETS
Board PN.4

Xijia Li, Mengsi Wang, Yan Song, Ying Qu, Northeast Normal University, China

MOP2.PN.5 ANALYSIS OF VEGETATION VARIATION AROUND ZIJINSHAN GOLD AND COPPER MINE, FUJIAN, CHINA
Board PN.5

Mengjing Lin, Xiaoqin Wang, Aifang Xiao, Fuzhou University, China

MOP2.PN.6 SPATIOTEMPORAL PATTERN SIMULATION OF FRACTIONAL VEGETATION COVERAGE IN THE SOUTH QILIAN MOUNTAINS BASED ON BP NEURAL NETWORK
Board PN.6

Xinmeng Wang, Binbin He, Minfeng Xing, Xiangzhuo Liu, Shuxu Gao, University of Electronic Science and Technology of China, China

MOP2.PN.7 LAND SURFACE ECOSYSTEM CHANGE DUE TO NATURAL AND ANTHROPOLOGY EFFECTS-THE ORDOS CASE, INNER MONGOLIA
Board PN.7

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 NDVI VERSUS CNN FEATURES IN DEEP LEARNING FOR LAND COVER CLASSIFICATION OF AERIAL IMAGES
Board PN.8

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 NDVI BASED SPATIAL TREND ANALYSIS TO EVALUATE GROWING CONDITIONS IN IRRIGATED AREAS OF INDUS BASIN
Board PN.9

Ali Ismaeel, Zhou Qiming, Hong Kong Baptist University, China

MOP2.PN.10 VEGETATION AND WATER VARIATION OF EJIN BANNER OASIS: NEW INSIGHTS INTO THE EXPANSION OF THE BADAIN JARAN DESERT
Board PN.10

Jiaxin Du, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science / University of Chinese Academy of Sciences, China; Bihong Fu, Qiang Guo, Pulong Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

MOP2.PN.11 DETECTION OF VEGETATION AREAS ATTACKED BY PESTS AND DISEASES BASED ON ADAPTIVELY WEIGHTED ENHANCED GLOBAL AND LOCAL DEEP FEATURES
Board PN.11

Yanshuai Dai, Li Shen, Yungang Cao, Southwest Jiaotong University, China; Tianjie Lei, China Institute of Water Resources and Hydropower Research (IWRH), China; Wenfan Qiao, Southwest Jiaotong University, China

MOP2.PN.12 ANALYSIS OF VEGETATION DYNAMICS IN BAICHENG DISTRICT, CHINA FROM SPOT-VEGETATION NDVI TIME SERIES
Board PN.12

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 PREDICTION MODEL OF LAND USE AND LAND COVER CHANGES IN BEIJING BASED ON ANN AND MARKOV_CA MODELBoard PO.1
*Qian Zhan, Jiaojiao Tian, Shufang Tian, China University of Geosciences (Beijing), China***MOP2.PO.2 LAND COVER SPURIOUS CHANGE DETECTION USING A GEO-ECO ZONING RULE BASE**Board PO.2
*Ling Zhu, Yixuan Lu, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China; Shu Peng, National Geomatics Center of China, China***MOP2.PO.3 FRAGMENT POLYGON REMOVAL IN INCREMENTAL LAND COVER MAP UPDATING**Board PO.3
*Ling Zhu, Xuanye Wei, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China***MOP2.PO.4 TEMPORAL AND SPATIAL FEATURES OF URBAN AND CONSTRUCTION LAND IN CHENGDU CITY, CHINA**Board PO.4
*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 SPATIO-TEMPORAL CHARACTERISTICS OF LAND COVER CHANGES OF LIANGJIANG NEW DISTRICT IN CHINA DURING 2010-2018**Board PO.5
*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 ANALYSIS AND EXPLORE FUTURE LAND USE/COVER CHANGE BASED ON 3S AND CELLULAR AUTOMATA IN TIANJIN(CHINA)**Board PO.6
*Ruorou Wang, Tianjin Normal University, China; Yanfei Yang, Hohai University, China; Xingmei Chen, Yi Lian, Lei Chen, Tianjin Normal University, China***MOP2.PO.7 LAND USE AND LAND COVER CHANGE OF QINGHAI LAKE AND ITS SURROUNDINGS**Board PO.7
*Mujie Li, Rui Kong, Jiayi 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 INVESTIGATING WATER SUSTAINABILITY AND LAND USE/LAND COVER CHANGE (LULC) AS THE IMPACT OF TOURISM ACTIVITY IN BALI, INDONESIA**Board PO.8
*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 REMOTE SENSING ANALYSIS ON ECOSYSTEM EVOLUTION OF THE IRRAWADDY RIVER DELTA**Board PO.9
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 ESTIMATION OF FOREST COVER RESILIENCE IN INDIA USING MC2 DVMBoard PQ.1
*Pulakesh Das, Vidyasagar University; and IIT Kharagpur, India; Mukunda Dev Behera, IIT Kharagpur, India; PS Roy, ICRIASAT, India***MOP2.PQ.2 RETRIEVAL OF FRACTION OF ABSORBED PHOTOSYNTHETICALLY ACTIVE RADIATION (FPAR) BASED ON FENGYUN-3C /MERSI DATA**Board PQ.2
*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 SATELLITE-ESTIMATED WINTER MEAN MINIMUM TEMPERATURE (TN) ANALYSIS OVER 2000-2013 FOR THE TIBET AUTONOMOUS REGION OF CHINA**Board PQ.3
*Yuanyuan Wang, Zhaojun Zheng, Guicai Li, National Satellite Meteorological Center, China Meteorological Administration, China***MOP2.PQ.4 IMPACTS OF CLIMATE VARIABILITY ON HANNA LAKE IN QUETTA, PAKISTAN**Board PQ.4
*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 SURFACE ALBEDO INVERSION OF FY-3C MERSI DATA**Board PQ.5
*Chunliang Zhao, 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 MODELING CORAL REEF SUSCEPTIBILITY USING GIS MULTI-CRITERIA ANALYSIS**Board PQ.6
*Khusharrah Aslam, Rao Zahid Khalil, Saad Malik, Sumaira Zafar, Institute of Space Technology, Pakistan***MOP2.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**Board PQ.7
*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 CLIMATE DATA RECORDS FOR ATMOSPHERIC MOTION VECTORS FOR C3S**Board PQ.8
*Roger Huckle, Marie Doutriaux-Boucher, Alessio Lattanzio, Oliver Sus, Olivier Hauteceur, Jörg Schulz, EUMETSAT, Germany***MOP2.PQ.9 A GEOPHYSICAL MODEL FUNCTION FOR WIND SPEED RETRIEVAL FROM C-BAND HH-POLARIZED SYNTHETIC APERTURE RADAR**Board PQ.9
*Yiru Lu, Biao Zhang, Nanjing University of Information Science and Technology, China***MOP2.PQ.10 EXAMINATION OF TYPHOON SURFACE WIND ASYMMETRY IN NORTHWEST PACIFIC OCEAN USING SMAP OBSERVATIONS**Board PQ.10
*Ziyao Sun, Biao Zhang, Nanjing University of Information Science and Technology, China***MOP2.PQ.11 ANALYSIS ON CHANGE TREND OF PRECIPITATION USE EFFICIENCY FOR NATURAL VEGETATION IN LONG TIME SERIES IN CHINA**Board PQ.11
Lei He, Chengdu University of Information Technology, China; Yuxia Li, University of Electronic Science and Technology of China, China; Huaping Wu, National Climate Center, China

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** **APPLICABILITY ANALYSIS FOR ESTIMATING AND VALIDATING POLARIMETRIC DISTORTION PARAMETERS USING CORNER REFLECTORS FOR THE N-SAR SYSTEM**
Board PR.1
Fan Wang, Aifang Liu, Hui Xu, Nanjing Research Institute of Electronics Technology, China
- MOP2.PR.2** **ANALYSIS OF QUADRATIC PHASE ERROR INTRODUCED BY ORBIT DETERMINATION IN SPACEBORNE TRINODAL PENDULUM SAR FORMATION REAL-TIME IMAGING WITH MONTE CARLO SIMULATION**
Board PR.2
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** **EXPERIMENTAL DEMONSTRATION OF THE ABMP MODE USING THE N-SAR DATA**
Board PR.3
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** **AN ELECTROMAGNETIC SCATTERING SIMULATION BASED SEMI-PHYSICAL SYSTEM FOR SAR JAMMING**
Board PR.4
Jiaxuan Xu, Haipeng Wang, Fudan University, China; Chunzhuo Fan, Beijing Institute of Remote Sensing Information, China; Feng Xu, Fudan University, China
- MOP2.PR.5** **SAR IMAGE RECTIFICATION BASED ON VECTOR MAP**
Board PR.5
Feng Wang, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China
- MOP2.PR.6** **CALIBRATION OF NEW ALONG-TRACK INTERFEROMETRIC SAR INSTRUMENT IN PI-SAR X2 SYSTEM**
Board PR.6
Shoichiro Kojima, National Institute of Information and Communications Technology (NICT), Japan
- MOP2.PR.7** **AUTOMATIC SUB-IMAGES EXTRACTION FROM ENTIRE URBAN SAR SCENES BASED ON THE CLUSTERING-BASED ALGORITHM AND GRAPH TRAVERSAL METHODS**
Board PR.7
Jie Li, Ran Cheng, Yesheng Gao, Xue Jiang, Bin Yuan, Ye Zhang, Xingzhao Liu, Shanghai Jiao Tong University, China
- MOP2.PR.8** **DEVELOPMENT AND COMPARISON OF DDS AND MULTI-DDS CHIRP WAVEFORM GENERATOR**
Board PR.8
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** **A SPACEBORNE SAR CALIBRATION SIMULATOR BASED ON GAOFEN-3 DATA**
Board PR.9
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** **ADVANTAGES AND LIMITATIONS OF FORWARD SQUINT SAR IN SINGLE PASS INTERFEROMETRIC MAPPING OF TOPOGRAPHY**
Board PR.10
Alexander Zakharov, Kotel'nikov Institute of Radioengineering and Electronics, RAS, Russia; Pavel Denisov, Ministry of agriculture of Russian Federation, Russia
- MOP2.PR.11** **PARAMETER DESIGN OF MULTI - MODE SMALL SATELLITE SAR SYSTEM**
Board PR.11
Wei qiang 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** **PRF SAMPLING STRATEGIES FOR SWARMSAR SYSTEMS**
Board PR.12
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** **ON THE USE OF CNN FOR AUTOMATED QUALITY ASSESSMENT OF GF-3 POLARIMETRIC DATA**
Board PS.1
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** **A 3.6 GHZ X-BAND WIDEBAND EXPERIMENTAL AIRBORNE SAR SYSTEM**
Board PS.2
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** **MAXIMUM NESIGMAO BASED ON THE NEW STEERING STRATEGY FOR GEO SAR**
Board PS.3
Sen Yuan, Chunsheng Li, Ze Yu, Jiwen Geng, Jindong Yu, Beihang University, China
- MOP2.PS.4** **PASSIVE BISTATIC SAR IMAGING AND INTERFEROMETRY BY USING SATELLITE DIGITAL TV SIGNAL**
Board PS.4
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** **INITIAL RESULTS FROM THE 2019 NISAR ECOSYSTEM CAL/VAL EXERCISE IN THE SE USA**
Board PS.5
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** **POLARIMETRIC CALIBRATION OF L-BAND AIRBORNE SAR DATA**
Board PS.6
Abhisek Maiti, University of Twente, Faculty of ITC, Indian Institute of Remote Sensing, ISRO, India; Shashi Kumar, Indian Institute of Remote Sensing, ISRO, India; Valenty Tolpekin, University of Twente, Faculty of ITC, Netherlands; Shefali Agarwal, Indian Institute of Remote Sensing, ISRO, India
- MOP2.PS.7** **AN ERROR ESTIMATION METHOD FOR STEPPED FREQUENCY CHIRP SAR SIGNAL BASED ON RECEIVED ECHOES**
Board PS.7
Taoli Yang, Qihuang Huang, Yuanbin Cui, University of Electronic Science and Technology of China, China
- MOP2.PS.8** **TRI-FREQUENCY SYNTHETIC APERTURE RADAR FOR THE MEASUREMENTS OF SNOW WATER EQUIVALENT**
Board PS.8
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** **CALIBRATION OF HIGH-RESOLUTION POLARIMETRIC IMAGING SAR ACCOUNTING FOR THE IMPULSE RESPONSE OF THE ACTIVE POINT-TARGET AND THE SAR AMBIGUITY FUNCTION**
Board PS.9
Mani Kashanianfard, University of Michigan, United States; Kamal Sarabandi, University of Michigan - Radlab, United States
- MOP2.PS.10** **METHOD TO SUPPRESS TRANSIENT INTERFERENCE IN THE SKYWAVE OTHR**
Board PS.10
Ziwei Liu, Shanshan Zhao, Gengxin Zhang, Nanjing University of Posts and Telecommunications, China

Tuesday, July 30 09:40 - 10:40 Room 503: Sprint Area
 Session TUP1.SPR SPRINT Presentation

TUP1 SPRINT Session

- TUP1.SPR.1** **INSAR REMOTE SENSING OF ATMOSPHERE: BRIDGING HIGH RESOLUTION DATA AND NWP MODELS**
 09:50 *Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Pedro Mateus, João Catalão, Instituto Dom Luiz (IDL), Universidade de Lisboa, Portugal*
- TUP1.SPR.2** **HIGH RESOLUTION CHANGE DETECTION USING PLANET MOSAIC**
 09:55 *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** **EMPIRICAL CORRECTION OF TIDES AND INVERSE BAROMETER EFFECT PHASE COMPONENTS FROM DOUBLE DINSAR AND REGIONAL MODELS**
 15:30 *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** **A STATISTICAL APPROACH TO IMPROVE VIRTUAL DIMENSIONALITY OF HYPERSPECTRAL DATA**
 15:35 *Vijayashekhhar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodara, India; Bhargab Chattopadhyay, Indian Institute of Management Vishakapatnam, India*
- TUP2.SPR.3** **ADVANCEMENT IN BEDFAST LAKE ICE MAPPING FROM SENTINEL-1 SAR DATA**
 15:40 *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

Atmospheric Sounding I

Session Chair: Haris Haralambous, Frederick University, Frederick Research Center

- TUP2.PA.1 REMOTE SENSING OF WAVE SIGNATURES IN THE IONOSPHERE OVER EASTERN MEDITERRANEAN**
Board PA.1
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 A NEW TYPE OF SENSOR FOR ENVIRONMENTAL MONITORING OF FOG AND HAZE**
Board PA.2
Jingli Wang, Institute of Urban Meteorology, China Meteorological Administration, China
- TUP2.PA.3 THE ON-ORBIT PERFORMANCE OF FY-3D GNOS**
Board PA.3
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 EXTINCTION ÅNGSTRÖM EXPONENTS OF COATED SOOT PARTICLES: A NUMERICAL INVESTIGATION BASED ON CLOSED-CELL MODEL**
Board PA.4
Jia Liu, Yongming Zhang, Qixing Zhang, University of Science and Technology of China, China
- TUP2.PA.5 CONSTRAINING ANTHROPOGENIC EMISSION SOURCES FROM TROPOMI: A CASE STUDY IN NORTHERN CHINA**
Board PA.5
Haotian Zong, Beijing 101 High School, China; Zhao-Cheng Zeng, California Institute of Technology, United States; Xinhuiyu Liu, Lanzhou University, China
- TUP2.PA.6 COMPARING THE THERMAL STRUCTURES OF TROPICAL CYCLONES DERIVED FROM ATMS AND MWHS**
Board PA.6
Fuzhong Weng, Key State Laboratory of Severe Weather, China; Hao Hu, Yang Han, Nanjing University of Information Science and Technology, China
- TUP2.PA.7 DETERMINATION OF TOTAL PRECIPITABLE WATER FROM GNSS DATA IN THAILAND**
Board PA.7
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 EQUILIBRIUM ON-LINE WAVELENGTH SELECTION OF DIFFERENTIAL ABSORPTION LIDAR FOR DETECTING ATMOSPHERIC CARBON DIOXIDE**
Board PA.8
Ailin Liang, Nanjing University of Information Science and Technology, China
- TUP2.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**
Board PA.9
Omkar Pradhan, University of Colorado, United States; Lawrence Scally, Colorado Engineering Inc., United States; Albin Gasiewski, University of Colorado, United States

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** **SYSTEM ERROR ANALYSIS OF AN AIRBORNE ALONG-TRACK INTERFEROMETRIC FMCW SAR FOR SURFACE VELOCITY ESTIMATE**
Board PB.1
Huazeng Deng, Gordon Farquharson, University of Washington, Seattle, United States; Mikhail Balaban, O.Ya. Usikov Institute for Radiophysics and Electronics of NASU, Ukraine; John Sahr, Andrew Jessup, University of Washington, Seattle, United States
- TUP1.PB.2** **AN ENHANCED REFINED FILTER FOR SAR INTERFEROMETRIC NOISE**
Board PB.2
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** **INTERFEROMETRIC PHASE STACK DENOISING VIA NONLOCAL HIGHER ORDER ROBUST PCA METHOD**
Board PB.3
Rui Wang, Yanan You, Wenli Zhou, Beijing University of Posts and Telecommunications, China
- TUP1.PB.4** **ON THE USE OF ARTIFICIAL FREQUENCY-STABLE REFLECTORS IN SPLIT-BAND INTERFEROMETRY**
Board PB.4
Ludvine Libert, Dominique Derauw, Quentin Glaude, Anne Orban, Christian Barbier, Université de Liège, Belgium
- TUP1.PB.5** **ACCURATE INTERFEROMETRIC PARAMETER ESTIMATION OF AIRBORNE MULTI-BASELINE INSAR DATA WITHOUT CORNER REFLECTORS**
Board PB.5
Xiaotong Dang, Bingnan Wang, Liangjiang Zhou, Maosheng Xiang, Aerospace Information Research Institute, Chinese Academy of Sciences, China
- TUP1.PB.6** **AN OPTIMIZATION OF WEIGHTED MULTI-BASELINE LS UNWRAPPING ALGORITHM BASED ON QUALITY MAP**
Board PB.6
Xinyue Fan, Xiaoling Zhang, Zhi Liu, Huan Dang, University of Electronic Science and Technology of China, China
- TUP1.PB.7** **A NEW INTERFEROMETRIC PHASE UNWRAPPING METHOD BASED ON ENERGY MINIMIZATION FROM CONTEXTUAL MODELING**
Board PB.7
Ayouub 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** **MOON-BASED SAR FOR EARTH OBSERVATION AND ITS SPATIAL BASELINE DECORRELATION IN REPEAT-PASS INTERFEROMETRY**
Board PB.8
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** **JOINT MULTI-CHANNEL SPARSE METHOD OF ROBUST PCA FOR SAR GROUND MOVING TARGET IMAGE INDICATION**
Board PB.9
Gang Xu, Southeast University, China; Xianpeng Wang, Hainan University, China; Yan Huang, Longzhu Cai, Zhihao Jiang, Southeast University, China
- TUP1.PB.10** **PSINSAR BASED LAND DEFORMATION BASED DISASTER MONITORING USING SENTINEL-1 DATASETS**
Board PB.10
Shubham Awasthi, Kamal Jain, Akshay Pandey, Indian Institute of Technology Roorkee, India
- TUP1.PB.11** **THE LOCATION MODEL OF PLATFORM IN INSAR/INS INTEGRATED NAVIGATION SYSTEM**
Board PB.11
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** **THE USE OF INSAR TECHNOLOGY TO CHARACTERIZE LAND SURFACE DEFORMATION IN THE CANTO DO AMARO OILFIELD, NORTHEASTERN BRAZIL**
Board PB.12
Enrico Pedrosa, 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** **SPATIOTEMPORAL PATTERN OF AQI IN SHANDONG, CHINA USING THE EMPIRICAL ORTHOGONAL FUNCTION ANALYSIS**
Board PB.1
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** **SMILES-2 BAND SELECTION STUDY FOR CHEMICAL SPECIES**
Board PB.2
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** **SOUNDING THE ORIGIN OF L-BAND SAR STRIPES IN THE EQUATORIAL IONOSPHERE: COORDINATED OBSERVATION OF ALOS-2 AND AIR GLOW IMAGER**
Board PB.3
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** **MEASURING VECTOR VELOCITY OF MIDDLE ATMOSPHERE BY MU RADAR**
Board PB.4
Junfeng Xiao, Zhangyou Chen, Wuhan University, China; Hiroyuki Hashiguchi, Kyoto University, Japan
- TUP2.PB.5** **MEASUREMENT AND VALIDATION OF IONOSPHERIC TEC BASED ON CHINESE AREA POSITIONING SYSTEM**
Board PB.5
Liang Li, Jun Hong, Feng Ming, Liangjiang Zhou, Institute of Electronics, Chinese Academy of Sciences, China
- TUP2.PB.6** **A STATISTICAL ANALYSIS OF SPREAD F OCCURRENCE DURING MINIMUM AND MAXIMUM SOLAR ACTIVITIES IN LOW LATITUDE REGION**
Board PB.6
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** **ANALYSIS OF IONOSPHERIC IRREGULARITIES IN LOW LATITUDE DURING GEOMAGNETIC STORM USING GISTM NETWORK**
Board PB.7
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** **THE RELATIONSHIPS BETWEEN ERRORS OF DEM AND THE HEIGHT OF AMBIGUITY OF SENTINEL-1**
Board PC.1
Takashi Nonaka, Tomohito Asaka, Keishi Iwashita, Nihon University, Japan; Fumitaka Ogushi, Harris Geospatial Solutions K.K., Japan
- TUP1.PC.2** **MONITORING MT. SHINMOE'S CRATER ACTIVITY USING THE TIMESERIES PALSAR-2 INTERFEROMETRY**
Board PC.2
Kaho Fujiyama, Shimada Masanobu, Tokyo Denki University, Japan
- TUP1.PC.3** **IDENTIFICATION OF HIDDEN BUILDING FOOTPRINTS IN INTERFEROMETRIC PHASE PROFILE**
Board PC.3
Jyunpei Uemoto, National Institute of Information and Communications Technology (NICT), Japan
- TUP1.PC.4** **A MODIFIED GOLDSTEIN FILTER FOR INTERFEROGRAM DENOISING BASED ON RESIDUE DENSITY**
Board PC.4
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** **MEASUREMENT OF ALONG-TRACK SURFACE DISPLACEMENTS BY SAR: MULTI-APERTURE INTERFEROMETRY VS. AMPLITUDE PIXEL OFFSET**
Board PC.5
Hiroshi Kimura, Gifu University, Japan
- TUP1.PC.6** **AN ESTIMATION STUDY ON AREAL GROUND SUBSIDENCE IN HATAYAMA, SAITAMA USING TIME SERIES INTERFEROMETRIC SAR**
Board PC.6
Wataru Iwatate, Shimada Masanobu, Tokyo Denki University, Japan
- TUP1.PC.7** **VELOCITY ESTIMATION IN MULTI-CHANNEL SAR BASED ON MAXIMUM PROBABILITY METHOD**
Board PC.7
Yahua Ren, Junfeng Wang, Xingzhao Liu, Shanghai Jiao Tong University, China
- TUP1.PC.8** **TWO-DIMENSIONAL DISPLACEMENT ANALYSIS OF BUILDINGS BASED ON PERSISTENT SCATTERER CLUSTERING AND MAP DATA**
Board PC.8
Daisuke Ikefuji, Taichi Tanaka, Osamu Hoshuyama, NEC Corporation, Japan
- TUP1.PC.9** **INTERFEROMETRIC PHASE CHARACTERISTICS ANALYSIS AND UNWRAPPING METHOD OF AIRBORNE INSAR IN LOW COHERENCE AREA**
Board PC.9
Fangfang Li, Yueting Zhang, Donghui Hu, Chibiao Ding, Jiayin Liu, Institute of Electronics, Chinese Academy of Sciences, China
- TUP1.PC.10** **A MULTIPATH-BASED FEATURE FOR 3-D RECONSTRUCTION OF BUILDINGS BASED ON SAR TOMOGRAPHY**
Board PC.10
Ruichang Cheng, Xingdong Liang, Fubo Zhang, Wei Sun, Qichang Guo, Institute of Electronics, Chinese Academy of Sciences, China
- TUP1.PC.11** **A CONVEX HULL AND CLUSTER-ANALYSIS BASED FAST LARGE-SCALE PHASE UNWRAPPING METHOD FOR MULTIBASELINE SAR INTERFEROGRAMS**
Board PC.11
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** **PHASE UNWRAPPING ALGORITHM BASED ON IMPROVED WEIGHTED QUALITY GRAPH**
Board PC.12
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** **MONITORING OF VESPUCCI BRIDGE IN FLORENCE, ITALY USING A FAST REAL APERTURE RADAR AND A MIMO RADAR**
Board PC.1
Massimiliano Pieraccini, Lapo Miccinesi, Neda Rajhani, University of Florence, Italy
- TUP2.PC.2** **SMALL BASELINE SUBSET INTERFEROMETRIC SAR TECHNIQUE FOR SPATIOTEMPORAL ANALYSIS OF THE REGENT LANDSLIDES, SIERRA LEONE**
Board PC.2
Matthew Biniyam Kursah, Yong Wang, University of Electronic Science and Technology of China, China
- TUP2.PC.3** **THE 'DIRECT' ALGORITHM FOR THE EFFICIENT ESTIMATION OF MEAN DEFORMATION VELOCITY WITH PSI**
Board PC.3
Gabriel Santana Brito, Muriel Pinheiro, Pau Prats, German Aerospace Center (DLR), Germany
- TUP2.PC.4** **CONTINUOUS MONITORING THE GROUND DEFORMATION BY A STEP-BY-STEP ESTIMATOR IN MT-INSAR**
Board PC.4
Songbo Wu, Xiaoli Ding, Bochen Zhang, Hong Kong Polytechnic University, China
- TUP2.PC.5** **COMPARISON OF VARIOUS DEMS FOR HEIGHT ACCURACY ASSESSMENT OVER DIFFERENT TERRAINS OF INDIA**
Board PC.5
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** **STUDY ON POST-SEISMIC DEFORMATION OF TWO STRONG EARTHQUAKES OCCURRED IN NORTHERN TIBET PLATEAU**
Board PC.6
Chunyan Qu, Dezheng Zhao, Xinjian Shan, Xin Qiao, Institute of Geology, China Earthquake Administration, China
- TUP2.PC.7** **ROAD SURFACE DEFORMATION ASSESSMENT OF CHENGDU, CHINA USING PS-INSAR TECHNIQUE AND SENTINEL-1 MULTI-TEMPORAL SAR DATASETS**
Board PC.7
Bao Zhu, Yong Wang, University of Electronic Science and Technology of China, China
- TUP2.PC.8** **MONITORING THE STABILITY OF TIDE GAUGES USING TIME-SERIES INSAR ANALYSIS: A CASE STUDY IN POHANG, SOUTH KOREA**
Board PC.8
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** **TUNNELLING INDUCED GROUND MOVEMENTS DETECTED BY SENTINEL-1 SAR INTERFEROMETRY.**
Board PC.9
Matteo Roccheggiani, Daniela Piacentini, Emanuela Tirincanti, University of Urbino, Italy; Daniele Perissin, RASER Limited, China; Marco Menichetti, University of Urbino, Italy
- TUP2.PC.10** **MOON-BASED SAR FOR MACRO-SCALE SOLID EARTH OBSERVATION: SYSTEM PARAMETERS ANALYSIS AND DESIGN**
Board PC.10
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

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 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 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 THE CONTRIBUTION OF THE NON-LOCAL MEANS TO THE ITERATIVE MMSE SAR DESPECKLING**
Soumaya Fatnassi, Université de Gabès, Tunisia; Mohamed Yahia, Université Tunis El Manar, Tunisia; Riadh Abdelfattah, University of Carthage, IMT-Atlantique, Tunisia
- TUP1.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; Fujun 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 EVALUATION OF THE MUSYQ LAND SURFACE TEMPERATURE PRODUCT IN AN ARID AREA OF NORTHWEST CHINA**
Hua Li, Ruiho Li, Zunjian Bian, Biao Cao, Yongming Du, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- TUP1.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 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 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 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 REPEATED OBSERVATIONS WITH SHORT TIME INTERVALS FOR MEASURING TEMPERATURE DISTRIBUTION OF A VOLCANIC CRATER USING AN AIRBORNE IMAGING SPECTROMETER**
Tetsuya Jiisufuchi, 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 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 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 Science and Technology (AIST), Japan; Kazutaka Kikuta, Motoyuki Sato, Tohoku University, Japan
- TUP2.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 Science and Technology (AIST), Japan; Kazutaka Kikuta, Motoyuki Sato, Tohoku University, Japan
- TUP2.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 LANDSLIDE DETECTION AND MONITORING FOR MOUNTAINOUS 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 INSAR ERROR BUDGET FOR LARGE SCALE DEFORMATION**
Francesco De Zan, Alessandro Parizzi, Fernando Rodriguez Gonzalez, Homa Ansari, Giorgio Gomba, Ramon Brčić, Michael Eineder, German Aerospace Center (DLR), Germany
- TUP2.PD.7 ADAPTING STAMPS FOR JOINTLY PROCESSING DISTRIBUTED SCATTERERS AND PERSISTENT SCATTERERS**
Markus Even, Karlsruhe Institute of Technology (KIT), Germany
- TUP2.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 ESTIMATING DIKE ELEVATION FROM MULTI-TEMPORAL SAR IMAGES FOR EFFICIENT DIKE MANAGEMENT**
Takaya Kusakabe, Junichi Susaki, Kyoto University, Japan; Takuma Anahara, Japan Aerospace Exploration Agency (JAXA), Japan

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** ESTIMATING THE DISTRIBUTION OF HEAVY METALS IN SOIL FROM AIRBORNE HYPERSPECTRAL IMAGERY OVER JILIN GONGZHULING GOLD MINING AREA OF CHINA
Board PE.1
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** SELECTION OF PREDICTOR VARIABLES IN DOWNSCALING LAND SURFACE TEMPERATURE USING RANDOM FOREST ALGORITHM
Board PE.2
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** TEMPORAL NORMALIZATION OF LAND SURFACE TEMPERATURE DERIVED FROM AHI-8 MEASUREMENTS USING A DIURNAL TEMPERATURE CYCLE MODEL
Board PE.3
Geng-Ming Jiang, Wen-Xia Li, Fudan University, China; Guicai Li, Chuan Li, National Satellite Meteorological Center, China Meteorological Administration, China
- TUP1.PE.4** A PHYSICAL METHOD FOR RETRIEVING MICROWAVE LAND SURFACE EMISSIVITY UNDER ALL-WEATHER CONDITIONS
Board PE.4
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** IMPACT FACTORS OF DAYTIME VARIATION FOR BROADBAND LAND SURFACE EMISSIVITY OF CONCRETE ROAD
Board PE.5
Hongmei Zhao, Jiangxi Normal university, China
- TUP1.PE.6** ESTIMATION OF SPATIALLY COMPLETE LAND SURFACE EVAPOTRANSPIRATION OVER THE HEIHE RIVER BASIN
Board PE.6
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** HIGH TEMPORAL RESOLUTION LAND SURFACE TEMPERATURE RETRIEVAL FROM GLOBAL GEOSTATIONARY SATELLITE DATA
Board PE.7
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** PREDICTION OF NITROGEN CONTENT IN APPLE LEAVES BASED ON CONTINUOUS WAVELET TRANSFORM
Board PE.8
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** UPSCALING HIGH-RESOLUTION MINERALOGICAL ANALYSES TO ESTIMATE MINERAL ABUNDANCES IN DRILL CORE HYPERSPECTRAL DATA
Board PE.9
Mahdi Khodadadzadeh, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Germany
- TUP1.PE.10** A METHOD FOR ANGULAR NORMALIZATION OF LAND SURFACE TEMPERATURE PRODUCTS BASED ON COMPONENT TEMPERATURES AND FRACTIONAL VEGETATION COVER
Board PE.10
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 Gamba, German Aerospace Center (DLR)

- TUP2.PE.1** MONITORING SURFACE DEFORMATION OF TRANSMISSION CORRIDORS IN MOUNTAIN AREAS BASED ON SBAS-INSAR
Board PE.1
Hui Luo, State Grid Sichuan 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** LAND SUBSIDENCE IN BEIJING FROM 2017-2018 REVEALED BY SENTINEL-1 TOPS TIME SERIES INTERFEROMETRY
Board PE.2
Peilian Ran, Keren Dai, Chengdu University of Technology, China; Leyin Hu, Beijing Earthquake Agency, China; Tengfeng Qu, Peking University, China; Jisong Gou, Guanchen Zhuo, Chengdu University of Technology, China
- TUP2.PE.3** EXPLOITATION OF BURST OVERLAPPING AREAS OF TOPS DATA. APPLICATION TO SENTINEL-1
Board PE.3
Nestor Yague-Martinez, Pau Prats-Iraola, Muriel Pinheiro, Marc Jaeger, German Aerospace Center (DLR), Germany
- TUP2.PE.4** ASSESSMENT OF SENTINEL-1 PRODUCTS FOR REVEALING GLACIER SURFACE MOVEMENT IN INDIAN HIMALAYAS USING DIFFERENTIAL SAR INTERFEROMETRY
Board PE.4
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** INVESTIGATING THE DEFORMATION HISTORY AND FAILURE MECHANISM OF HEIFANGTAI LOESS LANDSLIDE, CHINA WITH MULTI-SOURCE SAR DATA
Board PE.5
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** A SQUEESAR DATABASE OVER THE ENTIRE JAPANESE TERRITORY
Board PE.6
Alessandro Ferretti, Fabrizio Novati, Chiara Giannico, Andrea Uffini, Iolanda Iannicella, Tre Altamira, Italy; Toshimi Mizuno, OYO Corporation, Japan
- TUP2.PE.7** ESTIMATION OF IONOSPHERIC EFFECTS ON SPACEBORNE TWINSAR-L SAR INTERFEROGRAMS
Board PE.7
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** DETECTION OF SEASONAL DEFORMATION ON OVERPASSES IN BEIJING URBAN AREA USING PS-INSAR TECHNIQUE
Board PE.8
Mingyuan Lyu, Yinghai Ke, Xiaojuan Li, Huili Gong, Lin Zhu, Capital Normal University, China

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** **CARBON DIOXIDE EMISSIONS STIMULATION AND ANALYSIS BASED ON CITY INDUSTRIAL STRUCTURE AND DMSP-OLS NIGHTTIME LIGHT DATA**
Board PF.1
Shuyi Li, Liang Cheng, Nanjing University, China
- TUP1.PF.2** **ESTIMATING MONTHLY-MEAN SOLAR RADIATION BASED ON ARTIFICIAL NEURAL NETWORK**
Board PF.2
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** **A LUT-BASED METHOD TO ESTIMATE CLEAR-SKY INSTANTANEOUS LAND SURFACE SHORTWAVE DOWNWARD RADIATION AND ITS DIRECT COMPONENT FROM MODIS DATA**
Board PF.3
Yuechi Yu, Tianxing Wang, Jiancheng Shi, Wang Zhou, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- TUP1.PF.4** **THE GLASS DAILY SURFACE NET RADIATION PRODUCT**
Board PF.4
Bo Jiang, Beijing Normal University, China; Shunlin Liang, University of Maryland, United States; Jianglei Xu, Beijing Normal University, China
- TUP1.PF.5** **SURFACE SHORTWAVE NET RADIATION ESTIMATION FROM LANDSAT DATA**
Board PF.5
Yezhe Wang, Bo Jiang, Jianglei Xu, Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University, China
- TUP1.PF.6** **A COMPREHENSIVE ASSESSMENT OF MODIS-DERIVED INSTANTANEOUS NET SURFACE SHORTWAVE RADIATION USING THE IN-SITU FLUXNET DATABASE**
Board PF.6
Wangmin Ying, Ruibo Wang, Lu Niu, Hua Wu, State Key Laboratory of Resources and Environment Information System, China
- TUP1.PF.7** **AN IN-SCENE ATMOSPHERIC COMPENSATION ALGORITHM FOR ASTER THERMAL BAND**
Board PF.7
Mengshuo Chen, Xiaoguang Jiang, Hua Wu, Ning Wang, Ronglin Tang, University of Chinese Academy of Sciences, China
- TUP1.PF.8** **UV RADIATION ESTIMATION IN THE UNITED STATES USING MODIS DATA**
Board PF.8
Congyuan Pei, Tao He, Wuhan University, China
- TUP1.PF.9** **CLOUDY-SKY LAND SURFACE LONGWAVE UPWARD RADIATION DERIVATION FROM SATELLITE MEASUREMENTS**
Board PF.9
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** **RECONSTRUCTION OF DAILY EVAPOTRANSPIRATION ON CLOUDY SKY CONDITIONS FROM FIELD AND MODIS DATA**
Board PF.10
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** **STUDY ON GROUNDWATER AND DEFORMATION TIME SERIES FROM ASAR AND TERRASAR-X USING SHORT BASELINE TCPINSAR AND IN-SITU MEASUREMENTS IN SHANGHAI**
Board PF.1
Yanling Chen, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; Jicang Wu, Tongji University, China
- TUP2.PF.2** **MONITORING OF URBAN LANDSLIDES WITH VERY HIGH RESOLUTION DATA: THE CASE STUDY OF LATRONICO**
Board PF.2
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** **MONITORING OF GROUND DISPLACEMENT IN GERMANO IRON MINING COMPLEX, MARIANA-MG, BRAZIL, WITH A-DINSAR TECHNIQUES USING TERRASAR-X DATA.**
Board PF.3
José Claudio Mura, Fabio Furlan Gama, Waldir Renato Paradelo, National Institute for Space Research (INPE), Brazil; Cleber Gonzales Oliveira, VISIONA Tecnologia Espacial, Brazil; Samuel Carneiro, SAMARCO Mineração S.A., Brazil
- TUP2.PF.4** **MONITORING LAND SUBSIDENCE IN GUATEMALA CITY USING TIME-SERIES INTERFEROMETRY**
Board PF.4
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** **MAPPING COASTAL SUBSIDENCE OVER HANGZHOU BAY USING ADVANCED MULTI-TEMPORAL INSAR TECHNIQUE WITH DISTRIBUTED SCATTERER**
Board PF.5
Qishi Sun, Liming Jiang, Institute of Geodesy and Geophysics, Chinese Academy of Sciences, China
- TUP2.PF.6** **STRUCTURAL HEALTH AND STABILITY ASSESSMENT OF QINGHAI-TIBET POWER TRANSMISSION LINE WITH TIME-SERIES INSAR USING X-BAND TERRASAR DATA**
Board PF.6
Zhengjia Zhang, Peng Fan, Xiuguo Liu, Mengmeng Wang, Chao Wang, Hong Zhang, Faculty of Information Engineering, China University of Geosciences, China
- TUP2.PF.7** **URBAN HAZARDS MANAGEMENT USING SENTINEL-1 DATA, APPLICATION TO ALEXANDRIA CITY, EGYPT**
Board PF.7
Tamer ElGharbawi, Suez Canal University, Egypt
- TUP2.PF.8** **INCREASING INSAR COVERAGE IN VEGETATED AND ROUGH TERRAIN USING TEMPORAL STABLE PIXELS**
Board PF.8
Tamer ElGharbawi, Suez Canal University, Egypt; Masayuki Tamura, Kyoto University, Japan
- TUP2.PF.9** **ESTIMATION OF GROUND DEFORMATION USING PSINSAR WITH L-BAND ALOS PALSAR DATA: A CASE STUDY OF KOLKATA, INDIA**
Board PF.9
Kousik Biswas, Debashish Chakravarty, Pabitra Mitra, Indian Institute of Technology Kharagpur, India; Arundhati Misra, Indian Space Research Organisation, India
- TUP2.PF.10** **SPATIO-TEMPORAL SUBSIDENCE ESTIMATION OF JHARIA COAL FIELD, INDIA USING SBAS-DINSAR WITH COSMO-SKYMED DATA**
Board PF.10
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, 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 IMPROVING MODELS OF URBAN GREEN VOLUME ESTIMATION USING LIDAR DATA**
Board PG.1
Qiuping Zhai, Linyi University, China; Tianyu Hu, Yanjun Su, Shichao Jin, Shang Gao, Qinghua Guo, Chinese Academy of Sciences, China
- TUP1.PG.2 URBAN AREA IMPERVIOUS SURFACE ESTIMATION BY SUBPIXEL UNMIXING**
Board PG.2
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; Cheir-I Chang, University of Maryland, Baltimore County, United States
- TUP1.PG.3 RECONSTRUCTION OF 3D ZEBRA CROSSINGS FROM MOBILE LASER SCANNING POINT CLOUDS**
Board PG.3
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 SUBPIXEL URBAN MAPPING OVER THE CONTERMINOUS U.S. (CONUS) USING S-NPP VIIRS**
Board PG.4
Huiran Jin, New Jersey Institute of Technology, United States
- TUP1.PG.5 DEEP DESPECKLING OF SAR IMAGES**
Board PG.5
Dusan Gleich, Danijel Sipoš, University of Maribor, Slovenia
- TUP1.PG.6 SELF-NORMALIZING GENERATIVE ADVERSARIAL NETWORK FOR SUPER-RESOLUTION RECONSTRUCTION OF SAR IMAGES**
Board PG.6
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 RAPID IDENTIFICATION OF EVAPOTRANSPIRATION FEATURES USING NORMALIZED DIFFERENCE LATENT HEAT INDEX (NDLI)**
Board PG.7
Yue-An Liou, Le Mai Son, National Central University, Taiwan
- TUP1.PG.8 TWO STAGE ESTIMATION PROCEDURE FOR SPATIAL REGRESSION MODELS AND MODEL SELECTION**
Board PG.8
Shojiro Tanaka, Hiroshima University of Economics, Japan; Ryuei Nishii, Nagasaki University, Japan; Gigih Fitrianto, Hiroshima University of Economics, Japan
- TUP1.PG.9 SPARSE LAYER INVERSION USING LINEAR PROGRAMMING APPROACH**
Board PG.9
Patitapaban Palo, Sanket Simarak Panda, Rakesh Mandal, Aurobinda Routray, IIT Kharagpur, India
- TUP1.PG.10 ERROR ANALYSIS ON NMF2 PREDICTED BY IRI-2016 MODEL DURING GEOMAGNETIC QUIET AND STORM PERIODS**
Board PG.10
Weihua Bai, Guangyuan Tan, Yueqiang Sun, Qifei Du, Junming Xia, National Space Science Center, Chinese Academy of Sciences, China
- TUP1.PG.11 AN OPTRONIC PROCESSOR FOR ULTRA-WIDEBAND SPECTRUM AWARENESS**
Board PG.11
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 MULTI-TASK LEARNING WITH LOW-RANK MATRIX FACTORIZATION FOR HYPERSPECTRAL NONLINEAR UNMIXING**
Board PG.1
Yuanhao 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 ENDMEMBER BUNDLE EXTRACTION BASED ON PURE PIXEL INDEX AND SUPERPIXEL SEGMENTATION**
Board PG.2
Ziqiang Hua, Xiaorun Li, Zhejiang University, China; Liaoying Zhao, Hangzhou Dianzi University, China
- TUP2.PG.3 TWO-DIMENSIONAL ROBUST NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL UNMIXING**
Board PG.3
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 HYPERSPECTRAL UNMIXING BASED ON SPARSITY-CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION WITH ADAPTIVE TOTAL VARIATION**
Board PG.4
Xin-Ru Feng, Heng-Chao Li, Rui Wang, Southwest Jiaotong University, China
- TUP2.PG.5 HYPERSPECTRAL UNMIXING VIA L1/4 SPARSITY-CONSTRAINED MULTILAYER NMF**
Board PG.5
Zihan Zhang, Qi Wang, Yuan Yuan, Northwestern Polytechnical University, China
- TUP2.PG.6 HYPERSPECTRAL UNMIXING USING WEIGHTED L1/2 SPARSE TOTAL VARIATION REGULARIZED AND VOLUME PRIOR CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION**
Board PG.6
Kewen Qu, Wenxing Bao, North Minzu University / Hefei University of Technology, China; Xiangfei Shen, North Minzu University, China
- TUP2.PG.7 DEEP UNFOLDED ITERATIVE SHRINKAGE-THRESHOLDING MODEL FOR HYPERSPECTRAL UNMIXING**
Board PG.7
Qipeng Qian, Shanghai Jiao Tong University, China; Fengchao Xiong, Zhejiang University, China; Jun Zhou, Griffith University, Australia
- TUP2.PG.8 SUPERPIXEL-GUIDED SPARSE UNMIXING FOR REMOTELY SENSED HYPERSPECTRAL IMAGERY**
Board PG.8
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 A NOVEL APPROACH FOR ABUNDANCE ESTIMATION IN WAVELET DOMAIN**
Board PG.9
Vijayashankar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodara, India

Tuesday, July 30 09:40 - 10:40 Room 501-502: Area H
Session TUP1.PH Poster

Estimation Methods for Hyperspectral and Multispectral Data

Session Co-Chairs: Shutao Li, Hunan University; Stefania Matteoli, National Council of Research (CNR)

- TUP1.PH.1** **NON-CONVEX RELAXATION LOW-RANK TENSOR COMPLETION FOR HYPERSPECTRAL IMAGE RECOVERY**
Board PH.1
Hanyang Li, Hongyi Liu, Jun Zhang, Zebin Wu, Zhihui Wei, Nanjing University of Science and Technology, China
- TUP1.PH.2** **CONSTRAINED LOW-TUBAL-RANK TENSOR RECOVERY FOR HYPERSPECTRAL IMAGES MIXED NOISE REMOVAL BY BILATERAL RANDOM PROJECTIONS**
Board PH.2
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** **SYNERGISTIC INVERSION OF RICE FPAR BASED ON OPTICAL AND RADAR REMOTE SENSING DATA**
Board PH.3
Yu Zhang, Shihua Li, Ze He, Yuhua Liu, Zhonghua Su, University of Electronic Science and Technology of China, China
- TUP1.PH.4** **RETRIEVAL OF LEAF NITROGEN CONCENTRATION IN WINTER WHEAT USING RED EDGE BAND AND ARTIFICIAL NEURAL NETWORK**
Board PH.4
Tianyuan Zhang, Qiming Qin, Juan Sui, Yao Zhang, Cong Zhao, Peking University, China
- TUP1.PH.5** **DECS-NET: CONVOLUTIONAL SELF-ENCODING NETWORK FOR HYPERSPECTRAL IMAGE DENOISING**
Board PH.5
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** **RETRIEVAL OF SOLAR-INDUCED CHLOROPHYLL FLUORESCENCE WITH PRINCIPAL COMPONENT ANALYSIS METHOD**
Board PH.6
Menghao Ji, Bo-Hui Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China
- TUP1.PH.7** **A CNN BASED CLOUD REMOVAL MODEL USING MULTI-TEMPORAL REMOTE SENSING IMAGES**
Board PH.7
Peiyu Dai, Shiqing Wei, Shunping Ji, Wuhan University, China
- TUP1.PH.8** **HYPERSPECTRAL COMPRESSIVE SENSING VIA SPATIAL-SPECTRAL TOTAL VARIATION REGULARIZED LOW-RANK TENSOR DECOMPOSITION**
Board PH.8
Ting Xie, Shutao Li, Bin Sun, Hunan University, China
- TUP1.PH.9** **NONLINEAR RELATIVE RADIOMETRIC NORMALIZATION FOR LANDSAT 7 AND LANDSAT 8 IMAGERY**
Board PH.9
Lino Garda Denaro, Chao-Hung Lin, National Cheng Kung University, Taiwan
- TUP1.PH.10** **TOTAL VARIATION REGULARIZED LOW-RANK SPARSITY DECOMPOSITION FOR BLIND CLOUD AND CLOUD SHADOW REMOVAL FROM MULTITEMPORAL IMAGERY**
Board PH.10
Yang 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** **THIN CLOUD REMOVAL WITH RESIDUAL SYMMETRICAL CONCATENATION NETWORK**
Board PH.11
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** **ESTIMATION OF NET SURFACE SHORTWAVE RADIATION FROM SIMULATED CHINESE GAOFEN-5 SATELLITE DATA**
Board PH.12
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** **AN IMPROVED MOVING TARGET DETECTION METHOD BASED ON RPCA FOR SAR SYSTEMS**
Board PH.1
Yifan Guo, Guisheng Liao, Jun Li, Tong Gu, Xidian University, China
- TUP2.PH.2** **UAV TARGET DETECTION ALGORITHM USING GNSS-BASED BISTATIC RADAR**
Board PH.2
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** **HYDROMETEOR MODEL ENHANCEMENT FOR DOPPLER POLARIMETRIC METHOD OF ATMOSPHERIC HAZARDS DETECTION**
Board PH.3
Felix Yanovsky, Anna Rudiakova, Yuliya Averyanova, National Aviation University, Ukraine
- TUP2.PH.4** **MULTISTATIC BEIDOU-BASED PASSIVE RADAR FOR MARITIME MOVING TARGET DETECTION AND LOCALIZATION**
Board PH.4
Chuan Huang, Zhongyu Li, Junjie Wu, Yulin Huang, Haiguang Yang, Jianyu Yang, University of Electronic Science and Technology of China, China
- TUP2.PH.5** **A NOVEL METHOD OF MITIGATING THE MUTUAL INTERFERENCE BETWEEN MULTIPLE LFM CW RADARS FOR AUTOMOTIVE APPLICATIONS**
Board PH.5
Zhihua Xu, Quan Shi, Jiajia Shi, Han Wang, Ming Wei, Ruifeng Gao, Yejin Shao, Huairan Tao, Nantong University, China
- TUP2.PH.6** **TRACKING OF MOVING TARGET BASED ON CFWCW IN VIDEO SAR SYSTEM**
Board PH.6
Gaopeng Li, Harbin Institute of Technology, China; Zhenhua Xu, Hong Kong University of Science and Technology, China; Zhan Liang, Yun Zhang, Harbin Institute of Technology, China
- TUP2.PH.7** **COMPARISON OF TARGET DETECTION PERFORMANCE FOR RADIANCE AND REFLECTANCE DOMAIN IN VNIR HYPERSPECTRAL IMAGES**
Board PH.7
Omer Ozdil, Ahmet Gunes, Yunus Emre Esin, Berkan Demirel, Safak Ozturk, HAVELSAN Inc., Turkey
- TUP2.PH.8** **IMPACT OF ATMOSPHERIC CORRECTION ON THE SHIP DETECTION USING AIRBORNE HYPERSPECTRAL IMAGE**
Board PH.8
Tae-Sung Kim, Sangwoo Oh, Tae Byung Chun, Moonjin Lee, Korea Research Institute of Ships & Ocean Engineering (KRISO), Korea (South)
- TUP2.PH.9** **SHIP DETECTION FOR POLARIMETRIC SAR IMAGES VIA GRAPH-BASED SPARSE MANIFOLD RANKING**
Board PH.9
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** **MULTI-TARGETS TRACKING IN MARITIME SEARCH USING IMPROVED DYNAMIC PROGRAMMING**
Board PH.10
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 Clumping

Session Chair: José Marcato Junior, Federal University of Mato Grosso do Sul

- TUP1.PI.1** **TOPOGRAPHIC EFFECTS ON LEAF AREA INDEX RETRIEVAL BY REMOTE SENSING APPROACH**
Board Pl.1
Wentao Yu, Jing Li, Qinhuo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- TUP1.PI.2** **IMAGE SEGMENTATION AND CLASSIFICATION WITH SLIC SUPERPIXEL AND CONVOLUTIONAL NEURAL NETWORK IN FOREST CONTEXT**
Board Pl.2
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** **PATH LENGTH CORRECTION FOR IMPROVING LEAF AREA INDEX MEASUREMENTS OVER SLOPING TERRAINS**
Board Pl.3
Gaofei Yin, Southwest Jiaotong University, China
- TUP1.PI.4** **A METHOD FOR ESTIMATING LEAF AREA INDEX FROM LANDSAT DATA BASED ON DART MODEL AND GAUSSIAN PROCESS**
Board Pl.4
Nan Liu, Zhiqiang Xiao, Hanyu Shi, Xuchen Zhan, Beijing Normal University, China
- TUP1.PI.5** **MULTI SCALE LAI ESTIMATION BASED ON MULTIREOLUTION TREE MODEL**
Board Pl.5
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 Examination Cooperation Center of Sipo, China
- TUP1.PI.6** **EVALUATION AND VALIDATION OF THE MODIS LAI ALGORITHM WITH DIGITAL HEMISPHERICAL PHOTOGRAPHY AT BHITAR KANIKA MANGROVE FOREST, INDIA**
Board Pl.6
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** **ESTIMATING EFFECTIVE LEAF AREA INDEX USING LI-STRAHLER GEOMETRIC-OPTICAL MODEL, LANDSAT 7 ETM+, AND AIRBORNE LIDAR IN THE GREATER KHINGAN MOUNTAINS OF CHINA**
Board Pl.8
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** **RETRIEVING LEAF CHLOROPHYLL CONTENT BY CONSIDERING LEAF SURFACE VARIATION IN THE PROSPECT MODEL**
Board Pl.9
Feng Qiu, Nanjing University, China
- TUP1.PI.10** **MODELING LANDSAT CLUMPING INDEX BASING ON MODIS AND FIELD DATA: A MACHINE LEARNING APPROACH**
Board Pl.10
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** **A SOFTWARE TOOL FOR RETRIEVING THE CLUMPING INDEX PRODUCT FROM THE MODIS PRODUCTS**
Board Pl.11
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** **QUALITY INSPECTION OF PHALAEOPSIS HYBRIDS USING HYPERSPECTRAL BAND SELECTION TECHNIQUES**
Board Pl.1
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** **LOOK FOR SALIENCY IN HYPERSPECTRAL IMAGES**
Board Pl.2
Zhiqi Shen, Xiaoyan Luo, Rui Xue, Beihang University, China; Hongyan Wang, Xi'an Satellite Control Center, China
- TUP2.PI.3** **HYPERSPECTRAL IMAGE TARGET DETECTION BY WEIGHTED JOINT NEAREST NEIGHBOR AND SPARSE REPRESENTATION**
Board Pl.3
Xianfeng Ou, Yiming Zhang, Pengcheng Yan, Jianhui Wu, Bing Tu, Hunan Institute of Science and Technology, China
- TUP2.PI.4** **PEDESTRIAN DETECTION BASED ON INFRARED IMAGING THROUGH GRAY TRANSFORMATION AND DEEP LEARNING**
Board Pl.4
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** **RECONSIDERATION OF THE DECOMPOSITION ALGORITHMS FOR QUAD-POL SAR DATA**
Board Pl.5
Yong Wang, Dingfeng Duan, University of Electronic Science and Technology of China, China; Hong Li, East Carolina University, United States
- TUP2.PI.6** **GLRT DETECTORS FOR AIRBORNE RADAR BASED ON KNOWLEDGE-AIDED AND COMPRESSIVE SENSING**
Board Pl.6
Zhihang Wang, Zishu He, Qin He, Guahao Sun, Fengde Jia, University of Electronic Science and Technology of China, China
- TUP2.PI.7** **THE EFFECTS ON CONTINUUM REMOVED BAND DEPTH BY VEGETATION COVER BASED ON PROSAIL MODEL**
Board Pl.7
Lei Chen, Yixuan Xu, Da Qian, Ruorou Wang, Hu Zhang, Yi Lian, Tianjin Normal University, China
- TUP2.PI.8** **MULTICHANNEL-TWO PULSE CANCELLATION METHOD BASED ON NLCS IMAGING FOR BISTATIC FORWARD-LOOKING SAR**
Board Pl.8
Shanchuan Li, Zhongyu Li, Zhutian Liu, Haiguang Yang, Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China, China
- TUP2.PI.9** **TARGET AND AMBIGUITY DISCRIMINATION USING DOPPLER SPECTRUM FROM LOW PRF SAR IMAGE**
Board Pl.9
Hiroaki Fujihara, Yumiko Katayama, Noboru Oishi, Yuya Yokota, Masanobu Shibata, Akira Karasawa, Makoto Matsuki, Shohei Nakamura, Mitsubishi Electric Corporation, Japan
- TUP2.PI.10** **ACHIEVING TARGET IDENTIFICATION FOR THE MMW SEEKER BASED ON SCANNING MATCHING AND BEAM POINTING**
Board Pl.10
Fugang Lu, Shichao Chen, Junsheng Liu, Xi'an Modern Control Technology Research Institute, China; Ming Liu, Shaanxi Normal University, China

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 Itah, Remote Sensing Technology Center of Japan, Japan; Shinichiro Tsuji, Nippon Koei Co., Ltd., Japan; Takahiro Koide, Kokusai Kagyo 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 Wyniawskij, 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
HYPERSPPECTRAL 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
HYPERSPPECTRAL 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 HYPERSPPECTRAL ANOMALY DETECTION
Zhihong Huang, Shutao Li, Hunan University, China
- TUP2.PJ.4**
Board PJ.4
HYPERSPPECTRAL ANOMALY DETECTION BASED ON TOTAL VARIATION AND STRUCTURED DICTIONARY
Tongkai Cheng, Bin Wang, Fudan University, China
- TUP2.PJ.5**
Board PJ.5
ENHANCED HYPERSPPECTRAL UNMIXING VIA NON-NEGATIVE MATRIX FACTORIZATION INCORPORATING THE END MEMBER INDEPENDENCE
Mevan Ekanayake, University of Peradeniya, Sri Lanka; Bhatiya Rathnayake, Sri Lanka Technological Campus, Sri Lanka; Hasantha Ekanayake, Anusha Rathnayake, Vijitha Herath, Roshan Godaliyadda, Parakrama Ekanayake, University of Peradeniya, Sri Lanka

Tuesday, July 30 09:40 - 10:40 Room 501-502: Area K
Session TUP1.PK Poster

Spatial Structure and Health Monitoring of Vegetation

Session Chair: Nyamsuren Baasankhuu, University of Tsukuba

- TUP1.PK.1** **SPATIAL PATTERNS AND DRIVING FACTORS OF QUERCUS MONGOLICA ARCHITECTURE VARIATIONS USING TERRESTRIAL LIDAR TECHNOLOGY**
Board PK.1
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** **PREDICTING THE SPATIAL PATTERNS OF RED CYPRESS INVERSELY FROM POSITIVE EFFECTS OF TOPOGRAPHIC OBSTACLES ON FIR**
Board PK.2
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** **ACCURATE GROUND POSITIONING OBTAINED FROM 3D DATA MATCHING BETWEEN AIRBORNE AND TERRESTRIAL DATA FOR GROUND VALIDATION OF SATELLITE LASER**
Board PK.3
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** **THE LAND SURFACE VEGETATION FEATURES OBSERVED BY GPM/DPR BACKSCATTERING IN MONGOLIA**
Board PK.4
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** **FOREST CANOPY CLOSURE ESTIMATION IN GREATER KHINGAN FOREST BASED ON GF-2 DATA**
Board PK.5
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** **SEGMENTATION OF INDIVIDUAL TREES BASED ON THE 3-D DISTRIBUTION CHARACTERISTICS OF POINT CLOUD DATA OBTAINED BY AIRBORNE LIDAR**
Board PK.6
Yuhan Liu, Shihua Li, Ze He, University of Electronic Science and Technology of China, China
- TUP1.PK.7** **FAST CONSTRUCTION OF VEGETATION POLYGONS BASED ON OBJECT-ORIENTED METHOD**
Board PK.7
Fengmin Wu, Zhipeng Zheng, Yan Hu, Jing Chen, Bin Zhang, Chongqing Geomatics Center, China
- TUP1.PK.8** **EXPLORING THE CAPABILITIES OF SENTINEL-2 DATA IN VEGETATION HEALTH/STRESS MAPPING**
Board PK.8
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** **SIMULATION OF SHOOT BEETLE STRESS ON YUNNAN PINE FOREST SPECTRA USING A 3D RADIATIVE TRANSFER MODEL**
Board PK.9
QiNan Lin, HuaGua Huang, Beijing Forestry University, China
- TUP1.PK.10** **EVALUATION OF FOUR KERNEL DRIVEN MODELS IN THE THERMAL INFRARED BAND USING AIRBORNE MEASURED MULTI-ANGLE DATASETS**
Board PK.10
Biao Cao, Zunjian Bian, Yongming Du, Hua Li, Qing Xiao, Qinhua Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- TUP1.PK.11** **MAXENT MODEL APPLICATION FOR TREE PESTS MONITORING**
Board PK.11
Pablo Marzioletti, 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** **FEATURES EXTRACTION OF THE DOPPLER FREQUENCY SIGNATURE OF A HUMAN WALKING AT 1 GHZ**
Board PK.1
Giovanni Manfredi, Jean-Philippe Ovarlez, ONERA, France; Laetitia Thirion-Lefevre, CentraleSupélec, Université Paris-Saclay, France
- TUP2.PK.2** **FEASIBILITY EVALUATION FOR KEYWORD SPOTTING SYSTEM USING MINI MICROPHONE ARRAY ON UAV**
Board PK.2
Muhammad Bagus Andra, Budiman P.A Rohman, Tsuyoshi Usagawa, Kumamoto University, Japan
- TUP2.PK.3** **SHIP AND SEA-ICE DISCRIMINATION USING SUB-SPECTRA STRATEGY AND SINGLE POLARIMETRIC SAR IMAGERY**
Board PK.3
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** **A STATISTICAL APPROACH TO IMPROVE VIRTUAL DIMENSIONALITY OF HYPERSPECTRAL DATA**
Board PK.4
Vijayashkhar S S, Jignesh S. Bhatt, Indian Institute of Information Technology Vadodra, India; Bhargab Chattopadhyay, Indian Institute of Management Vishakapatnam, India
- TUP2.PK.5** **MAIN-LOBE JAMMING SUPPRESSION METHOD IN MULTIPLE-RADAR SYSTEM**
Board PK.5
Shanshan Zhao, Ziwei Liu, Nanjing University of Posts and Telecommunications, China
- TUP2.PK.6** **HYPERSPECTRAL IMAGERY TARGET DETECTION USING COLLABORATIVE REPRESENTATION WITH SPECTRAL VARIATION EXTENDED DICTIONARY**
Board PK.6
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** **HYPERSPECTRAL TARGET DETECTION VIA DEEP MULTIPLE INSTANCE SELF-ATTENTION NEURAL NETWORK**
Board PK.7
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, July 30 09:40 - 10:40 Room 501-502: Area L

Session TUP1.PL

Poster

Remote Sensing of Vegetation Parameters

Session Chair: Andrea Massei, 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 (UFES), 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 Massei, 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 RECENT 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**
Rocio 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 Cieżkowski, Małgorzata Kleniewska, Jarosław Chormański, Warsaw University of Life Sciences, Poland
- TUP2.PL.8**
Board PL.8 **EARLY DETECTION 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, July 30 09:40 - 10:40 Room 501-502: Area M
Session TUP1.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 ESTIMATING 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 Institute 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 Stratoulis, Singapore MIT Alliance 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

Tuesday, July 30 15:20 - 16:20 Room 501-502: Area M
Session TUP2.PM Poster

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, Xukai 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 Bouvashgh, 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 VARIATIONS OF INLAND WATER BODY: A CASE STUDY 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 Arunyakul, Ronaldo Carhuarica, 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, 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 Booyens, Helmholtz-Zentrum Dresden-Rossendorf; Helmholtz Institute Freiberg for Resource Technology

TUP1.PN.1 **WORLDVIEW-3 AND SENTINEL-2 IMAGERY FOR MAPPING NATURALLY OCCURRING ASBESTOS (NOA) IN SERPENTINITES ROCKS IN SOUTHERN ITALY.**
Board PN.1

Simone Pascucci, Stefano Pignatti, Claudia Belviso, Francesco Cavalcante, CNR, Italy; Maria Paola Bagliolo, Italian Workers Compensation Authority - INAIL, Italy

TUP1.PN.2 **APPLICATION OF CONSTRAINED ENERGY MINIMIZATION (CEM) ALGORITHM TO ASTER DATA FOR ALTERATION MINERAL MAPPING**
Board PN.2

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 **RESEARCH ON INFORMATION EXTRACTION TECHNOLOGY OF IRON OXIDE BASED ON AIRBORNE HYPERSPECTRAL DATA**
Board PN.3

Kai Qing, Ying-Jun Zhao, Xin Cui, Beijing Research Institute of Uranium Geology, China

TUP1.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
Board PN.4

Jianming Kuang, Linlin Ge, University of New South Wales, Australia; Alex Hay-Man Ng, Guangdong University of Technology, China

TUP1.PN.5 **TECTONIC BELT EXTRACTION BASED ON DEM AT THE MARGIN OF QINGHAI-TIBET PLATEAU**
Board PN.5

Tian Tian, Lixia Gong, Wenliang Jiang, Jingfa Zhang, Qiang Li, Hongbo Jiang, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP1.PN.6 **GEOMETRIC AND GEOMORPHIC FEATURES OF ACTIVE TECTONICS BASED**

ON HIGH-RESOLUTION REMOTE SENSING IMAGE
Board PN.6

Wenliang Jiang, Jingfa Zhang, Institute of Crustal Dynamics, China Earthquake Administration, China

TUP1.PN.7 **A NEW UNDERSTANDING ABOUT MARE BASALTS IN MOSCOVIENSE BASIN DEMONSTRATED BY CE-2 CELMS DATA**
Board PN.7

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 **INTEGRATING HYPERSPECTRAL AND RADIOMETRIC REMOTE SENSING, SPATIAL TOPOGRAPHIC ANALYSIS AND SURFACE GEOCHEMISTRY TO ASSIST MINERAL EXPLORATION IN SOUTHERN AUSTRALIA**
Board PN.8

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 **DETECTION OF SURFACE DISPLACEMENT FROM LARGE BASELINE DATA PAIRS BY MULTI-TEMPORAL D-INSAR WITH APPLICATION TO BANDUNG BASIN, INDONESIA**
Board PN.9

Pangaea Ghiyats Sabrian, Kyoto University, Japan; Asep Saepuloh, Bandung Institute of Technology, Indonesia; Katsuki Koike, Kyoto University, Japan

TUP1.PN.10 **UAV-BASED 3D OUTCROP ANALOG MODELS FOR OIL AND GAS EXPLORATION AND PRODUCTION**
Board PN.10

Emmanuel Dujonquoy, AGEO S, Total, France; Pierre Masse, Total, France; Yann Nicol, Total, AGEO S, France; Alterga Supomo Putra, Jeroen Kenter, Séverine Russo, Damien Dhont, Total, France

TUP1.PN.11 **AN ANALYSIS RESEARCH OF TERRAIN CORRECTION METHODS CONSIDERING THE SLOPE RANGES BASED ON OLI IMAGE**
Board PN.11

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 Politècnica de Catalunya

TUP2.PN.1 **PRECISE ORBIT OBSERVATION TECHNIQUES FOR GEOSYNCHRONOUS SYNTHETIC APERTURE RADAR (GEOSAR)**
Board PN.1

Jorge Nicolas-Alvarez, Antoni Braquetas, Albert Aguasca, Universitat Politècnica de Catalunya (UPC), Spain

TUP2.PN.2 **ARCHITECTING OPTIMIZED SPACEBORNE EARTH OBSERVATION MISSIONS**
Board PN.2

David Llaveria, Carles Aragaz, Adriano Camps, Eduard Alarcón, Universitat Politècnica de Catalunya (UPC), Spain

TUP2.PN.3 **THE INFLUENCE OF MOON-BASED SENSOR'S LOCATION ON MOON-BASED EARTH OBSERVATION**
Board PN.3

Guozhuang Shen, Huadong Guo, Guang Liu, Lu Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

TUP2.PN.5 **ADVANCED TERAHERTZ ATMOSPHERIC PROFILING SOUNDER ON NEXT GENERATION CHINESE METEOROLOGICAL SATELLITE**
Board PN.5

Shengwei Zhang, Jieying He, Zhenzhan Wang, Yu Zhang, Na Li, National Space Science Center, Chinese Academy of Sciences, China

TUP2.PN.6 **NON-METEOROLOGICAL APPLICATION OF NEW GENERATION GEOSTATIONARY SATELLITES**
Board PN.6

Satya Kalluri, Ivan Csiszar, Shobha Kondragunta, Istvan Laszlo, NOAA/NESDIS/STAR, United States

TUP2.PN.7 **ASCAT-C COMMISSIONING: FIRST CROSS-COMPARISON AND VALIDATION RESULTS**
Board PN.7

Francesca Ticconi, Craig Anderson, Stefanie Linow, Julian Wilson, EUMETSAT, Germany

TUP2.PN.8 **AN OVERVIEW OF NOAA'S GCOM-W1/AMSR-2 PRODUCT PROCESSING AND UTILIZATION**
Board PN.8

Paul Chang, Zarana Jelenak, Suleiman Alsweiss, Joseph Sapp, Patrick Meyers, Ralph Ferrara, NOAA/NESDIS, United States

TUP2.PN.9 **APPLICATIONS OF KHALIFASAT MISSION**
Board PN.9

Saeed Al Mansoori, Meera AlShamsi, Alya AlMaazmi, Fatima AlMarzouqi, Shaikha AlBeshar, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

TUP2.PN.10 **A PROPOSAL FOR SATELLITE OBSERVATION OF THE WHOLE ATMOSPHERE - SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER (SMILES-2)**
Board PN.10

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 **CONCEPTUAL STUDY OF SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER-2 (SMILES-2) RECEIVER**
Board PN.11

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** **EFFECTS OF ATTENUATION ON SEISMIC REFLECTIONS**
Board PO.1
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** **APPLICATION OF THE STRUCTURE FROM MOTION METHOD IN ACTIVE TECTONICS RESEARCH: A CASE STUDY OVER THE ALTYN TAGH FAULT**
Board PO.2
Haiyun Bi, China Earthquake Administration, China; Wenjun Zheng, Sun Yat-Sen University, China; Jiangyuan Zeng, Chinese Academy of Sciences, China
- TUP1.PO.3** **ANALYSIS OF THE KERNEL-DRIVEN BRDF MODEL OVER RUGGED TERRAINS**
Board PO.3
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** **IDENTIFYING USERS BY ASYNCHRONOUS MOBILITY TRAJECTORIES**
Board PO.4
Mengjun Qi, Zhongyuan Wang, Zheng He, Wuhan University, China; Tao Lu, Wuhan Institute of Technology, China
- TUP1.PO.5** **A FAST AND SIMPLE ALGORITHM FOR CALCULATING FLOW ACCUMULATION MATRICES FROM RASTER DIGITAL ELEVATION MODELS**
Board PO.5
Guiyun Zhou, Wenyan Dong, Hongqiang Wei, University of Electronic Science and Technology of China, China
- TUP1.PO.6** **POTENTIAL PREDICTION OF COALBED METHANE ANOMALY REGION UTILIZING LANDSAT8 OLI AND GF-2 IMAGES**
Board PO.6
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** **IDENTIFICATION OF ALTERED MINERAL USING HYPERION HYPERSPECTRAL IMAGE IN SOUTH OF TIBET, CHINA**
Board PO.7
Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgical Geological Bureau, China; Jianchun Zheng, Beijing Research Center of Urban System Engineering, China
- TUP1.PO.8** **PRESENT VERTICAL CRUSTAL MOVEMENT IN NORTH SEGMENT OF NORTH-SOUTH TECTONIC BELT DERIVED FROM GNSS**
Board PO.8
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** **MOSIS V2: IMMERSIVE VIRTUAL OUTCROP MODELS**
Board PO.9
Pedro Rossa, Rafael Kenji Horata, Alysson Soares Aires, Ademir Marques Jr, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil; Eniue 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** **MAPPING AND MONITORING OF SOIL SALINIZATION USING REMOTE SENSING AND REGRESSION TECHNIQUES: A CASE STUDY IN THE BAHARIYA DEPRESSION, WESTERN DESERT, EGYPT**
Board PO.10
Mohamed El-Horiny, Tanta University, Egypt
- TUP1.PO.11** **DRONE THERMAL IMAGING TO OBTAIN HEAT FLOWS OF JINLUO GEOTHERMAL SITE, SOUTHEAST TAIWAN**
Board PO.11
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** **MAPPING OF TALC DEPOSITS USING HYPERSPECTRAL IMAGES**
Board PO.12
Shinsuke Kodama, National Institute of Advanced Industrial 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** **INTRODUCTION OF GF-5 SATELLITE AND ABILITY OF MONITORING NO2 AND O3 COLUMN DENSITY FROM EMI**
Board PO.1
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** **GOES-17 ADVANCED BASELINE IMAGER PERFORMANCE RECOVERY SUMMARY**
Board PO.2
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** **SMAP RFI CHANGE DETECTION**
Board PO.3
Priscilla Mohammed, Giovanni De Amici, Jinzheng Peng, Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States
- TUP2.PO.4** **IMPACT OF THE RFI GENERATED BY ACTIVE LEO SYSTEMS ON A NEARLY-GEOSTATIONARY SAR SYSTEM**
Board PO.4
Antonio Leanza, Andrea Monti Guarnieri, Politecnico di Milano, Italy; Marco Di Clemente, Giancarlo Varacalli, Roberto Formaro, Agenzia Spaziale Italiana (ASI), Italy
- TUP2.PO.5** **ATMOSPHERE-SPACE INTERACTIONS MONITOR, INSTRUMENT AND FIRST RESULTS**
Board PO.5
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** **PERFORMANCE OF THE SNPP AND NOAA-20 CRIS SENSOR DATA RECORD PRODUCTS**
Board PO.6
Flavia 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; Larabee 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** **SENSITIVITY VARIATION OF ASTER DERIVED FROM MOON AND DEEPSPACE OBSERVATIONS IN 2003 AND 2017**
Board PO.7
Toru Kouyama, Satoshi Tsuchida, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Fumihiko Sakuma, Tetsushi Tachikawa, Japan Space Systems, Japan; Hirokazu Yamamoto, National Institute of Advanced Industrial 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 Science and Technology (AIST), Japan
- TUP2.PO.8** **AEROSOL MODELS FROM AERONET FOR THE EVALUATION OF THE LAND SURFACE REFLECTANCE FUNDAMENTAL CLIMATE DATA RECORD**
Board PO.8
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** **PERFORMANCE OF 2-D DEFORMATION MEASUREMENTS BY THE MULTI-STATIC HARMONY (STEREIOD) MISSION**
Board PO.9
Yuanhao Li, Paco Lopez-Dekker, Lorenzo Iannini, Delft University of Technology, Netherlands; Pau Prats-Iraola, German Aerospace Center (DLR), Germany
- TUP2.PO.10** **EVALUATION OF THE SURFACE REFLECTANCE LONG-TERM DATA RECORD FROM AVHRR OVER MULTIPLE LAND SURFACE TYPES**
Board PO.10
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** **THE POLAR RADIANT ENERGY IN THE FAR INFRARED EXPERIMENT (PREFIRE)**
Board PO.11
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, 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** **INSAR REMOTE SENSING OF ATMOSPHERE: BRIDGING HIGH RESOLUTION DATA AND NWP MODELS**
Board PQ.1
Giovanni Nico, Consiglio Nazionale delle Ricerche (CNR), Italy; Pedro Mateus, João Catalão, Instituto Dom Luiz (IDL), Universidade de Lisboa, Portugal
- TUP1.PQ.2** **A COMPREHENSIVE VORTEX INITIALIZATION ASSIMILATING SATELLITE MICROWAVE DERIVED HURRICANE WARM CORES USING A 4D-VAR APPROACH**
Board PQ.2
Xiaoxu Tian, Xiaolei Zou, University of Maryland, College Park, United States
- TUP1.PQ.3** **ASSIMILATION AND DIRECT INSERTION OF SENTINEL PRODUCTS IN THE WRF WEATHER FORECAST MODEL**
Board PQ.3
Martina Lagasio, Luca Pulvirenti, Antonio Parodi, Agostino Meroni, CIMA Research Foundation, Italy
- TUP1.PQ.4** **EVALUATION OF GROUND-BASED MICROWAVE RADIOMETER DATA USED IN NUMERICAL WEATHER PREDICTION**
Board PQ.4
Wenyang He, LAGEO, Institute of Atmospheric Physics, Chinese Academy of Sciences, China
- TUP1.PQ.5** **AN ADVANCED WORKFLOW FOR SIMULATING HIGH RESOLUTION WIND FIELDS OVER COMPLEX URBAN TERRAIN INCLUDING SINGLE TREE OBJECTS**
Board PQ.5
Maximilian Langheinrich, German Aerospace Center (DLR), Germany; Katja Seifert, Hochschule für Angewandte 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** **CASE STUDIES OF UTILIZING SATELLITE REMOTE SENSING FOR DISASTER RESPONSE**
Board PQ.1
Keita Hikichi, Ayumi Fukushima, Kenichi Honda, Norichika Asada, Naruo Mushiaki, Tomohiro Nishimura, Sakae Mukoyama, Kokusai Kogyo Co., Ltd., Japan
- TUP2.PQ.2** **SENSITIVITY OF LAND COVERS ON PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE**
Board PQ.2
Feng Jing, Institute of Earthquake Forecasting, China Earthquake Administration, China; Ramesh P Singh, Chapman University, China
- TUP2.PQ.3** **DETECTION OF BRIGHTNESS TEMPERATURE ANOMALIES USING MULTIPLE METHODS BEFORE THE 2009 L'AQUILA EARTHQUAKE**
Board PQ.3
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; Weiyang Wu, Institute of Geology, China Earthquake Administration, China
- TUP2.PQ.4** **POST-EARTHQUAKE DAMAGE MAPPING USING ARTIFICIAL NEURAL NETWORK AND SUPPORT VECTOR MACHINE CLASSIFIERS AT PALU, INDONESIA**
Board PQ.4
Mutiara Syifa, Subin Ryoo, Chang-Wook Lee, Kangwon National University, Korea (South)
- TUP2.PQ.5** **NIGHT LIGHT REMOTE SENSING APPLICATION IN DISASTER AND REHABILITATION: A CASE STUDY OF MUZAFFARABAD 2005 EARTHQUAKE**
Board PQ.5
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** **ANALYSIS ON ECOLOGICAL ENVIRONMENT QUALITY OF WENCHUAN COUNTY IN THE PAST 10 YEARS AFTER WENCHUAN EARTHQUAKE**
Board PQ.6
Qiang Li, Jingfa Zhang, Hongbo Jiang, Dan Geng, Institute of Crustal Dynamics, China Earthquake Administration, China
- TUP2.PQ.7** **DISASTER DAMAGE ASSESSMENT USING POLARIMETRIC SAR IMAGE ANALYSIS: CASE OF NEPAL EARTHQUAKE**
Board PQ.7
Shubham Jaiswal, Willis Towers Watson, Mumbai, India; Gulab Singh, Indian Institute of Technology Bombay, India; Anugrah Anilkumar Nagaich, School of Planning and Architecture Bhopal, India
- TUP2.PQ.8** **TECTONIC SHIFT MEASUREMENT WITH GEODETIC SAR PROCESSING**
Board PQ.8
Hartmut Runge, Ulrich Balss, Steffen Suchandt, Michael Eineder, German Aerospace Center (DLR), Germany
- TUP2.PQ.9** **CHANGES IN CHLOROPHYLL CONCENTRATIONS ASSOCIATED WITH THE 5.1 LA HABRA EARTHQUAKE, CALIFORNIA OF 29 MARCH 2014**
Board PQ.9
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** **EARTHQUAKE-INDUCED BUILDING DAMAGE ASSESSMENT BASED ON SAR CORRELATION AND TEXTURE**
Board PQ.10
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** **DIGITAL ELEVATION MODELS OF VOLCANIC PLUMES**
Board PQ.11
Marcello de Michele, Daniel Raucooules, Michael Fournelis, BRGM - French Geological Survey, France

Tuesday, July 30 09:40 - 10:40 Room 503: Area R
Session TUP1.PR Poster

GNSS-R Sensors, Techniques and Applications I

Session Co-Chairs: Hugo Carreno-Luengo, Centre Tecnològic de Telecomunicacions 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** **EFFECTS OF ROUGH TOPOGRAPHY IN GNSS-R: A PARAMETRIC STUDY BASED ON A DIGITAL ELEVATION MODEL**
Board PR.1
Hugo Carreno-Luengo, Guido Luzi, Michele Crosetto, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Spain
- TUP1.PR.2** **GRSA: INTEGRATED ASIC FOR SPACEBORNE GNSS REMOTE SENSING**
Board PR.2
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** **MULTIFUNCTIONAL GNSS-R PROCESSING SOFTWARE FOR GNOS II**
Board PR.3
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** **SOIL MOISTURE RETRIEVAL BASED ON SBAS AND BEIDOU GEO SIGNALS**
Board PR.4
Wei Ban, Kegen Yu, China University of Mining and Technology, China
- TUP1.PR.5** **BIOMASS ESTIMATION OVER TROPICAL RAINFORESTS USING GNSS-R ON-BOARD THE CYGNSS MICROSATELLITES CONSTELLATION**
Board PR.5
Hugo Carreno-Luengo, Guido Luzi, Michele Crosetto, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Spain
- TUP1.PR.6** **FOREST BIOMASS ESTIMATE ON LOCAL AND GLOBAL SCALES THROUGH GNSS REFLECTOMETRY TECHNIQUES**
Board PR.6
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** **ANALYSIS OF WETLAND EXTENT RETRIEVAL ACCURACY USING CYGNSS**
Board PR.7
Eric Loria, Andrew O'Brien, Ohio State University, United States; Valery Zavorotny, CIRES/University of Colorado Boulder/NOAA/ESRL, United States; Marco Lavelle, 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** **MAXIMUM SUSTAINED SURFACE WINDS RETRIEVAL USING THE CYCLONE GLOBAL NAVIGATION SATELLITE SYSTEM (CYGNSS) CONSTELLATION**
Board PR.8
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** **EVOLVING OCEAN MONITORING WITH GNSS-R: PROMISES IN SURFACE WIND SPEED AND PROSPECTS FOR RAIN DETECTION**
Board PR.9
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** **SPACEBORNE GNSS-R OBSERVATIONS OF MESOSCALE OCEAN EDDIES; PRELIMINARY RESULTS FROM CYGNSS MISSION**
Board PR.10
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** **RESEARCH ON ATTITUDE CONTROL METHOD OF AGILE SATELLITE BASED ON VARIABLE STRUCTURE CONTROL ALGORITHM**
Board PR.12
Jian Liangjian, Yang Zhao, Hefen Zhang, Beijing Institute of Spacecraft System Engineering, China

Tuesday, July 30 15:20 - 16:20 Room 503: Area R
Session TUP2.PR Poster

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** **IMPACT OF THE VARIATION OF OBSERVABLE AREAS ON LANDSLIDE STUDY USING INSAR TECHNIQUE**
Board PR.1
Yan Yan, University of Electronic Science and Technology of China, China; Yong Wang, East Carolina University, United States
- TUP2.PR.2** **MEASURING RAPID LANDSLIDE DISPLACEMENTS WITH OPTIMAL ESTIMATION WINDOW OFFSET TRACKING: APPLICATION TO THE BAIGE LANDSLIDE**
Board PR.2
Hongying Jia, Yingjie Wang, Yunkai Deng, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China
- TUP2.PR.3** **ON THE EFFECT OF INTERFEROMETRIC PAIRS SELECTION FOR MEASURING FAST MOVING LANDSLIDES**
Board PR.3
Michael Fomelis, Daniel Raucoles, Bastien Colas, Marcello De Michele, BRGM - French Geological Survey, France
- TUP2.PR.4** **DEVELOPMENT OF SMART STICK FOR SOIL EROSION MONITORING**
Board PR.4
Tzu-Hsuan Lin, Jing-Xuan Peng, Chun-Yao Wen, Yan-Ting Wang, Jing-Ting Huang, National Central University, Taiwan
- TUP2.PR.5** **TIME-SERIES LANDSLIDE MONITORING BASED ON STAMPS-SBAS: A CASE STUDY IN LUSHAN, TAIWAN**
Board PR.5
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** **CONDITIONING FACTORS DETERMINATION FOR LANDSLIDE SUSCEPTIBILITY MAPPING USING SUPPORT VECTOR MACHINE LEARNING**
Board PR.6
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 Halim, Universiti Putra Malaysia, Malaysia
- TUP2.PR.7** **INSAR APPLICATION TO BAIGE LANDSLIDE EVENT, CHINA, FROM FAST RESCUE TO CATCHMENT INVESTIGATION**
Board PR.7
Chaoying Zhao, Xiaojie Liu, Qin Zhang, Chengsheng Yang, Liqian Chen, Chang'an University, China
- TUP2.PR.8** **MOUNTAINOUS LANDSLIDE RECOGNITION BASED ON GAOFEN-3 POLARIMETRIC SAR IMAGERY**
Board PR.8
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** **LANDSLIDE DISPLACEMENT MONITORING WITH TIME SERIES INSAR BY COMBANDING BOTH PS AND DS TARGETS**
Board PR.9
Yanan Jiang, Qiang Xu, Minggao Tang, Chengdu University of Technology, China
- TUP2.PR.10** **LANDSLIDE DISPLACEMENT MONITORING WITH TIME SERIES INSAR BY COMBANDING BOTH PS AND DS TARGETS**
Board PR.10
Yanan Jiang, Qiang Xu, Minggao Tang, Chengdu University of Technology, China

TUESDAY
POSTER

Tuesday, July 30 09:40 - 10:40 Room 503: Area 5
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 Ciències de l'Espai (CSIG-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 AIRBORNE 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 5
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; Maximilian 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, Yanning 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; Emanuela Valerio, University of Rome "La Sapienza", Italy; Ivana Zinna, 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 A SEMI-SUPERVISED APPROACH TOWARDS LAND COVER MAPPING WITH SENTINEL-2 DESNSE TIME-SERIES IMAGERY

09:50

Ting Hu, Xin Huang, Jiayi Li, Wuhan University, China; Ján Atli Benediktsson, University of Iceland, Iceland; Jiansi Yang, Jianya Gong, Wuhan University, China

WEP1.SPR.2 CAL/VAL PHASE FOR THE SWIM INSTRUMENT ONBOARD CFOSAT

09:55

Raquel Rodríguez Suquet, Laura Hermozo, Cédric Tourain, Céline Tison, CNES, France; Danièle Hauser, Patricia Schippers, Lauriane Delaye, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Lotfi Aouf, Alice Dalphinnet, 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 Guitten, Ifremer, France; Jean-Michel Lachiver, CNES, France

WEP1.SPR.3 CONSTRAINED DISTANCE BASED K-MEANS CLUSTERING FOR SATELLITE IMAGE TIME-SERIES

10:00

Thomas Lampert, Baptiste Lafabregue, Pierre Gañçarski, University of Strasbourg, France

WEP1.SPR.4 MICROWAVE SINGLE PIXEL IMAGER (MSPI) ANTENNA ASSEMBLY

10:05

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 SMOS INSTRUMENT PERFORMANCE AFTER MORE THAN 9 YEARS IN ORBIT

15:30

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 Cloa, 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 Crapolichio, European Space Agency (ESA), Italy; Giovanni Macelloni, Marco Bragioni, Institute of Applied Physics, Italy; Pierre Vogel, Martin Suess, European Space Agency (ESA), Netherlands

WEP2.SPR.2 ARCTIC SEA SURFACE SALINITY RETRIEVAL FROM SMOS MEASURES

15:35

Justino Martínez, Carolina Gabarró, Estrella Olmedo, Verónica González-Gambau, Cristina González-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

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 ERAS 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 VERSION 2 AND VERSION 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, Jiaoqiao 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
Session WEP1.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

Wednesday, July 31 15:20 - 16:20 Room 501-502: Area B
Session WEP2.PB Poster

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; Gaixiang 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
Session WEP1.PC Poster

Image Formation I

Session Co-Chairs: Ryo Natsuaki, German Aerospace Center (DLR); Peng Liu, Fudan University

- WEP1.PC.1** **INVESTIGATIONS ON THE OPTIMUM COMBINATION OF AZIMUTH PHASE CODING AND UP- AND DOWN-CHIRP MODULATION FOR RANGE AMBIGUITY SUPPRESSION**
Board PC.1
Ryo Natsuaki, Nida Sakar, Nestor Yague-Martinez, Muriel Pinheiro, Pau Prats-Iraola, German Aerospace Center (DLR), Germany
- WEP1.PC.2** **SUB-IMAGE BLOCKS BASED JOINT SPARSE RECONSTRUCTION ALGORITHM FOR MULTI-PASS SAR IMAGES FEATURE ENHANCEMENT**
Board PC.2
Chunxiao Wu, Si Gao, Zenghui Zhang, Wenxian Yu, Shanghai Key Laboratory of Intelligent Sensing and Recognition, China
- WEP1.PC.3** **A DEPENDENT DOPPLER PARAMETERS CORRECTION METHOD BASED ON TWO-STEP EQUIVALENT RANGE MODEL IN DIVING HIGH SQUINT IMAGING WITH CURVED TRAJECTORY**
Board PC.3
Yanfeng Dang, Yi Liang, Jianxin Wu, YuHong Zhang, Xidian University, China
- WEP1.PC.4** **A PROCESSING STRATEGY FOR VARIABLE PRF SAR WITH DIGITAL BEAMFORMING IN AZIMUTH**
Board PC.4
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** **PROCESSING OF SAR ON HIGH-SPEED PLATFORM WITH ACCELERATION USING NONLINEAR TIME SCALING ALGORITHM**
Board PC.5
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** **A NEW GROUND MOVING TARGET IMAGING ALGORITHM FOR HIGH-RESOLUTION AIRBORNE CSSAR-GMTI SYSTEMS**
Board PC.6
Yongkang Li, Laisen Nie, Northwestern Polytechnical University, China
- WEP1.PC.7** **FOCUSING IMPROVEMENT FOR GROUND MOVING TARGET IN HIGH-SQUINT SYNTHETIC APERTURE RADAR IMAGERY**
Board PC.7
Lei Ran, Zheng Liu, Rong Xie, Jibin Zheng, Hui Ma, Hongwei Liu, Xidian University, China
- WEP1.PC.8** **LINEAR ARRAY SAR IMAGING AND AUTOFOCUS APPROACH**
Board PC.8
Yangyang Wang, Xiaoling Zhang, Liming Zhou, Xingyue Zhang, University of Electronic Science and Technology of China, China
- WEP1.PC.9** **CZT CORRECTION OF RANGE-DEPENDENT RESIDUAL-RCM FOR AIRBORNE SAR MOTION COMPENSATION**
Board PC.9
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** **COMPARISON OF REAL AND SIMULATED SAR IMAGERY OF SHIP WITH OCEANOGRAPHIC MEASURED DATA**
Board PC.10
Peng Liu, Fudan University, China; Peng Chen, Second Institute of Oceanography, Ministry of Natural Resources, China

Wednesday, July 31 15:20 - 16:20 Room 501-502: Area C
Session WEP2.PC Poster

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** **JOINT WIRELESS COMMUNICATION AND HIGH RESOLUTION SAR IMAGING USING AIRBORNE MIMO RADAR SYSTEM**
Board PC.1
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** **THREE DIMENSIONAL IMAGING ALGORITHM FOR SYNTHETIC APERTURE RADAR WITH METAMATERIAL APERTURES-BASED ANTENNA**
Board PC.2
Zhenhua Wu, National Laboratory of Radar Signal Processing, Xidian University, China; Lei Zhang, School of Electronics and Communication Engineering, Sun Yat-sen University, China; Shaopeng Wei, HongWei Liu, National Laboratory of Radar Signal Processing, Xidian University, China
- WEP2.PC.3** **INTEGRATION OF COMMUNICATION AND SAR RADAR BASED ON OFDM WITH CHANNEL ESTIMATION IN HIGH SPEED SCENARIO**
Board PC.3
Gaogao Liu, Haonan Niu, Minhua Zheng, Dan Bao, Jingjing Cai, Guodong Qin, Bin Wu, Peng Li, Nan Liu, Xidian University, China
- WEP2.PC.4** **EFFECT OF GAPS BETWEEN TELESCOPES ON APERTURE SYNTHESIS IN MULTI-CHANNEL SAR SYSTEM**
Board PC.4
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** **AN IMAGING METHOD FOR CO-PRIME-SAMPLING SPACEBORNE SAR**
Board PC.5
Wanwan Zhao, Pengbo Wang, Beihang University, China; Wei Liu, University of Sheffield, United Kingdom; Xinkai Zhou, Beihang University, China
- WEP2.PC.6** **PHASE MISMATCH CALIBRATION FOR MULTICHANNEL SLIDING SPOTLIGHT SAR IMAGING WITH EXTENDED AZIMUTH CROSS CORRELATION**
Board PC.6
Huaitao Fan, Zhimin Zhang, Robert Wang, Institute of Electronics, Chinese Academy of Sciences, China
- WEP2.PC.7** **AN EXTENDED D-TOMOSAR SYSTEM FOR THE RETRIEVAL OF THREE-DIMENSIONAL SURFACE DEFORMATION**
Board PC.7
Zhiqi Wang, Mei Liu, Kunfeng Lv, Harbin Institute of Technology, China
- WEP2.PC.8** **TWO-DIMENSIONAL IMAGING WITH STATIONARY NONUNIFORM FREQUENCY DIVERSE ARRAY TRANSMITTER**
Board PC.8
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, 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** **POWER TRANSMISSION TOWER CFAR DETECTION ALGORITHM BASED ON INTEGRATED SUPERPIXEL WINDOW AND ADAPTIVE STATISTICAL MODEL**
Board PD.1
Xin Zhou, Xiuguo Liu, Qihao Chen, Zhengjia Zhang, China University of Geosciences (Wuhan), China
- WEP1.PD.2** **BILGE DUMP AUTOMATIC ALERT SYSTEM IN SOUTHERN AFRICA OCEANS**
Board PD.2
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** **LONG TERM LAND SUBSIDENCE ANALYSIS BY FUSING MULTI-SENSOR TIME SERIES INSAR RESULTS**
Board PD.3
Jiayu Li, Lianhuan Wei, Qiuyue Feng, Shanjun Liu, College of Resources and Civil Engineering, Northeastern University, China
- WEP1.PD.4** **ANALYSIS OF IONOSPHERIC SCINTILLATION IMPACT ON SPACE-BORNE P-BAND SLIDING SPOTLIGHT SAR SYSTEM**
Board PD.4
Lei Yu, Yongsheng Zhang, Yifei Ji, Qilei Zhang, Zhen Dong, National University of Defense Technology, China
- WEP1.PD.5** **ICE VELOCITY MEASUREMENTS OF NARSSAP SERMIA IN GREENLAND USING MULTI-TEMPORAL TERRASAR-X/TANDEM-X SAR OBSERVATIONS**
Board PD.5
Seong-Woo Jung, Seo-Woo Park, Sang-Hoon Hong, Pusan National University, Korea (South)
- WEP1.PD.6** **VOLUME CHANGE OF THE QUARRY IN THE 2015 SHENZHEN LANDSLIDE MONITORED BY SAR SHAPE FROM SHADING**
Board PD.6
Chisheng Wang, Zhongwen Hu, Shenzhen University, China; Peng Liu, Southern University of Science and Technology, China
- WEP1.PD.7** **MEASUREMENTS OF FOLIAGE-INDUCED SIGNAL MODULATION AT L-BAND**
Board PD.7
Alvin Goh, Mark Preiss, Elliot Hansen, Defence Science and Technology Group, Australia
- WEP1.PD.8** **FUSION OF POLARIMETRIC AND TEXTURE INFORMATION FOR EARTHQUAKE-INDUCED LANDSLIDE EXTRACTION FROM "GAOFEN-3" FULLY POLARIMETRIC SAR IMAGERY**
Board PD.8
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** **SAR IMAGE CHANGE DETECTION BASED ON MEAN SHIFT PRE-CLASSIFICATION AND FUZZY C-MEANS**
Board PD.9
Ronghua Shang, Kaize Xie, Michael Aggrey Okoth, Licheng Jiao, Xidian University, China
- WEP1.PD.10** **ASSESSMENT OF THE SOIL MOISTURE ESTIMATION AT THE KOREA PENINSULA: CASE STUDY FOR AGRICULTURE AND MOUNTAINOUS AREAS**
Board PD.10
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** **FOCUS IMPROVEMENT FOR HIGHLY SQUINTED ONE-STATIONARY BISAR IMAGING BASED ON A RANGE EQUIVALENT MODEL**
Board PD.1
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** **AIRBORNE FMCW-SAR SIGNAL PROCESSING USING BACK-PROJECTION ALGORITHM CORRECTING CONTINUOUS MOTION EFFECT**
Board PD.2
Seung-Chul Lee, Duk-jin Kim, Ji-hwan Hwang, Seoul National University, Korea (South)
- WEP2.PD.3** **ISAR MANEUVERING TARGET IMAGING BASED ON CONVOLUTIONAL NEURAL NETWORK**
Board PD.3
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** **A NEW TWO-STEP IMAGING ALGORITHM FOR HIGH-RESOLUTION LOW-FREQUENCY SPACEBORNE SAR**
Board PD.4
Xiangwei Pan, Jie Chen, Pengbo Wang, Jian Wang, Beihang University, China
- WEP2.PD.5** **FORWARD-LOOKING RADAR SUPER-RESOLUTION IMAGING COMBINED TSVD WITH L1 NORM CONSTRAINT**
Board PD.5
Zhaowei Shu, Zhulin Zong, Libing Huang, Limei Huang, University of Electronic Science and Technology of China, China
- WEP2.PD.6** **ANALYSIS FOR INTEGRATION TIME AND DOPPLER CHARACTERISTICS IN AIRBORNE SAR WITH CONSTANT ACCELERATION**
Board PD.6
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** **APPLICATIONS OF BASEBAND AZIMUTH SCALING ON HIGH SQUINT BEAM STEERING SAR IMAGING WITH CONTANT ACCELERATION**
Board PD.7
Bowen Bie, Guang-Cai Sun, Mengdao Xing, Xidian University, China
- WEP2.PD.8** **A FINELY FOCUSING METHOD OF SAR USING VERY DEEP NEURAL NETWORK**
Board PD.8
Guangkai Qiao, Jingwei Dai, Kaizhi Wang, Yiran Jin, Shanghai Jiao Tong University, China
- WEP2.PD.9** **SAR IMAGE SUPER-RESOLUTION BASED ON NOISE-FREE GENERATIVE ADVERSARIAL NETWORK**
Board PD.9
Feng Gu, Hong Zhang, Chao Wang, Fan Wu, Chinese Academy of Sciences, China
- WEP2.PD.10** **EXTENSION OF POLAR FORMAT ALGORITHM TO CSAR IMAGING FOR ARBITRARY REGION OF INTEREST**
Board PD.10
Shuliang Gui, Jin Li, Jubo Hao, Feng Zuo, Yiming Pi, University of Electronic Science and Technology of China, China
- WEP2.PD.11** **ISAR IMAGING IN THE PRESENCE OF QUASI-RANDOM MULTIPLICATIVE NOISE USING CONVOLUTIONAL DEEP LEARNING**
Board PD.11
Jon Mitchell, Saibun Tjuatja, University of Texas at Arlington, United States
- WEP2.PD.12** **AN IMPROVED FAST TIME-DOMAIN ALGORITHM FOR BISTATIC FORWARD-LOOKING SAR IMAGING**
Board PD.12
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, 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** **MULTI-TARGETS DECEPTION JAMMING FOR ISAR WITH FREQUENCY DIVERSE ARRAY**
Board PE.1
Libing Huang, Zhulin Zong, Hui Wang, Limei Huang, Zhaowei Shu, University of Electronic Science and Technology of China, China
- WEP1.PE.2** **A NOVEL DECEPTIVE JAMMING METHOD VIA FREQUENCY DIVERSE ARRAY**
Board PE.2
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** **NARROWBAND INTERFERENCE SUPPRESSION ON SINGLE-CHANNEL SAR**
Board PE.3
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** **AN NOVEL IMAGING ALGORITHM FOR MEB SAR SYSTEMS WITH CHANNEL ERRORS**
Board PE.4
Yang Zhang, Taoli Yang, Xingyu Lu, University of Electronic Science and Technology of China, China
- WEP1.PE.5** **REMOVAL OF DIFFERENT TYPES OF NOISES IN SYNTHETIC APERTURE RADAR (SAR) IMAGES FOR IMPROVED SHIP DETECTION**
Board PE.5
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** **SAR INTERFERENCE SUPPRESSION BASED ON SIGNAL SYNTHESIS FROM JOINT TIME-FREQUENCY DISTRIBUTION**
Board PE.6
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** **TEMPORAL STABILITY OF GROUND NOTCHED IMAGES**
Board PE.7
Mauro Mariotti d'Alessandro, Politecnico di Milano, Italy; Yu Bai, Wuhan University, China; Stefano Tebaldini, Politecnico di Milano, Italy
- WEP1.PE.8** **MICRO-MOTION DECEPTION JAMMING ON SAR USING FREQUENCY DIVERSE ARRAY**
Board PE.8
Zhulin Zong, Libing Huang, Hui Wang, Limei Huang, Zhaowei Shu, University of Electronic Science and Technology of China, China
- WEP1.PE.9** **GPU-ACCELERATED FEATURE EXTRACTION AND TARGET CLASSIFICATION FOR HIGH-RESOLUTION SAR IMAGES**
Board PE.9
Yang-Lang Chang, Sina Hadipour, Cheng-Yen Chiang, National Taipei University of Technology, Taiwan; Hirokazu Kobayashi, Osaka Institute of Technology, Japan
- WEP1.PE.10** **A COMPLEX DECONVOLUTION METHOD BASED ON DOPPLER CENTROID ESTIMATION**
Board PE.10
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** **LOCAL COMPETITIVE WISHART CLASSIFIER FOR POLARIMETRIC SAR IMAGES**
Board PE.1
Xiyun Liu, Junjun Yin, Tao Wang, University of Science and Technology Beijing, China
- WEP2.PE.2** **PLASTIC-MULCHED FARMLAND CLASSIFICATION COMPARISONS BETWEEN X AND C-BAND POLARIMETRIC SAR DATA**
Board PE.2
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** **CLASSIFICATION OF HUNSHANDAKE SANDY LAND BASED ON POLARIMETRIC SAR DATA**
Board PE.3
Weixian Tan, Tingting He, Pingping Huang, Wei Xu, Inner Mongolia University of Technology, China
- WEP2.PE.4** **UNSUPERVISED CATEGORIZATION OF FOREST-COVER USING MULTI-SPECTRAL AND HYBRID POLARIMETRIC SAR IMAGES**
Board PE.4
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** **REGION-BASED CLASSIFICATION OF GF-3 POLSAR IMAGERY USING DEEP REINFORCEMENT LEARNING METHOD**
Board PE.5
Wen Nie, Jie Yang, Pingxiang Li, Lingli Zhao, Jinqi Zhao, Kui Huang, Xiaomeng Geng, Wuhan University, China
- WEP2.PE.6** **UNSUPERVISED CLASSIFICATION OF HIGH-RESOLUTION SAR IMAGES USING MULTILAYER LEVEL SET METHOD**
Board PE.6
Chuan Xu, Haigang Sui, Junyi Liu, Kaimin Sun, Wuhan University, China; Li Hua, Huazhong Agricultural University, China
- WEP2.PE.7** **SAR IMAGE CLASSIFICATION VIA CNN WITH STATISTICAL POOLING**
Board PE.7
Chudi Hu, LIESMARS, Wuhan University, China; Xin Su, Wuhan University, China; Bin Luo, LIESMARS, Wuhan University, China
- WEP2.PE.8** **JOINT CONVOLUTIONAL NEURAL NETWORK FOR SMALL-SCALE SHIP CLASSIFICATION IN SAR IMAGES**
Board PE.8
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** **INFORMATION ACQUISITION ABILITY OF LFMW FOR SAR**
Board PE.9
Jiawei Zhang, Huaping Xu, Zhaohong Li, Jingwen Li, Beihang University, China
- WEP2.PE.10** **A STUDY ON THE FREQUENCY AND AZIMUTH COHERENCE OF HIGH-RESOLUTION SAR IMAGE**
Board PE.10
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** **DEEP LEARNING SOLUTIONS FOR TANDEM-X-BASED FOREST CLASSIFICATION**
Board PE.11
Antonio Mazza, University Federico II of Naples, Italy; Francescopaolo Sica, German Aerospace Center (DLR), Germany
- WEP2.PE.12** **FOREST CLASSIFICATION AND DEFORESTATION MAPPING BY MEANS OF SENTINEL-1 INSAR STACKS**
Board PE.12
Francescopaolo Sica, Andrea Pulella, Paola Rizzoli, German Aerospace Center (DLR), Germany

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, Yuhua 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; Ján 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**
Prajawal 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 Patnis, 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 Bhargale, K. J. Somaiya College of Engineering, India; Surya Durbha, Abhishek Patnis, 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**
Malgorzata 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 SALT MARSH 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

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** **UAV-BASED IDENTIFICATION OF ACHNATHERUM SPLENDENS COMMUNITY COMBINING K-MEANS AND ARTIFICIAL FISH SWARM ALGORITHM**
Board PG.1
Jinling Zhao, Yan Fang, Qi Hong, Anhui University, China; Zhenggao Pan, Suzhou University, China; Linsheng Huang, Dongyan Zhang, Anhui University, China
- WEP1.PG.2** **TWO-BRANCH NEURAL NETWORK FOR LEARNING MULTI-LABEL CLASSIFICATION IN UAV IMAGERY**
Board PG.2
Yakoub Bazi, King Saud University, Saudi Arabia
- WEP1.PG.3** **RESEARCH ON UAV IMAGE REGISTRATION BASED ON SIFT ALGORITHM ACCELERATION**
Board PG.3
Wei Li, Changhui Li, Feng Wang, Guangzhou Urban Planning Design & Survey Research Institute, China
- WEP1.PG.4** **FULLY CONVOLUTIONAL SVM FOR CAR DETECTION IN UAV IMAGERY**
Board PG.4
Yoyou 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** **EXTRACTING CADASTRAL BOUNDARIES FROM UAV IMAGES USING FULLY CONVOLUTIONAL NETWORKS**
Board PG.5
Xue Xia, Mila Koeva, Claudio Persello, University of Twente, Netherlands
- WEP1.PG.6** **DEEP LEARNING FOR SEMANTIC SEGMENTATION OF UAV VIDEOS**
Board PG.6
Yiwen Wang, Ye Lyu, University of Twente, Netherlands; Yanpeng Cao, Zhejiang University, China; Michael Ying Yang, University of Twente, Netherlands
- WEP1.PG.7** **AN EMPIRICAL APPROACH ON SHADOW REDUCTION OF UAV IMAGERY IN FORESTS**
Board PG.7
Xavier Pons, Joan-Cristian Padró, Universitat Autònoma de Barcelona, Spain
- WEP1.PG.8** **WEED DETECTION USING CONVOLUTIONAL NEURAL NETWORKS BASED ON U-NET IN RGB UAV IMAGES**
Board PG.8
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** **MINERAL MAPPING OF DRILL CORE HYPERSPECTRAL DATA WITH EXTREME LEARNING MACHINES**
Board PG.1
Cecilia Contreras, Mahdi Khodadadzadeh, Pedram Ghamisi, Richard Gloaguen, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Helmholtz Institute Freiberg for Resource Technology, Germany
- WEP2.PG.2** **SEMI-SUPERVISED CLASSIFICATION FOR HYPERSPECTRAL IMAGES USING EDGE-CONDITIONED GRAPH CONVOLUTIONAL NETWORKS**
Board PG.2
Anshu Sha, Bin Wang, Xiaofeng Wu, Liming Zhang, Bo Hu, Jian Qiu Zhang, Fudan University, China
- WEP2.PG.3** **SPECTRAL-SPATIAL CLUSTERING OF HYPERSPECTRAL IMAGE BASED ON LAPLACIAN REGULARIZED DEEP SUBSPACE CLUSTERING**
Board PG.3
Meng Zeng, Yaoming Cai, Xiaobo Liu, Zhihua Cai, Xiang Li, China University of Geosciences (Wuhan), China
- WEP2.PG.4** **CORRELATION ALIGNMENT BASED ON SPARSE MATRIX TRANSFORM FOR UNSUPERVISED DOMAIN ADAPTATION IN HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PG.4
Tianhui Wei, Wenqi Fan, Jiangtao Peng, Hubei University, China; Weiwei Sun, Ningbo University, China
- WEP2.PG.5** **KNOWLEDGE GUIDED CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON HIERARCHICAL CLASS TREE**
Board PG.5
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** **MULTISCALE SPECTRAL-SPATIAL UNIFIED NETWORKS FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PG.6
Sifan Wu, Junping Zhang, Chongxiao Zhong, Harbin Institute of Technology, China
- WEP2.PG.7** **SUPERVISED HYPERSPECTRAL IMAGE CLASSIFICATION VIA SPARSE SEPARABLE CONVOLUTIONAL FEATURE LEARNING**
Board PG.7
Mengfei Song, Jie Song, Liang Xiao, Nanjing University of Science and Technology, China
- WEP2.PG.8** **HYPERSPECTRAL IMAGE CLASSIFICATION WITH BACKGROUND**
Board PG.8
Xiaodi Shang, Meiping Song, Chunyan Yu, Dalian Maritime University, China; Chein-I Chang, University of Maryland, United States
- WEP2.PG.9** **PIXEL DAG-RECURRENT NEURAL NETWORK FOR SPECTRAL-SPATIAL HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PG.9
Xiufang Li, Qigong Sun, Lingling Li, Zhongle Ren, Fang Liu, Licheng Jiao, Xidian University, School of Artificial Intelligence, China

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 SEMI-SUPERVISED PYRAMID FEATURE CO-TRAINING NETWORK FOR LIDAR DATA CLASSIFICATION**
Board PH.1
Zexin Wang, Haoran Wang, Licheng Jiao, Xu Liu, Xidian University, China
- WEP1.PH.2 COLLABORATIVE CLASSIFICATION OF HYPERSPECTRAL AND LIDAR DATA WITH INFORMATION FUSION AND DEEP NETS**
Board PH.2
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 LAND COVER CLASSIFICATION USING REMOTE SENSING IMAGES AND LIDAR DATA**
Board PH.3
Shouji Du, Shihong Du, Peking University, China
- WEP1.PH.4 A NOVEL LIDAR DATA CLASSIFICATION ALGORITHM COMBINED DENSENET WITH STN**
Board PH.4
Aili Wang, Minhui Wang, Kaiyuan Jiang, Lanfei Zhao, Harbin University of Science and Technology, China; Yuji Iwahori, Chubu University, Japan
- WEP1.PH.5 LIDAR DATA CLASSIFICATION ALGORITHM BASED ON GENERATIVE ADVERSARIAL NETWORK**
Board PH.5
Aili Wang, Yao Li, Kaiyuan Jiang, Lanfei Zhao, Harbin University of Science and Technology, China; Yuji Iwahori, Chubu University, Japan
- WEP1.PH.6 VOXEL-BASED ATTRIBUTE PROFILES ON LIDAR DATA FOR LAND COVER MAPPING**
Board PH.6
Florent Guiotte, LETG-Rennes, France; Sébastien Lefèvre, IRISA, France; Thomas Corpetti, LETG-Rennes, France
- WEP1.PH.7 AN UNSUPERVISED OUTLIER DETECTION METHOD FOR 3D POINT CLOUD DATA**
Board PH.7
Emon Kumar Dey, Mohammad Awrangjeb, Bela Stantic, Griffith University, Australia
- WEP1.PH.8 EXTRACTION OF MULTI-SCALE GEOMETRIC FEATURES FOR POINT CLOUD CLASSIFICATION**
Board PH.8
Rong Huang, Yusheng Xu, Uwe Stilla, Technical University of Munich (TUM), Germany
- WEP1.PH.9 AN AUXILIARY PARKING METHOD BASED ON AUTOMOTIVE MILLIMETER WAVE SAR**
Board PH.9
Rufei Wang, Jifang Pei, Yongchao Zhang, Minghui Li, Yulin Huang, Junjie Wu, University of Electronic Science and Technology of China, China
- WEP1.PH.10 A NOVEL COMPOSITE KERNEL APPROACH FOR MULTISENSOR REMOTE SENSING DATA FUSION**
Board PH.10
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 IMPROVING HYPERSPECTRAL IMAGE CLASSIFICATION WITH UNSUPERVISED KNOWLEDGE LEARNING**
Board PH.1
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 SUB-PIXEL MAPPING WITH MULTIPLE SHIFTED HYPERSPECTRAL IMAGES BASED ON MULTIOBJECTIVE EVOLUTIONARY ALGORITHM**
Board PH.2
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 SEGMENTATION-AWARE HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PH.3
Berkan Demirel, Omer Ozdil, Yunus Emre Esin, Safak Ozturk, HAVELSAN Inc., Turkey
- WEP2.PH.4 HYPERSPECTRAL IMAGE DENOISING VIA NON-LOCAL SPARSE SUBSPACE CLUSTERING**
Board PH.4
Lei Zhou, Chen Wang, Xiao Bai, Beihang University, China; Jun Zhou, Griffith University, Australia
- WEP2.PH.5 COLLABORATIVE REPRESENTATION ENSEMBLE USING BAGGING FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PH.5
Yao Yu, Hongjun Su, Hohai University, China
- WEP2.PH.6 ITERATIVE RANDOM TRAINING SAMPLE SELECTION FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PH.6
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 DATA AUGMENTATION AND REFINING WITH STEERING STENCILS FOR SUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGE**
Board PH.7
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 CLASSIFICATION BASED ON CAPSULE NETWORK WITH HYPERSPECTRAL IMAGE**
Board PH.8
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 FAST KERNEL COLLABORATIVE REPRESENTATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PH.9
Yan Xu, Qian Du, Nicolas Younan, Mississippi State University, United States

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 **SOIL ORGANIC MATTER ESTIMATION USING HYPERSPECTRAL REMOTE SENSING TECHNIQUES IN A WATER-LEVEL-FLUCTUATING ZONE AROUND GUANTING RESERVOIR, BEIJING, CHINA**
Board Pl.1
Zhaoning Gong, Qiwei Wang, Cheng Zhang, Hongliang Guan, Capital Normal University, China

WEP1.PI.2 **ON THE LIGHT PENETRATION IN NATURAL SANDS**
Board Pl.2
Gladimir Baranowski, Bradley Kimmel, Petri Varsa, Mark Iwanchyshyn, University of Waterloo, Canada

WEP1.PI.3 **RELATIONS BETWEEN LANDSAT SPECTRAL REFLECTANCES AND LAND SURFACE EMISSIVITY OVER BARE SOILS**
Board Pl.3
Albert Oliso, INRA, France; Xavier Briottet, Sophie Fabre, ONERA, France; Frédéric Jacob, IRD, France; Aurélie Michel, Siman Nativel, ONERA, France; Vincent Rivalland, Jean-Louis Roujean, CNRS, France

WEP1.PI.4 **INFLUENCE OF QUALITY FILTERING APPROACHES IN BEC SMOS L3 SOIL MOISTURE PRODUCTS**
Board Pl.4
Miriam Pablos, Institut of Marine Sciences - Spanish Research Council (ICM - CSIC), Spain; Mercè Vall-Hossera, Universitat Politècnica de Catalunya (UPC), Spain; Maria 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 **A SIMPLE, PHYSICALLY-BASED SOIL MOISTURE INDEX FROM SMAP RADIOMETER OBSERVATIONS**
Board Pl.5
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 **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**
Board Pl.6
Xingming Zheng, Northeast Institute of Geography and Agriculture, Chinese Academy of Sciences, China; Yu Bai, Jilin University, China; Tao Jiang, Northeast Institute of Geography and Agriculture, Chinese Academy of Sciences, China; Xiaowei Zhao, Jilin University, China; Kai Zhao, Northeast Institute of Geography and Agriculture, Chinese Academy of Sciences, China

WEP1.PI.7 **OVERVIEW AND INITIAL RESULTS OF SOIL MOISTURE EXPERIMENT IN THE LUAN RIVER**
Board Pl.7
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 **SOIL MOISTURE RETRIEVAL USING A MODIFIED DECOMPOSITION METHOD AND MULTI-INCIDENCE POLARIMETRIC SAR DATA**
Board Pl.8
Hongtao Shi, Jie Yang, Lingli Zhao, Lei Shi, Pingxiang Li, Jinqi Zhao, Wensong Liu, Lei Wang, Wuhan University, China

WEP1.PI.9 **ESTIMATION OF SOIL MOISTURE THROUGH WATER CLOUD MODEL USING SENTINEL-1A SAR DATA**
Board Pl.9
Vijay Pratap Yadav, Rajendra Prasad, Ruchi Bala, Ajeet Kumar Vishwakarma, Indian Institute of Technology BHU (Banaras Hindu University), India

WEP1.PI.10 **EVALUATION OF SATELLITE-DERIVED SOIL MOISTURE PRODUCTS USING GROUND-BASED OBSERVATIONS ACROSS CANADA AND CHINA**
Board Pl.10
Ally Toure, Ramata Magaggi1 Magaggi, Kalifa Goita, Hongquan Wang, University of Sherbrooke, Canada

WEP1.PI.11 **GROUND OBSERVATION EXPERIMENTS OF SOIL MOISTURE BASED ON DIFFERENT VEGETATION COVERAGE**
Board Pl.11
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 **SIMULATED MULTI-ANGULAR MICROWAVE RADIATION OF MOUNTAINOUS AREA**
Board Pl.12
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 **SUPER-RESOLUTION OF FORWARD-LOOKING SCANNING RADAR BASED ON LOW-RANK AND SPARSE CONSTRAINTS**
Board Pl.1
Wentao Zhang, Wenchao Li, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

WEP2.PI.2 **VIDEO SATELLITE IMAGERY SUPER-RESOLUTION VIA A DEEP RESIDUAL NETWORK**
Board Pl.2
Jiemin Wu, Zhi He, Li Zhuo, Sun Yat-Sen University, China

WEP2.PI.3 **IMPROVING THE PERFORMANCES OF TWO PANSHARPENING METHODS BASED ON REMOTE SENSING PHYSICS**
Board Pl.3
Hui Li, Linhai Jing, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

WEP2.PI.4 **HYPERSPECTRAL IMAGE SUPER-RESOLUTION BASED ON MULTI-SCALE WAVELET 3D CONVOLUTIONAL NEURAL NETWORK**
Board Pl.4
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 **GRADIENT-BASED ADAPTIVE IMAGE SUPER RESOLUTION**
Board Pl.5
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 **IMPROVED MULTIREOLUTION ANALYSIS METHOD FOR HYPERSPECTRAL PANSHARPENING**
Board Pl.6
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 **HIGH RESOLUTION SAR IMAGE SYNTHESIS WITH HIERARCHICAL GENERATIVE ADVERSARIAL NETWORKS**
Board Pl.7
Henghua Huang, Fan Zhang, Yongsheng Zhou, Qiang Yin, Wei Hu, Beijing University of Chemical Technology, China

WEP2.PI.8 **A MULTI-SCALE DENSELY DEEP LEARNING METHOD FOR PANSHARPENING**
Board Pl.8
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 **PAN-SHARPENING VIA ROG-BASED FILTERING**
Board Pl.9
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** **RETRIEVAL PERFORMANCE ANALYSIS FOR TIME SERIES RETRIEVALS OF SOIL MOISTURE UNDER DYNAMIC VEGETATION CANOPIES AND HETEROGENEOUS LAND COVER USING THE CYGNSS CONSTELLATION**
Board PJ.1
Mohammad Al-Khaldi, Shanka Wijesundara, Joel Johnson, Ohio State University, United States
- WEP1.PJ.2** **REMOTE SENSING OF SOIL MOISTURE FOR VEGETATION/FORESTS WITH LARGE VWC USING NMM3D FULL WAVE SIMULATIONS**
Board PJ.2
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** **ESTIMATING SOIL MOISTURE FROM SAR INTERFEROMETRY WITH CLOSURE PHASES**
Board PJ.3
Giorgio Gomba, Francesco De Zan, German Aerospace Center (DLR), Germany
- WEP1.PJ.4** **APPLYING A MACHINE LEARNING METHOD TO OBTAIN LONG TIME AND SPATIO-TEMPORAL CONTINUOUS SOIL MOISTURE OVER THE TIBETAN PLATEAU**
Board PJ.4
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** **SPATIOTEMPORAL TREND ANALYSIS OF SOIL MOISTURE RETRIEVED FROM THREE NLDAS-BASED ADVANCED LAND SURFACE MODELS OVER THE UNITED STATES: A COMPARATIVE STUDY**
Board PJ.5
Tingli Wang, Dagang Wang, Sun Yat-Sen University, China; Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China
- WEP1.PJ.6** **MULTI-PLATFORM RADIOMETER SYSTEMS FOR SURFACE SOIL MOISTURE RETRIEVAL**
Board PJ.6
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** **ESTIMATING SURFACE SOIL MOISTURE FROM AMSR2 TB WITH ARTIFICIAL NEURAL NETWORK METHOD AND SMAP PRODUCTS**
Board PJ.7
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** **RETRIEVAL OF SOIL SURFACE PARAMETERS VIA HELICOPTER-BORNE P-BAND POLARIMETRIC SAR DATA ACQUIRED ALONG ANTIPARALLEL FLIGHT TRACKS**
Board PJ.8
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** **DOWNSCALING SMAP PASSIVE SOIL MOISTURE PRODUCT WITH MODIS PRODUCTS OVER MOUNTAINOUS REGION**
Board PJ.9
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** **ESTIMATING SOIL MOISTURE USING THE OPTICAL TRAPEZOID MODEL (OPTRAM) IN A SEMI-ARID AREA OF SONGNEN PLAIN, CHINA BASED ON LANDSAT-8 DATA**
Board PJ.10
Fang Huang, Ping Wang, Yue Ren, Rong Liu, Northeast Normal University, China
- WEP1.PJ.11** **SOIL MOISTURE ESTIMATION USING CYGNSS CONSTELLATION**
Board PJ.11
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** **SOIL MOISTURE ACQUISITION THROUGH MULTISPECTRAL SENSORS COUPLED TO UNMANNED AERIAL VEHICLE (UAV)**
Board PJ.12
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** **A ROBUST IMAGE SEQUENCE REGISTRATION ALGORITHM FOR VIDEOSAR COMBINING SURF WITH INTER-FRAME PROCESSING**
Board PJ.1
Zihan Li, Zhen Dong, Anxi Yu, Zhihua He, Xiaoxiang Zhu, National University of Defense Technology, China
- WEP2.PJ.2** **TEXTURING BUENOS AIRES BUILDINGS WITH WORLDVIEW3 IMAGES**
Board PJ.2
Marie d'Autume, Enric Meinhardt-Llopis, CMLA, ENS Cachan, CNRS, Université Paris-Saclay, France
- WEP2.PJ.3** **SAR AND OPTICAL IMAGE FUSION FOR COASTAL SURVEILLANCE**
Board PJ.3
Li Zheng, Jifang Pei, Yin Zhang, Jianyu Yang, Wu Junjie, Yulin Huang, University of Electronic Science and Technology of China, China
- WEP2.PJ.4** **COMPARATIVE ANALYSIS OF LANDUSE LAND COVER BETWEEN OPTICAL AND FUSED IMAGE WITH SAR**
Board PJ.4
Khusharrah Khusharrah Aslam, Rao Zahid Khalil, Saad Ul Haque, Institute of Space Technology, Pakistan
- WEP2.PJ.5** **JOINT CLASSIFICATION OF MULTIREOLUTION AND MULTISENSOR DATA USING A MULTISCALE MARKOV MESH MODEL**
Board PJ.5
Alessandro Montaldo, Luca Fronda, University of Genoa, Italy; Ihsen Hedhli, Université Laval, Canada; Gabriele Moser, University of Genoa, Italy; Josiane Zerubia, Inria, UCA, France; Sebastiano Serpico, University of Genoa, Italy
- WEP2.PJ.6** **A NOVEL DEEP CLASSIFICATION FRAMEWORK FOR HIGH RESOLUTION REMOTE SENSING IMAGES BY OPEN DATA**
Board PJ.6
Yiqing Qin, Mingmin Chi, Fudan University, China
- WEP2.PJ.7** **MAIZE GROWTH AND CONDITION MONITORING WITH MULTISENSOR REMOTELY SENSED TIME SERIES**
Board PJ.7
Gohar Ghazaryan, Olena Dubovyk, Jonas Schreier, Valerie Graw, Jürgen Schellberg, University of Bonn, Germany
- WEP2.PJ.8** **A TOPOLOGICAL DATA ANALYSIS GUIDED FUSION ALGORITHM: MAPPER-REGULARIZED MANIFOLD ALIGNMENT**
Board PJ.8
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** **EVALUATION ON BJ-2 IMAGE FUSION ALGORITHMS FOR SATELLITE IMAGES OF COASTAL AQUACULTURE SEA AREAS**
Board PJ.9
Jialan Chu, Yanlong Chen, Jianhua Zhao, Fei Wang, National Marine Environmental Monitoring Center, China

Wednesday, July 31 09:40 - 10:40 Room 501-502: Area K
Session WEP1.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; Zahra 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, Elhousaine 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 Bazile, 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-Huerta, 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 Grillakias, 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

Wednesday, July 31 15:20 - 16:20 Room 501-502: Area K
Session WEP2.PK Poster

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, Yayang Sun, China Institute of Water Resources and Hydropower Research (IWRH), 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 Santì, 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**
Qixia 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 THEM-MEX'15 DATASET**
Alejandro Monsiváis-Huerta, 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 Gu, Xiaotao Li, China Institute of Water Resources and Hydropower Research (IWRH), 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 Duchame, 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** RECALIBRATION OF OFFSHORE CHLOROPHYLL CONTENT BASED ON VIRTUAL SATELLITE CONSTELLATION
Board PL.1
Miaofen Huang, Xufeng Xing, Weijian Luo, Zhonglin Wang, Guangdong Ocean University, China
- WEP1.PL.2** SPATIAL AND SEASONAL VARIATIONS OF THE UPPER OCEAN CHLOROPHYLL CONCENTRATION IN THE EASTERN NORTH PACIFIC
Board PL.2
Tao Wang, Jue Ning, Qing Xu, Hohai University, China
- WEP1.PL.3** RECONSTRUCT OCEANIC CHLOROPHYLL AND REFLECTANCE DATA BASED ON AN IMPROVED VE-DINEOF METHOD
Board PL.3
Bo Ping, Tianjin University, China; Yunshan Meng, National Marine Data and Information Service, China
- WEP1.PL.4** THE VALIDATION OF RADIOMETRIC PRODUCT DERIVED FROM VIIRS AROUND CHINA SEA FROM CLEAN WATER TO TURBID WATER
Board PL.4
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** EFFECTS OF ENVIRONMENTAL FACTORS ON PHYTOPLANKTON DYNAMICS DURING BLOOM CONDITIONS IN THE PEARL RIVER ESTUARY, CHINA
Board PL.5
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** LONG-TIME-SCALE INVESTIGATION OF PHYTOPLANKTON BIOMASS THROUGH RECONSTRUCTED CHLOROPHYLL-A DATA USING DINEOF METHOD
Board PL.6
Rebekah S, A B Inamdar, Shirish S Gadam, Indian Institute of Technology Bombay, India
- WEP1.PL.7** OCEAN COLOR ATMOSPHERIC CORRECTION OF SENTINEL-3 OLCI USING SWIR METHOD
Board PL.7
Huizeng Liu, Hong Kong Baptist University, China; Guofeng Wu, Qingquan Li, Shenzhen University, China; Qiming Zhou, Hong Kong Baptist University, China
- WEP1.PL.8** INVESTIGATION OF THE CHLOROPHYLL-A CONCENTRATION RESPONSE TO SEA SURFACE TEMPERATURE (SST) IN THE EAST CHINA SEA
Board PL.8
Chenxu Ji, Nanjing University of Information Science and Technology, China; Yuanzhi Zhang, Chinese University of Hong Kong, China
- WEP1.PL.9** WATER QUALITY MONITORING ALONG THE GIZZRI CREEK: AN APPLICATION OF OLS REGRESSION USING LANDSAT OLI IMAGERY
Board PL.9
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** EXPERIMENTAL INVESTIGATION OF THE COUPLED HYDRAULIC AND LOW-FREQUENCY DIELECTRIC BEHAVIOR OF THE ARCTIC PERMAFROST ACTIVE LAYER ORGANIC SOIL
Board PL.1
Kazem Bakian-Dogaheh, Richard Chen, Mahta Moghaddam, Alireza Tabatabaenejad, University of Southern California, United States
- WEP2.PL.2** SENSITIVITY OF BACKSCATTER TO SOIL WATER CONTENT AT L-, S-, C-, AND X-BANDS IN SEMI-FLOODED AREA
Board PL.2
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** EVALUATION OF DENGUE DISEASE IN BRAZIL: MULTIVARIABLE ANALYSIS
Board PL.3
Luciana Rossato Spatafora, Mohamed El Khayati, Mercè Vall-Ilossera, 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** A FRAMEWORK OF IMPROVING SATELLITE PRECIPITATION PRODUCTS BY UTILIZING SOIL MOISTURE AND TEMPERATURE INFORMATION
Board PL.4
Wei Wang, Changjiang Institute of Survey, Planning, Design and Research, China; Hui Lu, Fan Yang, Kun Yang, Tsinghua University, China
- WEP2.PL.5** A DOWNSCALING SCHEME FOR DERIVING SPATIALLY CONTINUOUS FINE-RESOLUTION SOIL MOISTURE DATA BASED ON GAP-FREE LAND SURFACE TEMPERATURE
Board PL.5
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** LEAK DETECTION IN WATER TRANSMISSION SYSTEMS BY MULTISPECTRAL REMOTE SENSING WITH AIRPLANE AND UAV
Board PL.6
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** STUDY AND APPLICATION OF METHODS OF SOIL MOISTURE CONTENT DATA ASSIMILATION FOR REGIONS PARTIALLY LACKING OF OBSERVATION DATA
Board PL.7
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** EVALUATION OF A PHYSICALLY-BASED PASSIVE MICROWAVE LAND SURFACE TEMPERATURE RETRIEVAL ALGORITHM USING MODIS DATA
Board PL.8
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** IMPACTS OF THE TERRESTRIAL CARBON CYCLE ON ATMOSPHERIC CO₂ GROWTH RATES INFERRED FROM CCDAS USING REMOTELY SENSED SOIL MOISTURE
Board PL.9
Mousong Wu, Nanjing University, China; Marko Scholze, Lund University, Sweden; Thomas Kaminski, Michael Vossbeck, The Inversion Lab, Germany
- WEP2.PL.10** CHARACTERIZATION OF SENTINEL-MSI AND LANDSAT-OLI FILTERS RESPONSIVITIES DIFFERENCES FOR SOIL SALINITY DYNAMIC MONITORING IN AN ARID LANDSCAPE
Board PL.10
Abderrazak Bannari, Nadir Hameid, Arabian Gulf University, Bahrain
- WEP2.PL.11** MEASURING COMPLEX PERMITTIVITY OF SOILS BY WAVEGUIDE TRANSMISSION/REFLECTION METHOD
Board PL.11
Shan Liao, Bo Gao, Ling Tong, Xun Yang, Yu Li, Ming Li, University of Electronic Science and Technology of China, China
- WEP2.PL.12** PRELIMINARY APPLICABILITY ANALYSIS OF SOIL DIELECTRIC CONSTANT MODEL OF THE DIFFERENT SOIL TEXTURE CONDITION
Board PL.12
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, 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** **CFSAT SCATTEROMETER DATA LEVEL-1 PROCESSING AND PRELIMINARY RESULTS**
Board PM.1
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** **CAL/VAL PHASE FOR THE SWIM INSTRUMENT ONBOARD CFSAT**
Board PM.2
Raquel Rodriguez Suquet, Laura Hermoz, Cédric Tourain, Céline Tison, CNES, France; Danièle Hauser, Patricia Schippers, Lauriane Delays, LATMOS, CNRS, UVSQ, Sorbonne Université, France; Lotfi Aouf, Alice Dolphinet, 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 Guillon, Ifremer, France; Jean-Michel Lachiver, CNES, France
- WEP1.PM.3** **THE PRELIMINARY RESULTS OF HY-2B MICROWAVE SCATTEROMETER DATA**
Board PM.3
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; Xuotong Xie, School of Geographical Sciences, Guangzhou University, China; Mingsen Lin, Yarong Zou, National Satellite Ocean Application Service, China
- WEP1.PM.4** **WIND RETRIEVAL ACCURACY ANALYSIS OF HY-2B MICROWAVE SCATTEROMETER**
Board PM.4
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** **SYNERGY OF EXPERIMENTAL, THEORETICAL AND NUMERICAL APPROACHES FOR A BETTER UNDERSTANDING OF SKIM NEAR NADIR KA-BAND DOPPLER MEASUREMENTS.**
Board PM.5
Frederic Nouguier, Bertrand Chapron, Ifremer, France; Fabrice Collard, OceanDataLab, France; Fabrice Arduin, CNRS, France
- WEP1.PM.6** **A SST-DEPENDENT GEOPHYSICAL MODEL FUNCTION FOR HY-2A MICROWAVE SCATTEROMETER**
Board PM.6
Xuotong Xie, Guangzhou University, China; Dongxuan Tian, Institute of Space Radio Technology, China; Kehai Chen, Zhifeng Wu, Songhong Tan, Guangzhou University, China
- WEP1.PM.7** **SEA SURFACE WIND RETRIEVAL FROM SYNTHETIC APERTURE RADAR DATA BY DEEP CONVOLUTIONAL NEURAL NETWORKS**
Board PM.7
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** **NOAA SCATTEROMETER WIND RETRIEVALS FROM THE SCATSAT-1 MISSION**
Board PM.8
Seubson Soisuvam, NOAA/NESDIS-UCAR, United States; Zorana Jelenak, Faozi Said, Jeonghwan Park, Qi Zhu, Paul Chang, NOAA/NESDIS, United States
- WEP1.PM.9** **ANALYSIS OF CYGNSS WIND CHARACTERISTICS WITH NOAA L2 RETRIEVALS AND TES METHOD**
Board PM.9
Jeonghwan Park, Faozi Said, NOAA / Global Science & Technology, Inc., United States; Stephen J. Katzberg, NASA Langley Research Center, United States; Seubson Soisuvam, Zorana Jelenak, NOAA/UCAR, United States; Paul S. Chang, NOAA, United States
- WEP1.PM.10** **EXPERIMENTAL STUDY OF THE SURFACE WAVES PARAMETERS INFLUENCE ON THE BACKSCATTERED DOPPLER SPECTRUM CHARACTERISTICS**
Board PM.10
Yuriy Titchenko, Eugeny Meshkov, Vladimir Karaev, Institute of Applied Physics, Russian Academy of Science, Russia
- WEP1.PM.11** **NEW OPPORTUNITIES FOR MULTISTATIC REMOTE SENSING OF WATER SURFACE USING RECEIVERS WITH DIFFERENT ANTENNA PATTERNS**
Board PM.11
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** **A DESIGN OF HYPERSPECTRAL MICROWAVE RADIOMETER SUBSYSTEM FOR SOUNDING ATMOSPHERE**
Board PM.1
Yangjin Luo, Shengwei Zhang, National Space Science Center, Chinese Academy of Sciences, China
- WEP2.PM.2** **CHARACTERIZATION OF THE X-BAND FPASMR AIRBORNE EXPERIMENT**
Board PM.2
Xiaojiao Yang, Guangnan Song, Hailiang Lu, Pengfei Li, Yanan Li, Jiakun Wang, Xi'an Institute of Space Radio Technology, China
- WEP2.PM.3** **RESEARCH ON WATER ICE IN LUNAR POLES BASED ON THE SVD METHOD FROM CHANG'E-2 MRM DATA**
Board PM.3
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** **ANALYSIS OF NON-STATIONARY RADIOMETER GAIN VIA ENSEMBLE DETECTION**
Board PM.4
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** **THE CALIBRATION AND STABILITY ANALYSIS OF THE JPL ULTRA-WIDE P/L-BAND RADIOMETER**
Board PM.5
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** **ARTIFACTS SUPPRESSION OF PASSIVE MILLIMETER-WAVE SAIR IMAGING**
Board PM.6
Xiaotao Shao, Caika 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** **FIELD OF VIEW OF MIRRORED APERTURE SYNTHESIS RADIOMETERS**
Board PM.7
Yufang Li, Qingxia Li, Liangji Gui, Huazhong University of Science and Technology, China; Li Feng, Hubei University of Technology, China; Haofeng Dou, Yuanhao Wu, Zhenyu Lei, Huazhong University of Science and Technology, China
- WEP2.PM.8** **A MULTI-BAND PASSIVE RADIOMETER FOR SEA SALINITY, SOIL MOISTURE AND CRYOSPHERE STUDIES**
Board PM.8
Ludovic Bruckner, Giovanni De Amici, Emmanuel Dinnat, David Le Vine, Jeff Piepmeier, NASA Goddard Space Flight Center, United States
- WEP2.PM.9** **SIMULATION SENSITIVITY OF GROUND-BASED MICROWAVE RADIOMETER DURING INTENSIVE OBSERVATION PERIOD**
Board PM.9
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, July 31 09:40 - 10:40 Room 501-502: Area N
Session WEP1.PN Poster

Ocean Surface Winds and Currents II

Session Chair: Duk-Jin Kim, Seoul National University

- WEP1.PN.1** **SENTINEL-1, WW3 AND BUOY SPECTRAL COMPARISONS IN THE SOUTHERN OCEAN**
Board PN.1
Salman Khan, Emilio Echevarria, Mark Hemer, CSIRO, Australia
- WEP1.PN.2** **USING SENTINEL-1 OCEAN DATA FOR MAPPING SEA SURFACE CURRENTS ALONG THE SOUTHERN NORWEGIAN COAST**
Board PN.2
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** **APPLICATION OF SENTINEL-1A DATA IN OFFSHORE WIND FIELD RETRIEVAL IN GUANGDONG PROVINCE**
Board PN.3
Pinghao Wu, Kaiwen Zhong, Hongda Hu, Yi Zhao, Jianhui Xu, Yunpeng Wang, Guangzhou Institute of Geography, Guangdong Academy of Sciences, China
- WEP1.PN.4** **HIGH RESOLUTION SENTINEL-1 AND RADARSAT-2 SAR OBSERVATIONS OF TROPICAL CYCLONES**
Board PN.4
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** **ALONG-TRACK INTERFEROMETRIC SYNTHETIC APERTURE RADAR DOPPLER MEASUREMENT CORRECTION BY USING A SURFACE SCATTERING MODEL**
Board PN.5
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** **NEW INVESTIGATIONS OF TEN-YEAR ENVISAT/ASAR WAVE MODE FOR GLOBAL OCEAN WAVES**
Board PN.6
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** **RECONSTRUCTION OF OCEAN SURFACE CURRENTS USING NEAR SIMULTANEOUS SATELLITE IMAGERY**
Board PN.7
Alexander Osadchiv, Roman Sedakov, Shirshov Institute of Oceanology, Russian Academy of Sciences, Russia
- WEP1.PN.8** **EFFECT OF WIND DIRECTION ON WIND SPEED ERRORS DERIVED FROM SENTINEL-1A/B IW MODE DATA IN KOREAN COASTAL REGION**
Board PN.8
Kyung-Ae Park, Jae-Cheol Jang, Jae-Jin Park, Seoul National University, Korea (South)
- WEP1.PN.9** **UPDATED EDDY STATISTICS FOR THE WESTERN MEDITERRANEAN BASED ON THREE YEARS OF SENTINEL-1A SAR IMAGERY**
Board PN.9
Martin Gade, Annika Stuhlmacher, Universität Hamburg, Germany
- WEP1.PN.10** **EFFECTS OF PROBING SPECTRAL WIDTH ON BISTATIC RADAR SCATTERING FROM SEA SURFACE**
Board PN.10
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** **AIRBORNE SAR OBSERVATION OF WIND DIRECTION DEPENDENCE OF OCEAN SURFACE BACKSCATTERING**
Board PN.11
Akitsugu Nadai, National Institute of Information and Communications Technology (NICT), Japan

Wednesday, July 31 15:20 - 16:20 Room 501-502: Area N
Session WEP2.PN Poster

Microwave Radiometer Instruments and Calibration III

Session Co-Chairs: Adriano Camps, Universitat Politècnica de Catalunya; Paolo de Mattheois, NASA Goddard Space Flight Center; Xinxin Xie, Shanghai Spaceflight Institute of TT&C and Telecommunication

- WEP2.PN.1** **INITIAL PERFORMANCE OF THE HAIYANG-2B SCANNING MICROWAVE RADIOMETER**
Board PN.1
ShuBo Liu, Xv Jin, Xi'an Institute of Space Radio Technology, China; Wu Zhou, National Satellite Ocean Application Service, China; Xiaoning Wang, Rui Yu, YanMing Li, HongXing Dang, XiaoMin Tan, Xi'an Institute of Space Radio Technology, China
- WEP2.PN.2** **ALONG-SCAN BIAS OF FENGYUN-3C MICROWAVE RADIATION IMAGER**
Board PN.2
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** **CALIBRATION OF NOAA-20 ADVANCED TECHNOLOGY MICROWAVE SOUNDER**
Board PN.3
Quanhua (Mark) Liu, NOAA/NESDIS/STAR, United States; Hu Yang, ESSIC, United States; Ninghai Sun, GST, United States
- WEP2.PN.4** **INTER-CALIBRATION OF PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE OBSERVED BY FY-3B/MWRI AND AQUA/AMSR-E ON ARCTIC**
Board PN.4
Haihua Chen, Xiaotong Tang, Lile Li, Lei Guan, Ocean University of China, China
- WEP2.PN.5** **INTERCALIBRATION OF FY-3C MWRI BRIGHTNESS TEMPERATURE AGAINST GMI MEASUREMENTS BASED ON OCEAN MICROWAVE RADIATIVE TRANSFER MODEL**
Board PN.5
Zi-Qian Zeng, Geng-Ming Jiang, Yu-Qiu Jin, Fudan University, China
- WEP2.PN.6** **IMPROVEMENT OF FY-3D/MWRI HOT REFLECTOR BACK LOBE CORRECTION**
Board PN.6
Shengli Wu, National Satellite Meteorological Center, China Meteorological Administration, China
- WEP2.PN.7** **CALIBRATION AND SCANNING STRATEGY OF TROPOSPHERIC WATER AND CLOUD ICE (TWICE) INSTRUMENT FOR 6U-CLASS CUBESATS**
Board PN.7
Yuriy Goncharenko, Braxton Kilmer, Steven Reising, Colorado State University, United States; Pekka Kangaslahti, Richard Cofield, Anders Skalare, Erich Schlecht, Mehmet Ogut, Joelle Cooperider, 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** **SMOS INSTRUMENT PERFORMANCE AFTER MORE THAN 9 YEARS IN ORBIT**
Board PN.8
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** **CORRECTION FOR CALIBRATION ERROR IN HY-2B SCANNING MICROWAVE RADIOMETER**
Board PN.9
Xu Jin, ShuBo Liu, PengJu Dang, Rui Yu, HongXing Dang, XiaoMin Tan, Academy of Space Electronic Information Technology, China
- WEP2.PN.10** **RECEIVER DEVELOPMENT FOR THE MICROWAVE OZONE PROFILING INSTRUMENT MOPI 5**
Board PN.10
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** **5 YEAR TECHNOLOGY ROADMAP FOR VLBI GLOBAL OBSERVING SYSTEM (VGOS)**
Board PN.11
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** **THE RESEARCH ON AN IN-ORBIT EXTERNAL CALIBRATION METHOD OF APERTURE SYNTHETIC RADIOMETER**
Board PN.12
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, 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 ESTIMATE OF WIND AND RAIN RATE INSIDE TROPICAL CYCLONE USING SPACEBORNE C- AND X- BAND PASSIVE MICROWAVE RADIOMETER MEASUREMENTSBoard PO.1
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 ACTIVE/PASSIVE GEOPHYSICAL MODEL FUNCTIONS FOR OCEAN VECTOR WIND RETRIEVALS FROM TRMM**Board PO.2
Alamgir Hossain, 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 TRMM ACTIVE/PASSIVE OCEAN VECTOR WIND RETRIEVALS**Board PO.3
Maria Jacob, Universidad Nacional de Córdoba, Argentina; Alamgir Hossain, W Linwood Jones, University of Central Florida, United States**WEP1.PO.4 MEAN SQUARE SLOPES OF SEA WAVES IN CYCLONE AREA FROM DUAL-FREQUENCY PRECIPITATION RADAR AND MICROWAVE RADIOMETER**Board PO.4
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 Titichenko, Anton Yablokov, Institute of Applied Physics, Russian Academy of Science, Russia**WEP1.PO.5 UNDEWATER ACOUSTIC WAVE GAUGE MEASUREMENTS OF SEA WAVE PARAMETERS: TEST EXPERIMENT AND MODELING**Board PO.5
Maria Ryabkova, Eugeny Meshkov, Vladimir Karaev, Maria Panfilova, Institute of Applied Physics, Russian Academy of Science, Russia**WEP1.PO.6 THE EFFECTS OF MSATD AND MWS ON THE COUPLING COEFFICIENT BETWEEN SATDA AND WSA**Board PO.6
Yifan Wang, Ocean University of China, China; Yunhua Wang, Yanmin Zhang, Ocean University Of China, China**WEP1.PO.7 WIND RETRIEVAL FOR CFOSCAT EDGE AND NADIR OBSERVATIONS BASED ON NEURAL NETWORKS AND IMPROVED PRINCIPLE COMPONENT ANALYSIS**Board PO.7
Xingou Xu, Key Laboratory of Microwave Remote Sensing, China; Ad Stoffelen, Royal Netherlands Meteorological Institute (KNMI), Netherlands**WEP1.PO.8 THE EFFECTS OF WIND TRANSFER ERROR ON CURRENT RETRIEVAL**Board PO.8
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 OBSERVATION OF TYPHOON MERANTI WITH HIGH FREQUENCY RADAR SYSTEM**Board PO.9
Heng Zhou, Xiongbin Wu, Xianchang Yue, School of Electronic Information, Wuhan University, China**WEP1.PO.10 A STUDY ON POLARIMETRIC SCATTEROMETER SIMULATION AND WIND VECTOR RETRIEVAL**Board PO.10
Dongxuan Tian, Institute of Space Radio Technology, China; Xuetao 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 WEED MAPPING USING VERY HIGH RESOLUTION SATELLITE IMAGERY AND FULLY CONVOLUTIONAL NEURAL NETWORK**Board PO.1
Yannik Rist, Iurii Shendryk, Foivos Diakogiannis, Shaun Levick, CSIRO, Australia**WEP2.PO.2 DEEP CONVOLUTIONAL NEURAL NETWORKS FOR PLANE IDENTIFICATION ON SATELLITE IMAGERY BY EXPLOITING TRANSFER LEARNING WITH A DIFFERENT OPTIMIZER**Board PO.2
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 SEMI-SUPERVISED VARIATIONAL GENERATIVE ADVERSARIAL NETWORKS FOR HYPERSPECTRAL IMAGE CLASSIFICATION**Board PO.3
Hao Wang, Chao Tao, Ji Qi, HaiFeng Li, YuQi Tang, Central South University, China**WEP2.PO.4 P-WAVE IDENTIFICATION WITH DEEP NEURAL NETWORK**Board PO.4
Wei Zhu, Xin Li, Chang Liu, Xiong Xu, Weiping Ni, Northwest Institute of Nuclear Technology, China**WEP2.PO.5 DEEP LEARNING ROAD EXTRACTION MODEL BASED ON SIMILARITY MAPPING RELATIONSHIP**Board PO.5
Haoyu Li, Yunping Chen, Yue Yang, Peixin Liu, Chuanqi Zhong, University of Electronic Science and Technology of China, China**WEP2.PO.6 AERIAL IMAGE AND MAP SYNTHESIS USING GENERATIVE ADVERSARIAL NETWORKS**Board PO.6
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 A DEEP LEARNING ARCHITECTURE FOR HETEROGENEOUS AND IRREGULARLY SAMPLED REMOTE SENSING TIME SERIES**Board PO.7
Corrado Avolio, Alessia Tricomi, Claudia Mammone, Massimo Zavagli, Mario Costantini, e-GEOS - Italian Space Agency / Telespazio, Italy**WEP2.PO.8 IMPROVED SEARCH AND DETECTION OF SURFACE-TO-AIR MISSILE SITES USING SPATIAL FUSION OF COMPONENT OBJECT DETECTIONS FROM DEEP NEURAL NETWORKS**Board PO.8
Alan Cannaday, Curt Davis, Grant Scott, University of Missouri, United States**WEP2.PO.9 AN EXTENSIBLE AND EASY-TO-USE TOOLBOX FOR DEEP LEARNING BASED ANALYSIS OF REMOTE SENSING IMAGES**Board PO.9
Raian Vargas Mareto, Thales Sehn Körting, Leila Maria Garcia Fonseca, National Institute for Space Research (INPE), Brazil

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 MICROWAVE SINGLE PIXEL IMAGER (MSPI) OVERVIEW AND IMAGING ALGORITHM

Board PP.1

Justin Bobak, Hatim Alqadah, Michael Nurnberger, Scott Rudolph, David Truesdale, US Naval Research Laboratory, United States

WEP1.PP.2 MICROWAVE SINGLE PIXEL IMAGER (MSPI) ANTENNA ASSEMBLY

Board PP.2

Justin Bobak, Scott Rudolph, Michael Nurnberger, Hatim Alqadah, US Naval Research Laboratory, United States

WEP1.PP.3 DESIGN AND ANALYSIS OF RADIOMETRIC CALIBRATION MISSION IN-ORBIT FOR ENVIRONMENT AND DISASTERS MONITORING SATELLITE

Board PP.3

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 ON STUDY OF ATMS GEOMETRIC CALIBRATION BY USING TWO-DIMENSION LUNAR SCAN OBSERVATIONS

Board PP.4

Jun Zhou, Hu Yang, University of Maryland, United States

WEP1.PP.5 A FEASIBLE SATELLITE ATTITUDE MANEUVER STRATEGY FOR HIGH RESOLUTION SLIDING SPOTLIGHT SAR

Board PP.5

Chaowei Zhou, Zhenfang Li, Xidian University, China; Zhibin Wang, Beijing Institute of Spacecraft System Engineering, China; Feng Tian, Xidian University, China

WEP1.PP.6 LONG-WAVELENGTH INFRARED DIGITAL FOCAL PLANE ARRAYS FOR EARTH REMOTE SENSING APPLICATIONS

Board PP.6

Sarath Gunapala, Sir Rafal, 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 ULID: AN UNCONNECTED L-BAND INTERFEROMETER DEMONSTRATOR

Board PP.7

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 A PLAYBACK SOFTWARE APPLIED TO REMOTE SENSING VIDEO INFORMATION DISPLAY

Board PP.8

Feng Wang, Yuming Xiang, Hongjian You, Institute of Electronics, Chinese Academy of Sciences, China

WEP1.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

Board PP.9

Joan A. Ruiz-de-Azua, Joan F. Muñoz, Lara Fernandez, Marc Badia, David Lloveria, Carlos Diez, Andrea Aguilera, 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 PROOF-OF-CONCEPT OF A FEDERATED SATELLITE SYSTEM BETWEEN TWO

Board PP.10

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 Aguilera, 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; Alessandra Golkar, Skolkovo Institute of Science and Technology, Russia; Adriano Camps, Technical University of Catalonia (UPC), Spain**WEP1.PP.11 ARCHITECTURES AND SYNCHRONIZATION TECHNIQUES FOR COHERENT DISTRIBUTED REMOTE SENSING SYSTEMS**

Board PP.11

Juan Carlos Merlano-Duncan, Jorge Querol, University of Luxembourg, Luxembourg; Adriano Camps, Universitat Politècnica de Catalunya-BarcelonaTech and IEEC/CIE-UPC, Spain; Symeon Chatzinotas, Bjorn Ottersten, University of Luxembourg, Luxembourg

WEP1.PP.12 ENABLING TECHNOLOGIES FOR NEXT GENERATION MIR (MICROWAVE INTERFEROMETRIC RADIOMETER) SYSTEMS

Board PP.12

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 EVALUATION OF MACHINE LEARNING-BASED URBAN SURFACE MAPPING USING A NEW MODERATE-RESOLUTION SATELLITE IMAGERY DATASET

Board PP.1

Xin Luo, Xiaohua Tong, Runjie Wang, Haiyan Pan, Tongji University, China

WEP2.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

Board PP.2

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 CLOUD DETECTION AND CLASSIFICATION FOR S-NPP FSR CRIS DATA USING SUPERVISED MACHINE LEARNING

Board PP.3

Miao Tian, Hao Chen, Guanghui Liu, University of Electronic Science and Technology of China, China

WEP2.PP.4 CROPLAND MAPPING IN FRAGMENTED AGRICULTURAL LANDSCAPE USING MODIFIED PYRAMID SCENE PARSING NETWORK

Board PP.4

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 OPEN MULTI-PROCESSING ACCELERATION FOR UNSUPERVISED LAND COVER CATEGORIZATION USING PROBABILISTIC LATENT SEMANTIC ANALYSIS

Board PP.5

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 DIMENSIONALITY REDUCTION IN THE PRESENCE OF HIGHLY CORRELATED VARIABLES FOR RANDOM FORESTS: WETLAND CASE STUDY

Board PP.6

Amir Behnamian, Sarah Banks, Lori White, Koreen Millard, Darren Pouliot, Jon Pasher, Jason Duffe, Environment and Climate Change Canada, Canada

WEP2.PP.7 SEQUENTIAL RECURRENT ENCODERS FOR LAND COVER MAPPING IN THE BRAZILIAN AMAZON USING MODIS IMAGERY AND AUXILIARY DATASETS

Board PP.7

Alejandro Coca-Castro, King's College London, United Kingdom; Marc Rubwurm, Technical University of Munich, Germany; Louis Reymondin, International Center for Tropical Agriculture, Colombia; Mark Mulligan, King's College London, United Kingdom

WEP2.PP.8 CAN A DEEP NETWORK UNDERSTAND THE LAND COVER ACROSS SENSORS?

Board PP.8

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 DEEP CONVOLUTIONAL NETWORKS FOR CLOUD DETECTION USING RESOURCESAT-2 DATA

Board PP.9

Debvrat Varshney, Prasun Gupta, Indian Institute of Remote Sensing, India; Claudia Persello, University of Twente, Netherlands; Bhaskar Nikam, Indian Institute of Remote Sensing, India

WEP2.PP.10 PREDICTING IMPERVIOUS LAND EXPANSION USING DEEP DECONVOLUTIONAL NEURAL NETWORKS

Board PP.10

Pariya Pourmohammadi, Donald Adjeroh, Michael Strager, West Virginia University, United States

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 ESTIMATING LAND SUBSIDENCE IN RELATION TO URBAN EXPANSION IN SEMARANG CITY, INDONESIA, USING INSAR AND OPTICAL CHANGE DETECTION METHODS

Board PQ.1

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 GROUND DEFORMATION DISASTER MONITORING FOR THE KOREA BY SENTINEL-1

Board PQ.2

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 POTENTIAL OF SENTINEL-1 TIME SERIES DATA FOR MONITORING SINKHOLE FORMATION IN FARMLANDS USING SBAS METHOD

Board PQ.3

Sajjad Sajedizadeh, Mahdi Khoshlahjeh Azar, Yasser Maghsoudi, K.N.Toosi University of Technology, Iran; Amir Shemshaki, Geological Survey of Iran, Iran

WEP1.PQ.4 APPLICATION OF D-INSAR TECHNOLOGY ON RISK ASSESSMENT OF MINING AREA

Board PQ.4

Zhiliang Zhang, Qiming Zeng, Jian Jiao, Peking University, China

WEP1.PQ.5 SURFACE CHANGE OF THE 6TH NUCLEAR TEST OF NORTH KOREA ON 3 SEPTEMBER 2017 DETECTED BY USING SAR IMAGES

Board PQ.5

Jisang Yoon, Hoonyul Lee, Kangwon National University, Korea (South)

WEP1.PQ.6 THE DEFORMING ETNA VOLCANO IMAGED THROUGH SBAS-DINSAR ANALYSIS: ITS LONG TERM BEHAVIOUR AND THE RECENT SEISMO-VOLCANIC CRISIS OF DECEMBER 2018

Board PQ.6

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 AUTOMATIC EXTRACTION OF POTENTIAL DEBRIS FLOW BASED ON GF-2 SATELLITE DATA

Board PQ.7

Chao He, Bei Ye, China University of Geosciences (Beijing), China

WEP1.PQ.8 MULTISOURCE DATA BASED APPROACH TO MAPPING EXPOSURE AND SEISMIC VULNERABILITY OF BUILDINGS IN TANGSHAN CENTER, CHINA

Board PQ.8

Wenhua Qi, Guiwu Su, Institute of Geology, China Earthquake Administration, China

WEP1.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

Board PQ.9

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 Assessment of Storm and Weather

Session Co-Chairs: Ryota Nakamura, Toyohashi University of Technology; MinJeong Jo, USRA/NASA-GSFC

WEP2.PQ.1 MULTIPLE SATELLITE MICROWAVE RETRIEVAL OF TROPICAL CYCLONE RAIN RATE AND WARM CORE STRUCTURE

Board PQ.1

Shuyan Liu, Colorado State University, United States; Christopher Grassotti, University of Maryland, United States; Quanhua Liu, NOAA, United States; Yang-Keun Lee, University of Maryland, United States; Ryan Honeyager, I.M. Systems Group, United States

WEP2.PQ.2 THE INFLUENCE OF SATELLITE OBSERVATION ANGLE ON TROPICAL CYCLONE INTENSITY ESTIMATION USING THE DEVIATION ANGLE VARIANCE TECHNIQUE

Board PQ.2

Liang Hu, Elizabeth Ritchie, University of New South Wales, Australia; Scott Tyo, School of Engineering and IT, Australia

WEP2.PQ.3 HURRICANE BUILDING DAMAGE ASSESSMENT USING POST-DISASTER UAV DATA

Board PQ.3

Junho Yeom, Youkyung Han, Kyungpook National University, Korea (South); Anjin Chang, Jinha Jung, Texas A&M University Corpus Christi, United States

WEP2.PQ.4 A DEEP LEARNING BASED METHOD FOR TYPHOON RECOGNITION AND TYPHOON CENTER LOCATION

Board PQ.4

Xue Yang, Zongqian Zhan, Wuhan University, China; Junping Shen, Beijing Piesat Information Technology Co. Ltd, China

WEP2.PQ.5 HURRICANE OBSERVATIONS WITH GNSS-REFLECTOMETRY FROM CYGNSS MISSION - CASE STUDY OF HURRICANE IRMA 2017

Board PQ.5

Dongliang Guan, Nanjing Tech University, China; Adriano Camps, Hyuk Park, Universitat Politècnica de Catalunya (UPC), Spain

WEP2.PQ.6 BERTISS PROJECT - BALKAN-MEDITERRANEAN REAL TIME SEVERE WEATHER SERVICE

Board PQ.6

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 THE ARCTIC PORTAL AS AN INSTRUMENT FOR POLAR LOW OPERATIONAL DETECTION AND FORECAST OF THEIR EVOLUTION

Board PQ.7

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 FUTURE EXTREME CLIMATE PREDICTION IN WESTERN JILIN PROVINCE BASED ON STATISTICAL DOWNSCALING MODEL

Board PQ.8

Ping Zhang, Demin Yin, Jilin University, China; Peter M. Atkinson, Lancaster University, United Kingdom

WEP2.PQ.9 VERIFICATION OF POLAR LOW MODELING RESULTS WITH SATELLITE DATA

Board PQ.9

Kirill Khvorostovsky, Kirill Yarusov, Elizaveta Zabolotskikh, Russian State Hydrometeorological University, Russia

WEP2.PQ.10 STUDY ON THE CALCULATION STRATEGIES OF IONOSPHERIC SCINTILLATION INDEX ROTI FROM GPS

Board PQ.10

Wei Wei, Administration Office of China Satellite Navigation Systems (CSNO), China; Wei Li, Shuli Song, Lengeng Shao, Shanghai Astronomical Observatory, Chinese Academy of Sciences, China

WEP2.PQ.11 SPATIO-TEMPORAL ANALYSIS OF LIGHTNING DISTRIBUTION IN GOLDEN GATE HIGHLANDS NATIONAL PARK (GGHNP) USING GEOSPATIAL TECHNOLOGY

Board PQ.11

Dipuo Mafokeng (Molaudzi), Samuel Adelabu, Kayode Adepoju, University of the Free State, South Africa; Elhadi Adam, University of the Witwatersrand, South Africa

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 Raucoales, BRGM; Bahareh Kalantar, RIKEN

- WEP1.PR.2** **IMPROVEMENT OF FLOOD RISK MANAGEMENT THROUGH A WEB FLOOD INFORMATION SYSTEM**
Board PR.2
Mohit Mohanty, Subhankar Karmakar, Subimal Ghosh, Indian Institute of Technology Bombay, India
- WEP1.PR.3** **SCENARIO OF FLASH FLOOD CAUSED BY HYPOTHETICAL FAILURE OF MOSUL DAM IN IRAQ USING HEC-GEORAS MODEL AND GIS**
Board PR.3
Abderrazak Bannari, Ghadeer Kadhem, Arabian Gulf University, Bahrain
- WEP1.PR.4** **IMPROVEMENT OF EXTRACTION METHOD OF FLOOD AREA USING SATELLITE IMAGE AFTER DISASTER AND GIS DATA BY THE 2018.07 HEAVY RAINFALL**
Board PR.4
Masashi Sonobe, Hideki Hashiba, Nihon University, Japan
- WEP1.PR.5** **CHANGE DETECTION BASED FLOOD MAPPING OF 2015 FLOOD EVENT OF CHENNAI CITY USING SENTINEL-1 SAR IMAGES**
Board PR.5
Venkata Sai Krishna Vanama, Y. S. Rao, IIT Bombay, India
- WEP1.PR.6** **COOPERATIVE EMERGENCY MONITORING AND ASSESSMENT OF FLOOD DISASTERS BASED ON THE INTEGRATED GROUND-AIR-SPACE REMOTE SENSING**
Board PR.6
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 (IWRH), China
- WEP1.PR.7** **ACCURACY ASSESSMENT OF FLOOD INUNDATION MAPS GENERATED USING DIGITAL TERRAIN MODELS OF VARYING SPATIAL RESOLUTIONS**
Board PR.7
Jennifer Marqueso, Jojene Santillan, Amor Gingo, Arthur Amora, Linbert Cutamora, Meriam Makinano-Santillan, Caraga State University, Philippines
- WEP1.PR.8** **MULTI-CLASS SEGMENTATION OF URBAN FLOODS FROM MULTISPECTRAL IMAGERY USING DEEP LEARNING**
Board PR.8
Abhishek Patnis, Rajat Shinde, Surya Durbha, Indian Institute of Technology Bombay, India; Kuldeep Kurte, Oak Ridge National Laboratory, United States
- WEP1.PR.9** **FLOOD DETECTION IN URBAN AREAS: ANALYSIS OF TIME SERIES OF COHERENCE DATA IN STABLE SCATTERERS**
Board PR.9
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** **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**
Board PR.10
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 Assessment of Natural Disaster and Hazards I

Session Co-Chairs: Hiroyoshi Yamada, Niigata University; Yuliang Nie, Peking University

- WEP2.PR.1** **FIRST ASSESSMENT OF DUAL POLARIZATION SENTINEL-1A DATA FOR FUEL MOISTURE CONTENT RETRIEVAL**
Board PR.1
Long Wang, Binbin He, Xingwen Quan, Minfeng Xing, Hongguo Zhang, University of Electronic Science and Technology of China, China
- WEP2.PR.2** **PRELIMINARILY ANALYSIS OF THE RELATION BETWEEN SATELLITE DERIVED FUEL MOISTURE CONTENT AND WILDFIRE ACTIVITY IN SOUTHWESTERN CHINA**
Board PR.2
Kaiwei Luo, Binbin He, Xingwen Quan, Xiangzhuo Liu, Chongbo Wen, University of Electronic Science and Technology of China, China
- WEP2.PR.3** **EVALUATION OF SATELLITE PRECIPITATION DATA FOR DROUGHT MONITORING IN BUNDELKHAND REGION, INDIA**
Board PR.3
Varsha Pandey, Prashant K Srivastava, Banaras Hindu University, India
- WEP2.PR.4** **HYDROLOGICAL DROUGHT MEASUREMENT USING GRACE TERRESTRIAL WATER STORAGE ANOMALY**
Board PR.4
Aihong Cui, Jianfeng Li, Qiming Zhou, Hong Kong Baptist University, China; Guofeng Wu, Qingquan Li, Shenzhen University, China
- WEP2.PR.5** **USE OF NDVI AND SPI INDICES FOR DROUGHT ASSESSMENT IN PAKISTAN**
Board PR.5
Badar Ghauri, Rao Zahid Khalil, Abdul Basit, Institute of Space Technology, Pakistan; Maham Ghauri, FAST National University, Pakistan
- WEP2.PR.6** **ADAPTABILITY OF SIX GLOBAL DROUGHT INDICES OVER CHINA**
Board PR.6
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** **DROUGHT IMPACT AND RECOVERY A CASE STUDY OF RAINFED AREA OF PUNJAB, PAKISTAN**
Board PR.7
Shoaib Jamra, Zaki Zaidi, Saima Awan, Arjumand Zaidi, Mehran University of Engineering and Technology, Pakistan
- WEP2.PR.8** **SATELLITE-DERIVED SYNTHETIC DROUGHT MODEL FOR MONGOLIA GRASSLAND**
Board PR.8
Sheng Chang, Bingfang Wu, Nana Yan, Bulgan Davdaj, 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** **ESTIMATION OF FUEL MOISTURE CONTENT BASED ON QUAD POLARIMETRIC DECOMPOSITION PARAMETERS OF RADARSAT-2 DATA**
Board PR.9
Long Wang, Binbin He, Xingwen Quan, Minfeng Xing, Xiangzhuo Liu, University of Electronic Science and Technology of China, China
- WEP2.PR.10** **SYNTHETIC APERTURE RADAR AND OPTICAL REMOTE SENSING OF CROP DAMAGE ATTRIBUTED TO SEVERE WEATHER IN THE CENTRAL UNITED STATES**
Board PR.10
Jordan Bell, Esayas Gebremichael, University of Alabama Huntsville, United States; Andrew Malthan, 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** **ECOLOGICAL ENVIRONMENT ASSESSMENT OF MINING AREA BY USING MOVING WINDOW-BASED REMOTE SENSING ECOLOGICAL INDEX**
Board PR.11
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** **SEMANTIC FRAMEWORK FOR SPATIAL QUERY REFORMULATION FOR DISASTER MONITORING APPLICATIONS**
Board PR.12
Kuldeep Kurte, Oak Ridge National Laboratory, United States; Abhishek Patnis, Surya Durbha, Rajat Shinde, Indian Institute of Technology Bombay, India

Wednesday, July 31 09:40 - 10:40 Room 503: Area 5
Session WEP1.PS Poster

Monitoring and Damage Assessment of Flood II

Session Co-Chairs: Motofumi Arai, 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**
Xiqin 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 Dubuca, TOTAL S.A., France

Wednesday, July 31 15:20 - 16:20 Room 503: Area 5
Session WEP2.PS Poster

Monitoring and Damage Assessment 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 Alcalá, 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, Sujun 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 Tailade, Laetitia Thirion-Lefevre, Régis Guinvarc'h, SONDRRA/CentraleSupélec, 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**
Sicang 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 Gitis, 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, Yaixin Zheng, Yaxin Mu, Key Laboratory of Electromagnetic Radiation and Sensing Technology, Institute of Electronics, Chinese Academy of Sciences, China

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 OCEAN THERMODYNAMICS AND HYDRODYNAMICS OF SUMMER MONSOON ONSET**
Board PT.1
W Timothy Liu, Xiaosu Xie, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- WEP2.PT.2 ESTIMATING OCEAN SUBSURFACE SALINITY FROM REMOTE SENSING DATA BY MACHINE LEARNING**
Board PT.2
Hua Su, Xin Yang, Fuzhou University, China; Xiao-Hai Yan, University of Delaware, United States
- WEP2.PT.3 SEA SURFACE SALINITY RETRIEVALS FROM AQUARIUS USING NEURAL NETWORKS**
Board PT.3
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 L-BAND SEAWATER DIELECTRIC MODEL FUNCTION BASED ON IMPROVED MEASUREMENT DATA SET**
Board PT.4
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 COMPARISON OF SENTINEL-3 SLSTR SST PRODUCT WITH SHIPBOARD SKIN SST MEASUREMENTS**
Board PT.5
Liqin Qu, Lei Guan, Minglun Yang, Ocean University of China, China
- WEP2.PT.6 ARCTIC SEA SURFACE SALINITY RETRIEVAL FROM SMOS MEASURES**
Board PT.6
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 PREDICTION OF SEA SURFACE TEMPERATURE IN THE SOUTH CHINA SEA BY ARTIFICIAL NEURAL NETWORKS**
Board PT.7
Li Wei, Lei Guan, Liqin Qu, Leli Li, Ocean University of China, China
- WEP2.PT.8 INFLUENCE OF NUCLEAR POWER PLANT ON SPATIO-TEMPORAL PATTERNS OF SEA SURFACE TEMPERATURE IN DAYA BAY, CHINA**
Board PT.8
Ke Zhang, Jue Huang, Tao Jiang, Hongchun Zhu, Shandong University of Science and Technology, China
- WEP2.PT.9 SPATIO-TEMPORAL DISTRIBUTION OF CARBON DIOXIDE PARTIAL PRESSURE IN THE BAY OF BENGAL**
Board PT.9
Lekshmi K, Rishikesh Bharti, Chandan Mahanta, IIT Guwahati, India
- WEP2.PT.10 VALIDATION OF AVHRR SEA SURFACE TEMPERATURE IN THE NORTHWEST PACIFIC**
Board PT.10
Yan Chen, Liqin Qu, Lei Guan, Ocean University of China, China
- WEP2.PT.11 PRELIMINARY ESTIMATE OF SEA SURFACE TEMPERATURE FROM THE SCANNING MICROWAVE RADIOMETER ONBOARD HY-2B SATELLITE**
Board PT.11
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 INFLUENCE OF CIRRUS CLOUDS ON THE ESTIMATE OF SEA SURFACE TEMPERATURE**
Board PT.12
Xiwei Fan, Gaozhong Nie, Yan Deng, Jiwen An, Junxue Zhou, Chaoxu Xia, Institute of Geology, China Earthquake Administration, China

Thursday, August 1 **09:40 - 10:40** **Room 503: Sprint Area**
Session THP1.SPR **SPRINT Presentation**

THP1 SPRINT Session

- THP1.SPR.1** **PIECEWISE HORIZONTAL 3D ROOF RECONSTRUCTION FROM AERIAL LIDAR**
 09:50
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** **POTENTIAL OF RED EDGE SPECTRAL BANDS IN FUTURE LANDSAT SATELLITES ON AGROECOSYSTEM CANOPY CHLOROPHYLL CONTENT RETRIEVAL**
 09:55
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** **DEPENDENCE OF POLARIMETRIC CHARACTERISTICS ON SAR RESOLUTIONS: EXPERIMENTAL ANALYSIS**
 15:30
Hyunsoo Kim, Jungmin Song, Ryo Natsuaki, Akira Hirose, University of Tokyo, Japan
- THP2.SPR.2** **MAPPING DIGITAL DRAINAGE NETWORK USING GEOPROCESSING: A CASE STUDY OF KALI GANDAKI RIVER BASIN, NEPAL HIMALAYA**
 15:35
Feiyu Chen, Bingwei Tian, Basanta Adhikari, Xiaoyun Gou, Sichuan University, China
- THP2.SPR.3** **NEW INSIGHTS OF GROUND-BASED LAND SURFACE TEMPERATURE MEASUREMENTS PROTOCOLS FOR IMPROVING VALIDATION OF THERMAL INFRARED SATELLITE DATA**
 15:40
Jean-Pierre Lagouarde, Mark Irvine, Institut National de la Recherche Agronomique (INRA), France; Pierre Guillevic, University of Maryland, United States

**THURSDAY
 POSTER**

Thursday, August 1 09:40 - 10:40 Room 501-502: Area A
Session THP1.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 ELECTROMAGNETIC 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, Qinhua 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

Thursday, August 1 15:20 - 16:20 Room 501-502: Area A
Session THP2.PA Poster

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, August 1 09:40 - 10:40 Room 501-502: Area B
Session THP1.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

Thursday, August 1 15:20 - 16:20 Room 501-502: Area B
Session THP2.PB Poster

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 Artificial 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, Shiyu 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, Yuhuan 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 ANALYSIS 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, 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 Frörlind, 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 CLASSIFICATION**
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, 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 **HYPERSPPECTRAL 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 HYPERSPPECTRAL IMAGE CLASSIFICATION**
Qiaobo Hao, Shutao Li, Xudong Kang, Hunan University, China
- THP1.PE.3**
Board PE.3 **GEOLOGIC BODY CLASSIFICATION OF HYPERSPPECTRAL 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 HYPERSPPECTRAL 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 HYPERSPPECTRAL DATASETS**
Himanshi Yadav, Alberto Candela, David Wettergreen, Carnegie Mellon University, United States
- THP1.PE.6**
Board PE.6 **HYPERSPPECTRAL IMAGE CLASSIFICATION VIA JOINT SPARSE REPRESENTATION**
Pai-Hui Hsu, Ying-Ying Cheng, National Taiwan University, Taiwan
- THP1.PE.7**
Board PE.7 **HYPERSPPECTRAL 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 **HYPERSPPECTRAL 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**
Trienka 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 HYPERSPPECTRAL 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 HYPERSPPECTRAL 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 HYPERSPPECTRAL IMAGES**
Boyu Feng, Jinfei Wang, Kaizhong Zhang, University of Western Ontario, Canada

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 HIGH-ORDER SELF-ATTENTION NETWORK FOR REMOTE SENSING SCENE CLASSIFICATION**
Board PF.1
Nanjun He, Leyuan Fang, Yi Li, Hunan University, China; Antonio Plaza, University of Extremadura, Spain
- THP1.PF.2 FEATURE SPARSITY IN CONVOLUTIONAL NEURAL NETWORKS FOR SCENE CLASSIFICATION OF REMOTE SENSING IMAGE**
Board PF.2
Wei Huang, Qi Wang, Xuelong Li, Northwestern Polytechnical University, China
- THP1.PF.3 A NOVEL DEEP FEATURE FUSION NETWORK FOR REMOTE SENSING SCENE CLASSIFICATION**
Board PF.3
Yangyang Li, Qi Wang, Xiaoxu Liang, Licheng Jiao, Xidian University, China
- THP1.PF.4 LEARNING DEEP NETWORKS UNDER NOISY LABELS FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION**
Board PF.4
Yansheng Li, Yongjun Zhang, Wuhan University, China; Zhihui Zhu, Johns Hopkins University, United States
- THP1.PF.5 FUSING DEEP LOCAL AND GLOBAL FEATURES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION**
Board PF.5
Keli Yan, Shaohui Mei, Mingyang Ma, Feng Yan, Northwestern Polytechnical University, China
- THP1.PF.6 EXTRACTION OF A SPECIFIC LAND-COVER CLASS FROM VERY HIGH SPATIAL RESOLUTION IMAGERY USING POSITIVE AND UNLABELED LEARNING WITH CONVOLUTIONAL NEURAL NETWORKS**
Board PF.6
Khelifa Djerriri, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria; Reda Adjoudj, Djillali Liabes University, Algeria
- THP1.PF.7 PERFORMANCE COMPARISON OF TWO POOLING STRATEGIES FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION**
Board PF.7
Maaxiong Wu, Gong Cheng, Xiwen Yao, Xiaoliang Qian, Junwei Han, Lei Guo, Northwestern Polytechnical University, China
- THP1.PF.8 SUPERVISED GENERATIVE ADVERSARIAL NETWORK BASED SAMPLE GENERATION FOR SCENE CLASSIFICATION**
Board PF.8
Wei Han, Ruyi Feng, Lizhe Wang, Jia Chen, China University of Geosciences, China
- THP1.PF.9 MSPPF-NETS: A DEEP LEARNING ARCHITECTURE FOR REMOTE SENSING IMAGE CLASSIFICATION**
Board PF.9
Rui Yang, Yun Zhang, Pengfei Zhao, Zhenyuan Ji, Weibo Deng, Harbin Institute of Technology, China
- THP1.PF.10 VERY HIGH RESOLUTION IMAGE SCENE CLASSIFICATION WITH CAPSULE NETWORK**
Board PF.10
Souleyman Chaib, Mohammed El Amin Larabi, Centre des Techniques Spatiales, Algeria; Yanfeng Gu, Harbin Institute of Technology, China; Khadija Bakhit, Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria
- THP1.PF.11 LAND PRICE ASSESMENT BASED ON DEEP NEURAL NETWORK**
Board PF.11
Ankai Hou, Jiayi Liu, Yuxuan Tao, Shaobin Jiang, Kai Li, Zezhong Zheng, University of Electronic Science and Technology of China, China; Jun Xia, Wuhan University, China; Yang 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 CLASSIFICATION PERFORMANCE EVALUATION OF DEEP LEARNING ARCHITECTURES FOR COMPLEX OBJECT BASED FACILITY RECOGNITION**
Board PF.12
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 SAR IMAGES ENHANCEMENT VIA DEEP MULTI-SCALE ENCODER-DECODER NEURAL NETWORK**
Board PF.1
Xiaqing Yang, Yuanyuan Zhou, Chen Wang, Jun Shi, University of Electronic Science and Technology of China, China
- THP2.PF.2 CONVOLUTIONAL NEURAL NETWORK FOR NATURAL COLOR VISUALIZATION OF HYPERSPECTRAL IMAGES**
Board PF.2
Puhong Duan, Xudong Kang, Shutao Li, Hunan University, China
- THP2.PF.3 GEOSR: A COMPUTER VISION PACKAGE FOR DEEP LEARNING BASED SINGLE-FRAME REMOTE SENSING IMAGERY SUPER-RESOLUTION**
Board PF.3
Zhiling Guo, Guangming Wu, Xiaodan Shi, Mingzhou Sui, University of Tokyo, Japan; Xiaoya Song, Harbin Institute of Technology, China; Yongwei Xu, Xiaowei Shao, Shibasaki Rysosuke, University of Tokyo, Japan
- THP2.PF.4 SEMANTIC CLASSIFICATION OF URBAN BUILDINGS USING DEEP LEARNING AND VGI INFORMATION**
Board PF.4
Wenzhi Zhao, Jiage Chen, Yanchen Bo, Beijing Normal University, China
- THP2.PF.5 NON-LOCAL COMPRESSIVE NETWORK FOR HYPERSPECTRAL AND MULTISPECTRAL DATA FUSION**
Board PF.5
Junbo Hao, Ying Wang, Jie Li, Xinbo Gao, School of Electronic Engineering, Xidian University, Xi'an, China, China
- THP2.PF.6 FUSION OF HYPERSPECTRAL AND LIDAR DATA BASED ON DUAL-BRANCH CONVOLUTIONAL NEURAL NETWORK**
Board PF.6
Jinze Wang, Junping Zhang, Qingle Guo, Tong Li, Harbin Institute of Technology, China
- THP2.PF.7 SYNTHESIZING CLOUD-FREE REMOTE SENSING IMAGES WITH CONDITIONAL GANS**
Board PF.7
Daoyu Lin, Guangluan Xu, Yang Wang, Xiaoke Wang, Institute of Electronics, Chinese Academy of Sciences, China
- THP2.PF.8 CLOUD REMOVAL OF OPTICAL REMOTE SENSING IMAGERY WITH MULTITEMPORAL SAR-OPTICAL DATA USING X-MTGAN**
Board PF.8
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 HIGH-RESOLUTION REMOTE SENSING IMAGE SCENE UNDERSTANDING: A REVIEW**
Board PG.1
Qiqi Zhu, China University of Geosciences, China; Xiongli Sun, Yanfei Zhong, Liangpei Zhang, Wuhan University, China
- THP1.PG.2 GRAPH OPTIMIZED LOCALITY PRESERVING PROJECTION VIA HEURISTIC OPTIMIZATION ALGORITHMS**
Board PG.2
Oguzhan Ceylan, Kadir Has University, Turkey; Gulsen Taskin, Istanbul Technical University, Turkey
- THP1.PG.3 USING PANSHARPENING TECHNIQUE IMPROVES INTERPOLATION-BASED SUBPIXEL MAPPING**
Board PG.3
Peng Wang, Gong Zhang, Taiyue Guo, Peilan Chen, Nanjing University of Aeronautics and Astronautics, China
- THP1.PG.4 A NOVEL SUB-PIXEL MAPPING MODEL BASED ON PIXEL AGGREGATION DEGREE FOR SMALL-SIZED LAND-COVER**
Board PG.4
Shangrong Wu, Peng Yang, Jiangqiang 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 A SUPER-RESOLUTION MAPPING USING A CONVOLUTIONAL NEURAL NETWORK**
Board PG.5
Teerasit Kasetkasem, Kasetsart University, Thailand
- THP1.PG.6 FINE CLASSIFICATION COMPARISON OF GF-1 GF-5 AND LANDSAT-8 REMOTE SENSING DATA BASED ON OPTIMIZED SAMPLE SELECTION METHOD**
Board PG.6
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 MARGIN-BASED RANDOM FOREST FOR IMBALANCED LAND COVER CLASSIFICATION**
Board PG.7
Wei Feng, Chinese Academy of Sciences, China; Samia Boukir, Bordeaux Institute of Technology, France; Wenjiang Huang, Chinese Academy of Sciences, China
- THP1.PG.8 A CONSTRAINED BOX ALGORITHM FOR IMBALANCED DATA IN SATELLITE IMAGES**
Board PG.8
Wajira Abeyasinghe, Michael Wong, Chih-Cheng Hung, Kennesaw State University, United States; Slim Bedchik, University of Tunis, Tunisia
- THP1.PG.9 IDENTIFYING AND CORRECTING MISLABELED SATELLITE IMAGE DATA BY ITERATIVE ORDERING OF ENSEMBLE MARGINS**
Board PG.9
Samia Boukir, Bordeaux Institute of Technology, France; Wei Feng, Chinese Academy of Sciences, China
- THP1.PG.10 RECOGNITION OF THE REMOTE SENSING SCENES FROM UNSEEN CLASSES**
Board PG.10
Yaxuan Zhao, Tingwei Wang, Hui Li, Peng Ren, China University of Petroleum (East China), China
- THP1.PG.11 FEATURE-BASED PHASE CORRELATION IN IMAGE REGISTRATION**
Board PG.11
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 SCALABLE EVALUATION OF 3D CITY MODELS**
Board PG.1
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 A NOVEL HYPERSPECTRAL DENOISING METHOD BASED ON WAVELET TRANSFORM AND THREE SPLINE INTERPOLATION UNDER THE FRAMEWORK OF EMPIRICAL MODE DECOMPOSITION**
Board PG.2
Miao Zhang, Rulin Yuan, Xinxin Li, Yi Shen, Harbin Institute of Technology, China
- THP2.PG.3 POWERFUL SITUATION AWARENESS USING HIGH RESOLUTION OPTICAL SATELLITES 'ASNARO-1' AND RADAR SATELLITES 'ASNARO-2'**
Board PG.3
Tetsuya Kawasaki, Masanori Miyawaki, Tsunekazu Kimura, Kazutsuna Hebiishi, Toshiaki Ogawa, NEC Corporation, Japan
- THP2.PG.4 COMPOSITE GEOLOCATING OF ZY-3-02 LASER ALTIMETRY DATA AND OPTICAL SATELLITE STEREO IMAGERY**
Board PG.4
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 GRIDLESS SPARSE METHODS BASED ON FOURTH-ORDER CUMULANT FOR DOA ESTIMATION**
Board PG.5
Yuying Zhang, Gong Zhang, Nanjing University of Aeronautics and Astronautics, China; Henry Leung, Electrical and Computer Engineering University of Calgary, Canada
- THP2.PG.6 SPLIT WINDOW ALGORITHM CALIBRATION AND VALIDATION FOR TASI SENSOR**
Board PG.6
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 A CLUSTERING METHOD FOR RAIN-CELL DETECTION IN WEATHER NOWCASTING APPROACHES**
Board PG.7
Felipe Minotta-Zapata, Rafael A. Rodriguez-Solis, University of Puerto Rico at Mayaguez, United States
- THP2.PG.8 THE PRELIMINARY STUDY ON THE SEASONAL FPAR REMOTE SENSING PRODUCT WITH A 30-M RESOLUTION AND LONG TIME SERIES**
Board PG.8
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, 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 A CNN-BASED PANSHARPENING METHOD WITH PERCEPTUAL LOSS

Board PH.1 Sergio Vitale, Università Parthenope, Italy

THP1.PH.2 DEEP SPATIAL-SPECTRAL INFORMATION EXPLOITATION FOR RAPID HYPERSPECTRAL IMAGE SUPER-RESOLUTION

Board PH.2 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 DUAL 1D-2D SPATIAL-SPECTRAL CNN FOR HYPERSPECTRAL IMAGE SUPER-RESOLUTION

Board PH.3 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 UNSUPERVISED REMOTE SENSING IMAGE SUPER-RESOLUTION USING CYCLE CNN

Board PH.4 Pengrui Wang, Haopeng Zhang, Beihang University, China; Feng Zhou, DFH Satellite Co., Ltd., China; Zhiguo Jiang, Beihang University, China

THP1.PH.5 SIMULTANEOUS SUPER-RESOLUTION AND SEGMENTATION FOR REMOTE SENSING IMAGES

Board PH.5 Sen Lei, Zhenwei Shi, Xi Wu, Bin Pan, Xia Xu, Beihang University, China; Hongxun Hao, Civil Aviation University of China, China

THP1.PH.6 ON TRAINING DEEP NETWORKS FOR SATELLITE IMAGE SUPER-RESOLUTION

Board PH.6 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 PANCHROMATIC SHARPENING OF MULTISPECTRAL SATELLITE IMAGERY VIA AN EXPLICITLY DEFINED CONVEX SELF-SIMILARITY REGULARIZATION

Board PH.7 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 SPECTRAL-DRIVEN PANSHARPENING USING ADAPTIVE IMAGE SEGMENTATION TO REDUCE COLOR DISTORTION

Board PH.8 Jiao Jiao, Xiangwu Gong, Lingda Wu, Xiangli Meng, Space Engineering University, China

THP1.PH.9 HYPERSPECTRAL AND MULTISPECTRAL IMAGE FUSION BASED ON SPECTRAL LOW RANK AND NON-LOCAL SPATIAL SIMILARITIES

Board PH.9 Renwei Dian, Shutao Li, Hunan University, China

THP1.PH.10 SSCNET: SPECTRAL-SPATIAL CONSISTENCY OPTIMIZATION OF CNN FOR PANSHARPENING

Board PH.10 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 A VISUALIZATION-ORIENTED TRAJECTORY DATA COMPRESSION METHOD

Board PH.1 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 GBSS: AN INTEGRATED MANAGEMENT SYSTEM FOR BICYCLE SHARING IN CHINA

Board PH.2 Weixin Zhai, Kun Qi, Peking University, China; Shuhua Song, Jiangsu Zhitu Technology Co., Ltd., China; Chengqi Cheng, Peking University, China

THP2.PH.3 AN OPTIMAL SAMPLING DESIGN FOR LAND SURFACE TEMPERATURE VALIDATION WITH SPATIAL AND DIURNAL VARIATIONS

Board PH.3 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 SPATIAL DISTRIBUTION PATTERN OF COUNTY-LEVEL MULTIDIMENSIONAL POVERTY

Board PH.4 Wenping Qi, Yanhui Wang, Zhaoning Gong, Fuzhou Duan, Wenxin Teng, College of Resources Environment & Tourism, Capital Normal University, China

THP2.PH.5 THE DUAL-ASPECT GEOMETRIC TERRAIN CORRECTION METHOD USING GF-3 SATELLITE DATA

Board PH.5 Jiayin Liu, Xiaolan Qiu, Baoquan Zhang, Feng Wang, Lei Liu, Chinese Academy of Sciences, China

THP2.PH.6 AN IMPROVED ALGORITHM FOR TERRAIN RENDERING

Board PH.6 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 GEOMORPHIC SPATIO-TEMPORAL CHANGE DETECTION OF INDUS DELTA PAKISTAN, USING SATELLITE LANDSAT DATA

Board PH.7 Gohar Ali Mahar, Federal Urdu University of Arts, Sciences and Technology, Pakistan

THP2.PH.8 IMPACT OF IN-SITU OBSERVATION SITES CONFIGURATION ON SPATIAL INTERPOLATION: A CASE STUDY ON AIR TEMPERATURE

Board PH.8 Yujie Xiong, Sun Yat-Sen University, China

THP2.PH.9 RESEARCH ON EXTRACTION AND EVALUATION OF ECOLOGICAL CORRIDOR BASED ON REMOTE SENSING AND GIS

Board PH.9 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

Thursday, August 1 09:40 - 10:40 Room 501-502: Area I
Session THP1.PI Poster

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 IMPROVING SPECTRAL RESOLUTION OF MULTISPECTRAL DATA USING CONVOLUTIONAL NEURAL NETWORK
Board PI.1
Mingyuan Peng, Lifu Zhang, Xuejian Sun, Yi Cen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

THP1.PI.2 SPECTRAL MODULATION FOR FUSION OF HYPERSPECTRAL AND MULTISPECTRAL IMAGES
Board PI.2
Xiaochen Lu, Xiangzhen Yu, Wenming Tang, Bingqi Zhu, Shanghai Radio Equipment Research Institute, China

THP1.PI.3 HYPERSPECTRAL AND MULTISPECTRAL IMAGE FUSION VIA TENSOR SPARSITY REGULARIZATION
Board PI.3
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 GRADIENT-BASED JOINT-VARIABLES NONNEGATIVE MATRIX FACTORIZATION FOR MULTI-SHARPENING HYPERSPECTRAL REMOTE SENSING DATA
Board PI.4
Moussa Sofiane Karoui, Fatima Zohra Benhalouche, Issam Boukerch, Centre des Techniques Spatiales, Algeria

THP1.PI.5 LEARNING SPECTRAL AND SPATIAL FEATURES BASED ON GENERATIVE ADVERSARIAL NETWORK FOR HYPERSPECTRAL IMAGE SUPER-RESOLUTION
Board PI.5
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 ADVANCES ON CNN-BASED SUPER-RESOLUTION OF SENTINEL-2 IMAGES
Board PI.6
Massimiliano Gargiulo, University Federico II, Italy

THP1.PI.7 SPATIAL CONSTRAINED HYPERSPECTRAL RECONSTRUCTION FROM RGB INPUTS USING DICTIONARY REPRESENTATION
Board PI.7
Yunhao Geng, Shaohui Mei, Jin Tian, Yifan Zhang, Northwestern Polytechnical University, China; Qian Du, Mississippi State University, China

THP1.PI.8 SUPER-RESOLUTION IMAGING OF REAL-BEAM SCANNING RADAR BASE ON ACCELERATED MAXIMUM A POSTERIORI ALGORITHM
Board PI.8
Wenchao Li, Meihua Niu, Yongchao Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP1.PI.9 OPTIMAL COMPONENT SUBSTITUTION AND MULTI-RESOLUTION ANALYSIS PANSHARPENING METHODS USING A CONVOLUTIONAL NEURAL NETWORK
Board PI.9
Frosti Pálsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, University of Iceland, Iceland

Thursday, August 1 15:20 - 16:20 Room 501-502: Area I
Session THP2.PI Poster

Geographic Information Science III

Session Co-Chairs: Pengfei Liu, School of Geographic and Environmental Sciences; Mercedes Paoletti, University of Extremadura

THP2.PI.1 ASSESSING IMPACTS OF TRAFFIC FLOWS ON THE SPATIAL DISTRIBUTION OF EARLY DENGUE IN GUANGZHOU SUBDISTRICTS
Board PI.1
Haiyan Tao, Yuan Liu, Keli Wang, Li Zhuo, Sun Yat-Sen University, China

THP2.PI.2 COLLAPSING GULLIES SUSCEPTIBILITY MAPPING BASED ON ENTROPY INFORMATION VALUE IN JIANGXI PROVINCE OF CHINA
Board PI.2
Yuanling Zhao, Dongbing Cheng, Changjiang River Scientific Research Institute, China

THP2.PI.3 INFLUENCE OF SUBSURFACE FLOW BY LIDAR DEM AND PHYSICAL SOIL STRENGTH FOR SHALLOW LANDSLIDE INSTABILITY ANALYSIS
Board PI.3
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 MAPPING DIGITAL DRAINAGE NETWORK USING GEOPROCESSING: A CASE STUDY OF KALI GANDAKI RIVER BASIN, NEPAL HIMALAYA
Board PI.4
Feiyu Chen, Bingwei Tian, Basanta Adhikari, Xiaoyun Gou, Sichuan University, China

THP2.PI.5 INFLUENCE FACTORS ANALYSIS OF GEOLOGICAL DISASTERS IN SOUTHEASTERN TIBET BASED ON GEOGRAPHICAL DETECTOR
Board PI.5
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 A DISTRIBUTED STORAGE STRATEGY FOR TRAJECTORY DATA BASED ON NOSQL DATABASE
Board PI.6
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 RESEARCH ON KEY TECHNOLOGY OF QUICK COPY AND RANDOM ACCESSING OF MASSIVE MAP TILES
Board PI.7
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 SPATIAL ANALYSIS OF SOIL EROSION BASED ON SATELLITE REMOTE SENSING: A CASE STUDY FROM YOUYANG COUNTY OF CHINA
Board PI.8
Xujun Lyu, Huazhong Agricultural University, China

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** **ACCURACY OF SSH MEASUREMENT BY USV EQUIPPED WITH GPS - A COMPARISON WITH THE GPS BUOY**
Board PJ.1
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** **SPATIAL AND SOCIAL ASPECT OF TRANSFORMATION LIVE CORAL TO DEAD CORAL AT INHABIT AND UNINHABIT ISLAND IN SPERMONDE ARCHIPELAGO**
Board PJ.2
Nurjannah Nurdin, Supriadi Supriadi, Dwia Aries Tina Pulubuhu, Mahatma Lanuru, Agus Aris, Hasanuddin University, Indonesia; Teruhisa Komatsu, University of Tokyo, Japan
- THP1.PJ.3** **APPLICATION OF HY-1C SATELLITE COASTAL ZONE IMAGER IN ISLAND REEF MONITORING**
Board PJ.3
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** **BATHYSENT - A METHOD TO RETRIEVE COASTAL BATHYMETRY FROM SENTINEL-2**
Board PJ.4
Daniel Roucoules, Marcello de Michele, Deborah Idier, Farid Smaj, Michael Fournelis, Faiza Boulahya, BRGM - French Geological Survey, France; Espen Volden, European Space Agency (ESA), Italy; Vivi Drakopoulou, Hellenic Center For Marine Research, Greece; Mijta Przemyslaw, Cloudferro, Poland
- THP1.PJ.5** **COASTLINES CHANGE OF THE PEARL RIVER ESTUARY IN THE PAST 40 YEARS USING LANDSAT DATASET AND ITS ENVIRONMENTAL IMPLICATIONS**
Board PJ.5
Xinyi Hu, Yunpeng Wang, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China
- THP1.PJ.6** **ON THE USE OF SATELLITE-BASED DIGITAL ELEVATION MODELS TO DETERMINE COASTAL TOPOGRAPHY**
Board PJ.6
Harold Diaz, Rafael Almar, LEGOS-IRD, France; Erwin W. J. Bergsma, CNES-LEGOS, France; Fabien Leger, LEGOS, France
- THP1.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**
Board PJ.7
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** **PRELIMINARY ANALYSIS OF WIND RESOURCES AND WIND ENERGY RESERVES IN THE OFF-SHORE REGION OF GUANGDONG PROVINCE**
Board PJ.8
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** **TWO-DIMENSIONAL SHIP VELOCITY RETRIEVAL FROM THE KOMPSAT-5 SAR**
Board PJ.9
Minyoung Back, Joong-Sun Won, Yonsei University, Korea (South)
- THP1.PJ.10** **IMPROVING COASTAL BENTHOS MAPPING WITH HYPERSPECTRAL IMAGERY**
Board PJ.10
Ken Clarke, Andrew Hennessy, University of Adelaide, Australia; Milena Fernandes, South Australian Water Corporation, Australia; Megan Lewis, University of Adelaide, Australia
- THP1.PJ.11** **A STUDY ON RELIABLE SHORELINE EXTRACTION METHOD BY WAY OF DETERMINATION OF OPTIMUM VERTEX INTERVAL**
Board PJ.11
Heesook Woo, Kwang seok Kwon, Byung guk Kim, Inha University, Korea (South)
- THP1.PJ.12** **SHALLOW WATER BATHYMETRY DERIVED BY MACHINE LEARNING AND MULTI-TEMPORAL SATELLITE IMAGES**
Board PJ.12
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** **AN ERROR-BASED BLOCK ADJUSTMENT METHOD FOR MULTI-ANGLE SATELLITE IMAGERY WITHOUT GROUND CONTROL POINTS**
Board PJ.1
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** **FIRST RESULTS FROM LASER-BASED SPECTRAL CHARACTERIZATION OF LANDSAT 9 OPERATIONAL LAND IMAGER-2**
Board PJ.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** **THE EFFECTS OF SUN-VIEWER GEOMETRY ON SUN-INDUCED FLUORESCENCE AND ITS RELATIONSHIP WITH GROSS PRIMARY PRODUCTION**
Board PJ.3
Qian Zhang, Yongguang Zhang, Zhaohui Li, Ji Li, Xiaokang Zhang, Nanjing University, China
- THP2.PJ.4** **MISSION STATUS OF A GEOSTATIONARY ENVIRONMENTAL MONITORING SPECTROMETER: THE DEVELOPMENT OF A GROUND STATION SYSTEM**
Board PJ.4
Jaehoon Jeong, Ara Cho, Jongmin Yoon, National Institute of Environmental Research, Korea (South); Minseok Nam, Goo Kim, National Institute of Environmental Research, Korea (South); Deakrae Kim, Sangkyun Kim, National Institute of Environmental Research, Korea (South)
- THP2.PJ.5** **EXPERIMENTAL COMPARISON AND ANALYSIS OF BLOCK BUNDLE ADJUSTMENT MODELS FOR CHINESE ZY-3 OPTICAL SATELLITE IMAGERY**
Board PJ.5
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** **NOAA-20 VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS) ON-ORBIT BAND-TO-BAND REGISTRATION ESTIMATION FOR REFLECTIVE SOLAR BAND (RSB) USING SCHEDULED LUNAR COLLECTIONS**
Board PJ.6
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** **INTELLIGENT ONBOARD PROCESSING AND MULTICHANNEL TRANSMISSION TECHNOLOGY FOR INFRARED REMOTE SENSING DATA**
Board PJ.7
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** **IMPROVING THE AVHRR'S BRDF CORRECTION USING MODIS**
Board PJ.8
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** **A MULTI-SATELLITE REGIONAL IMAGING MISSION PLANNING METHOD BASED ON MOOM FOR EMERGENCY SURVEYING AND MAPPING**
Board PJ.9
Yaxin Chen, Xin Shen, Shixue Li, Guo Zhang, Miao Zhong Xu, Yulin Liu, Junfei Xu, Wuhan University, China
- THP2.PJ.10** **LATEST IMPROVEMENTS FOR CRIS SENSOR DATA RECORDS**
Board PJ.10
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** **HYPERSPECTRAL CAMERA FOCUS SETTING WITH SPECTRAL DERIVATIVE ANALYSIS**
Board PJ.11
Yunus Emre Esin, Omer Ozdil, Safak Ozturk, Berkan Demirel, HAVELSAN Inc., Turkey

Thursday, August 1 09:40 - 10:40 Room 501-502: Area K
Session THP1.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** **SPATIAL STRUCTURE AND RELATIONSHIP BETWEEN PORTS AND PORT CITIES ALONG THE MARITIME SILK ROAD**
Board PK.1
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** **MULTIPLATFORM EARTH OBSERVATION SYSTEMS FOR THE MONITORING AND CONSERVATION OF VULNERABLE NATURAL ECOSYSTEMS**
Board PK.2
Francisco Eugenio, Monica Alfaro, Javier Martin, Javier Marcella, Universidad de Las Palmas de Gran Canaria, Spain
- THP1.PK.3** **BATHYMETRY MAPPING USING VERY HIGH RESOLUTION SATELLITE MULTISPECTRAL IMAGERY IN SHALLOW COASTAL WATERS OF PROTECTED ECOSYSTEMS**
Board PK.3
Ferran Marques, Universitat Politècnica de Catalunya BarcelonaTECH, Spain; Francisco Eugenio, Universidad de Las Palmas de Gran Canaria, Spain; Monica Alfaro, Universitat Politècnica de Catalunya BarcelonaTECH, Spain; Javier Marcella, Universidad de Las Palmas de Gran Canaria, Spain
- THP1.PK.4** **SUN GLINT MITIGATION FOR THE SABIA-MAR MISSION**
Board PK.4
Roberto Alonso, Jose Kuba, Comisión Nacional de Actividades Espaciales (CONAE), Argentina; Robert Frauin, Scripps Institution of Oceanography, University of California San Diego, United States
- THP1.PK.5** **BATHYMETRY MAPPING WITH MULTISPECTRAL REMOTE SENSING USING A PHYSICS-BASED MODELLING APPROACH**
Board PK.5
Christopher Olayinka Ilori, Simon Fraser University, Canada; Anders Knudby, University of Ottawa, Canada
- THP1.PK.6** **RANDOM FOREST CLASSIFICATION SCENARIOS FOR BENTHIC HABITAT MAPPING USING PLANETSCOPE IMAGE**
Board PK.6
Pramaditya Wicaksono, Wahyu Lazuardi, Universitas Gadjah Mada, Indonesia
- THP1.PK.7** **MEASUREMENT OF COASTAL WATER QUALITY INDICATORS USING SENTINEL-2; AN EVALUATION OVER HONG KONG AND THE PEARL RIVER ESTUARY**
Board PK.7
Sidrah Hafeez, Man Sing Wong, Hong Kong Polytechnic University, China
- THP1.PK.8** **THE GF-2 CAPABILITY ANALYSIS IN SHALLOW WATER REMOTE SENSING BATHYMETRY**
Board PK.8
Wei Shen, Qian Ji, Yaowei Qiu, Shanghai Ocean University, China; Zhongqiang Wu, Nanjing University, China
- THP1.PK.9** **STUDY ON CRUDE OIL AND ITS EMULSIFICATION CHARACTERISTICS**
Board PK.9
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** **SEA SURFACE CURRENT VELOCITY VECTORS FROM PASSIVE REMOTE SENSING IMAGERY**
Board PK.10
Guillermo Martínez-Flores, Oleg Zaitzev, Enrique H. Nava-Sánchez, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas, Mexico
- THP1.PK.11** **ANALYSIS FOR THE CHANGE OF AQUACULTURE AREA AND WATER QUALITY IN SANSHA BAY DURING 2010-2018**
Board PK.11
Yunzhi Chen, Yushuang Wang, Tingting Xie, Minghui Zhang, Fuzhou University, China
- THP1.PK.12** **TWO-DIMENSIONAL SHIP VELOCITY RETRIEVAL FROM THE KOMPSAT-5 SAR**
Board PK.12
Minyoung Back, Joong-Sun Won, Yonsei University, Korea (South)

Thursday, August 1 15:20 - 16:20 Room 501-502: Area K
Session THP2.PK Poster

UAV Platforms and Applications

Session Chair: José Marcato, Federal University of Mato Grosso do Sul

- THP2.PK.1** **COMPENSATION METHOD FOR MULTI-ROTOR UAV-MAGNETOMETER SYSTEM**
Board PK.1
Yaxin Mu, Xiaojuan Zhang, Luzhao Chen, Yaoxin Zheng, Wupeng Xie, Chinese Academy of Sciences, China
- THP2.PK.2** **MICRO-DOPPLER AIDED TRACK-BEFORE-DETECT FOR UAV DETECTION**
Board PK.2
Yuansheng Li, Ping Wei, Lin Gao, Wen Sun, Huaguo Zhang, Guchong Li, University of Electronic Science and Technology of China, China
- THP2.PK.3** **EVALUATING THE APPLICABILITY OF RTK-UAV FOR FIELD MANAGEMENT**
Board PK.3
Hiroyuki Obanawa, Seichi Sakanoue, Takanori Yagi, National Agriculture and Food Research Organization, Japan
- THP2.PK.4** **THE IMPACT OF GROUND CONTROL POINT QUANTITY ON AREA AND VOLUME MEASUREMENTS WITH UAV SFM PHOTOGRAMMETRY APPLIED IN OPEN PIT MINES**
Board PK.4
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** **ZONING THE FIRE-RISK IN PROTECTED AREAS IN BRAZIL WITH DRONES: A STUDY CASE FOR THE BRASÍLIA NATIONAL PARK**
Board PK.5
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** **RESOURCE ALLOCATION OPTIMIZATION OF DISTRIBUTED RADAR IMAGING SYSTEM BASED ON SPATIAL SPECTRUM ANALYSIS**
Board PK.6
Fanyun Xu, Rufeij Wang, Deqing Mao, Yongchao Zhang, Yin Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China, China
- THP2.PK.7** **UNMANNED AERIAL VEHICLE (UAV) APPLICATIONS IN PRECISION AGRICULTURE**
Board PK.7
Ram Avtar, Stanley Anak Suab, Hokkaido University, Japan; Kanichiro Matsumura, Tokyo University of Agriculture, Japan; Satoshi Inoue, National Agriculture and Food Research Organization, Japan
- THP2.PK.8** **ESTIMATING AREA AND WATER VOLUME OF RURAL RESERVOIRS USING DRONES**
Board PK.8
João Vitor Silva Costa, Manuel Eduardo Ferreira, Federal University of Goiás, Brazil; Marcia Macedo, Woods Hole Research Center, United States
- THP2.PK.9** **A UAS PLATFORM FOR ASSESSING SPECTRAL, STRUCTURAL, AND THERMAL PATTERNS OF ARCTIC TUNDRA VEGETATION**
Board PK.9
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** **UAV IMAGE MOSAIC BASED ON NON-RIGID MATCHING AND BUNDLE ADJUSTMENT**
Board PK.10
Linbo Luo, Quan Xu, Jun Chen, China University of Geosciences, China; Tao Lu, Wuhan Institute of Technology, China; Yang Wang, China University of Geosciences, China
- THP2.PK.11** **EXTRACT ROW-STRUCTURE PARAMETERS OF THE MAIZE FROM UAV IMAGERIES**
Board PK.11
Xiaofeng Li, Northeast Institute 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, 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, DGF-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 AeromgInfo 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 AeromgInfo 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**
Xiaofeng 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 Xiaohui, National Ocean Technology Center, China
- THP1.PL.10** Board PL.10 **CURRENT STATUS OF THE HY-2B SATELLITE RADAR ALTIMETER AND ITS PROSPECT**
Yangjun Jia, Mingsen Lin, Youguang Zhang, National Ocean Satellite Application Service, China; Wentao An, Xiaohui 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**
Bertin Calvo Otero, Rodrigo Corzo Martinez, 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 RECONSTRUCTION OF AIRBORNE LASER SCANNER TRAJECTORY FROM DATA
Board PM.1

Florian de Boissieu, Marc Lang, Jean-Baptiste Féret, Jean-Matthieu Monnet, Sylvie Durrieu, IRSTEA, France

THP1.PM.2 NON-REFERENCE QUALITY EVALUATION FOR INDOOR 3D POINT CLOUDS
Board PM.2

Yuhan Lian, Chenglu Wen, Cheng Wang, Jonathan Li, Xiamen University, China

THP1.PM.3 RETRIEVAL OF THE FOREST LEAF AREA INDEX BASED ON THE LASER PENETRATION RATIO FROM THE GLAS WAVEFORM LIDAR DATA
Board PM.3

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 GEOMETRIC-SPECTRA-BASED POINT CLOUD SEGMENTATION FOR HYPERSPECTRAL LIDAR
Board PM.4

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 STRUCTURAL OPTIMIZATION OF RECEIVING SYSTEM BASED ON OPTIMAL FIELD OF VIEW FOR SHALLOW SEA LASER MEASUREMENT
Board PM.5

Guoqing Zhou, Jiandong Wei, Xiang Zhou, Wei Huang, Jinlong Chen, Yizhi Tan, Haocheng Hu, Guilin University of Technology, China

THP1.PM.6 SLAM-BASED MULTI-SENSOR BACKPACK LIDAR SYSTEMS IN GNSS-DENIED ENVIRONMENTS
Board PM.6

Dedong Zhang, Zheng Gong, University of Waterloo, Canada; Yiping Chen, Xiamen University, China; John Zelek, Jonathan Li, University of Waterloo, Canada

THP1.PM.7 DENOISING ALGORITHM BASED ON LOCAL DISTANCE WEIGHTED STATISTICS FOR PHOTON COUNTING LIDAR POINT DATA
Board PM.7

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 PIECEWISE HORIZONTAL 3D ROOF RECONSTRUCTION FROM AERIAL LIDAR
Board PM.8

Slim Namouchi, RIADI-ENSI, Tunisia; Bruno Vallet, IGM, 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 JOINT DESIGN OF TRANSMIT AND RECEIVE BEAMFORMING FOR MIMO RADAR
Board PM.1

Ziyang Cheng, University of Electronic Science and Technology of China, China; Bin Liao, Shenzhen University, China; Jun Li, Julian Xie, University of Electronic Science and Technology of China, China

THP2.PM.2 AN INVESTIGATION OF AN OPERATIONALLY VIABLE SOLUTION FOR MITIGATING WIND TURBINE CLUTTER BASED ON DUAL POLARIZATION WEATHER RADAR SIGNATURES
Board PM.2

Amit Dutta, Colorado State University, United States; Evan Ruzanski, Vaisala, Inc., United States; V Chandrasekar, Colorado State University, United States

THP2.PM.3 DESIGN OF A DIGITAL LOW-FREQUENCY GEOPHONE BASED ON 4TH-ORDER SIGMA-DELTA MODULATOR AND VELOCITY FEEDBACK
Board PM.3

Xiaopeng Zhang, Xin Li, Tongdong Wang, Weiguo Xiao, Northwest Institute of Nuclear Technology, China

THP2.PM.4 A RADAR FORWARD-LOOKING SUPER-RESOLUTION METHOD BASED ON SINGULAR VALUE WEIGHTED TRUNCATION
Board PM.4

Xingyu Tuo, Yin Zhang, Deqing Mao, Yao Kang, Yulin Huang, University of Electronic Science and Technology of China, China

THP2.PM.5 NEW INSIGHTS OF GROUND-BASED LAND SURFACE TEMPERATURE MEASUREMENTS PROTOCOLS FOR IMPROVING VALIDATION OF THERMAL INFRARED SATELLITE DATA
Board PM.5

Jean-Pierre Lagouarde, Mark Irvine, Institut National de la Recherche Agronomique (INRA), France; Pierre Guillevic, University of Maryland, United States

THP2.PM.6 PROPOSAL OF THREE-PORT DIELECTRIC WAVEGUIDE PROBES FOR HUMAN BLOOD GLUCOSE MONITORING
Board PM.6

Seko Nagae, Akira Hirose, University of Tokyo, Japan

THP2.PM.7 MULTI-UAV ARCHITECTURE FOR GROUND DATA COLLECTION
Board PM.7

Emilian Vasceanu, Dan Popescu, Loretta Ichim, University POLITEHNICA of Bucharest, Romania

THP2.PM.8 VALIDATING GCOM-C TERRESTRIAL ECOLOGY PRODUCTS: HOW SHOULD IN-SITU OBSERVATION BE PERFORMED AT SATELLITE SCALE?
Board PM.8

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, 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 **EXTREME CASE OF SPECTRAL BAND DIFFERENCE CORRECTION BETWEEN THE OSIRIS-REX-NAVCAM2 AND DSCOVR-EPIC IMAGERS**

Board PN.1

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 **SPECTRAL CALIBRATION OF NOAA-20 OMPS SENSOR DATA RECORD**

Board PN.2

Chunhui Pan, University of Maryland, United States; Lihang Zhou, Changyong Cao, Lawrence Flynn, Satya Kalluri, NOAA, United States

THP1.PN.3 **CALIBRATION AND VALIDATION OF CERES FM-6 ON NOAA-20 UTILIZING ONBOARD CALIBRATION SUBSYSTEMS FIRST 12 MONTHS OF OPERATIONS**

Board PN.3

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 **RADIOMETRIC CROSS-CALIBRATION OF ZY3 SATELLITE WITH GF1 PMS/WFV AND LANDSAT-8 OLI**

Board PN.4

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 **CORRECTION OF THE BRDF EFFECTS ON SENTINEL-2 OCEAN IMAGES**

Board PN.5

Maria Kremezis, Vassilia Karathanassi, National Technical University of Athens, Greece

THP1.PN.6 **IMPROVED VICARIOUS RADIOMETRIC CALIBRATION METHOD CONSIDERING ADJACENCY EFFECT FOR HIGH RESOLUTION OPTICAL SENSORS**

Board PN.6

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 **NOAA-20 VIIRS ON-ORBIT CALIBRATION AND PERFORMANCE UPDATE**

Board PN.7

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 **GROUND SURFACE CALIBRATION SOURCES FOR EARTH OBSERVATION SEGMENTED TELESCOPE**

Board PN.8

Seichi Sato, Toshiyoshi Kimura, Japan Aerospace Exploration Agency (JAXA), Japan

THP1.PN.9 **CROSS-CALIBRATION OF FY-3C/MERSI BAND 1 USING SEAWIFS DATA**

Board PN.9

Xingwei He, Qi Han, Ning Kang, Qiang Guo, Yi Peng, National Satellite Meteorological Center, China Meteorological Administration, China

THP1.PN.10 **INTER-CALIBRATION OF NIGHTTIME LIGHT DATA BETWEEN DMSP/OLS AND NPP/VIIRS IN THE ECONOMIC CORRIDORS OF BELT AND ROAD INITIATIVE**

Board PN.10

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 **CROSS-CALIBRATION OF CHINA MODERATE-HIGH RESOLUTION REMOTELY SENSED DATA WITH WIDE VIEW ANGLE**

Board PN.11

Aixia Yang, Bo Zhong, Shanlong Wu, Junjun Wu, Qinhua 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 **EVALUATION OF SUPERVIEW-1 ON-ORBIT RADIOMETRIC CALIBRATION WITH AIRBORNE HYPERSPECTROMETER**

Board PN.12

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 **OPERATING PROCEDURES AND CALIBRATION OF A HYPERSPECTRAL SENSOR ONBOARD A REMOTELY PILOTED AIRCRAFT SYSTEM FOR WATER AND AGRICULTURE MONITORING**

Board PN.1

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 **EXPLORATION METICULOUS VARIATION FEATURES OF URBAN SURFACE TEMPERATURE BASED ON UAV THERMAL THERMOGRAPHY**

Board PN.2

Li Feng, Huihui Tian, Menmen Zhao, Youjing Zhang, Song Guo, Yanxia Liu, Hohai University, China

THP2.PN.3 **UAV-BASED POLARIMETRIC SYNTHETIC APERTURE RADAR FOR MINE DETECTION**

Board PN.3

Ralf Burr, Ulm University of Applied Sciences, Germany; Markus Scharfel, 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 **DRONE IMAGE STITCHING GUIDED BY ROBUST ELASTIC WARPING AND LOCALITY PRESERVING MATCHING**

Board PN.4

Linbo Luo, Qi Wan, Jun Chen, Yongtao Wang, China University of Geosciences, China; Xiaoguang Mei, Wuhan University, China

THP2.PN.5 **PARKING SPACE INFORMATION MONITORING BY MILLIMETER WAVE SAR BASED ON UNMANNED AERIAL VEHICLE**

Board PN.5

Minghui Li, Yongchao Zhang, Rufeifang Wang, Junjie Wu, Yulin Huang, Yin Zhang, Jianyu Yang, University of Electronic Science and Technology of China, China

THP2.PN.6 **A NOVEL MOSAIC METHOD FOR UAV-BASED HYPERSPECTRAL IMAGES**

Board PN.6

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 **ASSESSING VIS CALCULATED FROM UAS-ACQUIRED MULTISPECTRAL IMAGING TO DETECT IRON CHLOROSIS IN GRAIN SORGHUM**

Board PN.7

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 **RICE LODGING AREA EXTRACTION BASED ON YBCR SPATIAL AND TEXTURE FEATURES**

Board PN.8

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 **LOBE DIFFERENCING CORRELATING RADIOMETER (LDCR) DIGITAL CORRELATOR SPECTRAL CALIBRATION AND CHARACTERIZATION**

Board PN.9

Aravind Venkatasubramony, Eryan Dai, Albin Gasiewski, University of Colorado, United States; Maciej Stachura, Jack Elston, Blackswift Technologies LLC, United States

THP2.PN.10 **A UAV-BASED MULTI-SENSOR SYSTEM FOR EXPLORING VERTICAL DISTRIBUTION OF AEROSOLS**

Board PN.10

Shuang Liu, Fangjie Yu, Ge Chen, Ocean University of China, China

THP2.PN.11 **MONITORING THE BRAZILIAN SAVANNA WITH LIDAR AND RGB SENSORS ONBOARD REMOTELY PILOTED AIRCRAFT SYSTEMS**

Board PN.11

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 **ACCURACY ESTIMATION OF A LOW-COST GPS RECEIVER USING LANDMARKS ON AERIAL IMAGES**

Board PN.12

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** **AN IMPROVED REMOTE SENSING IMAGE RETRIEVAL USING ENSEMBLE NEURAL NETWORKS**
Board PO.1
Caihong Ma, Jianbo Duan, Chen Fu, Jianbo Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- THP1.PO.2** **QUANTITATIVE EVALUATION FOR THE BLOOMING EFFECT OF NIGHTTIME LIGHT DATA IN CHINA**
Board PO.2
Yang Hu, Xin Cao, Jin Chen, Beijing Normal University, China
- THP1.PO.3** **A MODEL REPRESENTATION APPROACH BASED ON COMPUTATIONAL CHARACTERISTICS FOR DISASTER MONITORING**
Board PO.3
Quan Zou, Southwest University, China; Guoqing Li, Wenyang Yu, Chinese Academy of Sciences, China
- THP1.PO.4** **TOWARDS INGESTION PROCESSES OF KOMPSAT DATA IN OPEN DATA CUBE ON OPEN SOURCE CLOUD COMPUTING ENVIRONMENT**
Board PO.4
Kwangseob Kim, Kiwon Lee, Hansung University, Korea (South)
- THP1.PO.5** **ADVERSARIAL HASH-CODE LEARNING FOR REMOTE SENSING IMAGE RETRIEVAL**
Board PO.5
Chao Liu, Jingjing Ma, Xu Tang, Xiangrong Zhang, Licheng Jiao, Xidian University, China
- THP1.PO.6** **ANALYSIS OF THE THERMAL ENVIRONMENT IN PEDESTRIAN SPACE USING 3D THERMOGRAPHY GENERATED WITH UNMANNED AERIAL VEHICLES AND INFRARED CAMERAS**
Board PO.6
Xuexiu Zhao, Jiang He, Yanwen Luo, Nanxiang Huang, Yilan Ni, College of Civil Engineering and Architecture, Guangxi University, China
- THP1.PO.7** **OPERATIONAL LARGE AREA MARITIME MONITORING USING SYNTHETIC APERTURE RADAR AND TRANSPONDER DATA: A SOUTH AFRICAN PERSPECTIVE**
Board PO.7
Colin Schwegmann, Council for Scientific and Industrial Research, South Africa; Waldo Kleyhans, 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** **THREE-DIMENSIONAL INTEGRATED SYSTEM FOR MULTI-SOURCE HETEROGENEOUS DATA**
Board PO.8
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** **THE DATA PREPARATION RESEARCH ON GLOBAL MULTI-SOURCE SYNERGIZED QUANTITATIVE REMOTE SENSING PRODUCTION SYSTEM**
Board PO.9
Hongyi Li, Ping Tang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- THP1.PO.10** **A RAPID ALBEDO INVERSION METHOD FROM NADIR REFLECTANCE BASED ON MODIS BRDF PRODUCT**
Board PO.10
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** **THE SURFACE URBAN HEAT ISLAND IN 285 CHINESE CITIES: SPATIAL PATTERN AND DRIVER**
Board PO.1
Yi'na Hu, Kun Qi, Arizona State University, United States; Tao Hu, Huazhong Agricultural University, China
- THP2.PO.2** **USING DMSP/OLS NIGHTTIME LIGHT TO ESTIMATE ELECTRIC POWER CONSUMPTION: PERSPECTIVE FROM TRANSFERABILITY ACROSS YEARS**
Board PO.2
Kun Qi, Yi'na Hu, Arizona State University, United States; Weixin Zhai, Chengqi Cheng, Bo Chen, Peking University, China
- THP2.PO.3** **DYNAMIC EVOLUTION OF SURFACE URBAN HEAT ISLAND IN BEIJING**
Board PO.3
Tao Hu, Huazhong Agricultural University, China; Yi'na Hu, Kun Qi, Arizona State University, United States
- THP2.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**
Board PO.4
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** **NPP-BASED EVALUATION OF ECOLOGICAL ASSETS IN CHINA'S ECOLOGICAL CONSERVATION REDLINE AREA**
Board PO.5
Mengjia Xu, Yan Wang, Changxin Zou, Dong Liu, Nanjing Institute of Environmental Sciences, Ministry of Ecology and Environment, China
- THP2.PO.6** **THE INFLUENCE OF DIFFERENT URBAN AND RURAL SELECTION METHODS ON THE SPATIAL VARIATION OF URBAN HEAT ISLAND INTENSITY**
Board PO.6
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** **RURAL LAND SURFACE TEMPERATURE GRADIENT CHANGE AND ITS MECHANISM ANALYSIS IN 32 CITIES IN CHINA**
Board PO.7
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** **REMOTE SENSING FOR ASSESSING NATURAL CAPITAL IN INCLUSIVE WEALTH OF NATIONS: CURRENT CAPABILITIES AND GAPS**
Board PO.8
Eric Magliarditi, Afreen Siddiqi, Olivier de Weck, Massachusetts Institute of Technology, United States
- THP2.PO.9** **USING REMOTE SENSING TO MONITOR THE WATER CHANGE OF XIONG'AN NEW AREA**
Board PO.9
Xiaoya Wang, Weiguo Jiang, Jing Li, Jianjun Wu, Yunhao Chen, Adu Gong, Hong Tang, Jianwei Yue, Beijing Normal University, China
- THP2.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**
Board PO.10
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; Sihao 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** **WATER SURFACE MONITORING OF QINGTONGXIA WEST MAIN CANAL BY SENTINEL-2 SATELLITE OBSERVATIONS**
Board PO.11
Rui Li, Jiancheng Shi, Tianjie Zhao, Jinmei Pan, Aerospace Information Research Institute, Chinese Academy of Sciences, China
- THP2.PO.12** **THE IEEE GRSS FARS TECHNICAL COMMITTEE DOCUMENT ON THE WORLD RADIOCOMMUNICATION CONFERENCE 2019 AGENDA ITEMS AFFECTING REMOTE SENSING**
Board PO.12
Paolo de Mattheis, 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, 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 SKEWNESS-ADJUSTED ROBUST STATISTICAL ASSESSMENT ON GOOGLES EARTH 3D MODELS: RAPPLEE RIDGE

Board PP.1

*Ademir Marques Junior, Rafael Kenji Horata, Eniuce Menezes de Souza, Pedro Rassa, Alysso 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 THOUGHTS ON THE CONSTRUCTION OF UNIFIED SPATIAL DATA MANAGE SYSTEM FOR ECO-ENVIRONMENTAL PROTECTION**

Board PP.2

*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 BIG DATA ANALYSIS OF REMOTE SENSING MONITORING OF LAND COVER IN WUHAN CITY FROM 2000 TO 2017**

Board PP.3

*Zhipeng Wang, Jining Yan, Luxiao Cheng, Xiaohui Huang, Liang Huang, Lizhe Wang, China University of Geosciences (Wuhan), China***THP1.PP.4 A SPATIO-TEMPORAL COUPLED METHOD FOR RETRIEVING REMOTE SENSING IMAGE DATA OF REPEATING SUN-SYNCHRONOUS ORBIT SATELLITES**

Board PP.4

*Meng Jin, Yuqi Bai, Tsinghua University, China***THP1.PP.5 PRACTICES AND EXPERIENCES IN HIGH VOLUMES OF SATELLITE DATA MANAGEMENT**

Board PP.5

*Weiguo Han, University Corporation for Atmospheric Research, United States; Matthew Jochum, National Oceanic and Atmospheric Administration, United States***THP1.PP.6 BUILDING AND DYNAMICALLY MANAGING WORKFLOWS FOR PROCESSING REMOTE SENSING DATA IN DISTRIBUTED HIGH-THROUGHPUT ENVIRONMENT**

Board PP.6

*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 ADDITIONAL RAIN GAUGE SITE APPROPRIATION FOR MONITORING PRECIPITATION IN SINDH, PAKISTAN USING GEOSPATIAL TECHNIQUES & MULTI-CRITERIA DECISION MAKING**

Board PP.7

*Sadaf Sadiq, Rao Zahid Khalil, Saad Malik, Saad ul Haque, Institute of Space Technology, Pakistan***THP1.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)**

Board PP.8

*Davide De Santis, Gabriele Beccari, Fabio Del Frate, Luisa Corrado, Germana Corrado, Giovanni Schiavon, University of Rome Tor Vergata, Italy***THP1.PP.9 REMOTE SENSING OF VEGETATION CANOPY FLUORESCENCE WITH WIDE-AREA IMAGE ACQUISITION**

Board PP.9

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** **ASSESSMENT OF AGRICULTURAL PRACTICES FROM SENTINEL 1 & 2 IMAGES APPLIED ON RICE FIELDS TO GET A FARM TYPOLOGY IN THE CAMARGUE REGION**
Board PQ.1
Dominique Courault, Laure Hossard, Fabrice Flamain, INRA, France; Emile Ndikumana, Dinh Ho Tong Minh, Nicolas Baghdadi, IRSTEA, France; Valérie Demarez, Centre d'Etude Spatiale de la BIOSphère (CESBIO), France
- THP1.PQ.2** **NDVI-BASED WINTER WHEAT RESPONSES TO HEATWAVE IN THE NORTH CHINA PLAIN**
Board PQ.2
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** **LAND SURFACE TEMPERATURE DECOMPOSITION IN OASIS UTILIZING A TWO-SOURCE ENERGY BALANCE MODEL BASED ON THE PRIESTLEY-TAYLOR APPROACH**
Board PQ.3
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** **MONITORING SPATIAL VARIANCE OF WINTER WHEAT GROWTH VIA CHRIS IMAGE**
Board PQ.4
Xiaohu Gu, Meiyun Shu, Guojun Yang, Xiaoyu Song, Xingang Xu, Beijing Research Center for Information Technology in Agriculture, China
- THP1.PQ.5** **POTENTIAL OF RED EDGE SPECTRAL BANDS IN FUTURE LANDSAT SATELLITES ON AGROECOSYSTEM CANOPY CHLOROPHYLL CONTENT RETRIEVAL**
Board PQ.5
Zhaoyu Cui, John Kerekes, Rochester Institute of Technology, United States
- THP1.PQ.6** **AN ATTEMPT TO EXTRACT PADDY FIELDS USING POLARIMETRIC DECOMPOSITION OF PALSAR-2 DATA**
Board PQ.6
Chinatsu Yonezawa, Tohoku University, Japan
- THP1.PQ.7** **EFFICIENT CORN CULTIVATED AREA IDENTIFICATION WITH MULTITEMPORAL SYNTHETIC APERTURE RADAR AND OPTICAL IMAGE IN GOOGLE EARTH ENGINE CLOUD PLATFORM**
Board PQ.7
Fuyou Tian, Bingfang Wu, Hongwei Zeng, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- THP1.PQ.8** **PLOT-SCALE RICE GRAIN YIELD ESTIMATION USING UAV-BASED REMOTELY SENSED IMAGES VIA CNN WITH TIME-INVARIANT DEEP FEATURES DECOMPOSITION**
Board PQ.8
Qi Yang, Liangsheng Shi, Lin Lin, Wuhan University, China
- THP1.PQ.9** **CROP PHENOLOGY CLASSIFICATION USING A REPRESENTATION LEARNING NETWORK FROM SENTINEL-1 SAR DATA**
Board PQ.9
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** **FRESHNESS OF PLEUROTUS DETERMINED BY ANALYSIS OF NEAR-INFRARED SPECTRA**
Board PQ.10
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** **DETECTION OF THE RESPONSE OF CHLOROPHYLL FLUORESCENCE TO WATER STRESS THROUGH THE EXPERIMENT AND SATELLITE DATA**
Board PQ.11
Zhuoya Ni, National Satellite Meteorological Center, China Meteorological Administration, China; Hongyuan Hua, 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** **COMPARISON OF TWO MODELING APPROACHES TO SIMULATE RICE PRODUCTION IN THE CAMARGUE REGION USING SENTINEL 2 DATA**
Board PQ.1
Dominique Courault, UMR 1114 EMMAH INRA, UAPV University of Avignon, France; Valérie Demarez, Centre d'Etude Spatiale 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** **COMPARISON RADAR VEGETATION INDEX (RVI) WITH CONVENTIONAL METHODS FOR PADDY RICE FIELD, LOTUS POND AND SOYBEAN**
Board PQ.2
Yasuharu Yamada, National Agriculture and Food Research Organization, Japan
- THP2.PQ.3** **EXPLOITING THE TEXTURAL INFORMATION OF UAV MULTISPECTRAL IMAGERY TO MONITOR NITROGEN STATUS IN RICE**
Board PQ.3
Hengbiao Zheng, Meng Zhou, Yan Zhu, Tao Cheng, Nanjing Agricultural University, China
- THP2.PQ.4** **MACHINE LEARNING METHODOLOGIES FOR PADDY YIELD ESTIMATION IN INDIA: A CASE STUDY**
Board PQ.4
Ranjini B Guruprasad, Kumar Saurav, Sukanya Randhawa, IBM, India
- THP2.PQ.5** **A HEURISTIC EXPLORATION OF BRIDGING PHENOLOGY-BASED AND MACHINE LEARNING-BASED METHODS FOR PADDY RICE MAPPING WITH SENTINEL-2 IMAGES**
Board PQ.5
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** **MULTI OUTPUT REGRESSIONS FOR ESTIMATING CANOLA BIOPHYSICAL PARAMETERS FROM PALSAR DATA**
Board PQ.6
Z.Meltem Sahin, Esra Erten, Gülsen Kaya, Istanbul Technical University, Turkey
- THP2.PQ.7** **DRONE-BASED OPTICAL, THERMAL, AND 3D SENSING FOR DIAGNOSTIC INFORMATION IN SMART FARMING – SYSTEMS AND ALGORITHMS –**
Board PQ.7
Yoshio Inoue, University of Tokyo, Japan; Masaki Yokoyama, Institute for Agro-Environmental Sciences, NARO (NIAES), Japan
- THP2.PQ.8** **LINKING CLOUD COVER PATTERNS TO LAND SURFACE TEMPERATURE CHANGE IN LANDSAT 8 IMAGES**
Board PQ.8
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** **TEMPORAL DETECTION OF PESTICIDE RESIDUES IN TEA LEAVES USING HYPERSPECTRAL SENSING**
Board PQ.9
Jayantrao Mohite, Suryakant Sawant, Tata Consultancy Services, India; Kailyanjeet Borah, Amalgamated Plantations Private Limited, India; Srinivasu Pappula, Tata Consultancy Services, India
- THP2.PQ.10** **STABILITY ESTIMATION OF A SAMPLE SIZE FOR INTERANNUAL MONITORING USING MICRO SATELLITES**
Board PQ.10
Shinya Odagawa, Daisuke Seguchi, Toshio Okumura, Remote Sensing Technology Center of Japan, Japan
- THP2.PQ.11** **MULTISPECTRAL AND MODIFIED CAMERAS COMPARISON IN AGRICULTURAL MAPPING WITH UNMANNED AERIAL VEHICLE (UAV)**
Board PQ.11
Rodrigo Raupp Bosque, Leonardo Campos Inocencio, Mauricio 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, August 1 09:40 - 10:40 Room 503: Area R
Session THP1.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 Goita, 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 Faraog, 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, Komelijus 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 Wyniawskij, Milena Napierkowska, David Petit, Pritimoy Podder, Deimos Space UK, United Kingdom; Jim Wilson, Doug Woods, Soil Essentials, United Kingdom

Thursday, August 1 15:20 - 16:20 Room 503: Area R
Session THP2.PR Poster

Remote Sensing for Crop Classification, Mapping and Monitoring IV

Session Co-Chairs: Heather McNairn, Agriculture and Agri-Food Canada; Mehdi Hosseini, Carleton University

- 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 SOUTHERN 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 VEN_μS 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 Institute 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**
Xiaohu 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 Cuzzo, 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** **SAR IMAGE SIMULATION BY GENERATIVE ADVERSARIAL NETWORKS**
Board PS.1
Xianjie Bao, Zongxu Pan, Lei Liu, Bin Lei, Institute of Electronics, Chinese Academy of Sciences, China
- THP1.PS.3** **SAR IMAGE GENERATION WITH SEMANTIC-STATISTICAL CONVOLUTION**
Board PS.3
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** **ARCTIC OCEAN SURFACE TYPE CLASSIFICATION USING SAR IMAGES AND MACHINE LEARNING ALGORITHMS.**
Board PS.4
Ekaterina Balashova, Elizaveta Zabolotskikh, Kirill Khvorostovsky, Russian State Hydrometeorological University, Russia; Bertrand Chapron, Ifremer, France
- THP1.PS.5** **A TENSOR NETWORK FOR TROPICAL CYCLONE WIND SPEED ESTIMATION**
Board PS.5
Xingxing Yu, Zhao Chen, Guangchen Chen, He Zhang, Junfeng Zhou, School of Computer Science and Technology, Donghua University, China
- THP1.PS.6** **ESTIMATING TYPHOON INTENSITY WITH CONVOLUTIONAL NEURAL NETWORK**
Board PS.6
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** **A FULLY AUTOMATIC AND CLOUD-BASED P-SBAS DINSAR PIPELINE FOR SENTINEL-1 PROCESSING**
Board PS.7
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** **LEARNING PHYSICAL SCATTERING PATTERNS FROM POLSAR IMAGES BY USING COMPLEX-VALUED CNN**
Board PS.8
Juanping Zhao, Mihai Datcu, German Aerospace Center (DLR), Germany; Zenghui Zhang, Huilin Xiong, Wenxian Yu, Shanghai Jiao Tong University, China
- THP1.PS.9** **A COMPLEX-VALUED CNN FOR DIFFERENT ACTIVATION FUNCTIONS IN POLSAR IMAGE CLASSIFICATION**
Board PS.9
Yun Zhang, Qinglong Hua, Dan Xu, Hongbo Li, Yan Bu, Pengfei Zhao, Harbin Institute of Technology, China
- THP1.PS.10** **REMOTE SENSING IMAGE SYNTHESIS VIA GRAPHICAL GENERATIVE ADVERSARIAL NETWORKS**
Board PS.10
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 Observation 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** **FUSING AIRBORNE LASER SCANNING AND RAPIDEYE SENSOR PARAMETERS FOR TROPICAL FOREST BIOMASS ESTIMATION OF NEPAL**
Board PS.1
Kashi Ram Yadav, University of Twente (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** **ESTIMATE FOREST BIOMASS DYNAMICS USING MULTI-TEMPORAL LIDAR AND SINGLE-DATE INVENTORY DATA**
Board PS.2
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** **RETRIEVAL OF LEAF AREA INDEX FROM AIRBORNE WAVEFORM LIDAR DATA BASED ON GORT MODEL**
Board PS.3
Xiao Zhu, Jinling Song, Beijing Normal University, China
- THP2.PS.4** **ASSESSING POST-FIRE TREE MORTALITY AND BIOMASS CHANGE BY INTEGRATING LIDAR AND HYPERSPECTRAL DATA**
Board PS.4
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** **GEOSPATIAL CLOUD COMPUTING AND MACHINE LEARNING FOR THE ASSESSMENT OF CARBON STORAGE BY URBAN TREES**
Board PS.5
Juan Manuel Carrillo Garcia, University of Waterloo, Canada; Diana Borda Beltran, Cisgea, Colombia; Derek T Robinson, University of Waterloo, Canada
- THP2.PS.6** **THE POTENTIAL OF FOREST BIOMASS INVERSION BASED ON CANOPY-INDEPENDENT STRUCTURE METRICS TESTED BY AIRBORNE LIDAR DATA**
Board PS.6
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** **MULTI-TEMPORAL SENTINEL-1 DATA FOR WALL-TO-WALL HERBACEOUS BIOMASS MAPPING IN KRUGER NATIONAL PARK, SOUTH AFRICA – FIRST RESULTS**
Board PS.7
Christian Berger, Stefan Werner, University of Jena, Germany; Carli Wigley-Coetsee, Izak Smit, South African National Parks, South Africa; Christiane Schmillius, University of Jena, Germany
- THP2.PS.8** **PEATLAND CARBON EMISSIONS ESTIMATES BY ALOS-2 PALSAR-2 INTERFEROMETRY IN BORNEO**
Board PS.8
Masato Hayashi, Takahiro Abe, Japan Aerospace Exploration Agency (JAXA), Japan; Takashi Hirano, Hokkaido University, Japan; Ruyichi Hirata, Tomohiro Shiraishi, National Institute for Environmental Studies, Japan; Lulie Melling, Sarawak Tropical Peat Research Institute, Malaysia
- THP2.PS.9** **EVALUATION OF NISAR BIOMASS ALGORITHM IN TEMPERATE AND BOREAL FORESTS**
Board PS.9
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, August 1 09:40 - 10:40 Room 503: Area T
Session THP1.PT Poster

Big Data and Machine Learning - New Trends in Remote Sensing I

Session Chair: Mesay Belete Bejjiga, University of Trento

- THP1.PT.1** **EXTRACTING HIGH-VOLUME TRAFFIC ROUTES FROM AIS SPATIAL DISTRIBUTION MAPS**
Board PT.1
Trienko Grobler, Stellenbosch University, South Africa; Waldo Kleynhans, University of Pretoria, South Africa
- THP1.PT.2** **REMOTE SENSING SATELLITE JITTER DETECTION BASED ON IMAGE REGISTRATION AND CONVOLUTIONAL NEURAL NETWORK FUSION**
Board PT.2
Zhaoxiang Zhang, Akira Iwasaki, University of Tokyo, Japan; Guodong Xu, Harbin Institute of Technology, China
- THP1.PT.3** **MULTI-SCALE CROPPING MECHANISM FOR REMOTE SENSING IMAGE CAPTIONING**
Board PT.3
Xueting Zhang, Qi Wang, Northwestern Polytechnical University, China; Shangdong Chen, Northwest University, China; Xuelong Li, Northwestern Polytechnical University, China
- THP1.PT.4** **MACHINE LEARNING LIFECYCLE FOR EARTH SCIENCE APPLICATION: A PRACTICAL INSIGHT INTO PRODUCTION DEPLOYMENT**
Board PT.4
Manil Maskey, Rahul Ramchandran, 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** **BUILDING TYPE CLASSIFICATION FROM SOCIAL MEDIA TEXTS VIA GEO-SPATIAL TEXTMINING**
Board PT.5
Matthias Häberle, Technical University of Munich (TUM), Germany; Martin Werner, Xiao Xiang Zhu, German Aerospace Center (DLR), Germany
- THP1.PT.6** **FUNDAMENTAL MATRIX ESTIMATION FROM STEREO CORRESPONDENCES USING MULTI-OBJECTIVE PARTICLE SWARM OPTIMIZATION APPROACH**
Board PT.6
Manimala Mahato, Shirishkumar Gedam, Krishna Mohan Buddhhiraju, Indian Institute of Technology Bombay, India
- THP1.PT.7** **A MULTI-TASK ARCHITECTURE FOR REMOTE SENSING BY JOINT SCENE CLASSIFICATION AND IMAGE QUALITY ASSESSMENT**
Board PT.7
Cong Zhang, Qi Wang, Xuelong Li, Northwestern Polytechnical University, China
- THP1.PT.8** **SEA SURFACE DYNAMICS RECONSTRUCTION USING NEURAL NETWORKS BASED KALMAN FILTER**
Board PT.8
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** **LEVERAGING STARE FOR CO-ALIGNED DATA LOCALITY WITH NETCDF AND PYTHON MPI**
Board PT.9
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** **EXPLORATORY SEARCH METHODOLOGY FOR SENTINEL 2 DATA: A PROSPECT OF BOTH VISUAL AND LATENT CHARACTERISTICS.**
Board PT.10
Corina Vaduva, Florin Andrei Georgescu, Andreea Griparis, Iulia Neagoe, Alexandru Cosmin Grivei, Mihai Datcu, University Politehnica of Bucharest, Romania
- THP1.PT.11** **RESEARCH ON RESOURCE ALLOCATION METHOD OF THE SIN BASED ON SDN**
Board PT.11
Xiangli Meng, Lingda Wu, Jiao Jiao, Xiangwu Gong, Space Engineering University, China
- THP1.PT.12** **THE USE OF MASSIVE DEFORMATION DATASETS FOR THE ANALYSIS OF SPATIAL AND TEMPORAL EVOLUTION OF MAUNA LOA VOLCANO (HAWAII)**
Board PT.12
Susi Pepe, IREA-CNR Institute for Remote Sensing of Environment (IREA), National Research Council (CNR), Italy; Luca D'Auria, Istituto Vulcanologico 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

Thursday, August 1 15:20 - 16:20 Room 503: Area T
Session THP2.PT Poster

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** **INTEGRATING REMOTE SENSE DATA WITH PROCESS-BASED HYDRO-ECOLOGICAL MODEL FOR CONTINUOUS GRID SIMULATION OF CARBON FLUX OVER MOUNTAINOUS AREAS**
Board PT.1
Xinyao Xie, Ainong Li, Jinhui 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** **FOREST HEIGHTS ESTIMATION BASED ON ARTIFICIAL NEURAL NETWORK BY USING GLAS AND LANDSAT DATA**
Board PT.2
Xiliang Ni, Chunxiang Cao, Aerospace Information Research Institute, Chinese Academy of Sciences, China
- THP2.PT.3** **ESTIMATION OF FOREST GROSS PRIMARY PRODUCTIVITY IN NORTH-EAST CHINA BY A PHYSIOLOGICALLY-BASED MODEL DRIVEN WITH REMOTE SENSING DATA**
Board PT.3
Yanan Liu, Wuhan University, China; Weishu Gong, University of Maryland, United States; Xiangyun Hu, Wuhan University, China
- THP2.PT.4** **PARAMETERIZATION AND VALIDATION OF A REMOTE SENSING MODEL FOR GROSS PRIMARY PRODUCTION ESTIMATION IN EVERGREEN BROADLEAF FORESTS WITH CLIMATE CLASSIFICATION**
Board PT.4
Shangrong Lin, Jing Li, Qinhua Liu, Jing Zhao, Wentao Yu, Chinese Academy of Sciences, China
- THP2.PT.5** **DIVERGENCE OF WATER YIELD AND GROSS ECOSYSTEM PRODUCTIVITY UNDER THE CHANGING VEGETATION COVER AND CLIMATE IN THE POYANG LAKE WATERSHED**
Board PT.5
LinLing Tang, Wuhan University, China; Xiaobin Cai, Chinese Academy of Sciences, China; Xiaoling Chen, Jialin Wang, Wuhan University, China
- THP2.PT.6** **LONG-TERM RELATIONSHIPS OF NDVI-BASED FOREST GROWTH WITH CLIMATIC VARIABLES ACROSS THE NORTH HEMISPHERE**
Board PT.6
Jiaxin Jin, Hohai University, China; Ying Wang, Sanjiang University, China; Bin Yong, Hohai University, China
- THP2.PT.7** **COMPARISON OF NET PRIMARY PRODUCTIVITY SIMULATED FROM TWO DIFFERENT BIOSPHERIC MODELS IN A PLANTATION SITE IN INDIA**
Board PT.7
Poonam Tripathi, International Centre for Integrated Mountain Development, Nepal; Nataraj Patel, Satya Prakash Singh Kushwaha, Indian Institute of Remote Sensing, Dehradun, India
- THP2.PT.8** **SENSITIVITY ANALYSIS OF SMAP-REFLECTOMETRY (SMAP-R) SIGNALS TO VEGETATION WATER CONTENT**
Board PT.8
Nereida Rodriguez-Alvarez, Sidharth Misra, Mary Morris, California Institute of Technology, NASA Jet Propulsion Laboratory, United States
- THP2.PT.9** **RESPONSES OF FOREST WATER-USE EFFICIENCY TO GROWING SEASON LENGTH ACROSS EASTERN CHINA**
Board PT.9
Fengsheng Guo, Jiaxin Jin, Yong Bin, Hohai University, China

Friday, August 2 09:40 - 10:40 Room 503: Sprint Area
Session FRP1.SPR SPRINT Presentation

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 Montomali, 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

FRFriday, August 2 09:40 - 10:40 Room 501-502: Area A
Session FRP1.PA Poster

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, NUAU, 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 Căcoveanu, 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 Ambrósio, 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, Shanghai 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 **CHARACTERIZATION OF DOUBLE-BOUNCE SCATTERING IN RVQG SCENARIOS USING CONTROLLED HR-POLTOMSAR EXPERIMENTS**
Board PD.1
Ray Abdo, Laurent Ferro-Famil, Frederic Boutet, Lekhmissi Harkati, IETR - Université de Rennes 1, France

FRP1.PD.2 **TOMOSAR APPLICATION FOR EARLY WARNING IN INFRASTRUCTURE HEALTH MONITORING**
Board PD.2
Alessandra Budillon, Giampaolo Ferraioli, Angel C. Johnsy, Vito Pascazio, Gilda Schirinzi, University of Naples Parthenope, Italy

FRP1.PD.3 **SAR TOMOGRAPHY BASED ON DEEP LEARNING**
Board PD.3
Alessandra Budillon, Angel C. Johnsy, Gilda Schirinzi, Sergio Vitale, University of Naples Parthenope, Italy

FRP1.PD.4 **MULTIPLE VIEW GEOMETRY IN REMOTE SENSING: AN EMPIRICAL STUDY BASED ON PLEIADES SATELLITE IMAGES**
Board PD.4
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 **MULTIPLE SCATTERER DETECTION OVER ARTIFICIAL MEDIA USING SAR TOMOGRAPHY AND HIGH-RESOLUTION SPECTRAL ESTIMATION TECHNIQUES**
Board PD.5
Yue Huang, Laurent Ferro-Famil, University of Rennes 1, France

FRP1.PD.6 **AN IMPROVED STAGewise WEAK ORTHOGONAL MATCHING PURSUIT METHOD FOR ELECTRIC POWER TRANSMISSION TOWER EVALUATION USING DIFFERENTIAL SAR TOMOGRAPHY**
Board PD.6
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 **IMPROVED DERAMPING METHOD BASED ON D-TOMOSAR FOR EXTRACTING DEFORMATION OF TRANSMISSION TOWERS IN MOUNTAIN AREA**
Board PD.7
Min Du, Yan Chen, University of Electronic Science and Technology of China, China; Lei Wu, Deep Blue Remote Sensing Technology Co, Ltd, China; Yungping Chen, Jing Chen, Xuan Huang, University of Electronic Science and Technology of China, China

FRP1.PD.8 **SAR TOMOGRAPHIC IMAGING DEMONSTRATION USING GF-3 DATA**
Board PD.8
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 **A NEW STRUCTURE-BASED COREGISTRATION METHOD FOR NEAR-FIELD GROUND-BASED MIMO TOMOGRAPHIC SAR**
Board PD.9
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 **THE SAME RANGE LINE CELLS BASED FAST TWO-DIMENSIONAL COMPRESSIVE SENSING FOR AIRBORNE MIMO ARRAY SAR 3-D IMAGING**
Board PD.10
Chunxiao Wu, Zenghui Zhang, Shanghai Key Laboratory of Intelligent Sensing and Recognition, China; Longyang 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, Università di Pisa; Matteo Pardini, German Aerospace Center (DLR)

FRP1.PE.1 **3D LANDSCAPE MODELLING FOR ASSESSING EFFECTIVENESS OF VEGETATION CONSERVATION ON AN URBAN NATURE RESERVE**
Board PE.1
Chris Munyati, Thabiso Moeti, Northwest University, South Africa

FRP1.PE.2 **ACCURATE MODELING AND ANALYSIS OF TEMPORAL-SPATIAL VARIANT IONOSPHERIC INFLUENCES ON GEOSYNCHRONOUS SAR TOMOGRAPHY**
Board PE.2
Cheng Hu, Bin Zhang, Xichao Dong, Feifeng Liu, Beijing Institute of Technology, China

FRP1.PE.3 **TOMOSAR FOCUSING BY MEANS OF A VARIANT OF TIKHONOV REGULARIZED METHOD**
Board PE.3
Jinwei Xie, Xidian University, China; Zhibin Wang, Beijing Institute of Spacecraft System Engineering, China; Zhenfang Li, Xidian University, China

FRP1.PE.4 **SA-BILASAR DOWN-LOOKING 3-D IMAGING BASED ON SPARSE BAYESIAN RECONSTRUCTION**
Board PE.4
Min Yan, Shunjun Wei, Hao Su, Xiaoling Zhang, Jun Shi, University of Electronic Science and Technology of China, China

FRP1.PE.5 **STOCHASTIC RADIATION RADAR 3-D HIGH RESOLUTION IMAGING TECHNIQUE**
Board PE.5
Deqing Mao, Yin Zhang, Yongchao Zhang, Chenxi Yu, Xiaobo Yang, Jianyu Yang, University of Electronic Science and Technology of China, China

FRP1.PE.6 **DENSE MATCHING FOR DSM GENERATION FROM ZY-3 SATELLITE IMAGERY**
Board PE.6
Wenhuan Yang, Xin Li, Bo Yang, Yuhui Yang, Yang Yan, Wuhan University, China

FRP1.PE.7 **TEXTURED BUILDING MODEL BOTTOM BOUNDARY RECTIFICATION BASED ON DEM**
Board PE.7
Tianshuo Li, Fei Deng, Wuhan University, China

FRP1.PE.8 **GENERATING 3D POINT CLOUDS FROM A SINGLE SAR IMAGE USING 3D RECONSTRUCTION NETWORK**
Board PE.8
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 **3D SCATTERING DISTRIBUTION RECONSTRUCTION FOR AIR TARGETS VIA RADAR NETWORK**
Board PE.9
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** **COMPARISON FEATURE SELECTION METHODS FOR SUBTROPICAL VEGETATION CLASSIFICATION WITH HYPERSPECTRAL DATA**
Board PF.1
Qiaosi Li, Frankie Kwan Kit Wong, Tung Fung, Chinese University of Hong Kong, China
- FRP1.PF.2** **MORPHOLOGICAL ANALYSIS FOR BANANA DISEASE DETECTION IN CLOSE RANGE HYPERSPECTRAL REMOTE SENSING IMAGES**
Board PF.2
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** **DETECTION OF ANOMALOUS GRAPEVINE BERRIES USING ALL-CONVOLUTIONAL AUTOENCODERS**
Board PF.3
Laurenz Strathmann, Uwe Rascher, Forschungszentrum Jülich GmbH, Germany; Ribana Roscher, University of Bonn, Germany
- FRP1.PF.4** **AUTOMATIC EXTRACTION METHOD OF SARGASSUM BASED ON SPECTRAL-TEXTURE FEATURES OF REMOTE SENSING IMAGES**
Board PF.4
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** **USING THE CBERS-04 MULTISPECTRAL DATA TASELED CAP TRANSFORMATION TO DETECT THE QUASI-CIRCULAR VEGETATION PATCHES**
Board PF.5
Qingsheng Liu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China
- FRP1.PF.6** **RESEARCH ON TREE SPECIES BAND RECOGNITION METHOD BASED ON HYPER-SPECTRUM**
Board PF.6
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** **HIERARCHICAL CLASSIFICATION OF BRAZILIAN SAVANNA PHYSIOGNOMIES USING VERY HIGH SPATIAL RESOLUTION IMAGE, SUPERPIXEL AND GEOBIA**
Board PF.7
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** **ASSESSMENT OF SENTINEL-1 AND SENTINEL-2 SATELLITE IMAGERY FOR CROP CLASSIFICATION IN INDIAN REGION DURING KHARIF AND RABI CROP CYCLES**
Board PF.8
Jitendra Singh, IBM, India; Aniruddha Mahapatra, Indian Institute of Technology Roorkee, India; Saurav Basu, IBM, India; Biplob Banerjee, Indian Institute of Technology Bombay, India
- FRP1.PF.9** **COST EFFECTIVE APPROACH FOR MAPPING PROSOPIS INVASION IN ARID SOUTH AFRICA USING SPOT-6 IMAGERY AND TWO MACHINE LEARNING CLASSIFIERS**
Board PF.9
Nyasha Florence Mureriwa, Elhadi Adam, University of the Witwatersrand, South Africa; Samuel Adelabu, University of the Free State, South Africa
- FRP1.PF.10** **CROP IDENTIFICATION AND DISCRIMINATION USING AVIRIS-NG HYPERSPECTRAL DATA BASED ON DEEP LEARNING TECHNIQUES**
Board PF.10
Hetul Patel, Nirma University, India; Nita Bhagia, Indian Space Research Organisation, India; Tarjini Vyas, Nirma University, India; Bimal Bhattacharya, Indian Space Research Organisation, India; Kinjal Dave, Nirma University, India
- FRP1.PF.11** **SCALING DEEP LEARNING BASED CROP CLASSIFICATION ON MODERN INTEL XEON PROCESSORS**
Board PF.11
Bharathkumar Ramachandra, Krishna Gadiraju, Ranga Raju Vatsavai, North Carolina State University, United States; Jaime Puente, Lenovo, United States
- FRP1.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**
Board PF.12
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** **LOW-RANK AND CONTINUOUS TARGET FEATURE ENHANCEMENT FOR SAR OBJECT RECOGNITION**
Board PG.1
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** **SAR EDGE DETECTOR WITH HIGH LOCALIZATION ACCURACY**
Board PG.2
Qian-Ru Wei, Yu-Ke Wang, Peng-Yi Xie, School of Software and Microelectronics, Northwestern Polytechnical University, China
- FRP1.PG.3** **RADAR HRRP TARGET RECOGNITION BASED ON STACKED FRAME MAXIMUM LIKELIHOOD PROFILE-TRAJECTORY SIMILARITY AUTOENCODERS**
Board PG.3
Wenbo Liu, Gong Zhang, Wangcai Chen, Cheng Hang, Nanjing University of Aeronautics and Astronautics, China
- FRP1.PG.4** **ANALYSIS OF SEA CLUTTER USING DYNAMIC MODE DECOMPOSITION**
Board PG.4
Yanming Zhang, Lijun Jiang, University of Hong Kong, China; Hong Tat Ewe, Universiti Tunku Abdul Rahman, Malaysia
- FRP1.PG.5** **3-D SCATTERING CENTER EXTRACTION BASED ON BPDN FOR COMPLEX RADAR TARGETS**
Board PG.5
Xiangyin Qian, 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** **A METHOD FOR MICRO-DOPPLER EXTRACTION UNDER PASSIVE RADAR BASED ON COMMUNICATION SIGNAL**
Board PG.6
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** **DENSELY CONNECTED CONVOLUTIONAL NEURAL NETWORK BASED POLARIMETRIC SAR IMAGE CLASSIFICATION**
Board PG.7
Hongwei Dong, Lamei Zhang, Bin Zou, Harbin Institute of Technology, China
- FRP1.PG.8** **POLSAR IMAGE CLASSIFICATION BASED ON AN IMPROVED BOW MODEL WITH MID-LEVEL SEMANTIC FEATURES**
Board PG.8
Bin Zou, Yu Zhang, Lamei Zhang, Harbin Institute of Technology, China
- FRP1.PG.9** **VEHICLE AZIMUTH ANGLE ESTIMATION OF SAR IMAGE BASED ON TARGET RESTORATION**
Board PG.9
Lamei Zhang, Wuxia Miao, Bin Zou, Harbin Institute of Technology, China
- FRP1.PG.10** **RESEARCH OF BACKSCATTERING PROPERTIES OF VEGETATION FIRE BASED ON GROUND-BASED SCATTEROMETER MEASUREMENT**
Board PG.10
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** **TARGET RECOGNITION IN SAR IMAGE VIA SPARSE REPRESENTATION IN TRANSFORMED DOMAIN**
Board PG.11
Ganggang Dong, Hongwei Liu, Bo Jiu, Jibin Zheng, Junkun Yan, Xidian University, China
- FRP1.PG.12** **TOWARDS A ML BASED GLOBAL CROP IDENTIFICATION MODEL USING LIMITED SAR DATA - THAT IS SCALABLE ACROSS DATA-SPARSE GEOGRAPHIES**
Board PG.12
Sukanya Randhawa, Jitendra Singh, Jagabondu 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** **ANOMALY DETECTION-ORIENTED BAND SELECTION FOR HYPERSPECTRAL IMAGE**
Board PH.1
Lang Ren, Liaoying Zhao, Hangzhou Dianzi University, China; Xiaorun Li, Zhejiang University, China
- FRP1.PH.2** **GLOBAL SELF-LABELED DISTRIBUTION ANALYSIS FOR HYPERSPECTRAL BAND SELECTION**
Board PH.2
Xinyi Tong, Jihao Yin, Beihang University, China; Limin Wu, Beijing Institute of Space Mechanics & Electricity, China; Hui Qv, Beihang University, China
- FRP1.PH.3** **HYPERSPECTRAL REMOTE SENSING IMAGE BAND SELECTION VIA MULTI-OBJECTIVE SINE COSINE ALGORITHM**
Board PH.3
Yuting Wan, Yanfei Zhong, Ailong Ma, Liangpei Zhang, Wuhan University, China
- FRP1.PH.4** **ROBUST MULTI-FEATURE SPECTRAL CLUSTERING FOR HYPERSPECTRAL BAND SELECTION**
Board PH.4
Weiwei Sun, Gang Yang, Jialin Li, Ningbo University, China
- FRP1.PH.5** **HYPERSPECTRAL BAND SELECTION BASED ON TERNARY WEIGHT CONVOLUTIONAL NEURAL NETWORK**
Board PH.5
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** **PARTICLE SWARM OPTIMIZATION-BASED HOTSPOT ANALYSIS AND IMPURITY FUNCTION BAND PRIORITIZATION USING MULTIPLE ATTRIBUTE DECISION-MAKING MODEL FOR BAND SELECTION OF HYPERSPECTRAL IMAGES**
Board PH.6
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** **BAND SELECTION USING SEGMENTED PCA AND COMPONENT LOADINGS FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PH.7
Munmun Baisanthy, Defence Terrain Research Laboratory, India; Anil Kumar Sao, Indian Institute of Technology Mandi, India
- FRP1.PH.8** **UNIFORM BAND INTERVAL DIVIDED BAND SELECTION**
Board PH.8
Fang Li, Hongju Cao, Xiaodi Shang, Meiping Song, Chunyan Yu, Cheir-I Chang, Dalian Maritime University, China
- FRP1.PH.9** **ATTENTION NETWORKS FOR BAND WEIGHTING AND SELECTION IN HYPERSPECTRAL REMOTE SENSING IMAGE CLASSIFICATION**
Board PH.9
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** **A BAND SELECTION BASED 1D-CNN TO CLASSIFY OIL FILM THICKNESS**
Board PH.10
Bingxin Liu, Gang Guo, Donglai Wu, Guannan Li, Ying Li, Dalian Maritime University, China
- FRP1.PH.11** **UNSUPERVISED DISCRIMINATIVE DIMENSION REDUCTION FOR HYPERSPECTRAL CHEMICAL PLUME SEGMENTATION**
Board PH.11
James Murphy, Tufts University, United States; Mauro Maggioni, Johns Hopkins University, United States
- FRP1.PH.12** **A DISCRIMINATIVELY LEARNED CNN EMBEDDING FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION**
Board PH.12
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** **TOWARDS AUTOMATED DELINEATION OF SMALLHOLDER FARM FIELDS FROM VHR IMAGES USING CONVOLUTIONAL NETWORKS**
Board PI.1
Claudio Persello, Valentyn Tolpekin, John Ray Bergado, Rolf de By, University of Twente, Netherlands
- FRP1.PI.2** **SEA-LAND SEGMENTATION WITH RES-UNET AND FULLY CONNECTED CRF**
Board PI.2
Zhengquan Chu, Tian Tian, Ruyi Feng, Lizhe Wang, China University of Geosciences, China
- FRP1.PI.3** **THE MODIFIED ENCODER-DECODER NETWORK BASED ON DEPTHWISE SEPARABLE CONVOLUTION FOR WATER SEGMENTATION OF REAL SAR IMAGERY**
Board PI.3
Jinsong Zhang, Mengdao Xing, Guangcai Sun, Xidian University, China
- FRP1.PI.4** **AN EFFECTIVE VARIATIONAL WATERLINE SEGMENTATION METHOD**
Board PI.4
Yong Meng, Zeming Zhou, Yudi Liu, Qixiang Luo, Chenjing Tian, Xiaofeng Zhao, National University of Defense Technology, China
- FRP1.PI.5** **A MARKOV RANDOM FIELD MOEL WITH ALTERNATING GRANULARITIES FOR SEGMENTATION OF HIGH SPATIAL RESOLUTION REMOTE SENSING IMAGERY**
Board PI.5
Chen Zheng, Min Zhang, Xiaohui Chen, Henan University, China; Leiguang Wang, Southwest Forestry University, China
- FRP1.PI.6** **SEMANTIC SEGMENTATION OF HIGH RESOLUTION REMOTE SENSING IMAGE BASED ON BATCH-ATTENTION MECHANISM**
Board PI.6
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** **SIMULTANEOUS SEGMENTATION AND EDGE DETECTION FOR HYPERSPECTRAL IMAGE VIA A DEEP SUPERVISED AND BOUNDARY-CONSTRAINED NETWORK**
Board PI.7
Yonghao Xu, Bo Du, Liangpei Zhang, Wuhan University, China
- FRP1.PI.8** **FULL-RESOLUTION IMAGE SEGMENTATION MODEL COMBINING MULTI-SOURCE INPUT INFORMATION**
Board PI.8
Chenxiao Feng, Xili Wang, Shaanxi Normal University, China; Xiyuan Wang, Ningxia University, China; Ming Liu, Jie Wu, Shaanxi Normal University, China
- FRP1.PI.9** **REGION-BASED IMAGE-KEY-ELEMENT DECOMPOSITION FOR LARGE-SCALE SAR IMAGES**
Board PI.9
Weike Li, Bin Zou, Lamei Zhang, Harbin Institute of Technology, China; Yu Xin, Beijing Institute of Remote Sensing Information, China
- FRP1.PI.10** **SEGMENTATION OF SENTINEL-2 IMAGES ON SNAP - AN EVALUATION WITH SITEF**
Board PI.10
Andre R S Marcal, Faculdade de Ciencias, Universidade do Porto, Portugal
- FRP1.PI.11** **A SIMPLE ROTATIONAL EQUIVARIANCE LOSS FOR GENERIC CONVOLUTIONAL SEGMENTATION NETWORKS: PRELIMINARY RESULTS**
Board PI.11
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** **PIPELINE SEGMENTATION USING LEVEL-SET METHOD**
Board PI.12
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 DEEP LEARNING MODEL FOR WATER/ICE/LAND CLASSIFICATION USING LARGE-SCALE MEDIUM RESOLUTION SATELLITE IMAGES**
Board PJ.1
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 A LEVEL SET BASED METHOD FOR LAND MASKING IN SHIP DETECTION USING SAR IMAGES**
Board PJ.2
Ziwei Wang, Wei Yang, Jie Chen, Chunsheng Li, Beihang University, China
- FRP1.PJ.3 A DEEP LEARNING FOREST TYPES CLASSIFICATION METHOD FOR HIGH SPATIAL RESOLUTION REMOTE SENSING IMAGE: DUAL-FCN8S-CRF**
Board PJ.3
Ying Guo, Zengyuan Li, Erxue Chen, Xu Zhang, Lei Zhao, Yan Chen, Yahui Wang, Chinese Academy of Forestry, China
- FRP1.PJ.4 OPTICAL REMOTE SENSING WATER-LAND SEGMENTATION REPRESENTATION BASED ON PROPOSED SNS-CNN NETWORK**
Board PJ.4
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 SEA-LAND SEGMENTATION FOR HARBOUR IMAGES WITH SUPERPIXEL CRF**
Board PJ.5
Bin Sun, Shutao Li, Jie Xie, Hunan University, China
- FRP1.PJ.6 TRAINING A SINGLE MULTI-CLASS CONVOLUTIONAL SEGMENTATION NETWORK USING MULTIPLE DATASETS WITH HETEROGENEOUS LABELS: PRELIMINARY RESULTS**
Board PJ.6
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 A REVERSIBLE GENERATIVE ADVERSARIAL NETWORKS FOR SAR IMAGERY CLUTTER SUPPRESSION**
Board PJ.7
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 EFFECTIVE FUSION OF MULTI-MODAL DATA WITH GROUP CONVOLUTIONS FOR SEMANTIC SEGMENTATION OF AERIAL IMAGERY**
Board PJ.8
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 APPLICATION OF UNET FULLY CONVOLUTIONAL NEURAL NETWORK TO IMPERVIOUS SURFACE SEGMENTATION IN URBAN ENVIRONMENT FROM HIGH RESOLUTION SATELLITE IMAGERY**
Board PJ.9
Joe McGlinchy, Brian Johnson, Brian Muller, Maxwell Joseph, Jeremy Diaz, University of Colorado Boulder, United States
- FRP1.PJ.10 AN AUTOMATIC LAND COVERS IDENTIFICATION BASED ON DEMPSTER-SHAFER THEORY FOR MULTI-SPECTRAL IMAGES**
Board PJ.10
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 ROAD NETWORK EXTRACTION FROM SATELLITE IMAGES USING CNN BASED SEGMENTATION AND TRACING**
Board PK.1
Yao Wei, Kai Zhang, Shunping Ji, Wuhan University, China
- FRP1.PK.2 D-RESUNET: RESUNET AND DILATED CONVOLUTION FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION**
Board PK.2
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 ROAD CENTERLINES EXTRACTION FROM HIGH RESOLUTION REMOTE SENSING IMAGE**
Board PK.3
Shikai Sun, Wei Xia, Bingqi Zhang, Ying Zhang, China Transport Telecommunications & Information Center, China
- FRP1.PK.4 NEW NEURAL NETWORK AND AN IMAGE POSTPROCESSING METHOD FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION**
Board PK.4
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 NEW NETWORK BASED ON D-LINKNET AND DENSENET FOR HIGH RESOLUTION SATELLITE IMAGERY ROAD EXTRACTION**
Board PK.5
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 ROAD MATERIAL INFORMATION EXTRACTION BASED ON MULTI-FEATURE FUSION OF REMOTE SENSING IMAGE**
Board PK.6
Chao Yang, Yuxia Li, Bo Peng, Yuan Cheng, Ling Tong, University of Electronic Science and Technology of China, China
- FRP1.PK.7 MULTI-SCALE ENHANCED DEEP NETWORK FOR ROAD DETECTION**
Board PK.7
Xiaoyan Lu, Yanfei Zhong, Wuhan University, China; Ji Zhao, China University of Geosciences, China
- FRP1.PK.8 LOCATION-SPECIFIC EMBEDDING LEARNING FOR THE SEMANTIC SEGMENTATION OF BUILDING FOOTPRINTS ON A GLOBAL SCALE**
Board PK.8
Benjamin Bischke, Patrick Helber, Jörn Hees, Andreas Dengel, German Research Center for Artificial Intelligence (DFKI), Germany
- FRP1.PK.9 WEAKLY SUPERVISED BUILDING SEGMENTATION FROM AERIAL IMAGES**
Board PK.9
Muhammad Usman Rafique, Nathan Jacobs, University of Kentucky, United States
- FRP1.PK.10 BUILDINGS EXTRACTION FROM REMOTE SENSING DATA USING DEEP LEARNING METHOD BASED ON IMPROVED U-NET NETWORK**
Board PK.10
Yiru Duan, Lin Sun, Shandong University of Science and Technology, China
- FRP1.PK.11 CONVOLUTION BASED SPECTRAL PARTITIONING ARCHITECTURE FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Board PK.11
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
Session FRP1.PL Poster

Optical Remote Sensing of Snow

Session Co-Chairs: Linmei Jiang, Beijing Normal University; Siri Jodha Khalsa, Univ. of Colorado, Boulder

- FRP1.PL.1** **FORWARD SIMULATION OF SNOW ALBEDO BASED ON SNICAR MODEL**
Board PL.1
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** **A VIRTUAL AIRBORNE MISSION SIMULATOR AT X- AND KU-BANDS DRIVEN BY SNOWEX 2017 DATA**
Board PL.2
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** **ASSESSING PERFORMANCE OF THE KERNEL-DRIVEN BRDF MODELS IN RETRIEVING SNOW ALBEDO BASED ON THE BIC-PT MODEL**
Board PL.3
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** **A DEVICE TO MEASURE SNOW SPECIFIC SURFACE AREA USING SWIR REFLECTANCE**
Board PL.4
Joshua Elliott, Austin Lines, Laura Ray, Mary Albert, Thayer School of Engineering at Dartmouth College, United States
- FRP1.PL.5** **EVALUATION OF THERMAL DETECTOR TECHNOLOGY CAPABILITIES FOR THE COMPACT THERMAL IMAGER: RESULTS FROM THE QWIP INFRARED CAMERA FROM SNOWEX'17**
Board PL.5
Alicia Joseph, Murzy Jhabvala, Donald Jennings, Dorothy Hall, Nicolo DiGirolamo, Larry Stock, NASA Goddard Space Flight Center, United States
- FRP1.PL.6** **ESTIMATION OF FRACTIONAL SNOW COVER FROM FY-4A/AGRI**
Board PL.6
Gongxue Wang, Lingmei Jiang, Xiaojing Liu, Huizhen Cui, Jianwei Yang, Jian Wang, Beijing Normal University, China
- FRP1.PL.7** **GREENLAND ALBEDO REANALYSIS PRODUCT AND PRELIMINARY ACCURACY ASSESSMENT**
Board PL.7
Yixiang Tian, Han Qi, Rongxing Li, Tongji University, China
- FRP1.PL.8** **IMPROVING MODIS FRACTIONAL SNOW COVER PRODUCTS VIA BLOCK-BASED NONLOCAL SPATIO-TEMPORAL FILTERING**
Board PL.8
Jinliang Hou, Chunlin Huang, Ying Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China
- FRP1.PL.9** **AN EFFECTIVE ALGORITHM OF SNOW, CLOUDS AND CLOUD SHADOW DETECTION FOR MODIS IMAGERY**
Board PL.9
Rongjuan Yang, Ronggao Liu, Yang Liu, Xuexin Wei, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China
- FRP1.PL.10** **SNOW GRAIN SIZE ESTIMATION OF A SITE IN THE INDIAN HIMALAYAN REGION USING HYPERSPECTRAL REMOTE SENSING : AVIRIS-NG DATA**
Board PL.10
Anmol Jalali, Dericks Praise Shukla, Indian Institute of Technology (IIT), Mandi, India
- FRP1.PL.11** **AREA CHANGE OF SNOW AND ICE IN THE BABAO RIVER BASIN, TIBETAN PLATEAU**
Board PL.11
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** **SNOW AREA MAPPING USING FEATURE-ORIENTED PRINCIPAL COMPONENT ANALYSIS**
Board PL.12
Pooja Patel, Sandeep Kumar Mondal, Rishikesh Bharti, Indian Institute of Technology Guwahati, India

Friday, August 2 09:40 - 10:40 Room 501-502: Area M
Session FRP1.PM Poster

Microwave Remote Sensing of Snow Cover

Session Chair: Juha Lemmetyinen, Finnish Meteorological Institute

- FRP1.PM.1** **RETRIEVING DRY SNOW DEPTH BASED ON CO-POLARIZED PHASE DIFFERENCE OF X-BAND RADAR IMAGE**
Board PM.1
Pengfeng Xiao, Yue Zhuo, Xueliang Zhang, Xuezhi Feng, Yina Song, Nanjing University, China
- FRP1.PM.2** **EVALUATING THE PERFORMANCE OF TWO SWE RETRIEVAL METHODS OVER US**
Board PM.2
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** **A BACKSCATTERING MODEL AT L-BAND FOR THE SNOW COVER ON THE GROUND**
Board PM.3
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** **X-BAND POLARIMETRIC SAR COPOLAR PHASE DIFFERENCE FOR FRESH SNOW DEPTH ESTIMATION IN THE NORTHWESTERN HIMALAYAN WATERSHED**
Board PM.4
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** **SUBBANDED PROCESSING FOR ULTRAWIDEBAND FMCW RADAR FOR SNOW MEASUREMENT**
Board PM.5
Shashank Watal, Jie-Bang Yan, University of Alabama, United States
- FRP1.PM.6** **ESTIMATING SNOW-DEPTH BY FUSING SATELLITE AND STATION OBSERVATIONS: A DEEP LEARNING APPROACH**
Board PM.6
Jiwen Wang, Qiangqiang Yuan, Tongwen Li, Huanfeng Shen, Liangpei Zhang, Wuhan University, China
- FRP1.PM.7** **A FRAME ON SNOW DEPTH RECONSTRUCTION BASED ON MACHINE LEARNING TECHNIQUE**
Board PM.7
Jianwei Yang, Lingmei Jiang, Gongxue Wang, Jian Wang, Huizhen Cui, Xu Su, Beijing Normal University, China
- FRP1.PM.8** **BUILDING LONG-TERM SNOW DEPTH DATASETS FROM PASSIVE MICROWAVE OBSERVATIONS—A CASE STUDY IN THE UNITED STATES**
Board PM.8
Xiaojing Liu, Lingmei Jiang, Gongxue Wang, Beijing Normal University, China; Shu Wang, National Meteorological Information Center, China
- FRP1.PM.9** **RETRIEVAL OF SNOW WATER EQUIVALENT BY GAMMA**
Board PM.9
Yuan Ma, Hongyi Li, Jian Wang, Xiaohua Hao, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, China
- FRP1.PM.10** **INVESTIGATING LAKE ICE PHENOLOGY IN TIBETAN PLATEAU USING SATELLITE DATA**
Board PM.10
Linan Guo, Yanhong Wu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China
- FRP1.PM.11** **YELLOW RIVER ICE DECISION TREE CLASSIFICATION METHOD BASED ON POLARIMETRIC SAR DATA**
Board PM.11
Pingping Huang, Qiang Shi, Weixian Tan, Wei Xu, Inner Mongolia University of Technology, China

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 Bragioni, 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 Montomali, 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
RESEARCH 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); Hoonyul 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, Lantmäteri, 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 Tourmadre, 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 Nadzir 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** **SUPERPOSITION OF SEA ICE CLASSIFICATION BASED ON SYNTHETIC APERTURE RADAR IMAGES CONSIDERING UNDERLYING DRIFT**
Board PP.1
Maurice Wiercioch, Anja Frost, Suman Singha, German Aerospace Center (DLR), Germany
- FRP1.PP.2** **COMPARISON OF REMOTELY SENSED SEA ICE CONCENTRATIONS WITH REANALYSIS DATASET IN POLAR REGIONS**
Board PP.2
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** **ASSIMILATION OF HIGH-RESOLUTION ICE CHARTS IN A COUPLED OCEAN-SEA-ICE MODEL**
Board PP.3
Sindre Fritznér, Rune Graversen, Arctic University of Norway, Norway; Kai Christensen, Keguang Wang, MET Norway, Norway
- FRP1.PP.4** **OPEN WATER SEASON CHANGES OVER THE KARA SEA COASTAL ZONE: MARRESALYA EXAMPLE**
Board PP.4
Pavel Shabanov, Shirshov Institute of Oceanology, Russian Academy of Sciences, Russia; Natalia Shabanova, Lomonosov Moscow State University, Russia
- FRP1.PP.5** **ROSS SEA ICE PRODUCTION AND FAST-ICE EDGE USING SENTINEL-1 SAR IMAGES**
Board PP.5
Liyun Dai, Tao Che, Xiaohong Deng, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China
- FRP1.PP.6** **TOWARDS OPERATIONAL SEA ICE TYPE RETRIEVAL USING L-BAND SYNTHETIC APERTURE RADAR**
Board PP.6
Suman Singha, German Aerospace Center (DLR), Germany; A. Malin Johansson, Anthony Paul Doulgeris, Arctic University of Norway, Norway
- FRP1.PP.7** **RETRIEVING SEA ICE FREEBOARD FROM MABEL DATA**
Board PP.7
Xiaoyan Wang, Lanzhou University, China
- FRP1.PP.8** **SUPER RESOLUTION RECONSTRUCTION TECHNIQUE IN PASSIVE MICROWAVE IMAGES OF ARCTIC SEA ICE**
Board PP.8
Xiaomin Liu, Tiantian Feng, Junqiao Zhao, Rongxing Li, Tongji University, China
- FRP1.PP.9** **COMPARISON OF SENTINEL-1 SAR AND SENTINEL-3 ALTIMETRY DATA FOR SEA ICE TYPE DISCRIMINATION**
Board PP.9
Wiebke Aldenhoff, Leif E.B. Eriksson, Chalmers University of Technology, Sweden; Céline Heuzé, University of Gothenburg, Sweden
- FRP1.PP.10** **STUDY ON THE RETRIEVAL OF SEA ICE CONCENTRATION FROM FY3B/MWRI IN THE ARCTIC**
Board PP.10
Lele Li, Haihua Chen, Xiaoyu Wang, Lei Guan, Ocean University of China, China
- FRP1.PP.11** **PASSIVE MICROWAVE REMOTE SENSING OF LAKE ICE FREEZING IN HIGH ASIA**
Board PP.11
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** **APPLICABILITY ASSESSMENT OF AREAL AND FEATURE-BASED ALGORITHMS FOR SEA ICE TRACKING FROM SAR IMAGES USING TEXTURE ENTROPY ANALYSIS**
Board PP.12
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** **SAR-IMAGE BASED URBAN CHANGE DETECTION IN BANGKOK, THAILAND USING DEEP LEARNING**
Board PQ.1
Raveerat Jaturapitpomchai, 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** **IDENTIFY URBAN AREA FROM REMOTE SENSING IMAGE USING DEEP LEARNING METHOD**
Board PQ.2
Jinxin Guo, Huazhong Ren, Yitong Zheng, Jing Nie, Shanshan Chen, Yuanheng Sun, Qiming Qin, Peking University, China
- FRP1.PQ.3** **DELINEATION OF THE URBAN FRINGE USING MULTI-INDICATORS AND DEEP NEURAL NETWORK**
Board PQ.3
Renbo Luo, Xingnan Liu, Zhifeng Wu, Yingbiao Chen, Guangzhou University, China
- FRP1.PQ.4** **COMBINED MULTISCALE CONVOLUTIONAL NEURAL NETWORKS AND SUPERPIXELS FOR BUILDING EXTRACTION IN VERY HIGH-RESOLUTION IMAGES**
Board PQ.4
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** **ON ANOMALOUS DEFORMATION PROFILE DETECTION THROUGH SUPERVISED AND UNSUPERVISED MACHINE LEARNING**
Board PQ.5
Stefan-Adrian Toma, Bogdan Sebacher, Adrian Focsa, Mihai-Lica Pura, Military Technical Academy, Romania
- FRP1.PQ.6** **LEARNING SELF-ADAPTIVE SCALES FOR EXTRACTING URBAN FUNCTIONAL ZONES FROM VERY-HIGH-RESOLUTION SATELLITE IMAGES**
Board PQ.6
Xiuyuan Zhang, Shihong Du, Peking University, China
- FRP1.PQ.7** **BUILDING SHADOW DETECTION BASED ON DBM**
Board PQ.7
Guoqing Zhou, Hongjun Sha, Haoyu Wang, Tao Yue, Bin Jia, Guilin University of Technology, China
- FRP1.PQ.8** **URBAN ROADS NETWORK DETECTION FROM HIGH RESOLUTION REMOTE SENSING**
Board PQ.8
Lisa Yang, Afreen Siddiqi, Olivier de Weck, Massachusetts Institute of Technology, United States
- FRP1.PQ.9** **URBAN-RURAL FRINGE RECOGNITION WITH THE INTEGRATION OF OPTICAL AND NIGHTTIME LIGHTS DATA**
Board PQ.9
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 Qian, 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, Huiyang 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 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 Guimaraes, 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 Aydinoglu, 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

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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)”

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

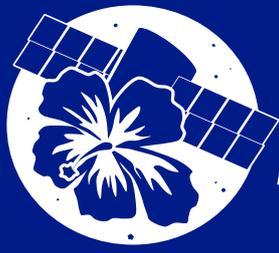
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IGARSS



IEEE



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

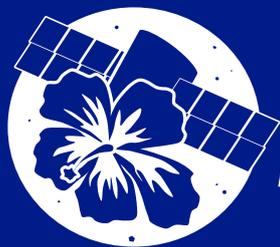
IGARSS 2020

19–24 July 2020

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IGARSS



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2020 IEEE International Geoscience and Remote Sensing Symposium

19 – 24 July 2020 🌐 Waikoloa, Hawaii, USA

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 Symposium 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'omalulu 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.

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