IGARSS 2012

IEEE International Geoscience and Remote Sensing Symposium

Remote Sensing for a Dynamic Earth

Program Guide

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2012 MUNICH IGARSS

22-27 July 2012 | Munich
International Congress Centre

IEEE GRSS DLR esa

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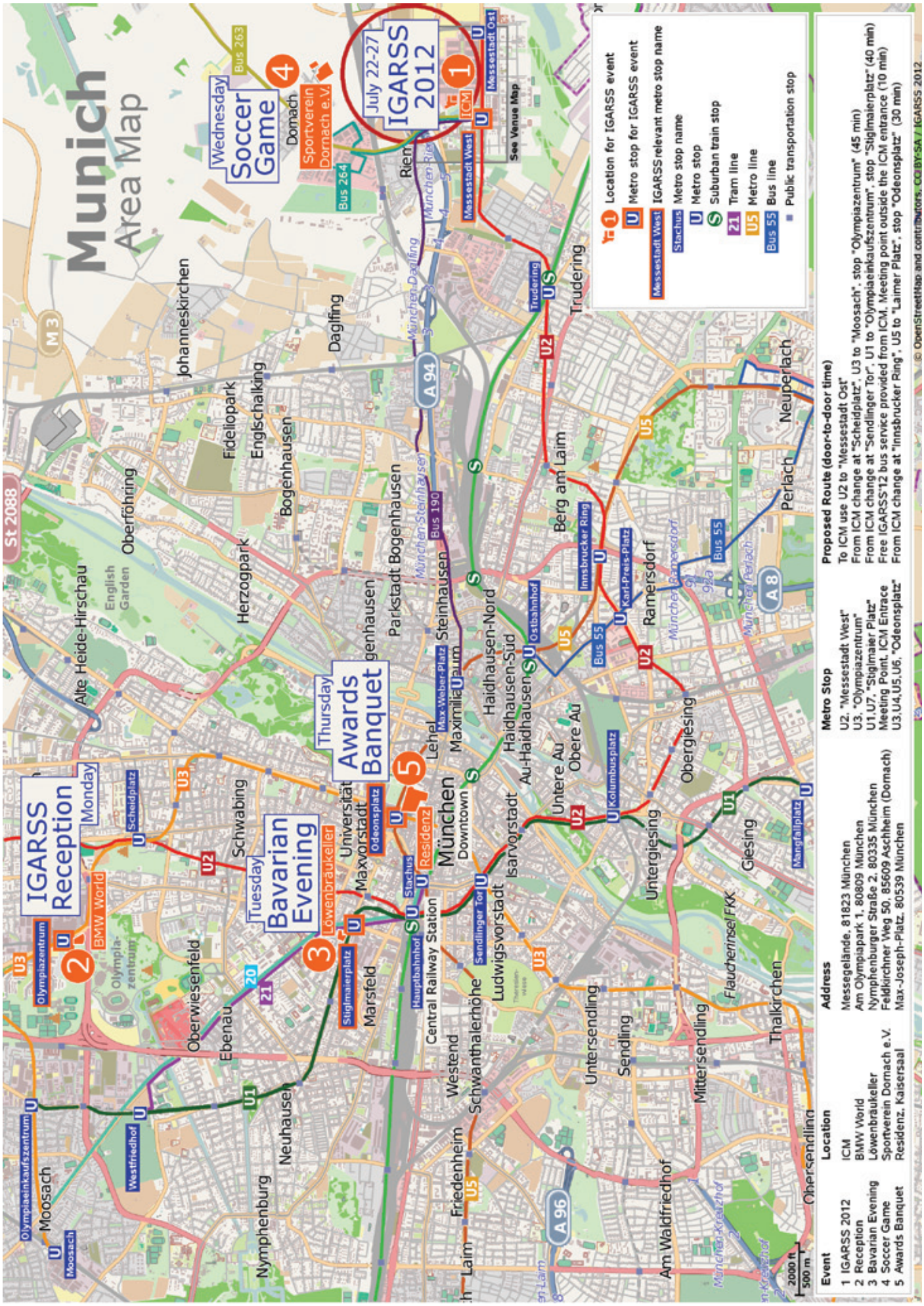
Munich Area Map



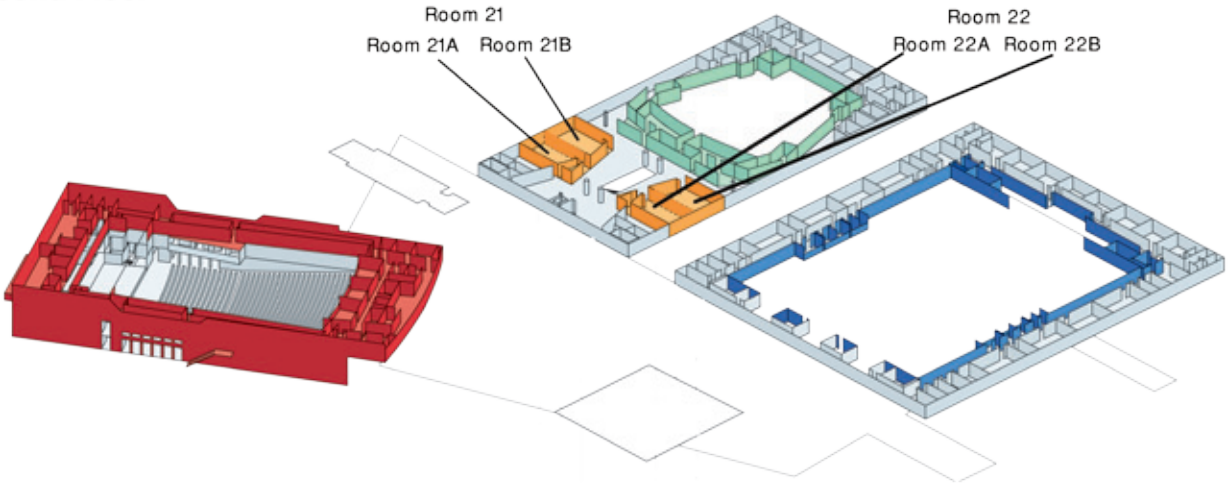
Venue Map: International Congress Center Munich (ICM)

IGARSS 2012 will be held at the International Congress Center Munich (ICM) - Willy-Brandt-Allee.

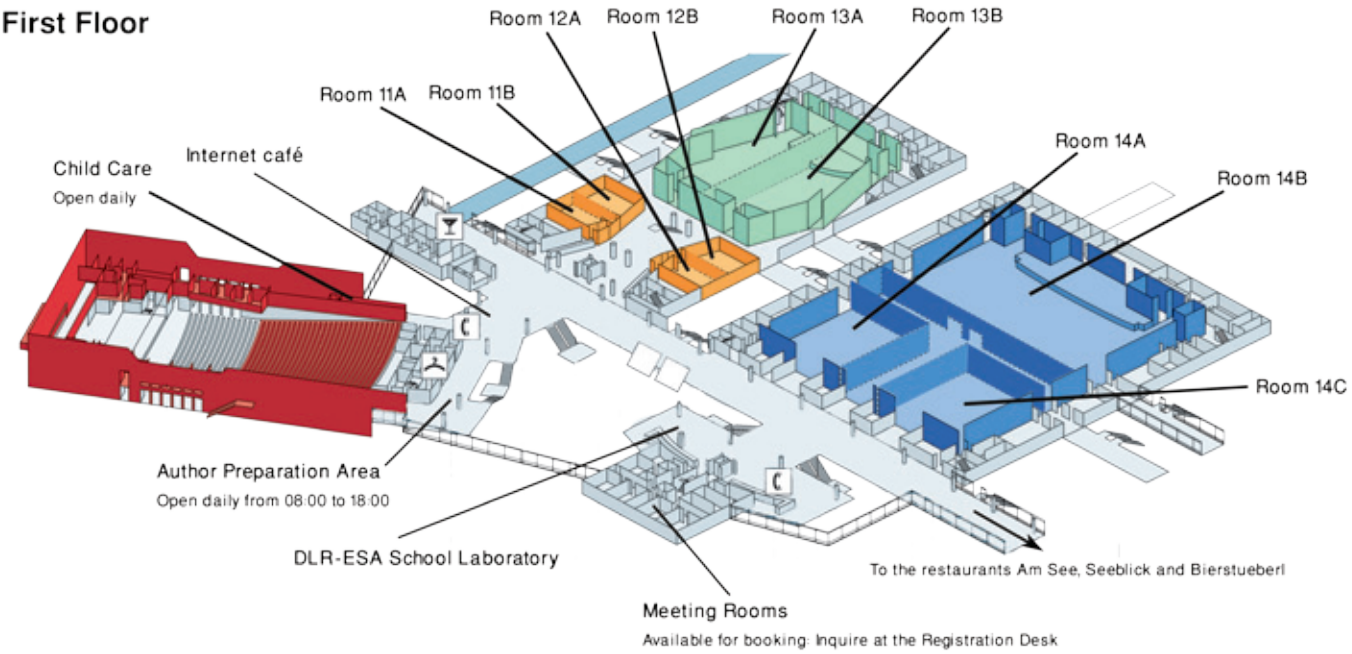
The venue can be reached by public transportation (Metro line U2, disembark at "Messestadt West")
Navigator Address to ICM: Am Messesee 6, München
Navigator Address for parking: Paul-Henri-Spaak-Str. 6, München

Venue Overview - International Congress Center Munich (ICM)

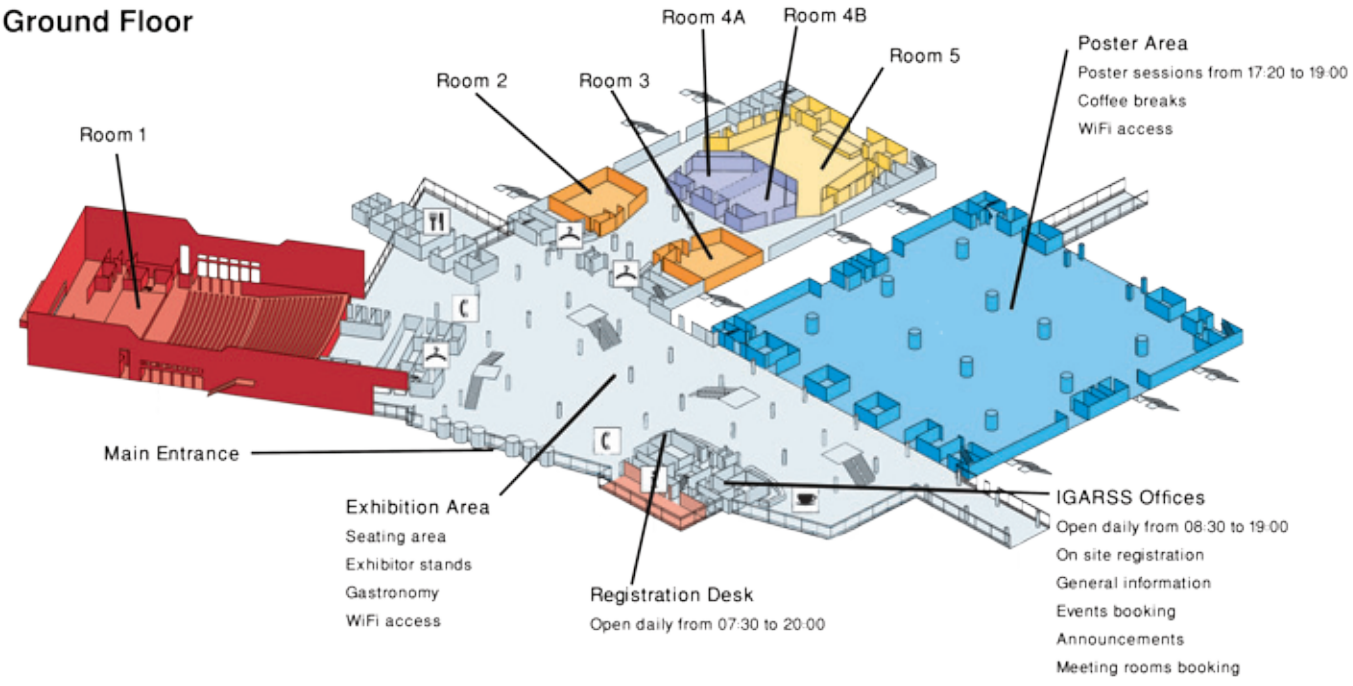
Second Floor



First Floor



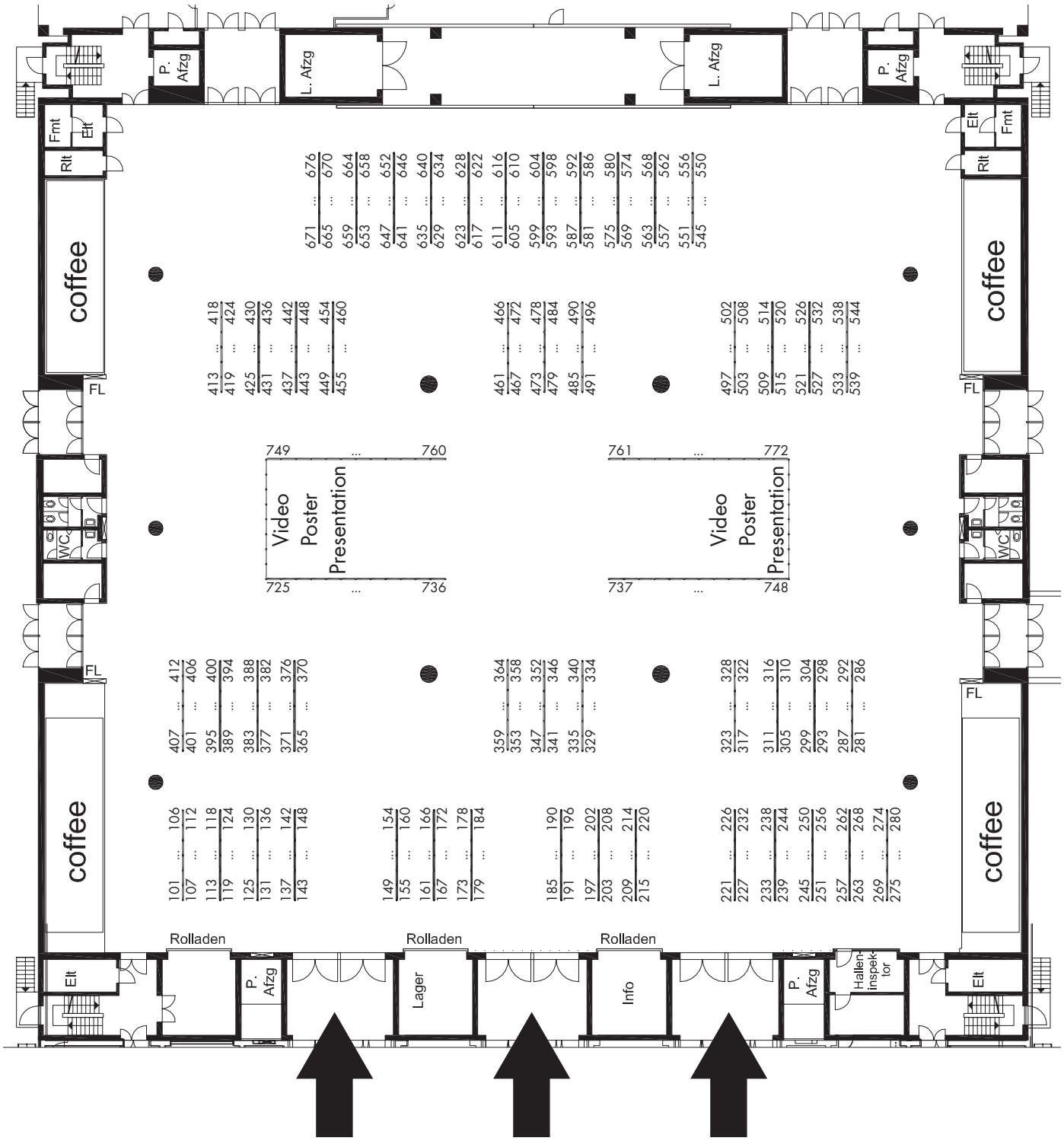
Ground Floor



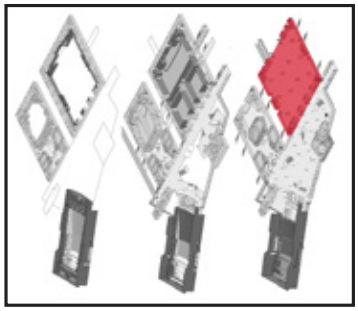
Ground Floor Foyer - International Congress Center Munich (ICM)

Exhibition Map available on Page 18.

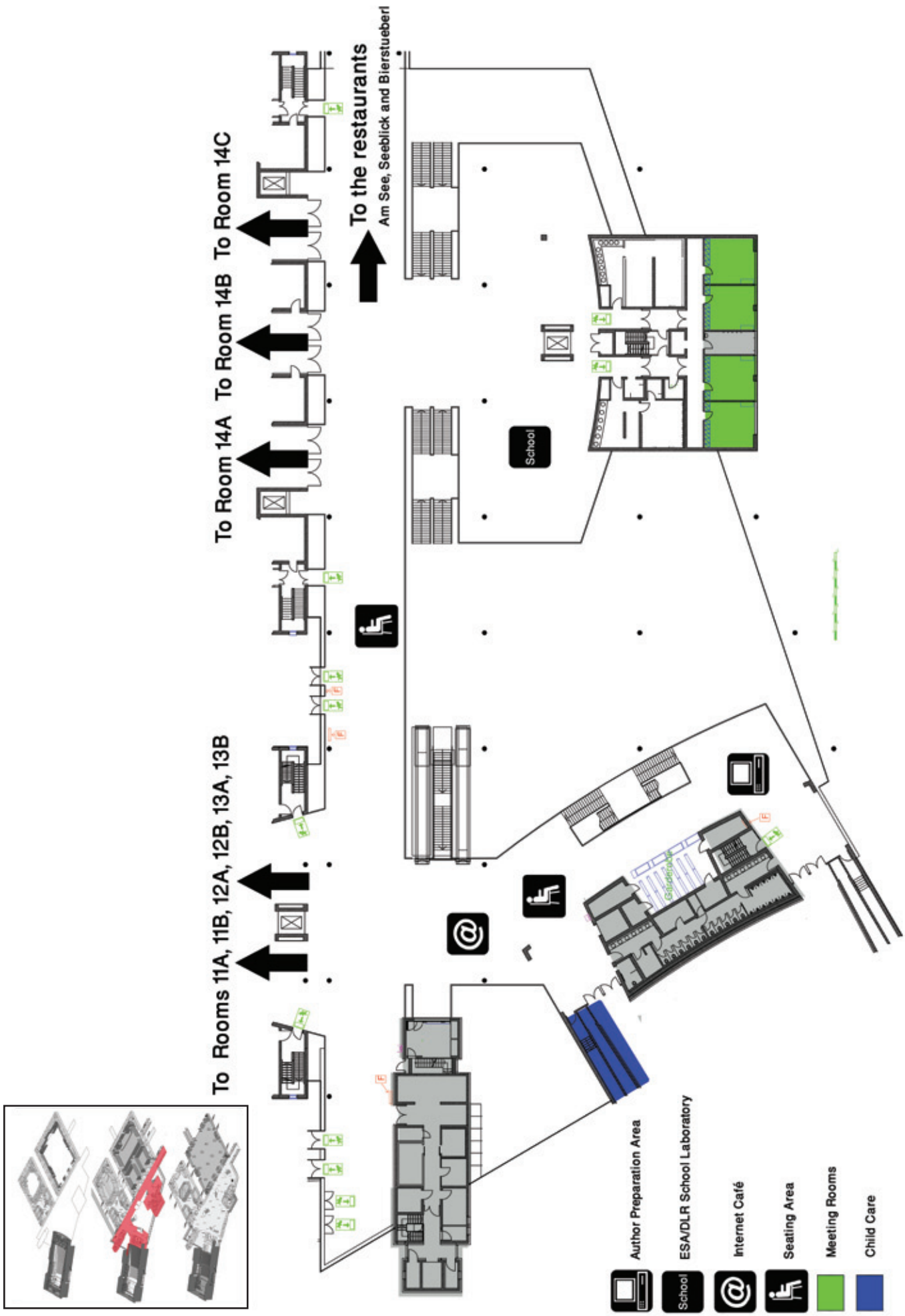
Ground Floor: Poster Area (Hall B0) - International Congress Center Munich (ICM)



Entrance from Foyer



First Floor Foyer - International Congress Center Munich (ICM)



Technical Program Overview - Tutorials, Plenary and Oral Sessions

Sunday, July 22 - Tutorials

	Room 2	Room 3	Room 4B	Room 11A	Room 11B	Room 12A	Room 12B	Room 21A
08:30 - 17:30	FD-1: SAR Imaging, Polarimetry, Interferometry and Tomography	FD-2: Vegetation Structure from Lidar and SAR	FD-7: Advanced Classification Techniques for Remote Sensing	FD-3: Optical Remote Sensing: Basics & Applications	FD-4: Recent Advances in Hyperspectral Data Analysis	FD-5: Multivariate Analysis of Imaging Data	FD-6: Image Information Mining - Methods and Applications for Exploration of Earth Observation data	FD-8: Remote Sensing with Reflected and Occulted Global Navigation Satellite System (GNSS) Signals

	Room 4A	Room 21B						
08:30 - 12:30	HD-1: New SAR Missions and Concepts	HD-2: Calibration of Aperture Synthesis Radiometers: The MIRAS/ SMOS Case						
12:30 - 13:30	Lunch Break							
13:30 - 17:30	HD-3: SAR Tomography: Basics and Applications							
17:30 - 20:00	Welcome Reception – International Conference Center Munich (ICM), First Floor Foyer							

Monday, July 23 - Plenary and Oral Sessions

09:00 - 12:30	Opening and Plenary Session – Room 1							
12:30 - 13:30	Lunch Break							
	Room 2	Room 3	Room 4A	Room 4B	Room 5	Room 11	Room 12A	Room 12B
13:30 - 15:10	MO3.10 NASA Soil Moisture Active Passive Mission Approach to Pre-Flight Testing of Retrieval Algorithms	MO3.6 EOS Aqua Contributions to Earth Science: The First 10 Years I	MO3.14 Dynamics of Earth Processes and Climate Change: Biosphere I	MO3.4 Information Extraction from High Resolution Imagery	MO3.2 Recent Advancements in POLSAR Imaging in Honor of Prof. Boerner's 75th Birthday I	MO3.3 Spaceborne Imaging Spectroscopy Missions: Updates, and Global Datasets and Products I organized by the Technical Committee	MO3.8 Active/Passive Microwave Remote Sensing of Terrestrial Snow I	MO3.7 Data Fusion I organized by the Technical Committee
15:10 - 15:40	Break							
15:40 - 17:20	MO4.10 Soil Moisture: Aquarius and SMAP	MO4.6 EOS Aqua Contributions to Earth Science: The First 10 Years II	MO4.14 Dynamics of Earth Processes and Climate Change: Biosphere II	MO4.4 Advances in High Resolution Optical Techniques	MO4.2 Recent Advancements in POLSAR Imaging in Honor of Prof. Boerner's 75th Birthday II	MO4.3 Spaceborne Imaging Spectroscopy Missions: Updates, and Global Datasets and Products II organized by the Technical Committee	MO4.8 Active/Passive Microwave Remote Sensing of Terrestrial Snow II	MO4.7 Data Fusion II organized by the Technical Committee
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	BMW World Reception – BMW-Welt; Busses leave ICM at 18:45							

09:00 - 12:30	Opening and Plenary Session – Room 1							
12:30 - 13:30	Lunch Break							
	Room 13A	Room 13B	Room 14A	Room 14B	Room 14C	Room 21A	Room 21B	Room 22A
13:30 - 15:10	MO3.12 Biomass Estimation using L-band SAR	MO3.15 New Satellite Missions I	MO3.5 Motion Analysis	MO3.13 Suomi National Polar-orbiting Partnership (NPP) Overview and Sensor Data Records	MO3.1 Bistatic SAR I	MO3.11 Tropical Rainfall Measuring Mission	MO3.16 Applications of Infrared Imaging of Air-Water Interfaces	MO3.9 Remote Sensing of Sea Surface Salinity I
15:10 - 15:40	Break							
15:40 - 17:20	MO4.12 Vegetation Parameter Retreival	MO4.15 New Satellite Missions II	MO4.5 SAR Image Enhancement	MO4.13 Suomi National Polar-orbiting Partnership (NPP) Data Products	MO4.1 Bistatic SAR II	MO4.11 Global Precipitation Measurement (GPM) Mission	MO4.16 Change Detection and Multitemporal Image Analysis I	MO4.9 Remote Sensing of Sea Surface Salinity II
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	BMW World Reception – BMW-Welt; Busses leave ICM at 18:45							

Technical Program Overview - Oral Sessions

Tuesday, July 24

	Room 2	Room 3	Room 4A	Room 4B	Room 5	Room 11	Room 12A	Room 12B
08:20 - 10:00	TU1.10 Soil Moisture: Radar I	TU1.6 Radar Remote Sensing of Land: A Session in Honor of Prof. Fawwaz Ulaby I	TU1.14 DInSAR Applications	TU1.4 Hyperspectral Image Analysis	TU1.2 Advanced Methods for Polarimetric Information Extraction A	TU1.3 Student Paper Contest I	TU1.8 Airborne and Spaceborne Remote Sensing of Polar Ice Cover A	TU1.7 Urban Hyperspectral Remote Sensing
10:00 - 10:30	Break							
10:30 - 12:10	TU2.10 Soil Moisture: Passive Microwave	TU2.6 Radar Remote Sensing of Land: A Session in Honor of Prof. Fawwaz Ulaby II	TU2.14 Dynamics of Earth Processes and Climate Change: Hydrosphere	TU2.4 Spectral Unmixing I	TU2.2 Advanced Methods for Polarimetric Information Extraction B	TU2.3 Student Paper Contest II	TU2.8 Airborne and Spaceborne Remote Sensing of Polar Ice Cover B	TU2.7 New Instruments
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Young Professionals Lunch – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	TU3.10 Soil Moisture: Radar II	TU3.6 Millimeter and Sub-Millimeter Wave Radiometry I organized by the Technical Committee	TU3.14 Dynamics of Earth Processes and Climate Change: Atmosphere	TU3.4 Advanced Concepts in Hyperspectral Data Processing	TU3.2 SAR Polarimetry: Theory and Applications I	TU3.3 Advanced SAR Techniques and Digital Beamforming as Honorary Session for Prof. Werner Wiesbeck A	TU3.8 Remote Sensing of Snow Properties I	TU3.7 SAR Processing and Calibration
15:10 - 15:40	Break							
15:40 - 17:20	TU4.10 Soil Moisture: Algorithms and Validation	TU4.6 Millimeter and Sub-Millimeter Wave Radiometry II organized by the Technical Committee	TU4.14 Dynamics of Earth Processes and Climate Change: Disasters and Hazards I	TU4.4 Classification of Hyperspectral Data	TU4.2 SAR Polarimetry: Theory and Applications II	TU4.3 Advanced SAR Techniques and Digital Beamforming as Honorary Session for Prof. Werner Wiesbeck B	TU4.8 Remote Sensing of Snow Properties II	TU4.7 SAR Validation
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	Bavarian Evening – "Löwenbräukeller" in Munich City; Busses leave ICM at 18:45							

	Room 13A	Room 13B	Room 14A	Room 14B	Room 14C	Room 21A	Room 21B	Room 22A
08:20 - 10:00	TU1.12 Active Remote Sensing of Forest Structures	TU1.15 ESA's Sentinel Missions in support of GMES Services and their Utilization in Science I	TU1.5 Image Registration	TU1.13 RADARSAT	TU1.1 Differential SAR Interferometry I	TU1.11 Cloud and Precipitation Retrieval	TU1.16 Change Detection and Multitemporal Image Analysis II	TU1.9 Ocean Biology (Color) and Water Quality
10:00 - 10:30	Break							
10:30 - 12:10	TU2.12 Active Remote Sensing for Forest Change Detection	TU2.15 ESA's Sentinel Missions in support of GMES Services and their Utilization in Science II	TU2.5 Advanced Methods for Image Classification	TU2.13 ENVISAT - 10 years Achievements I	TU2.1 Differential SAR Interferometry II	TU2.11 Tropical Cyclone and Extreme Weather Remote Sensing	TU2.16 Change Detection and Multitemporal Image Analysis III	TU2.9 Ocean Surface Winds and Currents I
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Young Professionals Lunch – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	TU3.12 Vegetation Change Detection	TU3.15 Sentinel-1 I	TU3.5 SAR Image Processing I	TU3.13 ENVISAT - 10 years Achievements II	TU3.1 TanDEM-X Mission Status and First Scientific Results I	TU3.11 Atmospheric Sounding I	TU3.16 Climate Data Records From Satellite Observations to Analyse Climate Variability and Change I	TU3.9 Ocean Surface Winds and Currents II
15:10 - 15:40	Break							
15:40 - 17:20	TU4.12 Canopy and Leaf Structure	TU4.15 Sentinel-1 II	TU4.5 SAR Image Processing II	TU4.13 ENVISAT - 10 years Achievements III	TU4.1 TanDEM-X Mission Status and First Scientific Results II	TU4.11 Atmospheric Sounding II	TU4.16 Climate Data Records From Satellite Observations to Analyse Climate Variability and Change II	TU4.9 Ocean Surface Winds and Currents III
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	Bavarian Evening – "Löwenbräukeller" in Munich City; Busses leave ICM at 18:45							

Technical Program Overview - Oral Sessions

Wednesday, July 25

	Room 2	Room 3	Room 4A	Room 4B	Room 5	Room 11	Room 12A	Room 12B
08:20 - 10:00	WE1.10 SMOS Instrument Calibration and Performance	WE1.6 Active Microwave Calibation and New Sensor	WE1.14 Dynamics of Earth Processes and Climate Change: Disasters and Hazards II	WE1.4 Applications of Hyperspectral Data	WE1.2 Polarimetric SAR Interferometry I	WE1.3 Sensor Interoperability and Robustness in the Monitoring of Tropical Forests	WE1.8 Ice Sheets and Glaciers I	WE1.7 SAR Calibration
10:00 - 10:30	Break							
10:30 - 12:10	WE2.10 Advanced Imaging Spectrometers organized by the Technical Committee	WE2.6 Microwave Radiometer Technology	WE2.14 Dynamics of Earth Processes and Climate Change: Disasters and Hazards III	WE2.4 Spectral Band Selection and Feature Extraction	WE2.2 Polarimetric SAR Interferometry II	WE2.3 Subsurface Sensing: Systems	WE2.8 Ice Sheets and Glaciers II	WE2.7 SAR Mission Calibration and Validation
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Technical Committee and Chapter Chairs Lunch – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	WE3.10 Geospatial Semantic Web and Ontologies I organized by the Technical Committee	WE3.6 Microwave Radiometer Calibration	WE3.14 Dynamics of Earth Processes and Climate Change: Disasters and Hazards IV	WE3.4 Spectral Unmixing II	WE3.2 Signal Processing Techniques for POL-SAR and POL-InSAR Applications	WE3.3 Subsurface Sensing: Methods	WE3.8 Cryosphere: Sea Ice I	WE3.7 Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors I organized by the Technical Committee
15:10 - 15:40	Break							
15:40 - 17:20	WE4.10 Geospatial Semantic Web and Ontologies II organized by the Technical Committee	WE4.6 Microwave Radiometer Missions	WE4.14 Applications Integrating Multiple Observing Systems	WE4.4 Optical and Infrared Modelling I	WE4.2 SAR Polarimetry Techniques I	WE4.3 Subsurface Sensing: Applications	WE4.8 Cryosphere: Sea Ice II	WE4.8 Cryosphere: Sea Ice II
17:20 - 19:30	Poster Sessions and Exhibitor Reception – ICM Hall B0							
18:00 - 22:00	Soccer Game – Sports Field at SV Dornach; Busses leave from ICM							

	Room 13A	Room 13B	Room 14A	Room 14B	Room 14C	Room 21A	Room 21B	Room 22A
08:20 - 10:00	WE1.12 Vegetation Biophysical Properties	WE1.15 Advances in Interaction Models in Support of Active Microwave Remote Sensing of Natural Surfaces I	WE1.5 Image Analysis	WE1.13 GEOSS and Users: The Power of Interoperability	WE1.1 High Resolution SAR I	WE1.11 Trace Gases	WE1.16 Climate Data Records From Satellite Observations to Analyse Climate Variability and Change III	WE1.9 Ocean Surface Winds and Currents IV
10:00 - 10:30	Break							
10:30 - 12:10	WE2.12 Data Fusion III	WE2.15 Advances in Interaction Models in Support of Active Microwave Remote Sensing of Natural Surfaces II	WE2.5 Hyperspectral Image Processing	WE2.13 GEOSS-based Earthquake Anomaly Recognition I	WE2.1 High Resolution SAR II	WE2.11 Aerosol Remote Sensing A	WE2.16 Complex Image Analysis: Applications to VHR SAR Scene Understanding	WE2.9 Ocean Altimetry
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Technical Committee and Chapter Chairs Lunch – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	WE3.12 Vegetation Health	WE3.15 Advanced Topics in Microwave Radiometry	WE3.5 SAR Image Processing III	WE3.13 Synergistic Utilization of TerraSAR-X and RADARSAT-2 Data I	WE3.1 High Resolution SAR III	WE3.11 Aerosol Remote Sensing B	WE3.16 Active Remote Sensing in Agriculture	WE3.9 SMOS Observations over Land I
15:10 - 15:40	Break							
15:40 - 17:20	WE4.12 High Resolution Retrieval of Vegetation Structure	WE4.15 Advances in Remote Sensing of Biomass Dynamic	WE4.5 Image Restoration and Enhancement	WE4.13 Synergistic Utilization of TerraSAR-X and RADARSAT-2 Data II	WE4.1 Ionospheric and Tropospheric Observation	WE4.11 Numerical Weather Prediction and Data Assimilation	WE4.16 Mapping of Agricultural Systems using Remote Sensing	WE4.9 SMOS Observations over Land II
17:20 - 19:30	Poster Sessions and Exhibitor Reception – ICM Hall B0							
18:00 - 22:00	Soccer Game – Sports Field at SV Dornach; Busses leave from ICM							

Technical Program Overview - Oral Sessions

Thursday, July 26

	Room 2	Room 3	Room 4A	Room 4B	Room 5	Room 11	Room 12A	Room 12B
08:20 - 10:00	TH1.10 Assimilation I	TH1.6 Phenology - Bridging the Gap between Ground Observations and Remotely Sensed Imagery	TH1.14 Lidar Systems and Technologies	TH1.4 Optical and Infrared Modelling II	TH1.2 SAR Polarimetry Techniques II	TH1.3 Absorption and Scattering by Volumes of Particles	TH1.8 Permafrost and Seasonally Frozen Ground	TH1.7 Data Management and Systems
10:00 - 10:30	Break							
10:30 - 12:10	TH2.10 Assimilation II	TH2.6 Feature Extraction and Estimation	TH2.14 Passive Optical and Hyperspectral Sensors	TH2.4 Optical and Infrared Modelling III	TH2.2 SAR Polarimetry for Earth Observation I	TH2.3 Microwave Signatures of Soil and Vegetation	TH2.8 Inland Waters I	TH2.7 Data Processing, Analysis and Management
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Women in Geosciences, Remote Sensing and Engineering Luncheon – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	TH3.10 Radar Remote Sensing of Wetlands I	TH3.6 Information Extraction from Multitemporal Sequences	TH3.14 Sensor Performance and Simulation::Passive Optical and Hyperspectral Sensors		TH3.2 SAR Polarimetry for Earth Observation II	TH3.3 SAR Imaging	TH3.8 Inland Waters II	TH3.7 Remote Sensing Data and Policy Decisions
15:10 - 15:40	Break							
15:40 - 17:20	TH4.10 Radar Remote Sensing of Wetlands II	TH4.6 Information Extraction: Multisensor Data Fusion	TH4.14 UAV and Airborne Remote Sensing	TH4.4 Special Session on Ocean Electromagnetic Scattering with Application to Synthetic Aperture Radar Applications - In Memoriam of Donald R. Thompson	TH4.2 SAR Polarimetry	TH4.3 Tomographic SAR Techniques	TH4.8 Ocean as the Source and Sink of Carbon Dioxide Observed from Space	TH4.7 Remote Sensing and Education
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	Awards Banquet – "Kaisersaal" of the Residenz Palace in Munich; Busses leave ICM at 18:45							

	Room 13A	Room 13B	Room 14A	Room 14B	Room 14C	Room 21A	Room 21B	Room 22A
08:20 - 10:00	TH1.12 Vegetation Structure Retrieval at Multiple Scales	TH1.15 Aerosol Remote Sensing from Space	TH1.5 Image Classification Techniques	TH1.13 COSMO-SkyMed - Last Achievements in Scientific Research and Applications I	TH1.1 TanDEM-X Interferometry	TH1.11 New Developments in Ocean Monitoring from Spaceborne SAR	TH1.16 Remotely Sensed Estimation of Crop Parameters	TH1.9 Remote Sensing of Land Surface Energy Budget
10:00 - 10:30	Break							
10:30 - 12:10	TH2.12 Data Integration for Forest Characterization	TH2.15 Geographic Information Science: Applications	TH2.5 Pansharpening and Image fusion	TH2.13 COSMO-SkyMed - Last Achievements in Scientific Research and Applications II	TH2.1 SAR Interferometry I	TH2.11 Recent Innovations in Earth Science Remote Sensing Technology Development at NASA	TH2.16 Classification and Identification of Agricultural Land Cover	TH2.9 SMOS Observations over Oceans I
12:10 - 13:30	Lunch Break							
12:10 - 13:30	Women in Geosciences, Remote Sensing and Engineering Luncheon – ICM Restaurant "Am See, Seeblick"							
13:30 - 15:10	TH3.12 From Data Archive Centers to Knowledge Creation Collaboratories I organized by the Technical Committee	TH3.15 Geographic Information Science: Grid and Web Services	TH3.5 Feature Detection in Images	TH3.13 ESA's candidate Earth Explorer missions - BIOMASS, CoReH2O, PREMIER I	TH3.1 SAR Interferometry II	TH3.11 Space Lidar: Missions, Technologies and Observations I organized by the Technical Committee	TH3.16 Urban Remote Sensing I	TH3.9 SMOS Observations over Oceans II
15:10 - 15:40	Break							
15:40 - 17:20	TH4.12 From Data Archive Centers to Knowledge Creation Collaboratories II organized by the Technical Committee	TH4.15 State-of-the-Art of Urban Remote Sensing	TH4.5 Hyperspectral Data Processing for Security and Defense	TH4.13 ESA's candidate Earth Explorer missions - BIOMASS, CoReH2O, PREMIER II	TH4.1 DEM, MTI and Ship Detection	TH4.11 Space Lidar: Missions, Technologies and Observations II organized by the Technical Committee	TH4.16 SAR Applications in Urban Remote Sensing	TH4.9 Ocean Temperature and Salinity
17:20 - 19:00	Poster Sessions - Hall B0							
19:30 - 22:30	Awards Banquet – "Kaisersaal" of the Residenz Palace in Munich; Busses leave ICM at 18:45							

Technical Program Overview - Oral Sessions

Friday, July 27

	Room 2	Room 3	Room 4A	Room 4B	Room 5	Room 11	Room 12A	Room 12B
08:20 - 10:00	FR1.10 Forest Land Cover Mapping	FR1.6 Information Extraction from SAR images	FR1.14 Ground-Based Systems I	FR1.4 Satellite Photogrammetry with the New Generation of High-resolution Sensors	FR1.2 Upcoming Global Survey Optical Satellite Missions: Landsat Data Continuity Mission and Sentinel-2 I	FR1.3 Tomography and 3D imaging	FR1.8 Ocean Vector Wind Sensor Applications from Research to Operation	FR1.7 Advanced Methods for Detecting and Mitigating Radio-Frequency Interference
10:00 - 10:30	Break							
10:30 - 12:10	FR2.10 Land Cover Mapping Techniques	FR2.6 Information Extraction: Urban Areas and Transportation	FR2.14 Ground-Based Systems II	FR2.4 Remote Sensing of Terrestrial Environmental Observatories for Ecosystem Research	FR2.2 Upcoming Global Survey Optical Satellite Missions: Landsat Data Continuity Mission and Sentinel-2 II	FR2.3 Recent Advances in GNSS Reflectometry	FR2.8 Pléiades, a dual optical system for metric resolution observations : thematic space applications	FR2.7 Land Cover, Water, and Climate
12:10 - 13:30	Lunch Break							
13:30 - 15:10	FR3.10 Agricultural Land Cover Change	FR3.6 Information Extraction: Object Extraction and Classification	FR3.14 Radiometric Calibration for Optical Sensors I	FR3.4 New Trends in Multimode and Multispectral Remote Sensing Data Processing I	FR3.2 In Flight Calibration of Optical Satellite Sensors Using Pseudo Invariant Calibration Sites	FR3.3 Quantitative Land Surface Composition Mapping	FR3.8 Remote Sensing of Vegetation Fluorescence I	FR3.7 Modelling for Forest Characterization
15:10 - 15:40	Break							
15:40 - 17:20	FR4.10 Land Cover Mapping with Radar	FR4.6 Information Extraction: Classification	FR4.14 Radiometric Calibration for Optical Sensors II	FR4.4 New Trends in Multimode and Multispectral Remote Sensing Data Processing II	FR4.2 Innovative SAR Sensors for Applications in Hydrology	FR4.3 The GEO Geohazard Supersites - Seismic Hazards and SAR Interferometry	FR4.8 Remote Sensing of Vegetation Fluorescence II	FR4.7 Recent Advances in Radiometric Calibration Techniques
09:00 - 15:30	Technical Tour: Visit of the German Aerospace Research Center (DLR) in Oberpfaffenhofen – Busses leave ICM at 09:00							
09:00 - 15:30	Technical Tour: Visit of EADS ASTRIUM in Ottobrunn, Satellite technology and development – Busses leave ICM at 09:00							

	Room 13A	Room 13B	Room 14A	Room 14B	Room 14C	Room 21A	Room 21B	Room 22A
08:20 - 10:00	FR1.12 Synergy of Spaceborne EO Products to Map the Essential Climate Variable Biomass I	FR1.15 Superresolution and Sub-pixel Classification for Hyperspectral Imagery	FR1.5 HyspIRI: Climate Science from Global Imaging Spectroscopy and Multi-Spectral Thermal Measurements	FR1.13 Novelty Detection and One-class Classification	FR1.1 Airborne SAR and InSAR I	FR1.11 Sparse Signal Reconstruction and Compressive Sensing in Earth Observation I	FR1.16 Urban Remote Sensing II	FR1.9 Coastal Zones I
10:00 - 10:30	Break							
10:30 - 12:10	FR2.12 Synergy of Spaceborne EO Products to Map the Essential Climate Variable Biomass II	FR2.15 Long Term Preservation on Earth Observation Data: Cooperation Activities and Applications	FR2.5 Hyperspectral Vegetation Mapping I - Forests and Natural Areas	FR2.13 Education, Training and Capacity Building in Remote Sensing - Global and Regional Programmes	FR2.1 Airborne SAR and InSAR II	FR2.11 Sparse Signal Reconstruction and Compressive Sensing in Earth Observation II	FR2.16 DEM, Mapping, and Mineral Deposits	FR2.9 Coastal Zones II
12:10 - 13:30	Lunch Break							
13:30 - 15:10	FR3.12 Earth Observation for Public Health I	FR3.15 Land Remote Sensing Data Assimilation: Where are we?	FR3.5 Hyperspectral Vegetation Mapping II – Agricultural Applications	FR3.13 Education, Training and Capacity Building in Remote Sensing - Tools and Software	FR3.1 Extraction of Geospatial Information for Space Borne SAR-Sensors with High Spatial Resolution	FR3.11 Remote Sensing using GNSS-like Signals and Other Sensors I	FR3.16 Surface Topo and Surface Movement Monitoring	FR3.9 SAR Remote Sensing for a Dynamic Ocean
15:10 - 15:40	Break							
15:40 - 17:20	FR4.12 Earth Observation for Public Health II	FR4.15 Machine Learning Meets New Remote Sensing Applications	FR4.5 Hyperspectral Remote Sensing in Shallow Waters	FR4.13 Education, Training and Capacity Building in Remote Sensing - Space Agencies	FR4.1 Geophysical Parameters Retrieval from Geostationary Satellites Data: Algorithms and Products	FR4.11 Remote Sensing using GNSS-like Signals and Other Sensors II	FR4.16 Tropical forest biomass using P-band SAR data-The BIOMASS mission	FR4.9 Radar Remote Sensing of the Ocean at Grazing Incidence
09:00 - 15:30	Technical Tour: Visit of the German Aerospace Research Center (DLR) in Oberpfaffenhofen – Busses leave ICM at 09:00							
09:00 - 15:30	Technical Tour: Visit of EADS ASTRIUM in Ottobrunn, Satellite technology and development – Busses leave ICM at 09:00							

Technical Program Overview - Poster Sessions

Monday, July 23

	Day Code	Starting Board Number	Session Name
17:20 - 19:00	MOP	101	Methods and Analysis for Bistatic SAR
	MOP	106	High Resolution Imagery: Methods and Applications
	MOP	116	3D Imaging
	MOP	126	Geographic Information Science: Applications Poster
	MOP	138	Geographic Information Science: Theory, Algorithms, and Systems
	MOP	150	Subsurface Sensing I
	MOP	159	Subsurface Sensing II
	MOP	166	Soil Moisture and Vegetation: Radar
	MOP	174	Soil Moisture: Passive Microwave
	MOP	186	Soil Moisture: Applications
	MOP	194	Soil Moisture: Active and Passive
	MOP	206	Remote Sensing of Wetlands
	MOP	215	Inland Waters
	MOP	227	Dynamic Processes of the Earth
	MOP	233	Hydrology
	MOP	238	Dynamics of Earth Processes and Climate Change: Atmosphere
	MOP	248	Disasters and Hazards I - Flood Risk and Flood Monitoring
	MOP	257	Disasters and Hazards III - Volcanos, Oil Spill, Earthquakes, Etc.
	MOP	267	Disasters and Hazards IV - Natural Disasteer Management
	MOP	277	Disasters and Hazards V - Natural Disaster Monitoring and Management
	MOP	286	Assimilation
	MOP	295	New Satellite Missions
	MOP	305	New Satellite Missions and Instruments
	MOP	313	Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors
	MOP	317	Applications of Infrared Imaging of Air-Water Interfaces
	MOP	320	Suomi National Polar-orbiting Partnership (NPP) Environmental and Sensor Data Records
	MOP	333	Remote Sensing of Land Surface Energy Budget
	MOP	338	SMOS Observations over Land
	MOP	725	Dynamics of Earth Processes and Climate Change::Biosphere *Video Poster
	MOP	737	Disasters and Hazards II - Earthquakes and Tsunami *Video Poster

a) Poster placement from Monday 12:00 to Wednesday 08:00 (for Monday and Tuesday posters) and Wednesday 12:00 to Friday 08:00 (for Wednesday and Thursday posters)

b) Authors are required to be present for poster presentation from 17:20 to 19:00 on the day scheduled for the presentation. Posters should be attached to the boards for two days. It is recommended to stay both days for discussion in front of your poster.

c) Video Poster Presentation from 17:30 to 18:30: Boards 725 - 748 on Monday and Wednesday; Boards 749 - 772 on Tuesday and Thursday (5 minutes for each poster)

Technical Program Overview - Poster Sessions

Tuesday, July 24

	Day Code	Starting Board Number	Session Name
17:20 - 19:00	TUP	345	SAR Image Processing I
	TUP	356	SAR Image Processing II
	TUP	363	SAR Image Processing III
	TUP	373	Image Processing Applications I
	TUP	381	Image Processing Applications II
	TUP	392	Change Detection II
	TUP	399	Image Pan-Sharpening and Fusion
	TUP	408	Image Analysis
	TUP	420	Image Registration and Enhancement
	TUP	432	Precipitation, Clouds and Atmospheric Topics
	TUP	443	Numerical Weather Prediction and Data Assimilation
	TUP	451	Atmospheric Sounding
	TUP	463	Aerosol Remote Sensing, Trace Gases, and Air Quality I
	TUP	475	Aerosol Remote Sensing, Trace Gases, and Air Quality II
	TUP	487	Ocean Biology
	TUP	495	Ocean Surface Winds II
	TUP	500	Ocean Surface Currents
	TUP	509	Ocean Temperature and Salinity
	TUP	517	Coastal Zones II
	TUP	524	Ocean Altimetry
	TUP	530	Topography, Geology, Geomorphology I
	TUP	542	Topography, Geology, Geomorphology II
	TUP	552	Data Management and Systems I
	TUP	564	Data Management and Systems II
	TUP	749	Ocean Surface Winds I *Video Poster
	TUP	761	Coastal Zones I *Video Poster

a) Poster placement from Monday 12:00 to Wednesday 08:00 (for Monday and Tuesday posters) and Wednesday 12:00 to Friday 08:00 (for Wednesday and Thursday posters)

b) Authors are required to be present for poster presentation from 17:20 to 19:00 on the day scheduled for the presentation. Posters should be attached to the boards for two days. It is recommended to stay both days for discussion in front of your poster.

c) Video Poster Presentation from 17:30 to 18:30: Boards 725 - 748 on Monday and Wednesday; Boards 749 - 772 on Tuesday and Thursday (5 minutes for each poster)

Technical Program Overview - Poster Sessions

Wednesday, July 25

	Day Code	Starting Board Number	Session Name	
17:20 - 19:00	WEP	101	High Resolution SAR	
	WEP	111	Persistent Scatterer, Implementation	
	WEP	121	Deformation	
	WEP	133	DInSAR and Interferometry	
	WEP	144	Compressed Sensing, Coregistration	
	WEP	156	Multibaseline, Filtering, Advanced Observations	
	WEP	162	Airborne SAR, SAR Applications	
	WEP	172	High Performance Computing and Data Correction in Hyperspectral Imagery	
	WEP	182	Spectral Unmixing, Feature Extraction	
	WEP	191	Classification of Hyperspectral Data	
	WEP	202	Applications of Hyperspectral Imagery	
	WEP	212	Optical and Infrared Modelling I	
	WEP	224	Optical and Infrared Modelling II	
	WEP	230	Hyperspectral Image Processing	
	WEP	238	Image Segmentation	
	WEP	246	Image Classification	
	WEP	253	Optical Image Analysis	
	WEP	262	Image Processing	
	WEP	270	Remote Sensing of Snow Properties II	
	WEP	273	Remote Sensing of Mountain Glaciers	
	WEP	281	Remote Sensing of Ice Sheets and Glaciers	
	WEP	290	Cryosphere: Sea Ice Poster	
	WEP	301	Permafrost and Seasonally Frozen Ground	
	WEP	305	SAR Calibration and Validation	
	WEP	317	SAR Instruments, Mitigation, Simulation	
	WEP	329	Active Microwave Calibation and New Sensor I	
	WEP	341	Active Microwave Calibation and New Sensor II	
	WEP	345	Advances in Microwave Radiometers and Calibration Techniques	
	WEP	355	Microwave Radiometer Missions	
	WEP	365	Lidar Performance and Processing	
	WEP	368	Hyperspectral Applications: Passive Optical and Hyperspectral Sensors	
	WEP	384	UAV Sensors, Platforms and Technology	
	WEP	387	Ground-Based Systems	
	WEP	725	Hyperspectral Imagery for the Monitoring of the Environment	*Video Poster
	WEP	737	Remote Sensing of Snow Properties I	*Video Poster

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Technical Program Overview - Poster Sessions

Thursday, July 26

	Day Code	Starting Board Number	Session Name	
17:20 - 19:00	THP	398	Scattering and SAR Techniques I	
	THP	410	Scattering and SAR Techniques II	
	THP	422	Scattering and SAR Techniques III	
	THP	426	SAR Polarimetry I	
	THP	436	SAR Polarimetry II	
	THP	442	SAR Image Analysis	
	THP	449	Image Information: Environmental and Hazard Applications	
	THP	459	Image Information Extraction: Detection of Man-made Features	
	THP	470	Information Extraction for Atmospheric and Environmental Applications	
	THP	480	Information Extraction: Signal Processing Applications	
	THP	490	Information Extraction: Classification and Fusion	
	THP	498	Image Information Extraction	
	THP	508	Land Cover and Change	
	THP	520	Land Cover: Urban and Interface Areas	
	THP	531	Change and Forests	
	THP	542	Mapping Change	
	THP	553	Change in Land Cover	
	THP	565	Biodiversity and Forest Health	
	THP	574	Forest Biomass and Carbon	
	THP	583	Change Detection I	
	THP	593	Vegetation Phenology and Productivity	
	THP	604	Foliage and Canopy Characterisation	
	THP	613	Retreival of Forest Structural Attributes	
	THP	623	Characterising Land Surfaces	
	THP	631	Quantifying Vegetation Processes and Structure	
	THP	641	Remote Sensing for Disease and Environmental Stress Detection	
	THP	652	Urban Remote Sensing II	
	THP	749	Modeling and Estimation of Hydrological and Vegetation Parameters in Agricultural Regions	*Video Poster
	THP	761	Urban Remote Sensing I	*Video Poster

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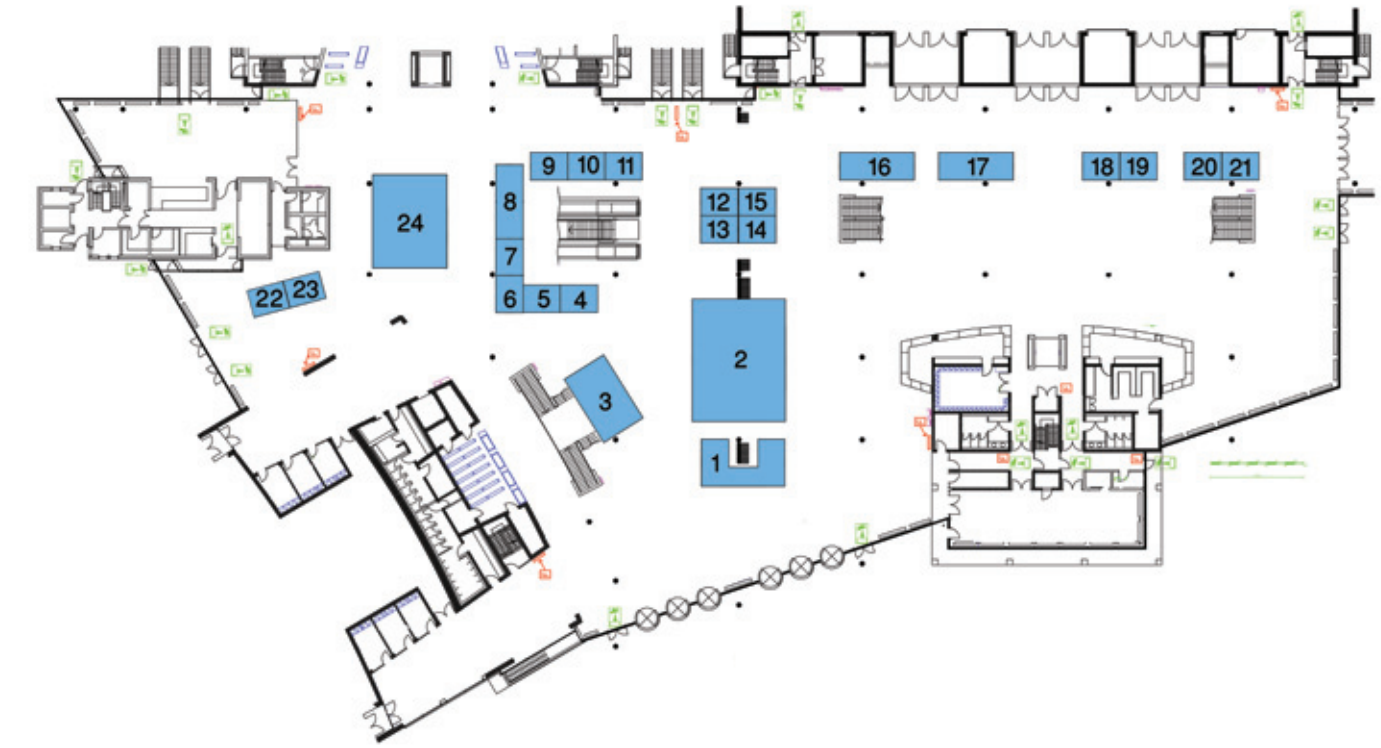
b) Authors are required to be present for poster presentation from 17:20 to 19:00 on the day scheduled for the presentation. Posters should be attached to the boards for two days. It is recommended to stay both days for discussion in front of your poster.

c) Video Poster Presentation from 17:30 to 18:30: Boards 725 - 748 on Monday and Wednesday; Boards 749 - 772 on Tuesday and Thursday (5 minutes for each poster)

Exhibition: International Congress Center Munich (ICM) - Foyer Area (Ground Floor)



1	GRSS and IGARSS 2013	9	Space Imaging Middle East	17	ASTRIUM
2	DLR and ESA	10	European Space Imaging	18	Headwall Photonics
3	JAXA	11	Zurich - Hotspot in Earth Observation	19	GeoViQua-EGIDA-MiraMon
4	Acal BFI Germany GmbH	12	RapidEye AG	20	Sphere Optics GmbH
5	Taylor & Francis	13	Canadian Space Agency	21	Geo-konzept GmbH
6	ScanEx R&D Center	14	Spectral Evolution	22	HE Space Operations
7	EXELIS	15	Ursus-airborne	23	CEOS Visualization Environment (COVE)
8	Agilent Böblingen	16	Japan Space Systems	24	NASA

List of Exhibitors

acal technology BFi OPTiLAS	Acal & Bfi Germany GmbH Acal BFI is a pan-European distributor specialized in sophisticated opto-electronic systems for R&D and the defense, aerospace and telecommunications industries. The Hyper-Cam, a lightweight and compact hyperspectral-imaging sensor using Fourier Transform Infrared (FT-IR) technology will be shown at the exhibition.
Agilent Technologies	Agilent Böblingen As the world's premier measurement company, Agilent offers the broadest range of innovative measurement solutions in the industry, providing customers with products and services such as oscilloscopes, spectrum analyzers, signal generators, network analyzers, multi meter, power supplies plus a huge variety of basic test & measurement equipment.
ASTRIUM AN EADS COMPANY	ASTRIUM Astrium is the only European space technology company that covers the whole range of civil and defence space systems and services. Astrium Services' GEO-Information division offers an unrivalled portfolio of satellite imagery, data access, and derived geo-information products and services.
CSA ASC	Canadian Space Agency The Canadian Space Agency is driving the development of Earth observation applications through the RADARSAT program, enhancing knowledge of the Earth and management of its natural resources. Learn more about the evolution of RADARSAT by visiting our booth.

	CEOS Visualization Environment (COVE) The CEOS Visualization Environment (COVE) tool is a browser-based system that leverages Google-Earth to display satellite sensor coverage areas and identify coincidence scene locations for more than 80 space missions. The NASA CEOS System Engineering Office (SEO) worked with the Committee on Earth Observing Satellites (CEOS) Working Group on Calibration and Validation to develop the COVE tool.
	DLR & ESA DLR is Germany's national research center for aeronautics and space. Its extensive research and development work in aeronautics, space, transportation, energy, defence and security research is integrated into national and international cooperative ventures. As Germany's Space Agency, the German federal government has given DLR responsibility for the forward planning and implementation of the German space programme as well as international representation of Germany's interests. The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world.
	European Space Imaging European Space Imaging (EUSI) is Europe's leading very high-resolution imagery satellite provider also operating its own dedicated ground station with direct data link to DigitalGlobe's WorldView satellites. Customers benefit from priority direct tasking, efficient area collections and same-day production and delivery.
	EXELIS Visual Information Solutions EXELIS Visual Information Solutions is empowering 250,000 people worldwide to easily extract information from complex data and satellite imagery. Our superior remote sensing software ENVI, SARscape, E3De and IDL allow access, analysis, and sharing of spectral, SAR, and laser data.
	Geo-konzept Geo-konzept is the exclusive European reseller of Tetracam Multiarray cameras and offers equipment for digital measurements of multispectral narrow bands, whether ground-based or airborne / UAVs. One of the primary applications is the analyzing of biological activity and biomass production.
	GeoViQua & EGIDA & MiraMon GeoViQua-FP7 focuses on adding quality specifications to GEOSS spatial data; EGIDA-FP7 promotes coordination of activities carried out by GEO, national and European initiatives; MiraMon is a GIS and Remote Sensing software developed in the Autonomous University of Barcelona.
	Headwall Photonics Leading designer and manufacturer of hyperspectral imaging sensors. Hyperspec® sensors are aberration-corrected for superb spectral and spatial resolution with wide field of view. Sensors available for VNIR, NIR, SWIR, and MWIR. Hyperspec® family of imaging sensors are configured, sold as complete ground-based, airborne, or satellite payloads systems.
	HE Space HE Space is a multinational space engineering company with 30 years of experience in recruiting talented personnel for the space industry and agencies. We understand the space sector and we are ready to help you. Go to www.hespace.com!

	GRSS and IGARSS 2013 In its 50th year celebration, GRSS continues to move forward its mission of encouraging and supporting its members who work in 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 that information. Be a part of the Society's advancement, visit the IEEE GRSS exhibit and receive a complimentary affiliate membership. IGARSS 2013 will be held in Melbourne, Australia, from 21-26 July 2013.
	Japan Aerospace Exploration Agency (JAXA) Since 1995 we have been calibrating and validating the observed data and the observation instrument for GOSAT, TRMM/PR and coming JAXA satellites including GCOM-W/AMSR2, ALOS-2/PALSAR2, developing higher-level algorithms, and demonstrating the usefulness of application services by using earth observation data.
	Japan Space Systems J-spacesystems, newly established as a non-profit affiliate organization of METI in 2012, promotes application technology of remote sensing data, operates Ground Data System of ASTER and PALSAR data and distributes those data. We also develop spacecraft systems and remote sensing instruments.
	NASA NASA's Earth System Science conducts and sponsors research on global climate and environmental change and its consequences for life on Earth. We partner with agencies and international research organizations to better understand the complexity of climate changes and trends.
	RapidEye AG RapidEye is the leading provider of quality high-resolution satellite imagery. With a constellation of five Earth Observation satellites, RapidEye images over 4 million square kilometers of earth every day, and adds approximately one billion square kilometers of imagery to its archive yearly.
	ScanEx R&D Center SCANEX Research & Development Center is the leading Russian company, offering a complete set of integrated solutions on remote sensing data reception and processing. The core of technology by SCANEX is the UniScan multi-mission ground stations for X-band data reception from over 15 different satellites. There are more than 70 such receiving ground stations currently operating worldwide.
	Space Imaging Middle East Space Imaging Middle East is the leading geospatial solutions provider in the MENA region, and a founding Member of the WorldView Global Alliance. The company offers a host of services ranging from high-resolution imagery collection and processing, to customized GIS solutions.
	Spectral Evolution Spectral Evolution portable UV-VIS-NIR spectroradiometers are light and compact with user-friendly features including: InGaAs/Si photodiode arrays for reliable performance, small LiIon batteries for high power without weight, Detachable fiber optics; One-touch software that automatically saves data files in ASCII format.

SphereOptics	Sphere Optics GmbH SphereOptics GmbH, based in Germany is known for their knowhow in the Remote Sensing and Hyperspectral Imaging market, as well as their good customer service. We offer high performance spectral measurement equipment from the companies ASDI/USA and NEO/Norway, as well as optical standards.
Taylor & Francis Taylor & Francis Group	Taylor & Francis Taylor & Francis is dedicated to the dissemination of scholarly information, utilising skills and expertise honed since 1798. Today we publish an expanding range of titles covering earth science, geology, geochemistry, GIS, remote sensing, oceanography and water resources. www.tandfonline.com
URSUS AIRBORNE UNMANNED REMOTE SENSING UTILITY SERVICES	Ursus-airborne Ursus-airborne is an innovative company providing Remote Sensing services using Unmanned Airborne technology. We have more than 20 years of Remote Sensing expertise, using both Satellite and Airborne imagery for natural resources management, environmental monitoring and utility management.
ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich EMPA Materials Science & Technology GAMMA REMOTE SENSING Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra Swiss Confederation Federal Department of Home Affairs FDHA Federal Office of Meteorology and Climatology MeteoSwiss University of Zurich[UZH]	Zurich - Hotspot in Earth Observation We present Earth observation related activities around Zurich. Our expertise ranges from imaging systems, data acquisition, image processing, product generation to modeling using state-of-the-art methods. We are dedicated to educating and promoting the next generation of Earth observation professionals.

ESA/DLR School Laboratory

The DLR_School_Lab Oberpfaffenhofen, operated by the German Aerospace Center (DLR) since 2003, is an extracurricular science lab, its main objective being to attract secondary school students (level K10 – K12) to science and technology. For this purpose, each of the DLR institutes at the Oberpfaffenhofen research site has designed experiments which are, on the one hand, based on its respective core research areas and which, on the other hand, are suitable for secondary school students (age 14 to 20). In total, the DLR_School_Lab offers 13 experiments in the research areas of remote sensing technologies, analysis of Earth Observation data, meteorology, environmental research, communication and navigation, robotics and mechatronics, and operation of space-borne and airborne missions. The experiments are offered to secondary level school classes with up to 35 students. The visiting classes usually stay for one day, allowing each student to perform two different experiments. To date, more than 18,000 students have visited the DLR_School_Lab Oberpfaffenhofen. Further key activities of the DLR_School_Lab are advanced teacher courses and STEM (Science, Technology, Engineering, Mathematics) talent support.

Within its different programs, ESA has developed a number of educational modules, such as those with respect to the International Space Station and to Earth Observation (EO). While these may catch the interest of kids, they are mainly aimed at youngsters from lower to higher secondary school level and students at Universities. The available educational material for EO and Remote Sensing Technologies varies from richly illustrated worksheets and lessons to playful games on a CD, dedicated software and interactive applications. A cornerstone of ESA EO education is Eduspace (http://www.esa.int/SPECIALS/Eduspace_EN/), a website which aims to provide secondary school students and teachers with a learning and teaching tool. It is meant to be an entry point for space image data, and, in particular, to a widespread visibility of Earth observation applications for education and training. In this context, self-learning texts and numerous application exercises have been put on-line, covering most relevant applications of satellite based Earth Observation and introducing a wide range of themes within Global Change, Disaster monitoring, but also Change Detection of cities and landscapes, as well as issues connected to weather and climate. ESA has also developed a school atlas, fully based on satellite images, as a complement to traditional school atlases. The related DVDs allow visualisation and demonstrations in the classroom. Both Eduspace and the ESA School Atlas are supported by the image processing and Geographical Information Systems (GIS) software LEOWorks, which was newly developed for educational purposes.

The experiments demonstrated at IGARSS 2012 are as follows:

Sensor Lab: Remote Sensing Technology (Lead DLR)

- Infrared, Laser and Radar Technology
- Environmental Optical Remote Sensing and Spectroscopy
- Satellite Navigation (GPS) Technology

Data Lab: Analysis of Remote Sensing Data (Lead ESA)

- Access to Satellite Based Earth Observation Data
- Image Processing Methodologies
- Practical Examples of Change Detection

IEEE GRSS Membership

Membership in the IEEE GRSS is open to professionals and students with varying degrees of academic accomplishment and work experience. Student memberships in GRSS are extremely economical, and the benefits are the same as regular members. A student member must carry at least 50% of a normal, full time academic program as a registered undergraduate or graduate student in a regular course of study in IEEE designated fields. For professionals interested only in the benefits of GRSS, affiliate membership meets the need. In fact, if you visit the GRSS booth in the exhibition hall, you can sign up for a free 1-year GRSS affiliate membership. Regular memberships in IEEE provide additional benefits including the option to belong to more than one society and receive IEEE benefits such as IEEE Spectrum and insurance or credit cards offered through the organization. Regular members are also eligible for Senior Membership in the IEEE GRSS after ten years of professional experience in the field (including educational experience). Please visit the IEEE GRSS website: http://www.grss-ieee.org to explore details of qualifications and membership opportunities.

GRSS memberships include on-line access through IEEE Xplore to the Transactions on Geoscience and Remote Sensing (TGRS), Geoscience and Remote Sensing Letters (GRSL) and Journal of Selected Topics in Applied Earth Observations and Remote Sensing (J-STARS). Also online access through IEEE Xplore to all IGARSS Proceedings and selected GRSS sponsored small symposia is available to members for an additional fee of only $4. If you would like to receive printed copies of TGRS, GRSL or J-STARS, you must indicate this on your application form (available on the GRSS website) and pay the additional fee(s) of $56, $30, or $36, respectively. These options are available only for full-year memberships.

The list below is a summary of IEEE and Society Dues.

- For Student, Full, Senior and Fellow GRSS membership grades, you must pay to become an IEEE member and select GRSS as an additional society membership.
- To calculate total dues, you may elect to add the optional printed TGRS, GRSL or J-STARS fee to the appropriate IEEE member fee. (Affiliates select appropriate GRSS Affiliate fee only. No IEEE member fees will be assessed.)
- Applications received between 16 August and 28 February will be processed as full-year memberships. Services begin immediately.
- Applications received between 1 March and 15 August will be processed as half-year memberships expiring 31 December of that calendar year.

Residence	IEEE GRSS Member Full Year	IEEE GRSS Member Half Year	IEEE GRSS Student Member Full Year	IEEE GRSS Student Member Full Year	GRSS Affiliate Full Year	GRSS Affiliate Half Year
United States	$199	$100	$41	$21	$81	$41
Canada	$195	$98	$46	$23	$81	$41
Africa, Europe, Middle East	$169	$85	$36	$19	$81	$41
Developing Nations e-Membership	$81	$41	N/A	N/A	N/A	N/A
Latin America	$160	$80	$36	$18	$81	$41
Developing Nations e-Membership	$72	$36	N/A	N/A	N/A	N/A
Asia Pacific	$161	$81	$36	$18	$81	$41
Developing Nations e-Membership	$73	$36	N/A	N/A	N/A	N/A

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You can meet our experts and experience ENVI 5 at the forthcoming conference:
INTERGEO, 9-11 October, Hannover

CEOS VISUALIZATION ENVIRONMENT

COVE

The CEOS Visualization Environment (COVE) tool is a browser-based system that leverages Google-Earth to display satellite sensor coverage areas and identify coincidence scene locations for more than 80 space missions. The NASA CEOS System Engineering Office (SEO) worked with the Committee on Earth Observing Satellites (CEOS) Working Group on Calibration and Validation to develop the COVE tool.

www.ceos-cove.org

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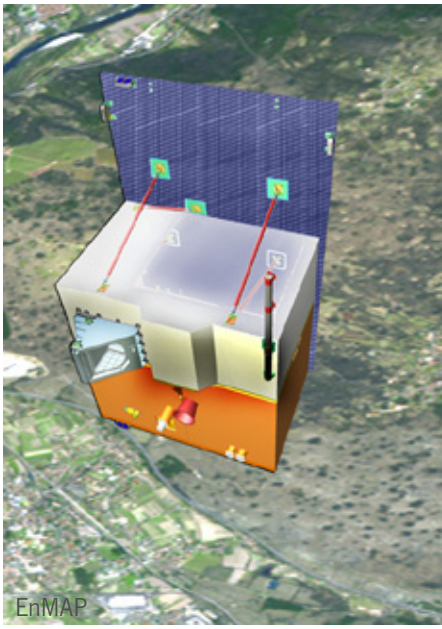

EnMAP

Kayser-Threde is a medium-sized space company located in Munich and system prime for complex optical instruments, satellites and space missions

- We play a leading role in national and international space projects
- We create superior systems in optics, electronics, robotics and mechanics
- We meet customer demands - both in space and on Earth.

Kayser-Threde is the prime contractor for the German hyperspectral Earth observation satellite EnMAP. This is designed to support the international geoscience community with both satellite-borne data sets for improved models and an enhanced understanding of global biosphere and geosphere processes.

Kayser-Threde is proud to contribute to Europe's large-scale project MTG (Meteosat Third Generation), which is expected to revolutionize global weather forecasting and environmental monitoring. We will equip each of the six satellites with sophisticated payload sensor technology.

When it comes to new developments for research, astronomy and Earth observation, we are the right partner.

Kayser-Threde GmbH | Munich | tel. +49 89 724 95-0 | info@kayser-threde.com

An OHB Company

SphereOptics – your partner in Remote Sensing and Hyperspectral Imaging!

SphereOptics, a small company in the South of Germany, is specialized on the production, refining, cleaning and calibration of materials and standards for diffuse transmission and reflectance. These highly pure sintered **PTFE** products are sold under the trademark **Zenith Polymer®,** which is the preferred material in the aerospace industry, in spectroscopy and optical laboratories. In addition to the supply of optical materials, **SphereOptics** is partnered with leading companies in the spectroscopy sector and also active in the field of remote sensing and hyperspectral imaging.

ASD Inc. pioneered the use of portable spectroscopic technology in remote sensing more than 20 years ago with the invention of the first robust, high-performance, portable instrument that could be used in earth science field work. The global leader enlarged its FieldSpecs product line by the new **FieldSpec 4**, which is a milestone in the field spectroscopy. The new instrument offers ASD´s state-of-the art remote sensing technology with dramatically improved speed, performances and portability over previous models. The new full-range (350-2500 nm) VIS/NIR **FieldSpec 4** provides the highest spectral resolution (up to 8 nm) available in a portable, ruggedized field spectrometer.

NEO's line of hyper-spectral cameras, aims to be a compact, high performance and versatile instrument for a multitude of applications, ranging from airborne to laboratory and industrial use of imaging spectroscopy.

Their line of **HySpex cameras** comprises VNIR models, operating in the range 400 to 1000 nm, and SWIR models operating in the range 900 to 2500 nm. In addition to the **HySpex cameras**, NEO also supplies the equipment necessary to build fully functional hyperspectral imaging systems for a multitude of applications.

ReSe Applications Schläpfer is a small Swiss company focused on remote sensing data processing, and specifically on imaging spectroscopy. The company expertise is in geometric and atmospheric modeling of radiation in optical remote sensing, as well as the geometric and atmospheric preprocessing of optical remote sensing data. One ground breaking development of ReSe is the **PARGE** orthorectification software for airborne optical scanner systems.

For further information please visit **www.SphereOptics.de** or visit us at our **booth No. 6** at the **IGAARS Symposium 2012** in Munich and talk to our specialists in ground truthing.

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General Information

Welcome from the IEEE GRSS President

On behalf of the IEEE Geoscience and Remote Sensing Society, I warmly welcome you to the International and Geoscience and Remote Sensing Symposium - IGARSS 2012 in Munich. The annual symposium, 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.

The organization of IGARSS starts approximately four years before the conference is scheduled. The success of every IGARSS is due to the hard work of a large number of volunteers. IGARSS continues to grow and this year more abstracts were received than ever before. As a result of a very careful abstract review process, an outstanding technical program has been organized for IGARSS 2012. More than 100 scientists and engineers from around the world worked very hard to finalize the IGARSS technical program during our Technical Program Committee (TPC) meeting in Frascati, Italy in March 2012. My congratulations and sincere thanks to all the colleagues involved in the review process and session organization for their excellent work during the two-month review and abstract selection process. A special note of thanks goes to the excellent IGARSS 2012 team, led by General Co-Chairs Alberto Moreira and Yves-Louis Desnos, and IGARSS Technical Program Committee Co-Chairs Irena Hajnsek and Helmut Rott. The IGARSS 2012 team has truly done an outstanding job.

During IGARSS week, I would like to invite you to visit the GRSS booth in the exhibition area. GRSS will be offering free one-year GRSS affiliate memberships at our exhibit booth for all IGARSS participants who have not yet become GRSS members. GRSS strives to address remote sensing techniques, applications and policies, as well as new research directions. The fields of interest of our 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. By being a member of GRSS, you can be a part of this important voice. Benefits of being a GRSS member include electronic access to our three premier journals (IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Letters and IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing), participation in our five Technical Committees, IGARSS participation at a reduced rate, the quarterly Newsletter that will be transformed into the GRSS Magazine next year, educational programs, use of our distinguished speakers program, joining the GOLD (Graduates of the Last Decade) program, access to tutorial on-line lectures, and participation in one of our 39 chapters.

I wish you a wonderful IGARSS 2012.

Jón Atli Benediktsson
President, IEEE Geoscience and Remote Sensing Society

Welcome from the General Co-Chairs

On behalf of the IEEE Geoscience and Remote Sensing Society (GRSS) we would like to warmly welcome you to Munich for IGARSS 2012! This will be the 32nd annual IGARSS symposium at which the excellent tradition of gathering world-class scientists, engineers and educators engaged in the fields of geoscience and remote sensing will be continued. This year, IGARSS' theme is "Remote Sensing for a Dynamic Earth". In an ever-changing and dynamic world, high-resolution and timely geospatial information with global access and coverage becomes increasingly important for our society's needs. We believe that the additional scientific themes of this event, focusing on the characterization of dynamic Earth processes, assimilation, integrated Earth observing systems and current as well as the next generation of satellite missions, has led to the formation of a very interesting technical program.

The Geoscience and Remote Sensing Society was founded 50 years ago. This makes IGARSS 2012 a very special one as GRSS is presenting each participant with a 50-year commemorative book of the GRSS society. We are convinced that you will be delighted to read about the history and development of the GRSS society over the years. We are also sure that you will recognize many personalities and leading scientists who have shaped the state-of-the-art in remote sensing. In fact the first IGARSS in Europe took place in Munich 30 years ago, a time in which remote sensing was just in its infancy!

We cordially invite you to join us in the IGARSS 2012 Plenary Session on Monday morning for the keynote speeches as well as for the awards ceremony. This year's plenary highlight will feature the following high-level keynote speeches: Prof. Johann-Dietrich Wörner, Chairman of the Executive Board of the German Aerospace Center (DLR), will speak about this year's symposium theme "Remote Sensing for a Dynamic Earth"; Prof. Volker Liebig, Director of Earth Observation Programmes at the European Space Agency (ESA), will present "The European Earth Observation Program", and Dr. Ghassem Asrar, Director of the World Climate Research Programme, will report on "Recent Progress and Future Opportunities in Earth Observations".

The IGARSS week will also be supported by a variety of technical activities (Tutorials, a Technical Committee and Chapter Luncheon, a Women and Engineering Luncheon, and Technical Tours), by educational activities (a Summer School preceding the IGARSS week, a Young Professionals Luncheon, and a School Lab for groups of secondary school students during the week). In addition we have organized an exhibition with nearly 30 leading companies in remote sensing and a very typical social program (a Reception at "BMW World", a Bavarian Dinner and an Awards Banquet). Thanks to these numerous activities we are confident that you will find at IGARSS 2012 the ideal forum to discuss the recent advances in remote sensing as well as plenty of opportunities to network with groups in your field of expertise.

Our joint and international team has worked very hard and well together in the last four years. With careful planning and organisation, achieving a record in attendance and in all statistics, we anticipate a very interesting and pleasant IGARSS week for all participants. Please enjoy!

We look forward to meeting and talking to you in Munich during IGARSS 2012.

Alberto Moreira and Yves-Louis Desnos
IGARSS 2012 General Co-chairs

Team meeting at DLR

Technical Program Overview

On behalf of the Technical Program Committee (TPC) it is our pleasure to welcome you to the IGARSS 2012 in Munich and to present the technical program. According to the IGARSS global theme we have extended the technical program and enriched it with new topics covering the need for improved global understanding of dynamic Earth processes. The symposium offers a unique opportunity to exchange ideas and advance the state of the art in remote sensing and geoscience.

This year's IGARSS had a record number of over 3370 abstract submissions. The Technical Program Committee with 105 members met on March 2 in Frascati to assemble an interesting and well balanced technical program which comprises 288 oral sessions of 5 presentations each, and 146 poster sessions of up to 12 poster presentations. In preparation of this meeting, 1028 active reviewers took care of evaluating the submitted abstracts. The technical areas cover a wide range of themes extending from remote sensing of land, oceans, atmosphere and cryosphere, electromagnetic modelling and advanced image processing to the design of sensors and missions as well as specialized applications, education and policy.

From the 288 oral sessions around 40% have been organized as invited session and 10% are special sessions including honorary and Technical Committee sessions. Especially the large number of submitted student papers needs to be highlighted. From the 87 submitted student papers 10 could be selected for the student paper competition.

Several changes to previous technical programs have been introduced that are designed to continue, improve and adapt the needs for communication and scientific exchange as the field of remote sensing continues to evolve and develop rapidly in term of data availability, technology, product development and science applications. First, with the overwhelming amount of abstracts submitted we needed to increase the number of assigned reviewers and members of the Technical Committee. Second, to maintain the high quality of the technical program we decided to assign 4 reviewers to each submitted abstract. Third, in order to keep the technical program themes up to date special themes were introduced covering dynamic Earth processes, data assimilation, integrated Earth observing systems and current as well as upcoming satellite missions. Fourth, the very high number of high quality papers made it unavoidable to increase the number of parallel sessions from 10 to 16. Fifth, each poster will be displayed for two days and will be presented by the authors on the evening from 17:20 to 19:00 o'clock. Finally, for the first time a child care facility will be available during the whole week from 08:00 to 17:30 during the session times.

As a novelty this year we will have video poster presentations of selected themes. Two U-shaped areas will allow presenting at the same time two IGARSS themes with up to 12 posters. Each presentation will take 5 min. In total we have dedicated one hour from Monday to Thursday between 17:30 and 18:30 for poster video display.

The technical program includes only those presentations for which a presenting author has registered for the symposium by press time. In case of no-shows we request to keep the time schedule listed in the program to allow participants moving from session to session to follow papers of interest. The co-chairs of both oral and poster sessions have been requested to record which specific presentations were presented. Those not presented at IGARSS will not be published on IEEE Xplore.

IGARSS 2012 will also continue to provide live webcasting of selected technical presentations. This year we intend to provide for 4-6 selected sessions a live webcast and an upload webcast that can be downloaded at later time. The webcasts will include the presentation material along with a live view of the presenter to enable the remote participants to fully experience the presentations.

Our highest appreciation goes to the reviewers and the Technical Program Committee of IGARSS 2012 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 Services (CMS, Inc) for their dedicated support to the implementation of the IGARSS 2012 technical program and especially to Lance Cotton of CMS for his outstanding support of our work.

We wish you a productive and exciting week at IGARSS 2012 in Munich!

Irena Hajnsek and Helmut Rott
IGARSS 2012 Technical Program Co-Chairs

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Fernando Martin-Porqueras
Andrea Massa
Takeshi Matsuoka
Karim Mattar
Paolo de Matthaeis
Francesco Mattia
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Darren McKague
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Gary McWilliams
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Susanne Mecklenburg
Freek Van der Meer
Erich Meier
Thomas Meissner
Farid Melgani
Gregoire M Mercier
Dave Meyer
Franz Meyer
Nouha Mezned
Eckart Michaelsen
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Maurizio Migliaccio
Heinz Miller
Anthony Milne
Peter Minnett
Sidharth Misra
Josef Mittermayer
Tomoaki Miura
Miguel Moctezuma
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Mohamed Mohamed
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Matthieu Molinier
Frank Monaldo
Alejandro Monsivais-Huertero
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Carsten Montzka
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Stefano Pignatti Morano
Alberto Moreira
Jose Moreno
Alessandro Mori
Robin D Morris
Keith Morrison
Gabriele Moser
Arii Motofumi
Giorgos Mountrakis
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Jan-Peter Muller
Jose M. Munoz-Ferreras
Jordi Munoz-Mari
Mauro Dalla Mura
Christopher Mutlow
Ury Naftaly
Thomas Nagler
Kenji Nakamura
Jose M. P. Nascimento
Adib Nashashibi
Nasser Nasrabadi
Stefano Nativi
Enrique A. Navarro
Thomas Neff
Reza Nekovei
Maxim Neumann
Giovanni Nico
Congling Nie
Allan Aasbjerg Nielsen
Olaf Niemann
Irmgard Niemeyer
Edip Niver
Sima Noghanian
Yoo-jeong Noh
Claudia Notarnicola
Jean-Francois Nouvel
Ferdinando Nunziata
Sam Nwaneri
Peggy O'Neill
Vincent de Paul Obade
Yisok Oh
Kazuo Oki
Hakan Olsson
Ali Omar
Dzevat Omeragic
Cindy Ong
Helene Oriot
Roberto Orosei
Majid Mohammady Oskouei
Yoshifumi Ota
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Tobias Otto
Kazuo Ouchi
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Sharmila Padmanabhan
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Kannappan Palaniappan
Elisa Palazzi
Fracesco Palazzo
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Patricia de Rosnay
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Tod Rubin
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Joseph Shaw
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Lie-Chung Shen
Andrew Shepherd
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Yosio Edemir Shimabukuro
Shuji Shimizu
Michal Shimoni
Yuriy Shkvarko
Fridon Shubitidze
Jean-Robert Simard
Anita Simic
Steven Simske
Mandeep Singh Jit Singh
Upendra Singh
Vern Singhroy
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Gail Skofronick-Jackson
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Zakaria Smahi
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Helmut Suess
Yuzo Suga

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Yumin Tan
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Majid H. Tangestani
Kevin Tansey
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Werner Peter Thomas
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Francesc Torres
Ramón Torres
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Ridha Touzi
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Leung Tsang
Yi-Hsing Tseng
Devis Tuia
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Yu-Chang Tzeng
Kalum Priyanath Udagepola
Lars Ulander
Silvia Liberata Ullo
Cem Unsalan
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Fan Wu
Hao Wu
Ji Wu
Jindong Wu
Lixin Wu
Tzong-Dar Wu
Randolph Wynne
Ming-Yao Xia
Feiqin Xie
Hongjie Xie
Xiaoxiong Xiong
Xiaolan Xu
Yong Xue
Hiroyoshi Yamada
Yasushi Yamaguchi
Yoshio Yamaguchi
Hiroya Yamano
Banghua Yan
Kai Yang
Wenli Yang
Zhengwei Yang Yang
Felix Yanovsky
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Marwan Younis
Qian Yu
Yunyue Yu
Jinchun Yuan
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Guoqing Zhou
Jun Zhou
Yaping Zhou
Yuyu Zhou
Zheng-Shu Zhou
Wenquan Zhu
Xiao Xiang Zhu
Manfred Zink
Weibao Zou
Mehrez Zribi
Raul Zurita-Milla
Lisa Zurk
Harold Zwick
Jakob van Zyl

Future IGARSS Symposia

- IGARSS 13: July 21 - July 26, 2013, Melbourne, Australia
- IGARSS 14: July 13 - July 18, 2014, Quebec City, Canada
- IGARSS 15: July 26 - July 31, 2015, Milan, Italy

IGARSS 2013

21-26 July 2013
MELBOURNE

www.igarss2013.org

INTERNATIONAL GEOSCIENCE REMOTE SENSING SYMPOSIUM

Building a Sustainable Earth through Remote Sensing

WELCOME MESSAGE

On behalf of the IEEE Geoscience and Remote Sensing Society and the IGARSS 2013 Local Organising Committee, we are delighted to invite you to Melbourne, Australia for IGARSS 2013. We are looking forward to welcoming leading scientists, engineers and educators from the diverse disciplines that make up the Geoscience and Remote Sensing community. We also hope to attract new delegates from the Asia-Pacific and Oceania regions.

We will be offering a world class technical program encompassing traditional IGARSS topics and new topics reflecting the theme of the 2013 Conference, "Building a Sustainable Earth through Remote Sensing". This theme was selected to emphasize the issues that most affect the Earth's environment, and the human impact on the planet. We welcome both seasoned and new delegates to Melbourne in July 2013.

With best wishes

Peter Woodgate and Simon Jones,
General Co-Chairs, IGARSS 2013

THEMES

The Technical Program will include the following themes:

- Analysis Techniques and studies of Atmosphere, Cryosphere, Oceans and Land
- Sensors and Platforms
- Data Management, Dissemination Education and Policy
- Data Assimilation
- Emerging Space Programs
- Data Fusion and Integration
- In situ Observation and Data Scaling
- Advances in Analysis Techniques

In addition, the following special scientific themes will be addressed:

- Dynamics of Earth Processes and Climate Change
- Integrated Earth Observing Systems
- New Satellite Missions
- Remote Sensing in Carbon Accounting
- Disaster Management
- Calibration and Validation of Satellite Imagery

For Further Information Contact:

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QUÉBEC CITY, CANADA | JULY 13-18, 2014

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Energy and our Changing Planet

ENERGY AND OUR CHANGING PLANET

The conference theme encompasses geoscience and remote sensing activities in important emerging fields and programs such as earth observation for renewable energy, energy budgets and modeling, global environmental change, arctic research, sustainable development, international co-operation, the *Committee on Earth Observation Satellites* (CEOS), the *Global Earth Observations System of Systems* (GEOSS), development of new technologies, future satellite programs, and security and defence. All geoscience and remote sensing topics are welcome.

QUÉBEC CITY

A NORTH AMERICAN TREASURE

Declared a World Heritage Site by UNESCO in 1985, Québec City is steeped in history and European charm. Just a few minutes from downtown, discover the wonders of nature! The Québec City Summer Festival presents major musical performances each year in July at various sites in and around the heart of Québec City.

More @ www.quebecregion.com

VENUE

THE QUÉBEC CITY CONVENTION CENTRE

This international award-winning facility situated near many hotels provides a spectacular setting for IGARSS 2014.

YOUR HOSTS

General Chair:
Dr. Monique Bernier, INRS-ETE
Technical Program Co-chairs:
Dr. Ellsworth LeDrew, University of Waterloo
Dr. Josée Lévesque, Defence Research and Development Canada

WWW.IGARSS2014.ORG
Opening January 2013

Social Events

Welcome Reception

Sunday, July 22, 17:30–20:00, International Conference Center Munich (ICM), first floor foyer. See map on page 4. All registered conference attendees are invited to participate and to enjoy light dishes and refreshments.

Public transportation: Metro U2, Stop: Messestadt-West.

Reception at BMW World

Monday, July 23, 19:30–22:30, BMW World Munich at the Lerchenauer Straße on the corner of Georg-Brauchle-Ring. Take entrance north when arriving with Metro or main entrance when coming with bus. See map on page 2.

Public transportation: Metro U3, Stop: Olympia-Zentrum.

Chartered busses will depart at 18:45 from ICM for those attendees who have purchased this service during registration.

The official reception takes place in BMW-Welt in Munich. BMW Welt is the experience and delivery Center of the BMW brand. It is compelling for its distinctive futuristic architecture and the wide range of exhibitions and events on offer. In addition to the exclusive presentation of the latest range of cars and motorcycles, interactive exhibits afford insights into innovation, development, design and production. This is where the BMW brand can be experienced with all the senses. The reception takes place in the auditorium located in the foyer of BMW-Welt directly located at the north entry. Please follow the IGARSS signs. Entrance of the area around the auditorium is only allowed for IGARSS attendees who have purchased a ticket in advance. An IGARSS registration badge/confirmation is needed to enter this area. During the Opening Reception meals and refreshments will be available for your enjoyment and musical entertainment will be provided.

Young Professional's Lunch

Tuesday, July 24, 12:10–13:30, ICM Restaurant "Am See, Seeblick" accessible via the first floor of the ICM Foyer in southern direction. See map on page 7.

Public transportation: Metro U2, Stop: Messestadt-West.

The event will be open to students and young professionals. The lunch will provide a forum of discussion between current students and GOLD members (Graduates of the Last Decade) on career paths, skill sets beneficial to secure employment in the geosciences and remote sensing industries, as well as professional development opportunities. The number of participants in this event is limited and restricted to those attendees who have purchased a ticket in advance.

Bavarian Evening

Tuesday, July 24, 19:30–22:30.

The Bavarian Evening takes place in the "Löwenbräukeller" in Munich City at the Stiglmaierplatz (Nymphenburger Straße corner Dachauer Straße.)

Public transportation: Metro U1, Stop: Stiglmaierplatz. See map on page 2.

This location lives and breathes Bavarian tradition and customs. It is one of the most popular meeting places for locals and guests from all over the world who value the charm of Bavarian tradition in one of the original large establishments of Munich pub culture. Enjoy Bavarian culinary specialties, while being entertained with typical Bavarian music and performances. The registration fee per person already includes one drink (up to one Liter) and a typical Bavarian meal. An IGARSS registration badge/confirmation is needed to participate to this event.

Chartered busses will depart at 18:45 hours from ICM for those attendees who have purchased a ticket in advance.

Technical Committee and Chapter Chairs Lunch

Wednesday, July 25, 12:10–13:30, ICM Restaurant "Am See, Seeblick" accessible via the first floor of the ICM Foyer in southern direction. See map on page 7.

Public transportation: Metro U2, Stop: Messestadt-West.

This event provides a venue for discussion of GRSS Technical Committee and Chapter activities accompanied by a fine meal. This is an excellent opportunity to learn more about the technical committees and activities of our chapters. The number of participants in this event is limited and restricted to those attendees who had selected this event in their online registration.

Exhibitor Reception

Wednesday, July 25, 17:20–19:30, ICM Hall B0. See map on Page 18.

The reception jointly starts with the poster session on Wednesday.

Public transportation: Metro U2, Stop: Messestadt-West

Enjoy light hors d'oeuvre and refreshments as you visit our exhibitors.

Soccer Game

Wednesday, July 25, 18:00–22:00. Sports field of SV Dornach, Feldkirchner Weg 50 in 85609 Dornach only 2.5 km from the ICM. The Sports field is equipped with changing rooms and bathrooms. See map on page 2.

Free bus transportation will be provided, leaving at 18:00 and 18:25. Please gather at the entrance of the ICM.

Drinks are provided and we will have a barbeque in the evening. All registered participants will get a basic package of coupons for free on-site food. Additionally, the local soccer club SV Dornach will run a small kiosk selling low-priced drinks for viewers and participants who want more.

Women in Geosciences, Remote Sensing and Engineering Luncheon

Thursday, July 26, 12:10–13:30, ICM Restaurant "Am See, Seeblick" accessible via the first floor of the ICM Foyer in southern direction. See map on page 7.

Public transportation: Metro U2, Stop: Messestadt-West.

The event takes place for the first time and is addressed to all IGARSS attendees with an interest in making the geosciences, remote sensing, and engineering professions positive and inclusive for both genders. The lunch will provide networking opportunities and a forum of discussion for topics ranging from gender equity, recruiting and retaining of women in these fields, family work-life balance, professional development, and benefits of a diverse workforce. The number of participants in this event is limited and restricted to those attendees who have purchased a ticket in advance.

IGARSS 2012 Awards Banquet

Thursday, July 26, 19:30–22:30 at the imperial ballroom "Kaisersaal" of the Residenz Palace in Munich, Residenzstraße 1.

Public transportation: Metro U3, U6, U4, U5, Stop: Odeonsplatz, exit Residenzstraße. See map on page 2.

Chartered busses will depart at 18:45 hours from ICM for those attendees who have purchased a ticket in advance.

This year's IGARSS awards evening will take place at the imperial ballroom "Kaisersaal" of the Residenz Palace in Munich. The Kaisersaal is the largest and most beautiful hall of the Residenz. Already Mozart played at this historical location in front of an elected audience. Classical music will be provided during dinner by selected musicians and awards will be presented.

Chartered busses will depart at 18:45 hours from ICM for those attendees who had selected and paid for this service in their online registration.

Transportation to the social events outside the Congress Center

All events are reachable by public transportation, however a bus service starting from ICM has also been organized for the people who have registered for it through advance registration. If you have registered for bus transportation services, please gather at the bus meeting point (outside the Congress Center – see map on page 5) at least 10 minutes before the scheduled departing time.

Using Public Transportation

A complimentary ticket for using the public transportation in Munich during the IGARSS week is available to all IGARSS participants. The ticket is included in the registration bag.

Technical Tours

Friday, 27 July 2012. Two Technical tours have been organized for people who have purchased a ticket in advance.

Tour 1: Visit of the German Aerospace Research Center (DLR) in Oberpfaffenhofen.

Tour 2: Visit of EADS ASTRIUM in Ottobrunn, Satellite technology and development.

Both centers are located near Munich. Busses will depart from ICM at 09:00. Arrival at the ICM is planned for about 15:30. Please keep your passport with you; it will be required to obtain a visitor badge at the entrance of both centers.

Conference General Information

Internet café and WiFi access

It is possible to freely connect to the WiFi "IGARSS" on the Ground Floor from the Exhibition and Poster Areas. The following password should be used: go2igarss12. Alternatively an Internet Café is available on the First Floor.

Author Preparation Area

An area where authors can check their presentation with the same laptop configuration as used in the presentation rooms is available on the First Floor. The area is open daily during the symposium at 08:00–18:00. Authors are encouraged to test their presentations (including animations) in this area well ahead of their session start.

Registration Desk

Collection of the conference kit is possible at this desk, which is open daily during the symposium days at 07:30–20:00.

IGARSS Office

General information, on site registrations, booking of tours and social events, booking of meeting rooms, and issues of announcements can be performed in this area, which is open daily during the symposium days at 08:30–19:00.

Emergency calls

Emergency service / firebrigade: 112

Police:..... 110

Child Care

A separate area for child care is available on the first floor. The service is free and is provided during the symposium days split into two time blocks per day: 08:00–12:30 and 13:30–17:30. Capacity is limited per block and will be assigned on a first come, first served basis.

Meeting Rooms

Small meeting rooms holding a maximum of 12 persons are available in the conference venue at a cost of €150. Please inquire about availability and make your reservation at the IGARSS office.

Lunch Packages

If purchased in advance via online registration, 5 vouchers for 5 lunch packages should have been delivered to you with the registration package. These vouchers can be used to collect the lunch package each day. Signs will clearly indicate where to pick up the lunch packages.

Presentations Instructions

Oral Presentations

The official language of the Symposium is English. Each oral presentation is allocated 20 minutes, of these the last 5 minutes shall be used for questions, discussion and change over.

Presenters should be in the session room 20 minutes before the session begins to meet with the session chair, who should be near the stage/lectern. Presentations shall be uploaded to the IGARSS 2012 computer in the presentation room during the break before the session. Presenters are advised when uploading their presentation to check if formulas/animations are shown correctly.

An author preparation area equipped with computers is available on the first floor for the authors to check their presentations. If presenters wish to practice setting up the slides or pre-load them onto the provided computer, this has to be done before the session begins.

Each presentation room is equipped with one computer/video projector, a microphone, a lectern, and a pointing device. The software installed on the computer includes:

- Windows 7
- MS Office 2010 Professional (Power Point, Word)
- Adobe Acrobat Reader X
- Internet Explorer 8
- Windows Media Player 12

The media player is only available with the standard codecs. Use of standard True Type fonts is suggested for PowerPoint presentations. In the case PowerPoint contains videos, please ensure that both files (Power Point and video - MPG AVI) are in the same folder.

Presentations from personal laptops are not allowed, to ensure smooth programme running and to minimise transition time between presentations. The possibility to present from PCs other than the session room PC is not foreseen.

Poster Presentations and Display Hours

For each paper accepted within a poster session, one poster board in portrait format is reserved with a dimension of 90 cm (width) x 200 cm (height). Information about the location of the posters is provided on page 6.

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 at 17:20–19:00 o'clock.

For selected themes, video poster presentations are foreseen from Monday to Thursday between 17:30 and 18:30. Two U-shaped areas allow presenting at the same time two IGARSS themes with up to 12 posters. Each presentation will take 5 minutes. After the video presentation the discussion can be continued at the displayed poster.

About Munich, Germany

Munich - the capital of Bavaria - is a city with an 850-year history, full of culture, music, natural beauty, charm and hospitality. The city boasts attractive architecture, with palaces and churches, museums, theatres, nearby fairy-tale castles and idyllic mountain resorts in the Bavarian Alps. Munich is also a center of high-tech science and home to four universities, research institutes, software companies, space industries and various international enterprises, making it an ideal location for IGARSS 2012.

The warmth and hospitality of Munich's citizens will create a unique atmosphere for the symposium participants during their stay in this welcoming city.

Munich is the third largest city in Germany after Berlin and Hamburg. It has a total population of around 1.3 million people, 22.9% of those are non-German and come from around 180 different countries.

Munich, known as the "Cosmopolitan city with a heart" is indeed a very cosmopolitan place. Beside German, many people in Munich speak English. So don't be afraid to approach people in English. You will get the help you need.

Munich is in the Central European Time (CET) zone which is UTC + 1 hour in winter time and UTC + 2 hours in summer time (during IGARSS 2012).

Top Munich Sightseeing

Marienplatz and New Town Hall

Marienplatz has been the heart of Munich since its foundation in 1158. Here you will find the famous chimes starting at 11 am, 12 am and 5 pm every day. At this time, figurines come out of the pillar high on the New Town Hall performing the Schäfflertanz, a dance performed at the end of the plague in the 1500s. The Marienplatz is a great starting point to visit all the touristic attractions such as the Old and the New Town Hall, the Old Peter Church and Viktualienmarket.

Frauenkirche

The Frauenkirche is the largest and most well known cathedral in Munich. Its architectural features are the two towers which dominate the silhouette of Munich. The church as it is today was completed in 1488. The towers, however, were added later in around 1525. The interior of the cathedral is kept rather simple, but the sheer size is spectacular. During the summer months it is possible to climb the towers to get a view over Munich.

Viktualienmarkt
Viktualienmarkt is one of the oldest markets in Munich selling a variety of fruits and vegetables, speciality cheeses, meats, fish, honey and dairy products. It is located only some steps away from the central square Marienplatz. The Viktualienmarkt occupies a space of more than 20.000 m^2 and in addition to the market stalls and shops, there is also a larger beer garden and many small shops, butchers, bakeries and kiosks serving speciality snacks and light meals.

English Garden
The English Garden is one of the largest city parks in the world. It offers various recreational activities such as jogging, football, biking, sun bathing and more. If you visit the English Garden do not miss a stop at the Chinese Tower, one of the biggest beer gardens in Munich.

Alte Pinakothek
The Alte Pinakothek is one of the most important Art Museums in Europe. In 1836 it first opened its doors to the public and has become one of the most popular attractions in Munich. More than 800 paintings from most famous painters from between the 14th and 18th centuries are exhibited. Art lovers will need more than a day to explore everything the museum has to offer.

Bavarian State Opera
The classical opera house has an impressive exterior and a magnificent interior. The theatre's ensemble has a long-standing tradition of excellence.

Theatiner Church at the Odeonsplatz
The Theatiner Church is one of the magnificent buildings at the Odeonsplatz. In its direct proximity there are the Feldherrnhalle and the Münchner Residenz.

The Hofbräuhaus
A trip to Munich is not complete without a visit of the Hofbräuhaus, the most famous beer hall in the world. Founded in 1589 it has been serving its beer for over 400 years. The Hofbräuhaus delivers a little taste of the Oktoberfest throughout the year.

Neuschwanstein Castle
If you already visited Munich, you should not miss Neuschwanstein castle, near Hohenschwangau. It's one of the most impressive ever built fairy tale castles in the world. Don't miss it! More information: http://www.schloesser.bayern.de/englisch/palace/objects/neuschw.htm.

Nördlingen
For an unforgettable daily trip you must visit Nördlingen, a city captured in Germany's one and only completely preserved circular city wall with a walkway on it – even mostly roofed over. Enjoy circling around the inner city in about one hour. The church spire of St. Georgs Church right in middle of the city will give you orientation. More information: http://www.noerdlingen.de

The World's Greatest Middle Ages Knights Tournament
Join us on a journey through time, back into the Middle Ages! On three weekends in July - just around IGARSS'12 on July 13-15, July 20-22 and July 27-29, an international team of over 1,000 artists is waiting to whisk you away on an historical adventure. Knights on fiery Andalusians, spectacular horse stunts and the legendary man-to-man full-contact jousting are all part of the annual tournament Kaltenberg's arena. Enjoy the medieval entertainers' program which offers you a full day's entertainment on 7 open-air stages, spontaneous street shows and a grande parade in which all artists participate. Their friendly medieval market with traditional handcrafts and culinary delicacies will invite you to linger and tarry awhile. More information: http://www.ritterturnier.de/en.html.

Taxation and Tipping

Prices in Germany usually include value added tax (VAT). No additional costs will be charged when purchasing goods or services. The included VAT rate is indicated separately on bills and receipts.

Tipping is at your own discretion. In Germany all taxes and tips are included in hotel and restaurant bills. A good service may be rounded up by 5 to 10%. In restaurants, it is usual to at least round up to the next or after next whole-number.

Shops and Business Hours

In Germany, we have the "Ladenschlussgesetz" (Shops Closing Act) which dictates that shops must be closed on Sundays and public holidays and during workdays (Monday to Saturday) they shall not be open before 6 am and must close at 8 pm. However, there are many exceptions, bakeries and pharmacies for example. Also, at airports and in gasoline stations, you may shop around-the-clock. As a rule, shops are open from 9 am to 6 pm from Monday to Friday and until lunch time on Saturday. Supermarkets are open until 8 pm usually, even on Saturday.

Public Transportation - Free of Charge!

The MVV network allows travel within the Munich city area, using the S-Bahn and U-Bahn (suburban and metro railway), trams, city buses and regional buses. Your participant badge (issued at registration) also doubles as an MVV Congress CombiTicket and can be used as a substitute for a ticket to travel in all the Munich inner district "Innenraum", **free of charge** during IGARSS, i.e. from July 22 until July 27, 2012. **So be sure to wear your badge at all times.** Note that for journeys to the airport, you will require another ticket (available for 11.00 Euro) as you will be leaving the inner district "Innenraum" of Munich.

In case you need to buy additional tickets (e.g. for accompanying persons—note that accompanied children under 6 years of age may travel free of charge—or for destinations outside the Inner District), these can be purchased from private ticket offices (e.g. kiosks) or from the ticket machines in all suburban railway (S-Bahn) and metro (U-Bahn) stations, on trams, city and regional busses. More information about costs and the MVV network can be found at:

http://www.mvv-muenchen.de/en/home/index.html

Technical Program

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Opening Session

09:00 **Welcome to IGARSS 2012**
Alberto Moreira and Yves-Louis Desnos - General Co-Chairs

09:10 **Welcome from the Bavarian Government**
Bavarian Minister of Economic Affairs, Infrastructure, Transport and Technology Martin Zeil

09:20 **Welcome from IEEE GRS Society**
Jón Atli Benediktsson, President

09:30 **Welcome from IEEE**
Peter W. Staecker, IEEE President-Elect 2012

09:40 **Major Awards and Recognitions**
Presented by Werner Wiesbeck
2012 IEEE Fellows
2012 IEEE W.R.G. Baker Paper Award
2012 IEEE GRSS Education Award
2012 IEEE GRSS Distinguished Achievement Award

Special Recognition on the occasion of the 50th anniversary of IEEE GRSS for:
Fawwaz Ulaby, Werner Wiesbeck and Wolfgang-Martin Boerner
Laudatio by Kamal Sarabandi

10:10 **Break**

Plenary Session

10:50 **Remote Sensing for a Dynamic Earth**
Johann-Dietrich Wörner, Chairman of the Executive Board of the German Aerospace Center (DLR)

11:20 **The European Earth Observation Program**
Volker Liebig, Director of Earth Observation Programmes, European Space Agency (ESA)

11:50 **Recent Progress and Future Opportunities in Earth Observations**
Ghassem Asrar, Director of the World Climate Research Programme (WCRP)

Symposium Introduction

12:20 **IGARSS 2012 Technical Program**
Irena Hajnsek and Helmut Rott, Technical Program Co-Chairs

12:25 **Closing remarks**
Alberto Moreira and Yves-Louis Desnos, General Co-Chairs

12:30 **Lunch**

Plenary Speakers

Johann-Dietrich Wörner is since 2007 Chairman of the Executive Board of the German Aerospace Center (DLR). In 1982, as part of his studies at the Technische Universität Darmstadt, he spent two years in Japan, investigating earthquake safety. Before being elected President of the Technische Universität Darmstadt in 1995, he was heading the Testing and Research Institute and held the position of Dean of the Civil Engineering Faculty.

Wörner has been honored with a series of prizes and awards including honorary doctorates from the State University New York (USA), the technical universities of Bucharest (Romania) and Mongolia, the Saint Petersburg University for Economics and Finance (Russia), and École Centrale Lyon (France). He has also been appointed to the Berlin Brandenburg Academy of Sciences and is a representative of the Technical Sciences Section of the German Academy of Sciences Leopoldina.

Wörner is Vice President of the Helmholtz Association; he is also a member of various national and international supervisory bodies, advisory councils and committees. He was a member of the board of École Centrale Paris and École Centrale Lyon, the Convention for Technical Sciences (acatech) and the supervisory board of Röhm GmbH, to name just a few. Furthermore, he was appointed to the energy expert group of the German Government. He continues to be a member of the advisory boards of several universities such as the Technische Universität Berlin and the IST Lisboa.

Volker Liebig took up duty as Director of Earth Observation and Head of ESRIN in October 2004. ESRIN, ESA's Italian Center, is situated in Frascati, close to Rome. Born in Lübbecke, Germany, Volker Liebig grew up in Munich. He studied geophysics at the University of Munich where he received a PhD. Volker Liebig began his professional career in polar research and took part in the German Antarctic Expedition, Ganovex IV, where he investigated Earth's geomagnetic field. After six years working in managerial positions in the space industry, in 1994 he joined the German Space Agency, DARA.

During his career with DARA he was Head of the Earth Observation Utilisation Programme and then appointed Head of Application Programmes where he was responsible for communications, navigation and Earth observation. In 2000, the Senate of the German Aerospace Center, DLR, approved his appointment as the Programme Director of the German Space Programme.

In 1993 Volker Liebig became a member of ESA's Programme Board for Earth Observation, a post he held until 1998. For four years he was also a member of the ESA Council as well as a member of the Space Advisory Group of the European Commission. In 1999 he commenced lecturing at the University of Stuttgart, from which he has received an honorary professorship.

Ghassem R. Asrar is currently the Director of the World Climate Research Program (WCRP) in Geneva, Switzerland. He served as chief scientist for the Earth Observing System in the Office of Earth Science at NASA prior to being named as the Associate Administrator for Earth Science in 1998. While in his position of chief scientist, he led an international team developing the scientific priorities and measurements to be obtained by NASA Earth Observing System satellites that provided fundamental new insights into the connections between Earth's land, oceans, atmosphere, ice and life. He also established the NASA Earth System Science graduate fellowship and New Investigators Programs to support training of the next generation of Earth scientists and engineers that have graduated more than 1000 recipients.

Asrar is the recipient of U.S. Presidential Distinguished Executive Award (2002), an elected Fellow of American Meteorological Society (2001), and IEEE (2000). He has received the NASA Exceptional Performance Award in 1997, the AIAA Goddard Memorial Lecture Medal in 1998, NASA Exceptional Service Medal, 1999, NASA Distinguished Leadership Medal, 2000, the Space System Award from the American Institute of Aeronautics and Astronautics, 2006, and Distinguished Alumni Award from the Michigan State University, 2008.

He conducted research and trained undergraduate and post-graduate students for nine years in academia prior to joining NASA as a senior scientist in 1987. He has authored more than 100 peer-reviewed scientific and technical papers, primarily in the fields of remote sensing of biosphere and atmosphere studies, and has edited several reference books.

Awards and Recognitions

Awards and Recognitions to be presented at IGARSS 2012:

At the Opening Session, Monday, 23 July 2012:

2012 IEEE Fellow Awards

Jocelyn Chanussot
"For contributions to data fusion and image processing for remote sensing."

Eric L. Miller
"For contributions to inverse problems and physics-based signal and image processing."

Simonetta Paloscia
"For contributions to active and passive microwave remote sensing of vegetation and land surfaces."

John D. Mathews
"For contributions to radar observations of meteors."

Stephen L. Durden
"For contributions to microwave remote sensing and radar systems, including spaceborne cloud radar."

2012 IEEE W.R.G. Baker Paper Award

Gerhard Krieger, Alberto Moreira, Hauke Fiedler, Irena Hajnsek, Marian Werner, Marwan Younis, Manfred Zink
For their paper "TanDEM-X: A Satellite Formation for High-Resolution SAR interferometry", published at IEEE Transactions on Geoscience and Remote Sensing, Vol. 45, Issue 11, November 2007, pp. 3317–3341.

2012 IEEE GRSS Education Award

Motoyuki Sato
"In recognition of his significant educational contributions to Geoscience and Remote Sensing."

2012 IEEE GRSS Distinguished Achievement Award

Didier Massonnet
"For contributions to observing earthquake, co-seismic or post-seismic displacements, volcano deformation, natural and artificial subsidence."

Special Recognition on the Occasion of the 50th Anniversary of IEEE GRSS

The IEEE Geoscience and Remote Sensing Society proudly recognizes the following individuals who have made lasting contributions in technical, educational, and leadership aspects of the IEEE GRSS:

Fawwaz Ulaby, *University of Michigan, USA*
Werner Wiesbeck, *Karlsruhe Institute of Technology, Germany*
Wolfgang-Martin Boerner, *University of Illinois at Chicago, USA*

At the Awards Banquet, Thursday, 26 July 2012:

IEEE GRSS Certificates of Recognition
IEEE GRSS Publication Awards
IEEE GRSS GOLD Early Career Award
IEEE GRSS Chapter Excellence Award

Program will be distributed during the Awards Banquet.

Tutorials

Full-Day Tutorials

Sunday, July 22, 08:30 - 17:30

FD-1: SAR Imaging, Polarimetry, Interferometry and Tomography
Francisco Lopez-Dekker, Michael Eineder, Eric Pottier, Andreas Reigber
Location: Room 2

FD-2: Vegetation Structure from Lidar and SAR
Ralph Dubayah, Jacqueline Rosette, Juan Suarez-Minguez, Kostas Papathanassiou
Location: Room 3

FD-3: Optical Remote Sensing: Basics & Applications
Jose F. Moreno
Location: Room 11A

FD-4: Recent Advances in Hyperspectral Data Analysis
Qian Du, Antonio Plaza
Location: Room 11B

FD-5: Multivariate Analysis of Imaging Data
Peter Bajorski
Location: Room 12A

FD-6: Image Information Mining - Methods and Applications for Exploration of Earth Observation data
Mihai Datcu
Location: Room 12B

FD-7: Advanced Classification Techniques for Remote Sensing
Ranga Raju Vatsavai, Surya Durbha
Location: Room 4B

FD-8: Remote Sensing with Reflected and Occulted Global Navigation Satellite System (GNSS) Signals
James L. Garrison, Adriano Camps, Estel Cardellach
Location: Room 21A

Half-Day Tutorials

Sunday Morning, July 22, 08:30 - 12:30

HD-1: New SAR Missions and Concepts
Manfred Zink, Gerhard Krieger
Location: Room 4A

HD-2: Calibration of Aperture Synthesis Radiometers: The MIRAS/SMOS Case
Francesco Torres
Location: Room 21B

Sunday Afternoon, July 22, 13:30 - 17:30

HD-3: SAR Tomography: Basics and Applications
Gianfranco Fornaro, Fabrizio Lombardini
Location: Room 4A

Student Paper Competition

All IEEE student members were invited and encouraged to enter the IGARSS Student Paper Prize Competition. Ten finalists have been selected by a committee to present their papers during a special session at the symposium in Munich on Tuesday morning, July 24 in Room 11. 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:

TU1.3.1: DISCRIMINATIVE GRAPHICAL MODELS FOR SPARSITY-BASED HYPERSPECTRAL TARGET DETECTION

Umamahesh Srinivas; Pennsylvania State University
Yi Chen; The Johns Hopkins University
Vishal Monga; Pennsylvania State University
Nasser Nasrabadi; U.S. Army Research Laboratory
Trac Tran; The Johns Hopkins University

TU1.3.2: TEMPORAL POLSAR IMAGE SERIES EXPLOITATION WITH BINARY PARTITION TREES

Alberto Alonso-Gonzalez; Universitat Politecnica de Catalunya
Carlos Lopez-Martinez; Universitat Politecnica de Catalunya
Philippe Salembier; Universitat Politecnica de Catalunya

TU1.3.3: SEA SURFACE INFRARED EMISSIVITY WITH SURFACE REFLECTION

Hongkun Li; Lunam University - University of Nantes
Nicolas Pinel; Lunam University - University of Nantes
Christophe Bourlier; Lunam University - University of Nantes

TU1.3.4: IMPROVED JACOBIAN FORMULATION FOR A UNIFIED MICROWAVE RADIATIVE TRANSFER MODEL: VALIDATION AND NUMERICAL RESULTS

Miao Tian; Univ. of Colorado, Boulder
Albin Gasiewski; Univ. of Colorado, Boulder

TU1.3.5: CUBESAT-BASED DEMONSTRATOR FOR OPTICAL EARTH OBSERVATION

Roger Jove-Casulleras; Universitat Politecnica de Catalunya
Adriano Camps; Universitat Politecnica de Catalunya
Juan Ramos; Universitat Politecnica de Catalunya

TU2.3.1: INTERPRETING C-BAND SEA SURFACE DEPOLARIZATION OBSERVATIONS

Bo Wang; TELECOM Bretagne
Bertrand Chapron; IFREMER
Alexis Mouche; CLS company
Gregoire Mercier; TELECOM Bretagne
Rene Garello; TELECOM Bretagne
Ming Xia He; Ocean University of China

TU2.3.2: PROBABILISTIC LAND COVER CLASSIFICATION APPROACH TOWARD KNOWLEDGE-BASED SATELLITE DATA INTERPRETATIONS

Shutaro Hashimoto; Hokkaido University
Takeo Tadono; Japan Aerospace Exploration Agency
Masahiko Onosato; Hokkaido University
Masahiro Hori; Japan Aerospace Exploration Agency
Takashi Moriyama; Japan Aerospace Exploration Agency

TU2.3.3: A NEW TECHNIQUE FOR DETECTING THE PRESENCE OF WEAK INTERFERING DIGITAL SIGNALS IN RADIOMETRIC NOISE

Eric McIntyre; University of Colorado at Boulder
Albin Gasiewski; University of Colorado at Boulder

TU2.3.4: SUB-PIXEL MAPPING OF THE ALTERATION MINERALS USING ASTER DATA, A CASE STUDY FROM THE CENTRAL PART OF DEHAJ-SARDUIYEH COPPER BELT, SE KERMAN, IRAN.

Mahdieh Hosseinjani; Shiraz University
Majid H. Tangestani; Shiraz University

TU2.3.5: SEMISUPERVISED NONLINEAR FEATURE EXTRACTION FOR IMAGE CLASSIFICATION

Emma Izquierdo-Verdiguier; University of Valencia
Luis Gomez-Chova; University of Valencia
Lorenzo Bruzzone; University of Trento
Gustavo Camps-Valls; University of Valencia

The European Research Council (ERC) and its funding opportunities

Wed., Room 12A, 17:20-17:40

The presentation will aim at presenting the European Research Council (ERC) and its funding opportunities. ERC is the first European funding body set up to support investigator-driven frontier research. Its main aim is to stimulate scientific excellence by supporting and encouraging the very best, truly creative scientists, scholars and engineers to be adventurous and take risks in their research. The scientists are encouraged to go beyond established frontiers of knowledge and the boundaries of disciplines. ERC grants are awarded through open competition to projects headed by starting, consolidating and established researchers, irrespective of their origins, who are working or moving to work in Europe - the sole criterion for selection is scientific excellence. The presentation is given by Attilio Gambardella, European Research Council Executive Agency.

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 statements of interest, special sessions and meetings at IGARSS 2012.

Data Archiving and Distribution

The DAD TC mission is to provide recommendations and responses to issues related to the archiving and distribution of remotely sensed geospatial and geotemporal data, and on how new media, transmission means, and networks will impact the archiving, distribution, and format of remotely sensed data.

DAD TC Session: Geospatial Semantic Web and Ontologies.....Wed., Room 10, 13:30-17:20

DAD TC Session: From Data Archive Centers to Knowledge Creation Collaboratories ..... Thurs., Room 12, 13:30-17:20

DAD TC Meeting.....Wed., Room 10, 17:30-18:30

Data Fusion

The DFTC serves as a global, multidisciplinary, network for geospatial data fusion, connecting people and resources. It aims at educating students and professionals, and at promoting best practices in data fusion applications.

DFTC Session: Data Fusion ..Mon., Room 7, 13:30-17:20

DFTC Meeting.....Mon., Room 7, 17:30-18:30

Frequency Allocations in Remote Sensing

The FARS TC mission is to provide technical assessments, guidance and recommendations regarding matters of frequency sharing and interference between remote sensing and other uses of the radiowave spectrum.

FARS TC Session: Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors.....Wed., Room 7, 13:30-17:20

FARS TC Meeting .....Wed., Room 7, 17:30-18:30

Instrumentation and Future Technologies

The Committee's 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. This TC has several working groups on specific focused technologies.

IFT TC Active Microwave Session: Advanced SAR Techniques and Digital Beamforming ..... Tues., Room 3, 13:20-17:20

IFT TC Radiometry Session: Millimeter and Sub-Millimeter Wave Radiometry ..... Tues., Room 6, 13:20-17:20

IFT TC Optical Session: Advanced Imaging Spectrometers.....Wed., Room 10, 10:30-12:10

IFT TC Session: Recent Innovations in Earth Science Remote Sensing Technology Development at NASA ..... Thurs., Room 11, 10:30-12:10

IFT TC Lidar Session: Spaceborne Lidar: Missions, Technologies and Observations .....Thurs., Room 11, 13:30-17:20

IFT TC Meeting..... Tues., Room 3, 17:30-18:30

International Spaceborne Imaging Spectroscopy

The ISIS Working Group provides a forum for technical and programmatic discussion and consultation among national space agencies, research institutions and other spaceborne IS data providers. Goals of the ISIS are to share information on current and future spaceborne imaging spectroscopy ("hyperspectral") missions, and to seek opportunities for new international partnerships to the benefit of the global user community.

ISIS WG Session: Spaceborne Imaging Spectroscopy Missions: Updates, Global Datasets and Products Mon., Room 3, 13:30-17:20

ISIS WG Meeting..... Mon., Room 3, 17:30-18:30

NOTE: The Technical Committee meetings are open to all IGARSS participants. All are invited to learn more about their activities.

In addition, IGARSS participants are invited to attend the Technical Committees and Chapter Chairs Luncheon at which there will be brief presentations by the Chairs of the Technical Committees. Pre-registration is required.

Paper Identifiers

Example:	TU	4	.	1	.	4
Meaning:	**Day**	**Time Block**	**Separator**	**Track/Room**	**Separator**	**Sequence**

Day

MO ..... Monday, July 23
TU ..... Tuesday, July 24
WE ..... Wednesday, July 25
TH ..... Thursday, July 26
FR ..... Friday, July 27

Time Block

1 ..... First Morning Session ..... 08:20 - 10:00
2 ..... Second Morning Session ..... 10:30 - 12:10
3 ..... First Afternoon Session ..... 13:30 - 15:10
4 ..... Second Afternoon Session ..... 15:40 - 17:20
P ..... Evening Poster Session ..... 17:20 - 19:00

Room

All technical program events are held in the International Conference Center Munich (ICM).
Oral:

10 ► Room 2
6 ► Room 3
14 ► Room 4A
4 ► Room 4B
2 ► Room 5
3 ► Room 11
8 ► Room 12A
7 ► Room 12B
12 ► Room 13A
15 ► Room 13B
5 ► Room 14A
13 ► Room 14B
1 ► Room 14C
11 ► Room 21A
16 ► Room 21B
9 ► Room 22A

Poster:

All Poster Areas ► Hall B0

Sequence

Oral..... Order of presentation.
Poster..... Board number (Complete poster board identifier is the Room plus the Sequence.)

Monday, July 23 Plenary Session: Room 1 from 09:00 to 12:30. Program shown on page 46.

Monday, July 23 | 13:30 - 15:10 | Room 2
Session MO3.10 | Oral-Invited

NASA Soil Moisture Active Passive Mission Approach to Pre-Flight Testing of Retrieval Algorithms

Session Chair: Peggy O'Neill, NASA Goddard Space Flight Center

MO3.10.1 13:30 **ASSESSMENT OF THE IMPACTS OF RADIO FREQUENCY INTERFERENCE ON SMAP RADAR AND RADIOMETER MEASUREMENTS**
Curtis Chen, NASA Jet Propulsion Laboratory, United States; Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States; Joel T. Johnson, The Ohio State University, United States; Hirad Ghaemi, NASA Jet Propulsion Laboratory, United States

MO3.10.2 13:50 **EVALUATION OF THE SMAP RADIOMETER LEVEL 2 PRE-LAUNCH SOIL MOISTURE ALGORITHMS USING SMOS DATA**
Rajat Bindlish, Thomas Jackson, Tianjie Zhao, Michael Cosh, USDA ARS, United States; Steven Chan, NASA Jet Propulsion Laboratory, United States; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Eni Njoku, Andreas Colliander, NASA Jet Propulsion Laboratory, United States; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

MO3.10.3 14:10 **AN AIRBORNE SIMULATION OF THE SMAP DATA STREAM**
Jeffrey P. Walker, Monash University, Australia; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Xiaoling Wu, Ying Gao, Alessandra Monerris-Belda, Monash University, Australia; Rocco Panciera, University of Melbourne, Australia; Thomas Jackson, USDA, United States; Douglas Gray, University of Adelaide, Australia; Dongryeol Ryu, The University of Melbourne, Australia

MO3.10.4 14:30 **PRE-LAUNCH ANALYSIS OF SMAP MISSION USER COMMUNITY**
Molly Brown, NASA Goddard Space Flight Center, United States; Vanessa Escobar, Sigma Space Corporation / NASA Goddard Spaceflight Center, United States

MO3.10.5 14:50 **ASSESSING PRE-LAUNCH APPLICATION FEASIBILITY USING THE SMAP SCIENCE DATA SYSTEM ALGORITHM AND APPLICATION SIMULATION TESTBED**
Wade Crow, USDA ARS HRSL, United States; Eni Njoku, Scott Dunbar, Steven Chan, NASA Jet Propulsion Laboratory, United States

Monday, July 23 | 13:30 - 15:10 | Room 3
Session MO3.6 | Oral-Invited

EOS Aqua Contributions to Earth Science: The First 10 Years I

Session Chair: Elena Lobl, University of Alabama in Huntsville

MO3.6.1 13:30 **AQUA'S FIRST 10 YEARS: AN OVERVIEW**
Claire Parkinson, NASA, United States

MO3.6.2 13:50 **TEN YEARS OF AIRS/AMSU OBSERVATIONS OF WEATHER, CLIMATE AND ATMOSPHERIC COMPOSITION**
Eric Fetzer, Bjorn Lambrigtsen, Thomas Pagano, Hartmut H. Aumann, Joao Teixeira, NASA Jet Propulsion Laboratory, United States

MO3.6.3 14:10 **MEASUREMENT OF THE ATMOSPHERE AND OCEAN FROM THE AMSR-E INSTRUMENT: 2002-2011**
Roy Spencer, University of Alabama Huntsville, United States

MO3.6.4 14:30 **ADVANCES IN EARTH RADIATION BUDGET OBSERVATIONS FROM CERES AQUA**
Norman Loeb, Seiji Kato, Wenying Su, Kuan-Man Xu, David Doelling, NASA Langley Research Center, United States

MO3.6.5 14:50 **TEN YEARS OF EARTH OBSERVATIONS FROM MODIS ON AQUA: WHAT HAS BEEN ACCOMPLISHED?**
Michael King, University of Colorado, United States; Steven Platnick, NASA Goddard Space Flight Center, United States; Steven Running, University of Montana, United States; Bryan Franz, NASA Goddard Space Flight Center, United States

Monday, July 23 | 15:40 - 17:20 | Room 2
Session MO4.10 | Oral

Soil Moisture: Aquarius and SMAP

Session Chair: Rajat Bindlish, US Department of Agriculture - Agricultural Research Service

MO4.10.1 15:40 **DEVELOPMENT OF A SOIL MOISTURE PRODUCT USING AQUARIUS/SAC-D OBSERVATIONS**
Thomas Jackson, Rajat Bindlish, Tianjie Zhao, Thomas Holmes, Michael Cosh, USDA, United States; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Steven Chan, Eni Njoku, NASA Jet Propulsion Laboratory, United States

MO4.10.2 16:00 **AN OBSERVING SYSTEM SIMULATION EXPERIMENT (OSSE) FOR THE AQUARIUS/SAC-D SOIL MOISTURE PRODUCT: AN INVESTIGATION OF FORWARD/RETRIEVAL MODEL ASYMMETRIES**
Pablo Perna, Cintia Bruscantini, Instituto de Astronomía y Física del Espacio, Argentina; Paolo Ferrazzoli, Tor Vergata University of Rome, Ingegneria – DISP, Italy; Francisco Grings, Haydee Karszenbaum, Instituto de Astronomía y Física del Espacio, Argentina; Wade Crow, USDA, United States

MO4.10.3 16:20 **TOPOGRAPHIC SIGNATURES IN AQUARIUS RADIOMETER/SCATTEROMETER RESPONSE: INITIAL RESULTS**
Cuneyt Utku, Universities Space Research Association / NASA Goddard Space Flight Center, United States; David Le Vine, NASA Goddard Space Flight Center, United States

MO4.10.4 16:40 **AN INTEGRATED ACTIVE-PASSIVE SOIL MOISTURE RETRIEVAL ALGORITHM FOR SMAP FOR BARE SURFACES**
Ruzbeh Akbar, Mahta Moghaddam, University of Southern California, United States

MO4.10.5 17:00 **NUMERICAL COMPUTATION OF THE L-BAND EMISSION AND SCATTERING OF SOIL LAYERS WITH CONSIDERATION OF MOISTURE AND TEMPERATURE GRADIENTS.**
François Demontoux, University Bordeaux 1 - IMS Laboratory, France; Heather Lawrence, Centre d'Etudes Spatiales de la Biosphère, France; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA) - Unité EPHYSE, France; Valery Mironov, Liudmila Kosolapova, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Philippe Paillou, University of Bordeaux 1 – Laboratory LAB, France; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

Monday, July 23 | 15:40 - 17:20 | Room 3
Session MO4.6 | Oral-Invited

EOS Aqua Contributions to Earth Science: The First 10 Years II

Session Chair: Claire Parkinson, NASA Goddard Space Flight Center

MO4.6.1 15:40 **AQUA OVER THE ARCTIC: CONTRIBUTIONS OF THE AIRS INSTRUMENT IN OBSERVING THE ESSENTIAL CLIMATE VARIABLES (ECV)**
Abhay Devasthale, Swedish Meteorological and Hydrological Institute, Sweden

MO4.6.2 16:00 **TRENDS IN TROPICAL CIRCULATION OVER PACIFIC IN THE LAST DECADE.**
Alexander Ruzmaikin, Hartmut H. Aumann, NASA Jet Propulsion Laboratory, United States

MO4.6.3 16:20 **GLOBAL SEA SURFACE TEMPERATURE OBSERVATION BY AMSR**
Akira Shibata, Japan Aerospace Exploration Agency (JAXA), Japan

MO4.6.4 16:40 **CHANGING GLOBAL SEA ICE COVER FROM AMSR-E AND MODIS**
Josefino Comiso, NASA Goddard Space Flight Center, United States

MO4.6.5 17:00 **MODIS TERRESTRIAL PRODUCTS FOR CLIMATE AND BIOGEOCHEMICAL MODELING**
Crystal Schaaf, University of Massachusetts Boston, United States

Monday, July 23 13:30 - 15:10 Room 4A
Session MO3.14 Oral

Dynamics of Earth Processes and Climate Change: Biosphere I

Session Co-Chairs: Alessio Lattanzio, Makalumedia GmbH; Anne Schucknecht, Technische Universität Bergakademie Freiberg

MO3.14.1 13:30 **REMOTE SENSING BASED NET PRIMARY PRODUCTIVITY MODELING FOR SEMI-ARID KAZAKHSTAN**
Christina Eisfelder, Igor Klein, Markus Niklaus, Claudia Kuenzer, German Aerospace Center (DLR), Germany

MO3.14.2 13:50 **ESTIMATING ABOVE GROUND BIOMASS INCREASE FOR BRANDENBURG'S FORESTS USING A REMOTE SENSING BASED SVAT MODEL**
Markus Tum, Markus Niklaus, Erik Borg, German Aerospace Center (DLR), Germany; Annett Degenhardt, Landeskompetenzzentrum Forst Eberswalde (LFE), Germany; Kurt P. Günther, German Aerospace Center (DLR), Germany

MO3.14.3 14:10 **SPATIAL AND TEMPORAL VARIABILITY OF VEGETATION STATUS IN PARAÍBA, NORTHEASTERN BRAZIL**
Anne Schucknecht, Jörg Matschullat, Technical University Bergakademie Freiberg, Germany; Stefan Erasmi, Georg-August University Göttingen, Germany

MO3.14.4 14:30 **IMPORTANT CHARACTERISTICS OF MULTISPECTRAL DATA FOR AN ASSESSMENT OF FLORISTIC VARIATION**
Hannes Feilhauer, University of Erlangen, Germany; Frank Thonfeld, Ulrike Faude, University of Bonn, Germany; Kate He, Murray State University, United States; Duccio Rocchini, Fondazione Edmund Mach, Italy; Sebastian Schmidtlein, University of Bonn, Germany

MO3.14.5 14:50 **THE VEGETATION PHENOLOGY DETECTION IN AMAZON TROPICAL EVERGREEN FORESTS USING SPOT-VEGETATION 11-Y TIME SERIES**
Inès Moreau, Pierre Defourny, Université Catholique de Louvain, Belgium

Monday, July 23 13:30 - 15:10 Room 4B
Session MO3.4 Oral

Information Extraction from High Resolution Imagery

Session Chair: Yasushi Yamaguchi, Nagoya University

MO3.4.1 13:30 **A FEATURE FUSION METHOD FOR ROAD LINE EXTRACTION FROM REMOTE SENSING IMAGE**
Zhijian Huang, School of Electronic Science and Engineering, National University of Defense Technology; Institute of Software, CAS, China; Jinfang Zhang, Institute of Software, CAS, China; Luxiao Wang, Communication Equipment Repair Department of 92854 Troop, Chinese Navy, China; Fangjiang Xu, Institute of Software, CAS, China

MO3.4.2 13:50 **FEATURE PRESERVING METHOD FOR CREATING VISUAL APPEARANCE MODELS AND VIRTUAL VIEWS FROM COLLECTIVE IMAGES**
Michele Zanin, Claudio Andreatta, Paul Chippendale, Mauro Dalla Mura, Fabio Remondino, Fondazione Bruno Kessler, Italy

MO3.4.3 14:10 **A NOVEL SUPERVISED FEATURE SELECTION TECHNIQUE BASED ON GENETIC ALGORITHMS**
Mattia Pedergnana, University of Trento, University of Iceland, Italy; Prashanth Reddy Marpu, University of Iceland, Iceland; Mauro Dalla Mura, Fondazione Bruno Kessler, Italy; Jon Atli Benediktsson, University of Iceland, Iceland; Lorenzo Bruzzone, University of Trento, Italy

MO3.4.4 14:30 **BUILDING EXTRACTION FROM LIDAR AND AERIAL IMAGES AND ITS ACCURACY EVALUATION**
Jinfei Wang, Chuiqing Zeng, Brad Lehrbass, University of Western Ontario, Canada

MO3.4.5 14:50 **SUPERVISED RE-SEGMENTATION FOR VERY HIGH-RESOLUTION SATELLITE IMAGES**
Julien Michel, Manuel Grizonnet, Centre National d'Études Spatiales, France; Olivier Canévet, Télécom Bretagne, France

Monday, July 23 15:40 - 17:20 Room 4A
Session MO4.14 Oral

Dynamics of Earth Processes and Climate Change: Biosphere II

Session Co-Chairs: Carsten Brockmann, Brockmann Consult GmbH; Kyle McDonald, City College of New York

MO4.14.1 15:40 **LAND SURFACE ALBEDO RETRIEVAL WITHIN THE SCOPE-CM INITIATIVE**
Alessio Lattanzio, Makalumedia GmbH, Germany; Jörg Schulz, European Organisation for the Exploitation of Meteorological Satellites, Germany; Jessica Matthews, Cooperative Institute for Climate and Satellites, United States; Arata Okuyama, Japan Meteorological Agency, Japan; Bertrand Theodore, Moltek SAS, France; Kenneth R. Knapp, NOAA National Climatic Data Center, United States; Yuki Kosaka, Japan Meteorological Agency, Japan; Lothar Schueller, European Organisation for the Exploitation of Meteorological Satellites, Germany

MO4.14.2 16:00 **ANALYSIS OF WATER, HEAT AND CARBON BALANCES OVER THE SIBERIA REGION BY USING THE BIOSHERE MODEL BEAMS**
Kazuki Aiba, Takahiro Sasai, Yasushi Yamaguchi, Nagoya University, Japan

MO4.14.3 16:20 **NEW GLOBAL LAND COVER MAPPING EXERCISE IN THE FRAMEWORK OF THE ESA CLIMATE CHANGE INITIATIVE**
Sophie Bontemps, Pierre Defourny, Université Catholique de Louvain, Belgium; Carsten Brockmann, Brockmann Consult GmbH, Germany; Martin Herold, Wageningen University, Netherlands; Vasileios Kalogirou, Olivier Arino, European Space Agency, Italy

MO4.14.4 16:40 **SATELLITE DERIVED VEGETATION PHENOLOGICAL METRICS TO INDICATE THE DECLINE OF EUROPEAN FARMLAND BIRDS**
Eva Ivits, Michael Cherlet, European Commision, Joint Research Centre, Italy; Graeme Buchanan, Royal Society for the Protection of Birds, United Kingdom; Linda Olsvig-Whittaker, Israel Nature and Parks Authority, Israel

MO4.14.5 17:00 **DERIVATION OF BIOMASS COMPARTMENT MAPS FOR USE IN A GLOBAL LAND SURFACE MODEL**
Martin Thurner, Christian Beer, Max Planck Institute for Biogeochemistry, Germany; Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany; Nuno Carvalhais, Max Planck Institute for Biogeochemistry, Germany; Maurizio Santoro, Gamma Remote Sensing, Germany

Monday, July 23 15:40 - 17:20 Room 4B
Session MO4.4 Oral

Advances in High Resolution Optical Techniques

Session Chair: Michael Cathcart, Georgia Institute of Technology

MO4.4.1 15:40 **ABSOLUTE CALIBRATION OVER BI-REFLECTANCE TARGET FOR AIRBORNE AND SPACEBORNE CAMERAS**
Françoise Viallefont-Robinet, Office National d'Etudes et de Recherches Aérospatiale, France; Colin Thomas, THALES, France; Stéphanie Doz, CEAT, France; Joël Duffaut, Yannick Boucher, Office National d'Etudes et de Recherches Aérospatiale, France

MO4.4.2 16:00 **PUTTING THE USER INTO THE ACTIVE LEARNING LOOP: TOWARDS REALISTIC BUT EFFICIENT PHOTOINTERPRETATION**
Devis Tuia, EPFL Lausanne, Switzerland; Jordi Munoz-Mari, Universidad de Valencia, Spain

MO4.4.3 16:20 **IMPORTANCE-WEIGHTED MULTI-SCALE TEXTURE AND SHAPE DESCRIPTOR FOR OBJECT RECOGNITION IN SATELLITE IMAGERY**
Grant Scott, University of Missouri, United States; Derek Anderson, Mississippi State University, United States

MO4.4.4 16:40 **URBAN AREA DETECTION USING MULTIPLE KERNEL LEARNING AND GRAPH CUT**
Chao Tao, Yihua Tan, Jin-gan Yu, Jin-Wen Tian, Huazhong University of Science and Technology, China

MO4.4.5 17:00 **ADAPTIVE SPATIAL SAMPLING WITH ACTIVE RANDOM FOREST FOR OBJECT-ORIENTED LANDSLIDE MAPPING**
Andre Stumpf, Université de Strasbourg, University of Twente, France; Nicolas Lachiche, Université de Strasbourg, France; Norman Kerle, University of Twente, Netherlands; Jean-Philippe Malet, Anne Puissant, Université de Strasbourg, France

Monday, July 23 | 13:30 - 15:10 | Room 5
Session MO3.2 | Oral-Invited

Recent Advancements in POLSAR Imaging in Honor of Prof. Boerner's 75th Birthday I

Session Co-Chairs: Jakob van Zyl, NASA Jet Propulsion Laboratory; Yoshio Yamaguchi, Niigata University

MO3.2.1 13:30 **SCATTERING POWER DECOMPOSITION USING FULLY POLARIMETRIC INFORMATION**
Yoshio Yamaguchi, Gulab Singh, Sang-Eun Park, Hiroyoshi Yamada, Niigata University, Japan

MO3.2.2 13:50 **IMPROVEMENT OF ADAPTIVE-MODEL BASED DECOMPOSITION WITH POLARIZATION ORIENTATION COMPENSATION**
Motofumi Arii, Mitsubishi Space Software Co., Ltd., Japan; Jakob van Zyl, Yunjin Kim, NASA Jet Propulsion Laboratory, United States

MO3.2.3 14:10 **GENERAL POLARIMETRIC MODEL-BASED DECOMPOSITION FOR COHERENCY MATRIX**
Si-Wei Chen, Motoyuki Sato, Tohoku University, Japan

MO3.2.4 14:30 **EXTENSION OF BOERNER`S OPTIMAL POLARIZATION CONCEPT FOR ENHANCED CHARACTERIZATION OF POLARIMETRIC TARGET SCATTERING**
Ridha Touzi, Canada Centre for Remote Sensing, Canada

MO3.2.5 14:50 **DEVELOPMENT OF POL-INSAR TECHNIQUES AND APPLICATIONS ACTUAL STATUS AND THE NEXT CHALLENGES**
Irena Hajnsek, ETH Zürich / German Aerospace Center DLR, Germany; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

Monday, July 23 | 13:30 - 15:10 | Room 11
Session MO3.3 | Oral-Invited

Spaceborne Imaging Spectroscopy Missions: Updates, and Global Datasets and Products I organized by the Technical Committee

Session Chair: Karl Staenz, University of Lethbridge

MO3.3.1 13:30 **SUMMARY OF CURRENT AND FUTURE TERRESTRIAL CIVILIAN HYPERSPECTRAL SPACEBORNE SYSTEMS**
Karl Staenz, Alberta Terrestrial Imaging Centre (ATIC), Canada; Alex Held, Commonwealth Scientific and Industrial Research Organisation, Australia

MO3.3.2 13:50 **EO-1/HYPERION: NEARING TWELVE YEARS OF SUCCESSFUL MISSION SCIENCE OPERATION AND FUTURE PLANS**
Elizabeth Middleton, NASA, United States; Petya Campbell, Karl Huemmrich, Joint Center for Earth Technology, United States; Qingyuan Zhang, Universities Space Research Association, United States; Yen-Ben Cheng, Earth Resources Technology, Inc., United States; David Landis, Sigma Space Corporation, United States; Stephen Ungar, Universities Space Research Association, United States; Lawrence Ong, Nathan Pollack, Science Systems and Applications, Inc., United States

MO3.3.3 14:10 **EO-1 HYPERION CROSS AND LUNAR CALIBRATION STUDIES/ACTIVITIES**
Stephen Ungar, NASA / GESTAR, United States; Lawrence Ong, NASA SSAI, United States; Kurtis Thome, NASA Goddard Space Flight Center, United States

MO3.3.4 14:30 **THE ENVIRONMENTAL MAPPING AND ANALYSIS PROGRAM (ENMAP)- PRESENT STATUS OF PREPARATORY PHASE**
Hermann Kaufmann, Karl Segl, Theres Kuester, Christian Rogaß, German Research Centre for Geosciences (GFZ), Germany; Stefan Hofer, Kayser-Threde GmbH, Germany; Andreas Mueller, DLR German Remote Data Center, Germany; Christian Chlebek, German Aerospace Center (DLR), Germany

MO3.3.5 14:50 **DEVELOPMENT OF ALGORITHMS AND PRODUCTS FOR SUPPORTING THE ITALIAN HYPERSPECTRAL PRISMA MISSION: THE SAP4PRISMA PROJECT**
Stefano Pignatti, Consiglio Nazionale delle Ricerche IMAA, Italy; Nicola Acito, University of Pisa, Italy; Umberto Amato, Consiglio Nazionale delle Ricerche IAC, Italy; Raffaele Casa, University of Viterbo, Italy; Roberto de Bonis, University of Roma, Italy; Marco Diani, University of Pisa, Italy; Giovanni Laneve, University of Roma, Italy; Stefania Matteoli, University of Pisa, Italy; Angelo Palombo, Simone Pascucci, Filomena Romano, Federico Santini, Tiziana Simoniello, Consiglio Nazionale delle Ricerche IMAA, Italy; Cristina Ananasso, Simona Zoffoli, ASI, Italy; Giovanni Corsini, University of Pisa, Italy; Vincenzo Cuomo, Consiglio Nazionale delle Ricerche IMAA, Italy

Monday, July 23 | 15:40 - 17:20 | Room 5
Session MO4.2 | Oral-Invited

Recent Advancements in POLSAR Imaging in Honor of Prof. Boerner's 75th Birthday II

Session Co-Chairs: Jakob van Zyl, NASA Jet Propulsion Laboratory; Yoshio Yamaguchi, Niigata University

MO4.2.1 15:40 **PROSPECTS FOR OPERATIONAL USE OF AIRBORNE POLARIMETRIC SAR FOR DISASTER RESPONSE AND MANAGEMENT**
Scott Hensley, Cathleen Jones, Yunling Lou, NASA Jet Propulsion Laboratory, United States

MO4.2.2 16:00 **ON THE USE OF FULLY POLARIMETRIC RADARSAT-2 TIME-SERIES DATASETS FOR DELINEATING AND MONITORING THE SEASONAL DYNAMICS OF WETLAND ECOSYSTEM**
Eric Pottier, Cecile Marechal, Sophie Allain-Bailhache, IETR - UMR CNRS 6164, France; Stéphane Méric, Institut National des Sciences Appliquées - Rennes, France; Laurence Hubert-Moy, Samuel Corgne, COSTEL-LETG UMR CNRS 6554, France

MO4.2.3 16:20 **ON POLARIMETRIC SAR SPECKLE FILTERING**
Jong-Sen Lee, Thomas Ainsworth, Yanting Wang, Naval Research Laboratory, United States

MO4.2.4 16:40 **NEW METHOD FOR SHIP DETECTION**
Jian Yang, Wei Gao, Tsinghua University, China

MO4.2.5 17:00 **CRITICAL ASSESSMENT OF THE HISTORICAL DEVELOPMENT OF RADAR POLARIZATION TECHNOLOGY TOWARDS RADAR POLARIMETRY CULMINATING IN FULLY POLARIMETRIC-INTERFEROMETRIC SAR**
Wolfgang-Martin Boerner, Jorge Morisaki, University of Illinois at Chicago, United States

Monday, July 23 | 15:40 - 17:20 | Room 11
Session MO4.3 | Oral-Invited

Spaceborne Imaging Spectroscopy Missions: Updates, and Global Datasets and Products II organized by the Technical Committee

Session Chair: Karl Staenz, University of Lethbridge

MO4.3.1 15:40 **THE HYSPIRI DECADAL SURVEY MISSION: UPDATE ON THE MISSION CONCEPT AND SCIENCE OBJECTIVES FOR GLOBAL IMAGING SPECTROSCOPY AND MULTI-SPECTRAL THERMAL MEASUREMENTS**
Robert Green, Simon J. Hook, Elizabeth Middleton, Woody Turner, Stephen Ungar, Robert Knox, NASA Jet Propulsion Laboratory, United States

MO4.3.2 16:00 **ESA'S TECHNOLOGY DEVELOPMENTS FOR SPACEBORNE SPECTROMETERS**
G. Bazalgette, Jean-Loup Bézy, J. Callies, Umberto Del Bello, D. Lamarre, Luca Maresi, Roland Meynart, Jens Nieke, European Space Agency ESTEC, Netherlands; Bianca Hoersch, Michael Berger, M. Rast, European Space Agency ESRIN, Italy

MO4.3.3 16:20 **CURRENT STATUS OF HYPERSPECTRAL IMAGER SUITE (HISUI)**
Tsuneo Matsunaga, National Institute for Environmental Studies, Japan; Akira Iwasaki, Satoshi Tsuchida, The University of Tokyo, Japan; Jun Tanii, Japan Resources Observation System and Space Utilization Organization, Japan; Osamu Kashimura, Earth Remote Sensing Data Analysis Center, Japan; Hirokazu Yamamoto, National Institute of Advanced Industrial Science and Technology, Japan; Shuichi Rokugawa, The University of Tokyo, Japan

MO4.3.4 16:40 **RESULTS OF EVALUATION MODEL OF HYPERSPECTRAL IMAGER SUITE (HISUI)**
Jun Tanii, Japan Space Systems, Japan; Akira Iwasaki, The University of Tokyo, Japan; Takahiro Kawashima, Hitomi Inada, NEC Corporation, Japan

Monday, July 23 13:30 - 15:10 Room 12A
Session MO3.8 Oral-Invited

Active/Passive Microwave Remote Sensing of Terrestrial Snow I

Session Co-Chairs: Leung Tsang, University of Washington; Jiancheng Shi, Institute of Remote Sensing Applications, Beijing

MO3.8.1 13:30 **ALGORITHM FOR RETRIEVAL OF SNOW MASS FROM KU- AND X-BAND RADAR BACKSCATTER MEASUREMENTS**
Helmut Rott, ENVEO IT and University of Innsbruck, Austria; Thomas Nagler, Karl Voglmeier, ENVEO IT GmbH, Austria; Michael Kern, European Space Agency ESTEC, Netherlands; Giovanni Macelloni, Marco Gai, Ugo Cortesi, IFAC-CNR, Italy; Rolf Scheiber, German Aerospace Center (DLR), Germany; Irena Hajnsek, DLR-HR, Germany; Jouni Pulliainen, Finnish Meteorological Institute, Finland; Dominic Flach, eOsphere, United Kingdom

MO3.8.2 13:50 **SPATIALLY DISTRIBUTED DUAL FREQUENCY (17.2 AND 9.2 GHZ) SCATTEROMETER OBSERVATIONS OF SHALLOW TUNDRA SNOW**
Joshua King, Andrew Kasurak, Richard Kelly, Claude Duguay, University of Waterloo, Canada

MO3.8.3 14:10 **MULTIPLE SCATTERING IN RADAR REMOTE SENSING OF TERRESTRIAL SNOW FROM X-BAND TO KU BAND FOR COREH2O AND SCLP APPLICATIONS**
Xiaolan Xu, Leung Tsang, Wenmo Chang, University of Washington, United States; Simon H. Yueh, NASA Jet Propulsion Laboratory, United States

MO3.8.4 14:30 **MULTIFREQUENCY MICROWAVE RADIOMETER MEASUREMENTS OF SNOW ON LAKE ICE**
Martti Hallikainen, Matti Vaaja, Annakaisa von Lerber, Juha Kainulainen, Jaakko Seppänen, Aalto University, Finland; Juha Lemmetyinen, Finnish Meteorological Institute, Finland

MO3.8.5 14:50 **OPPORTUNITIES OF SNOW PROPERTY EXTRACTION BASED ON SINGLE AND MULTI PASS SAR INTERFEROMETRY: TANDEM-X**
Silvan Leinß, Irena Hajnsek, ETHZ Zürich, Switzerland

Monday, July 23 13:30 - 15:10 Room 12B
Session MO3.7 Oral-Invited

Data Fusion I organized by the Technical Committee

Session Co-Chairs: Fabio Pacifici, DigitalGlobe, Inc.; Jenny Q. Du, Mississippi State University

MO3.7.1 13:30 **FAST CLASSIFIED PANSHARPENING WITH SPECTRAL AND SPATIAL DISTORTION OPTIMIZATION**
Luciano Alparone, University of Florence, Italy; Bruno Aiazzi, Stefano Baronti, National Research Council of Italy, Italy; Andrea Garzelli, University of Siena, Italy

MO3.7.2 13:50 **A NOVEL SYSTEM FOR CLASSIFICATION OF IMAGE TIME SERIES WITH LIMITED GROUND REFERENCE DATA**
Begum Demir, Francesca Bovolo, Lorenzo Bruzzone, University of Trento, Italy

MO3.7.3 14:10 **FACTOR GRAPH MODELS FOR MULTISENSORY DATA FUSION: FROM LOW-LEVEL FEATURES TO HIGH LEVEL INTERPRETATION**
Aliaksei Makarau, Gintautas Palubinskas, Peter Reinartz, German Aerospace Center (DLR), Germany

MO3.7.4 14:30 **PANSHARPENING USING TOTAL VARIATION REGULARIZATION**
Xiyan He, Grenoble Institute of Technology, France; Laurent Condat, Centre National de la Recherche Scientifique / ENSICAEN / University Caen, France; Jocelyn Chanussot, Junshi Xia, Grenoble Institute of Technology, France

MO3.7.5 14:50 **COMPOSITE MULTI-ANGLE LAND-COVER CLASSIFICATION FROM MULTI-TEMPORAL VERY-HIGH SPATIAL RESOLUTION IMAGERY**
Nathan Longbotham, University of Colorado, United States; Fabio Pacifici, Chris Padwick, DigitalGlobe, Inc., United States; William J. Emery, University of Colorado, United States

Monday, July 23 15:40 - 17:20 Room 12A
Session MO4.8 Oral-Invited

Active/Passive Microwave Remote Sensing of Terrestrial Snow II

Session Co-Chairs: Leung Tsang, University of Washington; Jiancheng Shi, University of California at Santa Barbara

MO4.8.1 15:40 **EUROPEAN SPACE AGENCY CAMPAIGN ACTIVITIES IN SUPPORT OF EARTH OBSERVATION PROJECTS: EXAMPLES FOR SNOW AND ICE**
Dirk Schuettemeyer, Malcolm Davidson, Tânia Casal, Andrea Perrera, Remo Bianchi, Michael Kern, Klaus Scipal, European Space Agency, Netherlands

MO4.8.2 16:00 **DRY SNOW BACKSCATTERING SENSITIVITY ON DENSITY CHANGE FOR SWE ESTIMATION**
Nikola Besic, GIPSA-lab / Grenoble INP, France; Gabriel Vasile, GIPSA-lab / CNRS, France; Jocelyn Chanussot, GIPSA-lab / Grenoble INP, France; Srdjan Stankovic, University of Montenegro, Yugoslavia; Jean-Pierre Dedieu, LTHE / CNRS, France; Guy d'Urso, Didier Boldo, EDF R&D, France; Jean-Philippe Ovarlez, Office National d'Etudes et de Recherches Aérospatiale, France

MO4.8.3 16:20 **ENHANCING GLOBSNOW SNOW WATER EQUIVALENT RETRIEVAL METHODOLOGY BY APPLYING ACTIVE AND PASSIVE MICROWAVE OBSERVATIONS**
Kari Luojus, Jouni Pulliainen, Juha Lemmetyinen, Matias Takala, Finnish Meteorological Institute, Finland; Chris Derksen, Environment Canada, Canada; Bojan Bojkov, European Space Agency, Italy

MO4.8.4 16:40 **SYNERGY OF COREH2O SAR AND MICROWAVE RADIOMETRY TO RETRIEVE SNOW AND ICE PARAMETERS**
Juha Lemmetyinen, Pulliainen Jouni, Finnish Meteorological Institute, Finland; Helmut Rott, Thomas Nagler, ENVEO IT GmbH, Austria; Chris Derksen, Environment Canada, Canada; Claude Duguay, Richard Kelly, University of Waterloo, Canada; Giovanni Macelloni, Marco Brogioni, Institute of Applied Physics (IFAC-CNR), Italy; Michael Kern, European Space Agency, Netherlands

MO4.8.5 17:00 **MICROWAVE SNOW BACKSCATTERING MODELING BASED ON TWO-DIMENSIONAL SNOW SECTION IMAGE AND EQUIVALENT GRAIN SIZE**
Chuan Xiong, Jiancheng Shi, Institute of Remote Sensing Applications, CAS, China; Marco Brogioni, Institute of Applied Physics, National Research Council of Italy, Italy; Leung Tsang, University of Washington, United States

MO4.8.5 17:00 **OBJECTIVE CHARACTERIZATION OF SNOW MICROSTRUCTURE FOR MICROWAVE EMISSION MODELING**
Michael Durand, The Ohio State University, United States; Edward J. Kim, NASA Goddard Space Flight Center, United States; Noah Molotch, University of Colorado at Boulder, United States; Steven Margulis, University of California, Los Angeles, United States; Zoe Courville, U.S. Army Corps of Engineers, United States; Christian Mätzler, University of Bern, Switzerland

Monday, July 23 15:40 - 17:20 Room 12B
Session MO4.7 Oral-Invited

Data Fusion II organized by the Technical Committee

Session Co-Chairs: Fabio Pacifici, DigitalGlobe, Inc.; Jenny Q. Du, Mississippi State University

MO4.7.1 15:40 **AUGMENTED REALITY: FUSING THE REAL AND SYNTHETIC WORLDS**
Mauro Dalla Mura, Michele Zanin, Claudio Andreatta, Paul Chippendale, Fondazione Bruno Kessler, Italy

MO4.7.2 16:00 **HYPERSPECTRAL REMOTE SENSING IMAGE CLASSIFICATION BASED ON THE INTEGRATION OF SUPPORT VECTOR MACHINE AND RANDOM FOREST**
Peijun Du, Nanjing University, China; Junshi Xia, Jocelyn Chanussot, Xiyan He, Grenoble Institute of Technology, France

MO4.7.3 16:20 **HOW TO COMBINE TERRASAR-X AND COSMO-SKYMED HIGH-RESOLUTION IMAGES FOR A BETTER SCENE UNDERSTANDING ?**
Helene Sportouche, Institut Telecom; Telecom ParisTech; LTCI, France; Charles-Alban Deledalle, Ceremade, University Paris-Dauphine, France; Florence Tupin, Jean-Marie Nicolas, Talita Perciano, Institut Telecom; Telecom ParisTech; LTCI, France

MO4.7.4 16:40 **A REVIEW AND COMPARISON OF COMMERCIALLY AVAILABLE PAN-SHARPENING TECHNIQUES FOR HIGH RESOLUTION SATELLITE IMAGE FUSION**
Yun Zhang, Rakesh Mishra, University of New Brunswick, Canada

MO4.7.5 17:00 **FUSING SPECTRAL AND TEXTURE INFORMATION FOR COLLAPSED BUILDINGS DETECTION IN AIRBORNE IMAGE**
Liwei Li, Bing Zhang, Yuanfeng Wu, Key Laboratory of Digital Earth, Center for Earth Observation and Digital Earth, CAS, China

Monday, July 23 | 13:30 - 15:10 | Room 13A
Session MO3.12 | Oral

Biomass Estimation using L-band SAR

Session Chair: Scott Hensley, NASA Jet Propulsion Laboratory

MO3.12.1 13:30 **EFFECT OF TREE SPECIES ON PALSAR INSAR COHERENCE OVER SIBERIAN FOREST AT FROZEN AND UNFROZEN CONDITIONS**
Christian Thiel, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

MO3.12.2 13:50 **TROPICAL-FOREST VEGETATION STRUCTURE AND BIOMASS FROM SHORT-BASELINE, SINGLE-PASS, L-BAND RADAR INTERFEROMETRY**
Robert Treuhaft, Bruce Chapman, Fabio Goncalves, Scott Hensley, NASA Jet Propulsion Laboratory, United States; Joao Roberto dos Santos, National Institute for Space Research (INPE), Brazil; Paulo Graca, Instituto Nacional de Pesquisas da Amazonia, Brazil; Luciano Dutra, National Institute for Space Research (INPE), Brazil

MO3.12.4 14:30 **PLOT-LEVEL ABOVEGROUND BIOMASS ESTIMATION USING ALOS PALSAR IN GLEN AFFRIC, SCOTLAND**
Chue Poh Tan, The University of Edinburgh, United Kingdom; Iain Woodhouse, Juan Suarez, Colin Edwards, Mike Perks, Forestry Commission, United Kingdom

MO3.12.5 14:50 **ASSESSING THE IMPACT OF TERRAIN AND LAND COVER ON BIOMASS ESTIMATION USING MULTITEMPORAL L-BAND RADIOMETRY**
Don Atwood, University of Alaska Fairbanks, United States; Hans-Erik Andersen, USDA Forest Service Pacific Northwest Research Station, United States

Monday, July 23 | 13:30 - 15:10 | Room 13B
Session MO3.15 | Oral

New Satellite Missions I

Session Co-Chairs: Maurice Borgeaud, ESA/ESRIN; Shimada Masanobu, Japan Aerospace Exploration Agency

MO3.15.1 13:30 **NANOSATELLITES FOR EARTH ENVIRONMENTAL MONITORING: THE MICROMAS PROJECT**
William Blackwell, G. Allen, Christopher Galbraith, Timothy Hancock, R. Vincent Leslie, Idahosa Osaretin, L. Retherford, M. Scarito, C. Semisch, Michael Shields, M. Silver, D. Toher, K. Wight, MIT Lincoln Laboratory, United States; David Miller, Kerri Cahoy, MIT Space Systems Laboratory, United States; N. Erickson, University of Massachusetts, United States

MO3.15.2 13:50 **GEMINI: GEOSYNCHRONOUS SAR FOR EARTH MONITORING BY INTERFEROMETRY AND IMAGING**
Andrea Monti Guarnieri, Stefano Tebaldini, Fabio Rocca, Politecnico di Milano, Italy; Antoni Broquetas, Universitat Politècnica de Catalunya, Spain

MO3.15.3 14:10 **THE CYGNSS NANOSATELLITE CONSTELLATION HURRICANE MISSION**
Christopher Ruf, University of Michigan, United States; Scott Gleason, Concordia University, Canada; Zorana Jelenak, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Stephen Katzberg, South Carolina State University, United States; Aaron Ridley, University of Michigan, United States; Randall Rose, John Scherrer, Southwest Research Institute, United States; Valery Zavorotny, NOAA/Earth System Research Laboratory, United States

MO3.15.4 14:30 **TERRASAR-X2 - MISSION OVERVIEW**
Jürgen Janoth, Steffen Gantert, Wolfgang Koppe, Alexander Kaptein, Astrium Services | Geo-Information Services, Germany; Christian Fischer, Astrium GmbH, Germany

MO3.15.5 14:50 **NEW DIRECTIONS AND STUDIES FOR A US SPACEBORNE SAR MISSION**
Paul Rosen, Howard Eisen, Scott Hensley, Scott Shaffer, Louise Veilleux, NASA Jet Propulsion Laboratory, United States

Monday, July 23 | 15:40 - 17:20 | Room 13A
Session MO4.12 | Oral

Vegetation Parameter Retreival

Session Co-Chairs: Kamal Sarabandi, University of Michigan; Heather Lawrence, CESBIO

MO4.12.1 15:40 **MICROWAVE VEGETATION INDEX FROM SMOS**
Jiancheng Shi, Institute for Remote Sensing Applications, CAS, China; Yunqing Li, Institute of Remote Sensing Applications, CAS, China

MO4.12.2 16:00 **A SIMPLE ALGORITHM FOR RETRIEVAL OF THE OPTICAL THICKNESS AT L-BAND FROM SMOS DATA**
Ning Zhang, Jiancheng Shi, Guoqing Sun, Institute of Remote Sensing Applications, CAS, China; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France; Zhifeng Guo, Institute of Remote Sensing Applications, CAS, China; Heather Lawrence, Centre d'Etudes Spatiales de la Biosphère, United Kingdom

MO4.12.3 16:20 **DETERMINATION OF THE B-PARAMETER FOR SMOS AND AMSR-E VEGETATION OPTICAL DEPTH**
Jennifer Grant, European Space Agency, Netherlands; Margreet Van Marle, Richard De Jeu, Vrije Universiteit Amsterdam, Netherlands; Matthias Drusch, European Space Agency, Netherlands

MO4.12.4 16:40 **ESTIMATION OF EVAPOTRANSPIRATION IN HEIHE RIVER BASIN USING HJ-1AB DATA**
Hongwei Xu, Rui Sun, Junping Du, Beijing Normal University, China

MO4.12.5 17:00 **DETECTING A PERSISTANT WIND FIELD IN THE BOREAL CANADIAN FOREST USING POLARIMETRIC SAR AND IFSAR SIMULATIONS**
Michael Benson, Leland Pierce, Kamal Sarabandi, University of Michigan, United States

Monday, July 23 | 15:40 - 17:20 | Room 13B
Session MO4.15 | Oral

New Satellite Missions II

Session Co-Chairs: Stephen Volz, NASA-HQ; Roger L. King, Mississippi State University

MO4.15.1 15:40 **OVERVIEW OF GCOM**
Haruhisa Shimoda, Japan Aerospace Exploration Agency (JAXA), Japan

MO4.15.2 16:00 **UPCOMING AND PROSPECTIVE FIRE MONITORING MISSIONS BASED ON THE HERITAGE OF THE BIRD (BI-SPECTRAL INFRARED DETECTION) SATELLITE**
Gernot Ruecker, ZEBRIS GbR, Germany; Eckehard Lorenz, German Aerospace Center (DLR), Germany; Anja A. Hoffmann, Consultant, Germany; Dieter Oertel, German Aerospace Center (DLR), Germany; Joachim Tiemann, ZEBRIS GbR, Germany; Winfried Halle, German Aerospace Center (DLR), Germany

MO4.15.3 16:20 **SMALL OPTICAL SENSOR SATELLITE "ASNARO" AND SERIES OF SMALL EARTH OBSERVATION SATELLITES**
Takashi Fujimura, Tsunekazu Kimura, Toshiaki Ogawa, NEC Corporation, Japan

MO4.15.4 16:40 **ASSESSMENT OF THE POTENTIAL OF A HIGH SPATIAL RESOLUTION GEOSTATIONARY SYSTEM**
Jean-Philippe Gastellu-Etchegorry, Nicolas Lauret, Fabien Leclerc, Paul Roche, Eloi Grau, Centre d'Etudes Spatiales de la Biosphère (CNES-CNRS-UPS-IRD), Universite de Toulouse, France; Tiangang Yin, Centre National d'Etudes Spatiales (CNRS-UPS-IRD); Universite de Toulouse, France; Jeremy Rubio, Gérard Dedieu, Centre d'Etudes Spatiales de la Biosphère (CNES-CNRS-UPS-IRD), Universite de Toulouse, France

MO4.15.5 17:00 **PROGRESSES OF DEVELOPMENT OF CFOSAT SCATTEROMETER**
Xiaolong Dong, Di Zhu, Jintai Zhu, Tao Wang, National Space Science Center/Center for Space Science and Applied Research, CAS, China

Monday, July 23 13:30 - 15:10 Room 14A
Session MO3.5 Oral

Motion Analysis

Session Chair: Luis Gomez Chova, University of Valencia

MO3.5.1 13:30 **A NEW MOTION ERROR EXTRACTION METHOD BASED ON RCM TRAJECTORY FROM RAW DATA FOR MOTION COMPENSATION**
Yang Gao, Weidong Yu, Robert Wang, Xiaoxue Jia, Yunhua Luo, Institute of Electronics, CAS, China

MO3.5.2 13:50 **MOTION ESTIMATION AND FOCUSING OF SHIPS IN TERRASAR-X DATA USING FRFT**
Yicheng Jiang, Harbin Institute of Technology, China; Yun Zhang, German Aerospace Center (DLR) / Harbin Institute of Technology, China

MO3.5.3 14:10 **LEARNING REDUCED MODELS FOR MOTION ESTIMATION ON LONG TEMPORAL IMAGE SEQUENCES**
Isabelle Herlin, Karim Drifi, Institut National de Recherche en Informatique et en Automatique, France

MO3.5.4 14:30 **BOOTSTRAP METHOD FOR MAXIMUM LIKELIHOOD DISPLACEMENT ESTIMATION OF GLACIERS SURFACE**
Olivier Harant, GIPSA-lab, France; Laurent Ferro-Famil, IETR, France; Michel Gay, GIPSA-lab, France; Renaud Fallourd, Emmanuel Trouvé, LISTIC, France

MO3.5.5 14:50 **A BAYESIAN APPROACH TO SPACEBORN HYPERSPECTRAL OPTICAL FLOW ESTIMATION ON DUST AEROSOLS**
Fabian E. Bachl, University of Heidelberg, Germany; Paul Fieguth, University of Waterloo, Canada; Christoph S. Garbe, University of Heidelberg, Germany

Monday, July 23 13:30 - 15:10 Room 14B
Session MO3.13 Oral-Invited

Suomi National Polar-orbiting Partnership (NPP) Overview and Sensor Data Records

Session Co-Chairs: John Furgerson, NOAA/NESDIS JPSS; Gary McWilliams, ARL JPSS

MO3.13.1 13:30 **NOAA'S JOINT POLAR SATELLITE SYSTEM AND THE NPP SATELLITE: DELIVERING THE NEXT GENERATION OF ENVIRONMENTAL EARTH OBSERVATIONS**
Mitch Goldberg, NOAA/NESDIS/Center for Satellite Applications and Research, United States; James Gleason, NASA Goddard Space Flight Center, United States; Carl Hoffman, JPSS/PRAXIS, United States; John Furgerson, NOAA/NESDIS/Joint Polar Satellite Systems, United States; Mike Haas, NOAA/NESDIS/OSD, United States

MO3.13.2 13:50 **CALIBRATION AND VALIDATION OF THE NPP SENSOR DATA RECORDS AND ENVIRONMENTAL DATA RECORDS**
Heather Kilcoyne, NOAA/NESDIS/Joint Polar Satellite Systems, United States; Ivan Csiszar, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Michael Denning, Integrity Applications Incorporated, United States; Janna Feeley, Aerospace Corporation, United States; Bruce Guenther, NOAA/NESDIS/Joint Polar Satellite Systems, United States; Carl Hoffman, Praxis, Inc, United States; Fuzhong Weng, NOAA/NESDIS/Center for Satellite Applications and Research, United States

MO3.13.3 14:10 **NATIONAL POLAR-ORBITING PARTNERSHIP (NPP) VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS) SENSOR DATA RECORD (SDR) QUALITY**
Frank De Luccia, The Aerospace Corporation, United States; Changyong Cao, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Xiaoxiong Xiong, Robert E. Wolfe, NASA Goddard Space Flight Center, United States; Hassan Oudrari, Kwofu Chiang, Sigma Space Corporation, United States; Eric Johnson, Raytheon Space and Airborne Systems, United States; Stephen Mills, Lushalan Liao, Northrop Grumman Aerospace Systems, United States; David Moyer, Kameron Rausch, The Aerospace Corporation, United States

MO3.13.4 14:30 **OPERATIONAL CALIBRATION OF NPP ADVANCED TECHNOLOGY MICROWAVE SOUNDER (ATMS)**
Fuzhong Weng, NOAA, United States

MO3.13.5 14:50 **A SUMMARY OF NPP CRIS SENSOR DATA RECORD POST-LAUNCH CALIBRATION AND VALIDATION**
Yong Han, Center for Satellite Applications and Research, NOAA, United States; Degui Gu, Northrop Grumman Aerospace Systems, United States; Dan Mooney, Massachusetts Institute of Technology / Lincoln Laboratory, United States; Joe Predina, Exelis, United States; Hank Revercomb, University of Wisconsin, United States; Deron Scott, Space Dynamics Laboratory / Utah State University, United States; Larrabee Strow, University of Maryland, Baltimore County, United States; Denis Tremblay, Science Data Processing Inc. / ERT / NOAA-STAR, United States

Monday, July 23 15:40 - 17:20 Room 14A
Session MO4.5 Oral

SAR Image Enhancement

Session Co-Chairs: Richard Bamler, German Aerospace Center - DLR; Emmanuel Trouve, Univ. of Savie France

MO4.5.1 15:40 **REMOVAL OF SCALLOPING IN SCANSAR IMAGES USING KALMAN FILTER**
Mahboob Iqbal, Jie Chen, Beihang University, China

MO4.5.2 16:00 **DESPECKING OF SAR IMAGES USING COMPRESSIVE IMAGING FRAMEWORK**
Mahboob Iqbal, Jie Chen, Beihang University, China

MO4.5.3 16:20 **AN ADAPTIVE RED-BLACK WINDOW ALGORITHM FOR SAR IMAGE SPECKLE REDUCTION**
Yi Zhang, Yawen Dang, Kuan Lin, Institute of Electronics, CAS, China

MO4.5.4 16:40 **ENHANCING SAR IMAGE FORMATION USING SUPERIMPOSED FFT**
Omar Abdul-Latif, Stephen Pennock, University of Bath, United Kingdom

MO4.5.5 17:00 **SPECKLE REDUCTION AND RESTORATION OF SYNTHETIC APERTURE RADAR DATA WITH AN ADOPTIVE MARKOV RANDOM FIELD MODEL**
Masoud Mahdianpari, University of Tehran, Iran; Mahdi Motagh, GeoForschungsZentrum Potsdam (GFZ), Germany; Vahid Akbari, University of Tromsø, Norway

Monday, July 23 15:40 - 17:20 Room 14B
Session MO4.13 Oral-Invited

Suomi National Polar-orbiting Partnership (NPP) Data Products

Session Co-Chairs: Gary McWilliams, ARL JPSS; John Furgerson, NOAA/NESDIS JPSS

MO4.13.1 15:40 **SUOMI NATIONAL POLAR-ORBITING PARTNERSHIP: VERIFICATION AND EARLY OPERATIONS FOR THE OZONE MAPPING AND PROFILE SUITE**
Lawrence Flynn, NOAA, United States; Didier Rault, NASA, United States; Glen Jaross, Science Systems and Applications, Inc., United States; Irina Petropavlovskikh, Craig Long, NOAA, United States; Eric Beach, I.M. Systems Group, Inc., United States; Wei Yu, Jianguo Niu, Earth Resources Technology, Inc., United States; Dustin Swales, I.M. Systems Group, Inc., United States; Chunhui Pan, Cooperative Institute for Climate Studies, United States; Xiangqian Wu, NOAA, United States

MO4.13.2 16:00 **TACKLING THE HYDRA, VALIDATION OF THE IMAGERY ENVIRONMENTAL DATA RECORD (EDR) AND CLOUD MASK**
Thomas Kopp, Aerospace Corporation, United States; Donald Hillger, Andrew Heidinger, NOAA/NESDIS/Center for Satellite Applications and Research, United States

MO4.13.3 16:20 **SST FROM NPP/VIIRS**
Alexander Ignatov, NESDIS/STAR, United States; Peter Minnett, Robert Evans, U.Miami/RSMAS, United States; Doug May, NAVOCEANO, United States; Robert Arnone, Naval Research Laboratory, United States; John Stroup, NOAA/NESDIS & STC, United States; John Sapper, NESDIS/OSPO, United States; Sid Jackson, NGAS, United States; Pierre LeBorgne, Meteo-France, United States; Xingming Liang, NESDIS/STAR and CSU/CIRA, United States; Boris Petemko, NESDIS/STAR and RSTI, United States; Prasanjit Dash, NESDIS/STAR and CSU/CIRA, United States; Yury Kihai, NESDIS/STAR and RSTI, United States; Marouan Bouali, NESDIS/STAR and CSU/CIRA, United States; Feng Xu, NESDIS/STAR and IAI, United States; Korak Saha, NESDIS/STAR and CSU/CIRA, United States

MO4.13.4 16:40 **OCEAN COLOR PRODUCTS FROM VISIBLE INFARED IMAGER RADIOMETER SUITE (VIIRS)**
Robert Arnone, Naval Research Laboratory, United States; Giulietta Fargion, CHORES, United States; Menghua Wang, STAR, United States; Paul Martinolich, QinetiQ Corp, United States; Curt Davis, Oregon State University, United States; Charles Trees, NURC, Italy; Sherwin Ladner, Adam Lawson, Naval Research Laboratory, United States; Giuseppe Zibordi, European Commision, Joint Research Centre, Italy; ZhongPing Lee, University of Massachusetts Boston, United States; Michael Ondrusek, NOAA/NESDIS, United States; Samuel Almed, The City College of New York, United States

MO4.13.5 17:00 **JOINT POLAR SATELLITE SYSTEM (JPSS) CROSS-TRACK INFRARED MICROWAVE SOUNDING SUITE (CRIMSS) ENVIRONMENTAL DATA RECORD VALIDATION STATUS**
Nicholas Nalli, IMSG, Inc., United States; Christopher Barnet, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Murty Divakarla, IMSG, Inc., United States; Lihang Zhou, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Degui Gu, Northrop Grumman Aerospace Systems, United States; Xu Liu, Susan Kizer, NASA Langely Research Center, United States; Antonia Gambacorta, Riverside Technology, Inc, United States; Xiaozhen Xiong, IMSG, Inc., United States; Guang Guo, Riverside Technology, Inc., United States; Tony Reale, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Michael Wilson, IMSG, Inc., United States; Dave Tobin, University of Wisconsin-Madison, United States; William Blackwell, MIT Lincoln Laboratory, United States; Everette Joseph, Vernon Morris, Howard University, United States

Monday, July 23 | 13:30 - 15:10 | Room 14C
Session MO3.1 | Oral

Bistatic SAR I

Session Co-Chairs: Gerhard Krieger, German Aerospace Center - DLR; Marc Rodriguez-Cassola, German Aerospace Center - DLR

MO3.1.1 13:30 **UNEXPECTED HEIGHT OFFSETS IN TANDEM-X: EXPLANATION AND CORRECTION**
Gerhard Krieger, Francesco de Zan, Markus Bachmann, Jaime Hueso Gonzalez, Marc Rodríguez-Cassolà, Manfred Zink, German Aerospace Center (DLR), Germany

MO3.1.2 13:50 **ACCOUNTING FOR AZIMUTH AMBIGUITIES IN INTERFEROMETRIC PERFORMANCE ANALYSIS**
Michelangelo Villano, Gerhard Krieger, German Aerospace Center (DLR), Germany

MO3.1.3 14:10 **TESTS OF THE TANDEM-X DEM CALIBRATION PERFORMANCE**
Jaime Hueso Gonzalez, John Walter Antony, Markus Bachmann, Gerhard Krieger, Marco Schwerdt, Manfred Zink, German Aerospace Center (DLR), Germany

MO3.1.4 14:30 **APPLYING THE TANDEM-X WATER INDICATION MASK FOR DEM EDITING**
Anna Wendleder, Markus Breunig, Birgit Wessel, Achim Roth, German Aerospace Center (DLR), Germany

MO3.1.5 14:50 **ANALYSIS OF METHODS FOR RECONSTRUCTING PERIODICALLY MISSED SAR DATA ACQUIRED CLOSE TO NYQUIST**
Muriel Pinheiro, Marc Rodríguez-Cassolà, Pau Prats-Iraola, Andreas Reigber, German Aerospace Center (DLR), Germany

Monday, July 23 | 13:30 - 15:10 | Room 21A
Session MO3.11 | Oral-Invited

Tropical Rainfall Measuring Mission

Session Chair: Chandrasekar.V Chandra, Colorado State University

MO3.11.1 13:30 **CHARACTERIZATION OF PRECIPITATION SYSTEMS USING TRMM/PR AND CLOUDSAT DATA**
Nobuhiro Takahashi, Hiroaki Horie, Yuichi Ohno, Toshio Iguchi, National Institute of Information and Communications Technology, Japan

MO3.11.2 13:50 **EVALUATION OF EXTREMELY HEAVY RAIN RATES IN THE TRMM PR VERSION 7 PRODUCT**
Shinta Seto, University of Tokyo, Japan; Toshio Iguchi, National Institute of Information and Communications Technology, Japan; Masashi Kiguchi, Nobuyuki Utsumi, Taikan Oki, University of Tokyo, Japan

MO3.11.3 14:10 **TRMM VERSION 7 NEAR-REALTIME DATA PRODUCTS**
Erich Stocker, NASA Goddard Space Flight Center, United States; Owen Kelley, George Mason University, United States

MO3.11.4 14:30 **ANNUAL PRECIPITATION ASSESSMENT IN THE BRAZILIAN SAVANNA (2000 - 2010) BASED ON TRMM SATELLITE DATASET AT THE SCALE OF REGIONAL WATERSHEDS**
Manuel Ferreira, Laerte Ferreira, Daniela Silva, Federal University of Goiás, Brazil

MO3.11.5 14:50 **RECENT UPDATES ON PRECIPITATION TYPE CLASSIFICATION AND HYDROMETEOR IDENTIFICATION ALGORITHM FOR GPM-DPR**
Minda Le, Venkatachalam Chandrasekar, Colorado State University, United States

Monday, July 23 | 15:40 - 17:20 | Room 14C
Session MO4.1 | Oral

Bistatic SAR II

Session Co-Chairs: Francisco Lopez-Dekker, German Aerospace Center - DLR; Marc Rodriguez-Cassola, German Aerospace Center - DLR

MO4.1.1 15:40 **BISTATIC P-BAND SAR SIGNATURES OF FORESTS AND VEHICLES**
Lars M.H. Ulander, Per-Olov Frölind, Anders Gustavsson, Gunnar Stenström, Swedish Defence Research Agency, Sweden

MO4.1.2 16:00 **LOW FREQUENCY BISTATIC SAR MEASUREMENTS**
Anders Gustavsson, Lars M.H. Ulander, Björn Flood, Per-Olov Frölind, Tommy Jonsson, Björn Larsson, Daniel Murdin, Rolf Ragnarsson, Johan Rasmusson, Gunnar Stenström, Swedish Defence Research Agency, Sweden

MO4.1.3 16:20 **A NEW TRAJECTORY-BASED POLAR FORMAT ALGORITHM FOR BISTATIC SAR**
Yan Wang, Jingwen Li, Jie Chen, Huaping Xu, Bing Sun, Beihang University, China

MO4.1.4 16:40 **ATTITUDE MEASUREMENT ERRORS IN BISTATIC SAR**
Joseph Gauthier, Andrew Dempster, University of New South Wales, Australia

MO4.1.5 17:00 **RADAR IMAGING WITH VERY LOW GRAZING ANGLES IN A BISTATIC FORWARD-LOOKING CONFIGURATION**
Ingo Walterscheid, Andreas R. Brenner, Jens Klare, Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Germany

Monday, July 23 | 15:40 - 17:20 | Room 21A
Session MO4.11 | Oral

Global Precipitation Measurement (GPM) Mission

Session Co-Chairs: Shinta Seto, University of Tokyo; Gail Skofronick-Jackson, NASA Goddard Space Flight Center

MO4.11.1 15:40 **GPM MISSION OVERVIEW AND U.S. SCIENCE STATUS**
Arthur Hou, Ardeshir Azarbarzin, Gail Skofronick-Jackson, Candace Carlisle, NASA Goddard Space Flight Center, United States

MO4.11.2 16:00 **A NEW DUAL-FREQUENCY RETRIEVAL ALGORITHM FOR THE GPM/DPR**
Shinta Seto, University of Tokyo, Japan; Toshio Iguchi, National Institute of Information and Communications Technology, Japan; Taikan Oki, University of Tokyo, Japan

MO4.11.3 16:20 **DEVELOPMENT OF PRECIPITATION RETRIEVAL ALGORITHM OVER LAND FOR A SATELLITE-BORNE MICROWAVE SOUNDER**
Satoshi Kida, Takuji Kubota, Misako Kachi, Japan Aerospace Exploration Agency (JAXA), Japan; Shoichi Shige, Kyoto University, Japan; Riko Oki, Japan Aerospace Exploration Agency (JAXA), Japan

MO4.11.4 16:40 **DUAL-FREQUENCY DUAL-POLARIZED DOPPLER RADAR (D3R) SYSTEM FOR GPM GROUND VALIDATION: UPDATE AND RECENT FIELD OBSERVATIONS**
Venkatachalam Chandrasekar, Colorado State University, United States; Mathew Schwaller, NASA Goddard Space Flight Center, United States; Manuel Vega, Colorado State University / NASA Goddard Space Flight Center, United States; James Carswell, Remote Sensing Solutions GmbH, United States; Kumar Vijay Mishra, Alex Steinberg, Cuong Nguyen, Minda Le, Joseph Hardin, Francesc Junyent, Jim George, Colorado State University, United States

MO4.11.5 17:00 **DEVELOPMENT OF CLOUD LIQUID WATER DATABASE USING GLOBAL CLOUD-SYSTEM RESOLVING MODEL FOR GPM/DPR ALGORITHM**
Takuji Kubota, Japan Aerospace Exploration Agency (JAXA), Japan; Masaki Satoh, University of Tokyo, Japan; Tomoe Nasuno, Japan Agency for Marine-Earth Science and Technology, Japan; Shinta Seto, University of Tokyo, Japan; Toshio Iguchi, National Institute of Information and Communications Technology, Japan; Riko Oki, Japan Aerospace Exploration Agency (JAXA), Japan

Monday, July 23 13:30 - 15:10 Room 21B
Session MO3.16 Oral-Invited

Applications of Infrared Imaging of Air-Water Interfaces

Session Chair: Andrew Jessup, University of Washington

MO3.16.1 13:30 **FROM SUBMESOSCALE OCEAN EDDIES TO LABORATORY-SCALE TURBULENCE**
Geoffrey Smith, George Marmorino, Naval Research Laboratory, United States

MO3.16.2 13:50 **INVESTIGATION OF SMALL-SCALE AIR-SEA INTERACTION PROCESSES BY ACTIVE THERMOGRAPHY**
Bernd Jaehne, Leila Nagel, University of Heidelberg, Germany

MO3.16.3 14:10 **RIVER SURFACE FLOW AND TURBULENCE FROM THERMAL IMAGING**
Chris Chickadel, Alexander Horner-Devine, University of Washington, United States; Stefan Talke, Portland State University, United States; Andrew Jessup, University of Washington, United States

MO3.16.4 14:30 **OCEAN SKIN TEMPERATURE VARIABILITY DURING SUPPRESSED AND ACTIVE PHASES OF AN MJO USING AIRBORNE INFRARED IMAGERY**
Chris Zappa, Columbia University, United States

MO3.16.5 14:50 **APPLICATIONS OF DIRECT NUMERICAL SIMULATIONS TO INTERFACIAL PROBLEMS**
Robert Handler, Texas A&M University, United States

Monday, July 23 13:30 - 15:10 Room 22A
Session MO3.9 Oral-Invited

Remote Sensing of Sea Surface Salinity I

Session Co-Chairs: Simon Yueh, NASA Jet Propulsion Laboratory; David LeVine, NASA Goddard Space Flight Center

MO3.9.1 13:30 **EARLY EVALUATIONS OF THE AQUARIUS SALINITY MEASUREMENT ACCURACY**
Gary Lagerloef, Hsun-Ying Kao, Earth and Space Research, United States

MO3.9.2 13:50 **AQUARIUS RADIOMETER PERFORMANCE: EARLY ON-ORBIT CALIBRATION AND RESULTS**
Jeffrey Piepmeier, David LeVine, NASA Goddard Space Flight Center, United States; Simon H. Yueh, NASA Jet Propulsion Laboratory, United States; Frank Wentz, Remote Sensing Systems, United States; Christopher Ruf, University of Michigan, United States

MO3.9.3 14:10 **COMPARISONS OF AQUARIUS MEASUREMENTS OVER OCEANS WITH RADIATIVE TRANSFER MODELS AT L-BAND**
Emmanuel Dinnat, Chapman University/ NASA-GSFC, United States; David Le Vine, NASA Goddard Space Flight Center, United States; Saji Abraham, Wyle Information Systems, LLC, NASA Goddard Space Flight Center, United States; Paolo de Matthaeis, Cuneyt Utku, Universities Space Research Association / NASA Goddard Space Flight Center, United States

MO3.9.4 14:30 **THE AQUARIUS SALINITY RETRIEVAL ALGORITHM**
Thomas Meissner, Frank Wentz, Kyle Hilburn, Remote Sensing Systems, United States; Gary Lagerloef, Earth and Space Research, United States; David Le Vine, NASA Goddard Space Flight Center, United States

MO3.9.5 14:50 **ROUGHNESS CORRECTION FOR AQUARIUS SALINITY RETRIEVAL**
Shannon T. Brown, Sidharth Misra, NASA Jet Propulsion Laboratory, United States

Monday, July 23 15:40 - 17:20 Room 21B
Session MO4.16 Oral-Invited

Change Detection and Multitemporal Image Analysis I

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Jordi Inglada, CESBIO-CNES

MO4.16.1 15:40 **EVALUATION OF ATMOSPHERIC CORRECTION USING PSEUDO-INVARIANT FEATURES FROM BI-TEMPORAL HYPERSPECTRAL IMAGES**
Wesley Moses, Naval Research Laboratory/ National Research Council, United States; William Philpot, Naval Research Laboratory / ASEE Senior Faculty Fellow (Cornell University), United States

MO4.16.2 16:00 **USING THE WHITTAKER SMOOTHER FOR FILTERING TIME SERIES OF SPOT-VGT DATA AND FOR DERIVING RELIABLE VEGETATION ANOMALY MAPS**
Clement Atzberger, University of Natural Resources and Life Sciences (BOKU) Vienna, Austria; Paul H.C. Eilers, Erasmus Medical Centre, Netherlands

MO4.16.3 16:20 **PARAMETER OPTIMIZATION IN THE REGULARIZED KERNEL MINIMUM NOISE FRACTION TRANSFORMATION**
Allan A. Nielsen, Jacob S. Vestergaard, Technical University of Denmark, Denmark

MO4.16.4 16:40 **CHANGE DETECTION IN MULTITEMPORAL HR SAR IMAGES: A HYPOTHESIS TEST-BASED APPROACH**
Michelle M. Horta, Universidade Federal de São Carlos, Brazil; Helene Sportouche, Nicolas Seichepine, Florence Tupin, Jean-Marie Nicolas, Institut Telecom ParisTech, France; Nelson D. A. Mascarenhas, Federal University of São Carlos, Brazil

MO4.16.5 17:00 **TIME SERIES IMAGE FUSION: APPLICATION AND IMPROVEMENT OF STARFM FOR LAND COVER MAP AND PRODUCTION**
Tiangang Yin, Jordi Inglada, Julien Osman, Centre d'Etudes Spatiales de la Biosphère (CNES-CNRS-UPS-IRD), France

Monday, July 23 15:40 - 17:20 Room 22A
Session MO4.9 Oral-Invited

Remote Sensing of Sea Surface Salinity II

Session Co-Chairs: David LeVine, NASA Goddard Space Flight Center; Simon Yueh, NASA Jet Propulsion Laboratory

MO4.9.1 15:40 **SSS RETRIEVAL FROM SPACE: AN INTERCOMPARISON STUDY USING SMOS AND AQUARIUS DATA**
Sebastien Guimbard, Jerome Gourrion, Institut de Ciencies del Mar (ICM-CSIC), Spain; Marcos Portabella, Unitat de Tecnología Marina (UTM-CSIC), Spain; Veronica Gonzalez, Antonio Turiel, Institut de Ciencies del Mar (ICM-CSIC), Spain; Joaquim Ballabrera, Unitat de Tecnología Marina (UTM-CSIC), Spain; Carolina Gabarro, Fernando Pérez, Justino Martinez, Institut de Ciencies del Mar (ICM-CSIC), Spain

MO4.9.2 16:00 **BIAS TRENDS IN BRIGHTNESS TEMPERATURES DERIVED FROM MIRAS**
Joseph Tenerelli, Collecte Localisation Satellites (CLS), France; Nicolas Reul, Institut Français de Recherche pour l'Exploitation de la Mer, France

MO4.9.3 16:20 **SEA SURFACE SALINITY AS MEASURED BY SMOS AND BY SURFACE AUTONOMOUS DRIFTERS**
Jacqueline Boutin, Nicolas Martin, Xiaobin Yin, Gilles Reverdin, Simon Morrisset, LOCEAN-IPSL-CNRS, France

MO4.9.4 16:40 **NEW DIELECTRIC MEASUREMENT DATA TO DETERMINE THE PERMITTIVITY OF SEAWATER AT 1.413 GHZ**
Roger Lang, Yiwen Zhou, The George Washington University, United States; Cuneyt Utku, David Le Vine, Cryospheric Sciences Branch / Code 614.2, United States

MO4.9.5 17:00 **SIMULTANEOUS SALINITY AND WIND RETRIEVAL USING THE CAP ALGORITHM FOR AQUARIUS**
Simon H. Yueh, Wenqing Tang, Alexander Fore, Adam Freedman, Gregory Neumann, Julian Chaubell, Akiko Hayashi, NASA Jet Propulsion Laboratory, United States

Tuesday, July 24 | 08:20 - 10:00 | Room 2
Session TU1.10 | Oral

Soil Moisture: Radar I

Session Co-Chairs: Mehmet Kurum, NASA; Wolfgang Wagner, Vienna University of Technology

TU1.10.1 08:20 **SMOSAR ALGORITHM FOR SOIL MOISTURE RETRIEVAL USING SENTINEL-1 DATA**
Anna Balenzano, Francesco Mattia, Giuseppe Satalino, Consiglio Nazionale delle Ricerche, Italy; Valentijn Pauwels, Ghent University, Belgium; Paul Snoeij, European Space Agency, Netherlands

TU1.10.2 08:40 **COSMO SKYMED AO PROJECTS -SOIL MOISTURE DETECTION FOR VEGETATION FIELDS BASED ON A MODIFIED WATER-CLOUD MODEL USING COSMO-SKYMED SAR DATA**
Soon-gu Kweon, Ji-Hwan Hwang, Yisok Oh, Hongik University, Republic of Korea

TU1.10.3 09:00 **VALIDATION OF THE ENHANCED RESOLUTION ERS-2 SCATTEROMETER SOIL MOISTURE PRODUCT**
Christoph Reimer, Thomas Melzer, Richard Kidd, Wolfgang Wagner, Vienna University of Technology, Austria

TU1.10.4 09:20 **COSMO-SKYMED AO PROJECTS – USE OF HIGH RESOLUTION SAR DATA FOR WATER RESOURCE MANAGEMENT IN SEMI ARID REGIONS**
Gerardo Di Martino, Antonio Iodice, Antonio Natale, Daniele Riccio, Giuseppe Ruello, Ivana Zinno, Università degli Studi di Napoli Federico II, Italy; Youssouf Koussoube, University of Ouagadougou, Burkina Faso; Maria Nicolina Papa, Fabio Ciervo, University of Salerno, Italy

TU1.10.5 09:40 **SOIL MOISTURE MAPPING IN PERMAFROST REGIONS – AN OUTLOOK TO SENTINEL-1**
Daniel Sabel, Annett Bartsch, Stefan Schlaffer, Jean-Pierre Klein, Wolfgang Wagner, Vienna University of Technology, Austria

Tuesday, July 24 | 10:30 - 12:10 | Room 2
Session TU2.10 | Oral

Soil Moisture: Passive Microwave

Session Co-Chairs: Brian Hornbuckle, Iowa State University; Hui Lu, Tsinghua University

TU2.10.1 10:30 **SMOS MULTI-INCIDENCE ANGLE OBSERVATIONS OVER AUSTRALIA**
Sandy Peischl, Jeffrey P. Walker, Christoph Rüdiger, Monash University, Australia; Dongryeol Ryu, The University of Melbourne, Australia; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

TU2.10.2 10:50 **AIRBORNE L-BAND RADIOMETER OBSERVATIONS OF SOIL MOISTURE IN SUPPORT OF CONVECTIVE CLOUD STUDIES**
Charles Laymon, Karthik Srinivasan, Universities Space Research Association, United States; Ashutosh Limaye, NASA, United States

TU2.10.3 11:10 **MOISTURE RETRIEVALS OF BOREAL FOREST SOIL USING HUT-2D SYNTHETIC APERTURE RADIOMETER**
Seppänen Jaakko, Kainulainen Juha, Hallikainen Martti, Aalto University, Finland

TU2.10.4 11:30 **IMPACT OF SUBSURFACE LAYERS ON SUBCANOPY SOIL MOISTURE RETRIEVAL FROM RADAR**
Alireza Tabatabaeenejad, Mariko Burgin, University of Michigan, United States; Mahta Moghaddam, University of Southern California, United States

TU2.10.5 11:50 **IMPROVED JACOBIAN FORMULATION FOR A UNIFIED MICROWAVE RADIATIVE TRANSFER MODEL: VALIDATION AND NUMERICAL RESULTS**
Miao Tian, Albin Gasiewski, University of Colorado at Boulder, United States

Tuesday, July 24 | 13:30 - 15:10 | Room 2
Session TU3.10 | Oral

Soil Moisture: Radar II

Session Co-Chairs: Claudia Notarnicola, EURAC-Institute of Applied Remote Sensing; Cuneyt Utku, NASA

TU3.10.1 13:30 **EVALUATION OF THE ASAR GM SOIL MOISTURE PRODUCT**
Marcela Doubkova, Wouter Dorigo, Alena Hegyiova, Wolfgang Wagner, Vienna University of Technology, Austria

TU3.10.2 13:50 **VEGETATION EFFECTS ON L-BAND SOIL MOISTURE RETRIEVAL – LESSONS LEARNED FROM 5 YEARS OF ALOS PALSAR OBSERVATIONS**
Christian Koyama, Karl Schneider, University of Cologne, Germany

TU3.10.3 14:10 **RETRIEVAL OF SOIL MOISTURE VARIATIONS IN AGRICULTURAL FIELDS THROUGH A NEW BAYESIAN CHANGE DETECTION APPROACH**
Claudia Notarnicola, EURAC, Italy

TU3.10.4 14:30 **A STUDY OF COMPACT POLARIMETRY FOR SATELLITE-BORNE RADAR RETRIEVAL OF SOIL MOISTURE**
Jeffrey Ouellette, Joel T. Johnson, The Ohio State University, United States; Seung-Bum Kim, Jakob Van Zyl, NASA Jet Propulsion Laboratory, United States; Mahta Moghaddam, University of Southern California, United States; Leung Tsang, University of Washington, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States

TU3.10.5 14:50 **ESTIMATING SURFACE SOIL MOISTURE OVER SAHEL USING ENVISAT RADAR ALTIMETRY**
Christophe Fatras, Université de Toulouse, France; Frédéric Frappart, Observatoire Midi-Pyrénées, France; Eric Mougin, Centre National de la Recherche Scientifique, France; Manuela Grippa, Pierre Hiernaux, Observatoire Midi-Pyrénées, France

Tuesday, July 24 | 15:40 - 17:20 | Room 2
Session TU4.10 | Oral

Soil Moisture: Algorithms and Validation

Session Co-Chairs: Charles Laymon, USDA; Maria Piles, Universitat Politècnica de Catalunya

TU4.10.1 15:40 **ASSIMILATION OF PASSIVE AND ACTIVE MICROWAVE SOIL MOISTURE RETRIEVALS**
Clara Draper, Rolf Reichle, Gabriëlle De Lannoy, Qing Liu, NASA Goddard Space Flight Center, United States

TU4.10.2 16:00 **THE POTENTIAL OF THE COSMOS NETWORK TO BE A SOURCE OF NEW SOIL MOISTURE INFORMATION FOR SMOS AND SMAP**
Brian Hornbuckle, Samantha Irvin, Iowa State University, United States; Trenton Franz, Rafael Rosolem, Chris Zweck, University of Arizona, United States

TU4.10.3 16:20 **RETRIEVAL OF SPECTRAL SOIL ALBEDOS FROM AN ANALYSIS OF TIME SERIES OF MODIS AND SEVIRI DATA SETS OVER FRANCE**
Siliang Liu, Jean-Louis Roujean, Météo-France, France; Armel Thibaut Kaptue Tchuente, South Dakota State University, United States; Dominique Carrer, Marie Parrens, Jean-Christophe Calvet, Météo-France, France

TU4.10.4 16:40 **A DOWNSCALING APPROACH TO COMBINE SMOS MULTI-ANGULAR AND FULL-POLARIMETRIC OBSERVATIONS WITH MODIS VIS/IR DATA INTO HIGH RESOLUTION SOIL MOISTURE MAPS**
María Piles, Mercè Vall-llossera, Laia Laguna, Adriano Camps, Universitat Politècnica de Catalunya, Spain

TU4.10.5 17:00 **ESTIMATION OF SOIL MOISTURE DYNAMICS USING A RECURRENT DYNAMIC LEARNING NEURAL NETWORK**
Yu-Chang Tzeng, K. T. Fan, C. Y. Lin, Y. J. Lee, National United University, Taiwan; Kun-Shan Chen, National Central University, Taiwan

Tuesday, July 24 | 08:20 - 10:00 | Room 3
Session TU1.6 | Oral-Invited

Radar Remote Sensing of Land: A Session in Honor of Prof. Fawwaz Ulaby I

Session Chair: Kamal Sarabandi, University of Michigan

TU1.6.1 08:20 **SUBSURFACE TOPOGRAPHY MAPPING IN DESERTS USING TWO FREQUENCY SAR INTERFEROMETRY**
Kamal Sarabandi, The University of Michigan, United States

TU1.6.2 08:40 **MODEL ANALYSIS AND EXPERIMENTAL INVESTIGATIONS OF X-BAND BACKSCATTERING SENSITIVITY TO SNOWPACK CHARACTERISTICS**
Marco Brogioni, Institute of Applied Physics, Italy; Chuan Xiong, IFAC-CNR and IRSA, China; Paolo Pampaloni, Institute of Applied Physics, National Research Council of Italy, Italy; Simone Pettinato, Simonetta Paloscia, IFAC-CNR, Italy; Jianchen Shi, Institute of Remote Sensing Applications, CAS, China

TU1.6.3 09:00 **RADAR MEASUREMENT OF SOIL MOISTURE: FROM PROFESSOR FAWWAZ ULABY'S PIONEERING WORKS IN THE EARLY 1970S TO ITS CURRENT STATUS**
Yisok Oh, Hongik University, Republic of Korea

TU1.6.4 09:20 **BOREAL FOREST TREE HEIGHT ESTIMATION FROM INTERFEROMETRIC TANDEM-X IMAGES**
Jaan Praks, Martti Hallikainen, Aalto University, Finland; Oleg Antropov, VTT Technical Research Centre of Finland, Finland; Daniel Molina Hurtado, Aalto University, Finland

TU1.6.5 09:40 **THE IMPORTANCE OF MIMCS**
Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

Tuesday, July 24 | 10:30 - 12:10 | Room 3
Session TU2.6 | Oral-Invited

Radar Remote Sensing of Land: A Session in Honor of Prof. Fawwaz Ulaby II

Session Chair: Kamal Sarabandi, University of Michigan

TU2.6.1 10:30 **MIMO RADAR WITH OFDM CODING**
Werner Wiesbeck, Karlsruhe Institute of Technology (KIT), Germany

TU2.6.2 10:50 **MILLIMETER-WAVE SCATTERING FROM DRY SAND-COVERED SURFACES**
Adib Nashashibi, Kamal Sarabandi, University of Michigan, United States

TU2.6.3 11:10 **ADVANCES IN RADAR FORWARD AND INVERSE SCATTERING MODELS OF SUBSURFACE AND SUBCANOPY SOIL MOISTURE AND THEIR ROLE FOR THE AIRMOSS MISSION**
Mahta Moghaddam, University of Southern California, United States; Alireza Tabatabaeenejad, Mariko Burgin, University of Michigan, United States; Xueyang Duan, University of Southern California, United States

TU2.6.4 11:30 **COMBINED ACTIVE AND PASSIVE MICROWAVE REMOTE SENSING OF BARE SOILS AT L-BAND BASED ON NUMERICAL MAXWELL MODEL IN 3-DIMENSIONAL SIMULATIONS (NMM3D)**
Shaowu Huang, University of Washington, United States; Peng Xu, Wuhan University, China; Leung Tsang, University of Washington, United States; Jiancheng Shi, University of California, United States; Eni Njoku, California Institute of Technology, United States; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

TU2.6.5 11:50 **A MULTIPLE-SCATTERING EFFECTIVE ALBEDO FORMULATION AT L-BAND**
Mehmet Kurum, Peggy O'Neill, NASA Goddard Space Flight Center, United States; Roger Lang, The George Washington University, United States

Tuesday, July 24 | 13:30 - 15:10 | Room 3
Session TU3.6 | Oral-Invited

Millimeter and Sub-Millimeter Wave Radiometry I organized by the Technical Committee

Session Co-Chairs: Darren McKague, University of Michigan; Andreas Colliander, NASA Jet Propulsion Laboratory

TU3.6.1 13:30 **AN OVERVIEW OF MILLIMETER AND SUB-MILLIMETER WAVE RADIOMETRY**
Darren McKague, University of Michigan, United States; Andreas Colliander, NASA Jet Propulsion Laboratory, United States

TU3.6.2 13:50 **SUBMILLIMETRE-WAVE RECEIVER DEVELOPMENTS FOR ICI ONBOARD METOP-SG AND ICE CLOUD REMOTE SENSING INSTRUMENTS**
Bertrand Thomas, Michael Brandt, Achim Walber, Martin Philipp, Hugh Gibson, Harald Czekala, Thomas Rose, Radiometer Physics GmbH, Germany; Ville Kangas, European Space Agency ESTEC, Netherlands

TU3.6.3 14:10 **THE STEAMR INSTRUMENT**
Anders Emrich, Urban Frisk, Peter Sobis, Omnisys Instruments AB, Sweden; Axel Murk, Mark Whale, University of Bern, Switzerland; Johan Embretsen, Kalle Kempe, Stefan Andersson, Arvid Hammar, Christina Emrich, Omnisys Instruments AB, Sweden

TU3.6.4 14:30 **MICRO-MACHINED RECEIVERS FOR SUB-MILLIMETRE WAVE RADIOMETRY**
Simon Rea, Manju Henry, Hui Wang, Byron Alderman, Brian Moyna, Brian Ellison, STFC Rutherford Appleton Laboratory, United Kingdom; Peter de Maagt, ESTEC, European Space Agency, Netherlands

TU3.6.5 14:50 **INITIAL RESULTS FROM THE GEOSTAR-II LABORATORY DEMONSTRATOR**
Boon Lim, Todd Gaier, Pekka Kangaslahti, Bjorn Lambrigtsen, Alan B. Tanner, NASA Jet Propulsion Laboratory, United States

Tuesday, July 24 | 15:40 - 17:20 | Room 3
Session TU4.6 | Oral-Invited

Millimeter and Sub-Millimeter Wave Radiometry II organized by the Technical Committee

Session Co-Chairs: Andreas Colliander, NASA Jet Propulsion Laboratory; Darren McKague, University of Michigan

TU4.6.1 15:40 **DEVELOPMENT AND DEMONSTRATION OF LOW-MASS, LOW-POWER, MMIC-BASED MILLIMETER-WAVE RADIOMETERS WITH INTERNAL CALIBRATION AT 90, 130 AND 166 GHZ**
Steven C. Reising, Colorado State University, United States; Pekka Kangaslahti, Shannon T. Brown, Douglas Dawson, NASA Jet Propulsion Laboratory, United States; Darrin Albers, Alexander Lee, Colorado State University, United States; Oliver Montes, Daniel Hoppe, Behrouz Khayatian, Todd Gaier, Alan B. Tanner, Chaitali Parashare, Sharmila Padmanabhan, NASA Jet Propulsion Laboratory, United States; Xavier Bosch-Lluis, Kyle Gilliam, Scott Nelson, Colorado State University, United States

TU4.6.2 16:00 **SUB-MM LIMB OBSERVATION OF STRATOSPHERE AND MESOSPHERE USING ISS/JEM/SMILES**
Makoto Suzuki, Japan Aerospace Exploration Agency (JAXA), Japan; Ken-ichi Kikuchi, Satoshi Ochiai, National Institute of Information and Communications Technology, Japan; Toshiyuki Nishibori, Japan Aerospace Exploration Agency (JAXA), Japan; Hiroyuki Ozeki, Toho University, Japan; Satoko Mizobuchi, Takuki Sano, Japan Aerospace Exploration Agency (JAXA), Japan; Chihiro Mitsuda, Chikako Takahashi, Fujitsu FIP, Japan; Koji Imai, Tome R&D Inc., Japan; Naohiro Manago, Chiba University, Japan; Yoko Naito, Hiroo Hayashi, Masato Shiotani, Kyoto University, Japan

TU4.6.3 16:20 **TANGENT HEIGHT ACCURACY OF SUPERCONDUCTING SUBMILLIMETER-WAVE LIMB-EMISSION SOUNDER (SMILES) ON INTERNATIONAL SPACE STATION (ISS)**
Satoshi Ochiai, National Institute of Information and Communications Technology, Japan; Toshiyuki Nishibori, Japan Aerospace Exploration Agency (JAXA), Japan; Ken-Ichi Kikuchi, National Institute of Information and Communications Technology, Japan; Satoko Mizobuchi, Japan Aerospace Exploration Agency (JAXA), Japan; Takeshi Manabe, Osaka Prefecture University, Japan; Chihiro Mitsuda, Fujitsu FIP Corporation, Japan; Philippe Baron, National Institute of Information and Communications Technology, Japan; Shiro Ueno, Japan Aerospace Exploration Agency (JAXA), Japan

TU4.6.4 16:40 **THE CLOUD AND PRECIPITATION AIRBORNE RADIOMETER - POPULATING THE INTERNATIONAL SUB-MILLIMETRE AIRBORNE RADIOMETER**
Eric Pritchard, SEA, United Kingdom; Clare Lee, Met Office, United Kingdom; Brian Moyna, Rutherford Appleton Laboratory, United Kingdom; Martin Philipp, Radiometer Physics GmbH, Germany; Janet Charlton, JCR Systems Ltd., United Kingdom; Ville Kangas, European Space Agency, Netherlands

TU4.6.5 17:00 **MARSCHALS MILLIMETRE WAVE LIMB SOUNDER - HISTORY AND FUTURE DEVELOPMENT**
Brian Moyna, Matthew Oldfield, Simon Rea, Daniel Gerber, Brian J. Kerridge, Brian Ellison, Rutherford Appleton Laboratory, United Kingdom; Ville Kangas, Dirk Schüttemeyer, European Space Agency, Netherlands

Tuesday, July 24 | 08:20 - 10:00 | Room 4A
Session TU1.14 | Oral

DInSAR Applications

Session Co-Chairs: Scott Hensley, NASA Jet Propulsion Laboratory; Andreas Reigber, German Aerospace Center - DLR

TU1.14.1 08:20 **LANDSLIDE MONITORING WITH SPOTLIGHT TERRASAR-X DATA**
Rubén Iglésias, Dani Monells, Giuseppe Centolanza, Jordi J. Mallorquí, Xavier Fàbregas, Albert Aguasca, Universitat Politècnica de Catalunya, Spain

TU1.14.2 08:40 **THE SIGNATURE OF THE FEB 1ST, 2010 SLOW SLIP EVENT ON THE SOUTH FLANK OF THE KILAUEA, HAWAII INFERRED FROM X-BAND TERRASAR-X INSAR IMAGES**
Jingyi Chen, Howard Zebker, Stanford University, United States

TU1.14.3 09:00 **DINSAR TECHNIQUE FOR RETRIEVING THE VOLUME OF VOLCANIC MATERIALS ERUPTED BY MERAPI VOLCANO**
Josaphat Tetuko Sri Sumantyo, Chiba University, Japan; Masanobu Shimada, Japan Aerospace Exploration Agency (JAXA), Japan; Pierre-Philippe Mathieu, ESA, Italy; Junun Sartohadi, Ratih Fitria Putri, Gadjah Mada University, Indonesia

TU1.14.4 09:20 **TERRASAR-X TIME SERIES UPLIFT MONITORING IN STAUFEN, SOUTH-WEST GERMANY**
Christin Lubitz, Mahdi Motagh, Hans-Ulrich Wetzel, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany; Jan Anderssohn, Astrium Services, Germany

TU1.14.5 09:40 **HIGH SURFACE DISPLACEMENT MONITORING WITH PERSISTENT SCATTERER INTERFEROMETRY**
Zahra Sadeghi, Mohammad Javad Valadan Zouj, Maryam Dehghani, K.N.Toosi University of Technology, Iran

Tuesday, July 24 | 10:30 - 12:10 | Room 4A
Session TU2.14 | Oral

Dynamics of Earth Processes and Climate Change: Hydrosphere

Session Chair: Christoph Rudiger, Monash University

TU2.14.1 10:30 **ASSIMILATION OF VEGETATION PARAMETERS AND SNOW COVER DERIVED FROM EO IN THE HYDROLOGICAL MODEL PROMET IN THE FRAME OF CLIMB PROJECT**
Philipp Klug, Silke Migdall, Heike Bach, VISTA GmbH, Germany

TU2.14.2 10:50 **ANALYSIS OF UNCERTAINTIES IN THE INFERENCE OF GROUNDWATER DYNAMICS FROM GRAVITY RECOVERY AND CLIMATE EXPERIMENT OBSERVATIONS OVER AUSTRALIA**
Albert van Dijk, Australian National University / CSIRO, Australia; Russell Crosbie, Jorge Pena Arancibia, Commonwealth Scientific and Industrial Research Organisation / Land and Water, Australia; Paul Tregoning, Simon McClusky, Australian National University, Australia

TU2.14.4 11:30 **TOWARDS A GLOBAL LONG TERM DATA SET OF HIGH ESOLUTION LAND SURFACE HEAT FLUX ESTIMATIONS UTILIZING GEOSTATIONARY SATELLITE DATA**
Michael Borsche, Alexander Loew, Max Planck Institute for Meteorology, Germany

TU2.14.5 11:50 **COMPARISONS OF WRF AND GLDAS PRECIPITATION PRODUCTS IN THE HEIHE RIVER BASIN**
Yuting Hou, Lanzhou University, China; Zhuotong Nan, Chinese Academy of Sciences, China

Tuesday, July 24 | 13:30 - 15:10 | Room 4A
Session TU3.14 | Oral

Dynamics of Earth Processes and Climate Change: Atmosphere

Session Co-Chairs: Luca Baldini, CNR - National Research Council of Italy; Albano Gonzalez, Unversidad de La Laguna

TU3.14.1 13:30 **ESTIMATING DIRECT NORMAL IRRADIANCE FROM SATELLITE DATA**
Prashanth Reddy Marpu, Yehia Eissa, Imen Gherboudj, Taha B. M. J. Ouarda, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

TU3.14.2 13:50 **EVALUATION AND INTERCOMPARISON OF THE ATMOSPHERIC CO2 RETRIEVALS FROM MEASUREMENTS OF AIRS, IASI, SCIAMACHY AND GOSAT**
Tianxing Wang, Jiancheng Shi, Yingying Jing, Institute of Remote Sensing Applications, CAS, China

TU3.14.3 14:10 **ANALYSIS THE SPATIAL DISTRIBUTION AND TEMPORAL CHANGE OF SO2 USING SCIAMACHY PRODUCTS AND GROUND-BASED DATA IN CHINA**
Chunyan Zhou, Ministry of Environmental Protection, China

TU3.14.4 14:30 **EVALUATION OF THE EFFECT OF SOIL MOISTURE AND WIND SPEED ON DUST EMISSION USING AERONET, SEVIRI, SOIL MOISTURE AND WIND SPEED DATA**
Sagar Parajuli, Imen Gherboudj, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

TU3.14.5 14:50 **THE EXTRACTION OF METHANE SOURCES OVER THE GLOBAL AREA USING SATELLITE DATA**
Jonggeol Park, Sooyoung Park, Ippei Harada, Tokyo University of Information Sciences, Japan; Youngjoo Kwak, PWRI, Japan; Eiji Nunohiro, Tokyo University of Information Sciences, Japan

Tuesday, July 24 | 15:40 - 17:20 | Room 4A
Session TU4.14 | Oral

Dynamics of Earth Processes and Climate Change: Disasters and Hazards I

Session Co-Chairs: Gaetana Ganci, Istituto Nazionale di Geofisica e Vulcanologia; Eric Fielding, NASA Jet Propulsion Laboratory

TU4.14.1 15:40 **INSAR TIME SERIES SUGGEST CORRELATED VOLCANO DEFORMATION AT THE CAMPANIAN MAGMATIC ARC**
Thomas R. Walter, Manoochehr Shirzaei, GFZ Potsdam, Germany

TU4.14.2 16:00 **SURFACE DEFORMATION BY 2010 ERUPTION AT SINABUNG VOLCANO IN INDONESIA USING SBAS INSAR TECHNIQUE**
Chang-Wook Lee, The University of Seoul, Republic of Korea; Zhong Lu, U.S. Geological Survey, United States; Hyung-Sup Jung, The University of Seoul, Republic of Korea; Jae-Won Choi, National Disaster Management Institute, Republic of Korea

TU4.14.3 16:20 **VOLCANIC PRODUCT DETECTION AFTER THE 2010 MERAPI ERUPTION BY USING VHR SAR DATA**
Christian Bignami, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Joel Ruch, University of Roma Tre, Italy; Marco Chini, Marco Neri, Istituto Nazionale di Geofisica e Vulcanologia, Italy

TU4.14.4 16:40 **FLOW SIMULATIONS DRIVEN BY THERMAL SATELLITE DATA FOR IMPROVING REAL-TIME LAVA FLOW HAZARD ASSESSMENTS**
Gaetana Ganci, Annalisa Cappello, Giuseppe Bilotta, Ciro Del Negro, Istituto Nazionale di Geofisica e Vulcanologia, Italy

TU4.14.5 17:00 **MULTITEMPORAL OBSERVATIONS OF TEMPERATURE DISTRIBUTIONS IN ASAMA VOLCANO CRATER USING AIRBORNE HYPERSPECTRAL SCANNERS (ARTS) (APR. 2007 TO MAR. 2010)**
Tetsuya Jitsufuchi, National Research Institute for Earth Science and Disaster Prevention, Japan

Tuesday, July 24 | 08:20 - 10:00 | Room 4B
Session TU1.4 | Oral

Hyperspectral Image Analysis

Session Co-Chairs: Melba Crawford, Purdue University; Jocelyn Chanussot, Grenoble Institute of Technology

TU1.4.1 08:20 **3-D NONLOCAL MEANS FILTER WITH NOISE ESTIMATION FOR HYPERSPECTRAL IMAGERY DENOISING**
Yuntao Qian, Yanhao Shen, Minchao Ye, Qi Wang, Zhejiang University, China

TU1.4.2 08:40 **HYPERSPECTRAL IMAGE DENOISING USING 3DWAVELETS**
Behnood Rasti, Johannes R. Sveinsson, Magnus O. Ulfarsson, Jon Atli Benediktsson, University of Iceland, Iceland

TU1.4.3 09:00 **EFFICIENT NUMERCICAL SCHEMES FOR HYPERSPECTRAL IMAGES DIFFUSION FILTERING**
Yi Wang, China University of Geosciences, China; Hichem Sahli, Vrije Universiteit Brussel, Belgium; Tao Chen, Ke Wu, China University of Geosciences, China

TU1.4.4 09:20 **AN OPERATIONAL APPROACH FOR HYPERSPECTRAL IMAGE COMPRESSION**
Qian Du, Nam Ly, James Fowler, Mississippi State University, United States

TU1.4.5 09:40 **AN AUTOMATED FINE REGISTRATION OF MULTISENSOR REMOTE SENSING IMAGERY**
Deniz Gerçek, Davut Çesmeci, M. Kemal Güllü, Alp Ertürk, Sarp Ertürk, Kocaeli University, Turkey

Tuesday, July 24 | 10:30 - 12:10 | Room 4B
Session TU2.4 | Oral

Spectral Unmixing I

Session Co-Chairs: Paul Gader, University of Florida; Antonio Plaza, University of Extremadura

TU2.4.1 10:30 **GENERALIZED BILINEAR MODEL BASED NONLINEAR UNMIXING USING SEMI-NONNEGATIVE MATRIX FACTORIZATION**
Naoto Yokoya, The University of Tokyo, Japan; Jocelyn Chanussot, Grenoble Institute of Technology, France; Akira Iwasaki, The University of Tokyo, Japan

TU2.4.2 10:50 **UNSUPERVISED NONLINEAR SPECTRAL UNMIXING BY MEANS OF NLPCA APPLIED TO HYPERSPECTRAL IMAGERY**
Giorgio Antonino licciardi, INPG, France; Xavier Ceamanos, Sylvain Douté, UJF / CNRS, France; Jocelyn Chanussot, INPG, France

TU2.4.3 11:10 **ESTIMATING THE PERCENTAGE OF LINEAR AND NONLINEAR MIXING AT THE SUBPIXEL LEVEL IN HYPERSPECTRAL IMAGING**
Ryan Close, Paul Gader, University of Florida, United States

TU2.4.4 11:30 **LANDMARK SELECTION USING HOMOGENEITY ON NONLINEAR MANIFOLDS FOR UNMIXING HYPERSPECTRAL DATA**
Junhwa Chi, Melba M. Crawford, Purdue University, United States

TU2.4.5 11:50 **ESTIMATING THE NUMBER OF ENDMEMBERS IN HYPERSPECTRAL IMAGERY WITH NEAREST NEIGHBOR DISTANCES**
Rob Heylen, Paul Scheunders, University of Antwerp, Belgium

Tuesday, July 24 | 13:30 - 15:10 | Room 4B
Session TU3.4 | Oral

Advanced Concepts in Hyperspectral Data Processing

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Jon Atli Benediktsson, University of Iceland

TU3.4.1 13:30 **HYPERSPECTRAL CODED APERTURE (HYCA): A NEW TECHNIQUE FOR HYPERSPECTRAL COMPRESSIVE SENSING**
Gabriel Martin, Hyperspectral Computing Laboratory, Spain; Jose M. Bioucas-Dias, Instituto de Telecomunicações, Portugal; Antonio Plaza, Hyperspectral Computing Laboratory, Spain

TU3.4.2 13:50 **SPARSE ENDMEMBER EXTRACTION AND DEMIXING**
Martin Ehler, Helmholtz Zentrum Muenchen, Germany; Matthew Hirn, Yale University, United States

TU3.4.3 14:10 **A NOVEL SPARSITY CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL UNMIXING**
Jianjun Liu, Zebin Wu, Zhihui Wei, Liang Xiao, Le Sun, Nanjing University of Science and Technology, China

TU3.4.4 14:30 **HYPERMIX: A NEW TOOL FOR QUANTITATIVE EVALUATION OF ENDMEMBER IDENTIFICATION AND SPECTRAL UNMIXING TECHNIQUES**
Luis-Ignacio Jimenez, Gabriel Martin, Antonio Plaza, Hyperspectral Computing Laboratory, Spain

TU3.4.5 14:50 **DEDICATED CLASSIFICATION METHOD FOR THERMAL HYPERSPECTRAL IMAGING**
Michal Shimoni, SIC-RMA, Belgium; Christiaan Perneel, Royal Military Academy, Belgium

Tuesday, July 24 | 15:40 - 17:20 | Room 4B
Session TU4.4 | Oral

Classification of Hyperspectral Data

Session Co-Chairs: Yasushi Yamaguchi, Nagoya University; Begum Demir, University of Trento

TU4.4.1 15:40 **L1-GRAPH SEMISUPERVISED LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Yanfeng Gu, Kai Feng, Harbin Institute of Technology, China

TU4.4.2 16:00 **LOCALITY-PRESERVING NONNEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Wei Li, Mississippi State University, United States; Saurabh Prasad, University of Houston, United States; James Fowler, Mississippi State University, United States; Minshan Cui, University of Houston, United States

TU4.4.3 16:20 **IMPROVED HIERARCHICAL OPTIMIZATION-BASED CLASSIFICATION OF HYPERSPECTRAL IMAGES USING SHAPE ANALYSIS**
Yuliya Tarabalka, Institut National de Recherche en Informatique et en Automatique (INRA) Sophia Antipolis Méditérranée, France; James C. Tilton, NASA Goddard Space Flight Center, United States

TU4.4.4 16:40 **NEW APPROACHES ON DIMENSIONALITY REDUCTION IN HYPERSPECTRAL IMAGES FOR CLASSIFICATION PURPOSES**
Daniele Cerra, Jakub Bieniarz, Rupert Mueller, Peter Reinartz, German Aerospace Center (DLR), Germany

TU4.4.5 17:00 **ROBUST CLASSIFICATION OF HYPERSPECTRAL IMAGES BASED ON THE COMBINATION OF SUPERVISED AND UNSUPERVISED LEARNING PARADIGMS**
Naif Alajlan, Yakoub Bazi, Haikel Hichri, Essam Othman, King Saud University, Saudi Arabia

Tuesday, July 24 08:20 - 10:00 Room 5
Session TU1.2 Oral-Invited

Advanced Methods for Polarimetric Information Extraction A

Session Co-Chairs: Ridha Touzi, Canada Center for Remote Sensing; Jong-Sen Lee, NRL

TU1.2.1 08:20 **GENERALIZED POLARIMETRIC MODEL-BASED DECOMPOSITIONS USING EXTENDED INCOHERENT SCATTERING MODELS**
Jong-Sen Lee, Thomas Ainsworth, Yanting Wang, Naval Research Laboratory, United States

TU1.2.2 08:40 **MODEL-BASED POLARIMETRIC SCATTERING DECOMPOSITION OF VEGETATED TERRAIN: ARE WE OVER-ESTIMATING THE SCATTERING FROM VEGETATION?**
Jakob van Zyl, Yunjin Kim, NASA Jet Propulsion Laboratory, United States

TU1.2.3 09:00 **SENSITIVITY STUDY OF RADAR BACKSCATTER FROM BOREAL FOREST USING DISCRETE SCATTERER MODEL**
Motofumi Arii, Mitsubishi Space Software Co., Ltd., Japan; Takuma Watanabe, Hiroyoshi Yamada, Niigata University, Japan

TU1.2.4 09:20 **EDGE DETECTION IN POLSAR IMAGERY WITH STOCHASTIC DISTANCES**
Abraão Nascimento, Renato Cintra, Universidade Federal de Pernambuco, Brazil; Michelle M. Horta, Universidade Federal de São Carlos, Brazil; Alejandro C. Frery, Universidade Federal de Alagoas - UFAL, Brazil

TU1.2.5 09:40 **BISTATIC POLARIMETRIC DECOMPOSITIONS APPLIED TO DEPOLARIZING TARGETS**
Elise Koeniguer, Nicolas Trouve, Etienne Everaere, Office National d'Etudes et de Recherches Aérospatiale, France; Antonello De Martino, LPICM, France

Tuesday, July 24 10:30 - 12:10 Room 5
Session TU2.2 Oral-Invited

Advanced Methods for Polarimetric Information Extraction B

Session Co-Chairs: Jong-Sen Lee, NRL; Ridha Touzi, Canada Center for Remote Sensing

TU2.2.1 10:30 **TWO-POINT STATISTIC OF POLARIMETRIC SAR DATA PROVIDED BY A WAVELET FRAME**
Gianfranco de Grandi, European Commision, Joint Research Centre, Italy; Richard Lucas, Aberystwyth University, United Kingdom; Alexandre Bouvet, European Commision, Joint Research Centre, Italy

TU2.2.2 10:50 **SEGMENTATION OF POLARIMETRIC SAR DATA WITH A MULTI-TEXTURE PRODUCT MODEL**
Anthony Paul Doulgeris, Stian Normann Anfinsen, Torbjørn Eltoft, University of Tromsø, Norway

TU2.2.3 11:10 **VECTOR AND MATRIX LP NORMS IN POLARIMETRIC RADAR FILTERING**
Abdourrahmane Atto, University of Savoie, Polytech Annecy-chambery, France; Grégoire Mercier, Institut Telecom, Telecom Bretagne, France; Thu Trang Le, Emmanuel Trouvé, University of Savoie, Polytech Annecy-chambery, France

TU2.2.4 11:30 **RICE SCATTERING MECHANISM ANALYSIS AND CLASSIFICATION USING POLARIMETRIC RADARSAT-2**
Yun Shao, Kun Li, Institute of Remote Sensing Applications, CAS, China; Ridha Touzi, Brian Brisco, Canada Centre for Remote Sensing, Canada; Fengli Zhang, Institute of Remote Sensing Applications, CAS, China

TU2.2.5 11:50 **COMPACT VERSUS FULL POLARIMETRIC SAR FOR OPTIMUM TARGET POLARIZATION INFORMATION EXTRACTION**
Ridha Touzi, Canada Centre for Remote Sensing, Canada

Tuesday, July 24 13:30 - 15:10 Room 5
Session TU3.2 Oral-Invited

SAR Polarimetry: Theory and Applications I

Session Co-Chairs: Carlos López-Martínez, Universitat Politècnica de Catalunya; Eric Pottier, Université de Rennes 1

TU3.2.1 13:30 **ANALYSIS OF TEXTURED POLSAR DATA BY SHANNON ENTROPY**
Torbjørn Eltoft, Anthony Paul Doulgeris, Stian Normann Anfinsen, University of Tromsø, Norway

TU3.2.2 13:50 **USING POLARIMETRIC SAR DATA TO INFER SOIL MOISTURE FROM SURFACES WITH VARYING SUBSURFACE MOISTURE PROFILES**
Uday Khankhoje, Jakob van Zyl, Yunjin Kim, Thomas Cwik, NASA Jet Propulsion Laboratory, United States

TU3.2.3 14:10 **ANALYSIS OF THE DETECTION PERFORMANCE OF COHERENT SCATTERERS IN SAR IMAGES**
Maria J. Sanjuan-Ferrer, German Aerospace Center (DLR), Germany; Irena Hajnsek, ETH Zürich, Switzerland; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

TU3.2.4 14:30 **THE POLARIMETRIC RATIO FILTER APPLIED TO POLINSAR IMAGES**
Samuel Foucher, Computer Research Institute of Montreal, Canada; Carlos López-Martínez, Universitat Politècnica de Catalunya, Spain; François Charbonneau, Canada Centre for Remote Sensing, Canada

TU3.2.5 14:50 **FUTURE PERSPECTIVES OF SAR POLARIMETRY WITH APPLICATIONS TO MULTIPARAMETER FULLY POLARIMETRIC POLSAR REMOTE SENSING & GEOPHYSICAL STRESS-CHANGE MONITORING WITH IMPLEMENTATION TO AGRICULTURE, FORESTRY & AQUA-CULTURE PLUS NATURAL DISASTER ASSESSMENT & MONITORING WITHIN THE "PACIFIC RING OF FIRE"**
Wolfgang-Martin Boerner, University of Illinois at Chicago, United States

Tuesday, July 24 15:40 - 17:20 Room 5
Session TU4.2 Oral-Invited

SAR Polarimetry: Theory and Applications II

Session Co-Chairs: Eric Pottier, Université de Rennes 1; Carlos López-Martínez, Universitat Politècnica de Catalunya

TU4.2.1 15:40 **THE NEW DUAL-TEXTURE G DISTRIBUTION FOR SINGLE-LOOK POLSAR DATA**
Salman Khan, Raffaella Guida, University of Surrey, United Kingdom

TU4.2.2 16:00 **POLSAR REGION CLASSIFIER BASED ON STOCHASTIC DISTANCES AND HYPOTHESIS TESTS**
Wagner Silva, National Institute for Space Research (INPE), Brazil; Alejandro C. Frery, Alagoas Federal University, Brazil; Corina da Costa Freitas, Sidnei J. S. Sant'Anna, National Institute for Space Research (INPE), Brazil

TU4.2.3 16:20 **MODEL EXPERIMENT OF PERMITTIVITY RETRIEVAL METHOD FOR FORESTED AREA BY USING BREWSTER'S ANGLE**
Takuma Watanabe, Hiroyoshi Yamada, Niigata University, Japan; Motofumi Arii, Mitsubishi Space Software Co., Ltd., Japan; Sang-Eun Park, Yoshio Yamaguchi, Niigata University, Japan

TU4.2.4 16:40 **SOIL MOISTURE RETRIEVAL UNDER AGRICULTURAL VEGETATION USING FULLY POLARIMETRIC SAR**
Thomas Jagdhuber, Irena Hajnsek, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Axel Bronstert, University of Potsdam, Germany

TU4.2.5 17:00 **POLARIMETRIC SCATTERING MODEL FOR METHANE BUBBLES TRAPPED IN THE ICE OF SUB-ARCTIC LAKES**
Noora Al-Kahachi, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

Tuesday, July 24 08:20 - 10:00 Room 11
Session TU1.3 Oral

Student Paper Contest I

Session Chair: Martti Hallikainen, Aalto University

TU1.3.1 08:20 **DISCRIMINATIVE GRAPHICAL MODELS FOR SPARSITY-BASED HYPERSPECTRAL TARGET DETECTION**
Umamahesh Srinivas, The Pennsylvania State University, United States; Yi Chen, The Johns Hopkins University, United States; Vishal Monga, The Pennsylvania State University, United States; Nasser Nasrabadi, U.S. Army Research Laboratory, United States; Trac Tran, The Johns Hopkins University, United States

TU1.3.2 08:40 **TEMPORAL POLSAR IMAGE SERIES EXPLOITATION WITH BINARY PARTITION TREES**
Alberto Alonso-González, Carlos López-Martínez, Philippe Salembier, Universitat Politècnica de Catalunya, Spain

TU1.3.3 09:00 **SEA SURFACE INFRARED EMISSIVITY WITH SURFACE REFLECTION**
Hongkun Li, Nicolas Pinel, Christophe Bourlier, Lunam University - University of Nantes, France

TU1.3.5 09:40 **CUBESAT-BASED DEMONSTRATOR FOR OPTICAL EARTH OBSERVATION**
Roger Jove-Casulleras, Adriano Camps, Juan Ramos, Universitat Politècnica de Catalunya, Spain

Tuesday, July 24 10:30 - 12:10 Room 11
Session TU2.3 Oral

Student Paper Contest II

Session Chair: Martti Hallikainen, Aalto University

TU2.3.1 10:30 **INTERPRETING C-BAND SEA SURFACE DEPOLARIZATION OBSERVATIONS**
Bo Wang, Télécom Bretagne, France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Alexis Mouche, Collecte Localisation Satellites (CLS), France; Grégoire Mercier, René Garello, Télécom Bretagne, France; Ming Xia He, Ocean University of China, China

TU2.3.2 10:50 **PROBABILISTIC LAND COVER CLASSIFICATION APPROACH TOWARD KNOWLEDGE-BASED SATELLITE DATA INTERPRETATIONS**
Shutaro Hashimoto, Hokkaido University, Japan; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Masahiko Onosato, Hokkaido University, Japan; Masahiro Hori, Takashi Moriyama, Japan Aerospace Exploration Agency (JAXA), Japan

TU2.3.3 11:10 **A NEW TECHNIQUE FOR DETECTING THE PRESENCE OF WEAK INTERFERING DIGITAL SIGNALS IN RADIOMETRIC NOISE**
Eric McIntyre, Albin Gasiewski, University of Colorado at Boulder, United States

TU2.3.4 11:30 **SUB-PIXEL MAPPING OF THE ALTERATION MINERALS USING ASTER DATA, A CASE STUDY FROM THE CENTRAL PART OF DEHAJ-SARDUIYEH COPPER BELT, SE KERMAN, IRAN.**
Mahdieh Hosseinjani, Majid H. Tangestani, Shiraz University, Iran

TU2.3.5 11:50 **SEMISUPERVISED NONLINEAR FEATURE EXTRACTION FOR IMAGE CLASSIFICATION**
Emma Izquierdo-Verdiguier, Luis Gómez-Chova, University of Valencia, Spain; Lorenzo Bruzzone, University of Trento, Italy; Gustavo Camps-Valls, University of Valencia, Spain

Tuesday, July 24 13:30 - 15:10 Room 11
Session TU3.3 Oral-Invited

Advanced SAR Techniques and Digital Beamforming as Honorary Session for Prof. Werner Wiesbeck A

Session Co-Chairs: Marwan Younis, German Aerospace Center - DLR; Alberto Moreira, German Aerospace Center - DLR

TU3.3.1 13:30 **TECHNOLOGY DEVELOPMENTS FOR THE NEXT GENERATION OF SPACEBORNE SAR INSTRUMENTS BASED ON DIGITAL BEAMFORMING**
Martin Suess, Michael Ludwig, European Space Agency, Netherlands; Christoph Schaefer, Astrium GmbH, Germany; Marwan Younis, German Aerospace Center (DLR), Germany

TU3.3.2 13:50 **MIMO-SAR AND THE ORTHOGONALITY CONFUSION**
Gerhard Krieger, Marwan Younis, Sigurd Huber, Federica Bordoni, Anton Patyuchenko, Jung-Hyo Kim, Piotr Laskowski, Michelangelo Villano, Tobias Rommel, Francisco Lopez-Dekker, Alberto Moreira, German Aerospace Center (DLR), Germany

TU3.3.3 14:10 **DEMONSTRATION OF MIMO RADAR ORTHOGONAL WAVEFORM MEASUREMENTS**
Kyle Stewart, Ninoslav Majurec, Joel T. Johnson, The Ohio State University, United States

TU3.3.4 14:30 **A COMPACT SUBMILLIMETER-WAVE IMAGING RADAR FOR SMALL PLATFORMS AUTONOMOUS NAVIGATION**
Kamal Sarabandi, The University of Michigan, United States

TU3.3.5 14:50 **AZIMUTH RECONSTRUCTION DEMONSTRATION USING TERRASAR-X DUAL RECEIVE ANTENNA MODE**
Jung-Hyo Kim, Marwan Younis, Pau Prats-Iraola, Gerhard Krieger, German Aerospace Center (DLR), Germany

Tuesday, July 24 15:40 - 17:20 Room 11
Session TU4.3 Oral-Invited

Advanced SAR Techniques and Digital Beamforming as Honorary Session for Prof. Werner Wiesbeck B

Session Co-Chairs: Sebastian Riegger, Astrium; Jakob van Zyl, NASA Jet Propulsion Laboratory

TU4.3.1 15:40 **TECHNOLOGY DEVELOPMENT FOR GERMANY'S NEXT GENERATION DBF SAR**
Sebastian Riegger, Astrium, Germany

TU4.3.2 16:00 **DIGITAL BEAM-FORMING RECONFIGURABLE RADAR SYSTEM DEMONSTRATOR**
Anton Patyuchenko, Tobias Rommel, Piotr Laskowski, Marwan Younis, Gerhard Krieger, German Aerospace Center (DLR), Germany

TU4.3.3 16:20 **UAVSAR PROGRAM: NEW INSTRUMENT CAPABILITIES AND PLATFORMS**
Yunling Lou, Scott Hensley, NASA Jet Propulsion Laboratory, United States; Mahta Moghaddam, University of Southern California, United States; Delwyn Moller, Remote Sensing Solutions GmbH, United States; Roger Chao, Elaine Chapin, Alexandra Chau, Brandon Heavey, Cathleen Jones, Tim Miller, NASA Jet Propulsion Laboratory, United States

TU4.3.4 16:40 **CAPABILITIES OF THE TELAER AIRBORNE SAR SYSTEM UPGRADED TO THE MULTI-ANTENNA MODE**
Stefano Perna, IREA-CNR; Università degli studi di Napoli Parthenope, Italy; Paolo Berardino, IREA-CNR, Italy; Filippo Britti, Ciro Cirillo, Consorzio Telaer, Italy; Carmen Esposito, Gianfranco Fornaro, IREA-CNR, Italy; Dieter Lubeck, OrbiSat, Brazil; Giulio Monaldi, AGEA, Italy; João Moreira, OrbiSat, Brazil; Antonio Pauciullo, IREA-CNR, Italy; Stefano Trinca, Aeromanagement Europe srl, Italy; Eurico Vaz Junior, Christian Wimmer, OrbiSat, Brazil; Virginia Zamparelli, Riccardo Lanari, IREA-CNR, Italy

TU4.3.5 17:00 **DIGITAL BEAMFORMING SYNTHETIC APERTURE RADAR (DBSAR) POLARIMETRIC OPERATION AND PERFORMANCE DURING THE ECO3D FLIGHT CAMPAIGN**
Rafael Rincon, NASA, United States; Temilola Fatoyinbo, NASA Goddard Space Flight Center, United States; Kenneth Jon Ranson, Guoqing Sun, Martin Perrine, Quenton Bonds, Susan Valett, Stephen Seufert, NASA, United States

Tuesday, July 24 | 08:20 - 10:00 | Room 12A
Session TU1.8 | Oral-Invited

Airborne and Spaceborne Remote Sensing of Polar Ice Cover A

Session Co-Chairs: Michael Studinger, NASA Goddard Space Flight Center; Dana Floricioiu, German Aerospace Center - DLR

TU1.8.1 08:20 **NASA'S OPERATION ICEBRIDGE: USING INSTRUMENTED AIRCRAFT TO BRIDGE THE OBSERVATIONAL GAP BETWEEN ICESAT AND ICESAT-2 LASER ALTIMETER MEASUREMENTS**
Michael Studinger, IceBridge Science Team, IceBridge Instrument Teams, NASA Goddard Space Flight Center, United States

TU1.8.2 08:40 **PROGRESSIVE THINNING OF GREENLAND'S WEST-CENTRAL FLANK AND NORTHWEST COASTAL MARGIN FROM OPERATION ICEBRIDGE LASER ALTIMETRY**
John Sonntag, Serdar Manizade, URS Corporation, United States; William Krabill, Sigma Space Corporation, United States; Matthew Linkswiler, James Yungel, URS Corporation, United States

TU1.8.3 09:00 **RECONSTRUCTION OF GREENLAND ICE SHEET SURFACE EVOLUTION AND ICE DYNAMIC CHANGES FROM AIRBORNE AND SPACEBORNE LASER ALTIMETRY**
Beata Csatho, Tony Schenk, Gregory Babonis, University at Buffalo, United States; Cornelis van der Veen, University of Kansas, United States; Michiel van den Broeke, Utrecht University, Netherlands

TU1.8.4 09:20 **TEMPORAL FLOW VARIATIONS OF MAJOR OUTLET GLACIERS IN GREENLAND USING LANDSAT DATA**
Ralf Rosenau, Reinhard Dietrich, Dresden University of Technology, Germany; Michael Baessler, German Aerospace Center (DLR), Germany

TU1.8.5 09:40 **USING HIGH-RESOLUTION TERRASAR-X TIME SERIES IN SUPPORT OF GLACIOLOGICAL MEASUREMENTS ON KING GEORGE ISLAND (ANTARCTICA)**
Matthias Braun, University of Erlangen-Nürnberg, Germany; Hilke Gieseke, Franziska Kotzur, Ulrike Falk, Bonn University, Germany

Tuesday, July 24 | 10:30 - 12:10 | Room 12A
Session TU2.8 | Oral-Invited

Airborne and Spaceborne Remote Sensing of Polar Ice Cover B

Session Co-Chairs: Dana Floricioiu, German Aerospace Center - DLR; Michael Studinger, NASA Goddard Space Flight Center

TU2.8.1 10:30 **CRYOSAT-2 MISSION PERFORMANCE AND RESULTS**
Andrew Shepherd, University of Leeds, United Kingdom; Duncan Wingham, Natalia Galin, Andrew Ridout, University College London, United Kingdom; Robert Cullen, European Space Agency, United Kingdom; Katharine Giles, Seymour Laxon, University College London, United Kingdom

TU2.8.2 10:50 **CRYOSAT CAL/VAL ACTIVITIES USING THE AIRBORNE ASIRAS KU-BAND SYSTEM**
Veit Helm, Daniel Steinhage, Heinrich Miller, Alfred Wegener Institute for Polar and Marine Research, Germany

TU2.8.3 11:10 **P-BAND RADAR ICE SOUNDING IN ANTARCTICA**
Jorgen Dall, Anders Kusk, Steen Savstrup Kristensen, Ulrik Nielsen, René Forsberg, Technical University of Denmark, Denmark; Chung-Chi Lin, Nicolas Gebert, Tânia Casal, Malcolm Davidson, David Bekaert, Christopher Buck, European Space Agency, Netherlands

TU2.8.4 11:30 **GEOPHYSICAL PARAMETERS ESTIMATION WITH TERRASAR-X OF OUTLET GLACIERS IN THE TRANSANTARCTIC MOUNTAINS**
Dana Floricioiu, German Aerospace Center (DLR), Germany; Kenneth Jezek, The Ohio State University, United States; Michael Baessler, Wael Abdel Jaber, German Aerospace Center (DLR), Germany

TU2.8.5 11:50 **GRACE SATELLITE GRAVIMETRY IN AN EVOLVING PARADIGM OF ICE SHEET OBSERVATION**
Martin Horwath, Technische Universität München, Germany; Benoît Legrésy, Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), France; Ingo Sasgen, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany; Erik Ivins, NASA Jet Propulsion Laboratory, United States; Roland Pail, Technische Universität München, Germany

Tuesday, July 24 | 13:30 - 15:10 | Room 12A
Session TU3.8 | Oral

Remote Sensing of Snow Properties I

Session Chair: Martti Hallikainen, Aalto University

TU3.8.1 13:30 **MULTI-TEMPORAL WET SNOW MAPPING IN ALPINE CONTEXT USING POLARIMETRIC RADARSAT-2 TIME-SERIES**
Audrey Lessard-Fontaine, Centre National de la Recherche Scientifique, France; Sophie Allain-Bailhache, Rennes 1, France; Jean-Pierre Dedieu, Centre National de la Recherche Scientifique, France; Yves Durand, CNRM-GAME, France

TU3.8.2 13:50 **DETECTION OF SEASONAL AND SPATIAL VARIABILITY OF SNOW COVERED TERRAIN BACKSCATTER AT X/KU BANDS**
Juha Lemmetyinen, Jouni Pulliainen, Anna Kontu, Finnish Meteorological Institute, Finland; Andreas Wiesmann, Christian Mätzler, Gamma Remote Sensing, Switzerland; Helmut Rott, Thomas Nagler, ENVEO IT GmbH, Austria; Adriano Meta, MetaSensing B.V., Netherlands; Martin Schneebeli, Martin Proksch, WSL Institute for Snow and Avalanche Research SLF, Switzerland; Malcolm Davidson, Dirk Schüttemeyer, Michael Kern, European Space Agency, Netherlands

TU3.8.3 14:10 **MONITORING OF SNOW COVER ON ITALIAN ALPS USING AMSR-E AND ARTIFICIAL NEURAL NETWORKS**
Emanuele Santi, Giacomo Fontanelli, Simone Pettinato, Consiglio Nazionale delle Ricerche IFAC, Italy; Andrea Crepaz, CVA-ARPAV, Italy

TU3.8.4 14:30 **ACTIVE REMOTE SENSING OF SNOW WITH MULTI-LAYER BACKSCATTERING MODEL**
Ali Nadir Arslan, Juha Lemmetyinen, Jouni Pulliainen, Finnish Meteorological Institute, Finland

TU3.8.5 14:50 **SIMULATING MICROWAVE BRIGHTNESS TEMPERATURE OF SNOW WITH SNOWPACK AND HUT SNOW MODEL**
Anna Kontu, Juho Vehviläinen, Juha Lemmetyinen, Jouni Pulliainen, Finnish Meteorological Institute, Finland

Tuesday, July 24 | 15:40 - 17:20 | Room 12A
Session TU4.8 | Oral

Remote Sensing of Snow Properties II

Session Co-Chairs: Giovanni Macelloni, CNR - National Research Council of Italy; Jouni Pulliainen, FMI Finland

TU4.8.1 15:40 **SPATIO-TEMPORAL VARIABILITY OF SNOWPACK PROPERTIES: COMPARING OPERATIONAL, FIELD, AND ICESAT REMOTE SENSING DATA OVER NORTHERN COLORADO, UNITED STATES**
Steven Fassnacht, D. Brogan, Graham Sexstone, Colorado State University, United States; Michael Jasinski, NASA, United States; Juan-Ignacio Lopez-Moreno, Pyrenees Ecology Institute, Spain; M. Skordahl, Colorado State University, United States

TU4.8.2 16:00 **UPRADAR - CONTINUOUS GROUND TRUTH MONITORING OF SEASONAL SNOWPACK EVOLUTION UTILIZING UPWARD-LOOKING RADAR TECHNOLOGY**
Achim Heilig, University of Heidelberg, Germany; Achim Heilig, Boise State University, United States; Lino Schmid, Juerg Schweizer, Christoph Mitterer, WSL Institute for Snow and Avalanche Research SLF, Switzerland; Thomas Platzer, Georg Brunnhofer, Robert Okorn, FH Joanneum, Austria; Olaf Eisen, Alfred Wegener Institute for Polar and Marine Research, Germany

TU4.8.3 16:20 **COMPUTATION METHODS FOR SNOW SURFACE DERIVATIVES FROM MOBILE LASER SCANNING DATA**
Antero Kukko, Kati Anttila, Sanna Kaasalainen, Harri Kaartinen, Finnish Geodetic Institute, Finland

TU4.8.4 16:40 **CONTINENTAL USE OF SCAMOD FRACTIONAL SNOW COVER MAPPING METHOD IN BOREAL FOREST AND TUNDRA BELT**
Sari Metsämäki, Olli-Pekka Mattila, Kirsikka Niemi, Finnish Environment Institute, Finland

TU4.8.5 17:00 **MONITORING SNOW COVER OVER CHINA WITH FY-2E VISSR AND FY-3B MWRI**
Juntao Yang, Lingmei Jiang, Beijing Normal University, China; Jiancheng Shi, Chinese Academy of Sciences, China; Lixin Zhang, Beijing Normal University, China

Tuesday, July 24 | 08:20 - 10:00 | Room 12B
Session TU1.7 | Oral-Invited

Urban Hyperspectral Remote Sensing

Session Co-Chairs: Uta Heiden, German Aerospace Center - DLR; Dar A. Roberts, University of California, Santa Barbara

TU1.7.1 08:20 **SEMI-SUPERVISED ACTIVE LEARNING FOR URBAN HYPERSPECTRAL IMAGE CLASSIFICATION**
Inmaculada Dopido, Jun Li, Antonio Plaza, Hyperspectral Computing Laboratory, Spain; Jose M. Bioucas-Dias, Instituto de Telecomunicações, Portugal

TU1.7.2 08:40 **INCLUDING THE SPATIAL CONTEXT INTO DECISION FUSION FOR URBAN AREA MAPPING USING HYPERSPECTRAL DATA**
Gianni Lisini, IUSS, Italy; Paolo Gamba, University of Pavia, Italy; Karoly Bakos, University of Debrecen, Hungary

TU1.7.3 09:00 **SYNERGIES BETWEEN VISIBLE/NEAR/SHORTWAVE-INFRARED IMAGING SPECTROMETRY AND THE THERMAL INFRARED IN AN URBAN ENVIRONMENT: AN EVALUATION OF THE HYPERSPECTRAL INFRARED IMAGER (HYSPIRI) MISSION**
Dar Roberts, University of California, Santa Barbara, United States; Dale Quattrochi, Glynn Hulley, NASA, United States; Simon J. Hook, NASA Jet Propulsion Laboratory, United States; Robert Green, NASA, United States

TU1.7.4 09:20 **USE OF LAND-COVER FRACTIONS DERIVED FROM MESMA FOR URBAN WATER BALANCE CALCULATION**
Luca Demarchi, Frank Canters, Jonathan Cheung-Wai Chan, Eva Ampe, Okke Batelaan, Vrije Universiteit Brussel, Belgium

TU1.7.5 09:40 **SUPPORTING URBAN MICRO CLIMATE MODELLING WITH AIRBORNE HYPERSPECTRAL DATA**
Wieke Heldens, Thomas Esch, Uta Heiden, German Aerospace Center (DLR), Germany

Tuesday, July 24 | 10:30 - 12:10 | Room 12B
Session TU2.7 | Oral

New Instruments

Session Chair: Michael Inggs, University Cape Town

TU2.7.1 10:30 **P-BAND SAR SATELLITE FOR BIOMASS MISSION**
Sophie Ramongassie, Jean-Philippe Merliot, Claudine Flament, Nicolas Taveneau, Valerie Bourlon, Thales Alenia Space France, France; Patrizio Pavia, Giuseppe Orlando, Luciano Zuccala, Giorgio Trinchero, Thales Alenia Space Italia, Italy; Silvia Mezzasoma, European Space Agency ESTEC, Netherlands; Giorgio Arpesi, Selex Galileo S.p.A., Italy; Frank Te Hennepe, Stephan Strauss, OHB System, Germany; Marco Arcioni, Franco Fois, Klaus Scipal, Lin Chung-Chi, European Space Agency ESTEC, Netherlands

TU2.7.2 10:50 **DIGITAL BEAMFORMING TECHNOLOGY FOR NEXT-GENERATION X-BAND SAR MISSIONS**
Christian Fischer, Christoph Heer, Astrium GmbH, Germany; Rolf Werninghaus, German Aerospace Center (DLR), Germany

TU2.7.3 11:10 **KARIN: THE KA-BAND RADAR INTERFEROMER FOR THE PROPOSED SURFACE WATER AND OCEAN TOPOGRAPHY (SWOT) MISSION**
Daniel Esteban Fernandez, Eva Peral, Dalia McWatters, Brian Pollard, Ernesto Rodriguez, Richard Hughes, NASA Jet Propulsion Laboratory, United States

TU2.7.4 11:30 **KA-BAND SAR INTERFEROMETRY STUDIES FOR THE PROPOSED SWOT MISSION**
Daniel Esteban Fernandez, Lee-Lueng Fu, Ernesto Rodriguez, Eva Peral, Duane Clark, Shannon T. Brown, Richard Hodges, NASA Jet Propulsion Laboratory, United States

TU2.7.5 11:50 **BIOMASS END-TO-END MISSION PERFORMANCE ASSESSMENT**
Paco López-Dekker, Jose A. Garcia-Molina, Francesco de Zan, Thomas Börner, Marwan Younis, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Tomas Guardabrazo, DEIMOS Space, Spain; Valerie Bourlon, Sophie Ramongassie, Nicolas Taveneau, Thales Alenia Space, France; Lars M.H. Ulander, Daniel Murdin, Swedish Defence Research Agency, Sweden; Neil Rogers, Shaun Quegan, University of Sheffield, United Kingdom; Raffaella Franco, European Space Agency, Netherlands

Tuesday, July 24 | 13:30 - 15:10 | Room 12B
Session TU3.7 | Oral

SAR Processing and Calibration

Session Co-Chairs: Josef Mittermeyer, German Aerospace Center - DLR; Björn Döring, German Aerospace Center - DLR

TU3.7.1 13:30 **STARING SPOTLIGHT IMAGING WITH TERRASAR-X**
Josef Mittermayer, Steffen Wollstadt, Pau Prats-Iraola, Rolf Scheiber, German Aerospace Center (DLR), Germany; Wolfgang Koppe, Astrium Services, Germany

TU3.7.2 13:50 **GROUND MOVING TARGET INDICATION USING MULTI-CHANNEL SAR WITH NON-UNIFORM DISPLACED PHASE CENTERS**
Eduardo Makhoul, Antoni Broquetas, Josep Ruiz Rodon, Universitat Politècnica de Catalunya, Spain

TU3.7.3 14:10 **ADVANCED OPERATION MODE TECHNIQUES FOR AN INTERFEROMETRIC SYNTHETIC APERTURE RADAR**
Marwan Younis, Paco López-Dekker, Anton Patyuchenko, German Aerospace Center (DLR), Germany; Christoph Schaefer, EADS Astrium Ltd., Germany; Gerhard Krieger, German Aerospace Center (DLR), Germany

TU3.7.4 14:30 **FIRST MEASUREMENT RESULTS OF A NEW HIGHLY-ACCURATE ACTIVE SAR CALIBRATION TARGET**
Matthias Jirousek, Bjoern Doering, Philipp Looser, Marco Schwerdt, German Aerospace Center (DLR), Germany

TU3.7.5 14:50 **OPTIMAL INTERPOLATION OF SWOT SPACEBORNE MEASUREMENTS TO ENHANCE TEMPORAL COVERAGE**
Yeosang Yoon, Michael Durand, Carolyn Merry, The Ohio State University, United States

Tuesday, July 24 | 15:40 - 17:20 | Room 12B
Session TU4.7 | Oral

SAR Validation

Session Chair: Tom Lukowski, CCRS

TU4.7.1 15:40 **DETECTION AND MITIGATION OF IONOSPHERIC STRIPES IN PALSAR DATA**
Philip Roth, Barton Huxtable, Kancham Chotoo, Susan Chotoo, User Systems, Inc., United States; Ronald Caton, Air Force Research Laboratory, United States

TU4.7.2 16:00 **HIGH PRECISION MEASUREMENT ON THE ABSOLUTE LOCALIZATION ACCURACY OF TERRASAR-X**
Ulrich Balss, Xiaoying Cong, Ramon Brcic, German Aerospace Center (DLR), Germany; Moritz Rexer, Technische Universität München, Germany; Christian Minet, Helko Breit, Michael Eineder, Thomas Fritz, German Aerospace Center (DLR), Germany

TU4.7.3 16:20 **PROCESSING OF WAVEMILL PROOF-OF-CONCEPT FLIGHT DATA**
José Márquez, Nestor Yague-Martinez, Starlab Barcelona S.L., Spain; Martin Cohen, David Lancashire, EADS Astrium Ltd., United Kingdom; Christopher Buck, European Space Agency, Netherlands

TU4.7.4 16:40 **SENTINEL-1 FDBAQ PERFORMANCE VALIDATION USING TERRASAR-X DATA**
Elke Malz, Ilmenau University of Technology, Germany; Rolf Scheiber, Josef Mittermayer, German Aerospace Center (DLR), Germany; Paul Snoeij, Evert Attema, European Space Agency, Germany

TU4.7.5 17:00 **OPERATIONAL PRECISE BASELINE DETERMINATION FOR TANDEM-X DEM PROCESSING**
Yongjin Moon, Rolf Koenig, German Research Centre for Geosciences (GFZ), Germany; Martin Wermuth, German Aerospace Center (DLR), Germany

Tuesday, July 24 | 08:20 - 10:00 | Room 13A
Session TU1.12 | Oral

Active Remote Sensing of Forest Structures

Session Chair: Kostas Papathanassiou, German Aerospace Center - DLR

TU1.12.1 08:20 **OBSERVATION OF VEGETATION VERTICAL STRUCTURE AND DISTURBANCE USING L-BAND INSAR OVER THE INJUNE REGION IN AUSTRALIA**
Yang Lei, Paul Siqueira, University of Massachusetts Amherst, United States; Daniel Clewley, Richard Lucas, University of Aberystwyth, United Kingdom

TU1.12.2 08:40 **BAYESIAN APPROACH TO TREE DETECTION WITH AIRBORNE LASER SCANNING**
Timo Lähivaara, Aku Seppänen, Jari P. Kaipio, Jari Vauhkonen, Lauri Korhonen, Timo Tokola, Matti Maltamo, University of Eastern Finland, Finland

TU1.12.3 09:00 **ESTIMATION OF PAIE USING AIRBORNE LIDAR DATA IN SOUTH KOREA**
Doo-Ahn Kwak, Woo-Kyun Lee, Korea University, Republic of Korea; Menas Kafatos, Chapman University, United States; Yowhan Son, Korea University, Republic of Korea; Hyun-Kook Cho, Korea Forest Research Institute, Republic of Korea

TU1.12.4 09:20 **ESTIMATING BIOMASS AND HEIGHT USING DSM FROM SATELLITE DATA AND DEM FROM HIGH-RESOLUTION LASER SCANNING DATA**
Henrik Persson, Jörgen Wallerman, Håkan Olsson, Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden

TU1.12.5 09:40 **MONITORING ABOVE-GROUND BIOMASS DYNAMICS IN NEW ENGLAND FOREST STANDS USING THE ECHIDNA® GROUND-BASED LIDAR**
Tian Yao, Boston University, United States; Xiaoyuan Yang, University of Massachusetts Boston, United States; Alan Strahler, Boston University, United States; Crystal Schaaf, University of Massachusetts Boston, United States; Feng Zhao, Boston University, United States; Zhuosen Wang, University of Massachusetts Boston, United States; Curtis Woodcock, Zhan Li, Boston University, United States; David Jupp, Darius Culvenor, Glenn Newnham, Jenny Lovell, Commonwealth Scientific and Industrial Research Organisation, Australia; Miguel Román, NASA Goddard Space Flight Center, United States

Tuesday, July 24 | 10:30 - 12:10 | Room 13A
Session TU2.12 | Oral

Active Remote Sensing for Forest Change Detection

Session Co-Chairs: Lars Ulander, FOI; Sassan Saatchi, NASA Jet Propulsion Laboratory

TU2.12.1 10:30 **MEASUREMENTS OF FOREST CHANGE USING P-BAND SAR BACKSCATTER**
Gustaf Sandberg, Chalmers University of Technology, Sweden; Lars M.H. Ulander, Swedish Defence Research Agency, Sweden; Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden; Maciej J. Soja, Chalmers University of Technology, Sweden

TU2.12.2 10:50 **MAPPING DEFORESTATION AND DEGRADATION IN AFRICAN TROPICAL FORESTS**
Edward Mitchard, University of Edinburgh, United Kingdom; Sassan Saatchi, NASA Jet Propulsion Laboratory, United States; Simon Lewis, University of Leeds, United Kingdom; Patrick Meir, University of Edinburgh, United Kingdom

TU2.12.3 11:10 **DETECTING SEASONAL CHANGE OF DECISUOUS TREES USING ALOS PALSAR AND AIRBORNE LIDAR**
Akira Kato, Chiba University, Japan; Manabu Watanabe, Japan Aerospace Exploration Agency (JAXA), Japan; Yoshio Yamaguchi, Niigata University, Japan; Tatsuaki Kobayashi, Chiba University, Japan

TU2.12.4 11:30 **AIRBORNE LIDAR MEASUREMENTS TO ESTIMATE TROPICAL PEAT SWAMP FOREST ABOVE GROUND BIOMASS**
Uwe Ballhorn, Juilson Jubanski, Remote Sensing Solutions GmbH, Germany; Karin Kronseder, Ludwig-Maximilians-Universität München, Germany; Florian Siegert, Remote Sensing Solutions GmbH, Germany

TU2.12.5 11:50 **QUANTIFYING SPATIAL AND TEMPORAL DYNAMICS OF TROPICAL FOREST STRUCTURE USING HIGH RESOLUTION AIRBORNE LIDAR**
Maxim Neumann, Sassan Saatchi, NASA Jet Propulsion Laboratory, United States; David Clark, University of Missouri St. Louis, United States

Tuesday, July 24 | 13:30 - 15:10 | Room 13A
Session TU3.12 | Oral

Vegetation Change Detection

Session Chair: Christiane Schmullius, University of Jena

TU3.12.1 13:30 **MODIS NDVI VERSUS EVI: CHANGES IN PHILIPPINE VEGETATION**
Gay Jane Perez, University of the Philippines, Philippines; Josefino Comiso, NASA Goddard Space Flight Center, United States

TU3.12.2 13:50 **MONITORING FOREST COVER CHANGE AT NATIONAL LEVEL IN GABON FOR 1990, 2000 AND 2010 WITH OPTICAL IMAGERY**
Louis-Vincent Fichet, Christophe Sannier, SIRS, France; Etienne Massard Makaga, AGEOS, Gabon; Frédérique Seyler, Benoit Mertens, IRD, France

TU3.12.3 14:10 **USING COARSE RESOLUTION REMOTE SENSING DATA TO IDENTIFY CHANGES IN THE ARCTIC TREE LINE REGIONS OF NORTHERN SIBERIA**
Marcel Urban, Christiane Schmullius, Sören Hese, Institute of Geography, University of Jena, Germany; Martin Herold, Wageningen University, Netherlands

TU3.12.4 14:30 **AUTOMATED DETECTION OF STORM DAMAGE IN FOREST AREAS BY ANALYZING TERRASAR-X DATA**
Antje Thiele, Karlsruhe Institute of Technology (KIT), Germany; Markus Boldt, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), Germany; Stefan Hinz, Karlsruhe Institute of Technology (KIT), Germany

TU3.12.5 14:50 **IMPACTS OF COMMUNAL FUELWOOD EXTRACTION ON LIDAR-ESTIMATED BIOMASS PATTERNS OF SAVANNA WOODLANDS.**
Konrad Wessels, Council for Scientific and Industrial Research, South Africa; Barend Erasmus, University of Witwatersrand, South Africa; Matthew Colgan, Gregory P. Asner, Carnegie Institution for Science, United States; Renaud Mathieu, Council for Scientific and Industrial Research, South Africa; Wayne Twine, University of Witwatersrand, South Africa; Jan Van Aardt, Rochester Institute of Technology, United States; Izak Smit, South Africa National Parks, South Africa

Tuesday, July 24 | 15:40 - 17:20 | Room 13A
Session TU4.12 | Oral

Canopy and Leaf Structure

Session Co-Chairs: Terhikki Manninen, Finnish Meteorological Institute; Wenjie Fan, Peking University

TU4.12.1 15:40 **HIGH RESOLUTION BOREAL FOREST LAI MAPS USING DUAL POLARIZATION SAR IMAGES**
Terhikki Manninen, Finnish Meteorological Institute, Finland

TU4.12.2 16:00 **COMPARISON AND ANALYSIS OF TWO FRACTAL DIMENSION COMPUTING ALGORITHMS FOR UPSCALING REMOTE SENSING LEAF AREA INDEX MAP**
Yan Liu, Huazhu Xue, Jindi Wang, Hongmin Zhou, Beijing Normal University, China

TU4.12.3 16:20 **THE SPATIAL SCALING EFFECT OF DISCRETE CANOPY EFFECTIVE LEAF AREA INDEX RETRIEVED BY REMOTE SENSING**
Wenjie Fan, Yingying Gai, Xiru Xu, Peking University, China; Binyan Yan, The University of Texas at Austin, United States

TU4.12.4 16:40 **VALIDATION METHODS OF LAI PRODUCTS BASED ON SCALING EFFECT**
Yanran Liao, Yingying Gai, Wenjie Fan, Xiru Xu, Peking University, China; Binyan Yan, The University of Texas at Austin, United States; Yuan Liu, Peking University, China

TU4.12.5 17:00 **A MULTISCALE AND MULTISENSOR APPROACH OF LAI RETRIEVAL IN A MARITIME PINE ECOSYSTEM**
Olivier Regniers, Ajit Govind, Dominique Guyon, Jean-Pierre Wigneron, Frédéric Baret, Institut National de la Recherche Agronomique (INRA), France

Tuesday, July 24 | 08:20 - 10:00 | Room 13B
Session TU1.15 | Oral-Invited

ESA's Sentinel Missions in support of GMES Services and their Utilization in Science I

Session Co-Chairs: Josef Aschbacher, ESA ESRIN; Michael Berger, ESA ESRIN

TU1.15.1 08:20 **THE GMES SERVICE COMPONENT**
Reinhard Schulte-Braucks, European Commision, Joint Research Centre, Belgium

TU1.15.2 08:40 **GMES SPACE COMPONENT:PROGRAMMATIC STATUS**
Josef Aschbacher, Maria Pilar Milagro-Pérez, European Space Agency ESRIN, Italy

TU1.15.3 09:00 **THE SENTINEL-1 MISSION AND ITS APPLICATION CAPABILITIES**
Ramon Torres, Paul Snoeij, Malcolm Davidson, David Bibby, Svein Lokas, European Space Agency, Netherlands

TU1.15.4 09:20 **OVERVIEW OF SENTINEL-2**
Francois Spoto, Omar Sy, Paolo Laberinti, Philippe Martimort, Valerie Fernandez, European Space Agency ESTEC, Netherlands; Olivier Colin, Fra Hoersch, European Space Agency ESRIN, Italy; Aimé Meygret, Centre National d'Études Spatiales, France

TU1.15.5 09:40 **THE SENTINEL-3 MISSION: OVERVIEW AND STATUS**
Craig Donlon, Bruno Berruti, Susanne Mecklenburg, Jens Nieke, Helge Rebhan, Ulf Klein, Alessandra Buongiorno, Constantin Mavrocordatos, Johannes Frerick, Bernd Seitz, Phillipe Goryl, Pierre Féménias, Juergen Stroede, European Space Agency, Netherlands; Roberto Sciarra, SERCO S.p.A., Italy

Tuesday, July 24 | 10:30 - 12:10 | Room 13B
Session TU2.15 | Oral-Invited

ESA's Sentinel Missions in support of GMES Services and their Utilization in Science II

Session Co-Chairs: Michael Berger, ESA ESRIN; Josef Aschbacher, ESA ESRIN

TU2.15.1 10:30 **OVERVIEW OF THE SENTINEL-4 AND SENTINEL-5 MISSION**
Jean-Loup Bézy, European Space Agency ESTEC, Netherlands

TU2.15.2 10:50 **SENTINEL-5 PRECURSOR MISSION AND POTENTIAL APPLICATION EXAMPLES**
Kevin McMullan, European Space Agency, Netherlands

TU2.15.3 11:10 **THE GMES SPACE COMPONENT (GSC) - OPERATIONS CONCEPT AND DATA ACCESS**
Bianca Hoersch, European Space Agency ESRIN, Italy; Pierre Potin, Eric Monjoux, Pier Bargellini, Gunther Kohlhammer, European Space Agency, Italy

TU2.15.4 11:30 **THE SENTINELS AND GMES' APPLICATIONS**
Alan Belward, European Commision, Joint Research Centre, Italy

TU2.15.5 11:50 **SCIENTIFIC POTENTIAL OF THE SENTINEL-1, -2, AND 3 MISSIONS FOR OCEAN, CRYOSPHERE AND LAND OBSERVATIONS: THE SEN4SCI APPROACH**
Zbynek Malenovsky, Michael E. Schaepman, University of Zurich, Switzerland; Josef Cihlar, Zemkon, Canada; Glenda Garcia-Santos, University Zrch, Switzerland; Richard Fernndes, Canada Centre for Remote Sensing, Canada; Michael Berger, European Space Agency ESRIN, Italy

Tuesday, July 24 | 13:30 - 15:10 | Room 13B
Session TU3.15 | Oral-Invited

Sentinel-1 I

Session Co-Chairs: Ramón Torres, ESA / ESTEC; Pierre Potin, ESA / ESRIN

TU3.15.1 13:30 **SENTINEL-1 SYSTEM OVERVIEW AND PERFORMANCE**
Dirk Geudtner, Ramon Torres, European Space Agency, Netherlands

TU3.15.2 13:50 **SENTINEL-1 SATELLITE SYSTEM ARCHITECTURE: DESIGN, PERFORMANCES AND OPERATIONS**
Giacomo Taini, Thales Alenia Space Italia, Italy; Aniceto Panetti, Francesca Spataro, Tales Alenia Space Italia S.p.A., Italy; Claudio Bruno, Michelangelo L'Abbate, Anna Notarantonio, Sergio Barrasso, Thales Alenia Space Italia, Italy; Ramon Torres, Svein Lokas, European Space Agency, Netherlands

TU3.15.3 14:10 **THE SENTINEL-1 C-SAR INSTRUMENT**
Friedhelm Rostan, Markus Huchler, Sebastian Riegger, Astrium GmbH, Germany; Renato Croci, Thales Alenia Space Italia, Italy; Ramon Torres, European Space Agency ESTEC, Netherlands

TU3.15.4 14:30 **SENTINEL-1 GROUND SEGMENT**
Betlem Rosich, Nuno Miranda, Pierre Potin, European Space Agency, Italy; Cosimo Putignano, Gianluca Sabella, SERCO S.p.A., Italy; Dirk Geudtner, European Space Agency, Italy

TU3.15.5 14:50 **THE SENTINEL-1 DATA PROCESSOR AND OPERATIONAL PRODUCTS**
Nuno Miranda, Betlem Rosich, European Space Agency, Italy; Cosimo Putignano, SERCO S.p.A., Italy

Tuesday, July 24 | 15:40 - 17:20 | Room 13B
Session TU4.15 | Oral-Invited

Sentinel-1 II

Session Co-Chairs: Ramón Torres, ESA / ESTEC; Pierre Potin, ESA / ESRIN

TU4.15.1 15:40 **PERSPECTIVES OF SENTINEL-1 FOR SEA-ICE APPLICATIONS**
Leif Toudal Pedersen, DMI, Denmark; Wolfgang Dierking, AWI, Germany; Stein Sandven, NERSC, Norway; Roberto Saldo, DTU, Denmark; Desmond Power, C-Core, Canada

TU4.15.2 16:00 **ANALYSIS OF SENTINEL-1 MARINE APPLICATIONS POTENTIAL**
Paris Vachon, John Wolfe, Defence R&D Canada, Canada; Harm Greidanus, European Commision, Joint Research Centre, Italy

TU4.15.3 16:20 **PERSPECTIVES OF SENTINEL-1 FOR INSAR APPLICATIONS**
Fabio Rocca, Politecnico, Italy

TU4.15.4 16:40 **PROSPECTS OF SENTINEL-1 FOR LAND APPLICATIONS**
Wolfgang Wagner, Daniel Sabel, Marcela Doubkova, Michael Hornacek, Stefan Schlaffer, Annett Bartsch, Vienna University of Technology, Austria

TU4.15.5 17:00 **SENTINEL-1 MISSION OPERATIONS CONCEPT**
Pierre Potin, Pier Bargellini, Henri Laur, Betlem Rosich, Siegfried Schmuck, European Space Agency, Italy

Tuesday, July 24 | 08:20 - 10:00 | Room 14A
Session TU1.5 | Oral

Image Registration

Session Co-Chairs: John Kerekes, Chester F. Carlson Center for Imaging Science Rochester Institute of Technology; Anita Simic, French National Institute for Agricultural Research (INRA)

TU1.5.1 08:20 **GEOLOCATION OF PHOTOGRAPHS BY MEANS OF HORIZON MATCHING WITH DIGITAL ELEVATION MODELS**
Samuel Pritt, Frederick Community College, United States

TU1.5.2 08:40 **GLOBAL ANALYSIS OF THE IMPROVEMENTS IN AATSR NADIR-FORWARD CO- REGISTRATION FOLLOWING THE APPLICATION OF AN AUTOMATED REGISTRATION ALGORITHM**
Daniel Fisher, Jan-Peter Muller, University College London, United Kingdom

TU1.5.3 09:00 **SIMILARITY MEASURE FOR SPATIAL-SPECTRAL REGISTRATION IN HYPERSPECTRAL ERA**
Akira Iwasaki, Naoto Yokoya, Takeshi Arai, Yuki Itoh, Norihide Miyamura, The University of Tokyo, Japan

TU1.5.4 09:20 **MULTI-OBJECTIVE GENETIC ALGORITHM FOR EFFICIENT POINT MATCHING IN MULTI-SENSOR SATELLITE IMAGE**
J. Senthilnath, S.N. Omkar, V. Mani, Indian Institute of Science, India; Naveen P Kalro, National Institute of Technology Karnataka, India; P.G. Diwakar, ISRO Head quta., India

TU1.5.5 09:40 **GEOREGISTRATION OF MULTIPLE-CAMERA WIDE AREA MOTION IMAGERY**
Mark Pritt, Kevin LaTourette, Lockheed Martin, United States

Tuesday, July 24 | 10:30 - 12:10 | Room 14A
Session TU2.5 | Oral

Advanced Methods for Image Classification

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Gustavo Camps-Valls, University of Valencia

TU2.5.1 10:30 **MULTISCALE CONDITIONAL RANDOM FIELDS FOR SUPERVISED REGION BASED LABELING AND CLASSIFICATION**
Mitchel Alioscha-Perez, Jonathan C-W Chan, Hichem Sahli, ETRO-VUB, Belgium

TU2.5.2 10:50 **DOMAIN ADAPTATION FOR THE EXTRACTION OF COMPLEX URBAN PATTERNS FROM MULTIRESOLUTION SATELLITE IMAGES**
Camille Kurtz, Anne Puissant, Nicolas Passat, University of Strasbourg, France; Pierre Gançarski, University of Strasbourg/LSIIT, France

TU2.5.3 11:10 **A SEMISUPERVISED CONTEXTUAL CLASSIFICATION ALGORITHM FOR MULTITEMPORAL POLARIMETRIC SAR DATA**
Xin Niu, Yifang Ban, KTH-Royal Institute of Technology, Sweden

TU2.5.4 11:30 **A COST-SENSITIVE ACTIVE LEARNING TECHNIQUE FOR THE DEFINITION OF EFFECTIVE TRAINING SETS FOR SUPERVISED CLASSIFIERS**
Begum Demir, Luca Minello, Lorenzo Bruzzone, University of Trento, Italy

TU2.5.5 11:50 **MULTIPLE-KERNEL LEARNING-BASED UNMIXING ALGORITHM FOR ESTIMATION OF CLOUD FRACTIONS WITH MODIS AND CLOUDSAT DATA**
Yanfeng Gu, Shizhe Wang, Harbin Institute of Technology, China; Tao Shi, The Ohio State University, United States; Yinghui Lu, Eugene E. Clothiaux, The Pennsylvania State University, United States; Bin Yu, University of California, Berkeley, United States

Tuesday, July 24 | 13:30 - 15:10 | Room 14A
Session TU3.5 | Oral

SAR Image Processing I

Session Co-Chairs: Daniele Riccio, University of Naples Federico II; Mihai Datcu, German Aerospace Center - DLR

TU3.5.1 13:30 **SHIP DETECTION BASED ON IMPROVED S-NMF METHOD FRO FULLY POLARIMETRIC RADARSAT-2 DATA**
Bingjie Wu, Bo Zhang, Hong Zhang, Fan Wu, Center for Earth Observation and Digital Earth, CAS, China

TU3.5.2 13:50 **IDENTIFICATION AND CHARACTERIZATION OF RAILWAY TRAINS IN HIGH RESOLUTION TERRASAR-X IMAGES**
Gottfried Schwarz, Mihai Datcu, German Aerospace Center (DLR), Germany

TU3.5.3 14:10 **SAR IMAGE SIMULATION FOR THE ASSESSMENT OF DESPECKLING TECHNIQUES**
Gerardo Di Martino, Mariana Poderico, Giovanni Poggi, Daniele Riccio, Luisa Verdoliva, Università degli Studi di Napoli Federico II, Italy

TU3.5.4 14:30 **SVM BASED FEATURE SELECTION FOR X-SAR IMAGES**
Bruno Cafaro, Silvia Canale, Alberto De Santis, Daniela Iacoviello, Fiora Pirri, Sapienza Università di Roma, Italy

TU3.5.5 14:50 **AUTOMATIC BUILDINGS EXTRACTION IN HIGH RESOLUTION URBAN SAR IMAGES USING GENERALIZED OBJECT-BASED INCREMENTAL LEARNING METHOD**
Xian Sun, Daobing Zhang, Kun Fu, Fangcai Wu, Wanceng Zhang, Guogang Yan, Institute of Electronics, CAS, China

Tuesday, July 24 | 15:40 - 17:20 | Room 14A
Session TU4.5 | Oral

SAR Image Processing II

Session Chair: Lori Bruce, Mississippi State University

TU4.5.1 15:40 **APPLICATION OF OMNI-DIRECTIONAL TEXTURE ANALYSIS TO SAR IMAGES FOR LEVEE LANDSLIDE DETECTION**
Matthew Lee, James Aanstoos, Lori Bruce, Mississippi State University, United States; Saurabh Prasad, University of Houston, United States

TU4.5.2 16:00 **WAVELET-BASED DESPECKLING FOR ONBOARD IMAGE PROCESSING IN A SMALL SATELLITE SAR MARITIME SURVEILLANCE CONSTELLATION**
Erica H. Peterson, University of Toronto, Canada; Georgia Fotopoulos, The University of Texas at Dallas, United States; Robert E. Zee, University of Toronto, Canada

TU4.5.3 16:20 **AUTOMATIC REGISTRATION OF SAR AND OPTICAL IMAGES BASED ON MUTUAL INFORMATION ASSISTED MONTE CARLO**
Muhammad Adnan Siddique, COMSATS Institute of Information Technology, Pakistan; M. Saquib Sarfraz, Karlsruhe Institute of Technology, Germany; David Bornemann, Olaf Hellwich, Berlin Institute of Technology, Germany

TU4.5.4 16:40 **LARGE SCALE CHARACTERIZATION OF RADIO FREQUENCY INTERFERENCE SIGNATURES IN L-BAND SAR**
Franz Meyer, Jeremy Nicoll, Christian Koetschau, University of Alaska Fairbanks, United States; Anthony Paul Doulgeris, University of Tromsø, Norway

TU4.5.5 17:00 **REFINED FILTERING OF INTERFEROMETRIC PHASE FROM INSAR DATA**
Chin-Fu Chao, Kun-Shan Chen, Jong-Sen Lee, Chih-Tien Wang, National Central University, Taiwan

Tuesday, July 24 | 08:20 - 10:00 | Room 14B
Session TU1.13 | Oral-Invited

RADARSAT

Session Chair: Satish Srivastava, Canadian Space Agency

TU1.13.1 08:20 **RADARSAT-1 MISSION**
Surendra Parashar, Satish Srivastava, Ahmed Mahmood, Denis Auger, Canadian Space Agency, Canada

TU1.13.2 08:40 **OIL FIELD DEFORMATION MONITORING WITH RADARSAT-2**
Gordon Staples, Brad Lehrbass, Michael Henschel, MDA, Canada

TU1.13.3 09:00 **SHIP DETECTION USING POLARIMETRIC RADARSAT-2**
Ridha Touzi, Canada Centre for Remote Sensing, Canada; Jeff Hurley, MDA, Canada; Paris Vachon, Defence R&D Canada, Canada; Gordon Staples, MDA, Canada

TU1.13.4 09:20 **SENSITIVITY ANALYSIS OF COMPACT POLARIMETRY PARAMETERS TO CROP GROWTH USING SIMULATED RADARSAT-2 SAR DATA**
Jiali Shang, Heather McNairn, Agriculture and Agri-Food Canada, Canada; François Charbonneau, Zhaohua Chen, Natural Resources Canada, Canada; Xianfeng Jiao, Nipissing University, Canada

TU1.13.5 09:40 **RADARSAT CONSTELLATION MISSION**
Alain Carrier, Steve Iris, Canadian Space Agency, Canada

Tuesday, July 24 | 10:30 - 12:10 | Room 14B
Session TU2.13 | Oral-Invited

ENVISAT - 10 years Achievements I

Session Co-Chairs: Yves-Louis Desnos, ESA; Henri Laur, ESA

TU2.13.1 10:30 **GOING OPERATIONAL WITH SPACEBORNE C-BAND RADAR: FORESTRY AND LANDCOVER MAPPING WITH ENVISAT ASAR**
Christiane Schmullius, Christian Thiel, University Jena, Department for Earth Observation, Germany; Maurizio Santoro, Gamma Remote Sensing, Switzerland; Carsten Pathe, Earth Observation Services Jena, Germany; Tanja Riedel, University Jena, Department for Earth Observation, Germany

TU2.13.2 10:50 **RICE MONITORING USING ENVISAT ASAR DATA**
Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France; Alexandre Bouvet, European Commision, Joint Research Centre, Italy; Nguyen Lam Dao, GIS & Remote Sensing Research Center (GIRS), Viet Nam

TU2.13.3 11:10 **LANDSLIDE MAPPING IN SWITZERLAND WITH ENVISAT ASAR**
Urs Wegmüller, Tazio Strozzi, Gamma Remote Sensing, Switzerland; Reynald Delaloye, Université Fribourg, Switzerland; Hugo Raetzo, Bundesamt für Umwelt, Switzerland

TU2.13.4 11:30 **EXPLOITING TEN YEARS OF MERIS DATA OVER LAND SURFACES**
Nadine Gobron, European Commision, Joint Research Centre, Italy; Jadunandan Dash, University of Southampton, United Kingdom; Olivier Arino, European Space Agency, Italy; Lorena Hojas Gascon, European Commision, Joint Research Centre, Italy; Jan-Peter Muller, University College London, United Kingdom

TU2.13.5 11:50 **EXPLOITATION OF AATSR LAND SURFACE TEMPERATURE**
Darren Ghent, University of Leicester, United Kingdom

Tuesday, July 24 | 13:30 - 15:10 | Room 14B
Session TU3.13 | Oral-Invited

ENVISAT - 10 years Achievements II

Session Co-Chairs: Henri Laur, ESA; Yves-Louis Desnos, ESA

TU3.13.1 13:30 **LONG TERM DEFORMATION TIME SERIES: 10 YEARS OF EARTH OBSERVATION THROUGH ENVISAT MULTI-MODE ASAR SENSOR**
Paolo Berardino, Manuela Bonano, Fabiana Calò, Francesco Casu, Stefano Elefante, Michele Manunta, Mariarosaria Manzo, Luca Paglia, Antonio Pepe, Susi Pepe, Eugenio Sansosti, Giuseppe Solaro, Pietro Tizzani, Giovanni Zeni, Riccardo Lanari, National Research Council of Italy, Italy

TU3.13.2 13:50 **ENVISAT ALTIMETRY FOR RIVER AND LAKES MONITORING**
P.A.M. Berry, R.G. Smith, EAPRS Laboratory, United Kingdom; Jérôme Benveniste, European Space Agency ESRIN, Italy

TU3.13.3 14:10 **A RECONCILED ESTIMATE OF ICE SHEET MASS BALANCE**
Andrew Shepherd, University of Leeds, United Kingdom; Erik Ivins, NASA Jet Propulsion Laboratory, United States; Kate Briggs, University of Leeds, United Kingdom

TU3.13.4 14:30 **ANTARCTICA VOLUME CHANGE FROM 10 YEARS OF ENVISAT ALTIMETRY**
Thomas Flament, Frédérique Rémy, Laboratoire d'Etudes en Geophysique et Oceanographie Spatiales, France

TU3.13.5 14:50 **MONITORING SEA ICE USING ENVISAT ASAR - A NEW ERA STARTING 10 YEARS AGO**
Wolfgang Dierking, Alfred Wegener Institute for Polar and Marine Research, Germany; Leif Toudal Pedersen, Danish Meteorological Institute, Denmark

Tuesday, July 24 | 15:40 - 17:20 | Room 14B
Session TU4.13 | Oral-Invited

ENVISAT - 10 years Achievements III

Session Co-Chairs: Yves-Louis Desnos, ESA; Henri Laur, ESA

TU4.13.1 15:40 **ASAR MONITORING OF WAVES, SWELL AND CURRENTS**
Fabrice Collard, Collecte Localisation Satellites (CLS), France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Harald Johnsen, Norut, Norway; Johnny Johannessen, NERSC, Norway; Alexis Mouche, Vincent Kerbaol, Collecte Localisation Satellites (CLS), France

TU4.13.2 16:00 **A MONITORING SYSTEM FOR GLACIERS ON SVALBARD BASED ON ENVISAT ASAR WIDE SWATH DATA**
Heidi Hindberg, Eirik Malnes, Kjell Arild Høgda, Norut, Norway

TU4.13.3 16:20 **OBSERVING OCEANIC PLANETARY WAVES FROM SPACE: TWO DECADES OF PROGRESS**
Jeffrey Blundell, Paolo Cipollini, National Oceanography Centre, United Kingdom; Robert O'Brien, Anna Sutcliffe, University of Southampton, United Kingdom; Matthew Thomas, University of East Anglia, United Kingdom

TU4.13.4 16:40 **THE GLOBAL PICTURE OF THE ATMOSPHERIC COMPOSITION PROVIDED BY MIPAS ON ENVISAT**
Bruno Carli, Consiglio Nazionale delle Ricerche, Italy; Ginette Aubertin, ABB Bomem Inc., Canada; Manfred Birk, German Aerospace Center (DLR), Germany; Massimo Carlotti, University of Bologna, Italy; Elisa Castelli, Istituto di Scienza dell'Atmosfera e del Clima (ISAC) of CNR, Italy; Simone Ceccherini, Istituto di Fisica Applicata Nello Carrara IFAC-CNR, Italy; Livia D'Alba, Angelika Dehn, European Space Agency ESRIN, Italy; Marta De Laurentis, SERCO S.p.A., Italy; Bianca Maria Dinelli, Istituto di Scienza dell'Atmosfera e del Clima (ISAC) of CNR, Italy; Anu Dudhia, Atmospheric, Oceanic and Planetary Physics, Oxford University, United Kingdom; Thorsten Fehr, European Space Agency ESRIN, Italy; Herbert Fischer, Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research (IMK), Germany; Jean Marie Flaud, Laboratoire Interuniversitaire des Systèmes Atmosphériques (LISA) of CNRS, France; Bernd Funke, Instituto de Astrofisica de Andalucìa (CSIC), Spain; Roland Gessner, Astrium GmbH, Germany; Michael Hoepfner, Michael Kiefer, Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research (IMK), Germany; Mauel Lopez Puertas, Instituto de Astrofisica de Andalucìa (CSIC), Spain; Hermann Oelhaf, Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research (IMK), Germany; Gaetan Perron, ABB Bomem Inc, Canada; Anne Kleinert, Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research (IMK), Germany; Peter Mosner, Astrium GmbH, Germany; Fabrizio Cristoforo Niro, SERCO S.p.A., Italy; Piera Raspollini, Istituto di Fisica Applicata Nello Carrara IFAC-CNR, Italy; John Remedios, University of Leicester, United Kingdom; Marco Ridolfi, University of Bologna, Italy; Harjinder Sembhi, University of Leicester, United Kingdom; Luca Sgheri, Istituto per le Applicazione del Calcolo (IAC) of CNR, Italy; Thomas von Clarmann, Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research (IMK) of CNR, Germany; Georg Wagner, German Aerospace Center (DLR), Germany; Heidrun Weber, Astrium GmbH, Germany

TU4.13.5 17:00 **ASSIMILATION OF ENVISAT DATA FOR NUMERICAL WEATHER PREDICTION, ENVIRONMENT MONITORING AND REANALYSIS APPLICATIONS**
Jean-Noël Thepaut, European Centre For Medium Range Weather Forecasts, United Kingdom; Rossana Dragani, European Centre for Medium Range Weather Forecasts, United Kingdom; Saleh Abdalla, European Centre For Medium Range Weather Forecasts, United Kingdom; Richard Engelen, European Centre for Medium Range Weather Forecasts, United Kingdom

Tuesday, July 24 08:20 - 10:00 Room 14C
Session TU1.1 Oral

Differential SAR Interferometry I

Session Co-Chairs: Michael Eineder, German Aerospace Center - DLR; Gianfranco Fornaro, CNR - National Research Council of Italy

TU1.1.2 08:40 **1 AND 5 DAY DIFFERENTIAL INSAR UNDER CROSSING ORBITS WITH TERRASAR-X**
Steffen Wollstadt, Paco López-Dekker, Pau Prats-Iraola, Francesco de Zan, Thomas Busche, Gerhard Krieger, German Aerospace Center (DLR), Germany

TU1.1.3 09:00 **A NEW SBAS-DINSAR APPROACH BASED ON A REDUNDANT SET OF SMALL BASELINE INTERFEROGRAMS**
Yang Yang, National University of Defense Technology, China; Antonio Pepe, Mariarosaria Manzo, Riccardo Lanari, IREA-CNR, Italy

TU1.1.4 09:20 **NEAR REAL-TIME, SEMI-RECURSIVE, DEFORMATION MONITORING OF INFRASTRUCTURE USING SATELLITE RADAR INTERFEROMETRY**
Ling Chang, Ramon Hanssen, Delft University of Technology, Netherlands

TU1.1.5 09:40 **PHASE QUALITY OPTIMIZATION IN ORBITAL DIFFERENTIAL SAR INTERFEROMETRY WITH FULLY POLARIMETRIC DATA**
Dani Monells, Rubén Iglésias, Jordi J. Mallorquí, Xavier Fàbregas, Carlos López-Martínez, Universitat Politècnica de Catalunya, Spain

TU1.1.5 09:40 **OPTIMIZED FILTER DESIGN FOR IRREGULAR ACQUIRED DATA STACK IN PERSISTENT SCATTERERS SYNTHETIC APERTURE RADAR INTERFEROMETRY**
Wenyu Gong, Franz Meyer, Geophysical Institute, University of Alaska Fairbanks, United States

Tuesday, July 24 10:30 - 12:10 Room 14C
Session TU2.1 Oral

Differential SAR Interferometry II

Session Co-Chairs: Fabio Rocca, Polimi; Michael Eineder, German Aerospace Center - DLR

TU2.1.1 10:30 **TIBETAN PLATEAU PERMAFROST EVOLUTION MONITORING USING C- AND L-BAND SPACEBORNE SAR INTERFEROMETRY**
Fulong Chen, Hui Lin, Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong SAR of China

TU2.1.2 10:50 **HIGH RESOLUTION GROUND DEFORMATIONS MONITORING BY COSMO-SKYMED PSP SAR INTERFEROMETRY: PERFORMANCE ANALYSIS AND COMPARISON WITH ENVISAT RESULTS**
Mario Costantini, Salvatore Falco, Francesco Trillo, Francesco Vecchioli, E-GEOS - an ASI/ Telespazio Company, Italy

TU2.1.3 11:10 **FUSION OF PRIOR INFORMATION AND MULTI-SCALES LOCAL FREQUENCIES TO FACILITATE D-INSAR PHASE UNWRAPPING**
Yajing Yan, Emmanuel Trouvé, Virginie Pinel, Université de Savoie, France

TU2.1.4 11:30 **ADAPTIVE SPATIAL MULTILOOKING AND TEMPORAL MULTILINKING IN SBAS INTERFEROMETRY**
Gianfranco Fornaro, Diego Reale, National Research Council of Italy, Italy; Simona Verde, University of Naples Parthenope, Italy

TU2.1.5 11:50 **GROUND DEFORMATION ANALYSIS BY PERSISTENT SCATTERER INTERFEROMETRY OVER THE WHOLE ITALIAN TERRITORY**
Federico Minati, E-GEOS - an ASI/Telespazio Company, Italy; Davide Colombo, Tele-Rilevamento Europa - T.R.E. srl, Italy; Mario Costantini, E-GEOS - an ASI/Telespazio Company, Italy; Alessandro Ferretti, Tele-Rilevamento Europa - T.R.E. srl, Italy; Maria Grazia Ciminelli, E-GEOS - an ASI/Telespazio Company, Italy; Salvatore Costabile, Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Italy

Tuesday, July 24 13:30 - 15:10 Room 14C
Session TU3.1 Oral-Invited

TanDEM-X Mission Status and First Scientific Results I

Session Co-Chairs: Irena Hajnsek, German Aerospace Center - DLR; Manfred Zink, German Aerospace Center - DLR

TU3.1.1 13:30 **TANDEM-X MISSION STATUS**
Manfred Zink, German Aerospace Center (DLR), Germany

TU3.1.2 13:50 **TANDEM-X: SCIENCE ACTIVITIES**
Irena Hajnsek, ETH Zürich / German Aerospace Center DLR, Germany; Thomas Busche, German Aerospace Center (DLR), Germany

TU3.1.3 14:10 **TANDEM-X ACQUISITION STATUS AND CALIBRATION OF THE INTERFEROMETRIC SYSTEM**
Markus Bachmann, Daniel Schulze, Carlos Ortega Miguez, Donata Polimeni, Johannes Böer, Jaime Hueso Gonzalez, John Walter Antony, Gerhard Krieger, Benjamin Brävtigam, Marco Schwerdt, Manfred Zink, German Aerospace Center (DLR), Germany

TU3.1.4 14:30 **INTERFEROMETRIC PROCESSING AND PRODUCTS OF THE TANDEM-X MISSION**
Thomas Fritz, Helko Breit, Cristian Rossi, Ulrich Balss, Marie Lachaise, Sergio Duque, German Aerospace Center (DLR), Germany

TU3.1.5 14:50 **QUALITY ASSESSMENT OF FIRST LARGER TANDEM-X DEM BLOCKS**
Astrid Gruber, Birgit Wessel, Martin Huber, Markus Breunig, Susanne Wagenbrenner, Achim Roth, German Aerospace Center (DLR), Germany

Tuesday, July 24 15:40 - 17:20 Room 14C
Session TU4.1 Oral-Invited

TanDEM-X Mission Status and First Scientific Results II

Session Co-Chairs: Irena Hajnsek, German Aerospace Center - DLR / ETH Zürich; Manfred Zink, German Aerospace Center - DLR

TU4.1.1 15:40 **FIRST RESULTS OF TANDEM-X ALONG-TRACK INTERFEROMETRY**
Steffen Suchandt, Hartmut Runge, German Aerospace Center (DLR), Germany

TU4.1.2 16:00 **MONITORING THE PETERMANN ICE ISLAND WITH TANDEM-X**
Jose A. Garcia, German Aerospace Center (DLR), Germany; Kevin Eyssartier, Institute National Polytechnique de Grenoble, France; Paco López-Dekker, Pau Prats-Iraola, Francesco de Zan, Gerhard Krieger, Thomas Busche, German Aerospace Center (DLR), Germany

TU4.1.3 16:20 **DECADAL EARTH TOPOGRAPHY DYNAMICS MEASURED WITH TANDEM-X AND SRTM**
Michael Eineder, Thomas Fritz, Wael Abdel Jaber, Cristian Rossi, Helko Breit, German Aerospace Center (DLR), Germany

TU4.1.4 16:40 **DUAL POL-INSAR FOREST HEIGHT ESTIMATION BY MEANS OF TANDEM-X DATA**
Florian Kugler, German Aerospace Center (DLR), Germany; Irena Hajnsek, Eidgenössische Technische Hochschule Zürich, Switzerland; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

TU4.1.5 17:00 **BISTATIC SAR EXPERIMENTS WITH THE TANDEM-X CONSTELLATION**
Marc Rodríguez-Cassolà, Pau Prats-Iraola, Ulrich Steinbrecher, Ralf Horn, Anton Nottensteiner, Daniel Schulze, Martin Keller, Muriel Pinheiro, Manfred Zink, Andreas Reigber, Gerhard Krieger, Alberto Moreira, German Aerospace Center (DLR), Germany

Tuesday, July 24 | 08:20 - 10:00 | Room 21A
Session TU1.11 | Oral

Cloud and Precipitation Retrieval

Session Chair: Evan Ruzanski, Colorado State University

TU1.11.1 08:20 **OBSERVATIONS OF STORM SIGNATURES BY THE RECENTLY MODIFIED CONICAL SCANNING MILLIMETER-WAVE IMAGING RADIOMETER**
James Wang, Science Systems and Applications, Inc. / NASA Goddard Space Flight Center, United States

TU1.11.2 08:40 **A GLOBAL PRECIPITATION RETRIEVAL ALGORITHM FOR SUOMI NPP ATMS**
Chinnawat Surussavadee, Prince of Songkla University, Phuket Campus, Thailand; William Blackwell, MIT Lincoln Laboratory, United States; Dara Entekhabi, Massachusetts Institute of Technology, United States; R. Vincent Leslie, MIT Lincoln Laboratory, United States

TU1.11.3 09:00 **PRECIPITATION MEASUREMENT USING A DUAL KA-BAND RADAR SYSTEM FOR GPM/DPR ALGORITHM DEVELOPMENT**
Masanori Nishikawa, Kenji Nakamura, Haruya Minda, Nagoya University, Japan; Katsuhiro Nakagawa, Hiroshi Hanado, Seiji Kawamura, Shigeo Sugitani, National Institute of Information and Communications Technology, Japan; Shuji Shimizu, Japan Aerospace Exploration Agency (JAXA), Japan

TU1.11.4 09:20 **SATELLITE BASED ANALYSIS OF AEROSOL EFFECT ON CLOUD DROPLET SIZE IN EASTERN CHINA**
Fu Wang, University of Electronic Science and Technology of China, China; Jianping Guo, Chinese Academy of Meteorological Sciences, China; Yerong Wu, Xiaowen Li, Beijing Normal University, China

TU1.11.5 09:40 **HIGH RESOLUTION RAINFALL MAPPING IN THE DALLAS-FORT WORTH URBAN DEMONSTRATION NETWORK**
Haonan Chen, Venkatachalam Chandrasekar, Colorado State University, United States

Tuesday, July 24 | 10:30 - 12:10 | Room 21A
Session TU2.11 | Oral

Tropical Cyclone and Extreme Weather Remote Sensing

Session Co-Chairs: Joshua Cossuth, Florida State University; Chris Ruf, University of Michigan

TU2.11.1 10:30 **IMPROVED OBJECTIVE METRICS AND PHYSICAL UNDERSTANDING OF GLOBAL TROPICAL CYCLONE STRUCTURE THROUGH HURSAT SATELLITE DATA**
Joshua Cossuth, Robert Hart, Florida State University, United States

TU2.11.2 10:50 **WATER VAPOR, CLOUD LIQUID WATER CONTENT AND WIND SPEED IN TROPICAL, EXTRATROPICAL AND POLAR CYCLONES OVER THE NORTHWEST PACIFIC OCEAN**
Leonid Mitnik, Maia Mitnik, Irina Gurvich, Anastasiya Vykochko, Mikhail Pichugin, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russian Federation; Igor Cherny, Scientific-Technological Center "Kosmonit", JSC Russian Space Systems, Russian Federation

TU2.11.3 11:10 **OCEAN-ATMOSPHERIC INTERACTIONS, HEAVY PRECIPITATION, AND HURRICANE PREDICTIVE INDEX (HPI) ASSOCIATED WITH LAND-FALLING HURRICANE IRENE OVER THE EASTERN COAST OF THE UNITED STATES**
Christopher Wilson, Warith Abdullah, Remata Reddy, Wilbur Walters, Jackson State University, United States

TU2.11.4 11:30 **SPATIALLY PENALIZED REGRESSION FOR DEPENDENCE ANALYSIS OF RARE EVENTS: A STUDY IN PRECIPITATION EXTREMES**
Debasish Das, Temple University, United States; Auroop Ganguly, Northeastern University, United States; Snigdhansu Chatterjee, Vipin Kumar, University of Minnesota, United States; Zoran Obradovic, Temple University, United States

TU2.11.5 11:50 **ANALYSIS OF RAINFALL SIGNATURES ON COSMO-SKYMED X-BAND SYNTHETIC APERTURE RADAR OBSERVATIONS**
Saverio Mori, Luca Pulvirenti, Sapienza Università di Roma, Italy; Marco Chini, INGV, Italy; Nazzareno Pierdicca, Sapienza Università di Roma, Italy; Mario Montopoli, University of Cambridge, United Kingdom; Antonio Parodi, CIMA, Italy; James A. Weinman, University of Washington, United States; Frank S. Marzano, Sapienza Università di Roma, Italy

Tuesday, July 24 | 13:30 - 15:10 | Room 21A
Session TU3.11 | Oral

Atmospheric Sounding I

Session Co-Chairs: William Blackwell, MIT Lincoln Laboratory; Al Gasiewski, University of Colorado

TU3.11.1 13:30 **RETRIEVING ATMOSPHERIC TEMPERATURE AND MOISTURE PROFILES FROM SUOMI NPP CRIS/ATMS SENSORS USING CRIMSS EDR ALGORITHM**
Xu Liu, NASA Langley Research Center, United States; Susan Kizer, NASA Langley Research Center / Science Systems and Applications Incorporated, United States; Christopher Barnet, NOAA, United States; Murty Divakarla, NOAA/IM Systems Group, United States; DeGui Gu, Northrop Grumman Aerospace Systems, United States; Daniel Zhou, Allen Larar, NASA Langley Research Center, United States; Xiaozhen Xiong, Guang Guo, Nicholas Nalli, NOAA/IM Systems Group, United States; Antonia Gambacorta, NOAA / Riverside Technology Inc., United States; Michael Wilson, NOAA/IM Systems Group, United States; William Blackwell, MIT Lincoln Laboratory, United States; Lihang Zhou, NOAA, United States; Xia Ma, Northrop Grumman Aerospace Systems, United States; Mitchell Goldberg, NASA, United States; Dave Tobin, University of Wisconsin, United States

TU3.11.2 13:50 **SATELLITE SENSOR VALIDATION AND BENEFITS FROM AIRBORNE SYSTEMS**
Allen Larar, Daniel Zhou, Xu Liu, NASA Langley Research Center, United States; William Smith, HU / UW, United States

TU3.11.3 14:10 **ANALYSIS OF ATMOSPHERIC SIGNALS IN SPACEBORNE INSAR - TOWARD WATER VAPOR MAPPING BASED ON MULTIPLE SOURCES**
Fadwa Alshawaf, Benjamin Fersch, Stefan Hinz, Harald Kunstmann, Michael Mayer, Antje Thiele, Malte Westerhaus, Karlsruhe Institute of Technology (KIT), Germany; Franz Meyer, Geophysical Institute, University of Alaska Fairbanks, United States

TU3.11.4 14:30 **MEASUREMENT OF ATMOSPHERIC REFRACTIVITY USING SIGNALS OF OPPORTUNITY**
Robert Watson, Ben Wiltshire, Nathan Dumont, University of Bath, United Kingdom; Christopher Coleman, University of Adelaide, Australia

TU3.11.5 14:50 **ON THE ANGULAR EFFECT OF RESIDUAL CLOUDS AND AEROSOLS IN CLEAR-SKY IR WINDOW RADIANCE OBSERVATIONS**
Nicholas Nalli, IMSG, Inc., United States; Christopher Barnet, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Antonia Gambacorta, Eric Maddy, Riverside Technology, Inc, United States; Hua Xie, IMSG, Inc., United States; Tom King, Riverside Technology, Inc, United States; Everette Joseph, Vernon Morris, Howard University, United States; William Smith, Hampton University, United States

Tuesday, July 24 | 15:40 - 17:20 | Room 21A
Session TU4.11 | Oral

Atmospheric Sounding II

Session Co-Chairs: Al Gasiewski, University of Colorado; William Blackwell, MIT Lincoln Laboratory

TU4.11.1 15:40 **GNSS WATER VAPOR MONITORING IN THE SWISS ALPS**
Fabian Hurter, Alain Geiger, Donat Perler, Markus Rothacher, Institute of Geodesy and Photogrammetry, ETH, Zurich, Switzerland, Switzerland

TU4.11.2 16:00 **AIRBORNE LIDAR OBSERVATIONS OF WATER VAPOR TRANSPORT**
Christoph Kiemle, Andreas Schäfler, Martin Wirth, Andreas Fix, Stephan Rahm, Lidar Group, Institut für Physik der Atmosphäre, Germany

TU4.11.3 16:20 **RETRIEVAL OF THE ATMOSPHERIC PROPAGATION CONDITIONS OVER THE SEA SURFACE BASED ON SEA CLUTTER MEASUREMENTS**
Andreas Danklmayer, Helmut Essen, Gregor Biegel, Fraunhofer-FHR, Germany; Mario Behn, Joerg Foerster, Technical Center for Ships and Naval Weapons, Germany; Yvonick Hurtaud, DGA, France; Vincent Fabbro, Laurent Castanet, Office National d'Etudes et de Recherches Aérospatiale, France

TU4.11.4 16:40 **OPTICAL ANEMOMETRY BASED ON THE TEMPORAL CROSS-CORRELATION OF ANGLE-OF-ARRIVAL FLUCTUATIONS OBTAINED FROM SPATIALLY SEPARATED LIGHT SOURCES**
Shiril Tichkule, University of Colorado at Boulder, United States; Andreas Muschinski, NorthWest Research Associates, United States

TU4.11.5 17:00 **TROPOSPHERIC HUMIDITY REMOTE SENSING USING A NETWORK OF GROUND-BASED SCANNING COMPACT MICROWAVE RADIOMETERS**
Swaroop Sahoo, Xavier Bosch-Lluis, Steven C. Reising, Colorado State University, United States; Jothiram Vivekanandan, National Center for Atmospheric Research, United States

Tuesday, July 24 | 08:20 - 10:00 | Room 21B
Session TU1.16 | Oral-Invited

Change Detection and Multitemporal Image Analysis II

Session Co-Chairs: Jordi Inglada, CESBIO-CNES; Lorenzo Bruzzone, University of Trento

TU1.16.1 08:20 **UNSUPERVISED CHANGE DETECTION WITH HIGH-RESOLUTION SAR IMAGES BY EDGE-PRESERVING MARKOV RANDOM FIELDS AND GRAPH-CUTS**
Gabriele Moser, Sebastiano Serpico, University of Genoa, Italy

TU1.16.2 08:40 **ROBUST UNSUPERVISED NONPARAMETRIC CHANGE DETECTION OF SAR IMAGES**
Andrea Garzelli, Claudia Zoppetti, University of Siena, Italy; Bruno Aiazzi, Stefano Baronti, National Research Council of Italy, Italy; Luciano Alparone, University of Florence, Italy

TU1.16.3 09:00 **A NOVEL HIERARCHICAL APPROACH TO CHANGE DETECTION WITH VERY HIGH RESOLUTION SAR IMAGES FOR SURVEILLANCE APPLICATIONS**
Francesca Bovolo, Carlo Marin, Lorenzo Bruzzone, University of Trento, Italy

TU1.16.4 09:20 **MULTI-TEMPORAL AND MULTI-ANGULAR ANALYSIS OF VERY HIGH SPATIAL RESOLUTION IMAGES**
Fabio Pacifici, DigitalGlobe, Inc., United States; Nathan Longbotham, William J. Emery, University of Colorado at Boulder, United States

TU1.16.5 09:40 **CASCADE ACTIVE LEARNING FOR SAR IMAGE ANNOTATION**
Shiyong Cui, Mihai Datcu, German Aerospace Center (DLR), Germany; Pierre Blanchart, CEA, LIST, France

Tuesday, July 24 | 10:30 - 12:10 | Room 21B
Session TU2.16 | Oral-Invited

Change Detection and Multitemporal Image Analysis III

Session Co-Chairs: Florence Tupin, Telecom ParisTech; Francesca Bovolo, University of Trento

TU2.16.1 10:30 **NEAR REAL-TIME SAR CHANGE DETECTION USING CUDA**
Ke Zhu, Technische Universität München, Germany; Shiyong Cui, German Aerospace Center (DLR), Germany

TU2.16.2 10:50 **TWO STEPS MULTI-TEMPORAL NON-LOCAL MEANS FOR SAR IMAGES**
Xin Su, Institut Telecom; Telecom ParisTech; LTCI, France; Charles-Alban Deledalle, Centre National de la Recherche Scientifique, Ceremade, Paris Dauphine University, France; Florence Tupin, Institut Telecom; Telecom ParisTech; LTCI, France; Hong Sun, School of Electronic Information, Wuhan University, China

TU2.16.3 11:10 **REMOVING PARALLAX-INDUCED CHANGES IN HYPERSPECTRAL CHANGE DETECTION**
Karmon Vongsy, Michael J. Mendenhall, Air Force Institute of Technology, United States; Michael T. Eismann, Air Force Research Laboratory, United States; Gilbert L. Peterson, Air Force Institute of Technology, United States

TU2.16.4 11:30 **TARGET-DRIVEN CHANGE DETECTION BASED ON DATA TRANSFORMATION AND SIMILARITY MEASURES**
Peijun Du, Nanjing University, China; Sicong Liu, Lorenzo Bruzzone, Francesca Bovolo, University of Trento, Italy

TU2.16.5 11:50 **NEAR REAL-TIME DEFORESTATION MONITORING IN TROPICAL ECOSYSTEMS USING SATELLITE IMAGE TIME SERIES**
Jan Verbesselt, Manos Kalomenopoulos, Wageningen University, Netherlands; Carlos Souza, Imazon, Brazil; Martin Herold, Wageningen University, Netherlands

Tuesday, July 24 | 13:30 - 15:10 | Room 21B
Session TU3.16 | Oral-Invited

Climate Data Records From Satellite Observations to Analyse Climate Variability and Change I

Session Co-Chairs: Joerg Schulz, EUMETSAT; Pascal Lecomte, ESA

TU3.16.1 13:30 **REMOTE SENSING ASPECTS OF THE GLOBAL FRAMEWORK FOR CLIMATE SERVICES**
Barbara J. Ryan, WMO, Switzerland

TU3.16.2 13:50 **USE OF REMOTE SENSING DATA IN CLIMATE MODELLING**
Alexander Loew, Max-Planck-Institute for Meteorology, Germany; Roger Saunders, MetOffice Hadley Centre, United Kingdom; Thierry Phulpin, Météo-France, France; David Tan, ECMWF, United Kingdom; Silvia Kloster, Max-Planck-Institute for Meteorology, Germany; Mark Ringer, MetOffice Hadley Centre, United Kingdom; Serge Planton, Météo-France, France; Dick Dee, ECMWF, United Kingdom

TU3.16.3 14:10 **THE SUSTAINED CO-ORDINATED PROCESSING OF ENVIRONMENTAL SATELLITE DATA FOR CLIMATE MONITORING (SCOPE-CM)**
John Bates, NOAA/NCDC, United States; Lothar Schueller, EUMETSAT, Germany; Barbara J. Ryan, WMO, Switzerland

TU3.16.4 14:30 **REPROCESSING OF ALTIMETER PRODUCTS FOR ERS: REAPER**
Steven Baker, David Brockley, University College of London, United Kingdom; Bernat Martinez, Monica Roca, isardSAT, S.L., Spain; Franz-Heinrich Massmann, GeoForschungsZentrum Potsdam (GFZ), Germany; Michiel Otten, European Space Agency ESOC, Germany; Remko Scharroo, Altimetrics LLC, United States; François Soulat, Bruno Picard, Batoula Soussi, Collecte Localisation Satellites (CLS), France; Pieter Visser, Technical University of Delft, Netherlands; Pierre Féménias, European Space Agency ESRIN, Italy

TU3.16.5 14:50 **TOWARDS ESTABLISHING AN EO-BASED AEROSOL CLIAMTE DATA RECORD**
Thomas Holzer-Popp, DLR-DFD, Germany; Gerrit de Leeuw, Finnish Meteorological Institute, Finland

Tuesday, July 24 | 15:40 - 17:20 | Room 21B
Session TU4.16 | Oral-Invited

Climate Data Records From Satellite Observations to Analyse Climate Variability and Change II

Session Co-Chairs: Barbara Ryan, WMO; Joerg Schulz, EUMETSAT

TU4.16.1 15:40 **THE ESA CLIMATE CHANGE INITIATIVE: SATELLITE DATA RECORDS FOR ESSENTIAL CLIMATE VARIABLES**
Pascal Lecomte, European Space Agency, United Kingdom

TU4.16.2 16:00 **OCEAN COLOUR CLIMATE CHANGE INITIATIVE – APPROACH AND INITIAL RESULTS**
Shubha Sathyendranath, Bob Brewin, Plymouth Marine Laboratory, United Kingdom; Dagmar Mueller, Roland Doerffer, Hajo Krasemann, Helmholtz-Zentrum Geesthacht, Germany; Frederic Melin, European Commision, Joint Research Centre, Italy; Carsten Brockmann, Norman Fomferra, Marco Peters, Brockmann Consult GmbH, Germany; Mike Grant, Plymouth Marine Laboratory, United Kingdom; Francois Steinmetz, Pierre-Yves Deschamps, HYGEOS, France; John Swinton, Telespazio VEGA UK, United Kingdom; Tim Smyth, Plymouth Marine Laboratory, United Kingdom; Jeremy Werdell, Bryan Franz, NASA Ocean Biology Processing Group, United States; Stéphane Maritorena, University of California, Santa Barbara, United States; Emmanuel Devred, CERC, Canada; ZhongPing Lee, University of Massachusetts Boston, United States; Chuanmin Hu, University of South Florida, United States; Peter Regner, European Space Agency, United Kingdom

TU4.16.3 16:20 **CONSTRUCTING AND ANALYSING A 32-YEARS CLIMATE DATA RECORD OF REMOTELY SENSED SOIL MOISTURE**
Wouter Dorigo, Wolfgang Wagner, Bernhard Bauer-Marschallinger, Daniel Chung, Vienna University of Technology, Austria; Richard De Jeu, Robert Parinussa, VU University Amsterdam, Netherlands; Yi Liu, University of New South Wales, Australia

TU4.16.4 16:40 **SUSTAINED CLIMATE DATA RECORD GENERATION AT EUMETSAT**
Jörg Schulz, Tim Hewison, Rob Roebeling, Lothar Schueller, EUMETSAT, Germany

TU4.16.5 17:00 **THE EUMETSAT CMSAF AVHRR CLOUD PROPERTY AND SURFACE RADIATION FLUX CLIMATE DATA RECORD**
Rainer Hollmann, Martin Stengel, Deutscher Wetterdienst, Germany; Jan Fokke Meirink, KNMI, Netherlands; Karl-Goran Karlsson, Swedish Meteorological and Hydrological Institute, Sweden; Joerg Trentmann, Deutscher Wetterdienst, Germany; Aku Riihelä, Finnish Meteorological Institute, Finland

Tuesday, July 24 | 08:20 - 10:00 | Room 22A
Session TU1.9 | Oral

Ocean Biology (Color) and Water Quality

Session Chair: Carsten Brockmann, Brockmann Consult GmbH

TU1.9.1 08:20 **WATER QUALITY MODEL PARAMETERS INVERSION BASED ON IMPROVED STOCHASTIC OPTIMIZATION**
Junping Zhang, Wenjing Ma, Harbin Institute of Technology, China; Jiaguo Qi, Michigan State University, United States

TU1.9.2 08:40 **THE COASTCOLOUR DATASET**
Carsten Brockmann, Brockmann Consult GmbH, Germany; Roland Doerffer, HZG Research Centre Geesthacht, Germany; Shubha Sathyendranath, Plymouth Marine Laboratory, United Kingdom; Kevin Ruddick, Royal Belgian Institute of Natural Sciences, Belgium; Vanda Brotas, University Lisbon, Portugal; Richard Santer, University du Littoral Côte d'Opale, France; Simon Pinnock, European Space Agency ESRIN, Italy

TU1.9.3 09:00 **MONITORING THE EFFECT OF UPWELLING ON THE CHLOROPHYLL A DISTRIBUTION IN THE GULF OF FINLAND USING MERIS DATA**
Rivo Uiboupin, Jaan Laanemets, Tallinn University of Technology, Estonia

TU1.9.4 09:20 **ESTIMATING OF CHROMOPHORIC DISSOLVED ORGANIC MATTER (CDOM) WITH IN-SITU AND SATELLITE HYPERSPECTRAL REMOTE SENSING TECHNOLOGY**
Yong Tian, Central Michigan University, United States; Qian Yu, University of Massachusetts Amherst, United States; Weining Zhu, Central Michigan University, United States

TU1.9.5 09:40 **USE OF MSI AND HSI DATA WITH A LUT BASED APPROACH FOR RETRIEVING BATHYMETRY, WATER CONSTITUENTS, AND BOTTOM TYPE INFORMATION**
Jeffrey Bowles, David Gillis, Gia Lamela, Naval Research Laboratory, United States; W. David Miller, Computational Physics, Inc., United States; Karen Patterson, Naval Research Laboratory, United States

Tuesday, July 24 | 10:30 - 12:10 | Room 22A
Session TU2.9 | Oral

Ocean Surface Winds and Currents I

Session Chair: Naoto Ebuchi, Hokkaido University

TU2.9.1 10:30 **EVALUATION OF WIND VECTORS OBSERVED BY OCEANSAT-2 SCATTEROMETER USING STATISTICAL DISTRIBUTIONS**
Naoto Ebuchi, Hokkaido University, Japan

TU2.9.2 10:50 **A STUDY ON WIND VECTOR RETRIEVAL ALGORITHM FOR ROTATING FAN-BEAM SCATTEROMETER**
Xuetong Xie, Shi Huan, Guangzhou University, China; Jianqiang Liu, Shuyan Lang, Youguang Zhang, National Satellite Ocean Application Service, China; Di Zhu, Center for Space Science and Applied Research, CAS, China; Kehai Chen, Guangzhou University, China; Juhong Zou, National Satellite Ocean Application Service, China; Zhou Huang, Peking University, China; Weijun Tao, Guangzhou University, China

TU2.9.3 11:10 **SIMULATION OF THE PERFORMANCE OF FULL-POLARIZED SCATTEROMETER FOR OCEAN WIND VECTOR MEASUREMENT**
Zhongguo Song, Xiaolong Dong, Di Zhu, National Space Science Center/Center for Space Science and Applied Research, CAS, China

TU2.9.4 11:30 **ON DERIVATION OF SEA WAVE SPECTRUM FROM BALANCE EQUATION**
Vladimir Irisov, Zel Technologies, LLC / NOAA, United States

TU2.9.5 11:50 **NWP OCEAN CALIBRATION OF KU-BAND SCATTEROMETERS**
Risheng Yun, Key Laboratory of Microwave Remote Sensing, Center for Space Science and Applied Research, CAS, China; Ad Stoffelen, Jeroen Verspeek, Anton Verhoef, Royal Netherlands Meteorological Institute (KNMI), Netherlands

Tuesday, July 24 | 13:30 - 15:10 | Room 22A
Session TU3.9 | Oral

Ocean Surface Winds and Currents II

Session Co-Chairs: Jochen Horstmann, NATO Undersea Research Center; Handol Kim, KARI

TU3.9.1 13:30 **REMOTE SENSING OF OCEAN SURFACE WIND BY POLARIMETRIC SYNTHETIC APERTURE RADAR**
Biao Zhang, Nanjing University of Information Science and Technology, China; William Perrie, Bedford Institute of Oceanography, Canada; Paris Vachon, Defence R&D Canada, Canada; Xiao Feng Li, IMSG at NOAA/NEDIS, United States; William Pichel, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Jie Guo, Yantai Institute of Coastal Zone Research, CAS, China; Yijun He, Nanjing University of Information Science and Technology, China

TU3.9.2 13:50 **SEA SURFACE WIND FIELD RETRIEVAL FROM TERRASAR-X AND ITS APPLICATIONS TO COASTAL AREAS**
Xiaoming Li, Susanne Lehner, German Aerospace Center (DLR), Germany

TU3.9.3 14:10 **ESTIMATING WINDS FROM SYNTHETIC APERTURE RADAR IN TYPHOON CONDITIONS**
Jochen Horstmann, NATO Undersea Research Center, Italy; Christopher Wackerman, General Dynamics Advanced Information Systems, United States; Ralph Foster, Applied Physics Laboratory, United States; Michael Caruso, Hans C. Graber, Center for Southeastern Tropical Advanced Remote Sensing, United States

TU3.9.5 14:50 **SEA SURFACE WIND RETRIEVAL USING BOTH NORMALIZED RADAR CROSS SECTION AND POLARIZATION RESIDUAL DOPPLER FREQUENCY FROM TERRASAR-X DATA**
Faozi Saïd, University of Tromsø, Norway; Harald Johnsen, Norut, Norway

Tuesday, July 24 | 15:40 - 17:20 | Room 22A
Session TU4.9 | Oral

Ocean Surface Winds and Currents III

Session Chair: Werner Alpers, University of Hamburg

TU4.9.1 15:40 **TOWARDS A CLIMATE DATA RECORD OF SATELLITE OCEAN VECTOR WINDS**
Lucrezia Ricciardulli, Thomas Meissner, Frank Wentz, Remote Sensing Systems, United States

TU4.9.2 16:00 **ESTIMATING OCEAN SUSFACE STOKES DRIFT FROM SCATTEROMETER OBSERVATIONS**
Guoqiang Liu, William Perrie, Yijun He, Bedford Institute of Oceanography, Canada

TU4.9.3 16:20 **A WINTER MONSOON FRONT OVER THE SOUTH CHINA SEA STUDIED BY MULTI-SENSOR SATELLITE DATA, WEATHER RADAR DATA, AND A NUMERICAL MODEL**
Werner Alpers, University of Hamburg, Germany; Knut-Frode Dagestad, Nansen Environmental and Remote Sensing Center, Norway; Wai Kin Wong, Pak Wai Chan, Hong Kong Observatory, Hong Kong SAR of China

TU4.9.4 16:40 **THE EFFECTS OF GAP WIND INDUCED VORTICITY, MONSOON TROUGH, AND ITCZ ON TROPICAL CYCLOGENESIS**
Heather Holbach, Mark Bourassa, Florida State University, United States

TU4.9.5 17:00 **AN AUTOMATIC PROCESSING CHAIN FOR WIND AND WAVE FIELDS RETRIEVAL FROM COSMO-SKYMED DATA**
Massimo Zavagli, Corrado Avolio, Marco Di Bari, Maria Lucia Magliozzi, Claudio Mammone, Roberto Rossi, Mario Costantini, Achille Ciappa, Paola Nicolosi, E-GEOS, Italy

Wednesday, July 25 08:20 - 10:00 Room 2
Session WE1.10 Oral-Invited

SMOS Instrument Calibration and Performance

Session Co-Chairs: Manuel Martin-Neira, European Space Agency; Susanne Mecklenburg, European Space Agency

WE1.10.1 08:20 **SMOS INSTRUMENT PERFORMANCE AND CALIBRATION**
Manuel Martín-Neira, European Space Agency, Netherlands; Ignasi Corbella, Francesc Torres, Universitat Politècnica de Catalunya, Spain; Juha Kainulainen, Aalto University, Finland; Roger Oliva, European Space Agency ESAC, Villanueva de la Cañada, Spain; Josep Closa, EADS-CASA Espacio, Madrid, Spain; François Cabot, Centre d'Etudes Spatiales de la Biosphère, Universite de Toulouse, France; Rita Castro, José Barbosa, Antonio Gutiérrez, DEIMOS, Lisbon, Portugal; Eric Anterrieu, IRAP, Toulouse, France; Joseph Tenerelli, Collecte Localisation Satellites (CLS), France; Fernando Martín-Porqueras, IDEAS, ESAC, Villanueva de la Cañada, Spain; Guillermo Buenadicha, ESAC, Villanueva de la Cañada, Spain

WE1.10.2 08:40 **ENHANCED SMOS AMPLITUDE CALIBRATION USING EXTERNAL TARGET**
Ignasi Corbella, Francesc Torres, Nuria Duffo, Israel Duran, Miriam Pablos, Universitat Politècnica de Catalunya, Spain; Manuel Martín-Neira, European Space Agency, Netherlands

WE1.10.3 09:00 **STABILITY OF SMOS REFERENCE RADIOMETERS AND THEIR MEASUREMENTS OVER VARIOUS SEMI-HOMOGENOUS AREAS**
Juha Kainulainen, Aalto University, Finland; Andreas Colliander, California Institute of Technology, United States; Josep Closa, EADS Casa Espacio, Spain; Manuel Martín-Neira, European Space Agency, Netherlands; Martti Hallikainen, Aalto University, Finland

WE1.10.4 09:20 **A PARAMETRIC APPROACH FOR RFI DETECTION AND MITIGATION IN SMOS LEVEL 1A DATA**
Eric Anterrieu, Centre National de la Recherche Scientifique, France; Ali Khazaal, Yann H. Kerr, François Cabot, Yan Soldo, Centre d'Etudes Spatiales de la Biosphère, France

WE1.10.5 09:40 **SYNTHESIZING SMOS ZERO-BASELINES WITH AQUARIUS BRIGHTNESS TEMPERATURE SIMULATOR**
Andreas Colliander, NASA Jet Propulsion Laboratory, United States; Emmanuel Dinnat, Chapman University, NASA Goddard Space Flight Center, United States; David Le Vine, NASA Goddard Space Flight Center, United States; Juha Kainulainen, Aalto University, Finland

Wednesday, July 25 10:30 - 12:10 Room 2
Session WE2.10 Oral-Invited

Advanced Imaging Spectrometers organized by the Technical Committee

Session Chair: Mark Folkman, Northrop Grumman Aerospace Systems

WE2.10.1 10:30 **TECHNOLOGY EVOLUTION OF THE TROPOMI INSTRUMENT**
Johan de Vries, Dutch Space B.V., Netherlands; Ruud Hoogeveen, SRON Netherlands Institute for Space Research, Netherlands; Robert Voors, Dutch Space B.V., Netherlands; Quintus Kleipool, Pepijn Veefkind, Koninklijk Nederlands Meteorologisch Instituut, Netherlands; Ilse Aben, Ralph Snel, SRON Netherlands Institute for Space Research, Netherlands; Nick van der Valk, Huib Visser, Gerard Otter, TNO Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Netherlands

WE2.10.2 10:50 **THE PROTOTYPE HYSPIRI THERMAL INFRARED RADIOMETER (PHYTIR) AND HYPERSPECTRAL THERMAL EMISSION SPECTROMETER (HYTES)**
Simon J. Hook, William Johnson, Bjorn Eng, Marc Foote, Renaud Goullioud, Christopher Paine, Alex Soibel, Daniel Wilson, Bruno Jau, NASA Jet Propulsion Laboratory, United States

WE2.10.3 11:10 **MEASUREMENTS OF ATMOSPHERIC COMPOSITION FROM GEOSTATIONARY PLATFORMS USING THE PANCHROMATIC FOURIER TRANSFORM SPECTROMETER (PANFTS)**
Stanley Sander, Jean-Francois Blavier, Kevin Bowman, Annmarie Eldering, Jessica Neu, David Rider, Richard Key, John Worden, NASA Jet Propulsion Laboratory, United States

WE2.10.4 11:30 **CHALLENGES, PERFORMANCES AND APPLICATIONS OF MINIATURIZED HYPERSPECTRAL IMAGERS**
Stephanie Delalieux, Bavo Delauré, VITO, Belgium; De Clercq Coralie, AMOS, Belgium; Lieve de Vos, OIP, Belgium; Wouter Dierckx, VITO, Belgium; Semen Grabarnik, European Space Agency ESTEC, Netherlands; Els Knaeps, VITO, Belgium; Luca Maresi, European Space Agency ESTEC, Netherlands; Bart Michiels, VITO, Belgium; Vincent Moreau, AMOS, Belgium

WE2.10.5 11:50 **COMPACT, DUAL BAND THERMAL IMAGING SPECTROMETER FOR GEOSCIENCE AND REMOTE SENSING KRISTEN SHAPIRO, HAROLD MILLER, MARTIN FLANNERY, MARK FOLKMAN & SUZANNE CASEMENT NORTHROP GRUMMAN AEROSPACE SYSTEMS (NGAS), ONE SPACE PARK, REDONDO BEACH, CA 90278**
Harold Mileer, Kristen Shapiro, Suzanne Casement, Martin Flannery, Mark Folkman, Northrop Grumman Aerospace Systems, United States

Wednesday, July 25 13:30 - 15:10 Room 2
Session WE3.10 Oral-Invited

Geospatial Semantic Web and Ontologies I organized by the Technical Committee

Session Co-Chairs: Liping Di, George Mason University; Peng Yue, Wuhan University

WE3.10.1 13:30 **TOPOGRAPHIC FEATURE TYPE VOCABULARIES FO ONTOLOGY PATTERNS**
Dalia E. Varanka, E Lynn Usery, United States Geological Survey, United States

WE3.10.2 13:50 **ONTOLOGY-SUPPORTED COMPLEX FEATURE DISCOVERY IN A WEB SERVICE ENVIRONMENT**
Liping Di, Peng Yue, Ziheng Sun, George Mason University, United States

WE3.10.3 14:10 **GEOSEMANTICALLY-ENHANCED PUBMED QUERIES USING THE GEONAMES ONTOLOGY AND WEB SERVICES**
Maged N. Kamel Boulos, University of Plymouth, United Kingdom

WE3.10.4 14:30 **WHY LINKED DATA SHOULD NOT LEAD TO NEXT GENERATION SDI**
Sven Schade, Paul Smits, European Commision, Joint Research Centre, Italy

WE3.10.5 14:50 **THE CHALLENGE OF INTEGRATED EARTH OBSERVATION SEMANTIC SENSOR WEB**
Nengcheng Chen, Xiaolei Wang, Wuhan University, China

Wednesday, July 25 15:40 - 17:20 Room 2
Session WE4.10 Oral-Invited

Geospatial Semantic Web and Ontologies II organized by the Technical Committee

Session Co-Chairs: Liping Di, George Mason University; Peng Yue, Wuhan University

WE4.10.1 15:40 **SEMANTIC-BASED USER DEMAND MODELING FOR REMOTE SENSING IMAGES RETRIEVAL**
Xinyan Zhu, Ming Li, Wei Guo, Xia Zhang, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China

WE4.10.2 16:00 **GEOSPATIAL BEHAVIOURAL SEMANTICS: A NATURAL LANGUAGE APPROACH**
Kristin Stock, University of Nottingham, United Kingdom

WE4.10.3 16:20 **SEMANTIC MEDIATION ON THE SENSOR WEB**
Arne Bröring, Patrick Maué, Christian Malewski, University of Muenster, Germany; Krzysztof Janowicz, University of California, United States

WE4.10.4 16:40 **SEMANTIC FEATURE CATALOGUE SERVICE**
Peng Yue, Liping Di, Center for Spatial Information Science and Systems (CSISS), George Mason University, United States; Yaxing Wei, Oak Ridge National Laboratory, United States; Weiguo Han, Center for Spatial Information Science and Systems (CSISS), George Mason University, United States

WE4.10.5 17:00 **GEOSPATIAL ONTOLOGIES MATCHING: AN INFORMATION THEORETIC APPROACH**
Ujwala Bharambe, Surya Durbha, Indian Institute of Technology, Bombay, India; Roger King, Mississippi State University, United States

Wednesday, July 25 08:20 - 10:00 Room 3
Session WE1.6 Oral

Active Microwave Calibation and New Sensor

Session Chair: Paul Siqueira, University of Massachussetts

WE1.6.1 08:20 **PRECIPITATION OBSERVATION USING COMMERCIAL MICROWAVE COMMUNICATION LINKS**
Christian Chwala, Harald Kunstmann, Karlsruhe Institute of Technology (KIT), Germany; Susanne Hipp, Uwe Siart, Thomas Eibert, Technische Universität München, Germany

WE1.6.2 08:40 **ASCAT CALIBRATION STATUS**
J. J. W. Wilson, Craig Anderson, Julia Figa, Hans Bonekamp, EUMETSAT, Germany

WE1.6.3 09:00 **AIRBORNE VALIDATION EXPERIMENTS FOR SPACEBORNE MICROWAVE SCATTEROMETERS**
Xiaoning Wang, Ailing Lv, Haoqiang Shi, Chinese Academy of Space Technology, China

WE1.6.4 09:20 **AN AIRBORNE 35 GHZ RADAR INTERFEROMETER IN DEVELOPMENT AT THE UNIVERSITY OF MASSACHUSETTS**
Paul Siqueira, Rockwell Schrock, University of Massachusetts Amherst, United States; Thomas Millette, Mt. Holyoke College, United States; Tom Hartley, University of Massachusetts Amherst, United States

WE1.6.5 09:40 **NETRAD MULTISTATIC SEA CLUTTER DATABASE**
Michael Inggs, University of Cape Town, South Africa; Alessio Balleri, Waddah Al-Ashwal, University College London, United Kingdom; Keith Ward, igence, United Kingdom; Karl Woodbridge, Matthew Ritchie, William Miceli, University College London, United Kingdom; Robert Tough, igence, United Kingdom; Christopher Baker, The Ohio State University, South Africa; Simon Watts, Thales UK, United Kingdom; R. Harmanny, Thales (Netherlands), Netherlands; Andrew Stove, Thales UK, United Kingdom; JS Sandenbergh, University of Cape Town, South Africa; Hugh Griffiths, University College London, United Kingdom

Wednesday, July 25 13:30 - 15:10 Room 3
Session WE3.6 Oral

Microwave Radiometer Calibration

Session Chair: Sidharth Misra, NASA Jet Propulsion Laboratory

WE3.6.1 13:30 **AQUARIUS/SAC-D MICROWAVE RADIOMETER (MWR): INSTRUMENT DESCRIPTION & BRIGHTNESS TEMPERATURE CALIBRATION**
Sayak Biswas, Linwood Jones, University of Central Florida, United States; Daniel Rocca, Juan-Cruz Gallio, CONAE, Argentina

WE3.6.2 13:50 **AQUARIUS ENGINEERING PHASE ON-ORBIT TA CALIBRATION**
Amanda Mims, Christopher Ruf, University of Michigan, United States

WE3.6.3 14:10 **TECHNIQUES FOR CALIBRATION DRIFT CORRECTION ON THE AQUARIUS RADIOMETER**
Sidharth Misra, Shannon T. Brown, NASA Jet Propulsion Laboratory, United States

WE3.6.4 14:30 **SATELLITE ATTITUDE ANALYSIS USING THE VICARIOUS COLD CALIBRATION METHOD FOR MICROWAVE RADIOMETERS**
Rachael Kroodsma, Darren McKague, Christopher Ruf, University of Michigan, United States

WE3.6.5 14:50 **VICARIOUS INTERCALIBRATION OF AMSU-A**
Darren McKague, University of Michigan, United States

Wednesday, July 25 10:30 - 12:10 Room 3
Session WE2.6 Oral

Microwave Radiometer Technology

Session Co-Chairs: Ulf Klein, ESA; David Walker, National Institute of Standards and Technology

WE2.6.1 10:30 **REALIZATION OF A STANDARD RADIOMETER FOR MICROWAVE BRIGHTNESS-TEMPERATURE MEASUREMENTS TRACEABLE TO FUNDAMENTAL NOISE STANDARDS**
Dazhen Gu, Derek Houtz, James Randa, David Walker, NIST, United States

WE2.6.2 10:50 **ACTIVE LOAD MODULES FOR W-BAND RADIOMETER CALIBRATION**
Ernst Weissbrodt, Axel Tessmann, Michael Schlechtweg, Fraunhofer Institute for Applied Solid-State Physics, Germany; Ingmar Kallfass, Karlsruhe Institute of Technology (KIT), Germany; Oliver Ambacher, University of Freiburg, Germany

WE2.6.3 11:10 **DEVELOPMENT OF MICROWAVE CALIBRATION TARGETS FOR UPCOMING ESA MISSIONS**
Axel Murk, University of Bern, Switzerland; Richard Wylde, Graham Bell, Thomas Keating Ltd., United Kingdom; Andrew McNamara, Juan Reveles-Wilson, ABSL Space Products, United Kingdom; Irena Zivkovic, University of Bern, Switzerland; Roger Dewell, ABSL Space Products, United Kingdom; Peter de Maagt, European Space Agency, Netherlands

WE2.6.4 11:30 **DESIGN AND DEVELOPMENT STATUS OF THE SENTINEL-3 MICROWAVE RADIOMETER**
Ulf Klein, Bruno Berruti, Constantin Mavrocordatos, European Space Agency, Netherlands; Marc Bergadà, EADS CASA Espacio,, Spain

WE2.6.5 11:50 **DIGITAL BACK-END FOR RFI DETECTION AND MITIGATION IN MICROWAVE RADIOMETERS**
Giuseppe Forte, Adriano Camps, Isaac Ramos-Perez, Mercè Vall-llossera, Universitat Politècnica de Catalunya, Spain

Wednesday, July 25 15:40 - 17:20 Room 3
Session WE4.6 Oral

Microwave Radiometer Missions

Session Co-Chairs: Francesc Torres, Universitat Politècnica de Catalunya; Andreas Colliander, NASA Jet Propulsion Laboratory

WE4.6.1 15:40 **CHARACTERIZATION OF THE SPATIAL AND TEMPORAL STABILITY OF THE EAST-ANTARCTIC PLATEAU IN THE LOW-MICROWAVE BANDS**
Marco Brogioni, Giovanni Macelloni, IFAC-CNR, Italy; Rachid Rahmoune, Tor Vergata University of Rome, Italy

WE4.6.2 16:00 **SPATIAL DECORRELATION OF RADIOMETRIC NOISE IN SMOS MEASUREMENTS**
Francesc Torres, Lin Wu, Nuria Duffo, Ignasi Corbella, Universitat Politècnica de Catalunya, Spain; Manuel Martín-Neira, European Space Agency, Netherlands

WE4.6.3 16:20 **COMPARISON OF CARVE PALS BRIGHTNESS TEMPERATURE ACQUISITIONS IN ALASKA WITH SMOS AND AQUARIUS**
Andreas Colliander, Steven Dinardo, Charles Miller, NASA Jet Propulsion Laboratory, United States

WE4.6.4 16:40 **A GENERIC SIMULATOR FOR APERTURE SYNTHESIS RADIOMETERS**
Adriano Camps, Hyuk Park, Universitat Politècnica de Catalunya and IEEC, Spain; José Barbosa, Jorge Bandeiras, Deimos Engenharia, Portugal; Salvatore D'Addio, European Space Agency ESTEC, Netherlands

WE4.6.5 17:00 **AN INLAND WATER WET PATH DELAY RETRIEVAL ALGORITHM FOR NADIR-VIEWING MICROWAVE RADIOMETERS**
Kyle Gilliam, Xavier Bosch-Lluis, Steven C. Reising, Colorado State University, United States; Alan B. Tanner, Shannon T. Brown, California Institute of Technology, United States

Wednesday, July 25 08:20 - 10:00 Room 4A

Session WE1.14 Oral

Dynamics of Earth Processes and Climate Change: Disasters and Hazards II

Session Chair: Torge Steensen, Alaska Volcano Observatory

WE1.14.1 08:20 **RADAR REMOTE SENSING OF ASH CLOUD DUE TO THE GRÍMSVÖTN SUB-GLACIAL EXPLOSIVE ERUPTION ON 2011**
Frank S. Marzano, Mirko Lamantea, Sapienza Università di Roma, Italy; Mario Montopoli, University of Cambridge, United Kingdom; Domenico Cimini, Consiglio Nazionale delle Ricerche IMAA, Italy

WE1.14.2 08:40 **QUALITATIVE ANALYSIS OF INPUT PARAMETERS FOR SATELLITE-BASED QUANTIFICATION OF AIRBORNE VOLCANIC ASH**
Torge Steensen, Peter Webley, Alaska Volcano Observatory, United States

WE1.14.3 09:00 **MEETING REMOTE SENSING REQUIREMENTS FOR FASTER DISASTER RESPONSE**
David Dubois, Richard Lepage, École de technologie supérieure, Canada

WE1.14.4 09:20 **RAPID AND RELIABLE DAMAGE PROXY MAP FROM INSAR COHERENCE**
Sang-Ho Yun, Eric J. Fielding, NASA Jet Propulsion Laboratory, United States; Mark Simons, Piyush Agram, California Institute of Technology, United States; Paul Rosen, Susan Owen, Frank Webb, NASA Jet Propulsion Laboratory, United States

WE1.14.5 09:40 **ASSESSING AND MAPPING CROP VULNERABILITY DUE TO SUDDEN COOLING USING TIME SERIES SATELLITE DATA**
Yansheng Dong, Beijing Research Center for Information Technology in Agriculture, China; Hongping Chen, Institute of Atmospheric Physics, CAS, China; Xiaohe Gu, Jihua Wang, Bei Cui, Beijing Research Center for Information Technology in Agriculture, China

Wednesday, July 25 10:30 - 12:10 Room 4A

Session WE2.14 Oral

Dynamics of Earth Processes and Climate Change: Disasters and Hazards III

Session Chair: Scott Hensley, NASA Jet Propulsion Laboratory

WE2.14.1 10:30 **THE CARIBBEAN SATELLITE DISASTER PILOT - A CEOS ACTIVITY FOR GEO IN SUPPORT OF GEOSS**
Nicole Alleyne, CDEMA, Barbados; Andrew Eddy, Athena Global, Canada; Stuart Frye, SGT, Inc., United States; Jean-Francois Saulnier, Guy Aube, Guy Seguin, Canadian Space Agency, Canada; Pat Capellaere, Vightel Inc., United States; Dan Mandl, SGT, Inc., United States

WE2.14.2 10:50 **RETRIEVAL OF FAULT PARAMETERS OF OCTOBER 23, 2011 EASTERN TURKEY EARTHQUAKE OBTAINED BY NEURAL NETWORKS**
Matteo Picchiani, Tor Vergata University of Rome, Italy; Marco Chini, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Fabio Del Frate, Tor Vergata University of Rome, Italy; Salvatore Stramondo, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Giovanni Schiavon, Tor Vergata University of Rome, Italy

WE2.14.3 11:10 **THICKNESS ESTIMATION OF MARINE OIL SLICKS WITH NEAR-INFRARED MERIS AND MODIS IMAGERY: THE LEBANON OIL SPILL CASE STUDY**
Giacomo De Carolis, Maria Adamo, Guido Pasquariello, National Research Council of Italy, Italy

WE2.14.4 11:30 **DAMAGED BUILDING IDENTIFYING FROM VHR SATELLITE IMAGERY USING MORPHOLOGICAL OPERATORS IN 2011 PACIFIC COAST OF TOHOKU EARTHQUAKE AND TSUNAMI**
Chandana Parape, Environmental and Infomatic, Japan; Chinthaka Premachandra, Tokyo University of Science, Japan; Masayuki Tamura, Environmental and Infomatic, Japan; Masami Sugiura, Asia Disaster Reduction Center, Japan

WE2.14.5 11:50 **REMOTE SENSING AND OMNIDIRECTIONAL IMAGING FOR EFFICIENT BUILDING INVENTORY DATA-CAPTURING: APPLICATION WITHIN THE EARTHQUAKE MODEL CENTRAL ASIA**
Marc Wieland, Massimiliano Pittore, Stefano Parolai, Jochen Zschau, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany

Wednesday, July 25 13:30 - 15:10 Room 4A

Session WE3.14 Oral

Dynamics of Earth Processes and Climate Change: Disasters and Hazards IV

Session Co-Chairs: Jörn Hoffmann, German Aerospace Center - DLR; Marc Wieland, GFZ German Research Centre for Geosciences

WE3.14.1 13:30 **HEAVY RAINFALL-INDUCED LANDSLIDE DETECTION FROM VERY HIGH RESOLUTION MULTI-ASPECT TERRASAR-X IMAGES IN DESSIE, ETHIOPIA**
Fasil Beyene, Wolfgang Busch, Steffen H.-G. Knospe, Clausthal University of Technology, Germany; Lulseged Ayalew, Addis Ababa University, Ethiopia

WE3.14.2 13:50 **MEASURING LANDSLIDE DISPLACEMENT IN THE THREE GORGES REGION, CHINA, USING HIGH RESOLUTION AND FREQUENTLY ACQUIRED SAR IMAGES**
Andrew Singleton, Zhenhong Li, Trevor Hoey, University of Glasgow, United Kingdom

WE3.14.3 14:10 **DORIS PROJECT: THE EUROPEAN DOWNSTREAM SERVICE FOR LANDSLIDES AND SUBSIDENCE RISK MANAGEMENT**
Fabiana Calò, Michele Manunta, Luca Paglia, Istituto per il Rilevamento Elettromagnetico dell'Ambiente (IREA) - CNR, Italy; Francesca Ardizzone, Fausto Guzzetti, Mauro Rossi, Istituto di Ricerca per la Protezione Idrogeologica (IRPI) - CNR, Italy; Andrea Ciampalini, Chiara Del Ventisette, Sandro Moretti, Università degli Studi di Firenze, Italy; Fernando Bellotti, Davide Colombo, Tele-Rilevamento Europa - T.R.E. srl, Italy; Tazio Strozzi, Urs Wegmüller, Gamma Remote Sensing, Switzerland; Oscar Mora, Altamira Information, Spain

WE3.14.4 14:30 **CRUSTAL DEFORMATION IN LINFEN AREA STUDIED BY MT-INSAR**
Huaining Yang, Center for Earth Observation and Digital Earth, CAS, China; Huadong Guo, Chinese Academy of Sciences, China; Tianhai Liu, National Earthquake Response Support Service, China; Guang Liu, Shiyong Yan, Center for Earth Observation and Digital Earth, CAS, China

WE3.14.5 14:50 **DETECTION OF FLOODS AND HEAVY RAIN USING COSMO-SKYMED DATA: THE EVENT IN NORTHWESTERN ITALY OF NOVEMBER 2011**
Luca Pulvirenti, Sapienza Università di Roma, Italy; Marco Chini, INGV, Italy; Frank S. Marzano, Nazzareno Pierdicca, Saverio Mori, Sapienza Università di Roma, Italy; Leila Guerriero, Tor Vergata University of Rome, Italy; Giorgio Boni, CIMA, Italy; Laura Candela, ASI, Italy

Wednesday, July 25 15:40 - 17:20 Room 4A

Session WE4.14 Oral

Applications Integrating Multiple Observing Systems

Session Co-Chairs: Heike Bach, Vista GmbH; Jörn Hoffmann, German Aerospace Center - DLR

WE4.14.1 15:40 **COMBINED USE OF TERRASAR-X AND RADARSAT-2 DATA – A STUDY OF A VIRTUAL CONSTELLATION**
Oliver Lang, Diana Weihing, Franziska Gressler, Ernest Fahrland, Henning Schrader, Denis Salow, Valerie Minguy, Astrium GEO-Information Services, Germany; Michael Oswald, Astrium Satellites, Germany; Marek Tinz, Astrium GEO-Information Services, Germany

WE4.14.2 16:00 **MAPPING SPECIFIC CROP- A MULTI SENSOR TEMPORAL APPROACH**
Gourav Misra, Anil Kumar, N. R. Patel, Indian Institute of Remote Sensing, India; Raul Zurita-Milla, University of Twente, Netherlands; Alka Singh, Technische Universität München, Germany

WE4.14.3 16:20 **COMPATIBILITY ANALYSIS OF SPOT-4 VEGETATION AND TERRA MODIS VEGETATION INDEX PRODUCTS FOR LONG-TERM DATA RECORDS**
Javzandulam Tsend-Ayush, Tomoaki Miura, University of Hawaii, United States; Kamel Didan, Armando Barreto Munoz, University of Arizona, United States

WE4.14.4 16:40 **THE UTILITY OF 250-METER MODIS METRICS AND AMSR-E OBSERVATIONS FOR ASSESSING CLIMATE INDUCED VARIABILITY WITHIN SOUTHERN AFRICAN WETLANDS**
Tobias Landmann, Matthias Schramm, University of Wuerzburg in cooperation with DLR/DFD, Germany; Ndafuda Shiponeni, University of Namibia, Namibia; Christian Huettich, University of Jena, Germany; Stefan Dech, German Aerospace Center (DLR), Germany

WE4.14.5 17:00 **WATER STORAGE VARIATIONS IN THE ARAL SEA FROM MULTI-SENSOR SATELLITE DATA IN COMPARISON WITH RESULTS FROM GRACE GRAVIMETRY**
Alka Singh, Florian Seitz, Technische Universität München, Germany

Wednesday, July 25 08:20 - 10:00 Room 4B
Session WE1.4 Oral

Applications of Hyperspectral Data

Session Co-Chairs: Peijun Li, Peking University; Mathieu Fauvel, INPT-ENSAT Toulouse

WE1.4.1 08:20 **SPECTRAL LIBRARY OF TROPICAL ISLAND COASTAL BENTHIC COMMUNITIES, IN THE SPERMONDE ARCHIPELAGO, INDONESIA**
Nurjannah Nurdin, Hasanuddin University, Indonesia; Teruhisa Komatsu, University of Tokyo, Japan; M. Akbar As, SEAMEO-BIOTROP, Indonesia

WE1.4.2 08:40 **SHIP-BASED INFRARED HYPERSPECTRAL MEASUREMENTS OF THE AIRSEA TEMPERATURE DIFFERENCE**
Peter Minnett, Adam Chambers, Miguel Angel Izaguirre, University of Miami, United States

WE1.4.3 09:00 **RELEVANCE OF MINERAL TEXTURE ON BIDIRECTIONAL REFLECTANCE AND EMISSION SPECTROSCOPY: IMPLICATIONS FOR GEOLOGICAL REMOTE SENSING**
Rishikesh Bharti, Ramakrishnan Desikan, Keshav Dev Singh, Nithya Mullassery, Indian Institute of Technology, Bombay, India

WE1.4.4 09:20 **EXTRACTION OF MINERALS ON THE SOUTH POLE OF THE PLANET MARS BY UNSUPERVISED LINEAR UNMIXING OF HYPERSPECTRAL IMAGES**
Bin Luo, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China; Sylvain Douté, Xavier Ceamanos, l'Institut de Planetologie et d'Astrophysique de Grenoble, France; Jocelyn Chanussot, GIPSA-LAB, France; Liangpei Zhang, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China

WE1.4.5 09:40 **SPECTRAL RESPONSES OF VEGETATION SUBMITTED TO NATURAL GAS SEEPAGES: AN APPROACH INTEGRATING LEAF TO CANOPY MEASUREMENTS WITH ULTRASPECTTRAL TO MULTISPECTRAL SENSORS**
Carlos Souza-Filho, Luciola Magalhaes, University of Campinas, Brazil; Wilson Oliveira, Talita Lammoglia, PETROBRAS, Brazil

Wednesday, July 25 10:30 - 12:10 Room 4B
Session WE2.4 Oral

Spectral Band Selection and Feature Extraction

Session Co-Chairs: Bin Luo, Wuhan University; Sebastiano Serpico, University of Genoa

WE2.4.1 10:30 **HYPERSPECTRAL BAND SELECTION USING A COLLABORATIVE SPARSE MODEL**
Qian Du, Mississippi State University, United States; Jose M. Bioucas-Dias, Instituto Superior Técnico, TULisbon, Portugal; Antonio Plaza, University of Extremadura, Spain

WE2.4.2 10:50 **IMPROVED FEATURE SELECTION BASED ON A MUTUAL INFORMATION MEASURE FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Md. Ali Hossain, Xiuping Jia, Mark R. Pickering, School of Engineering and Information Technology, Australia

WE2.4.3 11:10 **NETWORK TOPOLOGY ANALYSIS: A NEW METHOD FOR BAND SELECTION**
Wei Xia, Zhao Dong, Hanye Pu, Bin Wang, Liming Zhang, Fudan University, China

WE2.4.4 11:30 **HYPERSPECTRAL BAND SELECTION THROUGH OPTIMUM-PATH FOREST AND EVOLUTIONARY-BASED ALGORITHMS**
Rodrigo Nakamura, Joao Papa, UNESP, Brazil; Leila Fonseca, National Institute for Space Research (INPE), Brazil; Jefersson Alex dos Santos, UNICAMP, Brazil; Ricardo da Silva Torres, University of Campinas, Brazil

WE2.4.5 11:50 **A NOVEL KERNEL-BASED NONPARAMETRIC FEATURE EXTRACTION METHOD FOR REMOTELY SENSED HYPERSPECTRAL IMAGE CLASSIFICATION**
Jinn-Min Yang, National Taichung University of Education, Taiwan

Wednesday, July 25 13:30 - 15:10 Room 4B
Session WE3.4 Oral

Spectral Unmixing II

Session Co-Chairs: Jocelyn Chanussot, Grenoble Institute of Technology; Michal Shimoni, Royal Military Academy

WE3.4.1 13:30 **A NEW SPATIAL SPARSITY-BASED METHOD FOR EXTRACTING ENDMEMBER SPECTRA FROM HYPERSPECTRAL DATA WITH SOME PURE PIXELS**
Moussa Sofiane Karoui, Centre des Techniques Spatiales, Algeria; Yannick Deville, Shahram Hosseini, Université de Toulouse, France; Abdelaziz Ouamri, Université des Sciences et de la Technologie, Algeria

WE3.4.2 13:50 **COLLABORATIVE NONNEGATIVE MATRIX FACTORIZATION FOR REMOTELY SENSED HYPERSPECTRAL UNMIXING**
Jun Li, Hyperspectral Computing Laboratory, Spain; Jose M. Bioucas-Dias, Instituto de Telecomunicações, Portugal; Antonio Plaza, Hyperspectral Computing Laboratory, Spain

WE3.4.3 14:10 **A SMOOTH HYPERSPECTRAL UNMIXING METHOD USING CYCLIC DESCENT**
Jakob Sigurdsson, Magnus O. Ulfarsson, Johannes R. Sveinsson, Jon Atli Benediktsson, University of Iceland, Iceland

WE3.4.4 14:30 **HYPERSPECTRAL IMAGE UNMIXING USING MANIFOLD LEARNING METHODS DERIVATIONS AND COMPARATIVE TESTS**
Nguyen Hoang Nguyen, Cédric Richard, Université de Nice Sophia-Antipolis, CNRS, OCA, France; Paul Honeine, Université de Technologie de Troyes, CNRS, France; Céline Theys, Université de Nice Sophia-Antipolis, CNRS, OCA, France

WE3.4.5 14:50 **UNMIXING FOR DETECTION AND QUANTIFICATION OF ADJACENCY EFFECTS**
Dzevdet Burazerovic, University of Antwerp, Belgium; Bert Geens, Flemish Institute for Technological Research (VITO), Belgium; Rob Heylen, University of Antwerp, Belgium; Sindy Sterckx, Flemish Institute for Technological Research (VITO), Belgium; Paul Scheunders, University of Antwerp, Belgium

Wednesday, July 25 15:40 - 17:20 Room 4B
Session WE4.4 Oral

Optical and Infrared Modelling I

Session Chair: Jose Moreno, University of Valencia

WE4.4.1 15:40 **MAXIMUM ENTROPY APPROACH TO TEMPERATURE/EMISSIVITY SEPARATION**
Alessandro Barducci, Donatella Guzzi, Cinzia Lastri, Paolo Marcoionni, Istituto di Fisica Applicata, Italy; Vanni Nardino, IIstituto di Fisica Applicata, Italy; Ivan Pippi, Istituto di Fisica Applicata, Italy

WE4.4.2 16:00 **AN IMPROVED METHOD FOR LAND SURFACE TEMPERATURE RETRIEVAL FROM MODIS DATA**
Changin Ri, Qinhuo Liu, Hua Li, Institute of Remote Sensing Applications, CAS, China

WE4.4.3 16:20 **EVALUATION OF TEMPERATURE INDEPENDENT SPECTRAL INDICES OF EMISSIVITY IN LAND SURFACE EMISSIVITY RETRIEVALS**
Gengming Jiang, Bin Wang, Fudan University, China

WE4.4.4 16:40 **MODELING DIRECTIONAL THERMAL RADIANCE ANISOTROPY FOR URBAN CANOPY**
Limin Zhao, Xingfa Gu, Tao Yu, Institute of Remote Sensing Applications, CAS, China; Wei Wan, Peking University, China; Jiaguo Li, Institute of Remote Sensing Applications, CAS, China

WE4.4.5 17:00 **RELATIVE ACCURACY ASSESSMENT OF ERSDAC ASTER SURFACE EMISSIVITY PRODUCTS AT RAILROAD VALLEY, NEVADA**
Soushi Kato, Tsuneo Matsunaga, National Institute for Environmental Studies, Japan; Hideyuki Tonooka, Ibaraki University, Japan

Wednesday, July 25 08:20 - 10:00 Room 5

Session WE1.2 Oral-Invited

Polarimetric SAR Interferometry I

Session Co-Chairs: Kostas Papathanassiou, German Aerospace Center - DLR; Juan M. Lopez-Sanchez, Universidad de Alicante

WE1.2.1 08:20 **EXPLORING THE POTENTIAL OF POL-INSAR TECHNIQUES AT X-BAND RESULTS AND EXPERIMENTS FROM TANDEM-X**
Konstantinos P. Papathanassiou, Florian Kugler, Irena Hajnsek, German Aerospace Center (DLR), Germany

WE1.2.2 08:40 **POTENTIALS AND LIMITATIONS OF FOREST REMOTE SENSING FROM POLARIMETRIC SAR INTERFEROMETRY**
Maxim Neumann, Scott Hensley, Sassan Saatchi, NASA Jet Propulsion Laboratory, United States; Laurent Ferro-Famil, Université de Rennes 1, France; Reigber Andreas, German Aerospace Center (DLR), Germany; Thierry Michel, Marco Lavalle, NASA Jet Propulsion Laboratory, United States; Razi Ahmed, Paul Siqueira, University of Massachusetts, United States

WE1.2.3 09:00 **SENSITIVITY ANALYSIS OF POLARIMETRIC RADAR INTERFEROMETRY**
Shadi Oveisgharan, Scott Hensley, Sassan Saatchi, NASA Jet Propulsion Laboratory, United States

WE1.2.4 09:20 **QUANTIFICATION AND COMPENSATION OF TEMPORAL DECORRELATION EFFECTS IN POLARIMETRIC SAR INTERFEROMETRY**
Seung-Kuk Lee, Florian Kugler, Konstantinos P. Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR), Germany

WE1.2.5 09:40 **TOWARDS A MORE RELIABLE ESTIMATION OF FOREST PARAMETERS FROM POLARIMETRIC SAR TOMOGRAPHY DATA**
Othmar Frey, ETH Zürich / Gamma Remote Sensing, Switzerland; Erich Meier, University of Zurich, Switzerland; Irena Hajnsek, ETH Zürich / German Aerospace Center DLR, Switzerland

Wednesday, July 25 10:30 - 12:10 Room 5

Session WE2.2 Oral-Invited

Polarimetric SAR Interferometry II

Session Co-Chairs: Kostas Papathanassiou, German Aerospace Center - DLR; Juan M. Lopez-Sanchez, Universidad de Alicante

WE2.2.1 10:30 **ALOS POLINSAR DATA PROCESSING FOR CLASSIFICATION AND CHANGE DETECTION**
Masato Ohki, Masanobu Shimada, Japan Aerospace Exploration Agency (JAXA), Japan

WE2.2.2 10:50 **POLARIMETRIC/INTERFEROMETRIC INNOVATIONS AND APPLICATIONS OF UAVSAR**
Thierry Michel, Scott Hensley, Maxim Neumann, Ron Muellerschoen, Bruce Chapman, Razi Ahmed, Yunling Lou, NASA Jet Propulsion Laboratory, United States; Paul Siqueira, University of Massachusetts Amherst, United States

WE2.2.3 11:10 **EXPERIMENTAL VALIDATION OF THE INTERFEROMETRIC COHERENCE FORMULATION IN SINGLE-TRANSMIT MODE**
Juan M. Lopez-Sanchez, J. David Ballester-Berman, Victor D Navarro-Sanchez, Fernando Vicente-Guijalba, University of Alicante, Spain

WE2.2.4 11:30 **LINKING THE POLARIMETRIC CHANGE DETECTOR BASED ON PERTURBATION FILTERS WITH THE POL-INSAR COHERENCE**
Armando Marino, ETH Zürich, Switzerland; Irena Hajnsek, German Aerospace Center (DLR), Germany

WE2.2.5 11:50 **POLARIMETRIC OPTIMIZATION FOR DINSAR PIXEL SELECTION WITH GROUND-BASED SAR**
Rubén Iglésias, Xavier Fàbregas, Albert Aguasca, Carlos López-Martínez, Alberto Alonso-González, Jordi J. Mallorquí, Universitat Politècnica de Catalunya, Spain

Wednesday, July 25 13:30 - 15:10 Room 5

Session WE3.2 Oral-Invited

Signal Processing Techniques for POL-SAR and POL-InSAR Applications

Session Co-Chairs: Laurent Ferro-Famil, University of Rennes 1, IETR; Eric Pottier, Université de Rennes 1

WE3.2.1 13:30 **ANALYSIS OF SPECKLE NOISE EFFECTS IN POLARIMETRIC SAR INTERFEROMETRY**
Carlos López-Martínez, Alberto Alonso-González, Xavier Fàbregas, Universitat Politècnica de Catalunya, Spain

WE3.2.2 13:50 **GLACIER SURFACE VELOCITY MEASURE BASED ON POLARIMETRIC TRACKING**
Esra Erten, Istanbul Technical University, Turkey; Olga Chesnokova, Irena Hajnsek, ETH Zürich, Switzerland; Andreas Reigber, German Aerospace Center (DLR), Germany; Laurent Ferro-Famil, Université de Rennes 1, France

WE3.2.3 14:10 **RESOLUTION ENHANCEMENT OF MULTI-BASELINE SAR TOMOGRAPHY WITH SPARSE SAMPLES**
Hiroyoshi Yamada, Toshihiro Yamada, Ryoichi Sato, Yoshio Yamaguchi, Niigata University, Japan

WE3.2.4 14:30 **POLARIMETRIC 3-D RECONSTRUCTION FROM MULTICIRCULAR SAR AT P-BAND**
Octavio Ponce, Pau Prats-Iraola, Rolf Scheiber, Andreas Reigber, Alberto Moreira, German Aerospace Center (DLR), Germany

WE3.2.5 14:50 **PHENOMENOLOGY OF GROUND SCATTERING IN TROPICAL FORESTS THROUGH POLARIMETRIC SAR TOMOGRAPHY**
Mauro Mariotti d'Alessandro, Stefano Tebaldini, Fabio Rocca, Politecnico di Milano, Italy

Wednesday, July 25 15:40 - 17:20 Room 5

Session WE4.2 Oral

SAR Polarimetry Techniques I

Session Co-Chairs: Stian Normann Anfinsen, University of Tromsø; Alejandro Frery, Universidade Federal de Alagoas

WE4.2.1 15:40 **FILTERING OF POLARIMETRIC SYNTHETIC APERTURE RADAR IMAGES: A SEQUENTIAL APPROACH**
Yi Cui, Yoshio Yamaguchi, Hirokazu Kobayashi, Niigata University, Japan; Jian Yang, Tsinghua University, China

WE4.2.2 16:00 **INFORMATION GEOMETRY FOR CLASSIFICATION OF HIGH RESOLUTION POLARIMETRIC SAR IMAGES**
Pierre Formont, Office National d'Etudes et de Recherches Aérospatiale / SONDRA, France; Jean-Philippe Ovarlez, Office National d'Etudes et de Recherches Aérospatiale, France; Frédéric Pascal, E3S-SONDRA, France; Gabriel Vasile, GIPSA-lab, France; Laurent Ferro-Famil, Université de Rennes 1, France

WE4.2.3 16:20 **NON-LINEAR CORRECTION OF POLARIZATION ORIENTATION FOR THE APPLICATION OF ICA TO POLSAR IMAGERY**
Takuma Anahara, Kyoto University, Japan; Michael Schmitt, Technische Universität München, Germany; Junichi Susaki, Kyoto University, Japan

WE4.2.4 16:40 **THE WISHART-KOTZ CLASSIFIER FOR MULTILOOK POLARIMETRIC SAR DATA**
Paul R. Kersten, No Affiliation, United States; Stian Normann Anfinsen, Anthony Paul Doulgeris, University of Tromsø, Norway

WE4.2.5 17:00 **A PHYSICAL-BASED UNSUPERVISED CLASSIFICATION AND STATISTICAL UNCERTAINTIES WITH APPLICATION TO POLSAR IMAGERY**
Yanting Wang, Thomas Ainsworth, Jong-Sen Lee, Naval Research Laboratory, United States

Wednesday, July 25 08:20 - 10:00 Room 11
Session WE1.3 Oral-Invited

Sensor Interoperability and Robustness in the Monitoring of Tropical Forests

Session Co-Chairs: Mark Williams, CRC-SI Australia; Thomas Ainsworth, Naval Research Laboratory

WE1.3.1 08:20 **SENSOR CAPABILITIES FOR DEFORESTATION AND FOREST DEGRADATION**
Anthony Milne, CRC for Spatial Information, Australia; Anthea Mitchell, The University of New South Wales, Australia; Mark Williams, Ian Tapley, Cooperative Research Centre for Spatial Information, Australia; Steffen Kuntz, Information Services, Germany

WE1.3.2 08:40 **POLARIMETRIC C BAND DATA FOR BRAZILIAN TROPICAL FOREST LAND COVER CLASSIFICATION**
Tatiana Kuplich, Southern Regional Centre for Space Research (CRS), Brazil; Emerson Servello, Brazilian Institute for Environment (IBAMA), Brazil; Yosio Edemir Shimabukuro, National Institute for Space Research (INPE), Brazil; Edson Sano, Brazilian Institute for Environment (IBAMA), Brazil

WE1.3.3 09:00 **COMPARISON OF STEREO-OPTICAL AND DUAL-BAND INSAR DEMS IN PAPUA NEW GUINEA**
Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan; Mark Williams, Cooperative Research Centre for Spatial Information, Australia; Scott Hensley, California Institute of Technology, United States

WE1.3.4 09:20 **USE OF AIRBORNE INSTRUMENTS FOR TROPICAL FOREST MONITORING APPLICATIONS**
Marco Lavalle, Scott Hensley, NASA Jet Propulsion Laboratory, United States; Mark Williams, Cooperative Research Centre for Spatial Information, Australia

WE1.3.5 09:40 **INTEROPERABILITY OF MULTI-FREQUENCY SAR DATA FOR FOREST INFORMATION EXTRACTION IN SUPPORT OF NATIONAL MRV SYSTEMS**
Anthea Mitchell, University of New South Wales, Australia; Mark Williams, Ian Tapley, CRC for Spatial Information, Australia; Anthony Milne, University of New South Wales, Australia

Wednesday, July 25 10:30 - 12:10 Room 11
Session WE2.3 Oral

Subsurface Sensing: Systems

Session Co-Chairs: Waymond Scott, Georgia Institute of Technology; Motoyuki Sato, Tohoku University, Japan

WE2.3.1 10:30 **WIDEBAND MEASUREMENT OF THE MAGNETIC SUSCEPTIBILITY OF SOILS AND THE MAGNETIC POLARIZABILITY OF METALLIC OBJECTS**
Waymond Scott, Michael McFadden, Georgia Institute of Technology, United States

WE2.3.2 10:50 **AN AUTONOMOUS ROBOTIC PLATFORM FOR GROUND PENETRATING RADAR SURVEYS**
Rebecca Williams, Laura Ray, Dartmouth College, United States; James Lever, Cold Regions Research and Engineering Lab, United States

WE2.3.3 11:10 **CALIBRATION OF A MULTISTATIC PLANAR SCANNER FOR SUBSURFACE IMAGING**
Soufiane Nounouh, Christelle Eyraud, Hervé Tortel, Amélie Litman, Institut Fresnel, France

WE2.3.4 11:30 **HISTOGRAM OF GRADIENT FEATURES FOR BURIED THREAT DETECTION IN GROUND PENETRATING RADAR DATA**
Peter Torrione, Kenneth Morton, Rayn Sakaguchi, Leslie Collins, Duke University, United States

WE2.3.5 11:50 **ANALYSIS OF A WIDE BANDWIDTH UNDERSAMPLED DIGITALLY HETERODYNED SFGPR**
Giovanni Galiero, Consortium for Research on Advanced Remote Sensing Systems, Italy; Doroteo Adirosi, Thales Alenia Space Italia, Italy; Giovanni Alberti, Consortium for Research on Advanced Remote Sensing Systems, Italy

Wednesday, July 25 13:30 - 15:10 Room 11
Session WE3.3 Oral

Subsurface Sensing: Methods

Session Co-Chairs: Eric Miller, Tufts University; Lorenzo Crocco, CNR - National Research Council of Italy

WE3.3.1 13:30 **MULTIPLE LANDMINE DETECTION ALGORITHM USING GROUND PENETRATING RADAR**
Suncheol Park, Kangwook Kim, Kwang Hee Ko, Gwangju Institute of Science and Technology, Republic of Korea

WE3.3.2 13:50 **LANDMINE DETECTION USING AN ENSEMBLE OF CONTINUOUS HMMS WITH MULTIPLE FEATURES AND DIFFERENT FUSION MEHTODS**
Hichem Frigui, Anis Hamdi, University of Louisville, United States

WE3.3.3 14:10 **SUBSURFACE IMAGING BY MODIFIED MIGRATION FOR IRREGULAR GPR DATA**
Xuan Feng, Qiao Wang, Qi Lu, Cai Liu, Wenjing Liang, HongLi Li, Yue Yu, Congmei Xie, Qianci Ren, Jilin University, China

WE3.3.4 14:30 **ON THE REGIME OF VALIDITY OF VOLUMETRIC AND BOUNDARY PERTURBATION-BASED SCATTERING MODELS FOR ROUGH MULTILAYER**
Pasquale Imperatore, Antonio Iodice, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

WE3.3.5 14:50 **SIMULTANEOUS DETERMINATION OF THE DIELECTRIC RELAXATION BEHAVIOR AND SOIL WATER CHARACTERISTIC CURVE OF UNDISTURBED SOIL SAMPLES**
Norman Wagner, Institute of Material Research and Testing at the Bauhaus-University Weimar, Germany; Katja Lauer, Institute of Soil Science and Soil Conservation Justus-Liebig-University Giessen, Germany

Wednesday, July 25 15:40 - 17:20 Room 11
Session WE4.3 Oral

Subsurface Sensing: Applications

Session Co-Chairs: Lorenzo Bruzzone, University of Trento; Mahta Moghaddam, University of Southern California

WE4.3.1 15:40 **SHALLOW RADAR (SHARAD)INVESTIGATIONS OVER SINUS MERIDIANI**
Marco Restano, Marco Mastrogiuseppe, Arturo Masdea, Giovanni Picardi, Roberto Seu, Sapienza Università di Roma, Italy

WE4.3.2 16:00 **A NOVEL METHOD FOR AUTOMATIC CLUTTER DETECTION IN RADARGRAMS ACQUIRED BY ORBITING RADAR SOUNDERS**
Adamo Ferro, Alain Pascal, Lorenzo Bruzzone, University of Trento, Italy

WE4.3.3 16:20 **AIRBORNE GROUND PENETRATING RADAR IMAGING VIA TOMOGRAPHIC INVERSION**
Ilaria Catapano, Lorenzo Crocco, Francesco Soldovieri, National Research Council of Italy, Italy

WE4.3.4 16:40 **MONITORING OF DYNAMIC GROUNDWATER LEVEL CHANGE BY GROUND PENETRATING RADAR FOR QUANTITATIVE ESTIMATION OF HYDRAULIC PARAMETERS**
Hai Liu, Yuya Yokota, Kazunori Takahashi, Motoyuki Sato, Tohoku University, Japan

WE4.3.5 17:00 **3DIMENSIONAL GPR APPLIED TO ARCAHEOLOGICAL SURVEY AND MITIGATION OF NATURAL DISASTRES**
Motoyuki Sato, Ahmed Gaber, Yuya Yokota, Tohoku University, Japan

Wednesday, July 25 08:20 - 10:00 Room 12A
Session WE1.8 Oral

Ice Sheets and Glaciers I

Session Chair: Thomas Nagler, ENVEO IT GmbH

WE1.8.1 08:20 **SATELLITE-BASED GLACIER MONITORING IN THE ESA PROJECT GLACIERS_CCI**
Frank Paul, Tobias Bolch, University of Zurich, Switzerland; Andreas Kääb, University of Oslo, Norway; Thomas Nagler, ENVEO IT GmbH, Austria; Andrew Shepherd, University of Leeds, United Kingdom; Tazio Strozzi, Gamma Remote Sensing, Switzerland

WE1.8.2 08:40 **DYNAMICS OF FAST GLACIERS IN THE PATAGONIA ICEFIELDS DERIVED FROM TERRASAR-X AND TANDEM-X DATA**
Wael Abdel Jaber, Dana Floricioiu, German Aerospace Center (DLR), Germany; Helmut Rott, University of Innsbruck, Austria; Michael Eineder, German Aerospace Center (DLR), Germany

WE1.8.3 09:00 **MONITORING A GLACIER IN SOUTHEASTERN ICELAND WITH THE PORTABLE TERRESTRIAL RADAR INTERFEROMETER**
Denis Voytenko, Timothy H. Dixon, University of South Florida, United States; Charles Werner, Gamma Remote Sensing, Switzerland; Noel Gourmelen, University of Strasbourg, France; Ian Howat, Phaedra Tinder, The Ohio State University, United States; Andrew Hooper, Delft University of Technology, Netherlands

WE1.8.4 09:20 **RETRIEVAL OF 3D-GLACIER MOVEMENT BY HIGH RESOLUTION X-BAND SAR DATA**
Thomas Nagler, ENVEO IT GmbH, Austria; Helmut Rott, ENVEO IT GmbH and University of Innsbruck, Austria; Markus Hetzenecker, Kilian Scharrer, ENVEO IT GmbH, Austria; Eyjólfur Magnússon, University of Iceland, Iceland; Dana Floricioiu, German Aerospace Center (DLR), Germany; Claudia Notarnicola, EURAC Research, Italy

WE1.8.5 09:40 **RETRIEVAL OF RIVER ICE THICKNESS FROM C-BAND POLSAR DATA**
Stéphane Mermoz, Centre d'Etudes Spatiales de la Biosphère, France; Sophie Allain-Bailhache, IETR, France; Monique Bernier, INRS-ETE, Canada; Eric Pottier, IETR, France; Joost Van Der Sanden, CCRS, Canada; Karem Chokmani, INRS-ETE, Canada

Wednesday, July 25 10:30 - 12:10 Room 12A
Session WE2.8 Oral

Ice Sheets and Glaciers II

Session Co-Chairs: Andrew Shepherd, Univ. Leeds; Jorgen Dall, TUD

WE2.8.1 10:30 **FIRST PRINCIPLES MODELING FOR LIDAR SENSING OF COMPLEX ICE SURFACES**
John Kerekes, Adam Goodenough, Scott Brown, Jiashu Zhang, Rochester Institute of Technology, United States; Beata Csatho, Anton Schenk, Sudhagar Nagarajan, Robert Wheelwright, University at Buffalo, United States

WE2.8.2 10:50 **AIRBORNE MEASUREMENTS OF ACCUMULATION RATES**
Daniel Steinhage, Veit Helm, Heinrich Miller, Alfred Wegener Institute for Polar and Marine Research, Germany

WE2.8.3 11:10 **ICE VOLUME CHARACTERIZATION USING LONG-WAVELENGTH AIRBORNE POLSAR DATA**
Giuseppe Parrella, Noora Al-Kahachi, Thomas Jagdhuber, Irena Hajnsek, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

WE2.8.4 11:30 **UTILIZING INSAR FOR THE MEASUREMENT OF ICE FLOW VELOCITIES AND OCEAN TIDE INDUCED HEIGHT CHANGES OF ICE SHELVES AT THEIR GROUNDING ZONES AND SURROUNDINGS**
Michael Baessler, German Aerospace Center (DLR), Germany; Ralf Rosenau, Reinhard Dietrich, Dresden University of Technology, Germany; Kazuo Shibuya, Koichiro Doi, National Institute of Polar Research, Japan

WE2.8.5 11:50 **ADVANCES IN SEISMIC AND RADAR DATA ACQUISITION AND INTERPRETATION FOR GLACIOLOGICAL RESEARCH ON GLACIERS, ICE SHEETS AND SHELVES**
Olaf Eisen, Anja Diez, Coen Hofstede, Alfred Wegener Institute for Polar and Marine Research, Germany; Yngve Kristoffersen, University of Bergen, Germany; Astrid Lambrecht, Christoph Mayer, Bavarian Academy of Sciences and Humanities, Germany; Ulrich Polom, Leibniz Institute for Applied Geophysics, Germany; Daniel Steinhage, Alfred Wegener Institute for Polar and Marine Research, Germany

Wednesday, July 25 13:30 - 15:10 Room 12A
Session WE3.8 Oral

Cryosphere: Sea Ice I

Session Chair: David Gallaher, University of Colorado

WE3.8.1 13:30 **THE RESCUE AND REUSE OF 1960'S NIMBUS SATELLITE DATA: PRELIMINARY SEA ICE EXTENT RESULTS FOR 1964, 1966, AND 1969**
David Gallaher, Garrett Campbell, Walt Meier, University of Colorado, United States

WE3.8.2 13:50 **COMPARISON OF AMSR-E SEA ICE CONCENTRATIONS WITH ASPECT SHIP OBSERVATIONS AROUND ANTARCTICA**
Alexander Beitsch, Stefan Kern, Lars Kaleschke, University of Hamburg, Germany

WE3.8.3 14:10 **INFLUENCE OF MELT PONDS ON MICROWAVE SENSORS' SEA ICE CONCENTRATION RETRIEVAL ALGORITHMS**
Anja Rösel, Lars Kaleschke, University of Hamburg, Germany

WE3.8.4 14:30 **A CASE STUDY OF BISTATIC TANDEM-X SAR FOR SEA ICE MONITORING**
Parivash Lumsdon, Oliver Lang, Marek Tinz, Astrium GEO-Information Services, Germany

WE3.8.5 14:50 **DAILY THIN-ICE THICKNESS MAPS FROM MODIS THERMAL INFRARED IMAGERY**
Susanne Adams, Sascha Willmes, University of Trier, Germany; David Schroeder, University College London, United Kingdom; Guenther Heinemann, University of Trier, Germany; Thomas Krumpen, Alfred Wegener Institute for Polar and Marine Research, Germany

Wednesday, July 25 15:40 - 17:20 Room 12A
Session WE4.8 Oral

Cryosphere: Sea Ice II

Session Co-Chairs: Stein Sandven, Nansen Environmental and Remote Sensing Center; Hiroyuki Wakabayashi, Nihon University

WE4.8.1 15:40 **STSE SAR ICE CONSTELLATION – A BACKSCATTER SIMULATION TOOL FOR EVALUATING CONSTELLATIONS OF SATELLITES INVOLVING SENTINEL-1 FOR ICE CHARTING**
Desmond Power, C-Core, Canada; Malcolm Davidson, European Space Agency, Netherlands; Nicholas Walker, Christopher Williams, eOsphere, United Kingdom; Bruce Ramsay, Bruce Ramsay, Canada; Kim Partington, Polar Imaging Limited, United Kingdom; David Barber, University of Manitoba, Canada; Matt Arkett, Canadian Ice Service, Canada; Roger De Abreu, Natural Resources Canada, Canada; Klaus Scipal, European Space Agency, Netherlands

WE4.8.2 16:00 **ICEBERGS DETECTION WITH TERRASAR-X DATA USING A POLARIMETRIC NOTCH FILTER**
Armando Marino, ETH Zürich, Switzerland; Irena Hajnsek, German Aerospace Center (DLR), Germany

WE4.8.3 16:20 **DETECTION OF SEA ICE MOTION FROM CO- AND CROSS-POLARIZATION RADARSAT-2 IMAGES**
Alexander Komarov, David Barber, University of Manitoba, Canada

WE4.8.4 16:40 **SEA ICE DRIFT AND AREA FLUX IN THE FRAM STRAIT FROM MULTISENSOR SATELLITE DATA**
Stein Sandven, Florian Geyer, Kjell Kloster, Marta Zygmuntowska, Nansen Environmental and Remote Sensing Center, Norway

WE4.8.5 17:00 **A COMPARISON OF ICE THICKNESS DATA FROM HELICOPTER-BORNE SENSORS WITH SAR IMAGERY FOR THE BEAUFORT SEA AND LABRADOR SHELF**
Ingrid Peterson, Simon Prinsenberg, Fisheries and Oceans Canada, Canada; Scott Holladay, Geosensors Inc., Canada; Louis Lalumiere, Sensors by Design Ltd., Canada

Wednesday, July 25 08:20 - 10:00 Room 12B
Session WE1.7 Oral

SAR Calibration

Session Co-Chairs: Manfred Zink, German Aerospace Center - DLR; Scott Hensley, NASA Jet Propulsion Laboratory

WE1.7.1 08:20 **ON THE PERFORMANCE OF BASELINE SELF-CALIBRATION USING INTERSECTING INTERFEROMETRIC SAR ACQUISITIONS**
Thomas Börner, Francesco de Zan, Paco López-Dekker, German Aerospace Center (DLR), Microwaves and Radar Institute, Germany

WE1.7.2 08:40 **RESULTS ON SPATIAL-TEMPORAL ATMOSPHERIC PHASE SCREEN RETRIEVAL FROM LONG-TERM GEOSAR ACQUISITION**
Josep Ruiz Rodon, Antoni Broquetas, Eduardo Makhoul, Universitat Politècnica de Catalunya, Spain; Andrea Monti Guarnieri, Fabio Rocca, Politecnico di Milano, Italy

WE1.7.3 09:00 **EXPERIMENTAL ASSESSMENT OF THE PS-CAL TECHNIQUE OVER COSMO-SKYMED HIGH RESOLUTION SAR DATA**
Davide Giudici, Davide D'Aria, Simone Mancon, ARESYS, Italy; Andrea Monti Guarnieri, Stefano Tebaldini, DEI - POLIMI, Italy

WE1.7.4 09:20 **A PS-BASED APPROACH FOR THE CALIBRATION OF SPACEBORNE POLARIMETRIC SAR SYSTEMS**
Lorenzo Iannini, Andrea Monti Guarnieri, Politecnico di Milano, Italy

WE1.7.5 09:40 **COSMO-SKYMED, TERRASAR-X, AND RADARSAT-2 GEOLOCATION ACCURACY AFTER COMPENSATION FOR EARTH-SYSTEM EFFECTS**
Adrian Schubert, David Small, Michael Jehle, Erich Meier, University of Zurich, Switzerland

Wednesday, July 25 10:30 - 12:10 Room 12B
Session WE2.7 Oral

SAR Mission Calibration and Validation

Session Co-Chairs: Jens Fischer, German Aerospace Center - DLR; David Small, University of Zürich

WE2.7.1 10:30 **CRYOSAT-2 INTERFEROMETER PERFORMANCE AND APPLICATION TO ACROSS-TRACK GEOID SLOPE ESTIMATION**
Natalia Galin, Duncan Wingham, Center for Polar Observation and Modelling, UCL, United Kingdom; Robert Cullen, Vega Space Ltd., United Kingdom

WE2.7.2 10:50 **RADAR BACKSCATTER CHARACTERIZATION APPROACH COMBINING GLOBAL TANDEM-X DATA**
Paola Rizzoli, Benjamin Bräutigam, German Aerospace Center (DLR), Germany

WE2.7.3 11:10 **A NOVEL REFLECTOR BASED DIGITAL BEAMFORMING SAR SYSTEM ROBUST AGAINST FEED FAILURES**
Sigurd Huber, Marwan Younis, Gerhard Krieger, German Aerospace Center (DLR), Germany

WE2.7.4 11:30 **ARE PIXEL INTENSITIES PROPORTIONAL TO RADAR CROSS SECTION IN SAR IMAGES?**
Björn J. Döring, Marco Schwerdt, German Aerospace Center (DLR), Germany

WE2.7.5 11:50 **CHARACTERIZATION OF REPEAT-PASS AIRBORNE AND SPACEBORNE INSAR OBSERVATIONS OVER THE HARVARD FOREST**
Paul Siqueira, Razi Ahmed, University of Massachusetts, United States; Scott Hensley, Bruce Chapman, NASA Jet Propulsion Laboratory, United States

Wednesday, July 25 13:30 - 15:10 Room 12B
Session WE3.7 Oral-Invited

Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors I organized by the Technical Committee

Session Co-Chairs: William Blackwell, MIT Lincoln Laboratory; Ian Adams, Naval Research Laboratory

WE3.7.1 13:30 **AQUARIUS RADIOMETER RFI DETECTION, MITIGATION AND IMPACT ASSESSMENT**
Christopher Ruf, David D. Chen, University of Michigan, United States; David Le Vine, Paolo de Matthaeis, Jeffrey Piepmeier, NASA Goddard Space Flight Center, United States

WE3.7.2 13:50 **L-BAND RFI OBSERVED BY THE AQUARIUS SCATTEROMETER: DETECTION, MITIGATION, AND ANALYSIS**
Adam Freedman, Simon H. Yueh, Alexander Fore, Gregory Neumann, Bryan Huneycutt, Curtis Chen, NASA Jet Propulsion Laboratory, United States

WE3.7.3 14:10 **A PROBABILITY DISTRIBUTION METHOD FOR DETECTING RADIO-FREQUENCY INTERFERENCE IN WINDSAT OBSERVATIONS**
David Truesdale, Ian Adams, Naval Research Laboratory, United States

WE3.7.4 14:30 **THE IMPACT OF OCEAN-REFLECTED RADIO-FREQUENCY INTERFERENCE ON WINDSAT DATA PRODUCTS**
Ian Adams, Michael Bettenhausen, Naval Research Laboratory, United States

WE3.7.5 14:50 **RFI IN AMSR-E SEA SURFACE TEMPERATURE AND WIND SPEED RETRIEVALS**
Chelle Gentemann, Kyle Hilburn, Marty Brewer, Lucrezia Ricciardulli, Thomas Meissner, Remote Sensing Systems, United States

Wednesday, July 25 15:40 - 17:20 Room 12B
Session WE4.7 Oral-Invited

Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors II organized by the Technical Committee

Session Co-Chairs: Ian Adams, Naval Research Laboratory; William Blackwell, MIT Lincoln Laboratory

WE4.7.1 15:40 **A STUDY OF RADIO FREQUENCY INTERFERENCE FOR CURRENT AND FUTURE L BAND MICROWAVE RADIOMETRY MISSIONS**
Joel T. Johnson, Mustafa Aksoy, The Ohio State University, United States

WE4.7.2 16:00 **SMOS RADIOMETER IN 1400-1427 MHZ: IMPACT OF THE RFI ENVIRONMENT AND APPROACH TO ITS MITIGATION AND CANCELLATION**
Elena Daganzo-Eusebio, Roger Oliva, European Space Agency, Netherlands; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France; Sara Nieto, European Space Agency, Spain; Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France; Susanne Mecklenburg, European Space Agency, Italy

WE4.7.3 16:20 **RFI IN SMOS DATA DETECTED BY POLARIMETRY**
Steen S. Kristensen, Jan Erik Balling, Niels Skou, Sten S. Søbjærg, Technical University of Denmark, Denmark

WE4.7.4 16:40 **RFI DETECTION ALGORITHM: ACCURATE GEOLOCATION OF THE INTERFERING SOURCES IN SMOS IMAGES.**
Roger Oliva, Sara Nieto, Fernando Felix, European Space Agency, Spain

WE4.7.5 17:00 **RFI MITIGATION FOR SMOS: A DISTRIBUTED APPROACH**
Yan Soldo, Ali Khazaal, François Cabot, Centre d'Etudes Spatiales de la Biosphère, France; Eric Anterrieu, IRAP, France; Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France

Wednesday, July 25 08:20 - 10:00 Room 13A
Session WE1.12 Oral

Vegetation Biophysical Properties

Session Chair: Terhikki Manninen, Finnish Meteorological Institute

WE1.12.1 08:20 **INVESTIGATING TEMPORAL VARIATIONS IN VEGETATION WATER CONTENT DERIVED FROM SMOS OPTICAL DEPTH**
Jennifer Grant, European Space Agency, Netherlands; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France; Matthias Drusch, European Space Agency, Netherlands; Mathew Williams, University of Edinburgh, United Kingdom; Beverly Law, Oregon State University, United States; Nathalie Novello, Institut National de la Recherche Agronomique (INRA), France; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

WE1.12.2 08:40 **BOREAL FOREST ALBEDO AND LAI IN SNORTEX 2008-2010**
Terhikki Manninen, Finnish Meteorological Institute, Finland; Lauri Korhonen, University of Eastern Finland, Finland; Aku Riihelä, Panu Lahtinen, Finnish Meteorological Institute, Finland; Pauline Stenberg, University of Helsinki, Finland; Jean-Louis Roujean, Centre National de la Recherche Scientifique / Météo-France, France; Olivier Hautecoeur, Météo-France, France

WE1.12.3 09:00 **A VEGETATION PHENOLOGY MODEL FOR FRACTIONAL VEGETATION COVER RETRIEVAL USING TIME SERIES DATA**
Yaokai Liu, Academy of Opto-Electronics, CAS, China; Xihan Mu, State Key Laboratory of Remote Sensing Science, School of Geography, Beijing Normal University, China; Yonggang Qian, Lingli Tang, Chuan-Rong Li, Academy of Opto-Electronics, CAS, China

WE1.12.5 09:40 **ACCURACY EVALUATION OF THE GROUND-BASED FRACTIONAL VEGETATION COVER MEASUREMENT BY USING SIMULATED IMAGES**
Jiqiang Zhao, Donghui Xie, Xihan Mu, Beijing Normal University, China; Yaokai Liu, Chinese Academy of Sciences, China; Guangjian Yan, Beijing Normal University, China

Wednesday, July 25 10:30 - 12:10 Room 13A
Session WE2.12 Oral

Data Fusion III

Session Co-Chairs: Wayne Walker, Woods Hole Research Centre; Gaia Vaglio Laurin, Tor Vegata University

WE2.12.1 10:30 **COMBING POLARIZATION COHERENCE TOMOGRAPHY AND POLINSAR SEGMENTATION FOR FOREST ABOVE GROUND BIOMASS ESTIMATION**
Wenmei Li, Erxue Chen, Zengyuan Li, Chinese Academy of Forestry, China; Huanmin Luo, Sichuan Vocational College of Cultural Industries, China; Wei Zhou, Shandong University of Science and Technology, China; Qi Feng, Chinese Academy of Forestry, China; Xinshuang Wang, Xi'an University of Science and Technology, China

WE2.12.2 10:50 **FUSION OF SMALL-FOOTPRINT LIDAR, ALOS PALSAR AND LANDSAT FOR THE RETRIEVAL OF CANOPY HEIGHT AND GROWING STOCK VOLUME**
Oliver Cartus, Josef M. Kellndorfer, Woods Hole Research Center, United States; Markus Rombach, Digimapas Chile Aerofotogrametria Ltda., Chile; Sergio Gonzales, Arauco, Chile

WE2.12.3 11:10 **FUSION OF OPTICAL AND MULTIFREQUENCY POLSAR DATA FOR FOREST CLASSIFICATION**
N. Gokhan Kasapoglu, Stian Normann Anfinsen, Torbjørn Eltoft, University of Tromsø, Norway

WE2.12.4 11:30 **MAPPING FOREST STANDS USING RADARSAT-2 QUAD-POLARIZATION SAR IMAGES: A COMBINATION OF POLARIMETRIC AND SPATIAL INFORMATION**
Lacina Coulibaly, Ayoub Tlili, Eric Hervet, Hector Guy Adégbidi, Université de Moncton, Canada

WE2.12.5 11:50 **COMPARISON OF THE INVERSION ABILITY IN EXTRAPOLATING FOREST CANOPY HEIGHT BY INTEGRATION OF LIDAR DATA AND DIFFERENT OPTICAL REMOTE SENSING PRODUCTS**
Han Ma, Jinling Song, Jindi Wang, Yang Hua, Beijing Normal University, China

Wednesday, July 25 13:30 - 15:10 Room 13A
Session WE3.12 Oral

Vegetation Health

Session Co-Chairs: Shawn Kefauver, University of California; Nitesh Poona, Stellenbosch University

WE3.12.1 13:30 **SATELLITE-BASED FOREST HEALTH MONITORING USING COARSE RESOLUTION DATA: FOCUS ON THE 2003 AND 2011 DROUGHTS IN FRANCE**
Jean-Charles Samalens, Dominique Guyon, Institut National de la Recherche Agronomique (INRA), France; Nicolas Bories, MAAP-Departement Santé des Forêts, France; Nathalie Breda, Institut National de la Recherche Agronomique (INRA), France; Dominique Piou, MAAP-Departement Santé des Forêts, France; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France

WE3.12.2 13:50 **DISCRIMINATING THE OCCURRENCE OF PITCH CANKER INFECTION IN PINUS RADIATA FORESTS USING HIGH SPATIAL RESOLUTION QUICKBIRD DATA AND ARTIFICIAL NEURAL NETWORKS**
Nitesh Poona, Stellenbosch University, South Africa; Riyad Ismail, University of KwaZulu-Natal, South Africa

WE3.12.3 14:10 **QUANTITATIVE COMPARISON OF FIRE DANGER INDEX PERFORMANCE USING FIRE ACTIVITY**
Karen Steenkamp, Konrad Wessels, Frans van den Bergh, Graeme McFerren, Philip Frost, Cheewai Lai, Derick Swanepoel, CSIR Meraka Institute, South Africa

WE3.12.4 14:30 **APPLICATIONS OF HYPERSPECTRAL REMOTE SENSING AND GIS FOR ASSESSING FOREST HEALTH AND AIR POLLUTION**
Shawn Kefauver, University of California, Davis, United States; Josep Peñuelas, Autonomous University of Barcelona, Spain; Susan Ustin, University of California, Davis, United States

WE3.12.5 14:50 **MONITORING PINE DEFOLIATION DUE TO THE PROCESSIONARY MOTH AT REGIONAL SCALE FROM MODIS TIME SERIES**
Nicolas Bories, Jean-Charles Samalens, Dominique Guyon, Institut National de la Recherche Agronomique (INRA) - Unité EPHYSE, France; Nathalie Breda, Institut National de la Recherche Agronomique (INRA), France; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA) - Unité EPHYSE, France

Wednesday, July 25 15:40 - 17:20 Room 13A
Session WE4.12 Oral

High Resolution Retrieval of Vegetation Structure

Session Chair: Temilola Fatoyinbo, NASA

WE4.12.1 15:40 **THE 2011 ECO3D FLIGHT CAMPAIGN: VEGETATION STRUCTURE AND BIOMASS ESTIMATION FROM SIMULTANEOUS SAR, LIDAR AND RADIOMETER MEASUREMENTS**
Temilola Fatoyinbo, Rafael Rincon, David Harding, NASA Goddard Space Flight Center, United States; Charles Gatebe, URSA/NASA Goddard Space Flight Center, United States; Kenneth Jon Ranson, NASA Goddard Space Flight Center, United States; Guoqing Sun, University of Maryland, College Park, United States; Philip Dabney, Miguel Román, NASA Goddard Space Flight Center, United States

WE4.12.2 16:00 **EFFECTS OF CLUMPING ON MODELLING LIDAR WAVEFORMS IN FOREST CANOPIES**
Kim Calders, Wageningen University, Netherlands; Philip Lewis, Mathias Disney, University College London, United Kingdom; Jan Verbesselt, Wageningen University, Netherlands; John Armston, Joint Remote Sensing Research Program; University of Queensland, Australia; Martin Herold, Wageningen University, Netherlands

WE4.12.3 16:20 **ON USING DISCRETE RETURN LIDAR DISTRIBUTIONS AS A PROXY FOR WAVEFORM LIDAR SIGNALS WHEN MODELING VEGETATION STRUCTURE**
Jan van Aardt, Rochester Institute of Technology, United States; Jiaying Wu, Apple Inc., United States; Joseph McGlinchy, ESRI, United States; Konrad Wessels, Renaud Mathieu, Council for Scientific and Industrial Research, South Africa; Ty Kennedy-Bowdoin, David Knapp, Gregory P. Asner, Carnegie Institution for Science, United States

WE4.12.4 16:40 **ESTIMATING CLUMPING INDEX OF SPARSE FOREST USING HEMISPHERICAL PHOTOGRAPHS COMBINED WITH GEOEYE-1 DATA**
Yuan Liu, Yingying Gai, Gaoxing Chen, Wenjie Fan, Xiru Xu, Peking University, China; Binyan Yan, The University of Texas at Austin, United States; Yanran Liao, Peking University, China

WE4.12.5 17:00 **A VOXEL-BASED APPROACH FOR CANOPY STRUCTURE CHARACTERIZATION USING FULL-WAVEFORM AIRBORNE LASER SCANNING**
Reik Leiterer, Felix Morsdorf, Hossein Torabzadeh, Michael E. Schaepman, Remote Sensing Laboratories, University of Zurich, Switzerland; Werner Mücke, Norbert Pfeifer, Markus Hollaus, Institute of Photogrammetry and Remote Sensing, Austria

Wednesday, July 25 08:20 - 10:00 Room 13B
Session WE1.15 Oral-Invited

Advances in Interaction Models in Support of Active Microwave Remote Sensing of Natural Surfaces I

Session Co-Chairs: Nicolas Floury, ESA / ESTEC; Francesco Mattia, CNR - National Research Council of Italy

WE1.15.1 08:20 **ADVANCED TECHNIQUES FOR MICROWAVE-SNOW INTERACTION MODELING**
Jouni Pulliainen, Juha Lemmetyinen, Ali Nadir Arslan, Anna Kontu, Kimmo Rautiainen, Finnish Meteorological Institute, Finland

WE1.15.2 08:40 **FOREST MICROWAVE BACKSCATTER MODELLING AT P BAND : TEMPERATE PINE FOREST**
Pierre Borderies, Office National d'Etudes et de Recherches Aérospatiale, France; Ludovic Villard, Centre d'Etudes Spatiales de la Biosphère, France; Clément Albinet, Office National d'Etudes et de Recherches Aérospatiale, France; Nicolas Floury, European Space Agency ESTEC, Netherlands

WE1.15.3 09:00 **ON THE COHERENT AND NON COHERENT COMPONENTS OF BARE AND VEGETATED TERRAIN BISTATIC SCATTERING: MODELLING THE GNSS-R SIGNAL OVER LAND**
Nazzareno Pierdicca, Sapienza Università di Roma, Italy; Leila Guerriero, Tor Vergata University of Rome, Italy; Marco Brogioni, IFAC-CNR, Italy; Alejandro Egido, Starlab Barcelona S.L., Spain

WE1.15.4 09:20 **AN EXPERIMENTAL AND THEORETICAL STUDY ON THE SENSITIVITY OF CROSS-POLARIZED BACKSCATTER TO SOIL MOISTURE**
Anna Balenzano, Francesco Mattia, Giuseppe Satalino, Consiglio Nazionale delle Ricerche, Italy; Jeffrey Ouellette, Joel T. Johnson, The Ohio State University, United States

WE1.15.5 09:40 **BACKSCATTERED FIELD CORRELATIONS FOR ROUGH SURFACES WITH VARYING DIELECTRIC PROPERTIES**
Jeffrey Ouellette, The Ohio State University, United States; Scott Hensley, NASA Jet Propulsion Laboratory, United States; Joel T. Johnson, The Ohio State University, United States

Wednesday, July 25 10:30 - 12:10 Room 13B
Session WE2.15 Oral-Invited

Advances in Interaction Models in Support of Active Microwave Remote Sensing of Natural Surfaces II

Session Chair: Charles-Antoine Guérin, MIO-Université du Sud-Toulon-Var

WE2.15.1 10:30 **OCEAN-SCATTERED POLARIZED BISTATIC RADAR SIGNALS MODELED WITH SMALL-SLOPE APPROXIMATION**
Alexander Voronovich, Valery Zavorotny, NOAA, United States

WE2.15.2 10:50 **STATISTICAL ANALYSIS OF THE SEA SURFACE BACKSCATTERED FIELD FROM MONTE CARLO SIMULATIONS**
Nicolas Pinel, Christophe Bourlier, University of Nantes, France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Nicole de Beaucoudrey, University of Nantes, France; Antoine Ghaleb, ARTAL Brest - Télécom Bretagne, France; René Garello, Télécom Bretagne, France

WE2.15.3 11:10 **A MICROWAVE REMOTE SENSING APPROACH FOR THE SHORT-WAVE SEA SPECTRUM**
Alexandra Bringer, Université de Toulon, France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Alexis Mouche, Collecte Localisation Satellites (CLS), France; Charles-Antoine Guérin, Université de Toulon, France

WE2.15.4 11:30 **NUMERICAL SIMULATION OF SEA SURFACE MICROWAVE REMOTE SENSING AT GRAZING INCIDENCE**
David Miret, Marc Saillard, Université du Sud-Toulon-var and Mediterranean Institute of Oceanography (MIO), AMU-MIO, CNRS-MIO, IRD-MIO, France; Gabriel Soriano, Université Aix-Marseille and Institut Fresnel, UMR CNRS 7249, France

WE2.15.5 11:50 **NEAR-NADIRAL NORMALIZED RADAR CROSS SECTION OF THE SEA SURFACE AT KU, KA, AND W-BANDS: COMPARISON OF MEASUREMENTS AND MODELS**
Ninoslav Majurec, Joel T. Johnson, The Ohio State University, United States; Simone Tanelli, Stephen Durden, NASA Jet Propulsion Laboratory, United States

Wednesday, July 25 13:30 - 15:10 Room 13B
Session WE3.15 Oral-Invited

Advanced Topics in Microwave Radiometry

Session Co-Chairs: Steven C. Reising, Colorado State University; Adriano Camps, Universitat Politècnica de Catalunya

WE3.15.1 13:30 **ON-BOARD DIGITAL RFI AND POLARIMETRY PROCESSOR FOR FUTURE SPACEBORNE RADIOMETER SYSTEMS**
Niels Skou, Steen S. Kristensen, Technical University of Denmark, Denmark; Teemu Ruokokoski, Janne Lahtinen, Harp Technologies, Finland

WE3.15.2 13:50 **SUPERMIRAS INSTRUMENT DEVELOPMENT, TECHNOLOGY AND CALIBRATION**
Ignasi Corbella, Francesc Torres, Nuria Duffo, Universitat Politècnica de Catalunya, Spain; Manuel Martín-Neira, European Space Agency, Netherlands

WE3.15.3 14:10 **RECENT PROGRESS ON ROTATIONAL TIME SHARED SCANING SYNTHETIC APERTURE IMAGING RADIOMETER**
Ji Wu, Cheng Zhang, Weiying Sun, Hao Liu, Jingye Yan, National Space Science Center/Center for Space Science and Applied Research, CAS, China

WE3.15.4 14:30 **DESIGN AND ANALYSIS OF A HYPERSPECTRAL MICROWAVE RECEIVER SUBSYSTEM**
William Blackwell, Christopher Galbraith, Timothy Hancock, R. Vincent Leslie, Idahosa Osaretin, Michael Shields, MIT Lincoln Laboratory, United States; Paul Racette, Larry Hilliard, NASA Goddard Space Flight Center, United States

WE3.15.5 14:50 **CALIBRATION AND PERFORMANCE OF THE JUNO MICROWAVE RADIOMETER**
Shannon T. Brown, Michael Janssen, NASA Jet Propulsion Laboratory, United States

Wednesday, July 25 15:40 - 17:20 Room 13B
Session WE4.15 Oral-Invited

Advances in Remote Sensing of Biomass Dynamic

Session Co-Chairs: Ralph Dubayah, University of Maryland; Irena Hajnsek, ETH/DLR

WE4.15.1 15:40 **ASSESSING THE CAPABILITY OF SAR POLARIMETRIC MEASUREMENTS TO DETECT CHANGES IN FOREST ABOVEGROUND BIOMASS**
Sassan Saatchi, NASA Jet Propulsion Laboratory, United States

WE4.15.2 16:00 **REMOTE SENSING OF THREE-DIMENSIONAL VEGETATION STRUCTURE AND BIOMASS DYNAMICS**
Diane Wickland, NASA, United States; Ralph Dubayah, University of Maryland, United States

WE4.15.3 16:20 **BOREAL FOREST BIOMASS CLASSIFICATION WITH TANDEM-X**
Astor Toraño Caicoya, Florian Kugler, German Aerospace Center (DLR), Germany; Irena Hajnsek, ETH Zürich, Switzerland; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

WE4.15.4 16:40 **ON THE ESTIMATION OF FOREST VERTICAL STRUCTURE FROM MULTIBASELINE POLARIMETRIC SAR DATA**
Matteo Pardini, Astor Toraño Caicoya, Florian Kugler, Seung-Kuk Lee, Irena Hajnsek, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

WE4.15.5 17:00 **TERRESTRIAL ECOSYSTEM APPLICATIONS OF LIDAR IN BIODIVERSITY AND BIOMASS DYNAMICS RESEARCH**
Scott J. Goetz, Woods Hole Research Center, United States; Ralph Dubayah, University of Maryland, United States

Wednesday, July 25 08:20 - 10:00 Room 14A

Session WE1.5 Oral

Image Analysis

Session Co-Chairs: Pierre Soille, Joint Research Center - European Commission; Lorenzo Crocco, CNR - National Research Council of Italy

WE1.5.1 08:20 **EDGE EXTRACTION BY STATISTICAL DEPENDENCE ANALYSIS: APPLICATION TO MULTI-ANGULAR WORLDVIEW-2 SERIES**
Lionel Gueguen, European Commision, Joint Research Centre, Italy; Santiago Velasco-Forero, Mines ParisTech, France; Pierre Soille, European Commision, Joint Research Centre, Italy

WE1.5.2 08:40 **MORPHOLOGICAL OPERATORS FOR SEGMENTATION OF HIGH CONTRAST TEXTURED REGIONS IN REMOTELY SENSED IMAGERY**
Igor Zingman, Dietmar Saupe, Karsten Lambers, University of Konstanz, Germany

WE1.5.3 09:00 **PRACTICAL ORTHORECTIFICATION OF SYSTEM CORRECTED SATELLITE IMAGES AND ITS VALIDATION**
Yoshikazu Iikura, Hirosaki University, Japan

WE1.5.4 09:20 **CAMERA POSE ESTIMATION USING VISUAL SERVOING FOR AERIAL VIDEO CHANGE DETECTION**
Nicolas Bourdis, Denis Marraud, EADS France, France; Hichem Sahbi, Centre National de la Recherche Scientifique Telecom ParisTech, France

WE1.5.5 09:40 **A NEW EFFECTIVE METHOD FOR QUANTITATIVE MICROWAVE IMAGING**
Lorenzo Crocco, Ilaria Catapano, National Research Council of Italy, Italy; Loreto Di Donato, Tommaso Isernia, Mediterranea University of Reggio Calabria, Italy

Wednesday, July 25 10:30 - 12:10 Room 14A

Session WE2.5 Oral

Hyperspectral Image Processing

Session Co-Chairs: Antonio Plaza, University of Extremadura; Jose M. Bioucas-Dias, Instituto Superior Tecnico, TU Lisbon

WE2.5.1 10:30 **CLUSTERED MAX-TYPE DETECTORS FOR HYPERSPECTRAL IMAGES**
Peter Bajorski, Rochester Institute of Technology, United States

WE2.5.2 10:50 **PARALLEL IMPLEMENTATION OF A HYPERSPECTRAL UNMIXING CHAIN: GRAPHIC PROCESSING UNITS VERSUS MULTI-CORE PROCESSORS**
Sergio Bernabé, Antonio Plaza, Hyperspectral Computing Laboratory, Spain; Sebastián López, Roberto Sarmiento, Institute for Applied Microelectronic, Spain

WE2.5.3 11:10 **NOISE REDUCTION OF HYPERSPECTRAL IMAGERY USING NONLOCAL SPARSE REPRESENTATION WITH SPECTRAL-SPATIAL STRUCTURE**
Yuntao Qian, Minchao Ye, Qi Wang, Zhejiang University, China

WE2.5.4 11:30 **RESIDUAL INFORMATION TO ESTIMATE UNCERTAINTY AND IMPROVE THE SPECTRAL LINEAR MIXING MODEL SOLUTION**
Daniel C. Zanotta, National Institute for Space Research (INPE), Brazil; Victor Haertel, Federal University at Rio Grande do Sul, Brazil; Yosio Edemir Shimabukuro, Camilo Daleles Rennó, National Institute for Space Research (INPE), Brazil

WE2.5.5 11:50 **PARALLEL HYPERSPECTRAL IMAGE COMPRESSION USING ITERATIVE ERROR ANALYSIS ON GRAPHICS PROCESSING UNITS**
Sergio Sanchez, Antonio Plaza, Hyperspectral Computing Laboratory, Spain

Wednesday, July 25 13:30 - 15:10 Room 14A

Session WE3.5 Oral

SAR Image Processing III

Session Chair: Uwe Stilla, Technische Universität München

WE3.5.1 13:30 **SAR-SIFT: A SIFT-LIKE ALGORITHM FOR APPLICATIONS ON SAR IMAGES**
Flora Dellinger, Julie Delon, Yann Gousseau, Télécom ParisTech, France; Julien Michel, Centre National d'Etudes Spatiales, France; Florence Tupin, Télécom ParisTech, France

WE3.5.2 13:50 **A NOVEL FEATURE EXTRACTION METHOD FOR THE CLASSIFICATION OF SAR IMAGES**
Örsan Aytekin, Mehmet Koc, Ilkay Ulusoy, Middle East Technical University, Turkey

WE3.5.3 14:10 **PRELIMINARY PATTERN RECOGNITION IN POLARIMETRIC SIGNATURES**
Stanislawa Porzycka, Jacek Strzelczyk, Marzena Bielecka, Andrzej Lesniak, AGH University of Science and Technology in Krakow, Poland

WE3.5.4 14:30 **LAND-COVER CLASSIFICATION OF SAR IMAGES BY COMBINING LOW-LEVEL FEATURES AND CATEGORY CONTEXT**
Yongke Ding, Lizhong Qiu, Qiuze Yu, Wenxian Yu, Xingzhao Liu, Shanghai Jiao Tong University, China

WE3.5.5 14:50 **CHERNOFF DISTANCE AND RELIEF FEATURE SELECTION**
Jing Peng, Montclair State University, United States; Guna Seetharaman, AFRL/RITB, United States

Wednesday, July 25 15:40 - 17:20 Room 14A

Session WE4.5 Oral

Image Restoration and Enhancement

Session Co-Chairs: Jocelyn Chanussot, Grenoble Institute of Technology; Luciano Alparone, University of Florence

WE4.5.1 15:40 **ORTHOGONAL MATCHING PURSUIT FOR VHR IMAGE RECONSTRUCTION**
Luca Lorenzi, Farid Melgani, University of Trento, Italy; Grégoire Mercier, Télécom Bretagne, France

WE4.5.2 16:00 **SPARSITY-BASED RESTORATION OF SMOS IMAGES IN THE PRESENCE OF OUTLIERS**
Javier Preciozzi, Pablo Muse, Universidad de la República, Uruguay; Andres Almansa, Centre National de la Recherche Scientifique, France; Sylvain Durand, Université Paris Descartes and Centre National de la Recherche Scientifique, France; François Cabot, Yann H. Kerr, Ali Khazaal, Bernard Rouge, Centre d'Etudes Spatiales de la Biosphère, France

WE4.5.3 16:20 **SOME CRITERIA TO ASSESS THE RECONSTRUCTABILITY OF SHADOW AREAS**
Luca Lorenzi, Farid Melgani, Grégoire Mercier, University of Trento, Italy

WE4.5.4 16:40 **A SPATIAL AND SPECTRAL COMBINED IMAGE RESTORATION APPROACH**
Yifan Zhang, Northwestern Polytechnical University, China

WE4.5.5 17:00 **NDVI CONTROLLED BASED HIGH FREQUENCY INJECTION MULTISPECTRAL IMAGE FUSION METHOD**
Hardik Dhamecha, Tanish Zaveri, Nirma University, India; Madhukar Potdar, Bhaskaracharya Institute for Space Application and Geo-Informatics, India

Wednesday, July 25 08:20 - 10:00 Room 14B
Session WE1.13 Oral-Invited

GEOSS and Users: The Power of Interoperability

Session Co-Chairs: Karen Moe, NASA; Kathy Fontaine, NASA

WE1.13.1 08:20 **THE GEOSS USER REQUIREMENT REGISTRY: FACILITATING THE LINKAGE OF SCIENCE AND GEOSS**
Hans-Peter Plag, University of Nevada, Reno, United States; Gary Foley, Environmental Protection Agency, United States; Shelley Jules-Plag, Tiwah, Inc., United States; Justin Kaufman, Greg Ondich, Science Consulting Group, Inc., United States

WE1.13.2 08:40 **KEY CHALLENGES IN THE USE OF SATELLITES FOR RISK ASSESSMENT**
Andrew Eddy, Athena Global, France; Guy Seguin, Canadian Space Agency, Canada; Shelley Stover, NASA, United States; Stephane Chalifoux, Guy Aube, Canadian Space Agency, Canada

WE1.13.3 09:00 **THE NAMIBIA EARLY FLOOD WARNING SYSTEM, A CEOS PILOT PROJECT**
Daniel Mandl, NASA Goddard Space Flight Center, United States; Stuart Frye, SGT, Inc., United States; Robert Sohlberg, University of Maryland, United States; Pat Cappelaere, Vightel Inc., United States; Matthew Handy, NASA Goddard Space Flight Center, United States; Robert Grossman, University of Chicago, United States

WE1.13.4 09:20 **STRENGTHENING DISASTER MANAGEMENT USING EARTH OBSERVATIONS - GEOSS AND CEOS ACTIVITIES**
George Percivall, The Open Geospatial Consortium, United States; Karen Moe, NASA, United States; John Evans, Global Science & Technology, United States; Nadine Alameh, The Open Geospatial Consortium, United States

WE1.13.5 09:40 **TEMPORAL AND SPATIAL VARIABILITY IN METEOSAT/SEVIRI IMAGES FOR THE GLOBAL SPACE-BASED INTER-CALIBRATION SYSTEM (GSICS)**
Tim Hewison, EUMETSAT, Germany

Wednesday, July 25 10:30 - 12:10 Room 14B
Session WE2.13 Oral-Invited

GEOSS-based Earthquake Anomaly Recognition I

Session Co-Chairs: Lixin Wu, Beijing Normal University; Angelo De Santis, Istituto Nazionale di Geofisica e Vulcanologia

WE2.13.1 10:30 **IMPORTANCE OF LITHOSPHERE-COVERSPHERE-ATMOSPHERE COUPLING TO EARTHQUAKE ANOMALY RECOGNITION**
Lixin Wu, Beijing Normal University, China; Kai Qin, China University of Mining and Technology, China; Shanjun Liu, Northeastern University, China; Angelo De Santis, Gianfranco Cianchini, Istituto Nazionale di Geofisica e Vulcanologia, Italy

WE2.13.2 10:50 **VALIDATION OF ATMOSPHERE/IONOSPHERE SIGNALS ASSOCIATED WITH MAJOR EARTHQUAKES BY MULTI-INSTRUMENT SPACE-BORNE AND GROUND OBSERVATIONS**
Dimitar Ouzounov, Chapman University, United States; Sergey Pulinets, Institute of Applied Geophysics, Russian Federation; Katsumi Hattori, Chiba University, Japan; Michel Parrot, LPC2E/CNRS, France; J.Y. Liu, National Central University, Taiwan; Y. I. Yang, National Taiwan University, Taiwan; Alonso Arellano-Baeza, University of Santiago de Chile, Chile; Menas Kafatos, Chapman University, United States; Patrick Taylor, NASA Goddard Space Flight Center, United States

WE2.13.3 11:10 **PRE-EARTHQUAKES, AN FP7 PROJECT FOR INTEGRATING OBSERVATIONS AND KNOWLEDGES ON EARTHQUAKE PRECURSORS: PRELIMINARY RESULTS AND STRATEGY**
Valerio Tramutoli, University of Basilicata, Italy; Sedat Inan, TUBITAK Marmara Research Center, Turkey; Norbert Jakowski, German Aerospace Center (DLR), Germany; Sergey Pulinets, Fiodorov Institute of Applied Geophysics, Russian Federation; Alexey Romanov, JSC Russian Space Systems, Russian Federation; Carolina Filizzola, Geospazio Italia srl., Italy; Irk Shagimuratov, West Department of N.V. Pushkov IZMIRAN RAS, Russian Federation; Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Nicola Genzano, Carmine Serio, Mariano Lisi, Rosita Corrado, Caterina Grimaldi, Mariapia Faruolo, Rosa Maria Petracca Altieri, University of Basilicata, Italy; Semih Ergintav, Ziyaddin Cakir, Erhan Alparslan, Selime Gurol, TUBITAK Marmara Research Center, Turkey; Mohammed Mainul Hoque, Klaus-Dieter Missling, Volker Wilken, Claudia Borries, German Aerospace Center (DLR), Germany; Yuri Kalilnin, Konstantin Tsybulia, E. Ginzburg, Anatoly Pokhunkov, Liubov Pustivaloya, Fiodorov Institute of Applied Geophysics, Russian Federation; Alexander Romanov, Igor Cherny, Sergey Trusov, Anna Adjalova, Denis Ermolaev, Sergey Bobrovsky, JSC Russian Space Systems, Russian Federation; Rossana Paciello, Irina Coviello, Alfredo Falconieri, Geospazio Italia srl., Italy; Irina Zakharenkova, Yuri Cherniak, Alexander Radievsky, West Department of N.V. Pushkov IZMIRAN RAS, Russian Federation; Vincenzo Lapenna, Marianna Balasco, Sabatino Piscitelli, Teodosio Lacava, Giuseppe Mazzeo, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy

WE2.13.4 11:30 **SHORT TIMESCALE VARIATIONS IN IONOSPHERE CAUSED BY IRREGULAR SOLAR ELECTROMAGNETIC RADIATION**
Liming He, Northeastern University, China; Lixin Wu, Northeastern University / Beijing Normal University, China; Pulinets Sergey, Fiodorov Institute of Applied Geophysics, Russian Federation; Shanjun Liu, Northeastern University, China

WE2.13.5 11:50 **RESULTS FROM INSAR MONITORING OF THE 2010-2011 NEW ZEALAND SEISMIC SEQUENCE: EA DETECTION AND EARTHQUAKE TRIGGERING**
Stefano Salvi, Simone Atzori, Cristiano Tolomei, Andrea Antonjoli, Elisa Trasatti, John Peter Merryman Boncori, Giuseppe Pezzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Alessandro Coletta, Simona Zoffoli, Agenzia Spaziale Italiana, Italy

Wednesday, July 25 13:30 - 15:10 Room 14B
Session WE3.13 Oral-Invited

Synergistic Utilization of TerraSAR-X and RADARSAT-2 Data I

Session Co-Chairs: Achim Roth, German Aerospace Center - DLR; Stephane Califoux, CSA

WE3.13.1 13:30 **THE JOINT USE OF RADARSAT-2 AND TERRASAR-X DATA IN THE ESA PROJECT MARISS - MARITIME SECURITY INFORMATION SERVICES**
Stephan Brusch, Susanne Lehner, Egbert Schwarz, German Aerospace Center (DLR), Germany

WE3.13.2 13:50 **MULTI-FREQUENCY ANALYSIS OF HIGH RESOLUTION QUAD-POL RADARSAT-2 AND DUAL-POL TERRASAR-X DATA FOR LAND COVER CLASSIFICATION IN ARCTIC COASTAL ECOSYSTEMS, MACKENZIE DELTA, BEAUFORT SEA**
Sarah Banks, Carleton University, Canada; Tobias Ullmann, University of Wuerzburg, Germany; Jason Duffe, National Wildlife Research Center, Canada; Achim Roth, German Aerospace Center (DLR), Germany; Douglas King, Carleton University, Canada; Anne Demers, National Wildlife Research Center, Canada; Anna Hogg, Andreas Schmitt, German Aerospace Center (DLR), Germany; Roland Baumhauer, University of Wuerzburg, Germany; Stefan Dech, German Aerospace Center (DLR), Germany

WE3.13.3 14:10 **OBSERVATION OF MELT ONSET IN AN ARCTIC TUNDRA LANDSCAPE USING HIGH RESOLUTION TERRASAR-X AND RADARSAT-2 DATA**
Jennifer Sobiech, Julia Boike, Wolfgang Dierking, Alfred Wegener Institute for Polar and Marine Research, Germany

WE3.13.4 14:30 **THE USE OF RADARSAT-2 AND TERRASAR-X DATA FOR THE EVALUATION OF SNOW CHARACTERISTICS IN SUBARCTIC REGIONS**
Yannick Duguay, Monique Bernier, Institut National de la Recherche Scientifique, Canada

WE3.13.5 14:50 **WETLAND MAPPING WITH MULTI-FREQUENCY SAR - COHERENT CHANGE DETECTION WITH TERRASAR-X AND RADARSAT-2**
Brian Brisco, Natural Resources Canada, Canada; Andreas Schmitt, German Aerospace Center (DLR), Germany; Kevin Murnaghan, Natural Resources Canada, Canada; Frank Ahern, TerreVista Earth Imaging, Canada; Shannon Kaya, Natural Resources Canada, Canada; Achim Roth, German Aerospace Center (DLR), Germany

Wednesday, July 25 15:40 - 17:20 Room 14B
Session WE4.13 Oral-Invited

Synergistic Utilization of TerraSAR-X and RADARSAT-2 Data II

Session Co-Chairs: Stephane Califoux, CSA; Achim Roth, German Aerospace Center - DLR

WE4.13.1 15:40 **SYNERGETIC USE OF TERRASAR-X AND RADARSAT-2 TIME SERIES DATA FOR IDENTIFICATION AND CHARACTERIZATION OF GRASSLAND TYPES – A CASE STUDY IN SOUTHERN BAVARIA, GERMANY**
Annekatrin Metz, University of Osnabrueck, Germany; Andreas Schmitt, Thomas Esch, Peter Reinartz, German Aerospace Center (DLR), Germany; Sascha Klonus, Manfred Ehlers, University of Osnabrueck, Germany

WE4.13.2 16:00 **MONITORING CROP GROWTH DYNAMICS USING RADARSAT-2 AND TERRASAR-X SAR DATA**
Jiali Shang, Agriculture and Agri-Food Canada, Canada

WE4.13.3 16:20 **HIERARCHICAL CROP TYPE MAPPING, USING MULTITEMPORAL, TERRASAR-X AND RADARSAT-2 DATA**
Björn Waske, Benjamin Mack, University of Bonn, Germany

WE4.13.4 16:40 **ON THE USE OF TERRASAR-X AND RADARSAT-2 SPOTLIGHT DATA FOR PERSISTENT SCATTERERS AND TOMOGRAPHIC ANALYSIS**
Valentin Poncos, University of Calgary / Kepler Space Inc, Canada; Michael Collins, University of Calgary, Canada

Wednesday, July 25 08:20 - 10:00 Room 14C
Session WE1.1 Oral

High Resolution SAR I

Session Co-Chairs: Scott Hensley, NASA Jet Propulsion Laboratory; Pau Prats, German Aerospace Center - DLR

WE1.1.1 08:20 **MARITIME NON-COOPERATIVE TARGET IMAGING WITH COSMO SKYMED DATA**
Marco Martorella, University of Pisa/RaSS National Lab, Italy; Debora Pastina, Sapienza Università di Roma, Italy; Fabrizio Berizzi, University of Pisa/RaSS National Lab, Italy; Pierfrancesco Lombardo, Sapienza Università di Roma, Italy

WE1.1.2 08:40 **PERFORMANCE INVESTIGATION ON THE HIGH-RESOLUTION WIDE-SWATH SAR SYSTEM OPERATING IN MULTISUBPULSE MODE**
Federica Bordoni, Marwan Younis, Gerhard Krieger, German Aerospace Center (DLR), Germany

WE1.1.3 09:00 **EVALUATING THE POTENTIAL OF UNSUPERVISED CLASSIFICATIONS FOR ICEFOOT CARTOGRAPY USING RADARSAT-2 HIGH RESOLUTION IMAGERY.**
Simon Tolzczuk-Leclerc, Eric Hudier, Simon Bélanger, University of Quebec, Canada

WE1.1.4 09:20 **HIGH PRECISION SAR FOCUSING OF TERRASAR-X EXPERIMENTAL STARING SPOTLIGHT DATA**
Pau Prats-Iraola, Rolf Scheiber, Marc Rodríguez-Cassolà, Steffen Wollstadt, Josef Mittermayer, Benjamin Bräutigam, Marco Schwerdt, Andreas Reigber, Alberto Moreira, German Aerospace Center (DLR), Germany

WE1.1.5 09:40 **QUALITY ASSESSMENT OF TERRASAR-X DERIVED GROUND CONTROL POINTS**
Wolfgang Koppe, Ronny Wenzel, Simon Hennig, Jürgen Janoth, Infoterra GmbH, Germany; Philipp Hummel, CompassData Inc., United States; Hannes Raggam, Joanneum Research, Austria

Wednesday, July 25 10:30 - 12:10 Room 14C
Session WE2.1 Oral

High Resolution SAR II

Session Co-Chairs: Pau Prats, German Aerospace Center - DLR; Scott Hensley, NASA Jet Propulsion Laboratory

WE2.1.1 10:30 **FIRST INVESTIGATIONS ON DETECTION OF STATIONARY VEHICLES IN AIRBORNE DECIMETER RESOLUTION SAR DATA BY SUPERVISED LEARNING**
Oliver Maksymiuk, Michael Schmitt, Technische Universität München, Germany; Andreas R. Brenner, Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Germany; Uwe Stilla, Technische Universität München, Germany

WE2.1.2 10:50 **A FILTER FOR HOMOGENEOUS AREAS IN VERY HIGH RESOLUTION SAR IMAGES BASED ON HYSTERESIS SMOOTHING**
Takuma Anahara, Kyoto University, Japan; Michael Schmitt, Technische Universität München, Germany; Masayuki Tamura, Kyoto University, Japan

WE2.1.3 11:10 **PARAMETER ESTIMATION FOR DISTRIBUTED SCATTERERS USING HIGH RESOLUTION SAR DATA**
Kanika Goel, Nico Adam, German Aerospace Center (DLR), Germany

WE2.1.4 11:30 **HIGH SPATIO-TEMPORAL RESOLUTION MONITORING OF INFRASTRUCTURE USING ADAPATIVE MULTILOOKING AND MULTI-INCIDENCE ANGLE INSAR NETWORK INVERSION**
Bernhard Rabus, MDA / SFU, Canada; Jayson Eppler, MDA, Canada

WE2.1.5 11:50 **STUDY AND ASSESSMENT OF SELECTED PRIMITIVE FEATURES BEHAVIOUR FOR SAR IMAGE DESCRIPTION**
Corneliu Octavian Dumitru, Mihai Datcu, German Aerospace Center (DLR), Germany

Wednesday, July 25 13:30 - 15:10 Room 14C
Session WE3.1 Oral

High Resolution SAR III

Session Co-Chairs: Florence Tupin, Telecom ParisTech; Uwe Stilla, Technische Universität München

WE3.1.1 13:30 **FEATURE BASED MAXIMUM LIKELIHOOD MODEL INVERSION FOR THREE-DIMENSIONAL BUILDING EXTRACTION FROM SINGLE HIGH RESOLUTION SAR IMAGES**
Edouard Barthelet, Grégoire Mercier, Institut Telecom, Telecom Bretagne, France; Léonard Denise, Sébastien Reynaud, Thales Communications & Security, France

WE3.1.2 13:50 **A KNOWLEDGE-BASED 3D-BUILDING RECONSTRUCTION FROM SINGLE VERY HIGH RESOLUTION SAR IMAGES**
Kan Tang, Keming Chen, Lei Wang, Wenchang Xiong, Mian Jiang, Hongqi Wang, Institute of Electronics, CAS, China

WE3.1.3 14:10 **MEDIUM-EARTH-ORBIT SAR IMAGING BASED ON KEYSTONE TRANSFORM AND AZIMUTH PERTURBATION**
Lijia Huang, Bing Han, Donghui Hu, Chibiao Ding, Lihua Zhong, Institute of Electronics, CAS, China

WE3.1.4 14:30 **CHARACTERIZATION OF SAR IMAGE PATTERNS PERTINENT TO INDIVIDUAL FAÇADES**
Stefan Auer, Christoph Gisinger, Technische Universität München, Germany; Richard Bamler, German Aerospace Center (DLR), Germany

WE3.1.5 14:50 **KA BAND MEASUREMENTS OVER URBAN AREA, A STUDY OF NLOS BACK-SCATTERING**
Jean-François Nouvel, Bernard Vaizan, Olivier Ruault du Plessis, Xavier Dupuis, Office National d'Etudes et de Recherches Aérospatiale, France

Wednesday, July 25 15:40 - 17:20 Room 14C
Session WE4.1 Oral

Ionospheric and Tropospheric Observation

Session Co-Chairs: Franz Meyer, UAF; Ramon Hanssen, University of Delft

WE4.1.1 15:40 **IONOSAR – COLLABORATIVE RESEARCH TOWARDS UNDERSTANDING AND MITIGATING IONOSPHERIC EFFECTS IN SAR**
Franz Meyer, University of Alaska Fairbanks, United States; Konstantinos P. Papathanassiou, Jun Su Kim, German Aerospace Center (DLR), Germany; Xiaoqing Pi, Anthony Freeman, NASA Jet Propulsion Laboratory, United States; Kancham Chotoo, User Systems, Inc., United States; Keith Groves, Boston College, United States; Edward Jones, Black Owl Consulting, Inc., United States

WE4.1.2 16:00 **VALIDATION OF METHOD FOR ESTIMATING INTERFEROMETRIC PHASE OFFSET WITHOUT THE USE OF GROUND CONTROL POINTS**
Muriel Pinheiro, German Aerospace Center (DLR) / OrbiSat Ind. e Aerolevantamento S. A., Brazil; Rafael Rosa, OrbiSat Ind. e Aerolevantamento S. A., Brazil; Jose C. Mura, National Institute for Space Research (INPE), Brazil; João Moreira, OrbiSat Ind. e Aerolevantamento S. A., Brazil

WE4.1.3 16:20 **MITIGATION OF ATMOSPHERIC PHASE DELAY EFFECTS IN SAR INTERFEROMETRY FOR VOLCANIC ACTIVITY MONOTORING USING MODIS DATA AND WRF MODEL**
Jungkyo Jung, Duk-Jin Kim, Seoul National University, Republic of Korea

WE4.1.4 16:40 **RESEARCH OF INSAR ATMOSPHERIC CORRECTION USING WRF MODEL SIMULATED RESULT AND MERIS PRODUCT**
Xiai Cui, Qiming Zeng, Cunren Liang, Jian Jiao, Qingxi Tong, Peking University, China

WE4.1.5 17:00 **IONOSPHERIC PATH DELAY ESTIMATION USING SPLIT-BEAM INTERFEROMETRY**
Urs Wegmüller, Tazio Strozzi, Charles Werner, Gamma Remote Sensing, Switzerland

Wednesday, July 25 08:20 - 10:00 Room 21A
Session WE1.11 Oral

Trace Gases

Session Co-Chairs: Oleg Dubovik, University of Lille; Lieven Clarisse, Université libre de Bruxelles

WE1.11.1 08:20 **APPLICATION OF KLIMA/G-POD ALGORITHM TO CO2 RETRIEVAL FROM IASI/METOP-A OBSERVATIONS AND COMPARISON WITH GOSAT/TANSO-FTS PRODUCTS**
Lucia Maria Laurenza, Ugo Cortesi, Samuele Del Bianco, Marco Gai, Istituto di Fisica Applicata Nello Carrara IFAC-CNR, Italy

WE1.11.2 08:40 **URBAN AIR POLLUTION MONITORING USING DIFFERENTIAL OPTICAL ABSORPTION SPECTROSCOPY (DOAS) AND WIND LIDAR**
Hiroaki Kuze, Yutaro Goto, Yusaku Mabuchi, Hayato Saitoh, Ilham Alimuddin, Gerry Bagtasa, Chiba University, Japan; Ippei Harada, Tokyo University of Information Sciences, Japan; Toshihiko Ishibashi, Takuma Tsujimoto, The City of Chiba, Japan; Shumpei Kameyama, Mitsubishi Electric Co., Japan

WE1.11.3 09:00 **THE IMPACT OF CROP RESIDUE BURNING ON AIR QUALITY OVER YANGTZE RIVER DELTA, CHINA: OBSERVATION AND SIMULATION**
Bin Zhu, Ji-Feng Su, Han-Qing Kang, Nanjing University of Information Science and Technology, China; Yan Cai, Nanjing University of Posts and Telecommunications, China

WE1.11.4 09:20 **MAPPING OF HIGH RESOLUTION NITROGEN DIOXIDE VERTICAL COLUMN DENSITIES WITH THE AIRBORNE PRISM EXPERIMENT (APEX) IMAGING SPECTROMETER OVER ZURICH, SWITZERLAND**
Christoph Popp, Dominik Brunner, Empa, Swiss Federal Laboratories for Materiels Science and Technology, Switzerland; Alexander Damm, University of Zurich, Switzerland; Brigitte Buchmann, Empa, Swiss Federal Laboratories for Materiels Science and Technology, Switzerland

WE1.11.5 09:40 **GLOBAL TRENDS OF TROPOSPHERIC NO2 OBSERVED FROM SPACE**
Philipp Schneider, Norwegian Institute for Air Research, Norway; Ronald J. van der A, Royal Netherlands Meteorological Institute (KNMI), Netherlands

Wednesday, July 25 10:30 - 12:10 Room 21A
Session WE2.11 Oral

Aerosol Remote Sensing A

Session Chair: Oleg Dubovik, University of Lille

WE2.11.2 10:50 **AEROSOL OPTICAL DEPTH RETRIEVAL OVER CHINA FROM NOAA AVHRR DATA**
Yingjie Li, Yong Xue, Institute of Remote Sensing Applications, CAS, China; Tingting Hou, Center for Earth Observation and Digital Earth, CAS, China; Leiku Yang, School of Geography, Beijing Normal University, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China; Jia Liu, Institute of Remote Sensing Applications, CAS, China

WE2.11.3 11:10 **A MULTI SENSOR APPROACH FOR STUDYING AND ANALYZING THE FORMATION AND DYNAMICS OF THE BLACK CLOUD OVER CAIRO, EGYPT**
Hesham El-Askary, Anup Prasad, Chapman University, United States; Heba Marey, Mohamed El-Raey, Alexandria University, Egypt; Ghassem Asrar, Menas Kafatos, Chapman University, United States

WE2.11.4 11:30 **UNCERTAINTY FROM LAMBERTIAN SURFACE ASSUMPTION IN SATELLITE AEROSOL RETRIEVAL**
Leiku Yang, Beijing Normal University, China; Yong Xue, Yingjie Li, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China; Jie Guang, Xingwei He, Jing Dong, Institute of Remote Sensing Applications, CAS, China; Tingting Hou, Center for Earth Observation and Digital Earth, CAS, China

WE2.11.5 11:50 **SIMULTANEOUS RETRIEVAL OF THE OPTICAL THICKNESS AND ALTITUDE OF MINERAL DUST WITH FY-3/VIRR INFRARED OBSERVATION**
Jin Qi, Institute of Atmospheric Physics, CAS / National Satellite Meteorological Center, China Meteorological Administration, China; Hong Qiu, Peng Zhang, Lin Chen, Xiaojing Li, National Satellite Meteorological Center, China Meteorological Administration, China

Wednesday, July 25 13:30 - 15:10 Room 21A
Session WE3.11 Oral

Aerosol Remote Sensing B

Session Chair: Oleg Dubovik, University of Lille

WE3.11.1 13:30 **ACCURATE AEROSOL REMOTE SENSING OVER BRIGHT LAND SURFACES USING AATSR**
Yi Qin, Ross Mitchell, Commonwealth Scientific and Industrial Research Organisation, Australia

WE3.11.2 13:50 **DUST DETECTION OVER BRIGHT SURFACES USING HIGH-RESOLUTION VISIBLE SEVIRI IMAGES**
Yehia Eissa, Hosni Ghedira, Taha B. M. J. Ouarda, Matteo Chiesa, Masdar Institute of Science and Technology, United Arab Emirates

WE3.11.3 14:10 **REMOTELY SENSING CHEMICAL COMPOSITION OF ATMOSPHERIC AEROSOLS FROM GROUND-BASED RADIOMETRIC AND POLARIMETRIC OBSERVATIONS**
Zhengqiang Li, Ling Wang, Donghui Li, Kaitao Li, Institute of Remote Sensing Applications, CAS, China; Philippe Goloub, Université Lille 1, France

WE3.11.4 14:30 **AEROSOL RETRIVAL OF NORTH CHINA USING NOAA AVHRR DATA**
Tingting Hou, Yong Xue, Center for Earth Observation and Digital Earth, CAS, China; Yingjie Li, Institute of Remote Sensing Applications, CAS, China; Leiku Yang, School of Geography, Beijing Normal University, Beijing, China; Xingwei He, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China; Jie Guang, Jing Dong, Institute of Remote Sensing Applications, CAS, China

WE3.11.5 14:50 **ENHANCEMENT OF BC CONCENTRATION ASSOCIATED WITH DIWALI FESTIVAL IN INDIA**
Ramesh Singh, Chapman University, United States; Manish Sharma, Sharda University, India

Wednesday, July 25 15:40 - 17:20 Room 21A
Session WE4.11 Oral

Numerical Weather Prediction and Data Assimilation

Session Chair: Gail Skofronick-Jackson, NASA Goddard Space Flight Center

WE4.11.1 15:40 **RETROSPECTIVE ANALYSIS OF REGIONAL CLIMATE: THE GERMAN REANALYSIS PROJECT - POTENTIAL OF REMOTE SENSING OBSERVATIONS.**
Stefan Kneifel, Susanne Crewell, Stephanie Redl, Sandra Steinke, University of Cologne, Germany; Christian Ohlwein, University of Bonn, Germany; Jan Keller, German Weather Service, Germany; Petra Friedrichs, Andreas Hense, Christoph Wosnitza, Ieda Pscheidt, University of Bonn, Germany

WE4.11.2 16:00 **MERGED ANALYSIS OF HOURLY PRECIPITATION UTILIZING GAUGE AND SATELLITE DATA IN CHINA**
Huan Li, Insititute of Remote Sensing Application, CAS, China; Yan Shen, National Meteorological Information Center, China Meteorological Administration, Beijing, China; Zheng Niu, Insititute of Remote Sensing Application, CAS, China; Yang Hong, University of Oklahoma, United States

WE4.11.3 16:20 **MONTHLY AND ANNUAL VALIDATION OF TRMM MULTISATELLITE PRECIPITATION ANALYSIS (TMPA) PRODUCTS IN THE CASPIAN SEA REGION FOR THE PERIOD 1999-2003**
Zheng Duan, Delft University of Technology, Netherlands; W.G.M. Bastiaanssen, Delft University of Technology / Water Watch, Netherlands; Junzhi Liu, Institute of Geographic Sciences and Natural Resources Research, CAS, China

WE4.11.4 16:40 **COMMUNITY RADIATIVE TRANSFER MODEL FOR RADIANCE ASSIMILATION AND APPLICATIONS**
Quanhua (Mark) Liu, University of Maryland, United States; Paul van Delst, NOAA NCEP/EMC/IMSG, United States; Yong Chen, Colorado State University, United States; David Groff, NOAA NCEP/EMC/IMSG, United States; Yong Han, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Andrew Collard, NOAA/N NCEP/EMC/IMSG, United States; Fuzhong Weng, Sid-Ahmed Boukabara, NOAA/NESDIS/Center for Satellite Applications and Research, United States; John Derber, NOAA/NCEP/EMC, United States

WE4.11.5 17:00 **WIND-SHEAR PREDICTION WITH AIRPORT LIDAR DATA**
Yuan-Xiang Li, Qi Hu, Shi-Qian Liu, Shanghai Jiao Tong University, China

Wednesday, July 25 08:20 - 10:00 Room 21B

Session WE1.16 Oral-Invited

Climate Data Records From Satellite Observations to Analyse Climate Variability and Change III

Session Co-Chairs: John Bates, National Climatic Data Center (NCDC); Pascal Lecomte, ESA

WE1.16.1 08:20 **A NEAR FUNDAMENTAL DECADAL DATA RECORD OF AIRS INFRARED SURFACE BRIGHTNESS TEMPERATURES**
Phuong Nguyen, David Chapman, Milton Halem, Jeff Avery, University of Maryland, Baltimore County, United States

WE1.16.2 08:40 **THE ESA GLOBALBEDO PROJECT FOR MAPPING THE EARTH'S LAND SURFACE ALBEDO FOR 15 YEARS FROM EUROPEAN SENSORS.**
Jan-Peter Muller, Gerardo López Saldaña, Gill Watson, Neville Shane, Tom Kennedy, Philip Lewis, University College London, United Kingdom; Jürgen Fisher, Luis Guanter, Carlos Domenech, Réné Preusker, Freie Universität Berlin, Germany; Peter North, Andreas Heckel, Swansea University, United Kingdom; Olaf Danne, Uwe Kraämer, Marco Zühlke, Norman Fomferra, Carsten Brockmann, Brockmann Consult GmbH, Germany; Peter Yuen, University College London, United Kingdom; Simon Pinnock, European Space Agency, Italy

WE1.16.3 09:00 **LONG TERM VARIATION TRENDS OF AEROSOL OPTICAL DEPTH IN CHINA FROM MODIS AND TOMS**
Jianping Guo, Chinese Academy of Meteorological Sciences, China; Yerong Wu, Xiaowen Li, Beijing Normal University, China

WE1.16.4 09:20 **TIME SERIES ANALYSIS OF SMOS AND ASCAT: SOIL MOISTURE PRODUCT VALIDATION IN THE RUR AND ERFT CATCHMENTS**
Kathrina Rötzer, Carsten Montzka, Heye Bogena, Forschungszentrum Jülich, Germany; Wolfgang Wagner, Richard Kidd, Vienna University of Technology, Austria; Harry Vereecken, Forschungszentrum Jülich, Germany

WE1.16.5 09:40 **POLAR DATA SETS, INTEROPERABILITY, AND USER COMMUNITIES: LESSONS LEARNED**
Ellsworth LeDrew, University of Waterloo, Canada; Warwick Vincent, Université Laval, Canada; Julie Friddell, University of Waterloo, Canada; Josée Michaud, Université Laval, Canada

Wednesday, July 25 10:30 - 12:10 Room 21B

Session WE2.16 Oral-Invited

Complex Image Analysis: Applications to VHR SAR Scene Understanding

Session Co-Chairs: Mihai Datcu, German Aerospace Center - DLR; Dušan Gleich, University of Maribor

WE2.16.1 10:30 **CIRCULARITY OF COMPLEX STOCHASTIC MODELS IN POLSAR AND MULTI-PASS INSAR IMAGES**
Gabriel Vasile, GIPSA-lab / CNRS, France; Felix-Costinel Totir, CYBERIO, France

WE2.16.2 10:50 **AUTOMATED INTERPRETATION OF VERY-HIGH RESOLUTION SAR IMAGES**
Jagmal Singh, Mihai Datcu, German Aerospace Center (DLR), Germany

WE2.16.3 11:10 **AUTOMATIC EXTRACTION OF GEOMETRIC STRUCTURES FOR 3D RECONSTRUCTION FROM TOMOGRAPHIC SAR DATA**
Olivier D'Hondt, Stephane Guillaso, Olaf Hellwich, Technische Universität Berlin, Germany

WE2.16.4 11:30 **DEMONSTRATOR OF MARITIME SAR APPLICATIONS: AUTOMATIC SHIP DETECTION RESULTS**
Pilar Jarabo-Amores, University of Alcalá, Spain; María-José González-Bonilla, National Institute for Aerospace Technology, Spain; David Mata-Moya, Jaime Martin De Nicolas-Presa, Angel Palma-Vazquez, University of Alcalá, Spain

WE2.16.5 11:50 **BERGMAN ITERATION FOR SLC SAR IMAGE INFORMATION EXTRACTION**
Dušan Gleich, University of Maribor, Slovenia

Wednesday, July 25 13:30 - 15:10 Room 21B

Session WE3.16 Oral

Active Remote Sensing in Agriculture

Session Co-Chairs: Philip Marzahn, Ludwig-Maximilians Universitaet Munich; Mingquan Jia, University of Electronic Science and Technology of China

WE3.16.1 13:30 **SENSITIVITY OF TERRASAR-X, RADARSAT-2 AND ALOS SATELLITE RADAR DATA TO CROP VARIABLES**
Rémy Fieuzal, Frédéric Baup, Claire Marais-Sicre, Centre d'Etudes Spatiales de la Biosphère, France

WE3.16.2 13:50 **RELATING ENVISAT ASAR AND ALOS PALSAR BACKSCATTERING COEFFICIENT TO NDVI FOR MONITORING SEASONAL CHANGE OF PASTURE BIOMASS IN WESTERN AUSTRALIA**
Xin Wang, Jean, Xiaojing Li, Linlin Ge, University of New South Wales, Australia

WE3.16.3 14:10 **INTEGRATIVE USE OF MULTITEMPORAL RAPIDEYE AND TERRASAR-X DATA FOR AGRICULTURAL MONITORING**
Heike Bach, Malin Friese, Vista Remote Sensing in Geosciences GmbH, Germany; Katharina Spannraft, Silke Migdall, Sandra Dotzler, VISTA GmbH, Germany; Tobias Hank, Toni Frank, Wolfram Mauser, Ludwig-Maximilians-Universität München, Germany

WE3.16.4 14:30 **BARE SOILS EXTRACTION AND CHARACTERIZATION IN AN INTENSIVE AGRICULTURAL AREA WITH POLARIMETRIC DATA**
Samuel Corgne, UMR LETG CNRS - Rennes, France; Pauline Seigne, CIRAD, Réunion, France; Grégoire Mercier, UMR CNRS 2872 TAMCIC, Equipe TIME, France; Nabucet Jean, UMR LETG CNRS - Rennes, France

WE3.16.5 14:50 **ON THE CAPABILITY OF DIFFERENT SAR POLARIZATION COMBINATIONS FOR AGRICULTURAL MONITORING**
Tobias Leichtle, Andreas Schmitt, Achim Roth, German Aerospace Center (DLR), Germany; Mathias Schardt, Joanneum Research, Austria

Wednesday, July 25 15:40 - 17:20 Room 21B

Session WE4.16 Oral

Mapping of Agricultural Systems using Remote Sensing

Session Co-Chairs: Liping Di, George Mason University; Kadim Taşdemir, EC Joint Research Centre

WE4.16.1 15:40 **CROP AREA ESTIMATION IN UKRAINE USING SATELLITE DATA WITHIN THE MARS PROJECT**
Nataliia Kussul, Sergii Skakun, Andrii Shelestov, Oleksii Kravchenko, Space Research Institute NASU-NSAU, Ukraine; Javier Francisco Gallego, European Commision, Joint Research Centre, Italy; Olga Kussul, Space Research Institute NASU-NSAU, Ukraine

WE4.16.2 16:00 **CROP MAPPING FROM VERY HIGH SPATIAL RESOLUTION SATELLITE IMAGES IN SOUTHERN TENERIFE**
Mauricio Labrador-García, Consejería de Agricultura, Ganadería, Pesca y Medio Ambiente. Gobierno de Canarias., Spain; Manuel Arbelo, Universidad de La Laguna, Spain; Lara A. Arroyo, Fundación General del Medio Ambiente de Castilla-La Mancha, Spain

WE4.16.3 16:20 **PARTIALLY SUPERVISED CLASSIFICATION OF AGRICULTURAL CROPS WITH TERRASAR-X AND RADARSAT-2 DATA**
Benjamin Mack, Björn Waske, University of Bonn, Germany

WE4.16.4 16:40 **GLOBAL AGRICULTURAL DROUGHT MAPPING: RESULTS FOR THE YEAR 2011**
Ali Levent Yagci, Liping Di, Meixia Deng, Genong Yu, Chunming Peng, George Mason University, United States

WE4.16.5 17:00 **INTEGRATED MULTI-SATELLITE REMOTE SENSING MEASUREMENTS FOR SUPPORTING THE WORLD AGROMETEOROLOGICAL INFORMATION SERVICE (WAMIS)**
John Qu, Xianjun Hao, Raymond Motha, George Mason University, United States; Robert Stefanski, WMO, Switzerland; Byong-Lyol Lee, SNU, Republic of Korea

Wednesday, July 25 08:20 - 10:00 Room 22A
Session WE1.9 Oral

Ocean Surface Winds and Currents IV

Session Co-Chairs: Gordon Fraquharson, University of Washington; David Chen, University of Michigan

WE1.9.1 08:20 **STUDY ON POLARISATION RATIO FOR X-BAND USING DUAL-POLARISATION TERRA-SAR X IMAGE**
Weizeng Shao, Susanne Lehner, German Aerospace Center (DLR), Germany; Changlong Guan, Ocean University of China, China

WE1.9.2 08:40 **A MINIATURIZED ALONG-TRACK INTERFEROMETRIC SYNTHETIC APERTURE RADAR FOR NEARSHORE OCEAN REMOTE SENSING**
Gordon Farquharson, Christopher Fisk, Dickson Widjaja, Andrew Jessup, University of Washington, United States

WE1.9.3 09:00 **LABORATORY MODELLING OF AIR-SEA INTERACTION UNDER SEVERE WIND CONDITIONS**
Yuliya Troitskaya, Daniil Sergeev, Alexandr Kandaurov, German Baidakov, Vassilii Kazakov, Institut of Applied Physics, Russian Federation

WE1.9.4 09:20 **SPECTRAL DEPENDENCE OF THE RESPONSE TIME OF SEA STATE TO LOCAL WIND FORCING**
David D. Chen, University of Michigan, Ann Arbor, United States; Scott Gleason, Concordia University, Canada; Christopher Ruf, University of Michigan, Ann Arbor, United States; Mounir Adjrad, University College London, United Kingdom

WE1.9.5 09:40 **OCEAN SURFACE CURRENTS RECONSTRUCTION AT A GLOBAL SCALE FROM MICROWAVE MEASUREMENTS**
Cristina González Haro, Jordi Isern Fontanet, Institut Català de Ciències del Clima (IC3), Spain

Wednesday, July 25 10:30 - 12:10 Room 22A
Session WE2.9 Oral

Ocean Altimetry

Session Co-Chairs: Paolo Cipollini, National Oceanography Center, Southampton; Bill Emery, Univ of Colorado

WE2.9.1 10:30 **ICESAT OBSERVATIONS OF LONG-PERIOD OCEAN WAVES AND THEIR INTERACTION WITH SEA ICE**
John Heinrichs, Jami Norman, Fort Hays State University, United States

WE2.9.2 10:50 **IMPROVED ALTIMETRIC PERFORMANCE OF CRYOSAT-2 SAR MODE OVER THE OPEN OCEAN AND THE COASTAL ZONE**
Christine Gommenginger, National Oceanography Centre, United Kingdom; Cristina Martin-Puig, Starlab Barcelona S.L., Spain; Salvatore Dinardo, European Space Agency ESRIN, Italy; David Cotton, SatOC Ltd, United Kingdom; Jérôme Benveniste, European Space Agency ESRIN, Italy

WE2.9.3 11:10 **THE OCEAN SURFACE TOPOGRAPHY JASON-CS MISSION PAYLOAD DESIGN AND DEVELOPMENT**
Robert Cullen, Richard Francis, European Space Agency ESTEC, Netherlands

WE2.9.4 11:30 **USING HF RADAR COASTAL CURRENTS TO CORRECT SATELLITE ALTIMETRY**
William J. Emery, Carolyn Roesler, Waqas Qazi, University of Colorado, United States

WE2.9.5 11:50 **COASTAL ALTIMETRY: RECENT PROGRESS AND APPLICATION TO STORM SURGE RESEARCH**
Paolo Cipollini, National Oceanography Centre, United Kingdom; Jérôme Benveniste, European Space Agency ESRIN, Italy; Craig Donlon, European Space Agency, Netherlands

Wednesday, July 25 13:30 - 15:10 Room 22A
Session WE3.9 Oral-Invited

SMOS Observations over Land I

Session Co-Chairs: Yann Kerr, CESBIO; Matthias Drusch, ESA

WE3.9.1 13:30 **SMOS A SUMMARY OF THE MOST SIGNIFICANT FINDINGS AFTER TWO YEARS AND A HALF IN ORBIT**
Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France; Philippe Waldteufel, IPSL-LATMOS, France; François Cabot, Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France; Delphine Leroux, Centre d'Etudes Spatiales de la Biosphère (CNES-CNRS-UPS-IRD), Universite de Toulouse, France; Ahmad Al Bitar, Centre d'Etudes Spatiales de la Biosphère, France; Ali Mahmoodi, Array Systems Computing Inc, Canada; Steven Delwart, European Space Agency, Italy; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France; Paolo Ferrazzoli, Tor Vergata University of Rome, Italy; Susanne Mecklenburg, European Space Agency, Italy

WE3.9.2 13:50 **FIRST EVALUATION OF THE SMOS OBSERVATIONS OVER THE VAS SITE: COMPARING DIFFERENT RETRIEVAL APPROACHES**
Jean-Pierre Wigneron, Nathalie Novello, Christophe Moisy, Dominique Guyon, Heather Lawrence, Institut National de la Recherche Agronomique (INRA) Bordeaux, France; Mike Schwank, Potsdam University, Germany; Ernesto Lopez, Cristina Millan, Maciej Miernecki, University of Valencia, Spain; Yann H. Kerr, Ahmad Al Bitar, François Cabot, Delphine Leroux, Arnaud Mialon, Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France; Philippe Waldteufel, LATMOS, France; Jennifer Grant, Tânia Casal, European Space Agency ESTEC, Netherlands; Kauzar Saleh, CDTI, Spain; Ali Mahmoodi, Array Systems Computing Inc, Canada; Steven Delwart, Susanne Mecklenburg, European Space Agency ESRIN, Italy

WE3.9.3 14:10 **SMOS L1C AND L2 VALIDATION IN AUSTRALIA**
Christoph Rüdiger, Jeffrey P. Walker, Monash University, Australia; Yann H. Kerr, Arnaud Mialon, Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère, France; Edward J. Kim, NASA Goddard Space Flight Center, United States

WE3.9.4 14:30 **ESTIMATION OF THE EFFECTIVE SMOS SOIL MOISTURE SAMPLING DEPTH OVER THE DANISH VALIDATION/CALIBRATION SITE IN THE SKJERN RIVER CATCHMENT**
Simone Bircher, University of Copenhagen, Denmark; Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère, France; Louise Andie Andreasen, Mie Andreasen, University of Copenhagen, Denmark; Torben Sonnenborg, Geological Survey of Denmark and Greenland, Denmark; Karsten Hoegh Jensen, University of Copenhagen, Denmark; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

WE3.9.5 14:50 **SMOSCAT: TOWARDS OPERATIONAL HIGH RESOLUTION SOIL MOISTURE WITH SMOS**
Maria Jose Escorihuela, isardSAT, S.L., Spain; Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère, France; Angeles Escorihuela, isardSAT, S.L., Spain; Pere Quintana, Observatori de l'Ebre, Spain; Daniel Martinez, PildoLabs, Spain

Wednesday, July 25 15:40 - 17:20 Room 22A
Session WE4.9 Oral-Invited

SMOS Observations over Land II

Session Co-Chairs: Yann Kerr, CESBIO; Matthias Drusch, ESA

WE4.9.1 15:40 **TESTING AND IMPROVING FORWARD MODEL AND SMOS L2 ALGORITHM FOR FORESTS**
Rachid Rahmoune, Paolo Ferrazzoli, Rome Tor Vergata University, Italy; Yann H. Kerr, Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France

WE4.9.2 16:00 **PREPARATION OF THE ECMWF EKF FOR THE ASSIMILATION OF SMOS BRIGHTNESS TEMPERATURES**
Joaquín Muñoz Sabater, Patricia de Rosnay, Matthias Drusch, Lars Isaksen, Anne Fouilloux, ECMWF, United Kingdom

WE4.9.3 16:20 **INITIAL VALIDATION OF SMOS VEGETATION OPTICAL THICKNESS IN IOWA**
Jason Patton, Brian Hornbuckle, Iowa State University, United States

WE4.9.4 16:40 **IDENTIFICATION OF SOIL MOISTURE RETRIEVAL ERRORS: LEARNING FROM THE COMPARISON OF SMOS AND ASACT**
Wolfgang Wagner, Sebastian Hahn, Alexander Gruber, Wouter Dorigo, Vienna University of Technology, Austria

WE4.9.5 17:00 **IMPROVED FORECASTING OF GLOBAL VEGETATION CONDITIONS USING REMOTELY-SENSED SURFACE SOIL MOISTURE**
Wade Crow, USDA ARS HRSL, United States; John Bolten, NASA Goddard Space Flight Center, United States

Thursday, July 26 | 08:20 - 10:00 | Room 2
Session TH1.10 | Oral

Assimilation I

Session Co-Chairs: Alex Loew, Max-Planck-Institute for Meteorology; Thomas Kaminski, FastOpt

TH1.10.1 08:20 **ON THE ASSIMILATION OF MULTI-ANGULAR SMOS DATA INTO A HYDROLOGIC MODEL FOR IMPROVING SURFACE WATER MANAGEMENT**
Valentijn Pauwels, Hans Lievens, Niko Verhoest, Ghent University, Belgium; Ahmad Al Bitar, François Cabot, Centre d'Etudes Spatiales de la Biosphère, France; Gabriëlle De Lannoy, NASA Goddard Space Flight Center, United States; Matthias Drusch, European Space Agency, Netherlands; Gift Dumedah, Monash University, Australia; Simon Gascoin, Yann H. Kerr, Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère, France; Ming Pan, Princeton University, United States; Douglas Plaza Guingla, Ghent University, Belgium; Rolf Reichle, NASA Goddard Space Flight Center, United States; Alok Sahoo, Princeton University, United States; Martinus Johannes van den Berg, Ghent University, Belgium; Jeffrey P. Walker, Monash University, Australia; Eric Wood, Princeton University, United States

TH1.10.2 08:40 **ESTIMATING ENERGY, WATER AND CARBON FLUX OVER AFRICA WITH USING A LAND DATA ASSIMILATION SYSTEM**
Hui Lu, Tsinghua University, China; Toshio Koike, Mohamed Rasmy, The University of Tokyo, Japan

TH1.10.3 09:00 **AN INTERACTIVE TOOL TO ANALYSE THE BENEFIT OF SPACE MISSIONS SENSING THE TERRESTRIAL VEGETATION**
Thomas Kaminski, FastOpt, Germany; W. Knorr, M. Scholze, University of Bristol, United Kingdom; Nadine Gobron, Bernard Pinty, European Commision, Joint Research Centre, Italy; R. Giering, FastOpt, Germany; Pierre-Philippe Mathieu, European Space Agency, Italy

TH1.10.4 09:20 **OPTIMIZATION OF LAND SURFACE MODEL VEGETATION PARAMETERS THROUGH SEQUENTIAL ASSIMILATION OF SURFACE ALBEDO OBSERVATIONS**
Gernot Geppert, Alexander Loew, Max Planck Institute for Meteorology, Germany

TH1.10.5 09:40 **ENHANCEMENT OF YIELD PREDICTION – SEQUENTIAL DATA ASSIMILATION USING THE MODELS APSIM AND PROSAIL AND THE PARTICLE FILTER**
Miriam Machwitz, CRP-Gabriel Lippmann, Luxembourg; Thomas Udelhoven, University of Trier, Germany; Martin Schlerf, CRP-Gabriel Lippmann, Luxembourg; Christian Bossung, Christoph Wiedekind, David Frantz, University of Trier, Germany; Lucien Hoffmann, CRP-Gabriel Lippmann, Luxembourg

Thursday, July 26 | 10:30 - 12:10 | Room 2
Session TH2.10 | Oral

Assimilation II

Session Co-Chairs: Roger Huckle, EUMETSAT; Gabriele Pfister, National Center for Atmospheric Research

TH2.10.1 10:30 **EXPLORING THE POTENTIAL OF SPACE-BASED REMOTE SENSING IN PREDICTION OF FLOODS**
Witold Krajewski, Luciana Cunha, Ricardo Mantilla, Allen Bradley, The University of Iowa, United States

TH2.10.2 10:50 **INVESTIGATION OF INTER-SENSOR NDVI RELATIONSHIPS BASED ON ANALYTICAL REPRESENTATION OF SOIL ISOLINES**
Kenta Taniguchi, Kenta Obata, Hiroki Yoshioka, Aichi Prefectural University, Japan

TH2.10.3 11:10 **NEW PERSPECTIVES ON OBSERVATION OPERATORS FOR ATMOSPHERIC CHEMICAL DATA ASSIMILATION**
Tijl Verhoelst, Sophie Vandenbussche, Jean-Christopher Lambert, Belgian Institute for Space Aeronomy, Belgium

TH2.10.4 11:30 **INCORPORATING SATELLITE TRACE GAS RETRIEVALS IN AIR QUALITY SIMULATIONS**
Gabriele Pfister, National Center for Atmospheric Research, United States; Avelino Arellano, University of Arizona, United States; David Edwards, National Center for Atmospheric Research, United States; Cathy Clerbaux, LATMOS/CNRS, Université Pierre et Marie Curie, France; Catherine Wespes, Université Libre de Bruxelles, Belgium; Xiong Liu, Kelly Chance, Harvard-Smithsonian Center for Astrophysics, United States; Pierre-François Coheur, LATMOS/CNRS, Université Pierre et Marie Curie, France

TH2.10.5 11:50 **GENERATING A POLAR WIND VECTOR DATA SET FROM METOP-AVHRR OBSERVATIONS**
Roger Huckle, Jörg Schulz, EUMETSAT, Germany

Thursday, July 26 | 13:30 - 15:10 | Room 2
Session TH3.10 | Oral

Radar Remote Sensing of Wetlands I

Session Co-Chairs: Bruce Chapman, NASA Jet Propulsion Laboratory; Ridha Touzi, Canada Center for Remote Sensing

TH3.10.1 13:30 **LOCAL TEXTURE STATIONARITY INDICATOR FOR FILTERING DOÑANA WETLANDS SAR IMAGES**
Belen Marti-Cardona, Carlos López-Martínez, Josep Dolz-Ripolles, Universitat Politècnica de Catalunya, Spain

TH3.10.2 13:50 **THE DETECTION AND ADJUSTMENT OF THE ERRORS IN A DEM REQUIRED FOR FLOODPLAIN INUNDATION MODELLING**
Dai Yamazaki, The University of Tokyo, Japan; Calum Baugh, Paul Bates, University of Bristol, United Kingdom; Shinjiro Kanae, Tokyo Institute of Technology, Japan; Douglas Alsdorf, The Ohio State University, United States; Taikan Oki, The University of Tokyo, Japan

TH3.10.4 14:30 **MEASURING WETLAND INUNDATION DYNAMICS WITHIN THE AMAZON RIVER BASIN WITH ALOS PALSAR**
Bruce Chapman, NASA Jet Propulsion Laboratory, United States; Kyle C. McDonald, The City College of New York, City University of New York, United States; Bruce Forsberg, Instituto Nacional de Pesquisas da Amazonia, Brazil

TH3.10.5 14:50 **SUITABILITY OF THE NEW GENERATION OF SAR SATELLITES TO THE WETLAND INSAR APPLICATION**
Shimon Wdowinski, University of Miami, United States; Sang-Hoon Hong, Korea Aerospace Research Institute, Republic of Korea; Brian Brisco, Canadian Center for Remote Sensing, Canada

Thursday, July 26 | 15:40 - 17:20 | Room 2
Session TH4.10 | Oral

Radar Remote Sensing of Wetlands II

Session Co-Chairs: Bruce Chapman, JPL; Ridha Touzi, Natural Resources Canada

TH4.10.1 15:40 **AREA CHANGE DETECTION IN RIVER MOUTHBARS AT THE MEKONG RIVER DELTA USING SYNTHETIC APERTURE RADAR (SAR) DATA**
Akiko Tanaka, Katsuto Uehara, Toru Tamura, Yoshiki Saito, Geological Survey of Japan, AIST, Japan

TH4.10.2 16:00 **WETLAND WATER SEGMENTATION USING MULTI-ANGLE AND POLARIMETRIC RADARSAT-2 DATASETS**
Sophie Allain-Bailhache, Cecile Marechal, Eric Pottier, Université de Rennes 1, France

TH4.10.3 16:20 **PEATLAND DELINEATION UNDER FOREST CANOPY WITH POLSAR DATA USING MODEL BASED DECOMPOSITION TECHNIQUE**
Oleg Antropov, Yrjö Rauste, VTT Technical Research Centre of Finland, Finland; Jaan Praks, Martti Hallikainen, Aalto University, Finland; Tuomas Häme, VTT Technical Research Centre of Finland, Finland

TH4.10.4 16:40 **PROGRESS ON SAR-BASED MAPPING AND CHANGE DETECTION FOR BOREAL WETLANDS OF NORTH AMERICA**
Jane Whitcomb, Mahta Moghaddam, University of Southern California, United States; Kyle C. McDonald, The City College of New York, United States; Erika Podest, Bruce Chapman, NASA Jet Propulsion Laboratory, United States

TH4.10.5 17:00 **MONITORING CHANGES IN MANGROVES USING ALOS PALSAR DATA**
Richard Lucas, Aberystwyth University, United Kingdom; Arnon Accad, Queensland Department of Environment and Resource Management, Australia; Joao Carreiras, Tropical Research Institute (IICT), Portugal; Temilola Fatoyinbo, Biospheric Sciences Branch, United States; Dirk Hoekman, Wageningen University, Netherlands; Ake Rosenqvist, SoloEO, Japan; Masanobu Shimada, Takeshi Motooka, Japan Aerospace Exploration Agency (JAXA), Japan; Pedro Walfir Souza-Filho, Universidade Federal do Pará, Brazil; Manabu Watanabe, Japan Aerospace Exploration Agency (JAXA), Japan; Takuya Itoh, Osamu Isoguchi, Tsutomu Yamanokuchi, Remote Sensing Technology Center of Japan, Japan

Thursday, July 26 | 08:20 - 10:00 | Room 3
Session TH1.6 | Oral-Invited

Phenology - Bridging the Gap between Ground Observations and Remotely Sensed Imagery

Session Chair: Daniel Doktor, Helmholtz Centre for Environmental Research

TH1.6.1 08:20 **EVALUATION OF METHODS TO COMPUTE GREEN-UP DATES BASED ON DAILY NDVI OBSERVATIONS**
Daniel Doktor, Helmholtz-Centre for Environmental Research - UFZ, Germany; Maximilian Lange, HTWK Leipzig, Germany; Dirk Koslowsky, Freie Universität Berlin, Germany

TH1.6.2 08:40 **PHENOLOGY PARAMETER EXTRACTION FROM TIME-SERIES OF SATELLITE VEGETATION INDEX DATA USING PHENOSAT**
Arlete Rodrigues, Andre R. S. Marcal, Mario Cunha, Universidade do Porto, Portugal

TH1.6.3 09:00 **CHARACTERISATION OF EUROPEAN ECOCYSTEMS BASED ON SATELLITE DERIVED PRODUCTIVTY AND PHENOLOGICAL PARAMETERS**
Eva Ivits, Michael Cherlet, Stefan Sommer, Wolfgang Mehl, European Commision, Joint Research Centre, Italy

TH1.6.4 09:20 **MULTI-TEMPORAL DETECTION OF GRASSLAND VEGETATION WITH RAPIDEYE IMAGERY AND A SPECTRAL-TEMPORAL LIBRARY**
Michael Förster, Tobias Schmidt, Christian Schuster, Birgit Kleinschmit, Technische Universität Berlin, Germany

TH1.6.5 09:40 **PHENOLOGICAL STRUCTURING OF MULTI-TEMPORAL RAPIDEYE IMAGERY**
Markus Möller, University of Halle-Wittenberg, Germany; Sönke Müller, University of Hanover, Germany; Daniel Doktor, Helmholtz Centre for Environmental Research, Germany; Cornelia Gläßer, University of Halle-Wittenberg, Germany

Thursday, July 26 | 10:30 - 12:10 | Room 3
Session TH2.6 | Oral

Feature Extraction and Estimation

Session Co-Chairs: Paul Scheunders, University of Antwerp; Tobias Storch, German Aerospace Center

TH2.6.1 10:30 **FEATURE SELECTION BY HIGH DIMENSIONAL MODEL REPRESENTATION AND ITS APPLICATION TO REMOTE SENSING**
Gulsen Taskin Kaya, Huseyin Kaya, Istanbul Technical University, Turkey; Okan K. Ersoy, Purdue University, United States

TH2.6.2 10:50 **A SPATIAL-SPECTRAL APPROACH TO DERIVING EIGENVECTORS FOR REMOTE SENSING IMAGE TRANSFORMATIONS**
Derek Rogge, Martin Bachmann, German Aerospace Center (DLR), Germany; Benoit Rivard, Jilu Feng, University of Alberta, Canada

TH2.6.3 11:10 **AUTOMATIC THRESHOLD SELECTION FOR MORPHOLOGICAL ATTRIBUTE PROFILES**
Zahid Mahmood, Guy Thoonen, Paul Scheunders, University of Antwerp, Belgium

TH2.6.4 11:30 **HIGH QUALITY DEM GENERATION FROM PCIAS**
Hongshi Yan, Jian-Guo Liu, Gareth Morgan, Imperial College London, United Kingdom; Cheng-Chien Liu, National Cheng Kung University, Taiwan

TH2.6.5 11:50 **SUB-CANOPY TOPOGRAPHY ESTIMATION: EXPERIMENTS WITH MULTIBASELINE SAR DATA AT L-BAND**
Matteo Pardini, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

Thursday, July 26 | 13:30 - 15:10 | Room 3
Session TH3.6 | Oral

Information Extraction from Multitemporal Sequences

Session Co-Chairs: Yuliya Tarabalka, NASA Goddard Space Flight Center; Simon Adar, Tel Aviv University

TH3.6.1 13:30 **SHAPE-CONSTRAINED SEGMENTATION APPROACH FOR ARCTIC MULTIYEAR SEA ICE FLOE ANALYSIS**
Yuliya Tarabalka, Institut National de Recherche en Informatique et en Automatique (INRA) Sophia Antipolis Méditérranée, France; Ludovic Brucker, Alvaro Ivanoff, James C. Tilton, NASA Goddard Space Flight Center, United States

TH3.6.2 13:50 **LAND COVER INFORMATION EXTRACTION BASED ON MULTI-TEMPORAL HJ-1 SATELLITE IMAGES**
Feng Zhang, Yanting Wu, Ying Li, Environmental Satellite Centre, China

TH3.6.3 14:10 **NEW APPROACH FOR SPECTRAL CHANGE DETECTION ASSESSMENT USING MULTI-STRIP AIRBORNE HYPERSPECTRAL DATA**
Simon Adar, Yoel Shkolnisky, Eyal Ben Dor, Tel Aviv University, Israel

TH3.6.4 14:30 **COMPARATIVE EVALUATION OF VECTOR MACHINE BASED HYPERSPECTRAL CLASSIFICATION METHODS**
Ali Can Karaca, Alp Ertürk, M. Kemal Güllü, Sarp Ertürk, Kocaeli University, Turkey

TH3.6.5 14:50 **A SEARCH ALGORITHM TO META-OPTIMIZE THE PARAMETERS FOR AN EXTENDED KALMAN FILTER TO IMPROVE CLASSIFICATION ON HYPER-TEMPORAL IMAGES**
Brian Salmon, University of Pretoria, South Africa; Waldo Kleynhans, Frans van den Bergh, Council for Scientific and Industrial Research, South Africa; Jan Olivier, University of Tasmania, Australia; Willem Marais, University of Wisconsin-Madison, United States; Trienko Grobler, Konrad Wessels, Council for Scientific and Industrial Research, South Africa

Thursday, July 26 | 15:40 - 17:20 | Room 3
Session TH4.6 | Oral

Information Extraction: Multisensor Data Fusion

Session Co-Chairs: Fabio del frate, University of Rome Tor Vergata; Samuel Corgne, UMR LETG CNRS

TH4.6.1 15:40 **FUSION OF RADARSAT-2 AND COSMO-SKYMED POLARIMETRIC IMAGES TO IMPROVE LAND COVER CLASSIFICATION**
Giorgio Antonino Licciardi, INPG, France; Chiara Pratola, Fabio del Frate, Giovanni Schiavon, Domenico Solimini, Tor Vergata University of Rome, Italy

TH4.6.2 16:00 **DEMPSTER- SHAFER FUSION RULE OF OPTICAL AND POLARIMETRIC DATA FOR WINTER LAND COVER MAPPING**
Samuel Corgne, Julie Betbeder, Sebastien Rapinel, Laurence Hubert-Moy, UMR LETG CNRS - Rennes, France; Eric Pottier, I.E.T.R – UMR CNRS 6164, Rennes, France

TH4.6.3 16:20 **MULTISENSOR DATA FUSION AND FEATURE EXTRACTION FOR FORESTRY APPLICATIONS**
Temesgen Yitayew, Camilla Brekke, Anthony Paul Doulgeris, University of Tromsø, Norway

TH4.6.4 16:40 **HIGH-RESOLUTION SAR AND HIGH-RESOLUTION OPTICAL DATA INTEGRATION FOR SUB-URBAN LAND-COVER CLASSIFICATION**
Marco Rusmini, Gabriele Candiani, Federico Frassy, Pieralberto Maianti, Andrea Marchesi, Francesco Rota Nodari, University Politecnico of Milan, Italy; Luigi Dini, Italian Space Agency, Italy; Marco Gianinetto, University Politecnico of Milan, Italy

TH4.6.5 17:00 **ESTABLISHING BASELINE INFORMATION ON AN ENHANCED COAL BED METHANE SITE WITH SPOT VGT-S10 AND ALOS PALSAR FOR SAFETY MONITORING**
Xiaojing Li, Linlin Ge, Zhe Hu, Rattanasuda Cholathat, University of New South Wales, Australia

Thursday, July 26 | 08:20 - 10:00 | Room 4A
Session TH1.14 | Oral

Lidar Systems and Technologies

Session Co-Chairs: John Kerekes, Rochester Institute of Technology; Michael Cathcart, Georgia Tech Research Institute

TH1.14.1 08:20 **EARLY RESULTS FROM A HIGH-RESOLUTION HYBRID TERRESTRIAL AND BATHYMETRY MAPPING LIDAR**
Juan Fernandez Diaz, William Carter, Ramesh Shrestha, Craig Glennie, Michael Sartori, Abhinav Singhania, University of Houston, United States

TH1.14.2 08:40 **DWEL: A DUAL-WAVELENGTH ECHIDNA® LIDAR FOR GROUND-BASED FOREST SCANNING**
Ewan S. Douglas, Alan Strahler, Jason Martel, Boston University, United States; Timothy Cook, University of Massachusetts Lowell, United States; Christopher Mendillo, Boston University, United States; Robert Marshall, Stanford University, United States; Supriya Chakrabarti, Crystal Schaaf, Curtis Woodcock, Zhan Li, Xiaoyuan Yang, Boston University, United States; Darius Culvenor, David Jupp, Glenn Newnham, Jenny Lovell, Commonwealth Scientific and Industrial Research Organisation, Australia

TH1.14.3 09:00 **DESIGN AND IMPLEMENTATION OF A DIVIDED-LENS LIDAR CEILOMETER PROTOTYPE FOR MANUFACTURE**
Joshua Vande Hey, Jeremy Coupland, Loughborough University, United Kingdom; James Richards, Andrew Sandford, Campbell Scientific, Ltd., United Kingdom

TH1.14.4 09:20 **FULL WAVEFORM ACTIVE HYPERSPECTRAL LIDAR: ENVIRONMENTAL APPLICATIONS**
Sanna Kaasalainen, Teemu Hakala, Juha Suomalainen, Eetu Puttonen, Finnish Geodetic Institute, Finland

TH1.14.5 09:40 **ALL OPTICAL SYNTHETIC APERTURE LIDAR SENSING-TO-PROCESSING CHAIN BASED ON SAR TECHNOLOGY**
Linda Marchese, Simon Turbide, Marc Terroux, Alain Bergeron, INO, Canada

Thursday, July 26 | 10:30 - 12:10 | Room 4A
Session TH2.14 | Oral

Passive Optical and Hyperspectral Sensors

Session Chair: David Goodenough, Canadian Forestry Service

TH2.14.1 10:30 **OPERATIONAL STATUS OF APEX AND CHARACTERISTICS OF THE APEX OPEN SCIENCE DATA SET**
Andreas Hueni, University of Zurich, Switzerland; Sindy Sterckx, Flemish Institute for Technological Research (VITO), Belgium; Michael Jehle, Petra D'Odorico, University of Zurich, Switzerland; Kristin Vreys, Bart Bomans, Jan Biesemans, Koen Meuleman, Flemish Institute for Technological Research (VITO), Belgium; Michael E. Schaepman, University of Zurich, Switzerland

TH2.14.2 10:50 **PROGRESS IN THE ADVANCED GERMAN HYPERSPECTRAL SATELLITE MISSION ENMAP**
Timo Stuffler, Stefan Hofer, Bernhard Sang, Kai Lenfert, Kayser-Threde GmbH, Germany; Hermann Kaufmann, GeoForschungsZentrum Potsdam (GFZ), Germany; Andreas Müller, Christian Chlebek, German Aerospace Center (DLR), Germany

TH2.14.3 11:10 **SIMULATING THE PERFORMANCE OF THE HYPERSPECTRAL PAYLOAD OF THE PRISMA MISSION**
Alessandro Barducci, Donatella Guzzi, Cinzia Lastri, Paolo Marcoionni, Vanni Nardino, Ivan Pippi, Istituto di Fisica Applicata, Italy

TH2.14.4 11:30 **INDEPENDENT LABORATORY CHARACTERIZATION OF NEO HYSPEX VNIR-1600 AND NEO HYSPEX SWIR-320M-E HYPERSPECTRAL IMAGERS**
Karim Lenhard, Andreas Baumgartner, Claas Köhler, Peter Gege, Thomas Schwarzmaier, German Aerospace Center (DLR), Germany

Thursday, July 26 | 13:30 - 15:10 | Room 4A
Session TH3.14 | Oral

Sensor Performance and Simulation::Passive Optical and Hyperspectral Sensors

Session Chair: Richard Lucas, Aberystwyth University

TH3.14.1 13:30 **MODIS AND VIIRS GEOMETRIC PERFORMANCE COMPARISON**
Robert E. Wolfe, NASA Goddard Space Flight Center, United States; Masahiro Nishihama, Sigma Space Corporation / NASA Goddard Spaceflight Center, United States; Guoqing Lin, Krishna Tewari, Innovim @ NASA Goddard Spaceflight Center, United States; Enrique Montano, Sigma Space Corporation / NASA Goddard Spaceflight Center, United States

TH3.14.2 13:50 **PRE- AND IN-FLIGHT GEOMETRIC CHARACTERIZATION AND CALIBRATION CONCEPTS FOR THE ENMAP MISSION**
Tobias Storch, German Aerospace Center (DLR), Germany; Kai Lenfert, Kayser-Threde GmbH, Germany; Mathias Schneider, German Aerospace Center (DLR), Germany; Valery Mogulsky, Kayser-Threde GmbH, Germany; Martin Bachmann, German Aerospace Center (DLR), Germany; Bernhard Sang, Kayser-Threde GmbH, Germany; Rupert Mueller, German Aerospace Center (DLR), Germany; Stefan Hofer, Kayser-Threde GmbH, Germany; Christian Chlebek, German Aerospace Center (DLR), Germany

TH3.14.3 14:10 **EETES: AN END-TO-END IMAGE SIMULATION TOOL APPLIED TO THE ENMAP HYPERSPECTRAL MISSION**
Karl Segl, Theres Küster, Christian Rogaß, Hermann Kaufmann, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany; Bernhard Sang, Valery Mogulsky, Stefan Hofer, Kayser-Threde GmbH, Germany

TH3.14.4 14:30 **PRISMA MISSION – PROGRAM STATUS AND FUTURE HYPERSPECTRAL APPLICATIONS**
Cristina Ananasso, Fabrizio Battazza, Giancarlo Natale Varacalli, Francesco Longo, Ettore Lopinto, Italian Space Agency, Italy

TH3.14.5 14:50 **UPDATE CALIBRATION RESULTS OF PRISM AND AVNIR-2 ONBOARD ALOS 'DAICHI'**
Takeo Tadono, Masanobu Shimada, Japan Aerospace Exploration Agency (JAXA), Japan; Junichi Takaku, Remote Sensing Technology Center of Japan, Japan; Hiroshi Murakami, Japan Aerospace Exploration Agency (JAXA), Japan

Thursday, July 26 | 15:40 - 17:20 | Room 4A
Session TH4.14 | Oral

UAV and Airborne Remote Sensing

Session Co-Chairs: Pau Prats, German Aerospace Center - DLR; Scott Hensley, NASA Jet Propulsion Laboratory

TH4.14.1 15:40 **HIGH RESOLUTION W-BAND UAV SAR**
Helmut Essen, Maxonic GmbH, Germany; Winfried Johannes, Stephan Stanko, Rainer Sommer, Alfred Wahlen, Joern Wilcke, Fraunhofer-FHR, Germany

TH4.14.2 16:00 **PERFORMANCE OF THE P-BAND SUBSYSTEM AND THE X-BAND INTERFEROMETER OF THE F-SAR AIRBORNE SAR INSTRUMENT**
Andreas Reigber, Marc Jäger, Muriel Pinheiro, Rolf Scheiber, Pau Prats-Iraola, Jens Fischer, Ralf Horn, Anton Nottensteiner, German Aerospace Center (DLR), Germany

TH4.14.3 16:20 **THE FIRST UAV-BASED P- AND X-BAND INTERFEROMETRIC SAR SYSTEM**
Marco Remy, Karlus Alexander Camara de Macedo, João Moreira, OrbiSat Remote Sensing, Brazil

TH4.14.4 16:40 **THE USE OF UNMANNED AERIAL VEHICLES AND WIRELESS SENSOR NETWORK IN AGRICULTURAL APPLICATIONS**
Fausto Costa, Jó Ueyama, University of São Paulo, Brazil; Torsten Braun, University of Bern, Switzerland; Gustavo Pessin, Fernando Osório, University of São Paulo, Brazil; Patrícia Vargas, Heriot-Watt University, United Kingdom

TH4.14.5 17:00 **THERMAL REMOTE SENSING WITH AN AUTONOMOUS UNMANNED AERIAL REMOTE SENSING PLATFORM FOR SURFACE STREAM TEMPERATURES**
Austin Jensen, Bethany Neilson, Mac McKee, Yangquan Chen, Utah State University, United States

Thursday, July 26 08:20 - 10:00 Room 4B

Session TH1.4 Oral

Optical and Infrared Modelling II

Session Chair: Jose Moreno, University of Valencia

TH1.4.1 08:20 **AN IMPROVED METHOD FOR THE RETRIEVAL OF SURFACE REFLECTANCE FROM EOS/MODIS DATA**
Jie Guang, Institute of Remote Sensing Applications, CAS, China; Yong Xue, London Metropolitan University, United Kingdom; Leiku Yang, School of Geography, Beijing Normal University, China; Yingjie Li, Institute of Remote Sensing Applications, CAS, China

TH1.4.2 08:40 **EVALUATION OF MODIS AND NCEP ATMOSPHERIC PRODUCTS FOR LAND SURFACE TEMPERATURE RETRIEVAL FROM HJ-1B IRS THERMAL INFRARED DATA WITH GROUND MEASUREMENTS**
Hua Li, Qinhuo Liu, Yongming Du, Jinxiong Jiang, Heshun Wang, Institute of Remote Sensing Applications, CAS, China

TH1.4.3 09:00 **ESTIMATION OF THE DIRECTIONAL REFLECTANCE IN MIDDLE INFRA-RED CHANNEL FROM SVISSR/FY-2C DATA**
Yonggang Qian, Academy of Opto-Electronics, CAS, China; Shi Qiu, University of Strasbourg, France; Ning Wang, Academy of Opto-Electronics, CAS, China; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Xiangsheng Kong, Ludong University, China; Xinhong Wang, Academy of Opto-Electronics, CAS, China; Yaokai Liu, NASA Jet Propulsion Laboratory, China; Yuan-Yuan Jia, Academy of Opto-Electronics, CAS, China; Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Lingli Tang, Chuan-Rong Li, Academy of Opto-Electronics, CAS, China

TH1.4.4 09:20 **A COMPARISON OF THE STOKES VECTOR SOLUTIONS USING DIFFERENT METHODS**
Ying Zhang, Weizhen Hou, Zhengqiang Li, Institute of Remote Sensing Applications, CAS, China; Baosheng Li, Hefei university of Technology, China

TH1.4.5 09:40 **DIRECTION DISCRETIZATION FOR RADIATIVE TRANSFER MODELING: AN INTRODUCTION TO THE NEW DIRECTION MODEL OF DART**
Tiangang Yin, Jeremy Rubio, Jean-Philippe Gastellu-Etchegorry, Eloi Grau, Nicolas Lauret, Centre d'Etudes Spatiales de la Biosphère (CNES-CNRS-UPS-IRD), France

Thursday, July 26 10:30 - 12:10 Room 4B

Session TH2.4 Oral

Optical and Infrared Modelling III

Session Chair: Jose Moreno, University of Valencia

TH2.4.1 10:30 **EXPLOITING THE MODIS SURFACE ALBEDOS WITH THE TWO-STREAM INVERSION PACKAGE (JRC-TIP)**
Bernard Pinty, European Commision, Joint Research Centre, Italy; Thomas Kaminski, Michael Vossbeck, FastOpt, Germany; Stephen Plummer, European Space Agency, United Kingdom

TH2.4.2 10:50 **REMOTE SENSING OF SUN-INDUCED FLUORESCENCE TO ESTIMATE GROSS PRIMARY PRODUCTIVITY IN A HETEROGENEOUS AGRICULTURAL AREA**
Anke Schickling, Uwe Rascher, Forschungszentrum Jülich, Germany; Alexander Damm, University of Zurich, Germany; Andreas Wahner, Forschungszentrum Jülich, Germany; Susanne Crewell, University of Cologne, Germany

TH2.4.3 11:10 **SCALING EFFECT OF AREA-AVERAGED NDVI DERIVED FROM ALOS-AVNIR2 DATA**
Masayuki Matsuoka, Kochi University, Japan; Kenta Obata, University of Hawaii, United States; Hiroki Yoshioka, Aichi Prefectural University, Japan

TH2.4.4 11:30 **HOURLY PHOTOSYNTHETICALLY ACTIVE RADIATION ESTIMATION BASED ON THE COMBINATION OF GEOSTATIONARY AND POLAR ORBITAL SATELLITES**
Li Li, Xiaozhou Xin, Hai-Long Zhang, Qinhuo Liu, Institute of Remote Sensing Applications, CAS, China

TH2.4.5 11:50 **THE RELATIONSHIP BETWEEN VEGETATION CLUMPING INDEX ANGULAR DISTRIBUTION AND CANOPY SPATIAL PATTERN**
Biao Cao, Qinhuo Liu, Yongming Du, Hua Li, Li Li, Institute of Remote Sensing Applications, CAS, China

Thursday, July 26 15:40 - 17:20 Room 4B

Session TH4.4 Oral-Invited

Special Session on Ocean Electromagnetic Scattering with Application to Synthetic Aperture Radar Applications - In Memoriam of Donald R. Thompson

Session Co-Chairs: Frank Monaldo, JHU/APL; Roland Romeiser, University of Miami RSMAS; Jochen Horstmann, NATO Undersea Research Center

TH4.4.1 15:40 **SAR WIND RETRIEVALS AT X-BAND USING TERRASAR-X AND COSMO-SKYMED DATA**
Jochen Horstmann, NATO Undersea Research Center, Italy; Frank Monaldo, The Johns Hopkins University, United States

TH4.4.2 16:00 **CONTRIBUTIONS OF DONALD R. THOMPSON TO GNSS REFLECTOMETRY**
James L. Garrison, Purdue University, United States

TH4.4.3 16:20 **25 YEARS OF OCEAN CURRENT MEASUREMENTS BY ALONG-TRACK INSAR**
Roland Romeiser, University of Miami, United States

TH4.4.4 16:40 **DOPPLER SIGNATURE OF THE SEA SURFACE IN THE MICROWAVE REGIME**
Charles-Antoine Guérin, Frédéric Nouguier, Université de Toulon, France; Gabriel Soriano, Université Aix-Marseille, France

TH4.4.5 17:00 **BRINGING OCEAN WINDS FROM 10 M TO HIGHER LEVELS**
Merete Badger, Alfredo Peña, Technical University of Denmark, Denmark; Ad Stoffelen, Tilly Driesenaar, Royal Netherlands Meteorological Institute (KNMI), Netherlands; Erik Berge, Rolv Bredesen, Kjeller Vindteknikk, Norway

Thursday, July 26 | 08:20 - 10:00 | Room 5
Session TH1.2 | Oral

SAR Polarimetry Techniques II

Session Co-Chairs: David Goodenough, Canadian Forestry Service; Armando Marino, ETH Zurich

TH1.2.1 08:20 **AN EVALUATION OF POLSAR SPECKLE FILTERS ON COMPACT-POL IMAGES**
Samuel Foucher, Tom Landry, Computer Research Institute of Montreal, Canada; Carlos López-Martínez, Universitat Politècnica de Catalunya, Spain; François Charbonneau, Canada Centre for Remote Sensing, Canada; Langis Gagnon, Computer Research Institute of Montreal, Canada

TH1.2.2 08:40 **THE M−CHI DECOMPOSITION OF HYBRID DUAL-POLARIMETRIC RADAR DATA**
R. Keith Raney, Joshua T. S. Cahill, G. Wesley Patterson, D. Benjamin J. Bussey, The Johns Hopkins University, United States

TH1.2.3 09:00 **COMPACT DECOMPOSITION THEORY FOR L-BAND SATELLITE RADAR APPLICATIONS**
Shane Cloude, AEL Consultants, United Kingdom; David Goodenough, Hao Chen, Canadian Forestry Service, Canada

TH1.2.4 09:20 **ESTIMATION AND CORRECTION OF SCINTILLATION EFFECT ON SPACEBORNE P-BAND SAR IMAGES**
Jun Su Kim, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Shaun Quegan, Neil Rogers, University of Sheffield, United Kingdom

TH1.2.5 09:40 **OPTIMISED POWER CHANGES DETECTOR FOR POLINSAR APPLICATIONS**
Armando Marino, ETH Zürich, Switzerland; Irena Hajnsek, Matteo Nannini, German Aerospace Center (DLR), Germany

Thursday, July 26 | 10:30 - 12:10 | Room 5
Session TH2.2 | Oral

SAR Polarimetry for Earth Observation I

Session Co-Chairs: Gianfranco DeGrandi, Joint Research Centre; Thomas Ainsworth, Naval Research Laboratory

TH2.2.1 10:30 **POLARIMETRIC ANALYSIS OF ICEBERG AND SEA ICE RADAR BACKSCATTERING MECHANISMS FOR ICEBERG DETECTION**
Christine Wesche, Wolfgang Dierking, Alfred Wegener Institute for Polar and Marine Research, Germany

TH2.2.2 10:50 **DUAL-POLARIZED COSMO-SKYMED SAR DATA FOR COASTLINE DETECTION**
Ferdinando Nunziata, Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy; Xiaofeng Li, NOAA, United States

TH2.2.3 11:10 **LEVEE ANOMALY DETECTION USING POLARIMETRIC SYNTHETIC APERTURE RADAR DATA**
Lalitha Dabbiru, James Aanstoos, Majid Mahrooghy, Wei Li, Arjun Shanker, Nicolas Younan, Mississippi State University, United States

TH2.2.4 11:30 **OIL SPILL CHARACTERIZATION WITH MULTI-POLARIZATION C- AND X-BAND SAR**
Stine Skrunes, Camilla Brekke, Torbjørn Eltoft, University of Tromsø, Norway

TH2.2.5 11:50 **STRICKEN MAN-MADE OBJECT DETECTION USING SCATTERING POWER DECOMPOSITION WITH NNED AND ROTATION OF THE COVARIANCE MATRIX**
Ryoichi Sato, Yuta Takahashi, Yoshio Yamaguchi, Hiroyoshi Yamada, Niigata University, Japan

Thursday, July 26 | 13:30 - 15:10 | Room 5
Session TH3.2 | Oral

SAR Polarimetry for Earth Observation II

Session Co-Chairs: Thomas Ainsworth, Naval Research Laboratory; Gianfranco DeGrandi, Joint Research Centre

TH3.2.1 13:30 **POLARIMETRIC MULTI-ANGULAR RADARSAT-2 DATA SENSITIVITY TO SURFACE PARAMETERS**
Hongquan Wang, Institut National des Sciences Appliquées - Rennes, France; Sophie Allain-Bailhache, Université de Rennes 1, France; Stéphane Méric, Institut National des Sciences Appliquées - Rennes, France; Eric Pottier, Université de Rennes 1, France

TH3.2.2 13:50 **FULL-POL-SAR DECOMPOSITION SCHEME OVER WET SNOW AREAS**
Gulab Singh, Sang-Eun Park, Yoshio Yamaguchi, Niigata University, Japan; Wolfgang-Martin Boerner, University of Illinois at Chicago, United States; G. Venkataraman, Indian Institute of Technology, Bombay, India

TH3.2.3 14:10 **THE IMPACT OF TERRAIN CORRECTION OF POLARIMETRIC SAR DATA ON GLACIER CHANGE DETECTION**
Vahid Akbari, University of Tromsø, Norway; Yngvar Larsen, Norut Informationtechnology AS, Norway; Anthony Paul Doulgeris, Torbjørn Eltoft, University of Tromsø, Norway

TH3.2.4 14:30 **APPLICATION OF QUADPOLARIMETRIC TERRASAR-X DATA FOR LANDCOVER CHARACTERIZATION IN TROPICAL REGIONS – A CASE STUDY IN SOUTH KALIMANTAN, INDONESIA**
Tobias Ullmann, University of Wuerzburg, Germany; Parivash Lumsdon, Felicitas V. Poncet, Astrium GEO-Information Services, Germany; Thomas Esch, German Aerospace Center (DLR), Germany; Oliver Lang, Marek Tinz, Steffen Kuntz, Astrium GEO-Information Services, Germany; Stefan Dech, German Aerospace Center (DLR), Germany

TH3.2.5 14:50 **DETECTING POLARIMETRICALLY COHERENT SCATTERERS WITH DUAL-POL SAR IMAGERY**
Thomas Ainsworth, Yanting Wang, Jong-Sen Lee, Naval Research Laboratory, United States

Thursday, July 26 | 15:40 - 17:20 | Room 5
Session TH4.2 | Oral

SAR Polarimetry

Session Co-Chairs: Maxim Newmann, Jet Propulsion Laboratory; Carlos López-Martínez, Universitat Politècnica de Catalunya

TH4.2.1 15:40 **ORIENTATION ANGLE ESTIMATION OVER FORESTED TERRAIN USING P-BAND POLSAR DATA**
Stefan Sauer, Thomas Jagdhuber, Florian Kugler, Seung-Kuk Lee, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

TH4.2.2 16:00 **A NEW THREE-STAGE INVERSION PROCEDURE OF FOREST HEIGHT WITH THE IMPROVED TEMPORAL DECORRELATION RVOG MODEL**
Zhen Li, Ming Guo, Center for Earth Observation and Digital Earth, CAS, China

TH4.2.3 16:20 **A PARAMETERIZED INVERSION MODEL FOR SOIL MOISTURE AND BIOMASS FROM POLARIMETRIC BACKSCATTERING COEFFICIENTS**
My-Linh Truong-Loï, Sassan Saatchi, Sermsak Jaruwatanadilok, NASA Jet Propulsion Laboratory, United States

TH4.2.4 16:40 **MULTI-CHANNEL AND MULTI-POLARISATION SHIP DETECTION**
Tonje Nanette Arnesen Hannevik, Norwegian Defence Research Establishment, Norway

TH4.2.5 17:00 **BILATERAL FILTERING OF POLSAR DATA BASED ON RIEMANNIAN METRICS**
Olivier D'Hondt, Stephane Guillaso, Olaf Hellwich, Technische Universität Berlin, Germany

Thursday, July 26 | 08:20 - 10:00 | Room 11
Session TH1.3 | Oral

Absorption and Scattering by Volumes of Particles

Session Chair: Leung Tsang, University of Washington

TH1.3.1 08:20 **MODELLING OF ELECTROMAGNETIC TRANSMISSION THROUGH RAIN FIELDS BASED ON DROP-SCALE SCATTERING**
Susanne Hipp, Siart Uwe, Eibert Thomas, Technische Universität München, Germany; Christian Chwala, Harald Kunstmann, Karlsruhe Institute of Technology (KIT), Germany

TH1.3.2 08:40 **DEVELOPMENT OF MICROWAVE RADAR AND RADIOMETER ELECTROMAGNETIC SCATTERING TABLES TO ACHIEVE PHYSICALLY CONSISTENT RETRIEVALS OF HYDROMETEOR PROFILES**
Liang Liao, Morgan State University, United States; Robert Meneghini, Simone Tanelli, NASA, United States

TH1.3.3 09:00 **PHYSICAL FORWARD MODELS AND VEGETATION DATA CUBES FOR RADAR REMOTE SENSING AT L-BAND FOR SMAP APPLICATIONS**
Xiaolan Xu, Leung Tsang, Tien-Hao Liao, University of Washington, United States; Seung-Bum Kim, Eni Njoku, NASA Jet Propulsion Laboratory, United States

TH1.3.4 09:20 **INVESTIGATION ON THE VALIDITY REGION OF ANALYTICAL MODELS SIMULATING SCATTERING FROM VEGETATION ELEMENTS**
Francesco Montomoli, Giovanni Macelloni, Marco Brogioni, IFAC-CNR, Italy; Alberto Toccafondi, University of Siena, Italy

TH1.3.5 09:40 **COMPARISON OF COHERENT AND INCOHERENT C-BAND RADAR SIGNATURES OF A RAINFOREST LOCATED AT SOUTHERN MEXICO**
Alejandro Monsivais-Huertero, Instituto Politécnico Nacional, Mexico; Judith Ramos, Universidad Nacional Autonoma de Mexico, Mexico; Ramata Magagi, Université de Sherbrooke, Canada

Thursday, July 26 | 10:30 - 12:10 | Room 11
Session TH2.3 | Oral

Microwave Signatures of Soil and Vegetation

Session Chair: Roger Lang, George Washington University

TH2.3.1 10:30 **AN EXTENSION OF THE INTEGRAL EQUATION MODEL IEM2M FOR ROUGH SURFACES OF COMPLEX PERMITTIVITY**
Jose Luis Alvarez-Perez, University of Alcalá, Spain

TH2.3.2 10:50 **THEORETICAL ANALYSIS OF TREE TRUNK ROUGH SURFACE INTERACTION USING REACTION THEOREM**
Hamid Nejati, Kamal Sarabandi, University of Michigan, Ann Arbor, United States

TH2.3.3 11:10 **VALIDATION OF SMOS LEVEL 3 SOIL MOISTURE**
Arnaud Mialon, Ahmad Al Bitar, Lucie Berthon, Centre d'Etudes Spatiales de la Biosphère, France; Simone Bircher, KU Kobenhavn Universitet, France; François Cabot, Centre d'Etudes Spatiales de la Biosphère, France; Maria Jose Escorihuela, isardSAT, S.L., Spain; Delphine Leroux, Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère, France; Nathalie Novello, Ephyse INRA, France; Thierry Pellarin, LTHE, France; Jean-Pierre Wigneron, Ephyse INRA, France; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

TH2.3.4 11:30 **A NUMERICAL MODEL FOR MICROWAVE EMISSION FROM SOIL WITH VEGETATION COVER**
Luis Camacho, Saibun Tjuatja, The University of Texas at Arlington, United States

TH2.3.5 11:50 **MULTI-RELAXATION GENERALIZED REFRACTIVE MIXING DIELECTRIC MODEL OF MOIST SOILS**
Valery Mironov, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Pavel Bobrov, Omsk State Pedagogical University, Russian Federation; Sergey Fomin, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation

Thursday, July 26 | 13:30 - 15:10 | Room 11
Session TH3.3 | Oral

SAR Imaging

Session Chair: Helmut Suess, German Aerospace Center - DLR

TH3.3.1 13:30 **OCEAN SURFACE RESPONSE TO HURRICANES OBSERVED BY SAR**
Xiaofeng Li, NOAA/NESDIS, United States; Jun Zhang, NOAA AOML, United States; Xiaofeng Yang, Chinese Academy of Sciences, China; William Pichel, Mark DeMaria, NOAA/NESDIS, United States; David Long, Brigham Young University, United States; Ziwei Li, Chinese Academy of Sciences, China

TH3.3.2 13:50 **MODELING OF PULSE RESPONSES FROM TIME-EVOLVING OCEAN-LIKE SURFACES**
Xingyue Guo, Mingyao Xia, University of Electronic Science and Technology of China, China

TH3.3.3 14:10 **SCATTERING FROM FRACTAL SURFACES: ITS PHYSICAL READING IN TERMS OF ALPHA-STABLE DISTRIBUTIONS**
Antonio Iodice, Antonio Natale, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

TH3.3.4 14:30 **APPLICATIONS OF SIMULATION TECHNIQUES FOR HIGH RESOLUTION SAR SYSTEMS**
Harald Anglberger, Rainer Speck, Helmut Suess, German Aerospace Center (DLR), Germany

TH3.3.5 14:50 **A MODIFIED PHASE-SHIFT MIGRATION ALGORITHM APPLIED TO THROUGH WALL IMAGING**
Peng Zhang, Yu Zhang, Shuai Cui, Xin Xu, Jie Chen, Xiaojuan Zhang, The Institute of Electronics, CAS, China

Thursday, July 26 | 15:40 - 17:20 | Room 11
Session TH4.3 | Oral-Invited

Tomographic SAR Techniques

Session Co-Chairs: Fabrizio Lombardini, University of Pisa / CNIT-RaSS Nat. Lab.; Scott Hensley, NASA Jet Propulsion Laboratory

TH4.3.1 15:40 **HIGH-RESOLUTION SAR TOMOGRAPHY USING FULL RANK POLARIMETRIC SPECTRAL ESTIMATORS**
Laurent Ferro-Famil, Université de Rennes 1, France; Yue Huang, Intermap Technologies Corp., Canada; Andreas Reigber, German Aerospace Center (DLR), Germany

TH4.3.2 16:00 **PHASE CALIBRATION OF MULTIBASELINE SAR DATA BASED ON A MINIMUM ENTROPY CRITERION**
Matteo Pardini, German Aerospace Center (DLR), Germany; Vittorio Bianco, University of Naples, Italy; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Antonio Iodice, University of Naples, Italy

TH4.3.3 16:20 **SOME FIRST POLARIMETRIC-INTERFEROMETRIC MULTI-BASELINE AND TOMOGRAPHIC RESULTS AT HARVARD FOREST USING UAVSAR**
Scott Hensley, Thierry Michel, Maxim Neumann, Marco Lavalle, Ron Muellerschoen, Bruce Chapman, Cathleen Jones, NASA Jet Propulsion Laboratory, United States; Razi Ahmed, Fabrizio Lombardini, University of Massachusetts Amherst, United States; Paul Siqueira, University of Massachusetts at Amherst, United States

TH4.3.4 16:40 **MULTIDIMENSIONAL SAR TOMOGRAPHY FOR COMPLEX NON-STATIONARY SCENES: COSMO-SKYMED URBAN AND P-BAND FOREST RESULTS**
Fabrizio Lombardini, University of Pisa, CNIT-RaSS, Italy; Francesco Cai, University of Pisa, Italy; Federico Viviani, Davide Pasculli, University of Pisa, CNIT-RaSS, Italy

TH4.3.5 17:00 **DETECTION OF PARTIALLY COHERENT TARGETS IN MULTIDIMENSIONAL SAR IMAGING**
Antonio De Maio, Università degli Studi di Napoli Federico II, Italy; Gianfranco Fornaro, Antonio Pauciullo, Diego Reale, National Research Council of Italy, Italy

Thursday, July 26 | 08:20 - 10:00 | Room 12A

Session TH1.8 | Oral

Permafrost and Seasonally Frozen Ground

Session Chair: Claude Duguay, University of Waterloo

TH1.8.1 08:20 **MONITORING ACTIVE ROCK GLACIERS IN THE WESTERN SWISS ALPS: CHALLENGES OF DIFFERENTIAL SAR INTERFEROMETRY AND SOLUTIONS TO ESTIMATE ANNUAL AND SEASONAL DISPLACEMENT RATES**
Chloé Barboux, Reynald Delaloye, University of Fribourg, Switzerland; Tazio Strozzi, Gamma Remote Sensing, Switzerland; Christophe Lambiel, University of Lausanne, Switzerland; Claude Collet, University of Fribourg, Switzerland; Hugo Raetzo, Federal Office for the Environment FOEN, Switzerland

TH1.8.2 08:40 **DETECTION OF SOIL FREEZING USING L-BAND RADIOMETRY**
Kimmo Rautiainen, Jouni Pulliainen, Juha Lemmetyinen, Anna Kontu, Jaakko Ikonen, Finnish Meteorological Institute, Finland

TH1.8.3 09:00 **TERRASAR-X INTERFEROMETRY FOR SURFACE DEFORMATION MONITORING ON PERIGLACIAL AREA**
Tazio Strozzi, Urs Wegmüller, Charles Werner, Gamma Remote Sensing, Switzerland; Andrew Kos, Terrarsense Switzerland, Switzerland

TH1.8.4 09:20 **DEVELOPMENT OF SMAP (SOIL MOISTURE ACTIVE AND PASSIVE) FREEZE/THAW ALGORITHMS ADAPTED FOR THE CANADIAN TUNDRA**
Parvin Kalantari, Monique Bernier, INRS, Canada; Kyle C. McDonald, The City College of New York, United States; Jimmy Poulin, INRS, Canada

TH1.8.5 09:40 **THE ESA DUE PERMAFROST PROJECT - A SERVICE FOR HIGH LATITUDE RESEARCH**
Annett Bartsch, Vienna University of Technology, Austria; Frank Martin Seifert, European Space Agency, Italy

Thursday, July 26 | 10:30 - 12:10 | Room 12A

Session TH2.8 | Oral

Inland Waters I

Session Co-Chairs: Giosuè Andrey Giardino, University of Rome Tor Vergata; Philipp Schneider, Norwegian Institute for Air Research (NILU)

TH2.8.1 10:30 **AUTOMATIC DETECTION AND DELINEATION OF SURFACE WATER BODIES IN AIRBORNE HYPERSPECTRAL DATA**
Mathias Bochow, GFZ German Research Centre For Geosciences, Germany; Birgit Heim, Alfred Wegener Institute for Polar and Marine Research, Germany; Theres Küster, Christian Rogaß, GFZ German Research Centre For Geosciences, Germany; Inka Bartsch, Alfred Wegener Institute for Polar and Marine Research, Germany; Karl Segl, Hermann Kaufmann, GFZ German Research Centre For Geosciences, Germany

TH2.8.2 10:50 **MULTI-TEMPORAL SAR METRICS APPLIED TO MAP WATER BODIES**
Maurizio Santoro, Urs Wegmüller, Gamma Remote Sensing, Switzerland

TH2.8.3 11:10 **THE CASE FOR A GLOBAL INLAND WATER QUALITY PRODUCT**
Tim Malthus, Erin Hestir, Arnold Dekker, Vittorio Brando, Commonwealth Scientific and Industrial Research Organisation / Land and Water, Australia

TH2.8.4 11:30 **VALIDATION OF ENVISAT ASAR BASED LAKE ICE MAPS ON LAKE PÄIJÄNNE**
Heidi Hindberg, Eirik Malnes, Norut, Norway; Hanna Asalmi, Olli-Pekka Mattila, Finnish Environment Institute SYKE, Finland

TH2.8.5 11:50 **USING RADAR TO DETECT FLOODING IN ARID WETLANDS AND RIVERS**
Rachel Melrose, Richard Kingsford, Anthony Milne, University of New South Wales, Australia

Thursday, July 26 | 13:30 - 15:10 | Room 12A

Session TH3.8 | Oral

Inland Waters II

Session Co-Chairs: Peter Gege, German Aerospace Center - DLR; Giosuè Andrey Giardino, University of Rome Tor Vergata

TH3.8.1 13:30 **EFFECTS OF COLD FRONT PASSAGE AND ATMOSPHERIC BOUNDARY LAYER STABILITY IN THE ESTIMATES OF SPATIALLY DISTRIBUTED HEAT FLUXES IN A TROPICAL RESERVOIR**
Marcelo Pedroso Curtarelli, Camilo Daleles Renno, Enner Herenio de Alcantara, National Institute for Space Research (INPE), Brazil

TH3.8.2 13:50 **A NEW METHOD TO DERIVE RIVER DISCHARGE FROM SATELLITE ALTIMETRY (ENVISAT)**
Mohammad J. Tourian, Nico Sneeuw, Johannes Riegger, András Bárdossy, University of Stuttgart, Germany

TH3.8.3 14:10 **A FLIGHT IN THE PIEDMONT REGION FOR WATER SURFACE DETECTION AND ALTIMETRY EXPERIMENTATION**
Nazelie Kassabian, Letizia Lo Presti, Politecnico di Torino, Italy; Gianluca Falco, Istituto Superiore Mario Boella, Italy

TH3.8.4 14:30 **GLOBAL TRENDS IN LAKE TEMPERATURES OBSERVED FROM SPACE**
Philipp Schneider, Norwegian Institute for Air Research, Norway; Simon J. Hook, NASA Jet Propulsion Laboratory, United States

TH3.8.5 14:50 **RADAR ALTIMETRY OF WATER LEVEL VARIABILITY IN THE INNER DELTA OF NIGER RIVER**
Kalifa Goïta, Adama Telly Diepkile, Université de Sherbrooke, Canada

Thursday, July 26 | 15:40 - 17:20 | Room 12A

Session TH4.8 | Oral-Invited

Ocean as the Source and Sink of Carbon Dioxide Observed from Space

Session Co-Chairs: W. Timothy Liu, NASA Jet Propulsion Laboratory; I-I Lin, National Taiwan University

TH4.8.1 15:40 **GOSAT AND ITS RESULTS**
Haruhisa Shimoda, Tokai University, Japan; Tsuneo Matsunaga, National Institute of Environmental Studies, Japan; Hiroshi Watanabe, Tatsuya Yokota, National Institute for Environmental Studies, Japan

TH4.8.2 16:00 **LARGE SCALE VARIABILITY OF MID-TROPOSPHERIC CARBON DIOXIDE AS OBSERVED BY THE ATMOSPHERIC INFRARED SOUNDER (AIRS) ON THE NASA EOS AQUA PLATFORM**
Thomas Pagano, Eric Fetzer, Edward Olsen, Luke Chen, Steven Licata, NASA Jet Propulsion Laboratory, United States

TH4.8.3 16:20 **PHYTOPLANKTON BLOOMS IN THE SOUTH CHINA SEA AND THE WESTERN NORTH PACIFIC SUBTROPICAL GYRE AS OBSERVED BY MULTIPLE SATELLITE SENSORS - IMPACT OF EDDY, AEROSOL, TYPHOON, AND VOLCANO**
I-I Lin, Chun-Chi Lien, National Taiwan University, Taiwan; George T. F. Wong, Academia Sinica, Taiwan; Chi-Wei Huang, National Taiwan University, Taiwan

TH4.8.4 16:40 **CARBON DIOXIDE FUGACITY AND OCEAN-ATMOSPHERE EXCHANGE**
W. Timothy Liu, Xiaosu Xie, NASA Jet Propulsion Laboratory, United States

Thursday, July 26 08:20 - 10:00 Room 12B
Session TH1.7 Oral

Data Management and Systems

Session Chair: Charles Luther, IEEE GRSS

TH1.7.1 08:20 **QUALITY ASSURANCE FOR THE GMES ATMOSPHERIC SERVICE: ENGINEERING CHALLENGES, STATUS AND PERSPECTIVES**
Anne De Rudder, Jean-Christopher Lambert, Belgian Institute for Space Aeronomy, Belgium

TH1.7.2 08:40 **SCIENCE DATA INFRASTRUCTURE FOR PRESERVATION - EARTH SCIENCE**
Mirko Albani, Fulvio Marelli, European Space Agency, Italy; David Giaretta, Arif Shaon, Alliance For Permanent Access, United Kingdom

TH1.7.3 09:00 **DATA MANAGEMENT AND ANALYSIS WITH WRF AND SFIRE**
Jonathan Beezley, University of Colorado at Denver, United States; Mavin Martin, Paul Rosen, University of Utah, United States; Jan Mandel, University of Colorado at Denver, United States; Adam Kochanski, University of Utah, United States

TH1.7.4 09:20 **CALVALUS: FULL-MISSION EO CAL/VAL, PROCESSING AND EXPLOITATION SERVICES**
Norman Fomferra, Martin Böttcher, Marco Zühlke, Carsten Brockmann, Brockmann Consult GmbH, Germany; Ewa Kwiatkowska, EUMETSAT, Germany

TH1.7.5 09:40 **DATA STANDARDIZATION AND MODELING IN A WEB BASED INFORMATION SYSTEM**
Tim Funkenberg, Julius-Maximilians-University Würzburg, Germany; Verena Klinger, Claudia Künzer, German Aerospace Center (DLR), Germany

Thursday, July 26 10:30 - 12:10 Room 12B
Session TH2.7 Oral

Data Processing, Analysis and Management

Session Chair: Hampapuram Ramapriyan, NASA Goddard Space Flight Center

TH2.7.1 10:30 **A SEMANTIC FRAMEWORK FOR DATA RETRIEVAL IN LARGE REMOTE SENSING DATABASES**
Teodor Costachioiu, Iulian Nita, Vasile Lazarescu, Politehnica University of Bucharest, Romania; Mihai Datcu, German Aerospace Center (DLR), Germany

TH2.7.2 10:50 **ASSOCIATIVE SEMANTIC RANKING OF SATELLITE IMAGES USING PATHFINDER NETWORK SCALING ENSEMBLE METHODS**
Adrian Barb, Penn State University, United States; Chi-Ren Shyu, University of Missouri, United States

TH2.7.3 11:10 **INCORPORATING A PUSH-BROOM SCANNER INTO A GENERIC HYPERSPECTRAL PROCESSING CHAIN**
Martin Habermeyer, Martin Bachmann, Stefanie Holzwarth, Rupert Mueller, Rudolf Richter, German Aerospace Center (DLR), Germany

TH2.7.4 11:30 **DATA RODS: HIGH SPEED, TIME-SERIES ANALYSIS OF MASSIVE CRYOSPHERIC DATA SETS USING PURE OBJECT DATABASES**
David Gallaher, Glenn Grant, University of Colorado, United States

TH2.7.5 11:50 **RESEARCH ON MIXED INDEXING MODEL FOR CLOUD POINTS**
Ruoming Shi, Xiaolong Qi, Beijing University of Civil Engineering and Architecture, China

Thursday, July 26 13:30 - 15:10 Room 12B
Session TH3.7 Oral

Remote Sensing Data and Policy Decisions

Session Chair: David Kunkee, The Aerospace Corporation

TH3.7.1 13:30 **SPECTRUM MANAGEMENT ACTIVITIES OF THE U.S. NATIONAL RESEARCH COUNCIL'S COMMITTEE ON RADIO FREQUENCIES**
Darren McKague, University of Michigan, United States; Steven C. Reising, Colorado State University, United States; David Lang, The National Academies, United States

TH3.7.2 13:50 **FOUNDATIONS FOR A NASA ESDS REFERENCE ARCHITECTURE**
Michael Burnett, Richard Ullman, NASA Goddard Space Flight Center, United States

TH3.7.3 14:10 **PRESERVATION OF DATA FOR EARTH SYSTEM SCIENCE – TOWARDS A CONTENT STANDARD**
Hampapuram Ramapriyan, John Moses, NASA Goddard Space Flight Center, United States; Ruth Duerr, National Snow and Ice Data Center, United States

TH3.7.4 14:30 **THE USE OF NASA LANCE IMAGERY AND DATA FOR NEAR REAL-TIME APPLICATIONS**
Diane Davies, Sigma Space Corporation, United Kingdom; Kevin Murphy, NASA Goddard Space Flight Center, United States; Helen Conover, Kathryn Regner, B Beaumont, University of Alabama, United States; Edward Masuoka, B Vollmer, NASA Goddard Space Flight Center, United States; M Theobald, P Durbin, Adnet, United States; K Michael, R Boller, NASA Goddard Space Flight Center, United States; J Schmaltz, K Horrocks, S Ilavajhala, A Ullah, Sigma Space Corporation, United States; M Teague, Columbus Technologies and Services Inc, United States; C Thompson, Andrew Bingham, NASA Jet Propulsion Laboratory, United States

TH3.7.5 14:50 **APPLICATION OF REMOTE-SENSING DATA IN THE INDEX-BASED INSURANCE DESIGN**
Raushan Bokusheva, ETH Zürich, Switzerland; Lev F. Spivak, Irina Vitkovskaya, Space Research Institute, Kazakhstan; Felix Kogan, NOAA, United States; Madina Batyrbayeva, Space Research Institute, Kazakhstan

Thursday, July 26 15:40 - 17:20 Room 12B
Session TH4.7 Oral

Remote Sensing and Education

Session Co-Chairs: Linda Hayden, Elizabeth City State University; Andrea Lawrence, Spelman College

TH4.7.1 15:40 **SAR-EDU - A GERMAN EDUCATION INITIATIVE FOR APPLIED SYNTHETIC APERTURE RADAR REMOTE SENSING**
Robert Eckardt, Nicole Richter, Friedrich-Schiller-Universität Jena, Germany; Stefan Auer, Technische Universität München, Germany; Michael Eineder, Achim Roth, Irena Hajnsek, German Aerospace Center (DLR), Germany; Christian Thiel, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

TH4.7.2 16:00 **MATLAB BASED SAR SIGNAL PROCESSOR FOR EDUCATIONAL USE**
Rinki Deo, Ankit Jamod, V. Deepika Rani Gopu, Y S Rao, Indian Institute of Technology, Bombay, India

TH4.7.3 16:20 **NEST: AN ESA OPEN SOURCE TOOLBOX FOR SCIENTIFIC EXPLOITATION OF SAR DATA**
Marcus Engdahl, European Space Agency ESRIN, Italy; Andrea Minchella, RSAC c/o ESA-ESRIN, Italy; Petar Marinkovic, PPO.Labs, Netherlands; Luis Veci, Jun Lu, Array Systems Computing Inc, Canada

TH4.7.4 16:40 **GMES INITIAL OPERATIONS - NETWORK FOR EARTH OBSERVATION RESEARCH TRAINING (GIONET)**
Virginia Nicolas-Perea, Heiko Balzter, University of Leicester, United Kingdom

TH4.7.5 17:00 **AQUATIS AND RYUJIN PROJECTS: FIRST STEPS TO REMOTE SENSING BOTTOM OF THE SEA BY SMALL HOMEMADE AUTONOMOUS UNDERWATER VEHICLES**
Laurent Beaudoin, Loica Avanthey, Antoine Gademer, Vincent Vittori, Laurent Dupessey, ESIEA, France; Jean-Paul Rudant, Université Paris-Est Marne la Vallée, France

Thursday, July 26 | 08:20 - 10:00 | Room 13A

Session TH1.12 | Oral

Vegetation Structure Retrieval at Multiple Scales

Session Co-Chairs: Bruce Chapman, NASA Jet Propulsion Laboratory; Jan van Aardt, Rochester Institute of Technology

TH1.12.1 08:20 **A PERCENT TREE COVER MAP OF AFRICA AT A SPATIAL RESOLUTION OF 100 METERS USING ALOS PALSAR DUAL-POLARIZATION DATA**
Alexandre Bouvet, Gianfranco de Grandi, European Commision, Joint Research Centre, Italy

TH1.12.2 08:40 **CLASSIFYING THE CANADIAN BOREAL FOREST'S STRUCTURE USING MULTI-MODAL REMOTE SENSING**
Michael Benson, Leland Pierce, Kathleen Bergen, Kamal Sarabandi, University of Michigan, United States

TH1.12.3 09:00 **A RE-EXAMINATION OF SRTM COHERENCE DATA FOR ESTIMATING FOREST STRUCTURE**
Bruce Chapman, NASA Jet Propulsion Laboratory, United States; Paul Siqueira, University of Massachusetts, United States; Scott Hensley, Robert Treuhaft, NASA Jet Propulsion Laboratory, United States

TH1.12.4 09:20 **USE OF DEMS DATA TO ESTIMATE HEIGHT CHANGES DUE TO DEFORESTATION**
Ram Avtar, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan; Haruo Sawada, The University of Tokyo, Japan; Rikie Suzuki, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan

TH1.12.5 09:40 **PRODUCTION OF THE HIGH RESOLUTION MAPS OF BIOPHYSICAL VARIABLES BASED ON SPOT IMAGERY AND IN-SITU MEASUREMENTS GENERATED BY PASTIS 57 FOR HYYTIALA, FINLAND**
Anita Simic, Frédéric Baret, Marie Weiss, Rémi Lecerf, Alfredo Alessandrini, J-F Hanocq, Olivier Marloie, Institut National de la Recherche Agronomique (INRA), France

Thursday, July 26 | 10:30 - 12:10 | Room 13A

Session TH2.12 | Oral

Data Integration for Forest Characterization

Session Chair: Paul Siqueira, University of Massachussetts

TH2.12.1 10:30 **ANALYSIS AND ERROR ASSESSMENT ON THE USE OF SEGMENTATION FOR ESTIMATING FOREST STRUCTURAL CHARACTERISTICS FROM LIDAR AND RADAR**
Paul Siqueira, Caitlin Dickinson, Razi Ahmed, University of Massachusetts, United States; Bruce Chapman, Scott Hensley, NASA Jet Propulsion Laboratory, United States; Kathleen Bergen, University of Michigan, United States; Richard Lucas, Daniel Clewley, University of Aberystwyth, United Kingdom

TH2.12.2 10:50 **FOREST/VEGETATION TYPES DISCRIMINATION IN AN ALPINE AREA USING RADARSAT2 AND ALOS PALSAR POLARIMETRIC DATA AND NEURAL NETWORKS**
Gaia Vaglio Laurin, Fabio Del Frate, Tor Vergata University of Rome, Italy; Luca Pasolli, Claudia Notarnicola, EURAC, Italy

TH2.12.3 11:10 **MAPPING OF FOREST BIOMASS DYNAMICS USING LANDSAT-DERIVED DISTURBANCE AND RECOVERY HISTORY AND LIDAR**
Dirk Pflugmacher, Oregon State University, United States; Warren Cohen, United States Forest Service, United States; Robert Kennedy, Zhiqiang Yang, Oregon State University, United States

TH2.12.4 11:30 **SPECIFIC BIOMASS INDICATOR FOR TROPICAL DENSE FORESTS OVER HILLY TERRAINS DERIVED FROM THE P-BAND SAR COHERENCY MATRIX**
Ludovic Villard, Thuy Le Toan, Yannick Lasne, Stéphane Mermoz, Centre d'Etudes Spatiales de la Biosphère, France

TH2.12.5 11:50 **COUNTY-SCALE CARBON ESTIMATION IN NASAS CARBON MONITORING SYSTEM**
Ralph Dubayah, George Hurtt, Naiara Pinto, University of Maryland, United States; Jackie Rosette, NASA Goddard Space Flight Center / Biospheric Sciences Branch, Code 614.4, United States; Juan Suarez, Anuradha Swatantran, University of Maryland, United States; Ross Nelson, Bruce Cook, NASA Goddard Space Flight Center / Biospheric Sciences Branch, Code 614.4, United States

Thursday, July 26 | 13:30 - 15:10 | Room 13A

Session TH3.12 | Oral-Invited

From Data Archive Centers to Knowledge Creation Collaboratories I organized by the Technical Committee

Session Co-Chairs: Rahul Ramachandran, University of Alabama-Huntville; Michael Seablom, NASA

TH3.12.1 13:30 **INTRODUCTION: POTENTIAL METAMORPHOSIS OF THE DATA ARCHIVE CENTERS (DACS)**
Kwo-Sen Kuo, NASA Goddard Space Flight Center / Caelum Research Corp, United States

TH3.12.2 13:50 **MEETING THE CHALLENGES OF DATA-INTENSIVE SCIENCE**
Sara Graves, Todd Berendes, University of Alabama Huntsville, United States

TH3.12.3 14:10 **DATA-INTENSIVE COMPUTING INVESTMENTS AT THE NASA EARTH SCIENCE TECHNOLOGY OFFICE: A STRATEGY FOR THE NEXT DECADE**
Michael Seablom, NASA, United States

TH3.12.4 14:30 **HOW FAR SHOULD DACS EVOLVE?**
Robert Ferraro, Andrew Bingham, Amy Braverman, Hook Hua, Chris Mattmann, Manson Yew, NASA Jet Propulsion Laboratory, United States

TH3.12.5 14:50 **AN INTEGRATED AND COLLABORATIVE APPROACH FOR NASA EARTH SCIENCE DATA**
Kevin Murphy, Dawn Lowe, Jeanne Behnke, NASA Goddard Space Flight Center, United States; Edwin Sofinowski, Columbus Technologies and Services Inc, United States; Rose Marie Gonzalez, Raytheon, United States

Thursday, July 26 | 15:40 - 17:20 | Room 13A

Session TH4.12 | Oral-Invited

From Data Archive Centers to Knowledge Creation Collaboratories II organized by the Technical Committee

Session Co-Chairs: Michael Seablom, NASA; Rahul Ramachandran, University of Alabama-Huntsville

TH4.12.1 15:40 **NASA EARTH EXCHANGE (NEX): EARTH SCIENCE COLLABORATIVE FOR GLOBAL CHANGE SCIENCE**
Ramakrishna Nemani, Petr Votava, Andrew Michaelis, NASA Ames Research Center, United States

TH4.12.2 16:00 **ADDRESSING DATA ACCESS NEEDS OF THE LONG-TAIL DISTRIBUTION OF GEOSCIENTISTS**
Tanu Malik, Ian Foster, University of Chicago, United States

TH4.12.3 16:20 **DISCOVERY BROKER FOR MULTI-DISCIPLINARY INTEROPERABILITY**
Stefano Nativi, National Research Council of Italy, Italy; Jay Pearlman, IEEE, United States; Max Craglia, European Commision, Joint Research Centre, Italy

TH4.12.4 16:40 **LEVERAGING DATA INTENSIVE COMPUTING TO SUPPORT AUTOMATED EVENT SERVICES**
Thomas Clune, NASA Goddard Space Flight Center, United States; Shawn Freeman, NGIS / NASA Goddard Space Flight Center, United States; Kwo-Sen Kuo, Caelum Research Corp. / NASA Goddard Space Flight Center, United States

TH4.12.5 17:00 **VISUAL DATA EXPLORATION ENVIRONMENT FOR DATA INTENSIVE SCIENCE**
Rahul Ramachandran, John Rushing, Xiang Li, Manil Maskey, Ajinkya Kulkarni, Amy Lin, University of Alabama Huntsville, United States; Kwo-Sen Kuo, Caelum Research Corp., United States

Thursday, July 26 | 08:20 - 10:00 | Room 13B
Session TH1.15 | Oral-Invited

Aerosol Remote Sensing from Space

Session Chair: Oleg Dubovik, University of Lille

TH1.15.1 08:20 **RETRIEVAL OF DETAILED AEROSOL PROPERTIES FROM PARASOL OBSERVATIONS OVER REFLECTIVE LAND SURFACES**
Oleg Dubovik, Centre National de la Recherche Scientifique / University Lille1, France; Tatyana Lapyonok, Herman Maurice, University Lille1, France; Didier Tanre, Centre National de la Recherche Scientifique / University Lille1, France; Fabrice Ducos, Holdak Andriy, Litvinov Pavel, University Lille1, France

TH1.15.2 08:40 **GLOBAL AEROSOL TYPE IDENTIFICATION FROM HYPERSPECTRAL INFRARED SPACE MEASUREMENTS**
Lieven Clarisse, Pierre-François Coheur, Université Libre de Bruxelles, Belgium; Fred Prata, Norwegian Institute for Air Research, Norway; Cathy Clerbaux, LATMOS, France; Daniel Hurtmans, Université Libre de Bruxelles, Belgium

TH1.15.3 09:00 **THE MODIS 12-YEAR AEROSOL RECORD AND TRANSITION TO THE NEXT GENERATION**
Robert Levy, Shana Mattoo, Leigh Munchak, SSAI, United States; Istvan Laszlo, NOAA/NESDIS, United States; Heather Q. Cronk, Integrity Applications Incorporated, United States; Hongqing Liu, NOAA/NESDIS/Center for Satellite Applications and Research, United States

TH1.15.4 09:20 **AEROSOL REMOTE SENSING BASED ON PHOTOPOLARIMETRY FOR SGLI ON GCOM-C1**
Itaru Sano, Sonoyo Mukai, Makiko Nakata, Kinki University, Japan; Oleg Dubovik, Centre National de la Recherche Scientifique Universite de Lille 1, France; Brent Holben, NASA, United States

TH1.15.5 09:40 **AN INITIAL CONSISTENCY ANALYSIS OF AEROSOL OPTICAL DEPTH RETRIEVAL FROM SATELLITE DATA**
Jia Liu, Yong Xue, Hui Xu, Yingjie Li, Jie Guang, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China

Thursday, July 26 | 10:30 - 12:10 | Room 13B
Session TH2.15 | Oral

Geographic Information Science: Applications

Session Co-Chairs: Anita Simic, French National Institute for Agricultural Research (INRA); Meixia Deng, George Mason University

TH2.15.1 10:30 **ATMOSPHERIC RELEASES DURING THE 2003 GLACIER WILDFIRES: MAPPING, ANALYSIS AND MODELING**
Germana Manca, Guido Cervone, George Mason University, United States; Keith Clarke, University of California, Santa Barbara, United States

TH2.15.2 10:50 **REMOTE SENSING AND GIS BASED GEOTHERMAL EXPLORATION IN SOUTHWEST TENGCHONG, CHINA**
Ning Zhang, Qiming Qin, Lian He, Hongbo Jiang, Peking University, China

TH2.15.3 11:10 **COMBINED SPATIAL POINT PATTERN ANALYSIS AND REMOTE SENSING FOR ASSESSING LANDMINE AFFECTED AREAS**
Jonathan Cheung-Wai Chan, Aura Alegria, Vrije Universiteit Brussel, Belgium; Maria Veratelli, Marco Folegani, Meteorological Environmental Earth Observation (MEEO), Italy; Hichem Sahli, Vrije Universiteit Brussel, Belgium

TH2.15.4 11:30 **SPATIAL CROSS-VALIDATION AND BOOTSTRAP FOR THE ASSESSMENT OF PREDICTION RULES IN REMOTE SENSING: THE R PACKAGE `SPERROREST'**
Alexander Brenning, University of Waterloo, Canada

TH2.15.5 11:50 **MONITORING AND MODELLING COMPETING GRASSLAND SPECIES USING VERY-HIGH AND HIGH-RESOLUTION REMOTE SENSING IN THE ANDES OF ECUADOR**
Brenner Silva, Jörg Bendix, University of Marburg, Germany

Thursday, July 26 | 13:30 - 15:10 | Room 13B
Session TH3.15 | Oral

Geographic Information Science: Grid and Web Services

Session Co-Chairs: Anita Simic, French National Institute for Agricultural Research (INRA); Meixia Deng, George Mason University

TH3.15.1 13:30 **IMPLEMENTING BOUNDED RATIONALITY IN DISASTER AGENT BEHAVIOR USING OGA OPERATORS**
Mihail Popescu, James Keller, University of Missouri, United States

TH3.15.2 13:50 **A STUDY OF GRID WORKFLOW DYNAMIC CUSTOMIZATION FOR REMOTE SENSING QUANTITATIVE RETRIEVAL**
Jing Dong, Yong Xue, Insititute of Remote Sensing Application, CAS, China; Ziqiang Chen, Hui Xu, Center for Earth Observation and Digital Earth, CAS, China; Yingjie Li, Chaolin Wu, Insititute of Remote Sensing Application, CAS, China

TH3.15.3 14:10 **USING WEB SERVICE COMPOSITION TO IMPLEMENT DANJIANGKOU RESERVOIR FLOOD SUBMERGE ANALYSIS WEB SYSTEM**
Hua Zhang, Wuhan University, China; Hong Fan, Wu Du, The State Key Lab of Surveying & Mapping, Wuhan University, China

TH3.15.4 14:30 **COMPARING GIS-MULTICRITERIA DECISION ANALYSIS FOR LANDSLIDE SUSCEPTIBILITY MAPPING FOR THE URMIA LAKE BASIN, IRAN**
Bakhtiar Feizizadeh, Thomas Blaschke, University of Salzburg, Austria

TH3.15.5 14:50 **AGENT-BASED RUMOR SPREADING MODELS FOR HUMAN GEOGRAPHY APPLICATIONS**
Alina Zare, Zachary Fields, James Keller, University of Missouri, United States; Joshua Horton, University of Florida, United States

Thursday, July 26 | 15:40 - 17:20 | Room 13B
Session TH4.15 | Oral-Invited

State-of-the-Art of Urban Remote Sensing

Session Co-Chairs: Paolo Gamba, University of Pavia; Uwe Stilla, Technische Universität München

TH4.15.1 15:40 **A NEW BUILT-UP PRESENCE INDEX BASED ON DENSITY OF CORNERS**
Lionel Gueguen, Pierre Soille, Martino Pesaresi, European Commision, Joint Research Centre, Italy

TH4.15.2 16:00 **ADVANCED METHODS FOR AUTOMATED OBJECT EXTRACTION FROM LIDAR IN URBAN AREAS**
Franz Rottensteiner, Leibniz Universität Hannover, Germany

TH4.15.3 16:20 **MONITORING BUILDINGS AND INFRASTRUCTURES WITH VERY HIGH RESOLUTION INTERFEROMETRIC SAR DATA**
Gianfranco Fornaro, Antonio Pauciullo, Diego Reale, National Research Council of Italy, Italy; Simona Verde, University of Naples Parthenope, Italy

TH4.15.4 16:40 **MEASURING MACHINE LEARNING MODEL PORTABILITY USING VERY-HIGH SPATIAL RESOLUTION MULTI-ANGLE IMAGERY**
Nathan Longbotham, University of Colorado, United States; Fabio Pacifici, Chris Padwick, DigitalGlobe, Inc., United States; William J. Emery, University of Colorado, United States

TH4.15.5 17:00 **URBAN REMOTE SENSING BY ULTRA HIGH RESOLUTION SAR**
Uwe Stilla, Technische Universität München, Germany

Thursday, July 26 | 08:20 - 10:00 | Room 14A

Session TH1.5 | Oral

Image Classification Techniques

Session Chair: Laurent Ferro-Famil, University of Rennes 1

TH1.5.1 08:20 **AN APPROACH FOR CLASSIFYING LARGE SCALE IMAGES**
Edoardo Pasolli, Farid Melgani, University of Trento, Italy

TH1.5.2 08:40 **A MRF-BASED APPROACH FOR A MULTISENSOR LAND COVER MAPPING OF MIS-REGISTERED IMAGES**
Teerasit Kasetkasem, Kasetsart University, Thailand; Preesan Rakwatin, Geo-Informatics and Space Technology Development Agency, Thailand; Ratchawit Sirisommai, ICTES Program, Thailand; Apisit Eiumnoh, BIOTECH, Thailand; Tsuyoshi Isshiki, Tokyo Institute of Technology, Japan

TH1.5.3 09:00 **KERNEL MATRIX APPROXIMATION FOR LEARNING THE KERNEL HYPERPARAMETERS**
Mathieu Fauvel, University of Toulouse, France

TH1.5.4 09:20 **SUPPORT VECTOR MACHINE AND BATHACHARRYA KERNEL FUNCTION FOR REGION BASED CLASSIFICATION**
Rogerio Negri, Luciano Dutra, Sidnei J. S. Sant'Anna, National Institute for Space Research (INPE), Brazil

TH1.5.5 09:40 **INTRODUCING PRIOR KNOWLEDGE IN TEMPORAL DISTANCES FOR SATELLITE IMAGE TIME SERIES ANALYSIS**
François Petitjean, Jordi Inglada, LSIIT - University of Strasbourg, France; Pierre Gançarski, University of Strasbourg/LSIIT, France

Thursday, July 26 | 13:30 - 15:10 | Room 14A

Session TH3.5 | Oral

Feature Detection in Images

Session Co-Chairs: John Kerekes, Rochester Institute of Technology; Xiuping Jia, School of Engineering and Information Technology

TH3.5.1 13:30 **MULTI-SCALE LINE DETECTION FOR LANDSLIDE FISSURE MAPPING**
Andre Stumpf, Thomas A. Lampert, Jean-Philippe Malet, Université de Strasbourg, France; Norman Kerle, University of Twente, France

TH3.5.2 13:50 **RIVER NETWORK DETECTION ON SIMULATED SWOT IMAGES BASED ON CURVILINEAR DENOISING AND MORPHOLOGICAL DETECTION**
Samuel Grosdidier, Université du Sud-Toulon-Var, France; Silvia Valero, Jocelyn Chanussot, Grenoble INP, France; Roger Fjortoft, Centre National d'Études Spatiales, France

TH3.5.3 14:10 **DETECTING SHADOWS IN A SEGMENTED LAND USE LAND COVER IMAGE WITH LIDAR DATA**
Alex Mtz. de Agirre, José Antonio Malpica, Alcala University, Spain

TH3.5.4 14:30 **HIERARCHICAL MULTI-SCALE SEGMENTATION OF LIDAR IMAGES IN FOREST AREAS**
Roman Palenichka, Frederik Doyon, Ahmed Lakhssassi, Marek Zaremba, University of Quebec in Outaouais, Canada

TH3.5.5 14:50 **COMPLEX BUILDING ROOF DETECTION AND STRICT DESCRIPTION FROM LIDAR DATA AND ORTHORECTIFIED AERIAL IMAGERY**
Shaohui Sun, Carl Savalggio, Rochester Institute of Technology, United States

THU 26

Thursday, July 26 | 10:30 - 12:10 | Room 14A

Session TH2.5 | Oral

Pansharpening and Image fusion

Session Co-Chairs: Andrea Garzelli, University of Siena; Jenny Q. Du, Mississippi State University

TH2.5.1 10:30 **REMOTE SENSING IMAGE FUSION USING BEST BASIS SPARSE REPRESENTATION**
Mahboob Iqbal, Jie Chen, Xian-Zhong Wen, Chun-Sheng Li, Beihang University, China

TH2.5.2 10:50 **PAN-SHARPENING WITH MULTI-SCALE WAVELET DICTIONARY**
Dehong Liu, Petros T. Boufounos, Mitsubishi Electric Research Labs, United States

TH2.5.3 11:10 **A PANSHARPENING ALGORITHM BASED ON GENETIC OPTIMIZATION OF MORPHOLOGICAL FILTERS**
Paolo Addesso, Roberto Conte, Maurizio Longo, Rocco Restaino, Gemine Vivone, University of Salerno, Italy

TH2.5.4 11:30 **SELECTION OF NUMERICAL MEASURES FOR PAN-SHARPENING ASSESSMENT**
Aliaksei Makarau, Gintautas Palubinskas, Peter Reinartz, German Aerospace Center (DLR), Germany

TH2.5.5 11:50 **INFLUENCE OF SPATIAL RESOLUTION ON PAN-SHARPENING RESULTS**
Leonardo Santurri, Bruno Aiazzi, Stefano Baronti, Roberto Carlà, Institute of Applied Physics, National Research Council of Italy, Italy

Thursday, July 26 | 15:40 - 17:20 | Room 14A

Session TH4.5 | Oral-Invited

Hyperspectral Data Processing for Security and Defense

Session Chair: Michal Shimoni, Royal Military Academie Belgium

TH4.5.1 15:40 **CONTEXTUAL SVM FOR HYPERSPECTRAL CLASSIFICATION USING HILBERT SPACE EMBEDDING**
Prudhvi Gurram, Heesung Kwon, U.S. Army Research Laboratory, United States

TH4.5.2 16:00 **EFFECTS OF THE SIGNAL DEPENDENT NOISE ON THE CFARNESS OF THE RX ALGORITHM IN HYPERSPECTRAL IMAGES.**
Nicola Acito, Italian Naval Academy, Italy; Marco Diani, Stefania Matteoli, Giovanni Corsini, University of Pisa, Italy

TH4.5.3 16:20 **IMPROVING ANOMALY DETECTION WITH MULTINORMAL MIXTURE MODELS IN SHADOW**
Trym Haavardsholm, Amela Kavara, Ingebjørg Kåsen, Torbjørn Skauli, Norwegian Defence Research Establishment, Norway

TH4.5.4 16:40 **HYPERSPECTRAL IMAGING PHENOMENOLOGY FOR THE DETECTION AND TRACKING OF PEDESTRIANS**
Jared Herweg, John Kerekes, Rochester Institute of Technology, United States; Michael T. Eismann, Air Force Research Laboratory, United States

TH4.5.5 17:00 **ROBUST SPATIAL-SPECTRAL HYPERSPECTRAL IMAGE CLASSIFICATION FOR VEGETATION STRESS DETECTION**
Minshan Cui, Saurabh Prasad, University of Houston, United States; Lori Bruce, Mississippi State University, United States; Ramesh Shrestha, University of Houston, United States

Thursday, July 26 | 08:20 - 10:00 | Room 14B
Session TH1.13 | Oral-Invited

COSMO-SkyMed - Last Achievements in Scientific Research and Applications I

Session Chair: Luigi Dini, ASI - Italian Space Agency

TH1.13.1 08:20 **MULTIRESOLUTION MAP DESPECKLING OF COSMO-SKYMED IMAGES**
Luciano Alparone, Fabrizio Argenti, Tiziano Bianchi, Alessandro Lapini, University of Florence, Italy; Bruno Aiazzi, Stefano Baronti, National Research Council of Italy, Italy; Ciro D'Elia, Simona Ruscino, University of Cassino, Italy

TH1.13.2 08:40 **MAXIMUM LIKELIHOOD ESTIMATION OF SAR AZIMUTH ANTENNA BY MEANS OF PERSISTENT POINT SCATTERERS**
Pietro Guccione, Politecnico di Bari, Italy; Andrea Monti Guarnieri, Politecnico di Milano, Italy

TH1.13.3 09:00 **COSMO-SKYMED AO PROJECTS – EXPLOITATION OF FRACTAL SCATTERING MODELS FOR COSMO-SKYMED IMAGES INTERPRETATION**
Gerardo Di Martino, Antonio Iodice, Università degli Studi di Napoli Federico II, Italy; Mariarosaria Manzo, Antonio Pepe, Susi Pepe, IREA-CNR, Italy; Daniele Riccio, Giuseppe Ruello, Università degli Studi di Napoli Federico II, Italy; Eugenio Sansosti, IREA-CNR, Italy; Pietro Tizzani, Università degli Studi di Napoli Federico II, Italy; Ivana Zinno, IREA-CNR, Italy

TH1.13.4 09:20 **COSMO-SKYMED AO PROJECTS – BUILDINGS FEATURE EXTRACTION FROM SINGLE SAR IMAGES**
Daniele Riccio, Gerardo Di Martino, Giorgio Franceschetti, Antonio Iodice, Antonio Natale, Pasquale Imperatore, Giuseppe Ruello, Ivana Zinno, Università degli Studi di Napoli Federico II, Italy

TH1.13.5 09:40 **DEVELOPMENT AND VALIDATION OF MULTITEMPORAL IMAGE ANALYSIS METHODOLOGIES FOR MULTIRISK MONITORING OF CRITICAL STRUCTURES AND INFRASTRUCTURES**
Sebastiano Serpico, University of Genoa, Italy; Lorenzo Bruzzone, University of Trento, Italy; Giovanni Corsini, University of Pisa, Italy; William J. Emery, University of Colorado, United States; Paolo Gamba, University of Pavia, Italy; Andrea Garzelli, University of Siena, Italy; Grégoire Mercier, Télécom Bretagne, France; Josiane Zerubia, Institut National de la Recherche Agronomique (INRA) Sophia Antipolis Méditérranée, France; Nicola Acito, Naval Military Academy, Italy; Bruno Aiazzi, IFAC-CNR, Italy; Francesca Bovolo, University of Trento, Italy; Fabio Dell'Acqua, University of Pavia, Italy; Michaela De Martino, University of Genoa, Italy; Marco Diani, University of Pisa, Italy; Vladimir Krylov, Institut National de la Recherche Agronomique (INRA) Sophia Antipolis Méditérranée, France; Gianni Lisini, University of Pavia, Italy; Carlo Marin, University of Trento, Italy; Gabriele Moser, University of Genoa, Italy; Aurelie Voisin, Institut National de la Recherche Agronomique (INRA) Sophia Antipolis Méditérranée, France; Claudia Zoppetti, University of Siena, Italy

Thursday, July 26 | 10:30 - 12:10 | Room 14B
Session TH2.13 | Oral-Invited

COSMO-SkyMed - Last Achievements in Scientific Research and Applications II

Session Chair: Luigi Dini, ASI - Italian Space Agency

TH2.13.1 10:30 **COMPARISON OF COSMO-SKYMED AND TERRASARX DATA FOR THE RETRIEVAL OF LAND HYDROLOGICAL PARAMETERS**
Simonetta Paloscia, Paolo Pampaloni, Emanuele Santi, Simone Pettinato, Marco Brogioni, Enrico Palchetti, Consiglio Nazionale delle Ricerche IFAC, Italy; Andrea Crepaz, ARPAV-CVA, Italy

TH2.13.2 10:50 **COSMO-SKYMED BACKSCATTER INTENSITY AND INTERFEROMETRIC COHERENCE SIGNATURES OVER GERMANY'S LOW MOUNTAIN RANGE FORESTED AREAS**
Nicolas Ackermann, Christian Thiel, Friedrich-Schiller-Universität Jena, Germany; Maurice Borgeaud, European Space Agency, Italy; Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

TH2.13.3 11:10 **PRELIMINARY RESULTS OF COSMO-SKYMED ANNOUNCEMENT OF OPPORTUNITY PROJECTS ABOUT MARINE MONITORING**
Francesco Nirchio, Italian Space Agency, Italy; Fabrizio Berizzi, Università di Pisa, Italy; Fabio Del Frate, Università di Tor Vergata, Italy; Angelo Freni, Università di Firenze, Italy; Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy; Francesco Palazzo, SERCO S.p.A., Italy; Stefano Zecchetto, ISAC-CNR, Italy

TH2.13.4 11:30 **X-SAR COSMO/SKYMED MISSION AND ITS SCIENTIFIC APPLICATIONS IN THE FIELD OF EARTH'S OBSERVATIONS: SOME TOPICS CONCERNING THE COMBINATIONS OF THE OBSERVATIONS ACHIEVED WITH OTHER TECHNIQUES**
Francesco Vespe, Agenzia Spaziale Italiana, Italy; Luca Baldini, Consiglio Nazionale delle Ricerche, Italy; Catia Benedetto, Agenzia Spaziale Italiana, Italy; Maria Teresa Chiaradia, Politecnico di Bari, Italy; Christian Iasio, EURAC, Italy; Angela Losurdo, GEOCART s.r.l., Italy; Claudia Notarnicola, EURAC, Italy; Claudio Prati, Politecnico di Milano, Italy; Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

TH2.13.5 11:50 **APPLICATION OF COSMO-SKYMED SYNTHETIC APERTURE RADAR INTERFEROMETRY OBSERVATIONS TO VOLCANO AND EARTHQUAKE PROCESSES**
Paul Lundgren, Eric J. Fielding, California Institute of Technology, United States

Thursday, July 26 | 13:30 - 15:10 | Room 14B
Session TH3.13 | Oral-Invited

ESA's candidate Earth Explorer missions - BIOMASS, CoReH2O, PREMIER I

Session Co-Chairs: Michael Kern, ESA; Klaus Scipal, ESA

TH3.13.1 13:30 **ESA'S EARTH EXPLORER SCIENTIFIC MISSIONS**
Mark Drinkwater, Pierluigi Silvestrin, Maurice Borgeaud, European Space Agency, Netherlands

TH3.13.2 13:50 **ESA'S BIOMASS MISSION CANDIDATE SYSTEM AND PAYLOAD OVERVIEW**
Marco Arcioni, Paolo Bensi, Malcolm Davidson, Mark Drinkwater, Franco Fois, Chung-Chi Lin, Roland Meynart, Klaus Scipal, Pierluigi Silvestrin, European Space Agency ESTEC, Netherlands

TH3.13.3 14:10 **ESA'S COREH2O SYSTEM AND PAYLOAD OVERVIEW**
Arnaud Lécuyot, Florence Hélière, Michael Kern, Nicolas Gebert, Paolo Bensi, Mark Drinkwater, Roland Meynart, Pierluigi Silvestrin, European Space Agency, Netherlands

TH3.13.4 14:30 **ESA'S PREMIER MISSION CANDIDATE: SYSTEM AND PAYLOAD OVERVIEW**
Bernardo Carnicero Domínguez, Stefan Kraft, Joerg Langen, Ville Kangas, Paolo Bensi, Jean-Loup Bézy, Mark Drinkwater, Paul Ingmann, Chung-chi Lin, Roland Meynart, Pierluigi Silvestrin, European Space Agency, Netherlands; Fredrik von Schéele, Urban Frisk, Anders Emrich, Omnisys Instruments AB, Sweden

TH3.13.5 14:50 **THE SCIENCE AND MEASUREMENT CONCEPTS UNDERLYING THE BIOMASS MISSION**
Shaun Quegan, University of Sheffield, United Kingdom; Jerome Chave, Centre National de la Recherche Scientifique, France; Jorgen Dall, TUD, Denmark; Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Fabio Rocca, POLIMI, Italy; Sassan Saatchi, NASA Jet Propulsion Laboratory, United States; Klaus Scipal, European Space Agency, Netherlands; Hank Shugart, University of Virginia, United States; Lars M.H. Ulander, Swedish Defence Research Agency, Sweden; Mathew Williams, University of Edinburgh, United Kingdom

Thursday, July 26 | 15:40 - 17:20 | Room 14B
Session TH4.13 | Oral-Invited

ESA's candidate Earth Explorer missions - BIOMASS, CoReH2O, PREMIER II

Session Co-Chairs: Klaus Scipal, ESA; Michael Kern, ESA

TH4.13.1 15:40 **THE BIOMASS MISSION RETRIEVAL ALGORITHMS: RESULTS FROM RECENT CAMPAIGNS**
Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France; Lars M.H. Ulander, Swedish Defence Research Agency, Sweden; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany; Fabio Rocca, Politecnico di Milano, Italy; Shaun Quegan, University Sheffield, United Kingdom; Malcolm Davidson, Klaus Scipal, European Space Agency ESTEC, Netherlands

TH4.13.2 16:00 **COREH2O, A DUAL FREQUENCY RADAR MISSION FOR SNOW AND ICE OBSERVATIONS**
Helmut Rott, University of Innsbruck, Austria; Donald W. Cline, NOAA-NWS, United States; Claude Duguay, University of Waterloo, Canada; Richard Essery, University of Edinburgh, United Kingdom; Pierre Etchevers, Météo-France, United Kingdom; Irena Hajnsek, DLR-HR, Germany; Michael Kern, European Space Agency ESTEC, Netherlands; Giovanni Macelloni, IFAC-CNR, Italy; Eirik Malnes, Norut, Norway; Jouni Pulliainen, Finnish Meteorological Institute, Finland; Simon H. Yueh, NASA Jet Propulsion Laboratory, United States

TH4.13.3 16:20 **ADDED VALUE OF COREH2O SAR TO THE MODELING OF CRYOSPHERIC PROCESSES AND TO THE RETRIEVAL OF SNOW AND ICE PARAMETERS**
Jouni Pulliainen, Finnish Meteorological Institute, Finland; Donald W. Cline, NOAA-NWS, United States; Claude Duguay, University of Waterloo, Canada; Richard Essery, University of Edinburgh, United Kingdom; Pierre Etchevers, Météo-France, France; Irena Hajnsek, DLR-HR, Germany; Michael Kern, European Space Agency ESTEC, Netherlands; Giovanni Macelloni, IFAC-CNR, Italy; Eirik Malnes, Norut, Norway; Helmut Rott, University of Innsbruck, Austria; Simon H. Yueh, NASA Jet Propulsion Laboratory, United States

TH4.13.4 16:40 **PREMIER - A CANDIDATE ESA EARTH EXPLORER MISSION FOR SPACE-BASED OBSERVATIONS IN THE UTLS**
Brian J. Kerridge, Rutherford Appleton Laboratory, United Kingdom; Michaela I. Hegglin, University of Toronto, Canada; Jack McConnell, York University, Canada; Donal Murtagh, Chalmers University of Technology, Sweden; Johannes Orphal, Karlsruhe Institute of Technology (KIT), Germany; Vincent-Henri Peuch, ECMWF, United Kingdom; Martin Riese, FZ Juelich, Germany; Michiel van Weele, KNMI, Netherlands; Joerg Langen, European Space Agency ESTEC, Netherlands

Thursday, July 26 08:20 - 10:00 Room 14C

Session TH1.1 Oral

TanDEM-X Interferometry

Session Co-Chairs: Gerhard Krieger, German Aerospace Center - DLR; Thomas Fritz, German Aerospace Center - DLR

TH1.1.1 08:20 **OBSERVATIONS AND DISCUSSIONS OF TANDEM-X INTERFEROGRAM SPECTRA OVER RAIN FOREST**
Francesco de Zan, Gerhard Krieger, Paco López-Dekker, German Aerospace Center (DLR), Germany

TH1.1.2 08:40 **DECORRELATION EFFECTS IN BISTATIC TANDEM-X DATA**
Michele Martone, Benjamin Braeutigam, Gerhard Krieger, German Aerospace Center (DLR), Germany

TH1.1.3 09:00 **THE DUAL-BASELINE INTERFEROMETRIC PROCESSING CHAIN FOR THE TANDEM-X MISSION**
Marie Lachaise, Ulrich Balss, Thomas Fritz, Helko Breit, German Aerospace Center (DLR), Germany

TH1.1.4 09:20 **PHASE UNWRAPPING CORRECTION WITH DUAL-BASELINE DATA FOR THE TANDEM-X MISSION**
Marie Lachaise, Thomas Fritz, Ulrich Balss, Richard Bamler, Michael Eineder, German Aerospace Center (DLR), Germany

TH1.1.5 09:40 **INSAR AND DEM QUALITY MONITORING OF TANDEM-X**
Benjamin Bräutigam, Paola Rizzoli, Michele Martone, Markus Bachmann, Thomas Kraus, Gerhard Krieger, German Aerospace Center (DLR), Germany

Thursday, July 26 10:30 - 12:10 Room 14C

Session TH2.1 Oral

SAR Interferometry I

Session Co-Chairs: Akira Hirose, Tokyo University; Paul Rosen, NASA Jet Propulsion Laboratory

TH2.1.1 10:30 **MULTI-SCALE AND BLOCK DECOMPOSITION METHODS FOR FINITE DIFFERENCE INTEGRATION AND PHASE UNWRAPPING OF VERY LARGE DATASETS IN HIGH RESOLUTION SAR INTERFEROMETRY**
Mario Costantini, Fabio Malvarosa, Federico Minati, Francesco Vecchioli, E-GEOS - an ASI/ Telespazio Company, Italy

TH2.1.2 10:50 **A BAYESIAN APPROACH TO UNWRAPPING THE PHASE OF INSAR TIME SERIES**
Andrew Hooper, Delft University of Technology, Netherlands

TH2.1.3 11:10 **FLOOD MONITORING WITH INTEGRATED MUTI-SOURCE DATASETS BASED ON SATELLITE SAR COHERENCE**
Zhe Hu, Linlin Ge, Xiaojing Li, The University Of New South Wales, Australia

TH2.1.4 11:30 **AN INNOVATIVE REGION GROWING ALGORITHM BASED ON MINIMUM COST FLOW APPROACH FOR PHASE UNWRAPPING OF FULL-RESOLUTION DIFFERENTIAL INTERFEROGRAMS**
Chandrakanta Ojha, Michele Manunta, Antonio Pepe, Luca Paglia, Riccardo Lanari, IREA-CNR, Italy

TH2.1.5 11:50 **A FIRST COMPARISON OF COSMO-SKYMED AND TERRASAR-X DATA OVER CHAMONIX MONT-BLANC TEST-SITE**
Jean-Marie Nicolas, Télécom ParisTech, France; Emmanuel Trouvé, Université de Savoie, France; Renaud Fallourd, Télécom ParisTech / Université de Savoie, France; Flavien Vernier, Université de Savoie, France; Florence Tupin, Télécom ParisTech, France; Olivier Harant, GIPSA-lab / IETR, France; Michel Gay, GIPSA-lab, France; Luc Moreau, Université de Savoie, France

Thursday, July 26 13:30 - 15:10 Room 14C

Session TH3.1 Oral

SAR Interferometry II

Session Co-Chairs: Masanobu Shimada, Japan Aerospace Exploration Agency; Martin Suess, ESA

TH3.1.1 13:30 **SPECKLE STATISICS AND LONG-TERM COHERENT SAR INTERFEROGRAMS**
Alessandro Parizzi, German Aerospace Center (DLR), Germany

TH3.1.2 13:50 **AIRBORNE CIRCULAR SAR IMAGING: RESULTS AT P-BAND**
Yun Lin, Wen Hong, Weixian Tan, Yanping Wang, Maosheng Xiang, Institute of Electronics, CAS, China

TH3.1.3 14:10 **KA-BAND SAR INTERFEROMETER**
Chiara Germani, Roberto Venturini, Thales Alenia Space Italia, Italy; Michael Ludwig, Elena Daganzo-Eusebio, Salvatore D'Addio, Antonio Gabriele, European Space Agency ESTEC, Netherlands

TH3.1.4 14:30 **IMPROVEMENT OF ALOS INTERFEROGRAM QUALITY BY USE OF THE LOCAL CO-REGISTRATION METHOD USING SINGULAR-POINT AND AMPLITUDE INFORMATION**
Ryo Natsuaki, Akira Hirose, The University of Tokyo, Japan

TH3.1.5 14:50 **ENSEMBLE BASED ATMOSPHERIC PHASE SCREEN ESTIMATION USING LEAST SQUARES**
Franz-Georg Ulmer, Nico Adam, Michael Eineder, German Aerospace Center (DLR), Germany

Thursday, July 26 15:40 - 17:20 Room 14C

Session TH4.1 Oral

DEM, MTI and Ship Detection

Session Chair: Stefan Baumgartner, German Aerospace Center - DLR

TH4.1.1 15:40 **INSAR PHASE UNWRAPPING USING NONLINEAR KALMAN SMOOTHER**
Davide Chirico, Gilda Schirinzi, Università degli Studi di Napoli Parthenope, Italy

TH4.1.2 16:00 **TRIPLET STEREO RADARSAT-2F/RCM HR IMAGES FOR DTM GENERATION**
Thierry Toutin, Canada Centre for Remote Sensing, Canada; Xiaokun Zhu, Beijing Institute of Surveying and Mapping, China

TH4.1.3 16:20 **APPROACH TO VELOCITY AND ACCELERATION MEASUREMENT IN THE BI-DIRECTIONAL SAR IMAGING MODE**
Josef Mittermayer, Pau Prats-Iraola, Steffen Wollstadt, Stefan Baumgartner, Paco López-Dekker, German Aerospace Center (DLR), Germany; Antoni Broquetas, Eduardo Makhoul, Universitat Politècnica de Catalunya, Spain; Gerhard Krieger, Alberto Moreira, German Aerospace Center (DLR), Germany

TH4.1.4 16:40 **GLRT MOVING TARGETS DETECTION PERFORMANCE ASSESSMENT ON TERRASAR-X ATI DATA**
Alessandra Budillon, Gilda Schirinzi, University of Naples Parthenope, Italy

TH4.1.5 17:00 **STATISTICAL MODELS FOR CONSTANT FALSE ALARM RATE SHIP DETECTION WITH THE SUBLOOK CORRELATION MAGNITUDE**
Stian Normann Anfinsen, Camilla Brekke, University of Tromsø, Norway

Thursday, July 26 | 08:20 - 10:00 | Room 21A
Session TH1.11 | Oral-Invited

New Developments in Ocean Monitoring from Spaceborne SAR

Session Co-Chairs: Susanne Lehner, German Aerospace Center - DLR; William Perrie, Department of Fisheries and Oceans Canada

TH1.11.1 08:20 **DETECTION AND CLASSIFICATION OF OIL SPILL AND LOOK-ALIKE SPOTS FROM SAR IMAGERY USING AN ARTIFICIAL NEURAL NETWORK**
Suman Singha, Tim J Bellerby, University of Hull, United Kingdom; Olaf Trieschmann, European Maritime Safety Agency, Portugal

TH1.11.2 08:40 **CROSS-POLARIZED SYNTHETIC APERTURE RADAR: A NEW MEASUREMENT TECHNIQUE FOR HURRICANES**
William Perrie, Biao Zhang, Bedford Institute of Oceanography, Canada

TH1.11.3 09:00 **EFFECT OF SURFACTANTS ON SEA SURFACE TEMPERATURE AND SALINITY**
Alexander Soloviev, Naoko Kurata, Katie Vella, Aurelian Tartar, Mahmood Shivji, Silvia Matt, Nova Southeastern University, United States; Atsushi Fujimura, University of Miami, United States; William Perrie, Bedford Institute of Oceanography, Canada

TH1.11.4 09:20 **STORM OBSERVATIONS BY REMOTE SENSING AND INFLUENCES OF ORGANIZED GUSTS ON OCEAN SURFACE WAVES**
Andrey Pleskachevsky, Susanne Lehner, German Aerospace Center (DLR), Germany; Wolfgang Rosenthal, GAUSS, Germany

TH1.11.5 09:40 **SEA STATE VARIABILITY AND COASTAL INTERACTION PROCESSES OBSERVED BY HIGH RESOLUTION TERRASAR-X SATELLITE RADAR IMAGES**
Susanne Lehner, Andrey Pleskachevsky, Miguel Bruck, German Aerospace Center (DLR), Germany

Thursday, July 26 | 10:30 - 12:10 | Room 21A
Session TH2.11 | Oral-Invited

Recent Innovations in Earth Science Remote Sensing Technology Development at NASA

Session Chair: George Komar, NASA - Earth Science Technology Office

TH2.11.1 10:30 **CHALLENGES ASSOCIATED WITH EARTH SCIENCE DECADAL SURVEY MEASUREMENTS**
Robert Bauer, Joseph Famiglietti, Parminder Ghuman, George Komar, Michael Seablom, NASA, United States

TH2.11.2 10:50 **MEASURING TECHNOLOGY MATURITY AND READINESS FOR MISSION INFUSION**
Michael Seablom, NASA, United States; Loren Lemmerman, SGT, Inc., United States

TH2.11.3 11:10 **SPACEBORNE FLIGHT VALIDATION OF NASA ESTO TECHNOLOGIES**
Charles Norton, NASA ESTO and Jet Propulsion Laboratory, United States; Michael Pasciuto, NASA ESTO, United States; Paula Pingree, Steve Chien, David Rider, NASA Jet Propulsion Laboratory, United States

TH2.11.4 11:30 **EVALUATING OPTIONS FOR ENHANCING TECHNOLOGY DEVELOPMENT AND CONTROLLING COST GROWTH**
Eric Mahr, Robert Bitten, The Aerospace Corporation, United States

TH2.11.5 11:50 **INSTRUMENT SCHEDULE DELAYS: POTENTIAL IMPACT ON MISSION DEVELOPMENT COST FOR RECENT NASA PROJECTS**
Robert Bitten, Eric Mahr, The Aerospace Corporation, United States

Thursday, July 26 | 13:30 - 15:10 | Room 21A
Session TH3.11 | Oral-Invited

Space Lidar: Missions, Technologies and Observations I organized by the Technical Committee

Session Chair: Upendra Singh, NASA Langley Research Center

TH3.11.1 13:30 **EARTH OBSERVATION SPACE LIDAR MISSIONS OF THE EUROPEAN SPACE AGENCY**
Paul Ingmann, Anne Grete Straume-Lindner, Tobias Wehr, European Space Agency ESTEC, Netherlands

TH3.11.2 13:50 **PAST, PRESENT, AND FUTURE INNOVATIONS IN ACTIVE REMOTE SENSING: THE NASA EARTH SCIENCE TECHNOLOGY PROGRAM**
George Komar, NASA, United States

TH3.11.3 14:10 **PAST, PRESENT AND FUTURE OF JAPANESE SPACE LIDAR PROGRAM**
Kazuhiro Asai, Tohoku Institute of Technology, Japan

TH3.11.4 14:30 **THE FRENCH/GERMAN CLIMATE MISSION MERLIN**
Gerhard Ehret, German Aerospace Center (DLR), Germany; Pierre Flamant, École Polytechnique, France

TH3.11.5 14:50 **MEASURING ATMOSPHERIC CO2 FOR THE NASA ASCENDS MISSION: THE CO2 LASER SOUNDER APPROACH**
James B. Abshire, Haris Riris, Graham Allan, Stephan Kawa, Xiaoli Sun, William Hasselbrack, Clark J. Weaver, Michael Rodriguez, Jianping Mao, NASA Goddard Space Flight Center, United States

Thursday, July 26 | 15:40 - 17:20 | Room 21A
Session TH4.11 | Oral-Invited

Space Lidar: Missions, Technologies and Observations II organized by the Technical Committee

Session Chair: James Abshire, NASA Goddard Space Flight Center

TH4.11.1 15:40 **NASA'S LIDAR MEASUREMENTS OF THE EARTH'S SURFACE FROM SPACE**
David Harding, NASA Goddard Space Flight Center, United States

TH4.11.2 16:00 **THE LASER TRANSMITTERS FOR THE NASA/CNES CALIPSO AND NASA ICESAT-2 MISSIONS**
Floyd Hovis, Fibertek, Inc., United States; Mark Stephen, NASA Goddard Space Flight Center, United States

TH4.11.3 16:20 **DEVELOPMENT OF SPACEBORNE LASERS FOR ALADIN AND ATLID INSTRUMENTS**
Alberto Cosentino, Alessandro D'Ottavi, Adalberto Sapia, Enrico Suetta, Selex Galileo S.p.A., Italy

TH4.11.4 16:40 **SPACE LIDAR MEASUREMENTS OF MARS, THE MOON AND MERCURY**
D. E. Smith, Maria T Zuber, Massachusetts Institute of Technology, United States; Gregory A. Neumann, Xiaoli Sun, John C. Cavanaugh, Erwan Mazarico, NASA Goddard Space Flight Center, United States; Mark H Torrence, SGT, Inc., United States

TH4.11.5 17:00 **INSTRUMENT DESIGN AND IN ORBIT PERFORMANCE OF PLANETARY LIDARS DEVELOPED AT NASA GSFC**
Xiaoli Sun, John C. Cavanaugh, James Smith, James B. Abshire, McGarry Jan, Gregory A. Neumann, David E. Smith, NASA Goddard Space Flight Center, United States; Maria T Zuber, Massachusetts Institute of Technology, United States

Thursday, July 26 08:20 - 10:00 Room 21B

Session TH1.16 Oral

Remotely Sensed Estimation of Crop Parameters

Session Co-Chairs: Valerie Laurent, University of Zurich; Olga Chesnokova, University of Zurich

TH1.16.1 08:20 **TESTING THE SMOS-DERIVED VEGETATION OPTICAL THICKNESS OVER RAINFED CEREALS**
Nilda Sánchez, Anna Scaini, José Martínez-Fernández, Universidad de Salamanca, Spain

TH1.16.2 08:40 **ESTIMATING LEAF AREA INDEX FROM LANDSAT USING MODIS LAI PRODUCTS AND FIELD MEASUREMENTS AS REFERENCE**
Feng Gao, Martha Anderson, USDA ARS, United States; Rasmus Houborg, European Commision, Joint Research Centre, Italy; William Kustas, USDA ARS, United States

TH1.16.3 09:00 **GEOHYDROLOGICAL CONCEPTUALIZATION FROM A REMOTELY SENSED SIMPLIFIED WATER BALANCE IN THE SANDVELD, SOUTH AFRICA**
Zahn Munch, Stellenbosch University, South Africa; Lesley Gibson, Geohydrological and Spatial Solutions (Pty) Ltd, South Africa

TH1.16.4 09:20 **MAPPING LAI AND CHLOROPHYLL CONTENT FROM AT-SENSOR APEX DATA USING A BAYESIAN OPTIMISATION OF A COUPLED CANOPY-ATMOSPHERE MODEL**
Valerie Laurent, University of Zurich, Switzerland; Wouter Verhoef, University of Twente, Netherlands; Michael E. Schaepman, Alexander Damm, University of Zurich, Switzerland; Jan Clevers, Wageningen University, Netherlands

TH1.16.5 09:40 **INCOHERENT ELECTROMAGNETIC MODEL FOR VINEYARDS AT C-BAND**
J. David Ballester-Berman, Juan M. Lopez-Sanchez, Idoia Garmendia-Lopez, Victor J. Mangas-Martin, University of Alicante, Spain

Thursday, July 26 10:30 - 12:10 Room 21B

Session TH2.16 Oral

Classification and Identification of Agricultural Land Cover

Session Co-Chairs: Yuei-An Liou, National Central University; Francesco Mattia, CNR-ISSIA

TH2.16.1 10:30 **CLASSIFYING AGRICULTURAL LAND USES WITH TIME SERIES OF SATELLITE IMAGES**
Heather North, David Pairman, Stella Belliss, Landcare Research, New Zealand; Jeromy Cuff, Environment Canterbury, New Zealand

TH2.16.2 10:50 **AUTOMATIC ASSESSMENT OF LAND PARCEL IDENTIFICATION SYSTEMS FOR AGRICULTURAL MANAGEMENT**
Kadim Tasdemir, Csaba Wirnhardt, European Commision, Joint Research Centre, Italy

TH2.16.3 11:10 **COSMO-SKYMED MULTI-TEMPORAL DATA FOR LANDCOVER CLASSIFICATION AND SOIL MOISTURE RETRIEVAL OVER AN AGRICULTURAL SITE IN SOUTHERN AUSTRALIA**
Giuseppe Satalino, Consiglio Nazionale delle Ricerche - Istituto di Studi sui Sistemi Intelligenti per l'Automazione, Italy; Rocco Panciera, Cooperative Research Centre for Spatial Information, Australia; Anna Balenzano, Francesco Mattia, Consiglio Nazionale delle Ricerche - Istituto di Studi sui Sistemi Intelligenti per l'Automazione, Italy; Jeffrey P. Walker, Monash University, Australia

TH2.16.4 11:30 **WINTER WHEAT IDENTIFICATION USING MULTI-TEMPORAL ENVISAT ASAR DATA —A CASE STUDY AT TONGZHOU DISTRICT, BEIJING**
Lina Bai, Bengyu Wang, Xin Tian, Ying Lu, Chinese Academy of Forestry, China; Yongtian Yang, Guizhou Normal University, China

TH2.16.5 11:50 **FROST DAMAGE DETECTION IN SUGARCANE CROP USING MODIS IMAGES AND SRTM DATA**
Bernardo Friedrich Theodor Rudorff, Daniel Alves Aguiar, Marcos Adami, Moises Pereira Galvão Salgado, National Institute for Space Research (INPE), Brazil

Thursday, July 26 13:30 - 15:10 Room 21B

Session TH3.16 Oral

Urban Remote Sensing I

Session Chair: Uwe Stilla, Technische Universität München

TH3.16.1 13:30 **INVESTIGATION ON THE DYNAMICS OF ARTIFICAL SURFACE REFLECTANCE UNDER FIELD CONDITION**
Kang Jiang, Xiangjuan Li, Luyan Ji, Kai Yu, Yongchao Zhao, Hairong Tang, Xiurui Geng, Daobin Zhang, Institute of Electronics, CAS, China

TH3.16.2 13:50 **COMBINING HIGH-RESOLUTION INSAR AND OPTICAL DATA FOR BUILDING DETECTION WITH IMPLICIT SCENE CONTEXT**
Jan Dirk Wegner, Uwe Soergel, Leibniz Universität Hannover, Germany

TH3.16.3 14:10 **BUILDING DETECTION IN INTRICATE ENVIRONMENT BASED ON INTERFERENCE SUPPRESSION WITH DIGITAL SURFACE MODEL AND OPTICAL IMAGE**
Yiming Yan, Hao Chen, Fengjiao Gao, Ye Zhang, Harbin Institute of Technology, China

TH3.16.4 14:30 **AUTOMATIC DETECTION AND MAPPING OF URBAN BUILDINGS IN HIGH RESOLUTION REMOTE SENSING IMAGES**
Zheng Zhang, Mei Zhou, Lingli Tang, Chuan-Rong Li, Academy of Opto-Electronics, CAS, China

TH3.16.5 14:50 **CHANGE DETECTION FOR SAR IMAGES CAPTURED WITH DIFFERENT INCIDENCE ANGLES**
Junyi Tao, German Aerospace Center (DLR), Germany; Stefan Auer, Technische Universität München, Germany; Peter Reinartz, German Aerospace Center (DLR), Germany

Thursday, July 26 15:40 - 17:20 Room 21B

Session TH4.16 Oral

SAR Applications in Urban Remote Sensing

Session Co-Chairs: Manuela Bonano, IREA-CNR; Achim Roth, German Aerospace Center - DLR

TH4.16.1 15:40 **DINSAR DEFORMATION TIME SERIES FOR MONITORING URBAN AREAS: THE IMPACT OF THE SECOND GENERATION SAR SYSTEMS**
Manuela Bonano, Michele Manunta, Antonio Pepe, IREA-CNR, Italy; Maria Marsella, Sapienza Università di Roma, Italy; Riccardo Lanari, IREA-CNR, Italy

TH4.16.2 16:00 **COMPARATIVE ANALYSIS AND COMBINATION OF ALOS OPTICAL AND SAR DATA FOR HUMAN SETTLEMENT EXTENT EXTRACTION**
Pei Liu, China University of Mining and Technology, China; Paolo Gamba, University of Pavia, Italy; Gianni Lisini, IUSS, Italy; Peijun Du, Nanjing University, China

TH4.16.3 16:20 **MATCHING OF PERSISTENT SCATTERERS TO BUILDINGS**
Alexander Schunert, Lukas Schack, Uwe Soergel, Leibniz Universität Hannover, Germany

TH4.16.4 16:40 **DESCRIPTION OF SETTLEMENT PATTERNS USING VHR SAR DATA OF THE GERMAN TANDEM-X MISSION**
Thomas Esch, Wieke Heldens, Andreas Felbier, Hannes Taubenboeck, Achim Roth, German Aerospace Center (DLR), Germany

TH4.16.5 17:00 **URBAN BOUNDARY EXTRACTION USING 2-COMPONENT POLARIMETRIC SAR DECOMPOSITION**
Christopher Storie, Joni Storie, The University of Winnipeg, Canada; Graciela Salinas de Salmuni, National Space Activities Commission (CONAE), Argentina

Thursday, July 26 | 08:20 - 10:00 | Room 22A
Session TH1.9 | Oral-Invited

Remote Sensing of Land Surface Energy Budget

Session Co-Chairs: Shunlin Liang, University of Maryland; Jean-Louis Roujean, Meteo France / CNRS

TH1.9.1 08:20 **THE ESA GLOBALBEDO PROJECT: ALGORITHM**
Philip Lewis, University College London and NCEO, United Kingdom; Luis Guanter, Freie Universität Berlin, Germany; Gerardo López Saldaña, Jan-Peter Muller, Gill Watson, Neville Shane, Tom Kennedy, University College London, United Kingdom; Jürgen Fisher, Carlos Domenech, Réné Preusker, Freie Universität Berlin, Germany; Peter North, Andreas Heckel, Swansea University, United Kingdom; Olaf Danne, Uwe Krämer, Marco Zühlke, Norman Fomferra, Carsten Brockmann, Brockmann Consult GmbH, Germany; Crystal Schaaf, University of Massachusetts Boston, United States

TH1.9.2 08:40 **LAND SURFACE ALBEDO AND DOWNWELLING SHORTWAVE RADIATION FROM MSG GEOSTATIONARY SATELLITE: METHOD FOR RETRIEVAL, VALIDATION, AND IMPACT ASSESSMENT IN NWP AND LSM MODELS**
Dominique Carrer, Jean-Louis Roujean, Olivier Hautecoeur, Météo-France, France; Jure Cedilnik, Slovenian Meteorological Service, Slovenia; Catherine Meurey, Météo-France, France

TH1.9.3 09:00 **JPSS LAND SURFACE EDRS: TEMPERATURE AND ALBEDO**
Yunyue Yu, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Shunlin Liang, Yuling Liu, Dongdong Wang, University of Maryland, United States; Ivan Csiszar, NOAA/NESDIS/Center for Satellite Applications and Research, United States

TH1.9.4 09:20 **DERIVATION OF TOA AND SURFACE FLUXES WITHIN ONE WEEK OF SATELLITE MEASUREMENTS USING THE FLASHFLUX ALGORITHMS**
David Kratz, Paul Stackhouse, NASA Langley Research Center, United States; Anne Wilber, Parnchai Sawaengphokhai, Shashi Gupta, Science Systems and Applications, Inc., United States

TH1.9.5 09:40 **CHINESE GLASS RADIATION PRODUCTS: ALGORITHMS, PRODUCTION AND VALIDATION**
Shunlin Liang, Beijing Normal University / University of Maryland, China

Thursday, July 26 | 10:30 - 12:10 | Room 22A
Session TH2.9 | Oral-Invited

SMOS Observations over Oceans I

Session Co-Chairs: Jordi Font, ICM-CSIC; Steven Delwart, ESA

TH2.9.1 10:30 **OVERVIEW ON SMOS LEVEL 2 OCEAN SALINITY RETRIEVAL**
Jordi Font, Institut de Ciencies del Mar (ICM-CSIC), Spain

TH2.9.2 10:50 **THE SMOS SENSOR: A NEW CAPABILITY TO ESTIMATE OCEAN SURFACE HIGH WINDS AND TO MONITOR OCEANIC RESPONSE UNDER TROPICAL CYCLONES**
Reul Nicolas, Institut Français de Recherche pour l'Exploitation de la Mer, France; Tenerelli Joseph, Collecte Localisation Satellites (CLS), France; Chapron Bertrand, Quilfen Yves, Institut Français de Recherche pour l'Exploitation de la Mer, France; Vialard Jerome, Vincent Emanuel, LOCEAN-IPSL-CNRS, France; Vandemark Doug, UNH, United States

TH2.9.3 11:10 **LARGE SCALE VARIABILITY OF SMOS SEA SURFACE SALINITY IN 2010 AND 2011: OCEAN VARIABILITY AND OTHER EFFECTS**
Jacqueline Boutin, Nicolas Martin, Xiaobin Yin, Jean-Luc Vergely, LOCEAN-IPSL-CNRS, France

TH2.9.4 11:30 **ON SYSTEMATIC BIASES BETWEEN MODELED AND MEASURED SMOS BRIGHTNESS TEMPERTURE**
Xiaobin Yin, Jacqueline Boutin, Nicolas Martin, LOCEAN-IPSL-CNRS, France; Paul Spurgeon, ARGANS Limited, United Kingdom

TH2.9.5 11:50 **IMPROVING SMOS RETRIEVED SALINITY: CHARACTERIZATION OF SYSTEMATIC ERRORS IN MEASURED AND MODELLED BRIGHTNESS TEMPERATURE IMAGES**
Jerome Gourrion, Sebastien Guimbard, Institut de Ciencies del Mar (ICM-CSIC), Spain; Roberto Sabia, European Space Agency ESRIN, Italy; Marcos Portabella, Unitat de Tecnología Marina (UTM-CSIC), Spain; Veronica Gonzalez, Antonio Turiel, Institut de Ciencies del Mar (ICM-CSIC), Spain; Joaquim Ballabrera, Unitat de Tecnología Marina (UTM-CSIC), Spain; Carolina Gabarro, Fernando Pérez, Justino Martinez, Institut de Ciencies del Mar (ICM-CSIC), Spain

Thursday, July 26 | 13:30 - 15:10 | Room 22A
Session TH3.9 | Oral-Invited

SMOS Observations over Oceans II

Session Co-Chairs: Jordi Font, ICM-CSIC; Steven Delwart, ESA

TH3.9.1 13:30 **SMOS-AQUARIUS COMPARISON AND CROSS-CALIBRATION OVER OCEANS**
Gary Lagerloef, Earth and Space Research, United States; Yann H. Kerr, Eric Anterrieu, Centre d'Etudes Spatiales de la Biosphère, France; Thomas Jackson, USDA, United States; Rajat Bindlish, U.S. Department of Agriculture, United States; Hsun-Ying Kao, Earth and Space Research, United States

TH3.9.2 13:50 **SALINITY FROM SPACE: EVALUATING SMOS AND AQUARIUS AGAINST MODEL AND IN SITU DATA**
Christopher Banks, Christine Gommenginger, Meric Srokosz, Helen Snaith, National Oceanography Centre, United Kingdom

TH3.9.3 14:10 **CAROLS AIRBORNE CAMPAIGNS IN THE GULF OF BISCAY: ACTIVE/ PASSIVE SYNERGY AND AZYMUTH VARIABILITY**
Adrien Martin, Jacqueline Boutin, UPMC/CNRS, France; Danièle Hauser, Gilles Reverdin, Centre National de la Recherche Scientifique, France; Mickael Pardé, LATMOS, France; Mehrez Zribi, Pascal Fanise, Monique Dechambre, Centre National de la Recherche Scientifique, France; Simon Morisset, LOCEAN-IPSL-CNRS, France; Joseph Tenerelli, Collecte Localisation Satellites (CLS), France; Nicolas Reul, Institut Français de Recherche pour l'Exploitation de la Mer, France

TH3.9.5 14:50 **DERIVATION OF AN EXPERIMENTAL SATELLITE-BASED T-S DIAGRAM**
Roberto Sabia, European Space Agency, Italy; Joaquim Ballabrera, SMOS Barcelona Expert Centre / ICM-CSIC, Spain; Gary Lagerloef, Earth and Space Research, United States; Eric Bayler, NOAA, United States; Marco Talone, SERCO S.p.A., Italy; Yi Chao, NASA Jet Propulsion Laboratory, United States; Craig Donlon, Diego Fernández-Prieto, European Space Agency, Netherlands; Jordi Font, SMOS Barcelona Expert Centre / ICM-CSIC, Spain

Thursday, July 26 | 15:40 - 17:20 | Room 22A
Session TH4.9 | Oral

Ocean Temperature and Salinity

Session Co-Chairs: Naoto Ebuchi, Hokkaido University; David Weissman, Hofstra University

TH4.9.2 16:00 **A COMPARISON OF MODELED DIURNALLY VARYING SEA SURFACE TEMPERATURES TO GEOSTATIONARY SATELLITE DATA**
Rachel Weihs, Mark Bourassa, Florida State University, United States

TH4.9.3 16:20 **SINGULARITY ANALYSIS ON SALINITY MAPS: HOW GEOPHYSICALLY CONSISTENT ARE SSS PRODUCTS?**
Antonio Turiel, Marta Umbert, Nina Hoareau, Institute of Marine Sciences, Spain; Joaquim Ballabrera, Marcos Portabella, Marine Technology Unit, Spain

TH4.9.4 16:40 **EVALUATION OF SEA SURFACE SALINITY OBSERVED BY AQUARIUS**
Naoto Ebuchi, Hiroto Abe, Hokkaido University, Japan

TH4.9.5 17:00 **MEASUREMENTS OF THE EFFECT OF RAIN ON THE L-BAND SEA SURFACE BRIGHTNESS TEMPERATURE FOR THE AQUARIUS INSTRUMENT**
David Weissman, Hofstra University, United States

Friday, July 27 | 08:20 - 10:00 | Room 2

Session FR1.10 | Oral

Forest Land Cover Mapping

Session Chair: Cornelius Senf, Humboldt-Universität zu Berlin

FR1.10.1 08:20 **USING MODIS TIME SERIES AND RANDOM FORESTS CLASSIFICATION FOR MAPPING LAND USE IN SOUTH-EAST ASIA**
Cornelius Senf, Patrick Hostert, Sebastian Van Der Linden, Humboldt-Universität zu Berlin, Germany

FR1.10.2 08:40 **DENSE 3D RECONSTRUCTION FOR VIDEO STABILIZATION AND GEOREGISTRATION**
Kevin LaTourette, Mark Pritt, Lockheed Martin, United States

FR1.10.3 09:00 **VALIDATION OF MODIS MCD45A1 PRODUCT TO IDENTIFY BURNED AREAS IN ACRE STATE - AMAZON FOREST**
Francielle Cardozo, Gabriel Pereira, Yosio Edemir Shimabukuro, Elisabete Moraes, National Institute for Space Research (INPE), Brazil

FR1.10.4 09:20 **MINING FREQUENT SUBSTRUCTURES FROM DEFORESTATION OBJECTS**
Adeline Maciel, Marcelino Silva, Rio Grande do Norte State University and Federal University of Semi-Arid Region, Brazil; Maria Escada, National Institute for Space Research (INPE), Brazil

FR1.10.5 09:40 **TEMPORAL ANALYSIS OF MULTISENSOR DATA FOR FOREST CHANGE DETECTION USING HIDDEN MARKOV MODELS**
Arnt B. Salberg, Øivind Trier, Norwegian Computing Center, Norway

Friday, July 27 | 10:30 - 12:10 | Room 2

Session FR2.10 | Oral

Land Cover Mapping Techniques

Session Chair: Michele Volpi, Université de Lausanne

FR2.10.1 10:30 **TO DERIVE A PRIOR DATABASE OF ARCHETYPAL BRDF SHAPES FROM GROUND MEASUREMENTS USING ANISOTROPIC FLAT INDEX (AFX)**
Ziti Jiao, Hu Zhang, Xiaowen Li, Beijing Normal University, China

FR2.10.2 10:50 **ENHANCED CHANGE DETECTION USING NONLINEAR FEATURE EXTRACTION**
Michele Volpi, Giona Matasci, University of Lausanne, Switzerland; Devis Tuia, Ecole Fédérale Polytechnique de Lausanne, Switzerland; Mikhail Kanevski, University of Lausanne, Switzerland

FR2.10.3 11:10 **SAMPLING STRATEGIES FOR UNSUPERVISED CLASSIFICATION OF MULTITEMPORAL HIGH RESOLUTION OPTICAL IMAGES OVER VERY LARGE AREAS**
Isabel Rodes, Jordi Inglada, Olivier Hagolle, Jean-François Dejoux, Gérard Dedieu, Centre d'Etudes Spatiales de la Biosphère, France

FR2.10.4 11:30 **DETECTING LAND COVER CHANGE USING A SLIDING WINDOW TEMPORAL AUTOCORRELATION APPROACH**
Waldo Kleynhans, Brian Salmon, Council for Scientific and Industrial Research, South Africa; Jan Olivier, University of Tasmania, Australia; Frans van den Bergh, Konrad Wessels, Trienko Grobler, Council for Scientific and Industrial Research, South Africa

FR2.10.5 11:50 **COMPARISON OF ITPCA AND IRMAD FOR AUTOMATIC CHANGE DETECTION USING INITIAL CHANGE MASK**
Nicola Falco, University of Iceland/University of Trento, Italy; Prashanth Reddy Marpu, Masdar Institute of Science and Technology, United Arab Emirates; Jon Atli Benediktsson, University of Iceland, Iceland

Friday, July 27 | 13:30 - 15:10 | Room 2

Session FR3.10 | Oral

Agricultural Land Cover Change

Session Co-Chairs: Thomas Jagdhuber, German Aerospace Center - DLR; Jordi Inglada, CESBIO-CNES

FR3.10.1 13:30 **LAND USE CHANGE DETECTION USING STATISTICAL SIGNATURE MATCHING AND RULE-BASED POST-PROCESSING**
Ben Mayhew, Felicitas von Poncet, Infoterra GmbH, Germany; Michael Schlund, Friedrich-Schiller-Universität Jena, Germany

FR3.10.2 13:50 **DETECTION OF RICE-PLANTED AREA USING MULTI-TEMPORAL ALOS/PALSAR DATA**
Kanae Miyaoka, Masayasu Maki, Junichi Susaki, Koki Homma, Kyoto University, Japan; Koshi Yoshida, Ibaraki University, Japan; Chiharu Hongo, Chiba University, Japan

FR3.10.3 14:10 **MULTI-TEMPORAL REMOTE SENSING IMAGE SEGMENTATION OF CROPLANDS CONSTRAINED BY A TOPOGRAPHICAL DATABASE**
Jordi Inglada, Jean-François Dejoux, Olivier Hagolle, Gérard Dedieu, Centre d'Etudes Spatiales de la Biosphère, France

FR3.10.4 14:30 **FUSION OF MULTI-TEMPORAL HIGH RESOLUTION OPTICAL IMAGE SERIES AND CROP ROTATION INFORMATION FOR LAND-COVER MAP PRODUCTION**
Julien Osman, Jordi Inglada, Jean-François Dejoux, Olivier Hagolle, Gérard Dedieu, Centre d'Etudes Spatiales de la Biosphère, France

FR3.10.5 14:50 **(NON-)LINEAR PHENOLOGICAL TRENDS IN AN ECOSYSTEM WITH MULTIPLE GROWING SEASONS DERIVED FROM AVHRR-NDVI TIME SERIES**
Ralf Seiler, Technische Universität Dresden, Germany; Richard Gloaguen, Technische Universität Bergakademie Freiberg, Germany

Friday, July 27 | 15:40 - 17:20 | Room 2

Session FR4.10 | Oral

Land Cover Mapping with Radar

Session Chair: Gianfranco Fornaro, IREA-CNR

FR4.10.1 15:40 **FUSION OF VHR MULTISPECTRAL AND X-BAND SAR DATA FOR THE ENHANCEMENT OF VEGETATION MAPS**
Chiara Pratola, Tor Vergata University of Rome, Italy; Giorgio Antonino Licciardi, Grenoble Institute of Technology / Tor Vergata University of Rome, France; Fabio Del Frate, Giovanni Schiavon, Domenico Solimini, Tor Vergata University of Rome, Italy

FR4.10.2 16:00 **COSMO/SKYMED AO PROJECTS – ADVANCED 2D AND 3D FOCUSING OF COSMO/SKYMED SAR DATA**
Maria Teresa Chiaradia, Politecnico di Bari, Italy; Gianfranco Fornaro, IREA-CNR, Italy; Angelo Freni, Università di Firenze, Italy; Giorgio Franceschetti, Pasquale Imperatore, Università degli Studi di Napoli Federico II, Italy; Francesca Intini, GAP, Italy; Antonio Iodice, Università degli Studi di Napoli Federico II, Italy; Alessandro Mori, Università di Firenze, Italy; Davide Oscar Nitti, Raffaele Nutricato, GAP, Italy; Diego Reale, IREA-CNR, Italy; Daniele Riccio, Paolo Trivero, Università degli Studi di Napoli Federico II, Italy

FR4.10.3 16:20 **SENTINEL-1 SAR DATA FOR MAPPING AGRICULTURAL CROPS NOT DOMINATED BY VOLUME SCATTERING**
Giuseppe Satalino, Anna Balenzano, Francesco Mattia, Consiglio Nazionale delle Ricerche - Istituto di Studi sui Sistemi Intelligenti per l'Automazione, Italy; Malcolm Davidson, European Space Agency, Netherlands

FR4.10.4 16:40 **A MULTI-SENSOR POLARIMETRIC ANALYSIS OVER ARCHAEOLOGICAL SITES**
Jolanda Patruno, Nicole Dore, Mattia Crespi, Università di Roma, Italy; Eric Pottier, Université de Rennes 1, France

FR4.10.5 17:00 **URBAN LAND COVER MAPPING USING RANDOM FOREST COMBINED WITH OPTICAL AND SAR DATA**
Hongsheng Zhang, Yuanzhi Zhang, Hui Lin, The Chinese University of Hong Kong, Hong Kong SAR of China

Friday, July 27 | 08:20 - 10:00 | Room 3
Session FR1.6 | Oral

Information Extraction from SAR images

Session Co-Chairs: Fumio Yamazaki, Chiba University; David Small, ETH Zurich

FR1.6.1 08:20 **MOVING TARGET TRACKING IN SINGLE-CHANNEL SAR**
Daniel Henke, Erich Meier, Remote Sensing Laboratories, University of Zurich, Switzerland

FR1.6.2 08:40 **A SHIP DETECTOR USING INVARIANT SCATTERING FEATURE FOR POLARIMETRIC SAR IMAGES**
Yuan Sun, Chao Wang, Fan Wu, Hong Zhang, Bo Zhang, Center for Earth Observation and Digital Earth, CAS, China

FR1.6.3 09:00 **CONTEXT-AWARE INFORMATION MODELING FOR HR SAR IMAGE SCENE INTERPRETATION**
Bin Liu, Yuhao Zhou, Qiuze Yu, Xingzhao Liu, Wenxian Yu, Shanghai Jiao Tong University, China

FR1.6.4 09:20 **SAR IMAGE TARGET DETECTION USING SCALE SALIENCY AND CFAR DETECTOR**
Wei Zhou, Jian Guan, Naval Aeronautic and Astronautic University, China

FR1.6.5 09:40 **USE OF HIGH-RESOLUTION SAR INTENSITY IMAGES FOR DAMAGE DETECTION FROM THE 2010 HAITI EARTHQUAKE**
Pralhad Uprety, Fumio Yamazaki, Chiba University, Japan

Friday, July 27 | 10:30 - 12:10 | Room 3
Session FR2.6 | Oral

Information Extraction: Urban Areas and Transportation

Session Co-Chairs: Uwe Stilla, Technische Universität München; Stefan Hinz, Karlsruher Institut für Technologie

FR2.6.1 10:30 **DETECTION OF COMPOUND STRUCTURES USING MULTIPLE HIERARCHICAL SEGMENTATIONS**
H. Gokhan Akcay, Selim Aksoy, Bilkent University, Turkey

FR2.6.2 10:50 **AIRBORNE TRAFFIC MONITORING SUPPORTED BY FAST CALCULATED DIGITAL SURFACE MODELS**
Sebastian Tuermer, Franz Kurz, Peter Reinartz, German Aerospace Center (DLR), Germany; Uwe Stilla, Technische Universität München, Germany

FR2.6.3 11:10 **NONSTATIONARY TARGET DETECTION METHOD BASED ON RICIAN DISTRIBUTION**
Wenjin Wu, Huadong Guo, Xinwu Li, Chinese Academy of Sciences, China

FR2.6.4 11:30 **SHIP DETECTION BASED ON FEATURE CONFIDENCE FOR HIGH RESOLUTION SAR IMAGES**
Shaofeng Jiang, Chao Wang, Bo Zhang, Hong Zhang, Center for Earth Observation and Digital Earth, CAS, China

FR2.6.5 11:50 **THE APPLICATION AND POTENTIAL OF BAYESIAN NETWORK FUSION FOR AUTOMATIC CARTOGRAPHIC MAPPING**
Karin Hedman, Technische Universität München, Germany; Stefan Hinz, Karlsruhe Institute of Technology (KIT), Germany

Friday, July 27 | 13:30 - 15:10 | Room 3
Session FR3.6 | Oral

Information Extraction: Object Extraction and Classification

Session Chair: Björn Waske, Rheinische Friedrich-Wilhelms-Universität Bonn

FR3.6.1 13:30 **MIXTURE OF HMM EXPERTS WITH APPLICATIONS TO LANDMINE DETECTION**
Seniha Esen Yuksel, Paul Gader, University of Florida, United States

FR3.6.2 13:50 **BOOSTING FOR INTERACTIVE MAN-MADE STRUCTURE CLASSIFICATION**
Nicolas Chauffert, Jonathan Israel, Bertrand Le Saux, Office National d'Etudes et de Recherches Aérospatiale - The French Aerospace Lab, France

FR3.6.3 14:10 **UNSUPERVISED RIVER DETECTION IN RAPIDEYE DATA**
Sascha Klemenjak, Björn Waske, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany; Silvia Valero, Jocelyn Chanussot, Grenoble Institute of Technology, France

FR3.6.4 14:30 **COMPRESSION-BASED SELF-ORGANIZING RECOGNIZER PRDC-CSOR WITH PRELIMINARY APPLICATION TO EO-IMAGE ANALYSIS**
Toshinori Watanabe, University of Electro-Communications, Japan

FR3.6.5 14:50 **A SIFT-SVM METHOD FOR DETECTING CARS IN UAV IMAGES**
Thomas Moranduzzo, Farid Melgani, University of Trento, Italy

Friday, July 27 | 15:40 - 17:20 | Room 3
Session FR4.6 | Oral

Information Extraction: Classification

Session Chair: Peijun Li, Peking University

FR4.6.1 15:40 **AN IMPROVED ARTIFICIAL IMMUNE UNSUPERVISED CLASSIFIER FOR MULTISPECTRAL REMOTE-SENSING IMAGERY**
Victor-Emil Neagoe, Catalina-Elena Neghina, Polytechnic University of Bucharest, Romania

FR4.6.2 16:00 **INTERACTIVE DOMAIN ADAPTATION TECHNIQUE FOR THE CLASSIFICATION OF REMOTE SENSING IMAGES**
Claudio Persello, Francesco Dinuzzo, Max Planck Institute for Intelligent Systems, Germany

FR4.6.3 16:20 **LAND COVER CLASSIFICATION USING MULTI-SOURCE IMAGES BY TAU MODEL**
Peijun Li, Haiqing Xu, Benqin Song, Peking University, China

FR4.6.4 16:40 **A NOVEL SOM-BASED ACTIVE LEARNING TECHNIQUE FOR CLASSIFICATION OF REMOTE SENSING IMAGES WITH SVM**
Swarnajyoti Patra, Lorenzo Bruzzone, University of Trento, Italy

FR4.6.5 17:00 **CLASSWISE HYPERSPECTRAL IMAGE CLASSIFICATION WITH PERTURBO METHOD**
Laetitia Chapel, Université de Bretagne-Sud, France; Thomas Burger, Centre National de la Recherche Scientifique, France; Nicolas Courty, Sébastien Lefèvre, Université de Bretagne-Sud, France

Friday, July 27 | 08:20 - 10:00 | Room 4A
Session FR1.14 | Oral

Ground-Based Systems I

Session Chair: Juan M. Lopez-Sanchez, Universidad de Alicante

FR1.14.1 08:20 **LANDSLIDE OBSERVATION BY GROUND-BASED SAR INTERFEROMETRY**
Kazunori Takahashi, Tohoku University, Japan; Daniele Mecatti, Davis Dei, University of Florence, Italy; Masayoshi Matsumoto, Motoyuki Sato, Tohoku University, Japan

FR1.14.2 08:40 **SUMIRAD - A CLOSE TO REAL TIME MMW RADIOMETER IMAGING SYSTEM**
Stephan Dill, Markus Peichl, Daniel Rudolf, German Aerospace Center (DLR), Germany

FR1.14.3 09:00 **A CONCEPT FOR EVALUATING THE PERFORMANCE OF WET RADOMES FOR PHASED-ARRAY WEATHER RADARS**
Jorge L Salazar, Paul Siqueira, Jorge Trabal, Eric Knapp, David McLaughlin, University of Massachusetts Amherst, United States

FR1.14.4 09:20 **A CROSS FREQUENCY PERFORMANCE COMPARISON OF DUAL POLARIZATION ATTENUATION CORRECTION ALGORITHMS AT X AND S BAND**
Joseph Hardin, Venkatachalam Chandrasekar, Colorado State University, United States

FR1.14.5 09:40 **A NOVEL APPROACH TO HIGH FREQUENCY RADAR SHIP TRACKING EXPLOITING ASPECT DIVERSITY**
Paolo Braca, Michele Vespe, Salvatore Maresca, Jochen Horstmann, NATO Undersea Research Centre, Italy

Friday, July 27 | 10:30 - 12:10 | Room 4A
Session FR2.14 | Oral

Ground-Based Systems II

Session Chair: Stephan Dill, German Aerospace Center - DLR

FR2.14.1 10:30 **AN E-BAND NEAR-RANGE FMCW MIMO RADAR SYSTEM FOR A VEHICLE-BORNE PLATFORM**
Andreas Kirschner, Johanna Guetlein, Sebastian Bertl, Juergen Detlefsen, Technische Universität München, Germany

FR2.14.2 10:50 **THE DALLAS FORT WORTH URBAN REMOTE SENSING NETWORK**
Brenda Philips, University of Massachusetts Amherst, United States; Venkatachalam Chandrasekar, Colorado State University, United States

FR2.14.3 11:10 **OPTICAL WIRELESS SENSOR NETWORKS OBSERVE LEAF PHENOLOGY AND PHOTOSYNTHETIC RADIATION INTERCEPTION IN A BRAZILIAN TROPICAL DRY FOREST**
Cassidy Rankine, G. Arturo Sanchez-Azofeifa, University of Alberta, Canada; Mario Marcos do Espírito Santo, Marco Tulio S. Viera, Universidade Estadual de Montes Claros, Brazil

FR2.14.4 11:30 **A PORTABLE MULTI-ANGLE OBSERVATION SYSTEM**
Guangjian Yan, Huazhong Ren, Ronghai Hu, Kai Yan, Wuming Zhang, Beijing Normal University, China

FR2.14.5 11:50 **DISCRIMINATION OF BIPEDS FROM QUADRUPEDS USING SEISMIC FOOTSTEP SIGNATURES**
Asif Mehmood, U.S. Army Research Laboratory, United States; Vishal Patel, University of Maryland, United States; Thyagaraju Damarla, U.S. Army Research Laboratory, United States

Friday, July 27 | 13:30 - 15:10 | Room 4A
Session FR3.14 | Oral-Invited

Radiometric Calibration for Optical Sensors I

Session Chair: Xiaoxiong Xiong, NASA

FR3.14.1 13:30 **MERIS: DIFFUSER BASED RADIOMETRIC CALIBRATION – METHODS AND RESULTS**
Steven Delwart, European Space Agency, Italy; Ludovic Bourg, ACRI-ST, France

FR3.14.2 13:50 **MODIS RADIOMETRIC CALIBRATION PROGRAM, METHODS AND RESULTS**
Xiaoxiong Xiong, NASA Goddard Space Flight Center, United States; Bruce Guenther, University of Maryland, Baltimore County, United States; Amit Angal, SSAI, United States; William Barnes, University of Maryland, Baltimore County, United States; Vince Salomonson, University of Utah, United States; Junqiang Sun, Brian Wenny, Sigma Space Corporation, United States

FR3.14.3 14:10 **CALIBRATING THE SOLAR CHANNELS OF THE ALONG TRACK SCANNING RADIOMETER**
David Smith, Barry Latter, Caroline Poulsen, RAL Space, STFC, United Kingdom

FR3.14.4 14:30 **RECENT GSICS ACTIVITIES TO MONITOR AND IMPROVE THE GOES CALIBRATION ACCURACY**
Fangfang Yu, ERT, Inc. NOAA/NESDIS, United States; Xiangqian Wu, NOAA/NESDIS, United States; Haifeng Qian, IMSG@NOAA/NESDIS, United States

FR3.14.5 14:50 **ESTABLISHING RADIOMETRIC CONSISTENCY AMONG VIIRS, MODIS, AND AVHRR USING SNO AND SNOX METHODS**
Changyong Cao, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Sirish Uprety, CIRA, Colorado State University, United States; Slawomir Blonski, University of Maryland, United States

Friday, July 27 | 15:40 - 17:20 | Room 4A
Session FR4.14 | Oral-Invited

Radiometric Calibration for Optical Sensors II

Session Chair: Steven Delwart, ESA

FR4.14.2 16:00 **CEOS WGCV COMPARISON OF TECHNIQUES/INSTRUMENTS USED FOR VICARIOUS CALIBRATION OF LAND SURFACE IMAGING THROUGH A GROUND REFERENCE STANDARD TEST SITE: TUZ GOLU, TURKEY**
Nigel Fox, Irina Behnert, National Physical Laboratory, United Kingdom; Yannick Boucher, Office National d'Etudes et de Recherches Aérospatiale, France; Andrew Deadman, National Physical Laboratory, United Kingdom; Derek Griffith, CSIR, South Africa; Peter Harris, National Physical Laboratory, United Kingdom; Dennis Helder, South Dakota State University, United States; Patrice Henry, Centre National d'Études Spatiales, France; M. Kaewmanee, GISTDA, Thailand; Els Knaeps, VITO, Belgium; D. Lee, Y. Lee, Korea Aerospace Research Institute, Republic of Korea; Larry Leigh, South Dakota State University, United States; C. Musana, ITU, Turkey; Hilal Özen, Tubitak Uzay, Turkey; Flavio Ponzoni, National Institute for Space Research (INPE), Brazil; A. Prakobya, ITU, Turkey; Dries Raymaekers, VITO, Belgium; Philippe Rolland, Office National d'Etudes et de Recherches Aérospatiale, France; Sindy Sterckx, VITO, Belgium; Kurtis Thome, NASA Goddard Space Flight Center, United States; Françoise Viallefont-Robinet, Office National d'Etudes et de Recherches Aérospatiale, France; Yuan Li, CMA, China

FR4.14.3 16:20 **A DATABASE FOR IMAGING MULTI-SPECTRAL INSTRUMENTS AND TOOLS FOR RADIOMETRIC INTERCOMPARISONS: DIMITRI**
Marc Bouvet, European Space Agency, Netherlands; Christopher Kent, Kathryn Barker, ARGANS Limited, United Kingdom; Ludovic Bourg, Guillaume Fontanilles, ACRI-ST, France; Dave Smith, Rutherford Appleton Laboratory, United Kingdom; Françoise Viallefont-Robinet, Office National d'Etudes et de Recherches Aérospatiale, France

FR4.14.4 16:40 **OPTICAL SENSOR CALIBRATION USING SIMULATED RADIANCES OVER DESERT SITES**
Yves Govaerts, VITO Consultant, Belgium; Sindy Sterckx, Stefan Adriaensen, VITO, Belgium

FR4.14.5 17:00 **INTERCALIBRATION METHODOLOGIES COMPARISON: MEREMSII FIRST RESULTS**
Kathryn Barker, ARGANS Limited, United Kingdom; Ludovic Bourg, ACRI-ST, France; Marc Bouvet, European Space Agency ESTEC, Netherlands; Nigel Fox, National Physical Laboratory, United Kingdom; Yves Govaerts, VITO, Belgium; Patrice Henry, Centre National d'Études Spatiales, France; Christopher Kent, ARGANS Limited, United Kingdom; David Smith, RAL Space, STFC, United Kingdom; Sindy Sterckx, VITO, Belgium; Françoise Viallefont-Robinet, Office National d'Etudes et de Recherches Aérospatiale, France

Friday, July 27 | 08:20 - 10:00 | Room 4B
Session FR1.4 | Oral-Invited

Satellite Photogrammetry with the New Generation of High-resolution Sensors

Session Co-Chairs: Thierry Toutin, Canada Center for Remote Sensing; Peter Reinartz, German Aerospace Center - DLR

FR1.4.1 08:20 **DSM GENERATION FROM OPTICAL AND SAR HIGH RESOLUTION SATELLITE IMAGERY: METHODOLOGY, PROBLEMS AND POTENTIALITIES**
Paola Capaldo, Mattia Crespi, Francesca Fratarcangeli, Andrea Nascetti, Francesca Pieralice, Sapienza Università di Roma, Italy; Giorgio Agugiaro, Bruno Kessler Foundation, Italy; Daniela Poli, Vermessung AVT ZT-GmbH, Austria; Fabio Remondino, Bruno Kessler Foundation, Italy

FR1.4.2 08:40 **DSM GENERATION OVER LARGE URBAN AREAS FROM VHR SATELLITE SENSORS**
Daniela Poli, Ivano Caravaggi, European Commision, Joint Research Centre, Italy

FR1.4.3 09:00 **DENSE MULTI-VIEW STEREO FROM SATELLITE IMAGERY**
Pablo d'Angelo, Georg Kuschk, German Aerospace Center (DLR), Germany

FR1.4.4 09:20 **PHOTOGRAMMETRIC EXPLOITATION OF HIGH RESOLUTION INDIAN REMOTE SENSING SATELLITES - CHALLENGES AND SOLUTIONS**
Radhadevi P V, ADRIN, India

FR1.4.5 09:40 **ENVIRONMENTAL MONITORING FROM SPACE USING OPTICAL IMAGERY: THE VERSATILITY OF SUB-PIXEL IMAGE MATCHING**
Sébastien Leprince, Francois Ayoub, Jean-Philippe Avouac, California Institute of Technology, United States

Friday, July 27 | 10:30 - 12:10 | Room 4B
Session FR2.4 | Oral-Invited

Remote Sensing of Terrestrial Environmental Observatories for Ecosystem Research

Session Co-Chairs: Carsten Montzka, FZJ; Thomas Jagdhuber, German Aerospace Center - DLR

FR2.4.1 10:30 **SOIL MOISTURE RETRIEVAL UNDER VEGETATION: VALIDATION ON TERENO OBSERVATORIES**
Thomas Jagdhuber, Miguel Kohling, German Aerospace Center (DLR), Germany; Irena Hajnsek, ETH Zürich, Switzerland; Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

FR2.4.2 10:50 **ACTIVE AND PASSIVE AIRBORNE MICROWAVE REMOTE SENSING FOR SOIL MOISTURE RETRIEVAL IN THE RUR CATCHMENT, GERMANY**
Carsten Montzka, Sayeh Hasan, Heye Bogena, Research Centre Jülich, Germany; Irena Hajnsek, Ralf Horn, Thomas Jagdhuber, Andreas Reigber, German Aerospace Center (DLR), Germany; Normen Hermes, Research Centre Jülich, Germany; Christoph Rüdiger, Monash University, Australia; Harry Vereecken, Research Centre Jülich, Germany

FR2.4.3 11:10 **A MULTI-SOURCES DATA ASSIMILATION SYSTEM FOR CATCHMENT SCALE RESEARCH**
Xujun Han, Xin Li, Yanlin Zhang, Jian Kang, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

FR2.4.4 11:30 **"FLASHING FIELDS" AND THE IMPACT OF SOIL SURFACE ROUGHNESS"**
Philip Marzahn, Ludwig-Maximilians-Universität München, Germany; Urs Wegmüller, Gamma Remote Sensing, Switzerland; Francesco Mattia, Italian National Research Council, Italy; Ralf Ludwig, Ludwig-Maximilians-Universität München, Germany

Friday, July 27 | 13:30 - 15:10 | Room 4B
Session FR3.4 | Oral-Invited

New Trends in Multimode and Multispectral Remote Sensing Data Processing I

Session Chair: Ivan Villalon, ITESO, Universidad Jesuita de Guadalajara

FR3.4.1 13:30 **HIGH-RESOLUTION IMAGING WITH UNCERTAIN RADAR MEASUREMENT DATA: A DOUBLY REGULARIZED COMPRESSIVE SENSING EXPERIMENT DESIGN APPROACH**
Yuriy V. Shkvarko, Jose Tuxpan, Stewart Santos, Israel Yañez, CINVESTAV del IPN, Mexico

FR3.4.2 13:50 **GAUSSIAN LOCALIZED ACTIVE CONTOURS FOR MULTITEMPORAL ANALYSIS OF URBAN TREE CROWNS**
Juan Ardila, Wietske Bijker, Valentyn Tolpekin, Alfred Stein, University of Twente, Netherlands

FR3.4.4 14:30 **DOWNSCALING OF AIR HUMIDITY BASED ON THERMAL INERTIA**
Yuan Rong, Hongbo Su, Renhua Zhang, Yongmin Yang, Institute of Geographic Sciences and Natural Resources Research, CAS, China

FR3.4.5 14:50 **A NEW APPROACH TO THE APPLICATION OF DMSP/OLS NIGHTTIME LIGHT DATA TO URBANIZATION ASSESSMENT**
Junfu Fan, Ting Ma, Chenghu Zhou, Yuke Zhou, Institute of Geographic Sciences and Natural Resources Research, CAS, China

Friday, July 27 | 15:40 - 17:20 | Room 4B
Session FR4.4 | Oral-Invited

New Trends in Multimode and Multispectral Remote Sensing Data Processing II

Session Chair: Yuriy Shkvarko, CINVESTAV Guadalajara

FR4.4.1 15:40 **DISTRIBUTED LAND USE CLASSIFICATION WITH IMPROVED PROCESSING TIME USING HIGH-RESOLUTION MULTISPECTRAL DATA**
Ivan E. Villalon-Turrubiates, ITESO, Universidad Jesuita de Guadalajara, Mexico

FR4.4.2 16:00 **3D VISUALIZATION TECHNOLOGY OF METEOROLOGICAL DATA**
Runqiang Chen, Peking University, China; Liren Xu, Beijing Institute of Applied Meteorology, China; Yue Zhao, Peking University, China; Xiaoying Shen, Beijing Institute of Applied Meteorology, China

FR4.4.3 16:20 **A STRATEGY TO PRODUCE CLIMATE PRODUCTS FROM WITHIN AN OPERATIONAL DATA PROCESSING STREAM FOR VIIRS**
Bruce Guenther, NOAA/NESDIS, United States; Bo-Cai Gao, Naval Research Laboratory, United States

FR4.4.4 16:40 **EVALUATION OF LASER-BASED CALIBRATION UNCERTAINTIES ON NPP VIIRS ON-ORBIT OCEAN COLOR PERFORMANCE**
Steven Brown, Keith Lykke, Allan Smith, NIST, United States; Bryan Franz, Kurtis Thome, Xiaoxiong Xiong, NASA Goddard Space Flight Center, United States; Robert A. Barnes, SAIC, United States

FR4.4.5 17:00 **DEVELOPMENT OF A COMPUTATIONAL ENVIRONMENT SUPPORTING APPLICATION OF REMOTE SENSING DATASETS TO DERIVE BIOCLIMATIC PARAMETERS**
Jami Norman, Fort Hays State University, United States; Kyle C. McDonald, The City College of New York, United States

Friday, July 27 | 08:20 - 10:00 | Room 5

Session FR1.2 | Oral-Invited

Upcoming Global Survey Optical Satellite Missions: Landsat Data Continuity Mission and Sentinel-2 I

Session Co-Chairs: Bianca Hoersch, European Space Agency; James Irons, NASA

FR1.2.1 08:20 **LANDSAT DATA CONTINUITY MISSION – LAUNCH FEVER**
James Irons, NASA Goddard Space Flight Center, United States; Thomas Loveland, USGS Earth Resources Observation and Science Center, United States; Brian Markham, Jeffrey Masek, Bruce Cook, NASA Goddard Space Flight Center, United States; John Dwyer, USGS Earth Resources Observation and Science Center, United States

FR1.2.2 08:40 **OVERVIEW OF SENTINEL-2**
Francois Spoto, Omar Sy, Paolo Laberinti, Philippe Martimort, Valerie Fernandez, Olivier Colin, European Space Agency, Netherlands; Bianca Hoersch, European Space Agency ESRIN, Italy; Franco Marchese, Matthias Drusch, European Space Agency, Germany; Aimé Meygret, Centre National d'Études Spatiales, France

FR1.2.3 09:00 **THE LANDSAT DATA CONTINUITY MISSION OPERATIONAL LAND IMAGER (OLI) SENSOR**
Brian Markham, NASA, United States; Edward Knight, Brent Canova, Eric Donley, Geir Kvaran, Kenton Lee, Ball Aerospace & Technologies Corp, United States; Julia Barsi, SSAI, United States; Jeffrey Pedelty, Philip Dabney, James Irons, NASA, United States

FR1.2.4 09:20 **SENTINEL-2 MULTISPECTRAL IMAGER (MSI) AND CALIBRATION/VALIDATION**
Philippe Martimort, Valerie Fernandez, Volker Kirschner, Claudia Isola, European Space Agency, Netherlands; Aimé Meygret, Centre National d'Études Spatiales, France

FR1.2.5 09:40 **THE THERMAL INFRARED SENSOR ON THE LANDSAT DATA CONTINUITY MISSION**
Dennis Reuter, James Irons, Fernando Pellerano, Cathleen Richardson, Kurtis Thome, NASA Goddard Space Flight Center, United States

Friday, July 27 | 10:30 - 12:10 | Room 5

Session FR2.2 | Oral-Invited

Upcoming Global Survey Optical Satellite Missions: Landsat Data Continuity Mission and Sentinel-2 II

Session Co-Chairs: Alan Belward, Joint Research Center, European Commission; Bianca Hoersch, ESA

FR2.2.1 10:30 **SENTINEL-2 LEVEL 1 PRODUCTS AND IMAGE PROCESSING PERFORMANCES**
Simon Baillarin, Aimé Meygret, Cecile Dechoz, Beatrice Petrucci, Sophie Lacherade, Thierry Tremas, Centre National d'Études Spatiales, France; Claudia Isola, Philippe Martimort, Francois Spoto, European Space Agency ESTEC, Netherlands

FR2.2.2 10:50 **LANDSAT DATA CONTINUITY MISSION (LDCM) ON-ORBIT CALIBRATION**
Esad Micijevic, Ronald Hayes, Ron Morfitt, Michael Choate, SGT, Inc., United States

FR2.2.3 11:10 **SENTINEL-2 DATA PRODUCTS AND DATA ACCESS CONCEPTS**
Olivier Colin, Ferran Gascon, Enrico Cadau, Borja López Fernández, European Space Agency, Italy; Bianca Hoersch, European Space Agency ESRIN, Italy

FR2.2.4 11:30 **LANDSAT DATA CONTINUITY MISSION (LDCM)OPERATIONAL LAND IMAGER (OLI) AND THERMAL INFRARED SENSOR (TIRS) COMBINED PRODUCT GENERATION**
Ronald Hayes, Esad Micijevic, SGT, Inc., United States

FR2.2.5 11:50 **COMBINED USE OF SENTINEL-2 AND LDCM DATA**
Alan Belward, European Commision, Joint Research Centre, Italy

Friday, July 27 | 13:30 - 15:10 | Room 5

Session FR3.2 | Oral-Invited

In Flight Calibration of Optical Satellite Sensors Using Pseudo Invariant Calibration Sites

Session Co-Chairs: Dennis Helder, South Dakota State University; Kurtis Thome, NASA

FR3.2.1 13:30 **CONTINUED MONITORING OF LANDSAT REFLECTIVE BAND CALIBRATION USING PSEUDO-INVARIANT CALIBRATION SITES**
Julia Barsi, Science Systems and Applications, Inc., United States; Brian Markham, NASA Goddard Space Flight Center, United States; Dennis Helder, South Dakota State University, United States

FR3.2.2 13:50 **A HYPERSPECTRAL ABSOLUTE CALIBRATION MODEL FOR THE LIBYA 4 SITE INVARIANT SITE BASED ON HYPERION OBSERVATIONS**
Dennis Helder, Nischal Mishra, Sandip Shrestha, South Dakota State University, United States

FR3.2.3 14:10 **SATELLITE SENSOR INTERCALIBRATION OVER DOME C: AN INTRODUCTION TO QA4EO AND THE ESA GLOBALBEDO PROJECT**
Dale Potts, University College London, United Kingdom; Steve Mackin, Disaster Monitoring Constellation International Imaging Ltd., United Kingdom; Jan-Peter Muller, University College London, United Kingdom; Nigel Fox, National Physical Laboratory, United Kingdom

FR3.2.4 14:30 **DESERT BASED ABSOLUTE CALIBRATION OF VISIBLE SENSORS**
Rajendra Bhatt, Science Systems and Applications, Inc., United States; David Doelling, NASA Langley Research Center, United States; Benjamin Scarino, Daniel Morstad, Science Systems and Applications, Inc., United States

FR3.2.5 14:50 **CHARACTERIZATION APPROACHES TO PLACE INVARIANT SITES ON SI-TRACEABLE SCALES**
Kurtis Thome, NASA Goddard Space Flight Center, United States

Friday, July 27 | 15:40 - 17:20 | Room 5

Session FR4.2 | Oral-Invited

Innovative SAR Sensors for Applications in Hydrology

Session Co-Chairs: Simonetta Paloscia, CNR - National Research Council of Italy; Mehrez Zribi, IRD

FR4.2.1 15:40 **AN ALGORITHM FOR SOIL MOISTURE MAPPING IN VIEW OF COMING SENTINEL-1 SATELLITE**
Simonetta Paloscia, Simone Pettinato, Emanuele Santi, Consiglio Nazionale delle Ricerche IFAC, Italy; Nazzareno Pierdicca, Luca Pulvirenti, Sapienza Università di Roma, Italy; Claudia Notarnicola, EURAC Research, Italy; Gaetano Pace, Advanced Computer Systems S.p.A., Italy; Antonio Reppucci, Starlab Barcelona S.L., Italy

FR4.2.2 16:00 **ANALYSIS OF SOIL TEXTURE USING TERRASAR X-BAND SAR**
Mehrez Zribi, Centre National de la Recherche Scientifique, France; Fatma Kotti, Zohra Lili-Chabaane, INAT, Tunisia; Nicolas Baghdadi, IRSTEA, France; Nadhira Ben Issa, Rim Amri, INAT, Tunisia

FR4.2.3 16:20 **THE RETRIEVAL AND MONITORING OF VEGETATION PARAMETERS FROM COSMO-SKYMED IMAGES**
Emanuele Santi, Giacomo Fontanelli, Francesco Montomoli, Marco Brogioni, Giovanni Macelloni, Simonetta Paloscia, Simone Pettinato, Paolo Pampaloni, Consiglio Nazionale delle Ricerche IFAC, Italy

FR4.2.4 16:40 **INTEGRATION OF X-BAND SAR AND OPTICAL THERMAL DATA FOR RETRIEVING SNOWPACK PARAMETERS IN MOUNTAIN AREAS**
Luca Pasolli, Eurac Research / University of Trento, Italy; Mattia Callegari, Claudia Notarnicola, Eurac Research, Italy; Lorenzo Bruzzone, University of Trento, Italy; Marc Zebisch, Eurac Research, Italy

FR4.2.5 17:00 **SENSITIVITY OF C-BAND POLARIMETRIC SAR DATA TO THE SOIL SURFACE PARAMETERS OVER BARE AGRICULTURE FIELDS**
Nicolas Baghdadi, IRSTEA, France; Mehrez Zribi, Centre National de la Recherche Scientifique, France; Ralf Ludwig, Ludwig-Maximilians-Universitaet Muenchen, Germany

Friday, July 27 | 08:20 - 10:00 | Room 11
Session FR1.3 | Oral

Tomography and 3D imaging

Session Co-Chairs: Andreas Reigber, German Aerospace Center - DLR; Stefano Tebaldini, Politecnico di Milano

FR1.3.1 08:20 **ON THE TOMOGRAPHIC INFORMATION IN SINGLE PAIRS OF CROSSING-ORBITS SAR ACQUISITIONS**
Paco López-Dekker, Francesco de Zan, Steffen Wollstadt, Pau Prats-Iraola, Gerhard Krieger, German Aerospace Center (DLR), Germany

FR1.3.2 08:40 **OPERATIONAL TOMOSAR PROCESSING USIN TERRASAR-X HIGH RESOLUTION SPOTLIGHT STACKS FROM MULTIPLE VIEW ANGLES**
Yuanyuan Wang, Technische Universität München, Germany; Xiao Xiang Zhu, German Aerospace Center (DLR), Technische Universität München, Germany; Yilei Shi, Technische Universität München, Germany; Richard Bamler, German Aerospace Center (DLR), Technische Universität München, Germany

FR1.3.3 09:00 **TROPISCAT: MULTI-TEMPORAL MULTI-POLARIMETRIC TOMOGRAPHIC IMAGING OF TROPICAL FOREST**
Dinh Ho Tong Minh, Stefano Tebaldini, Fabio Rocca, Politecnico di Milano, Italy; Clément Albinet, Pierre Borderies, Office National d'Etudes et de Recherches Aérospatiale, France; Thierry Koleck, Centre National d'Études Spatiales, France; Thuy Le Toan, Ludovic Villard, Centre d'Etudes Spatiales de la Biosphère, France

FR1.3.4 09:20 **FOREST HEIGHT ESTIMATION USING SINGLE-PASS DUAL-BASELINE L-BAND POLINSAR DATA**
Qiaoping Zhang, Yue Huang, Marcus Schwäbisch, Intermap Technologies Corp., Canada; Bryan Mercer, University of Calgary, Canada; Ming Wei, Intermap Technologies Corp., Canada

FR1.3.5 09:40 **JOINT ELECTRICAL AND HYDROLOGICAL INVERSION FOR RECONSTRUCTION OF SUBSURFACE CONTAMINANT SOURCE ZONES**
Alireza Aghasi, Itza Itza Mendoza-Sanchez, Linda Abriola, Eric Miller, Tufts University, United States

Friday, July 27 | 10:30 - 12:10 | Room 11
Session FR2.3 | Oral-Invited

Recent Advances in GNSS Reflectometry

Session Co-Chairs: Valery Zavorotny, NOAA; Adriano Camps, Universitat Politècnica de Catalunya

FR2.3.1 10:30 **HEIGHT PRECISION PREDICTION OF THE PARIS IN ORBIT DEMONSTRATOR BASED ON CRAMER-RAO BOUND ANALYSIS**
Salvatore D'Addio, European Space Agency, Netherlands; Francisco Martín, Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya, Spain; Manuel Martín-Neira, European Space Agency, Netherlands

FR2.3.2 10:50 **PARIS INTERFEROMETRIC TECHNIQUE PROOF OF CONCEPT: SEA SURFACE ALTIMETRY MEASUREMENTS**
Antonio Rius, Fran Fabra, Serni Ribó, Juan Carlos Arco, Santi Oliveras, Estel Cardellach, IEEC-CSIC, Spain; Adriano Camps, IEEC-UPC, Spain; Oleguer Nogués-Correig, SCITECH, Spain; Juha Kainulainen, Erkka Rohue, Aalto University, Finland; Manuel Martín-Neira, ESTEC-ESA, Netherlands

FR2.3.3 11:10 **SUBMETER OCEAN ALTIMETRY WITH GPS L1 C/A SIGNAL**
Hugo Carreno-Luengo, IEEC-UPC, Spain; Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya, Spain; Fran Fabra, Antonio Rius, IEEC-CSIC, Spain

FR2.3.4 11:30 **AIRBORNE WIND RETRIEVAL USING GPS DELAY-DOPPLER MAPS**
Valery Zavorotny, NOAA, United States; Nereida Rodriguez-Alvarez, Universitat Politècnica de Catalunya and IEEC CRAE/UPC, Spain; Dennis Akos, University of Colorado at Boulder, United States; Adriano Camps, Universitat Politècnica de Catalunya and IEEC CRAE/UPC, Spain

FR2.3.5 11:50 **MODELING AND SIMULATION OF BIN-BIN CORRELATIONS IN GNSS-R WAVEFORMS**
James L. Garrison, Purdue University, United States

Friday, July 27 | 13:30 - 15:10 | Room 11
Session FR3.3 | Oral-Invited

Quantitative Land Surface Composition Mapping

Session Co-Chairs: Cindy Ong, CSIRO; Sabine Chabrillat, GFZ

FR3.3.1 13:30 **SOIL DEGRADATION PROCESSES AS MONITORED BY SOIL SPECTROSCOPY AND HYPER SPECTRAL REMOTE SENSING MEANS**
Eyal Ben Dor, Tel Aviv University, Israel

FR3.3.2 13:50 **HYPERSPECTRAL SENSING OF ATHABASCA OIL SANDS**
Benoit Rivard, Jilu Feng, Michael Lipsett, University of Alberta, Canada

FR3.3.3 14:10 **REMOTE SENSING IN SUPPORT OF ENVIRONMENTAL MONITORING AND SUSTAINABLE DEVELOPMENT OF MINING REGIONS IN DESERTIFICATION AFFECTED DRYLANDS - DRAWING FROM THE EU EXPERIENCE OF DEVELOPING METHODOLOGY FOR PAN-EUROPEAN MINING WASTE INVENTORIES AND LAND DEGRADATION ASSESSMENT**
Stefan Sommer, European Commision, Joint Research Centre, Italy

FR3.3.4 14:30 **SPECTRAL CHARACTERISATION OF LAND SURFACE COMPOSITION TO DETERMINE SOIL EROSION WITHIN SEMIARID RAINFED CULTIVATED AREAS**
Thomas Schmid, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain; Alicia Palacios-Orueta, Universidad Politécnica de Madrid, Spain; Sabine Chabrillat, German Research Centre for Geosciences (GFZ), Germany; Eyal Bendor, Tel Aviv University, Israel; Antonio Plaza, University of Extremadura, Spain; Manuel Rodriguez, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain; Margarita Huesca, Universidad Politécnica de Madrid, Spain; Marta Pelayo, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain; Cristina Pascual, Universidad Politécnica de Madrid, Spain; Paula Escribano, University of Almeria, Spain; Victor Cicuendez, Universidad Politécnica de Madrid, Spain

FR3.3.5 14:50 **EFFECTS OF SPATIAL AND SPECTRAL RESOLUTION ON REMOTE SENSING FOR DISASTER RESPONSE**
Fred Kruse, Chris Clasen, Angela Kim, Sarah Carlisle, Naval Postgraduate School, United States

Friday, July 27 | 15:40 - 17:20 | Room 11
Session FR4.3 | Oral-Invited

The GEO Geohazard Supersites - Seismic Hazards and SAR Interferometry

Session Co-Chairs: Diane Evans, JPL; Wolfgang Lengert, ESA

FR4.3.1 15:40 **TERRASAR-X CONTRIBUTIONS TO GEO SUPERSITES AND SELECTED RESULTS**
Michael Eineder, Jörn Hoffmann, Christian Minet, German Aerospace Center (DLR), Germany; Mahdi Motagh, GFZ German Research Centre For Geosciences, Germany; Achim Roth, German Aerospace Center (DLR), Germany

FR4.3.2 16:00 **OBSERVATIONS OF THE 2011 TOHOKU-OKI EARTHQUAKE WITH ALOS/PALSAR**
Manabu Hashimoto, Yo Fukushima, Youichiro Takada, Kyoto University, Japan

FR4.3.3 16:20 **GEO SUPERSITES INITIATIVE AND EPOS (EUROPEAN PLATE OBSERVATORY SYSTEM)**
Wolfgang Lengert, European Space Agency, Italy; Massimo Cocco, Istituto Nazionale di Geofisica e Vulcanologia, Italy

FR4.3.4 16:40 **SOURCE MODELS FOR THE MARCH 5-9, 2011 KAMOAMOA FISSURE ERUPTION, KILAUEA VOLCANO, HAWAII, CONSTRAINED BY INSAR AND IN-SITU OBSERVATIONS**
Eric Fielding, Jet Propulsion Laboratory, California Insitute of Technology, United States

FR4.3.5 17:00 **ANALYSIS OF COSEISMIC AND POSTSEISMIC DEFORMATION USING GEO SUPERSITES INSAR DATA: EXAMPLES FROM CHILE, HAITI AND TURKEY**
Eric J. Fielding, Sang-Ho Yun, NASA Jet Propulsion Laboratory, United States; Yu-Nung Nina Lin, Mark Simons, California Institute of Technology, United States; Scott Hensley, Susan Owen, NASA Jet Propulsion Laboratory, United States

Ocean Vector Wind Sensor Applications from Research to Operation

Session Co-Chairs: Mark Bourassa, Florida State University; Paul Chang, NOAA/NESDIS

FR1.8.1 08:20 **SATELLITE OCEAN SURFACE VECTOR WIND APPLICATIONS OVERVIEW: RESEARCH AND OPERATIONS**
Paul Chang, NOAA/NESDIS, United States; Mark Bourassa, Florida State University, United States; Zorana Jelenak, NOAA/NESDIS, United States

FR1.8.2 08:40 **SPATIAL VARIABILITY OF UPWELLING ON A CONTINENTAL SHELF INFERRED FROM SATELLITE SCATTEROMETRY**
Steven Morey, The Florida State University, United States

FR1.8.3 09:00 **AN INTERCOMPARISON OF SURFACE TURBULENT HEAT FLUXES IN WARM CORE SECLUSIONS**
Mark Bourassa, Florida State University, United States

FR1.8.4 09:20 **OBSERVATIONS OF HURRICANE FORCE WINDS WITHIN EXTRATROPICAL CYCLONES USING SPACEBORNE PASSIVE AND ACTIVE MICROWAVE OCEAN WIND VECTOR MEASUREMENTS**
Zorana Jelenak, Paul Chang, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Joseph Sienkiewicz, NOAA/NWS/NCEP/OPC, United States

FR1.8.5 09:40 **RELATING OCEAN SURFACE WIND TO RAIN**
W. Timothy Liu, Wenqing Tang, Xiaosu Xie, NASA Jet Propulsion Laboratory, United States

Pléiades, a dual optical system for metric resolution observations : thematic space applications

Session Chair: Jordi Inglada, CESBIO-CNES

FR2.8.1 10:30 **THE PLÉIADES SYSTEM AND DATA DISTRIBUTION**
Benoit Boissin, Alain Gleyzes, Claire Tinel, Centre National d'Études Spatiales, France

FR2.8.2 10:50 **THE ORFEO ACOMPANIMENT PROGRAM AND ORFEO TOOLBOX**
Claire Tinel, Delphine Fontannaz, Hélène De Boissezon, Manuel Grizonnet, Julien Michel, Centre National d'Études Spatiales, France

FR2.8.3 11:10 **STUDY OF COASTAL MONITORING INDICATORS FROM PLEIADES-LIKE DATA: DETECTION OF BOATS MOORING AREAS AND COASTLINE MONITORING**
Manuel Grizonnet, Delphine Fontannaz, Centre National d'Études Spatiales, France; Guillaume Nasser, Institut de Recherche en Astrophysique et Planétologie, France; Antoine Mangin, ACRI-ST, France

FR2.8.4 11:30 **POTENTIAL OF LINEAR FEATURES DETECTION IN A MEDITERRANEAN LANDSCAPE FROM 3D VHR OPTICAL DATA: APPLICATION TO TERRACE WALLS**
Jean-Stéphane Bailly, AgroParisTech, France; Florent Levavasseur, Institut National de la Recherche Agronomique (INRA), France

FR2.8.5 11:50 **PLEIADES HR, A TOOL FOR BIODIVERSITY CONSERVATION: CASE OF COMMON HAMSTER ON THE ALSACE PLAIN**
Stéphanie Battiston, Jérôme Maxant, Paul de Fraipont, SERTIT, University of Strasbourg, France

Remote Sensing of Vegetation Fluorescence I

Session Co-Chairs: Jose Moreno, University of Valencia; Matthias Drusch, ESA

FR3.8.1 13:30 **SHINING LIGHT ON THE STRUCTURAL AND FUNCTIONAL PROPERTIES OF PLANT CANOPIES - REMOTE SENSING OF SUN-INDUCED FLUORESCENCE TO SCALE AND UNDERSTAND THE FUNCTIONAL REGULATION OF PHOTOSYNTHESIS FROM THE LEAF TO THE REGION**
Uwe Rascher, Anke Schickling, Francisco Pinto, Forschungszentrum Jülich, Germany; Alexander Damm, University of Zurich, Switzerland

FR3.8.2 13:50 **ESTIMATION OF GROSS ECOSYSTEM PRODUCTION BY HYPERSPECTRAL AND FLUORESCENCE MEASUREMENTS IN TERRESTRIAL ECOSYSTEMS**
Micol Rossini, Sergio Cogliati, University of Milano-Bicocca, Italy; Michele Meroni, Mirco Migliavacca, University of Milano-Bicocca / European Commision, Joint Research Centre, Italy; Tommaso Julitta, University of Milano-Bicocca, Italy; Edoardo Cremonese, Marta Galvagno, Agenzia Regionale per la Protezione dell'Ambiente della Valle d'Aosta, Italy; Beniamino Gioli, Franco Miglietta, Consiglio Nazionale delle Ricerche, Italy; Umberto Morra di Cella, Agenzia Regionale per la Protezione dell'Ambiente della Valle d'Aosta, Italy; Roberto Colombo, University of Milano-Bicocca, Italy

FR3.8.3 14:10 **CANOPY LEVEL CHLOROPHYLL FLUORESCENCE AND THE PRI IN A CORNFIELD**
Elizabeth Middleton, NASA, United States; Yen-Ben Cheng, Earth Resources Technology, Inc., United States; Lawrence Corp, Sigma Space Corporation, United States; Petya Campbell, Karl Huemmrich, Joint Center for Earth Technology, United States; Qingyuan Zhang, Universities Space Research Association, United States; William Kustas, USDA, United States

FR3.8.4 14:30 **EVALUATION OF GROSS PRIMARY PRODUCTION (GPP) VARIABILITY OVER SEVERAL ECOSYSTEMS IN SWITZERLAND USING SUN-INDUCED CHLOROPHYLL FLUORESCENCE DERIVED FROM APEX DATA**
Alexander Damm, Remote Sensing Laboratories, University of Zurich, Switzerland; Mathias Kneubühler, University of Zurich, Switzerland; Michael E. Schaepman, Remote Sensing Laboratories, University of Zurich, Switzerland; Uwe Rascher, Forschungszentrum Jülich, Germany

FR3.8.5 14:50 **FLEX: ESA'S EARTH EXPLORER 8 CANDIDATE MISSION**
Stefan Kraft, Umberto Del Bello, Marc Bouvet, Matthias Drusch, European Space Agency ESTEC, Netherlands; Jose Moreno, University of Valencia, Spain

Remote Sensing of Vegetation Fluorescence II

Session Co-Chairs: Matthias Drusch, ESA; Jose Moreno, University of Valencia

FR4.8.1 15:40 **MODELING CHLOROPHYLL FLUORESCENCE OBSERVATIONS FROM SPACE AND THEIR RETRIEVAL**
Wouter Verhoef, University of Twente, Netherlands; Cosimo Fortunato, Consiglio Nazionale delle Ricerche, Italy; Michele Meroni, European Commision, Joint Research Centre, Italy; Roberto Colombo, University of Milano-Bicocca, Italy; Marina Mazzoni, Consiglio Nazionale delle Ricerche, Italy

FR4.8.2 16:00 **RETRIEVAL OF VEGETATION FLUORESCENCE FROM GROUND-BASED AND AIRBORNE HIGH RESOLUTION MEASUREMENTS**
Sergio Cogliati, Roberto Colombo, Micol Rossini, University of Milano-Bicocca, Italy; Michele Meroni, European Commision, Joint Research Centre, Italy; Tommaso Julitta, Cinzia Panigada, University of Milano-Bicocca, Italy

FR4.8.3 16:20 **POTENTIAL RETRIEVAL OF BIOPHYSICAL PARAMETERS FROM FLORIS, S3-OLCI AND ITS SYNERGY**
Jochem Verrelst, Juan Pablo Rivera, Luis Alonso, University of Valencia, Spain; Rasmus Lindstrot, Freie Universität Berlin, Germany; Jose Moreno, University of Valencia, Spain

FR4.8.4 16:40 **FILLING-IN OF FAR-RED AND NEAR-INFRARED SOLAR LINES BY TERRESTRIAL AND ATMOSPHERIC EFFECTS: SIMULATIONS AND SPACE-BASED OBSERVATIONS FROM SCIAMACHY AND GOSAT**
Joanna Joiner, NASA Goddard Space Flight Center, United States; Yasuko Yoshida, Alexander Vasilkov, Science Systems and Applications, Inc., United States; Elizabeth Middleton, NASA Goddard Space Flight Center, United States; Petya Campbell, University of Maryland, Baltimore County, United States; Yukio Yoshida, National Institute for Environmental Studies, Japan; Akihiko Kuze, Japan Aerospace Exploration Agency (JAXA), Japan; Lawrence Corp, Sigma Space Corporation, United States

FR4.8.5 17:00 **RETRIEVAL AND GLOBAL ASSESSMENT OF TERRESTRIAL CHLOROPHYLL FLUORESCENCE FROM GOSAT SPACE MEASUREMENTS**
Luis Guanter, University of Oxford, United Kingdom; Christian Frankenberg, NASA Jet Propulsion Laboratory, United States; Philip Lewis, University College London, United Kingdom; Jung-Eun Lee, NASA Jet Propulsion Laboratory, United States; Christiaan Van der Tol, University of Twente, Netherlands; Jose Gomez-Dans, University College London, United Kingdom; Anu Dudhia, Don Grainger, University of Oxford, United Kingdom

Friday, July 27 | 08:20 - 10:00 | Room 12B
Session FR1.7 | Oral-Invited

Advanced Methods for Detecting and Mitigating Radio-Frequency Interference

Session Co-Chairs: Ian Adams, Naval Research Laboratory; William Blackwell, MIT Lincoln Laboratory

FR1.7.1 08:20 **ROBUST AND ADAPTIVE EXTRACTION OF RFI SIGNALS FROM ULTRA-WIDEBAND RADAR DATA**
Lam Nguyen, U.S. Army Research Laboratory, United States; Trac Tran, The Johns Hopkins University, United States

FR1.7.2 08:40 **DETECTION OF RADIO-FREQUENCY INTERFERENCE IN MICROWAVE RADIOMETERS USING SPECTRAL KURTOSIS**
Sten Schmidl Soebjaerg, Jan Svoboda, Jan Erik Balling, Niels Skou, Technical University of Denmark, Denmark

FR1.7.3 09:00 **ALTERNATIVE OPTIMIZED RADIO FREQUENCY INTERFERENCE DETECTION AND MITIGATION ALGORITHMS FOR DIGITAL RADIOMETERS**
Sidharth Misra, Sharmila Padmanabhan, Robert Jarnot, NASA Jet Propulsion Laboratory, United States

FR1.7.4 09:20 **DETECTING RFI USING MICROWAVE RADIOMETERS**
Markus Peichl, Stephan Dill, German Aerospace Center (DLR), Germany

FR1.7.5 09:40 **A LONG-TERM INVESTIGATION OF AMSR-E RADIO FREQUENCY INTERFERENCE**
Teodosio Lacava, Irina Coviello, Mariapia Faruolo, Giuseppe Mazzeo, Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Valerio Tramutoli, University of Basilicata, Italy

Friday, July 27 | 10:30 - 12:10 | Room 12B
Session FR2.7 | Oral

Land Cover, Water, and Climate

Session Chair: Liping Di, George Mason University

FR2.7.1 10:30 **THE ESA CLIMATE CHANGE INITIATIVE: MERGING BURNED AREA ESTIMATES FOR THE FIRE ESSENTIAL CLIMATE VARIABLE**
Andrew Bradley, Kevin Tansey, University of Leicester, United Kingdom; Emilio Chuvieco, University of Alcalá, Spain

FR2.7.2 10:50 **THE RELATIONSHIP BETWEEN LAND COVER AND MICRO-CLIMATES AT WEATHER OBSERVATION POINTS IN JAPAN**
Nanako Yoshinari, Shinshu University, Japan; Hikaru Ishiguro, PASCO Corporation, Japan; Naoki Takagi, Shinshu University, Japan

FR2.7.3 11:10 **GLOBAL WATER MAPPING USING MODIS TASSELED CAP INDEXES**
Nguyen Thanh Hoan, Ryutaro Tateishi, Dong Xuan Phong, Brian Johnson, Chiba University, Japan

FR2.7.4 11:30 **IMPACT OF LAND USE DYNAMICS ON STREAM FLOW: A CASE STUDY IN UPPER BHIMA BASIN, MAHARASHTRA, INDIA**
Dipak R. Samal, Shirish S. Gedam, Indian Institute of Technology, Bombay, India

FR2.7.5 11:50 **WATER FLUXES IN THE CENTRAL BRAZILIAN SAVANNA: SEASONAL PATTERNS AND LAND COVER INTERDEPENDENCIES AS OBSERVED FROM GRACE, TRMM, AND MODIS DATA**
Laerte Ferreira, Universidade Federal de Goias, Brazil; Srinivas Bettadpur, The University of Texas at Austin, United States; Michael Coe, Woods Hole Research Center, United States; Marcos Costa, Federal University of Viçosa, Brazil

Friday, July 27 | 13:30 - 15:10 | Room 12B
Session FR3.7 | Oral

Modelling for Forest Characterization

Session Chair: Richard Lucas, Aberystwyth University

FR3.7.1 13:30 **THE EFFECT OF NOISE ON MODEL INVERSION FOR THE RETRIEVAL OF FOREST STRUCTURE FROM SAR DATA**
Daniel Clewley, Richard Lucas, Aberystwyth University, United Kingdom; Mahta Moghaddam, The University of Southern California, United States; Pete Bunting, Landcare Research, New Zealand

FR3.7.2 13:50 **A STUDY OF MICROWAVE MULTIPLE SCATTERING EFFECTS IN TREES**
Qianyi Zhao, The George Washington University, United States; Cuneyt Utku, NASA Goddard Space Flight Center, United States; Roger Lang, The George Washington University, United States

FR3.7.3 14:10 **RADAR AND OPTICAL MODELLING OF FOREST REMOTE SENSING**
Clément Albinet, Pierre Borderies, Office National d'Etudes et de Recherches Aérospatiale, France

FR3.7.4 14:30 **EVALUATION THE TWO-STREAM INVERSION PACKAGE (JRC-TIP) OVER THE HAINICH FOREST FLUXNET SITE**
Bernard Pinty, European Commision, Joint Research Centre, Italy; Martin Jung, Max Planck Institute for Biogeochemistry, Germany; Thomas Kaminski, FastOpt, Germany; Thomas Lavergne, Center for Ocean and Sea Ice, Norway; Martina Mund, Georg-August University Göttingen, Germany; Stephen Plummer, European Space Agency, United Kingdom; Eric Thomas, Max Planck Institute for Biogeochemistry, Germany; Jean-Luc Widlowski, European Commision, Joint Research Centre, Italy

FR3.7.5 14:50 **FIRST RESULTS OF QUANTIFYING NONLINEAR MIXING EFFECTS IN HETEROGENEOUS FORESTS: A MODELING APPROACH**
Laurent Tits, Ward Delabastita, Katholieke Universiteit Leuven, Belgium; Ben Somers, Institute for Technological Research, Belgium; Jamshid Farifteh, Pol Coppin, Katholieke Universiteit Leuven, Belgium

Friday, July 27 | 15:40 - 17:20 | Room 12B
Session FR4.7 | Oral-Invited

Recent Advances in Radiometric Calibration Techniques

Session Chair: Georgi Georgiev, Sigma Space Corp.

FR4.7.1 15:40 **EARLY ASSESSMENT OF VIIRS ON-ORBIT CALIBRATION AND SUPPORT ACTIVITIES**
Xiaoxiong Xiong, NASA Goddard Space Flight Center, United States; Kwofu Chiang, Jeffrey McIntire, Hassan Oudrari, Aisheng Wu, Sigma Space Corporation, United States; Mathew Schwaller, James J. Butler, NASA Goddard Space Flight Center, United States

FR4.7.2 16:00 **METHOD OF COMPARING CERES AND SCARAB 3 MEASUREMENTS**
G. Louis Smith, Z. Peter Szewczyk, Science Systems and Applications, Inc., United States; Kory J. Priestley, Langley Research Centre, NASA, United States; Remy Roca, École Polytechnique, France

FR4.7.3 16:20 **RF-EXCITED PLASMA LAMPS FOR USE AS SOURCES IN INTEGRATING SPHERES FOR OPTICAL CALIBRATION**
Angelo Arecchi, Chris Durell, Joe Jablonski, Greg McKee, Labsphere, Inc., United States

FR4.7.4 16:40 **ICE CONTAMINATION OF METEOSAT/SEVIRI IR13.4 CHANNEL IMPLIED BY INTER-CALIBRATION AGAINST METOP/IASI**
Tim Hewison, Johannes Mueller, EUMETSAT, Germany

FR4.7.5 17:00 **FIELD CALIBRATION OF AIRBORNE SENSORS**
Charles Gatebe, Universities Space Research Association (USRA), United States; John Cooper, Sigma Space Corporation, United States; Matthew Kowalewski, USRA, United States; Rajesh Poudyal, Kent McCullough, Science Systems and Applications, Inc., United States

Synergy of Spaceborne EO Products to Map the Essential Climate Variable Biomass I

Session Co-Chairs: Christiane Schmullius, Friedrich-Schiller University; Wayne Walker, Woods Hole Research Centre

FR1.12.1 08:20 **COMPARISON OF SPACE-BASED TECHNOLOGIES FOR MEASURING BIOMASS: THE ROAD TO THE BIOMASS MISSION**
Shaun Quegan, University of Sheffield, United Kingdom; Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France

FR1.12.2 08:40 **METHODOLOGY TO BENCHMARK FOREST CARBON STOCKS**
Sassan Saatchi, NASA Jet Propulsion Laboratory, United States

FR1.12.3 09:00 **MAPPING FOREST CARBON IN NORTH AMERICA FROM OPTICAL/RADAR DATA FUSIION**
Josef M. Kellndorfer, Wayne S. Walker, Oliver Cartus, Tina Cormier, Jesse Bishop, Greg Fiske, Woods Hole Research Center, United States; Elizabeth LaPoint, U.S. Forest Service, United States

FR1.12.4 09:20 **ABOVEGROUND BIOMASS DERIVED FROM MULTI-SENSOR SATELLITE DATA AND FIELD MEASUREMENTS**
Alessandro Baccini, The Woods Hole Research Center, United States; Wayne S. Walker, Woods Hole Research Center, United States; Claudia M. Stickler, IPAM, United States; Josef M. Kellndorfer, Scott J. Goetz, Nadine Laporte, The Woods Hole Research Center, United States

FR1.12.5 09:40 **PAN-BOREAL MAPPING OF FOREST GROWING STOCK VOLUME USING HYPER-TEMPORAL ENVISAT ASAR SCANSAR BACKSCATTER DATA**
Maurizio Santoro, Gamma Remote Sensing, Switzerland; Christiane Schmullius, Carsten Pathe, Julian Schwilk, Friedrich-Schiller-Universität Jena, Germany

Synergy of Spaceborne EO Products to Map the Essential Climate Variable Biomass II

Session Co-Chairs: Wayne Walker, Woods Hole Research Centre; Christiane Schmullius, Friedrich-Schiller University

FR2.12.1 10:30 **MAPPING GLOBAL FOREST CANOPY HEIGHT USING ICESAT/GLAS, MODIS, ALOS/PALSAR AND ENVIRONMENTAL VARIABLES**
Marc Simard, NASA Jet Propulsion Laboratory, United States; Naiara Pinto, University of Maryland, United States; Bruce Chapman, NASA Jet Propulsion Laboratory, United States

FR2.12.2 10:50 **COMBINED ANALYSIS OF SATELLITE LIDAR AND RADAR DATA FOR CHARACTERIZING THREE-DIMENSIONAL FOREST STRUCTURE IN THURINGIAN FOREST, GERMANY**
Claudia Hilbert, Nicolas Ackermann, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

FR2.12.3 11:10 **ASSESSMENT AND MONITORING OF SIBERIAN FOREST RESOURCES IN THE FRAMEWORK OF THE EU-RUSSIA ZAPÁS PROJECT**
Christian Hüttich, Christiane Schmullius, Christian Thiel, Friedrich-Schiller-Universität Jena, Germany; Sergey Bartalev, Space Research Institute Moscow, Russian Federation; Kirill Emelyanov, Joint Stock Company, Russian Space Systems, Moscow, Russian Federation; Michael Korets, Sukachev Institute of Forest Krasnoyarsk, Russian Federation; Anatoly Shvidenko, Dmitry Schepaschenko, International Institute for Applied System Analysis Laxenburg, Austria

FR2.12.4 11:30 **ON THE POTENTIAL FOR CARBON SEQUESTRATION IN AUSTRALIA'S URBAN FOREST FOR THE NEXT DECADE**
Sandra Rech, Wellington Shire Council, Australia; Tom Schut, Robert Corner, Curtin University, Australia

FR2.12.5 11:50 **ESTIMATION OF CO2 REDUCTION AMOUNT BY ARID LAND AFFORESTATION IN WESTERN AUSTRALIA**
Hideki Suganuma, Seikei University, Japan; Yasuyuki Egashira, Osaka University, Japan; Hajime Utsugi, Forestry and Forest Product Research Institute, Japan; Toshinori Kojima, Seikei University, Japan

Earth Observation for Public Health I

Session Co-Chairs: Shilei Lu, Department of Development Planning and Assets Management, State Forestry Administration; Yong Xue, Chinese Academy of Sciences

FR3.12.1 13:30 **EPIDEMIC ANALYSIS AND VISUALIZATION BASED ON DIGITAL EARTH SPATIO-TEMPORAL FRAMEWORK**
Jingnong Weng, Beihang University, China; Yunfei Xu, Institute of Remote Sensing Applications, CAS, China; Ananta Raj Sharma, Beihang University, China

FR3.12.2 13:50 **SCHISTOSOMIASIS RISK ASSESSMENT FROM SPACE USING HIGH RESOLUTION RAPID EYE DATA**
Yvonne Walz, Martin Wegmann, Stefan Dech, University of Wuerzburg, Germany

FR3.12.3 14:10 **MAPPING SCHISTOSOMIASIS MANSONI IN THE STATE OF MINAS GERAIS, BRAZIL, USING SPATIAL REGRESSION**
Fernanda Fonseca, Corina da Costa Freitas, Luciano Dutra, National Institute for Space Research (INPE), Brazil

FR3.12.4 14:30 **DETECTION OF FOREST DISTURBANCE IN THE GREATER HINGGAN MOUNTAIN OF CHINA BASED ON LANDSAT TIME-SERIES DATA**
Wei Chen, Tetsuro Sakai, Kyoto University, Japan; Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Kazuyuki Moriya, Lina Koyama, Kyoto University, Japan

FR3.12.5 14:50 **HEALTH ASSESSMENT OF THE WATER-LEVEL-FLUCTUATION ZONE (WLFZ) IN THE THREE GORGES AREA BASED ON SPATIAL INFORMATION TECHNOLOGY**
Rong Tian, Chunxiang Cao, Huicong Jia, Min Xu, Haibing Xiang, Remote Sensing Applications, CAS, China; Guangchun Lei, Beijing Forestry University, China; Kun Tian, Southwest Forestry University, China; Jingnong Weng, Beihang University, China; Hanghe Cao, Experimental Primary School of Beijing Normal Universtiy, China

Earth Observation for Public Health II

Session Chair: Chunxiang Cao, Institute of Remote Sensing Applications, Chinese Academy of Sciences

FR4.12.1 15:40 **RESEARCH ON THE ENVIRONMENTAL IMPACT FACTORS OF HAND-FOOT-MOUTH DISEASE IN SHENZHEN, CHINA USING RS AND GIS TECHNOLOGIES**
Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Guanghe Li, Beijing University of Technology, China; Sheng Zheng, Institute of Remote Sensing Applications, CAS/ Graduate University, CAS, China; Jinquan Cheng, Shenzhen Center for Disease Control and Prevention, China; Guangchun Lei, Beijing Forestry University, China; Kun Tian, Southwest Forestry University, China; Yongsheng Wu, Xu Xie, Shenzhen Center for Disease Control and Prevention, China; Min Xu, Wei Ji, Institute of Remote Sensing Applications, CAS, China

FR4.12.2 16:00 **THE RISK ANALYSIS FOR INFECTIOUS DISEASE OUTBREAKS IN FLOOD DISASTER BASED ON SPATIAL INFORMATION TECHNOLOGIES**
Peera Yomwan, Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Preesan Rakwatin, Pakorn Apaphant, Geo-Informatics and Space Technology Development Agency, Thailand

FR4.12.3 16:20 **ESTIMATION OF TREE HEIGHTS USING REMOTE SENSING DATA AND AN ALLOMETRIC SCALING AND RESOURCE LIMITATIONS (ASRL) MODEL**
Xiliang Ni, Institute of Remote Sensing Applications, CAS, China; Yuli Shi, Nanjing University of Information Science and Technology, China; Sungho Choi, Boston University, United States; Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Ranga B. Myneni, Boston University, United States

FR4.12.4 16:40 **MALAREO - EARTH OBSERVATION TO SUPPORT MALARIA CONTROL IN SOUTHERN AFRICA**
Ides Bauwens, EUROSENSE, Belgium; Jonas Franke, Remote Sensing Solutions GmbH, Germany; Michael Gebreslasie, University of KwaZulu-Natal, South Africa

FR4.12.5 17:00 **PREDICTING THE ADAPTABILITY OF SUDDEN OAK DEATH IN CHINA USING SPATIAL INFORMATION TECHNOLOGY**
Cheng Liu, Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Jianlong Zhang, The State Forestry Administration, China; Aiguo Ma, Forest Pest Control Station, the State Forestry Administration, China; Wei Chen, Kyoto University, Japan; Min Xu, Institute of Remote Sensing Applications, CAS, China; Tetsuro Sakai, Kyoto University, Japan

Friday, July 27 | 08:20 - 10:00 | Room 13B
Session FR1.15 | Oral-Invited

Superresolution and Sub-pixel Classification for Hyperspectral Imagery

Session Co-Chairs: Jonathan Chan, Vrije Universiteit Brussel; Jocelyn Chanussot, Grenoble Institute of Technology

FR1.15.1 08:20 **HYPERSPECTRAL IMAGERY SUPER-RESOLUTION BY IMAGE FUSION AND COMPRESSED SENSING**
Yongqiang Zhao, yaozhong Yang, Qingyong Zhang, Jinxiang Yang, Jie Li, Northwestern Polytechnical University, China

FR1.15.2 08:40 **RESEARCH ON IMAGE RECONSTRUCTION BASED AND PIXEL UNMIXING BASED SUB-PIXEL MAPPING METHODS**
Liangpei Zhang, Xiong Xu, Jie Li, Huanfeng Shen, Yanfei Zhong, Xin Huang, Wuhan University, China

FR1.15.3 09:00 **LOCAL LINEAR SPECTRAL UNMIXING VIA CLUSTER ANALYSIS AND NON-NEGATIVE MATRIX FACTORIZATION FOR HYPERSPECTRAL (CHRIS/PROBA) IMAGERY**
Cosmin Lazar, Luca Demarchi, David Steenhoff, Jonathan Cheung-Wai Chan, Ann Nowé, Hichem Sahli, Vrije Universiteit Brussel, Belgium

FR1.15.4 09:20 **SUPERRESOLUTION RECONSTRUCTION OF HYPERSPECTRAL REMOTE SENSING IMAGERY USING CONSTRAINED OPTIMIZATION OF POCS**
Jianglin Ma, Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

FR1.15.5 09:40 **SPARSE MODELING FOR HYPERSPECTRAL IMAGERY WITH LIDAR DATA FUSION FOR SUBPIXEL MAPPING**
Alexey Castrodad, University of Minnesota, United States; Timothy Khuon, Robert Rand, National Geospatial-Intelligence Agency, United States; Guillermo Sapiro, University of Minnesota, United States

Friday, July 27 | 10:30 - 12:10 | Room 13B
Session FR2.15 | Oral-Invited

Long Term Preservation on Earth Observation Data: Cooperation Activities and Applications

Session Co-Chairs: Mirko Albani, European Space Agency; Katrin Molch, German Aerospace Center - DLR

FR2.15.1 10:30 **LONG TERM PRESERVATION OF EARTH OBSERVATION DATA: THE CHALLENGE AND THE COOPERATION ACTIVITIES**
Mirko Albani, European Space Agency, Italy

FR2.15.2 10:50 **USER NEEDS AND REQUIREMENTS IMPACTING THE LONG TERM PRESERVATION OF EARTH OBSERVATION DATA**
Katrin Molch, German Aerospace Center (DLR), Germany; Rosemarie Leone, Mirko Albani, European Space Agency ESRIN, Italy; Eberhard Mikusch, German Aerospace Center (DLR), Germany

FR2.15.3 11:10 **INTEROPERABILITY AND STANDARDIZATION ASPECTS IN THE DATA PRESERVATION DOMAIN**
Esther Conway, Spiros Ventouras, Science and Technology Facilities Council, United Kingdom; Mirko Albani, Rosemarie Leonie, European Space Agency ESRIN, Italy

FR2.15.4 11:30 **LTDP IMPLEMENTATION CASE: THE ESA ERS SAR WAVE MODE ARCHIVE AT IFREMER**
Jean-Francois Piollé, Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Rosemarie Leone, Peggy Fischer, European Space Agency, Italy

FR2.15.5 11:50 **LTDP STATUS AND PLAN FOR JAXA'S EARTH OBSERVATION SATELLITE DATA**
Satoko Miura, Mitsuhiko Fuda, Ryoichi Miyagawa, Japan Aerospace Exploration Agency (JAXA), Japan

Friday, July 27 | 13:30 - 15:10 | Room 13B
Session FR3.15 | Oral-Invited

Land Remote Sensing Data Assimilation: Where are we?

Session Co-Chairs: Alexander Loew, Max-Planck-Institute for Meteorology, Hamburg, Germany; Valentijn Pauwels, Laboratory of Hydrology and Water Management, Ghent University, Ghent, Belgium

FR3.15.1 13:30 **LAND SURFACE DATA ASSIMILATION - A HISTORICAL PERSPECTIVE**
Dara Entekhabi, MIT Lincoln Laboratory, United States

FR3.15.2 13:50 **ADVANCES IN ASSIMILATION OF SATELLITE-BASED PASSIVE MICROWAVE OBSERVATIONS FOR SOIL MOISTURE ESTIMATION**
Gabriëlle De Lannoy, Ghent University & Global Modeling / NASA Goddard Space Flight Center, Belgium; Rolf Reichle, Clara Draper, Randal Koster, Qing Liu, NASA Goddard Space Flight Center, United States; Alok Sahoo, Princeton University, United States; Valentijn Pauwels, Ghent University & Global Modeling, Belgium

FR3.15.3 14:10 **JOINT ASSIMILATION OF REMOTE SENSING-DERIVED WATER STAGE AND SOIL MOISTURE DATA INTO COUPLED HYDROLOGICAL-HYDRAULIC MODELS**
Patrick Matgen, Laura Giustarini, Renaud Hostache, Centre de Recherche Public - Gabriel Lippmann, Luxembourg; Douglas Plaza Guingla, Valentijn Pauwels, Niko Verhoest, Ghent University, Belgium

FR3.15.4 14:30 **OPERATIONAL LAND SURFACE DATA ASSIMILATION - THE NWP EXAMPLE**
Patricia de Rosnay, Lars Isaksen, Gianpaolo Balsamo, Clément Albergel, Joaquín Muñoz Sabater, ECMWF, United Kingdom

FR3.15.5 14:50 **PARTICLE MARKOV CHAIN MONTE CARLO SIMULATION: THEORY, CONCEPTS AND APPLICATIONS**
Jasper Vrugt, University of California, Irvine, United States

Friday, July 27 | 15:40 - 17:20 | Room 13B
Session FR4.15 | Oral-Invited

Machine Learning Meets New Remote Sensing Applications

Session Co-Chairs: Devis Tuia, École Polytechnique Fédérale de Lausanne; Gustavo Camps-Valls, University of Valencia

FR4.15.1 15:40 **THE BILLION PIXELS CHALLENGE: SCALING MACHINE LEARNING TOWARD LARGE IMAGE SETS**
Giovanni Marchisio, Krzysztof Koperski, Carsten Tusk, Chuck Chaapel, Pierre Izard, Kathleen Johnson, Chris Padwick, Vic Leonard, Michael Keaney, DigitalGlobe, Inc., United States

FR4.15.2 16:00 **IMAGE FUSION AND SPECTRAL UNMIXING OF HYPERSPECTRAL IMAGES FOR SPATIAL IMPROVEMENT OF CLASSIFICATION MAPS**
Giorgio Antonino Licciardi, INPG, France; Alberto Villa, Aesys, Italy; Muhammad Murtaza Khan, SEECS, Pakistan; Jocelyn Chanussot, INPG, France

FR4.15.3 16:20 **CONSENSUAL CLUSTERING FOR LAND COVER MAPPING**
Marine Campedel, Ivan Kyrgyzov, Télécom ParisTech, France

FR4.15.4 16:40 **ASSOCIATIVE MEMORY TECHNIQUES FOR THE EXPLOITATION OF REMOTE SENSING DATA IN THE MONITORING OF VOLCANIC EVENTS**
Matteo Picchiani, Fabio Del Frate, Tor Vergata University of Rome, Italy; Alessandro Piscini, Marco Chini, Stefano Corradini, Luca Merucci, Salvatore Stramondo, Istituto Nazionale di Geofisica e Vulcanologia, Italy

FR4.15.5 17:00 **ON THE INFLUENCE OF SPATIAL SCALE ON THE ACCURACY OF SUPPORT VECTOR REGRESSION MODELS FROM SYNTHETICALLY MIXED SPECTRAL LIBRARIES**
Akpona Okujeni, Sebastian van der Linden, Andreas Rabe, Maria Cierpinski, Patrick Hostert, Humboldt-Universität zu Berlin, Germany

Friday, July 27 | 08:20 - 10:00 | Room 14A
Session FR1.5 | Oral-Invited

HyspIRI: Climate Science from Global Imaging Spectroscopy and Multi-Spectral Thermal Measurements

Session Co-Chairs: Robert Green, JPL-Caltech; Simon Hook, NASA/JPL

FR1.5.1 08:20 **A UNIQUE ROLE FOR HYSPIRI IN DYNAMICAL GLOBAL VEGETATION MODELS**
Jose Moreno, University of Valencia, Spain

FR1.5.2 08:40 **SURFACE REFLECTANCE AND EMISSIVITY, A KEY FOR UNDERSTANDING THE EFFECTS OF URBAN EXPANSION ON ECOSYSTEM FUNCTION, DIVERSITY AND LOCAL CLIMATE**
Petya Campbell, University of Maryland, Baltimore County/JCET and NASA Goddard Space Flight Center, United States; Alexandra Anderson-Frey, McGill University, Canada; Kurtis Thome, Elizabeth Middleton, NASA Goddard Space Flight Center, United States

FR1.5.3 09:00 **MONITORING WATER AND CARBON FLUXES AT FINE SPATIAL SCALES USING HYSPIRI-LIKE MEASUREMENTS**
Rasmus Houborg, European Commision, Joint Research Centre, Italy; Martha Anderson, Feng Gao, Mitchell Schull, Carmelo Cammalleri, USDA, United States

FR1.5.4 09:20 **ON THE RELATIONSHIP BETWEEN NOMINAL LIGHT USE EFFICIENCY AND LEAF CHLOROPHYLL**
Mitchell Schull, Martha Anderson, USDA, United States; Rasmus Houborg, European Commision, Joint Research Centre, Italy; William Kustas, USDA, United States

FR1.5.5 09:40 **RADIATIVE FORCING BY LIGHT-ABSORBING IMPURITIES IN MOUNTAIN SNOW AND ICE FROM HYSPIRI MEASUREMENTS**
Thomas Painter, Felix Seidel, NASA Jet Propulsion Laboratory, United States; Sara McKenzie Skiles, University of California, Los Angeles, United States; Ann Bryant, University of Utah, United States

Friday, July 27 | 10:30 - 12:10 | Room 14A
Session FR2.5 | Oral-Invited

Hyperspectral Vegetation Mapping I - Forests and Natural Areas

Session Chair: Henning Buddenbaum, University of Trier

FR2.5.1 10:30 **FOREST APPLICATIONS WITH HYPERSPECTRAL IMAGING**
David Goodenough, University of Victoria, Canada; Hao Chen, Pacific Forestry Centre, Canada; Piper Gordon, K. Olaf Niemann, Geoff Quinn, University of Victoria, Canada

FR2.5.2 10:50 **ASSESSING FOREST PARAMETERS BY RADIATIVE TRANSFER MODELLING**
Andres Kuusk, Tartu Observatory, Estonia

FR2.5.3 11:10 **HYPERSPECTRAL INDICES AND FOREST CHARACTERISTICS**
Guerric Le Maire, CIRAD, France

FR2.5.4 11:30 **MAPPING MANGROVE CHLOROPHYLL AND NITROGEN CONTENT AS AN INDICATOR OF FOREST DEGRADATION USING AIRBORNE HYPERSPECTRAL IMAGES.**
Martin Schlerf, Public Research Centre Gabriel Lippmann, Luxembourg; Andrew K. Skidmore, Anas Fauzi, Loise Wandera, Christoffer Axelsson, Wouter Verhoef, University of Twente - ITC, Netherlands

FR2.5.5 11:50 **EFFECTS OF TREE CROWN DELINEATION IN INDIVIDUAL TREE SPECIES CLASSIFICATION WITH HYPERSPECTRAL AND LIDAR DATA**
Michele Dalponte, IASMA Research and Innovation Centre, Fondazione E. Mach, Italy; Hans Ole Ørka, Liviu Theodor Ene, Terje Gobakken, Norwegian University of Life Sciences, Norway; Damiano Gianelle, IASMA Research and Innovation Centre, Fondazione E. Mach, Italy; Erik Næsset, Norwegian University of Life Sciences, Norway

Friday, July 27 | 13:30 - 15:10 | Room 14A
Session FR3.5 | Oral-Invited

Hyperspectral Vegetation Mapping II – Agricultural Applications

Session Co-Chairs: Heike Bach, Vista GmbH; Tobias Hank, LMU Munich

FR3.5.1 13:30 **HOW SPECTROSCOPY FROM SPACE WILL SUPPORT WORLD AGRICULTURE**
Wolfram Mauser, Ludwig-Maximilians-Universität München, Germany; Heike Bach, VISTA GmbH, Germany; Tobias Hank, Florian Zabel, Birgitta Putzenlechner, Ludwig-Maximilians-Universität München, Germany

FR3.5.2 13:50 **TYPICAL LENGTH SCALE MAPPING OF LAND-ATMOSPHERE PROCESSES USING SPECTROSCOPY**
Michael E. Schaepman, Alexander Damm, Rogier de Jong, Valerie Laurent, Felix Morsdorf, Michael Jehle, Mathias Kneubühler, University of Zurich, Switzerland

FR3.5.3 14:10 **MODELING HYPERSPECTRAL OBSERVATIONS OF SOIL-VEGETATION OBJECTS FROM SPACE**
Wouter Verhoef, University of Twente, Netherlands

FR3.5.4 14:30 **OPTIMIZING LUT-BASED RADIATIVE TRANSFER MODEL INVERSION FOR RETRIEVAL OF BIOPHYSICAL PARAMETERS USING HYPERSPECTRAL DATA**
Jochem Verrelst, Juan Pablo Rivera, University of Valencia, Spain; Anna Leonenko, Swansea University, United Kingdom; Luis Alonso, Jose Moreno, University of Valencia, Spain

FR3.5.5 14:50 **THE ADDITIONAL VALUE OF HYPERSPECTRAL DATA FOR SMART FARMING**
Silke Migdall, Philipp Klug, VISTA GmbH, Germany; Antoine Denis, University of Liège, Belgium; Heike Bach, VISTA GmbH, Germany

Friday, July 27 | 15:40 - 17:20 | Room 14A
Session FR4.5 | Oral-Invited

Hyperspectral Remote Sensing in Shallow Waters

Session Co-Chairs: Peter Gege, German Aerospace Center - DLR, Institut für Methodik der Fernerkundung; Nicole Pinnel, German Aerospace Center - DLR

FR4.5.1 15:40 **COMBINING HYPERSPECTRAL REMOTE SENSING, SPATIAL MODELLING AND GIS FOR SPATIAL PLANNING AND ENVIRONMENTAL MONITORING OF SHALLOW COASTAL WATERS**
Tiit Kutser, Jonne Kotta, Ele Vahtmäe, Kristjan Herkül, University of Tartu, Estonia

FR4.5.2 16:00 **CHANGES IN SUBMERGED MACROPHYTE COMMUNITIES IN SOUTHERN LAKE GARDA IN THE LAST 14-YEARS**
Claudia Giardino, Mariano Bresciani, National Research Council of Italy, Italy; Rossano Bolpagni, Parma University, Italy; Erica Matta, Federica Braga, National Research Council of Italy, Italy

FR4.5.3 16:20 **HYPERSPECTRAL REMOTE SENSING OF CORAL REEFS: INVERSION, CLASSIFICATION, AND MODELING ECOSYSTEM FUNCTION**
Eric Hochberg, Bermuda Institute of Ocean Sciences, Bermuda

FR4.5.4 16:40 **OCEAN COLOR REMOTE SENSING OF SEAGRASS MEADOWS IN SAINT JOSEPH'S BAY, FLORIDA, BY HYPERSPECTRAL AIRBORNE IMAGERY.**
Victoria Hill, Richard Zimmerman, Old Dominion University, United States; W. Paul Bissett, Florida Environmental Research Institute, United States; Heidi Dierssen, University of Connecticut, United States; David Kohler, WeoGeo, Inc., United States

FR4.5.5 17:00 **ASSESSING CHLOROPHYLL PATTERNS IN TIDAL TRIBUTARY STREAMS AND RIVERS AND IN ESTUARY TO NEAR SHORE TRANSITION ZONES**
John Schalles, John Olley, John O'Donnell, Creighton University, United States; Christine Hladik, University of Georgia, United States

Friday, July 27 | 08:20 - 10:00 | Room 14B
Session FR1.13 | Oral-Invited

Novelty Detection and One-class Classification

Session Co-Chairs: Diego Fernandez Prieto, ESA; Lorenzo Bruzzone, University of Trento

FR1.13.1 08:20 **SEMI-SUPERVISED AND UNSUPERVISED NOVELTY DETECTION USING NESTED SUPPORT VECTOR MACHINES**
Frank de Morsier, École Polytechnique Fédérale de Lausanne, Switzerland; Maurice Borgeaud, European Space Agency, Italy; Christoph Küchler, RUAG Schweiz AG, Switzerland; Volker Gass, Jean-Philippe Thiran, École Polytechnique Fédérale de Lausanne, Switzerland

FR1.13.2 08:40 **DISCOVERING SINGLE CLASSES IN REMOTE SENSING IMAGES WITH ACTIVE LEARNING**
Mirco Furlani, University of Trento, Italy; Devis Tuia, EPFL Lausanne, Switzerland; Jordi Munoz-Mari, Universidad de Valencia, Spain; Francesca Bovolo, University of Trento, Italy; Gustavo Camps-Valls, Universidad de Valencia, Spain; Lorenzo Bruzzone, University of Trento, Italy

FR1.13.3 09:00 **A NOVEL APPROACH TO TARGETED LAND-COVER CLASSIFICATION OF REMOTE-SENSING IMAGES**
Mattia Marconcini, Diego Fernández-Prieto, European Space Agency, Italy

FR1.13.4 09:20 **GPU-ACCELERATED ONE-CLASS SVM FOR EXPLORATION OF REMOTE SENSING DATA**
Fabien Giannesini, Bertrand Le Saux, Office National d'Etudes et de Recherches Aérospatiale - The French Aerospace Lab, France

FR1.13.5 09:40 **INCLUDING INVARIANCES IN SVM REMOTE SENSING IMAGE CLASSIFICATION**
Emma Izquierdo-Verdiguier, Universistat de València, Spain; Valero Laparra, Universitat de Valencia, Spain; Luis Gómez-Chova, Gustavo Camps-Valls, Universistat de València, Spain

Friday, July 27 | 10:30 - 12:10 | Room 14B
Session FR2.13 | Oral-Invited

Education, Training and Capacity Building in Remote Sensing - Global and Regional Programmes

Session Chair: Premysl Stych, Charles University

FR2.13.1 10:30 **UNITED NATIONS (UNESCO) NETWORK OF SPACE PARTNERS EDUCATIONAL ACTIVITIES ON THE USE OF SPACE TECHNOLOGIES FOR HERITAGE SITES.**
Mario Hernandez, United Nations UNESCO, France; Francesco Sarti, European Space Agency, Italy

FR2.13.2 10:50 **EDUCATION AND CAPACITY BUILDING IN EARTH OBSERVATION FOR WATER-RELATED APPLICATIONS IN EMERGING ECONOMIES**
Zoltán Vekerdy, Zhongbo Su, Chris M.M. Mannaerts, Arno M. van Lieshout, Ben H.P. Maathuis, University of Twente, Netherlands

FR2.13.3 11:10 **EARTH OBSERVATION CAPACITY BUILDING ACTIVITIES – THE CZECH REPUBLIC CASE STUDY**
Premysl Stych, Lucie Kupková, Charles University, Czech Republic; Francesco Sarti, European Space Agency, Italy; Garik Gutman, NASA, United States

FR2.13.4 11:30 **NEW RUSSIAN EDUCATIONAL PROGRAM FOR ENGINEER TRAINING IN THE FIELD OF RADAR AND REMOTE SENSING**
Liudmila Sharygina, German Sharygin, Tomsk State University of Control Systems and Radioelectronics, Russian Federation

FR2.13.5 11:50 **REMOTE SENSING TRAINING IN SCIENTIFIC MASTER IN FRANCE AND AFRICA : EDUCATIONAL CHOICES ACCORDING TO STUDENTS' ACADEMIC INITIAL TRAINING AND FIRST DISTANCE LEARNING FEEDBACK IN CAMEROON**
Jean-Paul Rudant, Université Paris-Est Marne la Vallée, France; Pascal Barbier, Olivier de Joinville, ENSG / IGN, France; Beaudoin Michel, Université de Kinshasa, Democratic Republic of the Congo; Joseph Mvogo, Université de Douala, Cameroon; David Niamien, Université de Paris Est, France; Solofo Rakotondraompiana, Universite de Tananarive, Madagascar; Bernard Riera, Centre National de la Recherche Scientifique,

Friday, July 27 | 13:30 - 15:10 | Room 14B
Session FR3.13 | Oral-Invited

Education, Training and Capacity Building in Remote Sensing - Tools and Software

Session Co-Chairs: Val Byfield, Southampton Oceanography Centre; Eric Pottier, Université de Rennes 1

FR3.13.1 13:30 **BILKO AND AFRICAN CAPACITY DEVELOPMENT IN COASTAL AND MARINE REMOTE SENSING**
Valborg Byfield, National Oceanography Centre, United Kingdom; Stewart Bernard, Centre for Scientific and Industrial Research (CSIR), South Africa; Malcolm Dobson, Scotland-on-Line, United Kingdom; Alasdair J. Edwards, University of Newcastle, United Kingdom; Deon C. Louw, Ministry of Fisheries and Marine Resources, Namibia; Benedicta O. Mbu Oben, University of Buea, Cameroon; Ian S. Robinson, University of Southampton, United Kingdom; Yohanna Shaghude, University of Dar es Salaam, United Republic of Tanzania; Christo Whittle, University of Cape Town, South Africa

FR3.13.2 13:50 **AN E-TUTOR AND A VIRTUAL LABORATORY FOR SATELLITE IMAGE PROCESSING AND ANALYSIS**
Krishna Mohan Buddhiraju, Krishna Kumar Tiwari, Laxmi Narayana Eeti, Anubhooti Choubey, Adib Parkar, Indian Institute of Technology, Bombay, India

FR3.13.3 14:10 **POLSARPRO V5.0: AN ESA EDUCATIONAL TOOLBOX USED FOR SELF-EDUCATION IN THE FIELD OF POLSAR AND POL-INSAR DATA ANALYSIS**
Eric Pottier, Laurent Ferro-Famil, IETR UMR CNRS 6164, France

FR3.13.4 14:30 **OCEAN COLOUR AND LAND REMOTE SENSING TRAINING USING BEAM**
Ana Ruescas, Carsten Brockmann, Kerstin Stelzer, Norman Fomferra, Jasmin Geissler, Brockmann Consult GmbH, Germany

FR3.13.5 14:50 **A GLOBAL EARTH OBSERVATION DATA DISCOVERY SYSTEM - THE CEOS WGISS INTEGRATED CATALOG**
Liping Di, Yuqi Bai, Yuanzheng Shao, Huilin Wang, Lingjun Kang, George Mason University, United States; Archie Warnock, A/WWW Enterprises, United States; Martin Yapur, NOAA Satellites and Information Service, United States; Yonsook Enloe, Columbus Technologies and Services Inc, United States

Friday, July 27 | 15:40 - 17:20 | Room 14B
Session FR4.13 | Oral-Invited

Education, Training and Capacity Building in Remote Sensing - Space Agencies

Session Co-Chairs: Francesco Sarti, ESA; Dieter Hausamann, German Aerospace Center - DLR

FR4.13.2 16:00 **TERR'IMAGES: A CNES PROJECT USING PLEIADES IMAGERY FOR SECONDARY SCHOOLS**
Michel Vauzelle, Centre National d'Etudes Spatiales, France

FR4.13.3 16:20 **TOWARDS HUMAN CAPITAL DEVELOPMENT AND SCIENCE ADVANCEMENT IN EARTH OBSERVATION: CONTRIBUTIONS OF THE SOUTH AFRICAN NATIONAL SPACE AGENCY**
Paidamwoyo Mhangara, South African National Space Agency, South Africa

FR4.13.4 16:40 **PRACTICAL SCIENCE EDUCATION IN REMOTE SENSING AT THE DLR_SCHOOL_LAB OBERPFAFFENHOFEN**
Matthias Locherer, Ludwig-Maximilians-Universität München, Germany; Dieter Hausamann, Tobias Schuettler, German Aerospace Center (DLR), Germany

FR4.13.5 17:00 **ESA ACTIVITIES AND STRATEGY IN EDUCATION, TRAINING AND CAPACITY BUILDING FOR REMOTE SENSING FROM SPACE**
Francesco Sarti, Yves-Louis Desnos, Diego Fernández-Prieto, Pierre-Philippe Mathieu, Antonios Mouratidis, European Space Agency, Italy

Friday, July 27 | 08:20 - 10:00 | Room 14C

Session FR1.1 | Oral

Airborne SAR and InSAR I

Session Co-Chairs: Lars Ulander, FOI; Michael Schmitt, TUM

FR1.1.1 08:20 **ULTRA-HIGH RESOLUTION AIRBORNE SAR IMAGING OF VEGETATION AND MAN-MADE OBJECTS BASED ON 40% RELATIVE BANDWIDTH IN X-BAND**
Andreas R. Brenner, Fraunhofer-FHR, Germany

FR1.1.2 08:40 **ADAPTIVE MULTILOOKING OF AIRBORNE KA-BAND MULTI-BASELINE INSAR DATA OF URBAN AREAS**
Michael Schmitt, Uwe Stilla, Technische Universität München, Germany

FR1.1.3 09:00 **A CONCEPT FOR BUILDING RECONSTRUCTION FROM AIRBORNE MULTI-ASPECT SAR DATA**
Oliver Maksymiuk, Uwe Stilla, Technische Universität München, Germany

FR1.1.4 09:20 **VHF/UHF-BAND SAR IMAGING USING CIRCULAR TRACKS**
Per-Olov Frölind, Lars M.H. Ulander, Anders Gustavsson, Gunnar Stenström, Swedish Defence Research Agency, Sweden

FR1.1.5 09:40 **AIRBORNE MMW INSAR INTERFEROMETRY BASED ON TIME VARYING BASELINE AND BP ALGORITHM**
Zhou-Hao Pan, Graduate University, CAS, China; Daojing Li, Science and Technology on Microwave Imaging Laboratory, China; Qingjuan Zhang, Bo Liu, Graduate University, CAS, China

Friday, July 27 | 10:30 - 12:10 | Room 14C

Session FR2.1 | Oral

Airborne SAR and InSAR II

Session Co-Chairs: Andreas Reigber, German Aerospace Center - DLR; Lars Ulander, FOI

FR2.1.2 10:50 **COMPRESSIVE SENSING FOR SYNTHETIC APERTURE IMAGING USING A SPARSE BASIS TRANSFORM**
Christian Debes, AGT Group (R&D) GmbH, Germany; Stefan Leier, Fabio Nikolay, Abdelhak M. Zoubir, Technische Universität Darmstadt, Germany

FR2.1.3 11:10 **SAR RAW DATA PROCESSING APPROACH BASED ON A COMBINATION OF LBG ALGORITHM AND COMPRESSED SENSING**
Qun Zhang, Feng Zhu, Donghu Deng, Fufei Gu, Kaiming Li, Air Force Engineering University, China

FR2.1.4 11:30 **MIMO SAR SYSTEM USING DIGITAL IMPLEMENTED OFDM WAVEFORMS**
Jie Wang, Xingdong Liang, Longyong Chen, Institute of Electronics, CAS, China

FR2.1.5 11:50 **CONCEPT DESIGN OF A MIMO-SAR USING FREQUENCY DIVERSITY**
Canguan Gao, Yunkai Deng, Jin Feng, Robert Wang, He Yan, Institute of Electronics, CAS, China

Friday, July 27 | 13:30 - 15:10 | Room 14C

Session FR3.1 | Oral-Invited

Extraction of Geospatial Information for Space Borne SAR-Sensors with High Spatial Resolution

Session Co-Chairs: Helmut Suess, German Aerospace Center - DLR; Dan Johan Weydahl, Norwegian Defence Research Establishment (FFI)

FR3.1.1 13:30 **CHANGE DETECTION AND MARITIME SITUATION AWARENESS IN THE CHANNEL AREA - FEASIBILITY OF SPACE BORNE SAR FOR MARITIME SITUATION AWARENESS**
Bert van den Broek, Eric Breejen, Rob Dekker, Arthur Smith, TNO Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Netherlands

FR3.1.2 13:50 **ACTIVITY MONITORING IN A COMMERCIAL HARBOR USING MULTITEMPORAL REPEAT-PASS INTERFEROMETRIC SAR DATA**
Dirk Borghys, Royal Military Academy, Belgium; Azzedine Bouaraba, Ecole Militaire Polytechnique, Algeria; Christiaan Perneel, Royal Military Academy, Belgium

FR3.1.3 14:10 **GENERALIZATION OF THE COVAMCOH ANALYSIS FOR THE INTERPRETATION OF ARBITARY INSAR IMAGES**
Karsten Schulz, Markus Boldt, Markus Even, Fraunhofer IOSB, Germany

FR3.1.4 14:30 **DEPTH-OF-FOCUS ISSUES ON SPACEBORNE VERY HIGH RESOLUTION SAR**
Timo Kempf, Harald Anglberger, Helmut Suess, German Aerospace Center (DLR), Germany

FR3.1.5 14:50 **GEOREFERENCING, FEATURE ANALYSIS AND CHANGE DETECTION IN HARBOUR AND CITY AREAS USING HIGH-RESOLUTION SATELLITE SAR IMAGES ACQUIRED FROM MULTIPLE SENSORS**
Dan Johan Weydahl, Knut Eldhuset, Norwegian Defence Research Establishment, Norway; Øystein Dick, Bjarne Langmoen Olsen, The Norwegian University of Life Sciences, Norway

Friday, July 27 | 15:40 - 17:20 | Room 14C

Session FR4.1 | Oral-Invited

Geophysical Parameters Retrieval from Geostationary Satellites Data: Algorithms and Products

Session Chair: Yong Xue, Chinese Academy of Sciences

FR4.1.1 15:40 **IDENTIFICATION AND PHYSICAL RETRIEVAL OF DUST STORM COMBINING VISIBLE AND THERMAL INFRARED CHANNELS FROM MSG GEOSTATIONARY OBSERVATIONS**
Jean-Louis Roujean, Dominique Carrer, Olivier Hautecoeur, Météo-France / CNRS, France

FR4.1.2 16:00 **AEROSOL OPTICAL DEPTH AND SURFACE REFLECTANCE RETRIEVAL OVER LAND USING GEOSTATIONARY SATELLITE DATA**
Chi Li, Yong Xue, Yingjie Li, Chinese Academy of Sciences, China; Leiku Yang, Beijing Normal University, China; Tingting Hou, Hui Xu, Jia Liu, Chinese Academy of Sciences, China

FR4.1.3 16:20 **GOES-R BASELINE ALGORITHM PRODUCT REAL-TIME OPERATIONAL PERFORMANCE MONITORING**
Xingpin Liu, Riverside Technology, Inc., United States; Walter Wolf, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Shanna Sampson, Riverside Technology, Inc., United States; Zhaohui Cheng, NOAA/NESDIS/OSD, United States

Friday, July 27 | 08:20 - 10:00 | Room 21A
Session FR1.11 | Oral-Invited

Sparse Signal Reconstruction and Compressive Sensing in Earth Observation I

Session Co-Chairs: Xiaoxiang Zhu, German Aerospace Center - DLR / Technische Universitaet Muenchen; Massimo Fornasier, Technische Universitaet Muenchen

FR1.11.1 08:20 **RECENT ACHIEVEMENTS AND TRENDS IN SPARSE SIGNAL RECONSTRUCTION AND COMPRESSIVE SENSING**
Massimo Fornasier, Chair in Applied Numerical Analysis, TUM, Germany

FR1.11.3 09:00 **SPARSE TOMOGRAPHIC SAR RECONSTRUCTION FROM MIXED TERRASAR-X/TANDEM-X DATA STACKS**
Xiao Xiang Zhu, Richard Bamler, German Aerospace Center (DLR) / Technische Universität München (TUM), Germany

FR1.11.4 09:20 **A DATA ADAPTIVE COMPRESSED SENSING APPROACH TO POLARIMETRIC SAR TOMOGRAPHY**
Esteban Aguilera, Matteo Nannini, Andreas Reigber, German Aerospace Center (DLR), Germany

FR1.11.5 09:40 **CS-BASED MOVING TARGET DETECTION IN RANDOM PRI RADAR**
Zhen Liu, Xizhang Wei, Xiang Li, National University of Defense Technology, China

Friday, July 27 | 10:30 - 12:10 | Room 21A
Session FR2.11 | Oral-Invited

Sparse Signal Reconstruction and Compressive Sensing in Earth Observation II

Session Co-Chairs: Richard Bamler, German Aerospace Center - DLR; Marian-Daniel Iordache, Instituto Superior Tecnico, Lisbon, Portugal

FR2.11.1 10:30 **IMAGE RECONSTRUCTION IN COMPRESSED REMOTE SENSING WITH LOW-RANK AND L1-NORM REGULARIZATION**
Jianwei Ma, Harbin Institute of Technolgy, China; Yi Yang, Stanley Osher, Jerome Gilles, University of California, Los Angeles, United States

FR2.11.2 10:50 **KERNEL SPARSE REPRESENTATION FOR HYPERSPECTRAL TARGET DETECTION**
Yi Chen, The Johns Hopkins University, United States; Nasser Nasrabadi, U.S. Army Research Laboratory, United States; Trac Tran, The Johns Hopkins University, United States

FR2.11.3 11:10 **COLLABORATIVE SPARSE UNMIXING OF HYPERSPECTRAL DATA**
Marian-Daniel Iordache, Flemish Institute for Technological Research (VITO), Belgium; Jose M. Bioucas-Dias, Instituto de Telecomunicações, Portugal; Antonio Plaza, Hyperspectral Computing Laboratory, Spain

FR2.11.4 11:30 **THE ADAPTIVE INVERSE SCALE SPACE METHOD FOR HYPERSPECTRAL UNMIXING**
Michael Möller, Westfälische Wilhelms-Universität Münster, Germany

FR2.11.5 11:50 **SPARSE REPRESENTATION OF FULL WAVEFORM LIDAR DATA**
Sandor Laky, Piroska Zaletnyik, Budapest University of Technology and Economics, Hungary; Charles Toth, The Ohio State University, United States; Bence Molnar, Budapest University of Technology and Economics, Hungary

Friday, July 27 | 13:30 - 15:10 | Room 21A
Session FR3.11 | Oral-Invited

Remote Sensing using GNSS-like Signals and Other Sensors I

Session Chair: Shuanggen Jin, Shanghai Astronomical Observatory

FR3.11.1 13:30 **THE PARIS IN-ORBIT DEMONSTRATION MISSION**
Manuel Martín-Neira, Salvatore D'Addio, Justo Alcazar, Raffaele Vitulli, Nikos Karafolas, European Space Agency, Netherlands

FR3.11.2 13:50 **GNSS ATMOSPHERIC SEISMOLOGY: A CASE STUDY OF THE 2008 MW7.9 WENCHUAN EARTHQUAKE**
Shuanggen Jin, Shanghai Astronomical Observatory, CAS, China

FR3.11.3 14:10 **CORRELATION PROPERTIES OF DIRECT BROADCAST SIGNALS FOR BISTATIC REMOTE SENSING**
Rashmi Shah, James L. Garrison, Purdue University, United States

FR3.11.4 14:30 **INTERFEROMETRIC GNSS-R ACHIEVABLE ALTIMETRIC PERFORMANCE AND COMPRESSION/DENOISING USING THE WAVELET TRANSFORM: AN EXPERIMENTAL STUDY**
Adriano Camps, Universitat Politècnica de Catalunya and IEEC, Spain; Francisco Martín, Universitat Politècnica de Catalunya, Spain; Hyuk Park, Enric Valencia, Universitat Politècnica de Catalunya and IEEC, Spain; Antonio Rius, Institut de Ciències de l'Espai, CSIC and IEEC, Spain; Salvatore D'Addio, European Space Agency, Netherlands

FR3.11.5 14:50 **STARGYM, A GNSS-R END-TO-END SIMULATOR**
Alejandro Egido, Miquel García-Fernández, Marco Caparrini, Starlab Barcelona S.L., Spain; Salvatore D'Addio, European Space Agency, Spain

Friday, July 27 | 15:40 - 17:20 | Room 21A
Session FR4.11 | Oral-Invited

Remote Sensing using GNSS-like Signals and Other Sensors II

Session Chair: Shuanggen Jin, Shanghai Astronomical Observatory

FR4.11.1 15:40 **INSAR TROPOSPHERIC DELAY MITIGATION IN THE TIBETAN PLATEAU USING GPS RADIO OCCULTATION OBSERVATIONS AND NCEP DATA**
Liang Chang, Shuanggen Jin, Shanghai Astronomical Observatory, CAS, China

FR4.11.2 16:00 **NEAR-SURFACE SOIL MOISTURE CONTENT MEASUREMENT BY GNSS REFLECTOMETRY: AN ESTIMATION MODEL USING CALIBRATED GNSS SIGNALS**
Wei Wan, Xiuwan Chen, Peking University, China; Limin Zhao, Institute of Remote Sensing Applications, CAS, China; Jundong Zhang, Han Xiao, Peking University, China

FR4.11.3 16:20 **THE USE OF NAVIGATION SATELLITES SIGNALS FOR DETERMINATION THE CHARACTERISTICS OF THE SOIL AND FOREST CANOPY**
Valery Mironov, Sergey Fomin, Konstantin Muzalevskiy, Anatoliy Sorokin, Mikhail Mikhaylov, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation

FR4.11.4 16:40 **THE NEW ALGORITHM FOR RETRIEVAL OF SOIL MOISTURE AND SURFACE ROUGHNESS FROM GNSS REFLECTOMETRY**
Valery Mironov, Konstantin Muzalevskiy, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation

FR4.11.5 17:00 **ON THE INFLUENCE OF OCEAN WAVES ON SIMULATED GNSS-R DELAY-DOPPLER MAPS**
Maria Paola Clarizia, National Oceanography Centre, United Kingdom; Maurizio di Bisceglie, Carmela Galdi, Università degli Studi del Sannio, Italy; Christine Gommenginger, Meric Srokosz, National Oceanography Centre, United Kingdom

Friday, July 27 | 08:20 - 10:00 | Room 21B
Session FR1.16 | Oral

Urban Remote Sensing II

Session Co-Chairs: Raffaella Guida, University of Surrey; Marco Gianinetto, Politecnico di Milano

FR1.16.1 08:20 **A SUPPORT VECTOR REGRESSION APPROACH FOR BUILDING SEISMIC VULNERABILITY ASSESSMENT AND EVALUATION FROM REMOTE SENSING AND IN-SITU DATA**
Panagiota Matsuka, GIPSA-lab, ISTerre, University Joseph Fourier-Grenoble, France; Jocelyn Chanussot, GIPSA-lab, France; Erwan Pathier, Philippe Gueguen, ISTerre, University Joseph Fourier-Grenoble, France

FR1.16.2 08:40 **EXTRACTING TSUNAMI DEBRIS FROM HIGH-RESOLUTION POST-EVENT IMAGES**
Takumi Fukuoka, Shunichi Koshimura, Tohoku University, Japan

FR1.16.3 09:00 **ESTIMATING IMPERVIOUS SURFACE OF BOHAI RING MEGALOPOLIS FROM LANDSAT IMAGERY USING SVM METHOD**
Zhongchang Sun, Huadong Guo, Xinwu Li, Center for Earth Observation and Digital Earth, CAS, China; Huaining Yang, National Earthquake Response Support Service, China

FR1.16.4 09:20 **AIRBORNE REMOTE SENSING FOR MAPPING ASBESTOS ROOFS IN AOSTA VALLEY**
Federico Frassy, Gabriele Candiani, Pieralberto Maianti, Andrea Marchesi, Francesco Rota Nodari, Marco Rusmini, Politecnico di Milano, Italy; Carlo Albonico, ARPA Valle d'Aosta, Italy; Marco Gianinetto, Politecnico di Milano, Italy

FR1.16.5 09:40 **FUSING IMAGING SPECTROSCOPY AND LIDAR AT AN OBJECT SCALE TO IMPROVE CLASSIFCATION OF URBAN VEGETATION AND SURFACE MATERIALS**
Mike Alonzo, Dar Roberts, Bodo Bookhagen, Keely Roth, University of California, Santa Barbara, United States

Friday, July 27 | 10:30 - 12:10 | Room 21B
Session FR2.16 | Oral

DEM, Mapping, and Mineral Deposits

Session Chair: Thomas Busche, German Aerospace Center - DLR

FR2.16.1 10:30 **ASTER GLOBAL DEM: THE NEW VERSION 2**
Michael Abrams, NASA Jet Propulsion Laboratory, United States; Hiroji Tsu, Earth Remote Sensing Data Analysis Center, Japan; Dave Meyer, U.S. Geological Survey, United States

FR2.16.2 10:50 **PERCENTAGE OF SURFACE INCREASING WHEN PASSING FROM 2D TO 3D-SPACE USED AS A MORPHOLOGIC PARAMETER. APPLICATION TO THE STUDY AND CHARACTERIZATION OF THE SIERRA NORTE DE PUEBLA GEOLOGICAL FORMATIONS (MEXICO).**
Veronica Ochoa-Tejeda, SERTIT, University of Strasbourg, France; Jean-Francois Parrot, Instituto de Geografia, UNAM, Mexico; Paul de Fraipont, SERTIT, University of Strasbourg, France

FR2.16.3 11:10 **ANALYSIS AND VALIDATION OF HIGH-RESOLUTION SATELLITE DEMS GENERATED FROM EROS-B DATA FOR MONTAGUTO LANDSLIDE**
Nicomino Fiscante, Mariano Focareta, MARSec, Italy; Carmela Galdi, Silvia Liberata Ullo, Università degli Studi del Sannio, Italy

FR2.16.4 11:30 **CONTINENT-SCALE MINERAL INFORMATION FROM ASTER MULTISPECTRAL SATELLITE DATA**
Carsten Laukamp, Mike Caccetta, Commonwealth Scientific and Industrial Research Organisation / Earth Science and Resource Engineering, Australia; Simon Collings, Commonwealth Scientific and Industrial Research Organisation / Mathematics, Information and Statistics, Australia; Thomas Cudahy, Commonwealth Scientific and Industrial Research Organisation / Earth Science and Resource Engineering, Australia; Matilda Thomas, Geoscience Australia, Australia; Cindy Ong, Maarten Haest, Commonwealth Scientific and Industrial Research Organisation / Earth Science and Resource Engineering, Australia

Friday, July 27 | 13:30 - 15:10 | Room 21B
Session FR3.16 | Oral

Surface Topo and Surface Movement Monitoring

Session Chair: Michael Abrams, NASA Jet Propulsion Laboratory

FR3.16.1 13:30 **ANALYSIS OF SPATIAL CHARACTERISTICS FOR LANDSLIDES VEGETATION RESTORATION MONITORING BY LIDAR SURFACE ROUGHNESS DATA AND MULTISPECTRUM IMAGERY**
Mon-Shieh Yang, Ming-Chee Wu, National Cheng Kung University, Taiwan; Jin-King Liu, Taiwan Group on Earth Observations (TGEO), Taiwan

FR3.16.2 13:50 **TERRAIN MOTION MEASUREMENTS OVER EUROPEAN URBAN AREAS USING PERSISTENT SCATTERER INTERFEROMETRY**
Othmar Frey, Urs Wegmüller, Charles Werner, Gamma Remote Sensing, Switzerland

FR3.16.3 14:10 **OBJECT BASED DATA FUSION OF LANDFORM AND ANCILLARY DATA FOR UPSCALING SOIL-LANDSCAPE MAPPING IN THE WESTERN AUSTRALIAN PASTORAL RANGELANDS**
Deanna Wilson, Robert Corner, Antonius Schut, Curtin University, Australia

FR3.16.4 14:30 **COMPARISON OF INSAR TWO-PASS AND TIME SERIES METHODS FOR ANALYSING LANDSLIDES IN CENTRAL GEORGIA, CAUCASUS**
Elena Nikolaeva, Thomas R. Walter, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany

FR3.16.5 14:50 **COSMO SKYMED HIGH FREQUENCY - HIGH RESOLUTION MONITORING OF AN ALPINE SLOW LANDSLIDE, CORVARA IN BADIA, NORTHERN ITALY**
Christian Iasio, EURAC, Italy; Fabrizio Novali, Tele-Rilevamento Europa - T.R.E. srl, Italy; Alessandro Corsini, University of Modena and Reggio Emilia, Italy; Marco Mulas, EURAC, Italy; Mara Branzanti, Elisa Benedetti, Università di Roma, Italy; Chiara Giannico, Andrea Tamburini, Tele-Rilevamento Europa - T.R.E. srl, Italy; Volkmar Mair, Autonomous Province of Bolzano, Italy

Friday, July 27 | 15:40 - 17:20 | Room 21B
Session FR4.16 | Oral-Invited

Tropical forest biomass using P-band SAR data-The BIOMASS mission

Session Co-Chairs: Thuy Le Toan, CESBIO, Toulouse, France; Fabio Rocca, Polimi

FR4.16.1 15:40 **ASSESSMENT OF TROPICAL FOREST BIOMASS: A CHALLENGING OBJECTIVE FOR THE BIOMASS MISSION**
Thuy Le Toan, Ludovic Villard, Yannick Lasne, Stéphane Mermoz, Thierry Koleck, Centre d'Etudes Spatiales de la Biosphère, France

FR4.16.2 16:00 **ANALYSIS OF POLINSAR PRECISION FOR FOREST AND GROUND PARAMETERS ESTIMATION IN TROPICAL CONTEXT**
Aurelien Arnaubec, Office National d'Etudes et de Recherches Aérospatiale / Institut Fresnel, France; Pascale Dubois-Fernandez, Office National d'Etudes et de Recherches Aérospatiale, France

FR4.16.3 16:20 **RELATING TROPICAL FOREST BIOMASS TO P-BAND SAR TOMOGRAPHY**
Dinh Ho Tong Minh, Fabio Rocca, Stefano Tebaldini, Mauro Mariotti d'Alessandro, Politecnico di Milano, Italy; Thuy Le Toan, Ludovic Villard, Centre d'Etudes Spatiales de la Biosphère, France

FR4.16.4 16:40 **TROPICAL FOREST STRUCTURE ESTIMATION USING POLARIMETRIC SAR TOMOGRAPHY AT P-BAND**
Yue Huang, Intermap Technologies Corp., Canada; Laurent Ferro-Famil, Université de Rennes 1, France; Maxim Neumann, NASA Jet Propulsion Laboratory, United States

FR4.16.5 17:00 **TROPISCAT: A POLARIMETRIC AND TOMOGRAPHIC SCATTEROMETER EXPERIMENT IN FRENCH GUIANA FORESTS**
Thierry Koleck, Centre National d'Études Spatiales, France; Pierre Borderies, Office National d'Etudes et de Recherches Aérospatiale, France; Fabio Rocca, Politecnico di Milano, France; Clément Albinet, Office National d'Etudes et de Recherches Aérospatiale, France; Dinh Ho Tong Minh, Stefano Tebaldini, Politecnico di Milano, Italy; Alia Hamadi, Centre d'Etudes Spatiales de la Biosphère - ONERA, France; Ludovic Villard, Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France

Friday, July 27 | 08:20 - 10:00 | Room 22A
Session FR1.9 | Oral

Coastal Zones I

Session Co-Chairs: Peter J. Minnett, University of Miami; Stephan Brusch, German Aerospace Center - DLR

FR1.9.1 08:20 **THE EUFAR TRANSNATIONAL ACCESS PROJECT A.NEW (AIRBORNE OBSERVATIONS OF NONLINEAR EVOLUTION OF INTERNAL WAVES GENERATED BY INTERNAL TIDAL BEAMS)**
Jose C.B. da Silva, Jorge M. Magalhaes, Miguel Batista, University of Porto, Portugal; Louis Gostiaux, Laboratoire des Ecoulements Geophysiques et Industriels, France; Theo Gerkema, Royal Netherlands Institute of Sea Research (NIOZ), Netherlands; Adrian L. New, National Oceanography Centre, Southampton, United Kingdom

FR1.9.2 08:40 **EXTRACTION OF OCEAN SURFACE FEATURES USING MARINE RADAR IMAGE SEQUENCES**
Jochen Horstmann, Mathew Coffin, NATO Undersea Research Center, Italy

FR1.9.3 09:00 **OCEAN SURFACE CURRENT MEASUREMENTS USING HF RADAR DURING THE 2011 JAPAN TSUNAMI HITTING CHILEAN COAST**
Anna Dzvonkovskaya, Hamburg University of Technology (TUHH), Germany

FR1.9.4 09:20 **SEA STATE MEASUREMENTS USING TERRASAR-X DATA**
Miguel Bruck, Susanne Lehner, German Aerospace Center (DLR), Germany

FR1.9.5 09:40 **COASTAL AND MARITIME MONITORING USING POLARIMETRIC AND STRIPMAP COSMO SKYMED IMAGES**
Silvana Dellepiane, Elena Angiati, Università degli Studi di Genova, Italy

Friday, July 27 | 10:30 - 12:10 | Room 22A
Session FR2.9 | Oral

Coastal Zones II

Session Co-Chairs: Susanne Lehner, German Aerospace Center - DLR; Silvana G. Dellepiane, Università degli studi di Genova

FR2.9.1 10:30 **DEVELOPMENT OF A METHOD TO DETECT CORAL BLEACHING USING AIRBORNE HYPERSPECTRAL SENSOR**
Tomomi Takeda, Japan Space Systems, Japan; Satomi Kakuta, Asia Air Survey Co., Ltd., Japan; Osamu Kashimura, Japan Space Systems, Japan; Tsuneo Matsunaga, National Institute for Environmental Studies, Japan

FR2.9.2 10:50 **DIURNAL HEATING IN SHALLOW WATER – IMPLICATIONS FOR SATELLITE REMOTE SENSING OF SEA-SURFACE TEMPERATURE AND MONITORING COASTAL ENVIRONMENTS**
Peter Minnett, Xiaofang Zhu, University of Miami, United States; James Hendee, NOAA, United States; Carrie Manfrino, Central Caribbean Marine Institute, United States; Ray Berkelmans, Australian Institute of Marine Science, Australia

FR2.9.3 11:10 **AZIMUTH AMBIGUITIES REMOVAL FOR SHIP DETECTION USING FULL POLARIMETRIC X-BAND SAR DATA**
Domenico Velotto, Matteo Soccorsi, Susanne Lehner, German Aerospace Center (DLR), Germany

FR2.9.4 11:30 **REMOTE SENSING AND IN SITU SEA STATE INSTRUMENT COMPARISONS AT THE RESEARCH PLATFORM FINO 1 IN THE GERMAN BIGHT**
Christian Senet, Jens Fischer, Olaf Outzen, Kai Herklotz, Holger Klein, Federal Maritime and Hydrographic Agency, Germany

FR2.9.5 11:50 **TIDAL FLAT REFLECTANCE MODEL ACCOMMODATING TIDAL CONDITIONS USING GEOSTATIONARY OCEAN COLOR IMAGER (GOCI): PRELIMINARY RESULTS**
Wook Park, Ji-Sun Shin, Yonsei University, Republic of Korea; Yoon-Kyung Lee, Korea Ocean Research & Development Institute, Republic of Korea; Joong-Sun Won, Yonsei University, Republic of Korea

Friday, July 27 | 13:30 - 15:10 | Room 22A
Session FR3.9 | Oral-Invited

SAR Remote Sensing for a Dynamic Ocean

Session Co-Chairs: Alpers Werner, University of Hamburg; Xiaofeng Li, NOAA/NESDIS

FR3.9.1 13:30 **SATELLITE SAR SENSING OF OCEANIC DYNAMICS IN THE KURIL STRAITS AREA**
Leonid Mitnik, Vyacheslav Dubina, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russian Federation

FR3.9.2 13:50 **INTERNAL WAVE OBSERVATIONS BY SPACEBORNE ALONG-TRACK INTERFEROMETRIC SAR**
Roland Romeiser, Hans C. Graber, University of Miami, United States; Steffen Suchandt, German Aerospace Center (DLR), Germany

FR3.9.3 14:10 **INTERNAL SOLITARY WAVES GENERATED AT THE MASCARENE PLATEAU IN THE INDIAN OCEAN: SAR OBSERVATIONS AND MODELLING**
Jose C.B. da Silva, University of Porto, Portugal; Maarten Buijsman, Princeton University, United States; Jorge M. Magalhaes, University of Porto, Portugal; Adrian L. New, NOCS - National Oceanography Centre, Southampton, United Kingdom

FR3.9.4 14:30 **DETECTION OF WIND FARM USING THE RELATIVE PHASE OF COMPACT POLARIMETRY SAR**
Haiyan Li, Key Laboratory of Computational Geodynamics, CAS / Graduate University, CAS / Bedford Institute of Oceanography, Canada; William Perrie, Bedford Institute of Oceanography, Canada

FR3.9.5 14:50 **SYSTEMATIC OCEAN ROUGHNESS SIGNATURE OF MESOSCALE DYNAMIC STRUCTURES**
Frédéric Nouguier, Université du Sud-Toulon-Var, France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Fabrice Collard, Collecte Localisation Satellites (CLS), France

Friday, July 27 | 15:40 - 17:20 | Room 22A
Session FR4.9 | Oral-Invited

Radar Remote Sensing of the Ocean at Grazing Incidence

Session Co-Chairs: Jochen Horstmann, NATO Undersea Research Center; Jose Carlos Nieto Borge, Universidad de Alcalá

FR4.9.1 15:40 **RETRIEVAL OF OCEAN SURFACE WIND FIELDS FROM MARINE RADAR IMAGE SEQUENCES**
Cristina Lido, Ruben Carrasco, Jochen Horstmann, NATO Undersea Research Center, Italy

FR4.9.2 16:00 **MEASUREMENT OF WINDS, WAVES, AND CURRENTS WITH A SHIPBOARD COHERENT RADAR**
William Plant, University of Washington, United States

FR4.9.3 16:20 **HIGH RESOLUTION CURRENT AND BATHYMETRY DETERMINED BY NAUTICAL X-BAND RADAR**
Katrin Hessner, OceanWaveS GmbH, Germany; José Nieto Borge, University of Alcalá, Spain

FR4.9.4 16:40 **RETRIEVAL OF INTERNAL WAVE SIGNATURES FROM MARINE RADAR DATA**
Björn Lund, Jingshuang Xue, Roland Romeiser, Hans C. Graber, University of Miami, United States

FR4.9.5 17:00 **DETERMINING CURRENTS FROM MARINE RADAR DATA IN AN EXTREME CURRENT ENVIRONMENT AT A TIDAL ENERGY TEST SITE**
Paul Bell, National Oceanography Centre, United Kingdom; John Lawrence, Jennifer Norris, The European Marine Energy Centre Ltd., United Kingdom

Poster Sessions

Methods and Analysis for Bistatic SAR

Session Chair: Francisco Lopez-Dekker, German Aerospace Center - DLR

MOP.P.101 Board 101 **COMPRESSIVE SENSING MEETS SAR - A VECTOR ALGEBRAIC SAR PROCESSOR**
Otmar Loffeld, University of Siegen, Germany

MOP.P.102 Board 102 **HIGH EFFICIENCY ECHO DATA ACQUIRE APPROACH FOR BISTATIC SAR**
Jiansong Ding, Shunsheng Zhang, University of Electronic Science and Technology of China, China

MOP.P.103 Board 103 **IMAGING ALGORITHM BASED ON LEAST-SQUARE NUFFT METHOD FOR SPACEBORNE/AIRBORNE SQUINT MODE BISTATIC SAR**
Zhe Liu, Jianyu Yang, Xiaoling Zhang, Huan Huang, Wenchao Li, University of Electronic Science and Technology of China, China

MOP.P.104 Board 104 **THE STUDY OF THE REMOTE-SENSING APPLICATION USING THE GNSS REFLECTED SIGNAL WITH THE APERTURE SYNTHESIS**
Yoshinori Mikawa, Takuji Ebinuma, Shinichi Nakasuka, The University of Tokyo, Japan

MOP.P.105 Board 105 **RANGE CELL MIGRATION CORRECTION FOR BISTATIC SAR IMAGE FORMATION**
Chunyang Dai, Xiaoling Zhang, University of Electronic Science and Technology of China, China

Monday, July 23 17:20 - 19:00 Poster Area
Session MOP.P Poster

High Resolution Imagery: Methods and Applications

Session Chair: Melba Crawford, Purdue University

MOP.P.106 Board 106 **IMAGE REGISTRATION BASED ON OPTIMIZED ENERGY ANALYSIS OF FEATURE POINTS**
Yue Shi, Hongqin Wang, Lei Lu, Wenlong Yuan, Hao Tang, Chenyuan Wang, Institute of Electronics, CAS, China

MOP.P.107 Board 107 **COMPRESSED SENSING FOR EARTH OBSERVATION WITH HIGH RESOLUTION SATELLITE IMAGERY**
Julien Michel, Centre National d'Études Spatiales, France; Julien Malik, CS, France; Gwendoline Blanchet, Centre National d'Études Spatiales, France; Rosa Ruiloba, CS, France

MOP.P.108 Board 108 **SATELLITE IMAGE FUSION QUALITY MEASUREMENT BY SEPARATING RADIOMETRIC AND GEOMETRIC COMPONENTS**
Mahdi Hasanlou, Mohammad Reza Saradjian, Farhad Samadzadegan, University of Tehran, Iran

MOP.P.109 Board 109 **SATELLITE ALONG-TRACK ACQUISITION TIME LAGS. PRINCIPLES AND APPLICATIONS**
Andreas Kääb, University of Oslo, Norway; Sébastien Leprince, California Institute of Technology, United States

MOP.P.110 Board 110 **POTENTIAL OF HIGH RESOLUTION RAPIDEYE DATA FOR SPARSE VEGETATION FRACTION MAPPING IN ARID REGIONS**
Xiaosong Li, Institute of Remote Sensing Applications, CAS, China; Zhihai Gao, Lina Bai, Research Institute of Forest Resource Information Techniques, Chinese Academy of Forestry, China; Yongxi Huang, Institute of Remote Sensing Applications, CAS, China

MOP.P.111 Board 111 **A STATISTICAL MODEL OF SEA CLUTTER IN PANCHROMATIC HIGH RESOLUTION IMAGES**
Guillaume Jubelin, Ali Khenchaf, ENSTA Bretagne, France

MOP.P.112 Board 112 **REAL-WORLD DEM HARMONISATION THROUGH PHOTO RE-PROJECTION**
Paul Chippendale, Mauro Dalla Mura, Michele Zanin, Fondazione Bruno Kessler, Italy

MOP.P.113 Board 113 **OBJECT-BASED ANALYSIS OF WORLDVIEW-2 IMAGERY OF URBAN AREAS**
Imdad Ali Rizvi, Krishna Mohan Buddhiraju, Indian Institute of Technology, Bombay, India

MOP.P.114 Board 114 **PIXEL AND REGION BASED TEMPORAL CLASSIFICATION FUSION FOR HR SATELLITE IMAGE TIME SERIES**
Safa Réjichi, Ferdaous Chaabane, Carthage University, Sup'com Higher school of communication of Tunis, Tunisia

MOP.P.115 Board 115 **APPROPRIATE SPATIAL RESOLUTION ANALYSIS BASED ON LAND SURFACE HETEROGENEITY**
Ling-Ling Ma, Xinhong Wang, Chuan-Rong Li, Academy of Opto-Electronics, CAS, China; Shi Qiu, TRIO/LSIIT (UMR7005 CNRS), China

3D Imaging

Session Co-Chairs: Yue Huang, Intermap Technologies Corp.; Othmar Frey, ETH Zurich / Gamma Remote Sensing

MOP.P.116 Board 116 **STUDY ON THE ABSORPTION TOMOGRAPHY WITH PRE-STACK SEISMIC REFLECTION DATA BASED ON RAY THEORY**
Jing Zhao, Jinghuai Gao, Xi'an Jiaotong University, China

MOP.P.117 Board 117 **TOMOSAR AND PS-INSAR ANALYSIS OF HIGH-RISE BUILDINGS IN BERLIN**
Timo Balz, Lianhuan Wei, Michael Jendryke, Wuhan University, China; Daniele Perissin, Chinese University of Hong Kong, Hong Kong SAR of China; Mingsheng Liao, Wuhan University, China

MOP.P.118 Board 118 **LATTICE DETECTION IN PERSISTENT SCATTERER POINT CLOUDS AND OBLIQUE AERIAL IMAGERY**
Lukas Schack, Alexander Schunert, Uwe Soergel, Institute of Photogrammetry and GeoInformation, Leibniz Universität Hannover, Germany

MOP.P.119 Board 119 **POLARIMETRIC 3D RECONSTRUCTION OF MANMADE OBJECTS**
Shiqi Xing, Dahai Dai, Yongzhen Li, Jin Liu, Xuesong Wang, School of Electronic Science and Engineering,National University of Defense Technology, China

MOP.P.120 Board 120 **VERTICAL RESOLUTION ENHANCEMENT BY APPLYING POLARIMETRIC SPECTRAL ANALYSIS TECHNIQUES TO MULTIBASELINE INSAR DATA**
Stefan Sauer, Konstantinos P. Papathanassiou, German Aerospace Center (DLR), Germany

MOP.P.121 Board 121 **A HIERARCHICAL CONTOUR METHOD FOR AUTOMATIC 3D CITY RECONSTRUCTION FROM AIRBORNE LIDAR DATA**
Hui-Ying Li, Chao Yang, Jilin University, China; Zhi Wang, Northeastern University, China; Guan-Liang Wu, Wen-Hui Li, Cai Liu, Jilin University, China

MOP.P.122 Board 122 **FAÇADE STRUCTURE RECONSTRUCTION USING SPACEBORNE TOMOSAR POINT CLOUDS**
Muhammad Shahzad, Technische Universität München, Germany; Xiao Xiang Zhu, Richard Bamler, German Aerospace Center (DLR), Germany

MOP.P.123 Board 123 **EXTRACTION OF POINTS OF INTEREST FROM SAR TOMOGRAMS**
Stephane Guillaso, Olivier D'Hondt, Olaf Hellwich, Technical University of Berlin, Germany

MOP.P.124 Board 124 **COMPRESSIVE SAMPLING IN SAR TOMOGRAPHY: RESULTS ON COSMO-SKYMED DATA**
Domenico Barilone, Alessandra Budillon, Gilda Schirinzi, Università degli Studi di Napoli Parthenope, Italy

MOP.P.125 Board 125 **FOREST BIOMASS DERIVATION FROM SINGLE PASS DUAL BASELINE POLARISATION COHERENCE TOMOGRAPHY**
Erwan Renaudin, Bryan Mercer, University of Calgary, Canada

MON POSTER

Monday, July 23 17:20 - 19:00 Poster Area
Session MOP.P Poster

Geographic Information Science: Applications Poster

Session Chair: Anita Simic, French National Institute for Agricultural Research (INRA)

MOP.P.126 Board 126 **OWL-BASED SEMANTIC MODEL FOR SPATIO-TEMPORAL GEOGRAPHIC ONTOLOGY**
Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgic Geology Bureau, China; Jianchun Zhen, Beijing Research Center of Urban System Engineeing, China

MOP.P.127 Board 127 **THE TASK SCHEDULING FOR REMOTE SENSING QUANTITATIVE RETRIEVAL BASED ON HIERARCHICAL GRID COMPUTING PLATFORM**
Ziqiang Chen, Yong Xue, Center for Earth Observation and Digital Earth, CAS, China; Jing Dong, Jia Liu, Yingjie Li, Institute of Remote Sensing Applications, CAS, China

MOP.P.128 Board 128 **STUDY ON SPREAD OF VIBRIO CHOLERA IN RIVERS BASED ON CELLULAR AUTOMATA MODEL**
Jun Sun, Institute of Remote Sensing Applications, CAS, China; Abdoul Nasser Ibrahim, Zhejiang - CAS Application Center for Geoinformatics, China; Jianhua Gong, Liyang Yang, Yi Li, Jieping Zhou, Institute of Remote Sensing Applications, CAS, China

MOP.P.129 Board 129 **SEMANTICS CLUSTERING BASED AND QOS SUPPORTED REMOTE SENSING INFORMATION SERVICE INTELLIGENT DISCOVERY MODEL**
Ling Jiang, School of Resources and Environment, UESTC, China; Yuhong Jiang, Institute of Mountain Hazards and Environment, CAS, China; Zezhong Zheng, School of Resources and Environment, UESTC, China

MOP.P.130 Board 130 **SWRL RULE BASED PRECONDITION AND EFFECTS SERVICE MATCHING**
Hong Fan, Wuhan University, China; Zhihua Wang, LIESMARS, China; Wu Du, The State Key Lab of Surveying & Mapping, Wuhan University, China

MOP.P.131 Board 131 **SOIL ORGANIC MATTER MAPPING WITH FUZZY LOGIC AND GIS**
Runkui Li, Graduate University, CAS, China; Yasuyuki Kono, Kyoto University, Japan; Junzhi Liu, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Ming Peng, Graduate University, CAS, China; Venkatesh Raghavan, Osaka City University, Japan; Xianfeng Song, Graduate University, CAS, China

MOP.P.132 Board 132 **STUDY OF SPATIAL-TEMPORAL SPREAD MODEL FOR WHEAT STRIPE RUST IN SMALL SCALE BASED ON BAYESIAN NETWORK**
Xiaodong Yang, Hao Yang, Wenjiang Huang, Cunjun Li, Xingang Xu, Jihua Wang, Beijing Research Center for Information Technology in Agriculture, China

MOP.P.133 Board 133 **RESEARCH ON URBAN HEAT ISLAND EFFECT DURING BEIJING URBANIZATION PROCESS BY REMOTE SENSING AND ITS IMPACT ON ENVIRONMENTAL HEALTH**
Mengya Wang, Institute of Remote Sensing Applications, CAS/ Graduate University, CAS, China; Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Jianhong Guo, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Shilei Lu, State Forestry Administration, China; Sheng Zheng, Institute of Remote Sensing Applications, CAS / Graduate University, CAS, China; Min Xu, Huicong Jia, Yunfei Xu, Institute of Remote Sensing Applications, CAS, China; Bo Xu, Nanjing University, China; Yiheng Zheng, Beijing Xiuying Environmental Information Development Co. Ltd, China

MOP.P.134 Board 134 **THE RESEARCH OF SATELLITE MISSION PLANNING DRIVEN FOR NATURAL DISASTER REDUCTION**
Chuanfu Yang, Hong Tang, Beijing Normal University, China; Hao Wu, Academy of Opto-Electronics, CAS, China; Run Deng, Beijing Normal University, China

MOP.P.135 Board 135 **QUANTITATIVE ANALYSIS OF SEA LEVEL RISE CAUSED BY CONTINENTAL INPUT**
Xiaoyu Sun, National Marine Environmental Forecasting Center, Beijing, China; Tingting Lv, Institute of Remote Sensing Applications, CAS, China; Yi Gao, National Marine Environmental Forecasting Center, Beijing, China; Fenzhen Su, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Tianyu Zhang, National Marine Environmental Forecasting Center, Beijing, China; Junfu Fan, Institute of Geographic Sciences and Natural Resources Research, CAS, China

MOP.P.136 Board 136 **A CASE STUDY OF REMOTE SENSING INFORMATION MODEL SIMULATION AND DESCRIPTION**
ShengTao Sun, Yanshan University, China

MOP.P.137 Board 137 **A MODEL CONTRACT AND MODEL INTEGRATION LANGUAGE FOR INTEGRATING GEOGRAPHY MODELS IN DISTRIBUTED ENVIRONMENT**
Xiaolin Wang, Hui Li, Yingwei Luo, Peking University, China

Geographic Information Science: Theory, Algorithms, and Systems

Session Chair: Meixia Deng, George Mason University

MOP.P.138 Board 138 **DESIGN MODEL EXECUTION ENGINE BASED ON WEB SERVICES FOR DISTRIBUTED GEOGRAPHY MODELING ENVIRONMENT**
Xiaolin Wang, Hongqiang Mao, Yingwei Luo, Peking University, China

MOP.P.139 Board 139 **USER-FRIENDLY AND LONG-TERM PROVISION AND PROCESSING OF EARTH OBSERVATION PRODUCTS**
Jonas Eberle, Sören Hese, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

MOP.P.140 Board 140 **AN EXTENSION OF A CONFINED SPACE EVACUATION MODEL TO HUMAN GEOGRAPHY**
James Keller, Mihail Popescu, Dustin Gibeson, University of Missouri, United States

MOP.P.141 Board 141 **USING STANDARDIZED METADATA TO IMPROVE THE SEARCH AND ANALYSIS OF REMOTE SENSING DATA FOR CHANGE DETECTION**
Jung-Hong Hong, Yao-Hsien Yeh, National Cheng Kung University, Taiwan

MOP.P.142 Board 142 **THE DEVELOPMENT OF GIS-BASED EARTHQUAKE FIELD EMERGENCY COMMAND MANAGEMENT INFORMATION SYSTEM**
Xiang Ding, Xiaoqing Wang, Aixia Dou, Institute of Earthquake Science, China

MOP.P.143 Board 143 **3D WEATHER SIMULATION ON 3D VIRTUAL EARTH**
Hao Feng, Hong Fan, LIESMARS Wuhan University, China

MOP.P.144 Board 144 **TERRAHIDRO – A DISTRIBUTED HYDROLOGICAL SYSTEM TO DELIMIT LARGE BASINS**
Eric Silva Abreu, Sergio Rosim, Camilo Daleles Rennó, João Ricardo de Freitas Oliveira, Alexandre Copertino Jardim, Jussara de Oliveira Ortiz, Luciano Vieira Dutra, National Institute for Space Research (INPE), Brazil

MOP.P.145 Board 145 **DEVELOPMENT OF BUILDING SEGMENTATION ALGORITHM FOR DENSE URBAN AREAS FROM AERIAL PHOTOGRAPH**
Junichi Susaki, Kyoto University, Japan

MOP.P.146 Board 146 **EARTH SYSTEM SCIENTIFIC DATA SHARING MODE BASED ON ADAPTABLE GLOBAL SPATIAL GRID**
Jieqing Yu, China University of Mining and Technology, China; Lixin Wu, Xiaojing Li, Beijing Normal University, China; He Wang, China University of Mining and Technology, China

MOP.P.147 Board 147 **DEVELOPMENT OF GEOSPATIAL DATA SHARING/OVERLAY SYSTEM - CERES GAIA -**
Ryutaro Tateishi, Josaphat Tetuko Sri Sumantyo, Chiba University, Japan

MOP.P.148 Board 148 **IMPLEMENTATION THE SHARING OF HETEROGENEOUS FUNDAMENTAL GEOGRAPHIC FEATURES BASED ON CONCEPT LATTICE**
Haibo Wang, LIESMARS Wuhan University, China; Hong Fan, Wuha University, China; Xue Yang, The State Key Lab of Surveying & Mapping, Wuhan University, China

MOP.P.149 Board 149 **A SEGMENTATION ALGORITHM OF 3D BUILDING MODEL**
Lipan Pan, FanHong Hong, Fenghao Hao, The State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing(LIESMARS), Wuhan University, China

Monday, July 23 17:20 - 19:00 Poster Area
Session MOP.P Poster

Subsurface Sensing I

Session Chair: Christelle Eyraud, Institute Fresnel

MOP.P.150 Board 150 **COMPUTATION OF MODAL DECOMPOSITIONS FOR STUDYING ELECTROMAGNETIC INDUCTION**
Michael McFadden, Waymond Scott, Georgia Institute of Technology, United States

MOP.P.151 Board 151 **A LINEAR STATISTICAL APPROACH FOR DETECTION OF BURIED PARAMAGNETIC METAL OBJECTS USING EMI DATA**
Anish Turlapaty, Qian Du, Nicolas Younan, Mississippi State University, United States

MOP.P.152 Board 152 **DEVELOPING CALIBRATION TECHNOLOGY FOR FULL-POLARIMETRIC GPR**
Xuan Feng, Qiao Wang, Qi Lu, Cai Liu, Lilong Zou, Wenjing Liang, HongLi Li, Yue Yu, Qianci Ren, Jilin University, China

MOP.P.153 Board 153 **IMAGING OF MARTIAN SURFACE AND SUBSURFACE WITH HIGH-FREQUENCY RADAR SOUNDER**
Yu Zhang, Peng Zhang, Shuai Cui, Xiaojuan Zhang, Guangyou Fang, Institute of Electronics, CAS, China

MOP.P.154 Board 154 **A SIMPLE METHOD FOR COMPUTING DISCRETE SPECTRUM RELAXATIONS OF BODY OF REVOLUTION TARGETS USING EIGENVALUE DECOMPOSITION**
Jonathan Gabbay, Waymond Scott, Georgia Institute of Technology, United States

MOP.P.155 Board 155 **ESTIMATION OF THE DISCRETE SPECTRUM OF RELAXATION FREQUENCIES USING MULTIPLE MEASUREMENTS**
Mu-Hsin Wei, Waymond Scott, James McClellan, Georgia Institute of Technology, United States

MOP.P.156 Board 156 **THREE DIMENSIONAL PROPAGATION DIRECTIONS OF ELECTROMAGNETIC PULSES DETECTED IN THE EARTH**
Minoru Tsutsui, Taka Nakatani, Munetoshi Kamitani, Kyoto Sangyo Unuversity, Japan

MOP.P.157 Board 157 **DESIGN OF BOW-TIE ANTENNA WITH HIGH RADIATING EFFICIENCY FOR IMPULSE GPR**
Jian Wang, Yi Su, Chunlin Huang, Min Lu, Yu Li, National University of Defense Technology, China

MOP.P.158 Board 158 **ROBUST CAPON FILTER BANK BASED THREE DIMENSIONAL STRUCTURE SUPERRESOLUTION ALGORITHM**
Jian Wang, Qian Song, Zhimin Zhou, National University of Defense Technology, China

Subsurface Sensing II

Session Chair: Fikadu Dagefu, University of Michigan

MOP.P.159 Board 159 **RECIPROCAL POINTER CHAINS FOR IDENTIFYING LAYER BOUNDARIES IN GROUND-PENETRATING RADAR DATA**
Brandon Smock, Joseph Wilson, University of Florida, United States

MOP.P.160 Board 160 **WISDOM GPR MEASUREMENTS IN A COLD ARTIFICIAL AND CONTROLLED ENVIRONMENT**
Monique Dechambre, LATMOS/CNRS, France; Marc Biancheri-Astier, IDES /CNRS/Université Paris Sud 11, France; Valérie Ciarletti, LATOS/UVSQ, France; Sophie Dorizon, LATMOS/CNRS, France; Rafik Hassen-Khodja, LATMOS/UVSQ, France; Albane Saintenoy, François Costard, IDES /CNRS/Université Paris Sud 11, France; Antoine Séjourné, Institute of Geophysical Sciences / Research Center in Wroclawh Center, France

MOP.P.161 Board 161 **BACKSCATTERING FROM FRACTAL ROUGH MULTILAYER**
Pasquale Imperatore, Antonio Iodice, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

MOP.P.162 Board 162 **A DISCRIMINATIVE-GENERATIVE APPROACH TO THE CHARACTERIZATION OF SUBSURFACE CONTAMINANT SOURCE ZONES**
Bilal Ahmed, Tufts University, United States; Itza Mendoza-Sanchez, Escuela Superior de Ingenieria y Arquitectura, Mexico; Roni Khardon, Linda Abriola, Eric Miller, Tufts University, United States

MOP.P.163 Board 163 **SIMULATION AND SCALE MODEL MEASUREMENTS FOR THE DETECTION AND LOCALIZATION OF TUNNELS**
Fikadu Dagefu, Kamal Sarabandi, University of Michigan, United States

MOP.P.164 Board 164 **IN-PIPE GPR CONFIGURATION AND THE DETERMINATION OF TARGET DEPTH AND GROUND PERMITTIVITY**
Stephen Pennock, Hugo Jenks, Giovanni Orlando, Miles Redfern, University of Bath, United Kingdom

MOP.P.165 Board 165 **ROBUST HYDRAULIC FRACTURE MONITORING (HFM) OF MULTIPLE TIME OVERLAPPING EVENTS USING A GENERALIZED DISCRETE RADON TRANSFORM**
Gregory Ely, Shuchin Aeron, Tufts University, United States

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Session MOP.P Poster

Soil Moisture and Vegetation: Radar

Session Chair: Frank Bonitz, University Weimer

MOP.P.166 Board 166 **OPERATIONAL SURFACE SOIL MOISTURE RETRIEVAL BY C-BAND SAR IMAGERY IN A SEMI-ARID ENVIRONMENT**
Lu Dong, Philip Marzahn, Ralf Ludwig, LMU Munich, Germany

MOP.P.167 Board 167 **A PROPOSAL FOR A SAR INTERFEROMETRIC MODEL OF SOIL MOISTURE**
Francesco de Zan, Alessandro Parizzi, Pau Prats-Iraola, German Aerospace Center (DLR), Germany

MOP.P.168 Board 168 **DETECTING LATITUDINAL VARIATIONS IN PHENOLOGY OVER THE NORTHEAST ASIA BASED ON REMOTE SENSING VEGETATION INDEX**
Jiaxin Jin, Hong Jiang, Xiuying Zhang, Ying Wang, Nanjing University, China

MOP.P.169 Board 169 **DISCRETE SCATTER MODEL FOR MICROWAVE RADIOMETER RESPONSE TO WHEAT FIELD, COMPARISON OF THEORY AND DATA**
Fang Wang, School of Architecture and Urban Planning; Hunan Univ.of Science and Technology; Xiangtan, China; Jiancheng Shi, Chinese Academy of Sciences and Beijing Normal University, China; Lixin Zhang, Shaojie Zhao, Beijing Normal University, China

MOP.P.170 Board 170 **MULTIFREQUENCY AND MULTITEMPORAL GROUND-BASED SCATTEROMETERS MEASUREMENTS ON RICE FIELDS**
Mingquan Jia, Ling Tong, Yan Chen, University of Electronic Science and Technology of China, China

MOP.P.171 Board 171 **SOIL MOISTURE RETRIEVAL VIA THE POLARIMETRIC TWO-SCALE MODEL AND DUAL-POL SAR DATA**
Antonio Natale, Antonio Iodice, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

MOP.P.172 Board 172 **A ROBUST ALGORITHM FOR SOIL MOISTURE RETRIEVAL FROM THE SOIL MOISTURE ACTIVE PASSIVE MISSION RADAR OBSERVATIONS**
Parag Narvekar, Dara Entekhabi, Massachusetts Institute of Technology, United States; Eni Njoku, NASA Jet Propulsion Laboratory, United States

MOP.P.173 Board 173 **ANALYSIS OF SOIL MOISTURE DATA RETRIEVED FROM C-BAND SCATTEROMETERS IN SOUTHEAST ASIA**
Vahid Naeimi, Claudia Kuenzer, German Aerospace Center (DLR), Germany; Wolfgang Wagner, Daniel Sabel, Technical University of Vienna, Austria

Soil Moisture: Passive Microwave

Session Chair: Alicia Joseph, NASA

MOP.P.174 Board 174 **ESTIMATED SOIL MOISTURE IN VEGETATED AREA USING MULTITEMPORAL MULTIPOLARIZATION DATA**
Buho Hoshino, Rakuno Gakuen University, Japan; Gaku Kudo, Hokkaido University, Japan; Masami Kaneko, Hidehisa Taniuchi, Hisae Iino, Tetsuo Yabuki, Rakuno Gakuen University, Japan

MOP.P.175 Board 175 **A NEW METHOD FOR ESTIMATION OF BARE SURFACE SOIL MOISTURE WITH L-BAND RADIOMETER**
Peng Guo, Jiancheng Shi, Jinyang Du, Qiang Liu, Chinese Academy of Sciences, China

MOP.P.176 Board 176 **A SOIL MOISTURE RETRIEVAL MODEL USING PARAMETERIZED FIRST-ORDER MODEL**
Lijiao Xiao, Lingmei Jiang, Lixin Zhang, Fengmin Wu, Zhenguo Hao, Beijing Normal University, China

MOP.P.177 Board 177 **EXPERIMENTAL STUDY OF REFLECTION COEFFICIENT FREQUENCY DEPENDENCE FROM ROUGH SURFACE IN L-BAND**
Pavel Dagurov, Aleksey Dmitriev, Institute of Physical Material Science of Siberian Branch of Russian Academy of Science, Russian Federation; Valery Mironov, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Boris Basanov, Tumen Chymitdorzhiev, Institute of Physical Material Science of Siberian Branch of Russian Academy of Science, Russian Federation

MOP.P.178 Board 178 **A STATISTIC MODEL DEVELOPED TO ESTIMATE THE PENETRATION DEPTH USING PASSIVE MICROWAVE REMOTE SENSING**
Tao Zhang, Lixin Zhang, Shaojie Zhao, Lingmei Jiang, Linna Chai, Beijing Normal University, China

MOP.P.179 Board 179 **TOWARDS SOIL HYDRAULIC PARAMETER RETRIEVAL FROM A LAND SURFACE MODEL UNDER DIFFERENT METEOROLOGICAL CONDITIONS**
Ranmalee Bandara, Jeffrey P. Walker, Christoph Rüdiger, Monash University, Australia; Robert Gurney, University of Reading, United Kingdom

MOP.P.180 Board 180 **REDUCTION OF SURFACE ROUGHNESS EFFECTS ON THE SOIL MOISTURE RETRIEVAL FROM AMSR-E DATA**
Zeng-Lin Liu, Bo-Hui Tang, Hua Wu, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, CAS, China

MOP.P.181 Board 181 **A GLOBAL PASSIVE MICROWAVE BASED WETNESS INDEX FOR THE MONITORING OF SOIL MOISTURE AND INUNDATION**
Marouane Temimi, NOAA-CREST / City University of New York, United States; Teodosio Lacava, Irina Coviello, Mariapia Faruolo, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Reza Khanbilvardi, NOAA-CREST / City University of New York, United States; Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Valerio Tramutoli, University of Basilicata, Italy; Donna Wang, NOAA-CREST / City University of New York, United States

MOP.P.182 Board 182 **ANALYSIS OF THE RELATIONSHIP BETWEEN MICROWAVE EMISSIVITY AND NDVI / MVI/SOIL MOISTURE OVER TIBETAN PLATEAU, CHINA**
Shi Lijuan, Qiu Yubao, Center for Earth Observation and Digital Earth, CAS, China

MOP.P.183 Board 183 **ANALYZING TOPOGRAPHY EFFECTS FOR L-BAND RADIOMETRY USING AN IMPROVED MODEL APPROACH**
Xinxin Li, Beijing Normal University, China; Lutz Weihermüller, Juelich Research Center, Germany; Lixin Zhang, Lingmei Jiang, Beijing Normal University, China; Harry Vereecken, Juelich Research Center, Germany

MOP.P.184 Board 184 **SURFACE SOIL MOISTURE EVALUATION BY A MULTITEMPORAL SATELLITE APPROACH**
Katia Fontanelli, Roberto Carlà, Institute of Applied Physics, Italy; Federica Fiorucci, University of Perugia, Italy; Leonardo Santurri, Institute of Applied Physics, Italy

MOP.P.185 Board 185 **QUANTIFYING UNCERTAINTIES IN LAND SURFACE MICROWAVE EMISSIVITY RETRIEVALS**
Yudong Tian, University of Maryland, United States; Christa Peters-Lidard, NASA Goddard Space Flight Center, United States; Kenneth Harrison, University of Maryland, United States

MOP.P.186 Board 186 **SOIL MOISTURE RETRIEVAL BY REMOTE SENSING AND MULTI-YEAR TREND ANALYSIS OF THE SOIL MOISTURE IN TIBETAN PLATEAU**
Qiang Liu, Jiancheng Shi, Jinyang Du, Shenglei ZHANG, Institute of Remote Sensing Applications, CAS, China

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Soil Moisture: Applications

Session Chair: Irena Hajnsek, ETH Zürich / DLR

MOP.P.186 Board 186 **EXPLORING EFFECTS OF RAINFALL INTENSITY ON SOIL EROSION AT THE CATCHMENT SCALE USING MODIFIED SEMMED MODEL AT THE ZULI RIVER BASIN, WESTERN OF LOESS PLATEAU, CHINA**
Xiaowen Zhang, Lanzhou University of Finance and Economics, China; Shiqiang Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

MOP.P.187 Board 187 **SOILMOISTURE RETRIEVAL USING THERMAL INERTIA METHOD IN HEIHE RIVER BASIN, CHINA**
Chunfeng Ma, Xujun Han, Weizhen Wang, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

MOP.P.188 Board 188 **A QUANTITATIVE MODEL OF SOIL MOISTURE AND INSTANTANEOUS VARIATION OF LAND SURFACE TEMPERATURE**
Anqi Wang, Capital Normal University, China; Jiancheng Shi, Institute of Remote Sensing Applications, CAS, China; Huili Gong, Capital Normal University, China; Chao Xie, Peking University, China

MOP.P.189 Board 189 **A DIRECT ALGORITHM FOR ESTIMATING DAILY REGIONAL EVAPOTRANSPIRATION FROM MODIS TOA RADIANCES**
Jian Peng, Max-Planck-Institute for Meteorology, China; Yuanbo Liu, Xiaosong Zhao, Chinese Academy of Sciences, China; Alexander Loew, Max-Planck-Institute for Meteorology, Germany

MOP.P.190 Board 190 **FLOOD MONITORING USING PASSIVE REMOTE SENSING (AMSR-E) IN PART OF BRAHMAPUTRA BASIN, INDIA**
Yogesh Singh, Paolo Ferrazzoli, Rachid Rahmoune, Tor Vergata University of Rome, Italy

MOP.P.191 Board 191 **ESTIMATING SOIL HYDRAULIC PROPERTIES USING L-BAND RADIOMETER AND GROUND-PENETRATING RADAR**
François Jonard, Lutz Weihermüller, Mike Schwank, Khan Zaib Jadoon, Harry Vereecken, Sébastien Lambot, Research Centre Jülich, Germany

MOP.P.192 Board 192 **SPATIAL TIME DOMAIN REFLECTOMETRY FOR MONITORING OF THE HYDROLOGICAL WATER BALANCE AT A LYSIMETER TEST SITE IN THURINGIA/GERMANY**
Frank Bonitz, Norman Wagner, Klaus Kupfer, Institute for Materials Research and Testing at the Bauhaus-University Weimar, Germany; Steffi Knoblauch, Thuringian State Institute of Agriculture, Germany; Jurij Karlovsek, The Golder Geomechanics Centre, University of Queensland, Australia

MOP.P.193 Board 193 **ESTIMATION OF EVAPOTRANSPIRATION FROM SOIL MOISTURE MEASUREMENTS AND EDDY COVARIANCE IN HAIHE RIVER BASIN, CHINA**
Zhongli Zhu, Ziwei Xu, State Key Laboratory of Remote Sensing Science, Beijing Normal University, China

Soil Moisture: Active and Passive

Session Chair: Maria Piles, Universitat Politècnica de Catalunya

MOP.P.194 Board 194 **SPATIAL PATTERNS OF SMOS DOWNSCALED SOIL MOISTURE MAPS OVER THE REMEDHUS NETWORK (SPAIN)**
Nilda Sánchez, Universidad de Salamanca, Spain; María Piles, SMOS Barcelona Expert Centre, Spain; Anna Scaini, José Martínez-Fernández, Universidad de Salamanca, Spain; Adriano Camps, Mercè Vall-llossera, Universitat Politècnica de Catalunya, Spain

MOP.P.195 Board 195 **MULTI-ALGORITHM ENSEMBLE RECONSTRUCTION OF SURFACE SOIL MOISTURE OVER CHINA FROM AMSR-E**
Hui Lu, Peng Gong, Tsinghua University, China

MOP.P.196 Board 196 **TEMPORAL ERROR VARIABILITY OF COARSE SCALE SOIL MOISTURE PRODUCTS - CASE STUDY IN CENTRAL SPAIN**
Simon Zwieback, ETH Zürich, Switzerland; Wouter Dorigo, Wolfgang Wagner, Vienna University of Technology, Austria

MOP.P.197 Board 197 **EFFECTS OF TIME OF BARE CULTIVATED SOILS OBSERVATION AND THEIR ROUGHNESS ON THE AVERAGE DIURNAL SOIL ALBEDO APPROXIMATION BY SATELLITE DATA**
Jerzy Cierniewski, Cezary Kazmierowski, Slawomir Krolewicz, Jan Piekarczyk, Krzysztof Kusnierek, Adam Mickiewicz University, Poland

MOP.P.198 Board 198 **A METHOD FOR RETRIEVING HIGH-RESOLUTION SURFACE SOIL MOISTURE BY DOWNSCALING AMSR-E BRIGHTNESS TEMPERATURE**
Chengyun Song, Li Jia, Chinese Academy of Sciences, China; Massimo Menenti, Delft University of Technology, Netherlands

MOP.P.199 Board 199 **A TIME-SERIES METHOD FOR SPATIAL DISAGGREGATION OF RADIOMETER BRIGHTNESS TEMPERATURE USING HIGHER RESOLUTION RADAR OBSERVATIONS**
Chenzhou Liu, Jiancheng Shi, Shenglei Zhang, Shuai Gao, Institute of Remote Sensing Applications, CAS, China

MOP.P.200 Board 200 **COMPARISON OF MICROWAVE PASSIVE AND ACTIVE OBSERVATIONS OF SOIL MOISTURE**
Nazzareno Pierdicca, Luca Pulvirenti, Andrea Santarelli, Sapienza Università di Roma, Italy; Raffaele Crapolicchio, Marco Talone, SERCO S.p.A., Italy; Silvia Puca, Italian Department of Civil Protection, Italy

MOP.P.201 Board 201 **SOIL MOISTURE ACTIVE/PASSIVE (SMAP) FORWARD BRIGHTNESS TEMPERATURE SIMULATOR**
Jinzheng Peng, Morgan State University, GESTAR/ NASA GSFC, United States; Jeffrey Piepmeier, Edward J. Kim, NASA Goddard Space Flight Center, United States

MOP.P.202 Board 202 **GENERATING AN EFFECTIVE TEMPERATURE FOR LAND SURFACE EMISSIVITY RETRIEVAL USING MICROWAVE BRIGHTNESS TEMPERATURE DIURNAL CYCLE**
Hamidreza Norouzi, New York City College of Technology - CUNY / NOAA-CREST, United States; William Rossow, Marouane Temimi, The City College of New York - CUNY, NOAA-CREST, United States; Catherine Prigent, Centre National de la Recherche Scientifique, LRMA, France; Marzieh Azarderakhsh, The City College of New York - CUNY, United States; Sid-Ahmed Boukabara, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Reza Khanbilvardi, The City College of New York - CUNY, NOAA-CREST, United States

MOP.P.203 Board 203 **ACCOUNTING FOR ROUGHNESS EFFECTS IN L-MEB: SUGGESTED MODIFICATIONS TO THE H-Q SEMI-EMPIRICAL MODEL**
Heather Lawrence, University of Valencia, Spain; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France; Maciej Miernecki, Ernesto Lopez-Baeza, University of Valencia, Spain; François Demontoux, IMS laboratory, France; Arnaud Mialon, Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

MOP.P.204 Board 204 **ANALYSIS OF ROUGHNESS EFFECTS BASED IN-SITU ELBARA-II AND SPACEBORNE SMOS OBSERVATIONS OVER THE VAS (VALENCIA ANCHOR STATION)**
Maciej Miernecki, Universidad de Valencia, Spain; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France; Mike Schwank, German Research Centre for Geosciences (GFZ), Germany; Heather Lawrence, Universidad de Valencia, Spain; Ingo Volksch, Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Switzerland; Amparo Coll, Universidad de Valencia, Spain; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France; Tânia Casal, Mission Science Division, ESA / ESTEC, Netherlands; Ernesto Lopez-Baeza, Universidad de Valencia, Spain

MOP.P.205 Board 205 **REFINED INCIDENCE ANGLE CORRECTION FOR OPERATIONAL SOIL MOISTURE RETRIEVAL FROM ENVISAT ASAR WSM OBSERVATIONS**
Florian Appel, Heike Bach, VISTA Remote Sensing in Geosciences GmbH, Germany

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Remote Sensing of Wetlands

Session Chair: Bruce Chapman, JPL

MOP.P.206 Board 206 **WETLAND VEGETATION BIOMASS INVERSION USING POLARIMETRIC RADARSAT-2 DATA**
Guozhuang Shen, Jingjuan Liao, Huadong Guo, Ju Liu, Lu Zhang, Center for Earth Observation and Digital Earth, CAS, China; Jie Chen, Beijing University of Aeronautics & Astronautics, China

MOP.P.207 Board 207 **USE OF DATA ASSIMILATION TECHNIQUE FOR IMPROVING THE RETRIEVAL OF LEAF AREA INDEX IN TIME-SERIES IN ALPINE WETLANDS**
Xingwen Quan, Binbin He, Minfeng Xing, University of Electronic Science and Technology of China, China

MOP.P.208 Board 208 **USING L-BAND SAR IMAGES TO MAP COASTAL WETLANDS**
Joni Storie, University of Winnipeg, Canada; Andrew Lawson, Contract, United States; Christopher Storie, University of Winnipeg, Canada

MOP.P.209 Board 209 **MONITORING WETLANDS VARIATION IN THE YELLOW RIVER BASIN FOR WATER RESOURCES MANAGEMENT USING BEIJING-1 IMAGES**
Chong Huang, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Hai-Long Zhang, Institute of Remote Sensing Applications, CAS, China; Gao-Huan Liu, Qing-Sheng Liu, Institute of Geographic Sciences and Natural Resources Research, CAS, China

MOP.P.210 Board 210 **AUTOMATED WETLAND CLASSIFICATION USING OBIA: AGULHAS PLAIN, SOUTH AFRICA**
Theo Pauw, Adriaan Van Niekerk, Stellenbosch University, South Africa

MOP.P.211 Board 211 **USING K-MEANS AND MORPHOLOGICAL SEGMENTATION FOR INTERTIDAL FLATS RECOGNITION**
Fernando Soares, João Catalão, Universidade Lisboa, IDL, Portugal; Giovanni Nico, Consiglio Nazionale delle Ricerche, Istituto per le Applicazione del Calcolo, Italy

MOP.P.212 Board 212 **THE DYNAMIC VARIATION CHARACTERISTICS OF GAHAI LAKE AREA BASED ON EOS-MODIS DATA**
Jing Wang, Ni Guo, Lanzhou Institute of Arid Meteorology, China; Chunfeng Ma, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

MOP.P.213 Board 213 **DETECTING HISTORIC WETLANDS USING RADAR DATA: A REVIEW**
Samantha Fraser, Joni Storie, University of Winnipeg, Canada

MOP.P.214 Board 214 **COMPARISON OF DYNAMIC SURFACE WATER PRODUCTS INFERRED FROM REMOTE SENSING DATA, GAUGE MEASUREMENTS AND HYDROLOGICAL MODELING**
Marzieh Azarderakhsh, Kyle C. McDonald, Ronny Schroeder, Balazs Fekete, The City College of New York, United States; Bruce Chapman, NASA Jet Propulsion Laboratory, United States

MOP.P.215 Board 215 **TYPICAL ALPINE WETLAND LANDSCAPE CHANGES IN EASTERN TIBETAN PLATEAU UNDER CLIMATE CHANGE OVER 15 YEARS**
Wenlong Li, Lanzhou University, China; Jing Xu, Lanzhou University / Lanzhou University of Finance and Economics, China

Inland Waters

Session Chair: Peter Gege, German Aerospace Center - DLR

MOP.P.215 Board 215 **WATER MONITORING USING SINGLE SAR IMAGE:SEMI-FLOOD AREA**
Changlin Xiao, Yan Chen, Ling Tong, UESTC, China

MOP.P.216 Board 216 **COSMO SKYMED IN SUPPORT OF FLOOD MONITORING**
Silvana Dellepiane, Elena Angiati, Università degli Studi di Genova, Italy

MOP.P.217 Board 217 **INFLUENCE OF THE RESOLUTION OF DIGITAL TERRAIN MODELS IN FLOOD LAYER WATER HEIGHT CALCULATIONS**
Rebeca Alvarez, José Antonio Malpica, Alcala University, Spain

MOP.P.218 Board 218 **JASON-2 SATTELITE WATER LEVEL MONITORING IN THE VOLGA RESERVOIRS**
Galina Rybushkina, Yuliya Troitskaya, Irina Soustova, Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation

MOP.P.219 Board 219 **THE STUDY OF DELIMITATION METHOD OF RESERVIOR RESERVES BASED ON DEM**
Lu Xiang, Xiuli Feng, Jianqing Wang, Kan Wang, Ningbo University,

MOP.P.220 Board 220 **ADAPTIVE RE-TRACKING OF JASON-1 ALTIMETER DATA FOR INLAND WATERS (ON AN EXAMPLE OF GORKY RESEVOIR ON THE VOLGA RIVER)**
Yuliya Troitskaya, Institut of Applied Physics, Russian Federation; Galina Rybushkina, Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation; Irina Soustova, Sergey Lebedev, Institut of Applied Physics, Russian Federation

MOP.P.221 Board 221 **ESTIMATING GROUNDWATER STORAGE CHANGES IN THE HEIHE RIVER BASIN USING GRACE**
Yanping Cao, Zhuotong Nan, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China; Xinglin Hu, Hydrology and Water Resources Bureau of Gansu Province, China

MOP.P.222 Board 222 **MAPPING LAKE TOPOGRAPHY USING HIGH-RESOLUTION ALOS PRISM DATA**
Yuanbo Liu, Nanjing Institute of Geography and Limnology, CAS, China

MOP.P.223 Board 223 **A TENTATIVE STUDY OF WATER QUALITY RETRIEVAL IN LOW-LEVEL-POLLUTED CASE II WATERS USING ANALYTICAL MODEL**
Qing Guan, Ziqi Guo, Caixia Liu, Xia Lei, Institute of Remote Sensing Applications, CAS, China

MOP.P.224 Board 224 **SUBMERGED MACROPHYTES HEIGHT ESTIMATION BY ECHOSOUNDER DATA SAMPLE**
Luiz Henrique da Silva Rotta, Nilton Nobuhiro Imai, São Paulo State University, Brazil

MOP.P.225 Board 225 **MONITORING WATER QUALITY OF LAKE TAIHU FROM HJ-CCD DATA USING EMPIRICAL MODELS**
Junsheng Li, Bing Zhang, Qian Shen, Lei Zou, Liwei Li, Center for Earth Observation and Digital Earth, CAS, China

MOP.P.226 Board 226 **RESULTS OF GLOBWETLAND II, A REGIONAL PILOT PROJECT OF THE RAMSAR CONVENTION ON WETLAND, AND FUTURE OPPORTUNITIES**
Kathrin Weise, Bert Wolf, Michael Schwarz, Jena-Optronik GmbH, Germany; Marc Paganini, European Space Agency, Italy; Herbert Hansen, KEYOBS, Belgium; Enrico Bonino, Jena-Optronik GmbH, Belgium; Eleni Fitoka, KEYOBS, Greece; Manfred Keil, German Aerospace Center (DLR), Germany; Eric Van Valkengoed, Terrasphere, Netherlands; Inge Melotte, I-MAGE Consult, Belgium

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Dynamic Processes of the Earth

Session Co-Chairs: Christiane Schmullius, University of Jena; R. S. Chatterjee, Indian Institute of Remote Sensing

MOP.P.227 Board 227 **CHARACTERISTICS ANALYSIS OF SPATIAL AND TEMPORAL CHANGE ABOUT VEGETATION COVER IN HUNLUNBEIER GRASSLAND.**
Feng Zhang, Ying Li, Yanting Wu, Environmental Satellite Centre, China

MOP.P.228 Board 228 **PERMANENT SCATTERER INTERFEROMETRY FOR DETECTING SURFACE MOVEMENTS INDUCED BY GROUNDWATER LEVEL CHANGE**
Nesrin Salepci, Christian Thiel, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

MOP.P.229 Board 229 **INTERFEROMETRIC SYNTHETIC APERTURE RADAR (INSAR) MEASUREMENTS OF SUBSIDENCE IN THE GANGES RIVER DELTA, BANGLADESH**
Stephanie Higgins, James P. M. Syvitski, Irina Overeem, University of Colorado at Boulder, United States

MOP.P.230 Board 230 **HUMAN INDUCED GROUNDWATER LEVEL DECLINATION AND PHYSICAL REBOUND IN NORTHERN ATHENS BASIN (GREECE) OBSERVED BY MULTI-REFERENCE DINSAR TECHNIQUES**
Michael Foumelis, European Space Agency, Italy

MOP.P.231 Board 231 **SUBSIDENCE OF THE EARTH SURFACE IN THE KUZNETSK COAL BASIN, CAUSED BY TECHNOGENIC AND NATURAL SEISMIC ACTIVITY ACCORDING TO ALOS PALSAR INTERFEROMETRY**
Alexander Zakharov, Kotelnikov Institute of Radio-engineering and Electronics, Russian Federation; Michael Epov, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Valery Mironov, Institute of Petroleum Geology and Geophysics, Russian Federation; Tumen Chymitdorzhiev, Institute of Physical Materials Science, Russian Federation; Ludmila Zakharova, Kotelnikov Institute of Radio-engineering and Electronics, Russian Federation; Victor Seleznev, Alexander Emanov, Geophysical Survey, Russian Federation; Michael Bykov, Institute of Physical Materials Science, Russian Federation

MOP.P.232 Board 232 **LUNAR, SOLAR AND EARTHQUAKE PROJECTED POSITIONS OF 138 MAG. 8.25-5.2 EARTHQUAKES IN CALIFORNIA FROM 1769 TO 2004**
Kiyo Tomiyasu, Lockheed Martin, Retired, United States

Hydrology

Session Chair: Christoph Rudiger, Monash University

MOP.P.233 Board 233 **WATER STORAGE CHANGES OVER GREAT LAKE FROM SATELLITE GRAVIMETRY AND TIDAL DATA**
He Huang, RuoMing Shi, Beijing University of Civil Engineering and Architecture, China; GuangJian Yan, Beijing Normal University, China

MOP.P.234 Board 234 **GLOBAL WATER CYCLE AND CLIMATE CHANGE SIGNALS OBSERVED BY SATELLITE GRAVIMETRY**
Guiping Feng, Shuanggen Jin, Shanghai Astronomical Observatory, CAS, China

MOP.P.235 Board 235 **AN ASSIMILATION ALGORITHM OF SATELLITE-DERIVED LST OBSERVATIONS FOR THE OPERATIONAL PRODUCTION OF SOIL MOISTURE MAPS**
Lorenzo Campo, Fabio Castelli, University of Florence, Italy; Francesca Caparrini, Eumechanos, Italy; Dara Entekhabi, Massachusetts Institute of Technology, United States

MOP.P.236 Board 236 **COSMO SKYMED AO PROJECTS –MULTI-TEMPORAL SAR AND OPTICAL DATA INTEGRATED APPROACH FOR WEED INFESTED INLAND WATERS**
Lorenzo Fusilli, Giovanni Laneve, Pablo Marzialetti, Sapienza Università di Roma, Italy; Angelo Palombo, Simone Pascucci, Stefano Pignatti, Federico Santini, Consiglio Nazionale delle Ricerche IMAA, Italy

MOP.P.237 Board 237 **CALIBRATION OF COSMO-SKYMED SAR DATA FOR HYDROLOGY APPLICATIONS**
Daniele Riccio, Gerardo Di Martino, Antonio Iodice, Università degli Studi di Napoli Federico II, Italy; Youssouf Koussoube, University of Ouagadougou, Burkina Faso; Alfonso Davide Pinelli, Giuseppe Ruello, Università degli Studi di Napoli Federico II, Italy

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Dynamics of Earth Processes and Climate Change: Atmosphere

Session Co-Chairs: Fuzhong Weng, NOAA; Mathew Schwaller, NASA Goddard Space Flight Center

MOP.P.238 Board 238 **COMPARISON OF CMIP5 CLOUD COVER SIMULATION WITH REMOTE SENSING DATA FOR AFRICAN CORDEX DOMAIN**
Albano Gonzalez, Juan C. Perez, Juan P. Diaz, Francisco J. Exposito, Aaron Enriquez, David Taima, Universidad de La Laguna, Spain

MOP.P.239 Board 239 **QUALIFYING DIURNAL AND SEASONAL VARIATIONS OF SURFACE HEAT FLUXES OF TWO GRASSLAND ECOSYSTEMS ON QINGHAI-TIBET PLATEAU**
Jianwu Yan, Baozhang Chen, Min Feng, Institute of Geographic Sciences and Natural Resources Research, CAS, China

MOP.P.240 Board 240 **A SPATIO-TEMPORAL INTERPOLATION APPROACH FOR THE FTS SWIR PRODUCT OF XCO2 DATA FROM GOSAT**
Zhaocheng Zeng, Liping Lei, Shanshan Hou, Liwei Li, Center for Earth Observation and Digital Earth, CAS, China

MOP.P.241 Board 241 **VARIATION OF LATENT HEAT FLUX OVER THE BENGAL BAY-SOUTH CHINA SEA AREA AND ITS RELATIONSHIP WITH SOUTH CHINA SEA SUMMER MONSOON ONSET**
Jinnian Chen, Tao Zuo, Hongna Wang, Institute of Oceanology, CAS, China

MOP.P.242 Board 242 **A TOMOGRAPHIC APPROACH TO THE RETRIEVAL OF THE ATMOSPHERIC SPECIFIC ATTENUATION COEFFICIENT FROM MEASURED BRIGHTNESS TEMPERATURE**
Ada Vittoria Bosisio, Consiglio Nazionale delle Ricerche IEIIT, Italy; Vinia Mattioli, University of Perugia, Italy; Nazzareno Pierdicca, Sapienza Università di Roma, Italy

MOP.P.243 Board 243 **INTERDECADAL VARIABILITY OF THE WESTERN PACIFIC WARM POOL**
Hongna Wang, Jinnian Chen, Institute of Oceanology, CAS, China; Qinyan Liu, South China Sea Institute of Oceanology, CAS, China

MOP.P.244 Board 244 **IMPACT OF 500HPA HEIGHT FIELD ANOMALY ON PRECIPITATION AND TEMPERATURE CHANGE OVER ARID CENTRAL ASIA OVER THE PAST 100 YEARS**
Jinsong Wang, Feng Wei, Institute of Arid Meteorology, China Meteorological Administration, China

MOP.P.245 Board 245 **A PRELIMINARY STUDY OF ATMOSPHERIC CO2 PROFILE BASED ON GOSAT OBSERVATION**
Shanshan Hou, Liping Lei, Liwei Li, Xianhua Guan, Center for Earth Observation and Digital Earth, CAS, China

MOP.P.246 Board 246 **MONITORING HUMIDITY OVER LAND USING SATELLITE BASED DATA**
Sergio De Hoyos, Rouzbeh Nazari, Reza Khanbilvardi, The City College of New York, United States; Pietro Ceccato, Columbia University, United States

MOP.P.247 Board 247 **ASSESSMENTS OF F18 SPECIAL SENSOR MICROWAVE IMAGER/SOUNDER MEASUREMENTS FOR WEATHER AND CLIMATE APPLICATIONS**
Ding Liang, IMSG, United States; Fuzhong Weng, NOAA, United States; Yong Chen, Tong Zhu, Colorado State University, United States

Disasters and Hazards I - Flood Risk and Flood Monitoring

Session Chair: Wang Haijing, ETH Zurich

MOP.P.248 Board 248 **RESEARCH AND APPLICATION OF SNOWBELT FLOOD RISK EARLY-WARNING TECHNOLOGY – A CASE STUDY IN ILI STATE, XINJIANG PROVINCE**
Qi Wen, Juan Nie, Lingling Li, Liang Liu, Baojun Zhang, National Disaster Reduction Center of China, China

MOP.P.249 Board 249 **USING A NEW INTEGRATED DROUGHT MONITORING INDEX TO IMPROVE DROUGHT DETECTION IN MID-EASTERN CHINA**
Lei Zhou, China National Environmental Monitoring Center, China; Jian-Jun Wu, Song Leng, Ming Liu, Beijing Normal University, China; Jie Zhang, University of Maryland, College Park, United States; Lin Zhao, Beijing Normal University, China; Chunyuan Diao, University at Buffalo, The State University of New York, United States; Jianhui Zhang, Haijiang Luo, Fengying Zhang, Yu Shi, China National Environmental Monitoring Center, China

MOP.P.250 Board 250 **ESTIMATION OF FLOOD VOLUME IN CHAO PHRAYA RIVER BASIN, THAILAND, FROM MODIS IMAGES COUPPLED WITH FLOOD INUNDATION LEVEL**
Youngjoo Kwak, PWRI, Japan; Jonggeol Park, Tokyo University of Information Sciences, Japan; Atsuhiro Yorozuya, Kazuhiko Fukami, PWRI, Japan

MOP.P.251 Board 251 **CONTRIBUTION OF EARTH OBSERVATION DATA AND GIS TO MAPPING AND MANAGING FLOOD EVENTS IN GREECE**
Antonios Mouratidis, European Space Agency, Italy; Georgia Doxani, Melina Nikolaidou, Maria Lampiri, Aristotle University of Thessaloniki, Greece; Francesco Sarti, European Space Agency, Greece; Maria Tsakiri-Strati, Aristotle University of Thessaloniki, Greece

MOP.P.252 Board 252 **ASSESSMENT OF STORM-INDUCED COASTAL MORPHOLOGIC CHANGES AND DAMAGE USING REPEAT LIDAR REMOTE SENSING SURVEYS**
Hongxing Liu, Qiusheng Wu, University of Cincinnati, United States

MOP.P.253 Board 253 **APPLICATION OF FREQUENCY RATIO MODEL AND VALIDATION FOR PREDICTIVE FLOODED AREA SUSCEPTIBILITY MAPPING USING GIS**
MoungJin Lee, Jungeun Kang, Seongwoo Jeon, Korea Environment Institute, Republic of Korea

MOP.P.254 Board 254 **CONTRIBUTION OF SATELLITE DATA TO FLOOD RISK MAPPING IN ROMANIA**
Gheorghe Stancalie, Vasile Craciunescu, Argentina Teodora Nertan, Denis Mihailescu, National Meteorological Administration, Romania

MOP.P.255 Board 255 **FLOOD MODELING AND INUNDATION RISK EVALUATION USING REMOTE SENSING IMAGERY IN COASTAL ZONE OF CHINA**
Xiaoping Du, Huadong Guo, Xiangtao Fan, Junjie Zhu, Zhenzhen Yan, Qin Zhan, Zhongchang Sun, Chinese Academy of Sciences, China

MOP.P.256 Board 256 **RAPID RESPONSE FOR FLOOD DETECTION IMPLEMENTING THE RST APPROACH ON MSG/SEVIRI DATA**
Mariapia Faruolo, Emanuele Ciancia, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Irina Coviello, University of Basilicata, Italy; Teodosio Lacava, Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Valerio Tramutoli, University of Basilicata, Italy

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Disasters and Hazards III - Volcanos, Oil Spill, Earthquakes, Etc.

Session Chair: Ferdinando Nunziata, Universita di Napoli Parthenope

MOP.P.257 Board 257 **FIRST MONITORING OPERATIONS OF THE SPACEBORNE EUROPEAN VOLCANO OBSERVATORY**
Fabrizio Ferrucci, Steve Tait, Institut de Physique du Globe de Paris, France; Sue Loughlin, British Geological Survey, United Kingdom; Maria Lucia Tampellini, Raffaella Ratti, Marco Vimercati, Compagnia Generale per lo Spazio SpA, Italy; Nicolas Theys, Belgian Institute for Space Aeronomy, Belgium; Marco Bianchi, Marco Basilico, Tele-Rilevamento Europa - T.R.E. srl, Italy; Giovanni Laneve, Centro di Ricerca Progetto San Marco, Italy; Barbara Hirn, IES Consulting SrL, Italy; Lieven Clarisse, Université Libre de Bruxelles, Belgium; Pepijn Kenter, Sander Niemeijer, Science and Technology Corporation, Netherlands; Paul van der Voet, Terrasphere, Netherlands; Pieter Valks, German Aerospace Center (DLR), Germany; A.T.J. de Laat, Royal Netherlands Meteorological Institute (KNMI), Netherlands

MOP.P.258 Board 258 **A QUANTITATIVE ASSESSMENT OF DINSAR TIME SERIES ACCURACY IN VOLCANIC AREAS: FROM THE FIRST TO SECOND GENERATION SAR SENSORS**
Mariarosaria Manzo, Paolo Berardino, Manuela Bonano, Francesco Casu, Michele Manunta, Antonio Pepe, Susi Pepe, Eugenio Sansosti, Giuseppe Solaro, Pietro Tizzani, Giovanni Zeni, IREA-CNR, Italy; Francesco Guglielmino, Giuseppe Puglisi, Prospero De Martino, Francesco Obrizzo, Umberto Tammaro, INGV, Italy; Riccardo Lanari, IREA-CNR, Italy

MOP.P.259 Board 259 **APPLICATION OF GPGPU FOR SPATIO-TEMPORAL DETECTION AND MONITORING OF OIL SPILLS**
Ujwala Bhangale, Surya Durbha, Indian Institute of Technology, Bombay, India

MOP.P.260 Board 260 **EXPLOITATION OF COSMO-SKYMED SYSTEM FOR DETECTION OF SHIPS RESPONSIBLE FOR OIL SPILLS**
Daniele Staglianò, Alberto Lupidi, Fabrizio Berizzi, Marco Martorella, University of Pisa, Italy

MOP.P.261 Board 261 **OBSERVATION OF THE PENGLAI 19-3 OIL LEAK AND ITS IMPACT ON THE SEA AREA ECOSYSTEM**
Jie Guo, Yantai Institute of Coastal Zone Research, CAS, China; Qiang Xie, South China Sea Instiute of Oceanology, CAS / Institute of Deep-sea Science and Engineering, CAS, China; Xin Liu, Yantai Institute of Coastal Zone Research, CAS, China

MOP.P.262 Board 262 **A MULTI-SCALE MARKOV MODEL FOR UNSUPERVISED OIL SPILL DETECTION IN TERRASAR-X DATA**
Sandro Martinis, Monika Gähler, André Twele, German Aerospace Center (DLR), Germany

MOP.P.263 Board 263 **INCIDENCE PREDICTION OF COMMUNICABLE DISEASES AFTER THE WENCHUAN EARTHQUAKE USING REMOTE SENSING**
Sheng Zheng, Institute of Remote Sensing Applications, CAS/ Graduate University, CAS, China; Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Guanghe Li, Beijing University of Technology, China; Shilei Lu, State Forestry Administration, China; Min Xu, Huicong Jia, Institute of Remote Sensing Applications, CAS, China; Lin Li, China Agricultural University, China

MOP.P.264 Board 264 **FOREST FIRE HAZARD MODELING USING HYBRID AHP AND FUZZY AHP METHODS USING MODIS SENSOR**
Shahram Sharifi Hashjin, Amin Hoseinpoor Milaghardan, Ali Esmaeily, Kerman Graduate University of Technology, Iran; Barat Mojaradi, School of Civil Engineering, Iran University of Science and Technology, Iran; Farzin Naseri, International Center for Science, High Technology & Environmental Sciences, Iran

MOP.P.265 Board 265 **VARIATIONS OF THE ATMOSPHERIC WATER VAPOR IN LONG AND MIDDLE-TERM EARTHQUAKE PREPARATION**
Zhihui Deng, Meihua Chen, Rongjin Deng, Jinling Tao, Institute of Geology, China Earthquake Administration, China

MOP.P.266 Board 266 **STUDY ON THE COMPARATION OF BUILDING DAMAGE EXTRACTED FROM DIFFERENT RS IMAGES ACQUIRED AFTER 2010 M=7.1 YUSHU, QINGHAI, CHINA EARTHQUAKE**
Xiaoqing Wang, Aixia Dou, Dingjian Jin, Long Wang, Xiang Ding, Hongyi Wang, Institute of Earthquake Science, China

Disasters and Hazards IV - Natural Disasteer Management

Session Chair: Zhenhong Li, University of Glasgow

MOP.P.267 Board 267 **AUTOMATIC DEPICTING ALGORITHM OF EARTHQUAKE COLLAPSED BUILDINGS WITH AIRBORNE HIGH RESOLUTION IMAGE**
Jianwen Ma, Sixian Qin, Center for Earth Observation and Digital Earth, CAS, China

MOP.P.268 Board 268 **THE SUOMI NPP VIIRS ACTIVE FIRE PRODUCT: STATUS AND EARLY EVALUATION RESULTS**
Ivan Csiszar, NOAA/NESDIS, United States; Louis Giglio, Wilfrid Schroder, Evan Ellicott, University of Maryland, United States; Christopher Justice, University of Maryland, College Park, United States

MOP.P.269 Board 269 **IDENTIFICATION OF THE FIRE-HAZARDOUS FORESTS USING REMOTE SENSING DATA**
Elena Shcherbenko, Dmitry Plotnikov, Satellite Monitoring of Environment, Canada

MOP.P.270 Board 270 **CONTRIBUTION OF EARTH OBSERVATION AND MODELLING TO DISASTER RESPONSE MANAGEMENT: METHODOLOGICAL DEVELOPMENTS AND RECENT EXAMPLES**
Joachim Post, German Aerospace Center (DLR), Germany; Shunichi Koshimura, Tohoku University, Japan; Stephanie Wegscheider, German Aerospace Center (DLR), Germany; Abdul Muhari, Tohoku University, Japan; Matthias Mück, Guenter Strunz, German Aerospace Center (DLR), Germany; Hideomi Gokon, Satomi Hayashi, Tohoku University, Japan; Enrico Stein, Andrius Ramanauskas, German Aerospace Center (DLR), Germany

MOP.P.271 Board 271 **GEOHAZARDS OBSERVATIONS AND NATURAL DISASTER ASSESSMENT IN CHINA**
Zhi Wang, Baishan Xu, Northeastern University, China; Lixin Wu, Yonglin Shen, Zhifeng Li, Beijing Normal University, China; Huiying Li, Jilin University, China

MOP.P.272 Board 272 **FLOOD MONITORING SYSTEM WEBSITE USING GOOGLE EARTH AND 3D GIS**
Yili Chan, Masatoshi Mori, Kinki University, Japan

MOP.P.273 Board 273 **INVESTIGATION OF REMOTE SENSING FOR DIKE INSPECTION**
Sharon Cundill, Robert Hack, Mark van der Meijde, University of Twente, Netherlands

MOP.P.274 Board 274 **BUILDING AN ON-DEMAND WEB SERVICE SYSTEM FOR GLOBAL AGRICULTURAL DROUGHT MONITORING AND FORECASTING**
Meixia Deng, Liping Di, Genong Yu, Ali Levent Yagci, Chunming Peng, Bei Zhang, Dayong Shen, George Mason University, United States

MOP.P.275 Board 275 **HAZARD HOTSPOTS ANALYSIS FROM GEOSPATIAL DATABASE USING GEOSPATIAL DATA MINING TECHNOLOGY**
Pai-Hui Hsu, National Taiwan University, Taiwan; Wen-Ray Su, National Science & Technology Center for Disaster Reduction, Taiwan

MOP.P.276 Board 276 **CHARLES CREEK FLOOD ZONE MODELING: A CORRELATION STUDY OF ENVIRONMENTAL CONDITIONS VERSUS WATER LEVEL IN THE PASQUOTANK WATERSHED**
Nartezya Dykes, Spelman College, United States; Lekedrick Easley, Mississippi Valley State University, United States; Jeaime Powell, Elizabeth City State University, United States; Jerome Mitchell, Indiana University, United States; Kuchumbi Hayden, Elizabeth City State University, United States

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Disasters and Hazards V - Natural Disaster Monitoring and Management

Session Chair: Armando Marino, ETH

MOP.P.277 Board 277 **SIGRI PROJECT: RESULTS OF THE PRODUCTS VALIDATION PROCESS**
Giovanni Laneve, Munzer Jahjah, Sapienza Università di Roma, Italy; Fabrizio Ferrucci, Università della Calabria, Italy; Barbara Hirn, IES Consulting-Intelligence for Environment and Security, Italy; Fabrizio Battazza, Agenzia Spaziale Italiana, Italy; Lorenzo Fusilli, Roberto de Bonis, Sapienza Università di Roma, Italy

MOP.P.278 Board 278 **SAR HIGH RESOLUTION IMAGE SUB-PIXEL CORRELATION FOR LANDSLIDE MONITORING. APPLICATION TO SALAZIE (LA REUNION ISLAND) AND LA VALETTE (ALPS) LANDSLIDES.**
Daniel Raucoules, Marcello de Michele, BRGM, France

MOP.P.279 Board 279 **GRACE TIME VARIABLE GRAVITY FIELD FOR MONITORING NATURAL HAZARDS**
Christian Gruber, Frank Flechtner, Christoph Dahle, Elisa Fagiolini, Deutsches GeoForschungsZentrum, Germany

MOP.P.280 Board 280 **STUDY ON THE PRECISION EVALUATION METHOD FOR A SPECIFIC CATEGORY IN THE CLASSIFICATION OF REMOTE SENSING IMAGE**
Hongyi Wang, Xiaoqing Wang, Institute of Earthquake Science, China; Aixia Dou, Institude of Earthquake Science, China

MOP.P.282 Board 282 **IMPROVING LANDSLIDE HAZARD MAPPING MODELS CONSIDERING RAINFALL PROBABILITY-LOGISTIC REGRESSION AND CROSS VALIDATION**
MoungJin Lee, Seongwoo Jeon, Korea Environment Institute, Republic of Korea; Jae-Won Choi, National Emergency Management Agency, Republic of Korea; Saro Lee, Korea Institute of Geology, Republic of Korea

MOP.P.283 Board 283 **DETECTING AND MONITORING LANDSLIDE PHENOMENA WITH TERRASAR-X PERSISTENT SCATTERERS DATA: THE GIMIGLIANO CASE STUDY IN CALABRIA REGION (ITALY)**
Silvia Bianchini, Francesca Cigna, Chiara Del Ventisette, Sandro Moretti, Nicola Casagli, University of Firenze, Italy

MOP.P.284 Board 284 **COMPARISON OF MODIS AND BIRD IN DETECTING WILDFIRES OVER LARGE AREAS IN AN AUSTRALIAN CONTEXT**
Simon Mitchell, Simon Jones, RMIT University, Australia; Eckehard Lorenz, Andreas Eckardt, German Aerospace Center (DLR), Germany; Karin Reinke, Peter Moar, RMIT University, Australia

MOP.P.285 Board 285 **ROAD DAMAGE DETECTION FROM HIGH-RESOLUTION RS IMAGE**
Lixia Gong, China Earthquake Administration, China; Liqiang An, Earthquake Administration of Tianjin Municipality, China; Mingzhong Liu, Jingfa Zhang, China Earthquake Administration, China

Assimilation

Session Chair: Gabriele Pfister, National Center for Atmospheric Research

MOP.P.286 Board 286 **COMPARISON OF DIFFERENT MODEL ERROR TREATMENTS AND ASSIMILATION SCHEMES IN LAND SURFACE TEMPERATURE ASSIMILATION**
Shanshan Yu, Xiaozhou Xin, Qinhuo Liu, Institute of Remote Sensing Applications, CAS, China

MOP.P.287 Board 287 **GLASS LEAF AREA INDEX PRODUCT DERIVED FROM MODIS TIME SERIES REMOTE SENSING DATA**
Zhiqiang Xiao, Shunlin Liang, Jindi Wang, Xuejun Yin, Yang Xiang, Jinling Song, Han Ma, Beijing Normal University, China

MOP.P.288 Board 288 **COMPARISON OF SCALING EFFECTS IN FRACTION OF VEGETATION COVER BETWEEN ALGORITHMS BASED ON LINEAR MIXTURE MODEL USING VI**
Kenta Obata, University of Hawaii, United States; Hiroki Yoshioka, Aichi Prefectural University, Japan; Tomoaki Miura, University of Hawaii, United States

MOP.P.289 Board 289 **IMPROVING THE PROCESS-BASED SIMULATION OF GROWTH HETEROGENEITIES IN AGRICULTURAL STANDS THROUGH ASSIMILATION OF EARTH OBSERVATION DATA**
Tobias Hank, Ludwig-Maximilians-Universität München, Germany; Heike Bach, Katharina Spannraft, Malin Friese, VISTA Remote Sensing in Geosciences GmbH, Germany; Toni Frank, Wolfram Mauser, Ludwig-Maximilians-Universität München, Germany

MOP.P.291 Board 291 **ARCTIC COLLABORATIVE ENVIRONMENT: A NEW MULTINATIONAL COLLABORATION FOR AWARENESS, RESEARCH, AND OPERATIONAL DECISION SUPPORT**
Gina Wade, Martin Kress, Von Braun Center for Science and Innovation, United States; Jeff McCracken, Paul Meyer, NASA, United States; Steve Tanner, The University of Alabama Huntsville, United States; Stephen Spehn, United States European Command, United States; Charles Laymon, Universities Space Research Association, United States; Joseph Casas, NASA, United States

MOP.P.292 Board 292 **MULTI-RESOLUTION DATA ASSIMILATION FOR MISSING DATA INTERPOLATION IN GEOPHYSICAL SEQUENCES**
Sileye Ba, Télécom Bretagne, France; Bertrand Chapron, Institut Français de Recherche pour l'Exploitation de la Mer, France; Ronan Fablet, Télécom Bretagne, France

MOP.P.293 Board 293 **A DUAL-PHASE SATELLITE DATA SIMULATION SYSTEM: FRAMEWORK AND PRELIMINARY EVALUATION OVER CHINA**
Shenglei Zhang, Jiancheng Shi, Institute of Remote Sensing Applications, CAS, China; Lingmei Jiang, Beijing Normal University, China; Qiang Liu, Youjun Dou, Institute of Remote Sensing Applications, CAS, China

MOP.P.294 Board 294 **LAND SURFACE EVAPOTRANSPIRATION AS SEEN FROM METEOSAT SECOND GENERATION SATELLITES: LSA-SAF DEVELOPMENTS AND PERSPECTIVES.**
Françoise Gellens-Meulenberghs, Nicolas Ghilain, Alirio Arboleda, Royal Meteorological Institute, Belgium

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New Satellite Missions

Session Co-Chairs: Chris Ruf, University of Michigan; Haruhisa Shimoda, Japan Aerospace Exploration Agency

MOP.P.295 Board 295 **NPOESS PREPARATORY PROJECT (NPP) ENVIRONMENTAL PRODUCTS**
Kerry Grant, Shawn Miller, Raytheon, United States

MOP.P.296 Board 296 **CHARM: A CUBESAT WATER VAPOR RADIOMETER FOR EARTH SCIENCE**
Boon Lim, NASA Jet Propulsion Laboratory, United States; David Mauro, Rodolphe De Rosee, Matthew Sorgenfrei, NASA Ames Research Center, United States; Steve Vance, NASA Jet Propulsion Laboratory, United States

MOP.P.297 Board 297 **THE APPLICATION OF SMALL SATELLITES IN THE CONSTRUCTION OF PASSIVE SPACE-BASED SYSTEMS**
Mikhail Mironov, German Sharygin, Tomsk State University of Control Systems and Radioelectronics, Russian Federation

MOP.P.298 Board 298 **NPP VIIRS EARLY ON-ORBIT SOLAR DIFFUSER DEGRADATION RESULTS**
David Moyer, Evan Haas, The Aerospace Corporation, United States; Jon Fulbright, Hassan Oudrari, Sigma Space Corporation, United States; Xiaoxiong Xiong, NASA Goddard Space Flight Center, United States; Amit Angal, Science Systems and Applications, Inc., United States; Stephen Mills, Lushalan Liao, Northrop Grumman Airborne Systems, United States; Frank De Luccia, Kameron Rausch, The Aerospace Corporation, United States

MOP.P.299 Board 299 **PROBA-V GEOMETRIC CALIBRATION**
Stefano Mica, Luca Galli, Advanced Computer Systems S.p.A., Italy; Geert Duhoux, Stefan Livens, Flemish Institute for Technological Research (VITO), Belgium; Veljko Jovanovic, NASA Jet Propulsion Laboratory, United States; Alessandra Giustiniani, Advanced Computer Systems S.p.A., Italy; Jan C. Dries, Flemish Institute for Technological Research (VITO), Belgium; Joe Zender, Stefano Santandrea, European Space Agency ESTEC, Netherlands

MOP.P.300 Board 300 **PAU INSTRUMENT ABOARD INTA MICROSAT-1: FLIGHT MODEL TESTS**
Alberto Alonso-González, Adriano Camps, Daniel Pascual, Hyuk Park, Universitat Politècnica de Catalunya and IEEC, Spain; Antonio Alcayde, Sergio Chavero, Pedro Martinez, Luis Crespo, ADTelecom, Spain; Manuel Angulo, INTA, Spain; Antonio Rius, Institut de Ciències de l'Espai, CSIC and IEEC, Spain

MOP.P.301 Board 301 **CHARACTERISTICS OF TANDEM-X EXPERIMENTAL MODES**
José Luis Bueso Bello, Carolina González, Thomas Kraus, Benjamin Bräutigam, German Aerospace Center (DLR), Germany

MOP.P.302 Board 302 **EVALUATION OF CRIMSS OPERATIONAL PRODUCTS USING IN-SITU MEASUREMENTS, MODEL ANALYSIS FIELDS, AND RETRIEVAL PRODUCTS FROM HERITAGE ALGORITHMS**
Murty Divakarla, IMSG, Inc., United States; Christopher Barnet, Mitch Goldberg, NOAA/NESDIS, United States; Degui Gu, Northrop Grumman Aerospace Systems, United States; Xu Liu, NASA Langley Research Center, United States; Xiaozhen Xiong, IMSG, Inc., United States; Susan Kizer, NASA Langley Research Center, United States; Guang Guo, IMSG, Inc., United States; Michael Wilson, IMSG, Inc.,, United States; Eric Maddy, Riverside Technology, Inc., United States; Nicholas Nalli, IMSG, Inc., United States; Antonia Gambacorta, Tom King, Riverside Technology, Inc., United States; Xia Ma, Northrop Grumman Aerospace Systems, United States; William Blackwell, MIT Lincoln Laboratory, United States

MOP.P.303 Board 303 **SUOMI NPP VIIRS REFLECTIVE SOLAR BAND RADIOMETRIC CALIBRATION**
Kameron Rausch, Frank De Luccia, David Moyer, Jason Cardema, The Aerospace Corporation, United States; Ning Lei, Jon Fulbright, Chengbo Sun, Vincent Chiang, Sigma Space Corporation, United States

MOP.P.304 Board 304 **SUOMI NPP VIIRS EMISSIVE BAND RADIANCE CALIBRATION AND ANALYSIS**
Quanhua (Mark) Liu, University of Maryland, United States; Changyong Cao, Fuzhong Weng, NOAA / Center for Satellite Applications and Research, United States

New Satellite Missions and Instruments

Session Co-Chairs: Paul Rosen, NASA Jet Propulsion Laboratory; William Blackwell, MIT Lincoln Laboratory

MOP.P.305 Board 305 **UTILITY AS APPLIED TO SMALL SATELLITE RISK BASED DECISION-MAKING**
Roger King, Mississippi State University, United States

MOP.P.306 Board 306 **JOINT POLAR SATELLITE SYSTEM COMMON GROUND SYSTEM OVERVIEW**
Michael Jamilkowski, David C. Smith, Raytheon Intelligence and Information Systems, United States

MOP.P.307 Board 307 **SOUTH ATLANTIC ANOMALY (SAA) IMPACT ON SUOMI NPP VIIRS SENSOR DATA RECORD QUALITY**
Christopher Florio, Frank De Luccia, Patrick Yuen, The Aerospace Corporation, United States

MOP.P.308 Board 308 **GOES-R PROGRAM INSTRUMENT CALIBRATION AND PRODUCT VALIDATION**
Robert Iacovazzi Jr, NOAA/NESDIS/GOES-R, United States; Changyong Cao, Jaime Daniels, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Kathleen McIntyre, NASA, United States; Joseph Zajic, NOAA/NESDIS/GOES-R, United States; Edward Grigsby, NASA, United States

MOP.P.309 Board 309 **TRANSITIONING FROM MODIS TO VIIRS AEROSOL RECORD: EFFECTS OF ALGORITHM DIFFERENCES**
Istvan Laszlo, NOAA, United States; Hongqing Liu, Riverside Technology, Inc., United States; Heather Q. Cronk, Integrity Applications Incorporated, United States; Lorraine Remer, A., NASA, United States; Robert Levy, Science Systems and Applications, Inc., United States

MOP.P.310 Board 310 **USING ANTARCTIC DOME C SITE AND SIMULTANEOUS NADIR OVERPASS OBSERVATIONS FOR MONITORING RADIOMETRIC PERFORMANCE OF NPP VIIRS INSTRUMENT**
Slawomir Blonski, University of Maryland, United States; Changyong Cao, NOAA, United States; Sirish Uprety, Colorado State University, United States; Xi Shao, NOAA, United States

MOP.P.311 Board 311 **OPTIMIZATION OF POSITIONING OF GROUND STATIONS FOR SPACE OPTICAL MISSIONS**
Boris Grishechkin, Armin Braun, Martin Wickler, German Aerospace Center (DLR), Germany

MOP.P.312 Board 312 **GOES-R AWG PRODUCT PROCESSING SYSTEM FRAMEWORK**
Shanna Sampson, Riverside Technology, Inc, United States; Walter Wolf, NOAA/NESDIS/Center for Satellite Applications and Research, United States; Aiwu Li, Tianxu Yu, Riverside Technology, Inc, United States; Ray Garcia, Graeme Martin, CIMSS/University of Wisconsin-Madison, United States; Xingpin Liu, Riverside Technology, Inc, United States; William Straka, CIMSS/University of Wisconsin-Madison, United States; Meizhu Fan, Riverside Technology, Inc, United States; Eva Schiffer, CIMSS/University of Wisconsin-Madison, United States; Mitch Goldberg, NOAA/NESDIS/Center for Satellite Applications and Research, United States

Frequency Allocations in Remote Sensing and RFI Mitigation for Current and Future Sensors

Session Chair: David Truesdale, Naval Research Laboratory

MOP.P.313 Board 313 **STUDY OF RADIO FREQUENCY INTERFERENCE EFFECTS ON RADIOMETRY BANDS IN URBAN ENVIRONMENTS**
Giuseppe Forte, Adriano Camps, Jose Miguel Tarongi, Mercè Vall-llossera, Universitat Politècnica de Catalunya, Spain

MOP.P.314 Board 314 **PRESENT AND FUTURE OF ALLOCATION AND PROTECTION OF EARTH OBSERVATION USING CONSTELLATION**
Korehiro Maeda, University of Tokyo, Japan

MOP.P.315 Board 315 **PRELIMINARY RESULTS FROM THE SOIL MOISTURE ACTIVE/PASSIVE (SMAP) RADIOMETER DIGITAL ELECTRONICS ENGINEERING TEST UNIT (ETU)**
Damon Bradley, Clifford Brambora, Ali Feizi, Rafael Garcia, Lynn Miles, Priscilla Mohammed, Jinzheng Peng, Jeffrey Piepmeier, Kamdin Shakoorzadeh, Mark Wong, NASA Goddard Space Flight Center, United States

MOP.P.316 Board 316 **RFI RISK REDUCTION ACTIVITIES USING NEW GODDARD DIGITAL RADIOMETRY CAPABILITIES**
Damon Bradley, Edward J. Kim, Lynn Miles, Mark Wong, NASA Goddard Space Flight Center, United States; Joel Morris, University of Maryland, Baltimore County, United States

Applications of Infrared Imaging of Air-Water Interfaces

Session Chair: Chris Zappa, Columbia University

MOP.P.317 Board 317 **LABORATORY MEASUREMENTS OF WAVE-INDUCED TURBULENCE USING THERMAL MARKING VELOCIMETRY**
Ivan Savelyev, Eric Maxeiner, U.S. Naval Research Laboratory, United States

MOP.P.318 Board 318 **INFRARED MULTIPATH REFLECTION FROM BREAKING WAVES OBSERVED AT LARGE INCIDENCE ANGLES**
Andrew Jessup, Ruth Branch, Chris Chickadel, University of Washington, United States

MOP.P.319 Board 319 **INFRARED IMAGERY OF BREAKING INTERNAL WAVES**
Eric Maxeiner, National Research Council / Naval Research Lab, United States; Ivan Savelyev, Geoffrey Smith, Naval Research Laboratory, United States

Monday, July 23 17:20 - 19:00 Poster Area
Session MOP.P Poster-Invited

Suomi National Polar-orbiting Partnership (NPP) Environmental and Sensor Data Records

Session Co-Chairs: Janna Feeley, Aerospace Corporation JPSS; John Furgerson, NOAA/NESDIS JPSS

MOP.P.320 Board 320 **STATUS OF THE SUOMI NPP VISIBLE/INFRARED IMAGER RADIOMETER SUITE'S (VIIRS) LAND ENVIRONMENTAL DATA RECORDS (EDRS) AFTER EARLY EVALUATION OF ON-ORBIT PERFORMANCE**
Miguel Román, NASA Goddard Space Flight Center, United States; Ivan Csiszar, NOAA Center for Satellite Applications and Research, United States; Christopher Justice, University of Maryland, College Park, United States; Jeffrey Key, NOAA/NESDIS, United States; Jeff Privette, NOAA National Climatic Data Center, United States; Sadashiva Devadiga, Carol Davidson, Sigma Space Corporation / NASA Goddard Spaceflight Center, United States; Robert E. Wolfe, Edward Masuoka, NASA Goddard Space Flight Center, United States

MOP.P.321 Board 321 **SNOW COVER PRODUCTS FROM NPP VIIRS: CURRENT STATUS AND POTENTIAL IMPROVEMENTS**
Peter Romanov, The City College of New York, United States; Igor Appel, I.M. Systems Group Inc., United States

MOP.P.322 Board 322 **ADAPTING MODIS DUST MASK ALGORITHM TO VIIRS FOR AIR QUALITY APPLICATIONS**
Shobha Kondragunta, NOAA, United States; Pubu Ciren, Riverside Technology, Inc., United States

MOP.P.323 Board 323 **THE ADVANCED TECHNOLOGY MICROWAVE SOUNDER (ATMS): A NEW OPERATIONAL SENSOR SERIES**
Edward J. Kim, CH Joseph Lyu, NASA Goddard Space Flight Center, United States; William Blackwell, R. Vincent Leslie, MIT Lincoln Laboratory, United States; Neal Baker, Aerospace Corporation, United States; Tsan Mo, Ninghai Sun, Li Bi, NOAA, United States; Kent Anderson, Michael Landrum, Giovanni De Amici, Degui Gu, Alex Foo, NGAS, United States; Wael Ibrahim, Raytheon, United States; Kris Robinson, Space Development Lab, United States; Lynn Chidester, self, United States; James Shiue, NASA Goddard Space Flight Center, United States

MOP.P.324 Board 324 **GEOPHYSICAL PARAMETER RETRIEVAL ALGORITHM FOR CROSS-TRACK INFRARED SOUNDER AND TESTING RESULTS**
Daniel Zhou, Allen Larar, Xu Liu, NASA Langley Research Center, United States; William Smith, Hampton University, United States; Larry Strow, University of Maryland, Baltimore County, United States; Ping Yang, Texas A&M University, United States

MOP.P.325 Board 325 **INITIAL RESULTS FROM THE OZONE MAPPER PROFILER SUITE ON THE SUOMI NATIONAL POLAR-ORBITING PARTNERSHIP**
Glen Jaross, SSAI, United States; Richard Buss, Raytheon, United States; Maria Caponi, The Aerospace Corporation, United States; Lawrence Flynn, NOAA/NESDIS, United States; Scott Janz, NASA Greenbelt, United States; Megan Novicki, Northrop Grumman Aerospace Systems, United States; Chunhui Pan, CICS, United States; Didier Rault, NASA Langley Research Center, United States; Colin Seftor, SSAI, United States; Bhaswar Sen, Northrop Grumman Aerospace Systems, United States; Xiangqian Wu, NOAA/NESDIS, United States

MOP.P.326 Board 326 **OMPS EARLY ORBIT DARK AND BIAS EVALUATION AND CALIBRATION**
Chunhui Pan, University of Maryland, United States; Fuzhong Weng, NOAA, United States; Glen Jaross, Science Systems and Applications, Inc., United States; Xiangqian Wu, NOAA, United States; Michael Haken, Science Systems and Applications, Inc., United States; Larry Flynn, NOAA, United States; Scott Janz, NASA, United States; Maria Caponi, The Aerospace Corporation, United States; Matthew Kowalewski, USRA, United States; Richard Buss, Raytheon, United States

MOP.P.327 Board 327 **CERES FLIGHT MODEL 5 ON NPP: POST-LAUNCH PERFORMANCE AND INITIAL SENSOR DATA RECORD VALIDATION RESULTS**
Kory J. Priestley, NASA Langley Research Center, United States; Susan Thomas, G. Louis Smith, SSAI, United States

MOP.P.328 Board 328 **PRODUCT MATURITY STATUS FOR NPP SENSOR AND ENVIRONMENTAL DATA RECORDS**
Janna Feeley, Aerospace Corporation, United States; Ivan Csiszar, NOAA / Center for Satellite Applications and Research, United States; Michael Denning, Integrity Applications Incorporated, United States; Heather Kilcoyne, NOAA / Joint Polar Satellite Systems, United States

MOP.P.329 Board 329 **THE ALGORITHM DEVELOPMENT LIBRARY FOR NPP DATA PRODUCT ANALYSIS**
William Thomas, The MITRE Corporation, United States; Paul Meade, Computational Physics, Inc., United States; Bryan Henderson, Raytheon, United States; Richard Cember, Computational Physics, Inc., United States

MOP.P.330 Board 330 **HDF5 FOR NPP SENSOR AND ENVIRONMENTAL DATA RECORDS**
Richard Ullman, NASA Goddard Space Flight Center, United States; Michael Denning, Integrity Applications Incorporated, United States

MOP.P.331 Board 331 **JPSS SYSTEM ARCHITECTURE NPP TO THE FUTURE**
Glenn Trumbower, JPSS, United States

MOP.P.332 Board 332 **LONG TERM MORNITORING FOR JPSS SDR AND EDR PRODUCTS**
Lihang Zhou, NOAA, United States; Shuang Qiu, IMSG, United States; Fuzhong Weng, Ivan Csiszar, Laurie Rokke, NOAA, United States; Xingpin Liu, IMSG, United States; Walter Wolf, Mitch Goldberg, NOAA, United States

Remote Sensing of Land Surface Energy Budget

Session Chair: Shunlin Liang, University of Maryland

MOP.P.333 Board 333 **IMPACTS OF SURFACE BOUNDARY LAYER TURBULENCE ON SURFACE TEMPERATURE MEASUREMENTS AT DIFFERENT SPATIAL RESOLUTIONS**
Damien Commandoire, Jean-Pierre Lagouarde, Mark Irvine, Sylvia Dayau, Didier Garrigou, Jean-Marc Bonnefond, Institut National de la Recherche Agronomique (INRA), France

MOP.P.334 Board 334 **EVALUATION OF SURFACE HEAT FLUX BASED ON SATELLITE REMOTE SENSING AND FIELD MEASUREMENT DATA**
Jin-Ki Park, Sang-Il Na, Jong-Hwa Park, Chungbuk National University, Republic of Korea

MOP.P.335 Board 335 **EVALUATION OF SEBS-ESTIMATED EVAPOTRANSPIRATION USING A LARGE APERTURE SCINTILLOMETER DATA FOR A COMPLEX UNDERLYING SURFACE**
Jing Lu, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Huimin Wang, Qianyanzhou Ecological Station, CAS, China; Ronglin Tang, Bohui Tang, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Jelila Labed, University of Strasbourg, France; Hua Wu, Guirui Yu, Institute of Geographic Sciences and Natural Resources Research, CAS, China

MOP.P.336 Board 336 **VALIDATION OF GLASS ALBEDO PRODUCTS USING GROUND MEASUREMENTS AND LANDSAT TM DATA**
Lian He, Qiming Qin, Mingchao Liu, Heng Dong, Peking University, China

MOP.P.337 Board 337 **COMPARISON OF RADIOMETRIC GAIN OF OPTICAL SATELLITE SENSORS USING TUZ GOLU RADIOMETRICALLY CALIBRATED TEST SITE**
Hilal Özen, Tubitak Uzay, Turkey; Nigel Fox, Andrew Deadman, Irina Behnert, P. Harris, National Physical Laboratory, United Kingdom; S. Gürbüz, Tubitak Uzay, Turkey; L. Yuan, CMA, China; Derek Griffith, CSIR, South Africa; M. Kaewmanee, A. Prakobya, C. Musana, GISTDA, Thailand; Flavio Ponzoni, National Institute for Space Research (INPE), Brazil; D. Lee, Y. Lee, Korea Aerospace Research Institute, Republic of Korea; Yannick Boucher, Françoise Viallefont-Robinet, Office National d'Etudes et de Recherches Aérospatiale, France; Philippe Rolland, ONERA, France; Dennis Helder, South dakota state university, United States; Larry Leigh, South Dakota State University, United States; Kurtis Thome, NASA Goddard Space Flight Center, United States; Sindy Sterckx, Els Knaeps, D. Raeymaekers, VITO, Belgium; Patrice Henry, Centre National d'Études Spatiales, France

MOP.P.338 Board 338 **DAILY GLOBAL SOLAR RADIATION ESTIMATE IN THE SOUTH KOREA BASED ON GEOSTATIONARY SATELLITE REMOTE SENSING**
Sang-Il Na, Shin-cheol Baek, Jin-Ki Park, Jong-Hwa Park, Chungbuk National University, Republic of Korea

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SMOS Observations over Land

Session Chair: Yann Kerr, CESBIO

MOP.P.338 Board 338 **SMOS CALIBRATION AND VALIDATION OVER THE SALAR DE UYUNI**
Maria Jose Escorihuela, Angeles Escorihuela, isardSAT, S.L., Spain; Philippe Richaume, Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

MOP.P.339 Board 339 **COMPARISON BETWEEN THE SMOS L2 VEGETATION OPTICAL DEPTH PRODUCT OVER LOW VEGETATION AND VEGETATION INDICES AND LEAF AREA INDEX DURING 2010-2011**
Heather Lawrence, University of Valencia, Spain; Jean-Pierre Wigneron, Nathalie Novello, Institut National de la Recherche Agronomique (INRA), France; Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère, France; Ernesto Lopez-Baeza, University of Valencia, Spain; Delphine Leroux, Arnaud Mialon, Centre d'Etudes Spatiales de la Biosphère, France; Jennifer Grant, European Space Research and Technology Centre (ESTEC), Netherlands; Maciej Miernecki, University of Valencia, Spain; Christophe Moisy, Institut National de la Recherche Agronomique (INRA), France; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France

MOP.P.340 Board 340 **TEMPERATURE AND TEXTURE DEPENDENT DIELECTRIC MODEL OF MOIST SOILS AT THE SMOS FREQUENCY**
Valery Mironov, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Yann H. Kerr, Centre d'Etudes Spatiales de la Biosphère, France; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA) - Unité EPHYSE, France; Liudmila Kosolapova, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; François Demontoux, IMS Laboratory, CNRS, France

MOP.P.341 Board 341 **COMPARISON OF DIELECTRIC MODELS IN SMOS SOIL MOISTURE RETRIEVAL**
Arnaud Mialon, Philippe Richaume, Delphine Leroux, Ahmad Al Bitar, Yann H. Kerr, François Cabot, Centre d'Etudes Spatiales de la Biosphère, France; Jean-Pierre Wigneron, Ephyse INRA, France

MOP.P.342 Board 342 **COMPARISON OF TWO RETRIEVAL SOIL MOISTURE ALGORITHMS ON SMOS DATA**
Pavel Bobrov, Omsk State Pedagogical University, Russian Federation; Valery Mironov, Liudmila Kosolapova, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation; Alexander Yashchenko, Omsk State Pedagogical University, Russian Federation

MOP.P.343 Board 343 **A MULTI-SENSOR (SMOS, AMSR-E AND ASCAT) SATELLITE-BASED SOIL MOISTURE PRODUCTS INTER-COMPARISON**
Teodosio Lacava, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Luca Brocca, Research Institute for Geo-Hydrological Protection (IRPI), National Research Council, Italy; Mariapia Faruolo, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Patrick Matgen, Public Research Centre - Gabriel Lippmann, CRP, Luxembourg; Tommaso Moramarco, Research Institute for Geo-Hydrological Protection (IRPI), National Research Council, Italy; Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA), National Research Council, Italy; Valerio Tramutoli, University of Basilicata, Italy

MOP.P.344 Board 344 **ASSIMILATION OF SMOS OBSERVATIONS TO GENERATE A PROTOTYPE SMAP LEVEL 4 SURFACE AND ROOT-ZONE SOIL MOISTURE PRODUCT**
Rolf Reichle, Gabriëlle De Lannoy, NASA Goddard Space Flight Center, United States; Wade Crow, USDA ARS, United States; Randal Koster, NASA Goddard Space Flight Center, United States; John Kimball, University of Montana, United States

Dynamics of Earth Processes and Climate Change:Biosphere

Session Co-Chairs: Kyle McDonald, CUNY; Christiane Schmullius, University of Jena

MOP.P.725 Board 725 **THE EFFECTS OF CLIMATE CHANGE ON DIFFERENT TYPES OF GRASSLAND IN MAQU COUNTY IN NORTHEAST TIBETAN PLATEAU**
Ni Guo, Yaohui Li, Institute of Arid Meteorology, China Meteorological Administration, China; lanying Han, Northwest Regional Climate Center, CMA, China; Suping Wang, Institute of Arid Meteorology, Northwest Regional Climate Center, China Meteorological Administration, China

MOP.P.726 Board 726 **THE RESPONSE OF TERRESTRIAL ECOSYSTEM IN EASTERN ASIA REGION TO CLIMATE CHANGE**
Deyong Yu, Yupeng Liu, Bin Xun, State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University, China

MOP.P.727 Board 727 **TRACKING SEASONAL DROUGHT EFFECTS ON ECOSYSTEM LIGHT USE EFFICIENCY IN A MEDITERRANEAN FOREST USING CLIMATIC AND REMOTE SENSING DATA**
M.A. Gilabert, A. Moreno, University of Valencia, Spain; F. Maselli, M. Chiesi, Consiglio Nazionale delle Ricerche IBIMET, Italy; B. Martinez, University of Valencia, Spain; G. Seufert, IES-JRC, Italy; J. Meliá, University of Valencia, Spain

MOP.P.728 Board 728 **A VEGETATION RADIATIVE TRANSFER SCHEME IN ISBA-A-GS INTERACTIVE VEGETATION MODEL**
Dominique Carrer, Jean-Louis Roujean, Sebastien Lafont, Aaron Boone, Jean-Christophe Calvet, Météo-France, France

MOP.P.729 Board 729 **MONITORING VEGETATION PHENOLOGY IN CHINA USING TIME-SERIES MODIS LAI DATA**
Chuanfu Xia, Jing Li, Qinhuo Liu, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China

MOP.P.730 Board 730 **BIOCLIMATIC LIMITATIONS ON GLOBAL FORESTS AS MEASURED BY A FUSED REMOTE SENSING-CLIMATE APPROACH**
Jonathan Greenberg, University of Illinois at Urbana-Champaign, United States; Maria Santos, Stanford University, United States; Solomon Dobrowski, University of Montana, United States; Susan Ustin, The University of California, Davis, United States

MOP.P.731 Board 731 **A REMOTE SENSING MODEL BASED LAND DEGRADATION INDEX FOR THE ARID AND SEMI-ARID REGIONS OF SOUTHERN AFRICA**
Markus Niklaus, Christina Eisfelder, Markus Tum, Kurt P. Günther, German Aerospace Center (DLR), Germany

MOP.P.732 Board 732 **EVALUATION OF SPACEBORNE REMOTE SENSING DATA SETS FOR IMPROVING SPECIES DISTRIBUTION MODELING IN SOUTH AMERICA**
Kyle C. McDonald, Ana Carnaval, Eric Waltari, Ronny Schroeder, The City College of New York, United States; Erika Podest, NASA Jet Propulsion Laboratory, United States; Jami Norman, Fort Hays State University, United States

MOP.P.733 Board 733 **MAPPING MIGRATORY BIRD PREVALENCE USING REMOTE SENSING DATA FUSION**
Anuradha Swatantran, Ralph Dubayah, University of Maryland, United States; Scott J. Goetz, Woods Hole Research Center, United States; Matthew G. Betts, Oregon State University, United States; Mindy Sun, Woods Hole Research Center, United States; Marc Simard, NASA Jet Propulsion Laboratory, United States; Richard Holmes, Dartmouth College, United States

MOP.P.734 Board 734 **EVALUATION OF PHENOLOGY EXTRACTING METHODS FROM VEGETATION INDEX TIME SERIES**
Wenquan Zhu, Minjie Mou, Lingli Wang, Nan Jiang, Beijing Normal University, China

MOP.P.735 Board 735 **REGIONAL PATTERNS OF FRENCH FOREST PHENOLOGY DERIVED FROM MODIS AND SPOT VEGETATION DATA OVER THE LAST DECADE**
Jean-Charles Samalens, Dominique Guyon, Institut National de la Recherche Agronomique (INRA), France; Nicolas Bories, MAAP-Departement Santé des Forêts, France; Nathalie Breda, Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France

MOP.P.736 Board 736 **MONITORING SEMIARID AGRO-ECOSYSTEMS WITH PRODUCTS DERIVED FROM VEGETATION AND FUTURE PROBA-V DATASETS**
Dries Raymaekers, Institut National de la Recherche Agronomique (INRA) / VITO, Belgium; Alfredo Gabriel Garcia, Carlos Di Bella, María Eugenia Beget, Carolina Llavallol, Patricio Oricchio, Julieta Straschnoy, INTA, Argentina; Marie Weiss, Frédéric Baret, Institut National de la Recherche Agronomique (INRA), France

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Disasters and Hazards II - Earthquakes and Tsunami

Session Chair: Kun Shan Chen, National Central University

MOP.P.737 Board 737 **OUTGOING LONG WAVE RADIATION VARIABILITY FEATURE PRIOR TO THE JAPAN M9.0 EARTHQUAKE ON MARCH 11, 2011**
Feng Jing, Xu Hui Shen, Institute of Earthquake Science, China Earthquake Administration, China; Chun Li Kang, China Earthquake Networks Center / China Earthquake Administration, China

MOP.P.739 Board 739 **INSAR OBSERVATION OF THE SHALLOW MW 5.1 LORCA EARTHQUAKE (SPAIN). COMPARISON WITH ELASTIC DISLOCATION MODEL.**
Marcello de Michele, BRGM, France; Pierre Briole, ENS, France; Daniel Raucoules, BRGM, France

MOP.P.740 Board 740 **POLARIMETRIC SAR REMOTE SENSING OF EARTHQUAKE/TSUNAMI DISASTER**
Sang-Eun Park, Yoshio Yamaguchi, Gulab Singh, Hirokazu Kobayashi, Niigata University, Japan

MOP.P.741 Board 741 **MEASURING NON-LINEAR DEFORMATION OF THE CAMPI FLEGREI CALDERA (NAPLES, ITALY) USING A MULTI-METHOD INSAR-GEOPHYSICAL APPROACH**
Christian Minet, Kanika Goel, German Aerospace Center (DLR), Germany; Ida Aquino, Rosario Avino, Giovanna Berrino, Stefano Caliro, Giovanni Chiodini, Prospero De Martino, Carlo Del Gaudio, Ciro Ricco, Fabio Sansivero, Valeria Siniscalchi, Carlo Terranova, Giuseppe Vilardo, Sven Borgstrom, Istituto Nazionale di Geofisica e Vulcanologia Sezione di Napoli "Osservatorio Vesuviano", Italy

MOP.P.742 Board 742 **OPERATIONAL PS-DINSAR DEFORMATION MONITORING PROJECT AT A REGIONAL SCALE IN CATALONIA (SPAIN)**
Pablo Blanco, Fernando Pérez, Institut Cartogràfic de Catalunya, Spain; Aline Concha, Jordi Marturia, Institut Geologic de Catalunya, Spain; Vicenç Palà, Institut Cartogràfic de Catalunya, Spain

MOP.P.743 Board 743 **RAPID DETERMINATION OF EARTHQUAKE MAGNITUDE AND DISPLACEMENT FIELD FROM GPS-OBSERVED COSEISMIC OFFSETS FOR TSUNAMI WARNING**
Hans-Peter Plag, Geoffrey Blewitt, University of Nevada, Reno, United States; Yoaz Bar-Sever, NASA Jet Propulsion Laboratory, United States

MOP.P.744 Board 744 **JOINT INVERSION OF THE 2011 TOHOKU (JAPAN) EARTHQUAKE FROM DINSAR AND GPS DATA**
Christian Bignami, Sven Borgstrom, Marco Chini, Francesco Guglielmino, Christodoulos Kyriakopoulos, Daniele Melini, Giuseppe Puglisi, Valeria Siniscalchi, Salvatore Stramondo, Istituto Nazionale di Geofisica e Vulcanologia, Italy

MOP.P.745 Board 745 **DAMAGE ESTIMATION OF THE GREAT EAST JAPAN EARTHQUAKE WITH AIRBORNE SAR (PI-SAR2) DATA**
Makoto Satake, Tatsuharu Kobayashi, Jyunpei Uemoto, Toshihiko Umehara, Shoichiro Kojima, Takeshi Matsuoka, Akitsugu Nadai, Seiho Uratsuka, National Institute of Information and Communications Technology, Japan

MOP.P.746 Board 746 **DETERMINATION OF THE SHORT-TERM EARTHQUAKE PRECURSORY PERIOD BASED ON THE THEORY OF THE COMPLEX SYSTEM'S CRITICAL STATE AND MULTIPARAMETER REMOTE SENSING DATA UTILIZATION**
Sergey Pulinets, Space Research Institute, Russian Academy of Sciences, Russian Federation

MOP.P.747 Board 747 **MICROWAVE RADIATION ANOMALY OF YUSHU EARTHQUAKE AND ITS MECHANISM**
Shanjun Liu, Xin Liu, Yuntao Ma, Northeastern University, China; Lixin Wu, Northeastern University / Beijing Normal University, China

MOP.P.748 Board 748 **MECHANISMS AND RELATIONSHIP TO SOIL MOISTURE OF SURFACE LATENT HEAT FLUX ANOMALY BEFORE INLAND EARTHQUAKES**
Kai Qin, Lixin Wu, China University of Mining and Technology, China; Shanjun Liu, Northeastern University, China; Angelo De Santis, Gianfranco Cianchini, Istituto Nazionale di Geofisica e Vulcanologia, Italy

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Video Poster Presentation

Video Poster Presentation

SAR Image Processing I

Session Chair: Josef Mittermeyer, German Aerospace Center - DLR

TUP.P.345 Board 345 **AN IMPROVED WIDE SWATH IMAGING ALGORITHM BASED ON SERIES REVERSION IN GEO SAR**
Zhipeng Liu, Teng Long, Cheng Hu, Tao Zeng, Beijing Institute of Technology, China

TUP.P.346 Board 346 **A NOVEL TECHNIQUE FOR FEATURE-BASED AIRCRAFT IDENTIFICATION FROM HIGH RESOLUTION AIRBORNE ISAR IMAGES**
Niccolò Ricardi, University of Pavia, Italy; Angelo Aprile, Selex Galileo S.p.A., Italy; Fabio Dell'Acqua, University of Pavia, Italy

TUP.P.347 Board 347 **AN IMPROVED NORMALIZED CROSS CORRELATION ALGORITHM FOR SAR IMAGE REGISTRATION**
Yufan Wang, Qiuze Yu, Wenxian Yu, Shanghai Jiao Tong University, China

TUP.P.348 Board 348 **OFDM WAVEFORM DIVERSITY DESIGN FOR MIMO SAR IMAGING**
Wen-Qin Wang, University of Electronic Science and Technology of China, China

TUP.P.349 Board 349 **BLOCKED SPECTRUM COMPRESSIVE SENSING BASED ON ROOT-MUSIC ALGORITHM FOR SAR IMAGE**
Xiaobo Li, Jie Chen, Yanqing Zhu, Beihang University, China

TUP.P.350 Board 350 **OPTICAL AND SAR IMAGE MATCHING BASED ON DYNAMIC APPROXIMATE EPIPOLAR-LINE CONSTRAINT MODEL**
Shuai Xing, Jiansheng Li, Yu He, Qing Xu, Information Engineering University, China

TUP.P.351 Board 351 **EXTRACTING RADAR SHADOW FROM SAR IMAGES**
Oussama Haddad, Riadh Abdelfattah, Hachem Ajili, COSIM, Sup'Com, Tunisia

TUP.P.352 Board 352 **DEVELOPMENT OF AN ALGORITHM FOR AUTOMATIC DETECTION OF OIL SLICKS FROM SYNTHETIC APERTURE RADAR (SAR) IMAGERY IN THE GULF OF GUINEA**
Amadi Afua Sefah-Twerefour, George Wiafe, Kwame Adu Agyekum, University of Ghana, Ghana

TUP.P.353 Board 353 **A VISUAL CIRCLE BASED IMAGE REGISTRATION ALGORITHM FOR OPTICAL AND SAR IMAGERY**
Wei Shi, Fenzhen Su, Institute of Geographic Sciences and Nature Resources Research, CAS, China; Ruirui Wang, College of Forestry, Beijing Forestry University, China; Junfu Fan, Institute of Geographic Sciences and Nature Resources Research, CAS, China

TUP.P.354 Board 354 **AN N2.5 BACK-PROJECTION ALGORITHM FOR SAR IMAGING**
Yunfeng Shao, Robert Wang, Yunkai Deng, Yue Liu, Runpu Chen, Gang Liu, Institute of Electronics, CAS, China

TUP.P.355 Board 355 **SAR IMAGE REGISTRATION BASED ON INVARIANT SPATIAL ARRANGEMENT OF SALIENT TARGETS**
Wei Zhou, Jian Guan, Naval Aeronautic and Astronautic University, China

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SAR Image Processing II

Session Chair: Eric Pottier, Université de Rennes 1

TUP.P.356 Board 356 **SAR IMAGE DESPECKLING METHOD USING BIVARIATE SHRINKAGE BASED ON DUAL-TREE COMPLEX WAVELET**
Shuang Wang, Jiao Zhou, Jun Li, Biao Hou, Xidian University, China

TUP.P.357 Board 357 **A METHOD OF ACQUIRING TIE POINTS BASED ON CLOSED REGIONS IN SAR IMAGES**
Boli Xiong, Zhiguo He, Canbin Hu, Chen Qi, Yongmei Jiang, Gang Yao Kuang, National University of Defense Technology, China

TUP.P.358 Board 358 **FREQUENCY-WAVENUMBER DOMAIN FOCUSING UNDER LINEAR MIMO ARRAY CONFIGURATIONS**
Xiaodong Zhuge, Alexander Yarovoy, TUDelft, Netherlands

TUP.P.359 Board 359 **MODIFED FREQUENCY SCALING PROCESSING FOR FMCW SAR**
Yunhua Luo, Hongjun Song, Yang Gao, Yunkai Deng, Robert Wang, Institute of Electronics, CAS, China

TUP.P.360 Board 360 **VARIABLE LOCAL WEIGHT FILTERING FOR POLSAR DATA SPECKLE NOISE REDUCTION**
Alberto Alonso-González, Carlos López-Martínez, Philippe Salembier, Universitat Politècnica de Catalunya, Spain

TUP.P.361 Board 361 **PROCESSING OF SLIDING SPOTLIGHT SAR DATA IN PRESENCE OF SQUINT**
Virginia Zamparelli, University of Cassino, Italy; Gianfranco Fornaro, Riccardo Lanari, National Research Council of Italy, Italy; Stefano Perna, University of Naples Parthenope, Italy; Diego Reale, National Research Council of Italy, Italy

TUP.P.362 Board 362 **BURNT AREA MAPPING IN THE EUROPEAN-MEDITERRANEAN: SAR BACKSCATTER CHANGE ANALYSIS AND SYNERGISTIC USE OF OPTICAL AND SAR DATA**
Eva-Maria Bernhard, André Twele, Monika Gähler, German Aerospace Center (DLR), Germany

SAR Image Processing III

Session Chair: Urs Wegmüller, Gamma Remote Sensing

TUP.P.363 Board 363 **RELAXED GENERALIZED MINIMUM-ERROR THRESHOLDING FOR UNSUPERVISED CHANGE DETECTION FROM SAR AMPLITUDE IMAGES**
Lei Shen, Heng-Chao Li, Southwest Jiaotong University, China

TUP.P.364 Board 364 **SPECKLE REDUCTION OF SAR IMAGES USING CURVELET AND WAVELET TRANSFORMS BASED ON SPATIAL FEATURES CHARACTERISTICS**
Mohammad Alioghli Fazel, Saeid Homayouni, University of Tehran, Iran; Vahid Akbari, University of Tromsø, Norway; Masoud Mahdianpari, University of Tehran, Iran

TUP.P.365 Board 365 **GRAPH BASED SAR IMAGES CHANGE DETECTION**
Shuiping Gou, TianTian Yu, Xidian University, China

TUP.P.366 Board 366 **OFDM SIGNAL DESIGN FOR RANGE AMBIGUITY SUPPRESSION IN SAR CONFIGURATION**
Vishal Riché, Université de Rennes 1, France; Stéphane Méric, Institut National des Sciences Appliquées - Rennes, France; Jean-Yves Baudais, Centre National de la Recherche Scientifique, France; Eric Pottier, Université de Rennes 1, France

TUP.P.367 Board 367 **SAR IMAGE DENOISING USING TOTAL VARIATION BASED REGULARIZATION WITH SURE-BASED OPTIMIZATION OF THE REGULARIZATION PARAMETER**
Frosti Palsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, Jon Atli Benediktsson, University of Iceland, Iceland

TUP.P.368 Board 368 **AUTOMATIC POINT MATCHING BETWEEN SAR AND OPTICAL IMAGES, MATCH-POINT QUALITY CHARACTERISATION AND ERROR DETECTION**
Peter Soukal, Emmanuel Baltsavias, ETH Zürich, Switzerland

TUP.P.369 Board 369 **SYNTHESIZING HIGH RESOLUTION PROFILE BASED ON CORRELATION COEFFICIENT FOR STEPPED-FREQUENCY RADAR**
Rui Wang, Liang Chen, Feng Li, Tao Zeng, Beijing Institute of Technology, China

TUP.P.370 Board 370 **THE LEAST SQUARES METHOD OF SYNTHESIZING RANGE PROFILE FOR STEPPED-FREQUENCY RADAR**
Feng Li, Rui Wang, Tao Zeng, Beijing Institute of Technology, China

TUP.P.371 Board 371 **HOW TO FUSE OPTICAL AND RADAR IMAGERY?**
Gintautas Palubinskas, German Aerospace Center (DLR), Germany

TUP.P.372 Board 372 **A BAYESIAN RECONSTRUCTION ALGORITHM FOR SYNTHESIS APERTURE IMAGING RADIOMETER**
Hong Yang, Fei Hu, Chen Ke, Rong Jin, Huazhong University of Science and Technology, China; Jinhai Sun, Science and Technology on Electromagnetic Scattering Laboratory, China

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Image Processing Applications I

Session Chair: Anita Simic, French National Institute for Agricultural Research (INRA)

TUP.P.373 Board 373 **BACKGROUND SUBTRACTION AND DUST STORM DETECTION**
Chenyi Liu, Paul Fieguth, University of Waterloo, Canada; Christoph S. Garbe, University of Heidelberg, Canada

TUP.P.374 Board 374 **ROCKY DESERTIFICATION EXPONENTIAL MODEL IN KARST AREA**
Guoqing Zhou, Yanli Ma, Guilin University of Technology, China

TUP.P.375 Board 375 **MANIFOLD REGRESSION FOR SUBSURFACE CONTAMINANT CHARACTERIZATION**
Hao Zhang, Tufts University, United States; Itza Mendoza-Sanchez, Escuela Superior de Ingenieria y Arquitectura, Mexico; Linda Abriola, Eric Miller, Tufts University, United States

TUP.P.376 Board 376 **FAST ROBUST PERSPECTIVE TRANSFORM ESTIMATION FOR AUTOMATIC IMAGE REGISTRATION IN DISASTER RESPONSE APPLICATIONS**
Jim Thomas, Ahsan Kareem, Kevin Bowyer, University of Notre Dame, United States

TUP.P.377 Board 377 **LANDSLIDE DETECTION USING IRS P6 TEMPORAL INDICES DATA USING SOFT COMPUTING APPROACH**
Sandeep Singh Sengar, Indian Institute of Technology, Roorkee, India; Anil Kumar, Indian Institute of Remote Sensing, India; S.K. Ghosh, H.R. Wason, Indian Institute of Technology, Roorkee, India

TUP.P.378 Board 378 **PERFORMANCE ASSESSMENT OF AUTOMATIC CROWD DETECTION TECHNIQUES ON AIRBORNE IMAGES**
Beril Sirmacek, German Aerospace Center (DLR), Germany; Jeroen Lichtenauer, Imperial College London, United Kingdom; Cem Ünsalan, Yeditepe University, Turkey; Peter Reinartz, German Aerospace Center (DLR), Germany

TUP.P.379 Board 379 **A VISUAL ATTENTION MODEL BASED ON WAVELET TRANSFORM AND ITS APPLICATION ON SHIP DETECTION**
Biao Hou, Na Fan, Shuang Wang, Xidian University, China

TUP.P.380 Board 380 **ENVIRONMENTAL IMPACT ANALYSIS OF MINING USING SPOT-VEGETATION NDVI**
Carolien Tote, Else Swinnen, Ils Reusen, Stephanie Delalieux, Flemish Institute for Technological Research (VITO), Belgium

Image Processing Applications II

Session Chair: Jenny Q. Du, Mississippi State University

TUP.P.381 Board 381
POPULATION DENSITY ESTIMATION USING TEXTONS
Yousra Javed, Muhammad Murtaza Khan, School of Electrical Engineering and Computer Science, National University of Sciences and Technology,, Pakistan; Jocelyn Chanussot, GIPSA-lab, France

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LAND COVER VARIATION OF MINNAERT CONSTANT FOR TOPOGRAPHIC CORRECTION OF THEMATIC MAPPER DATA
José Marinaldo Gleriani, Universidade Federal de Vicosa, Brazil; Mauro Antonio Homem Antunes, Universidade Federal Rural do Rio de Janeiro, Brazil; Vicente Paulo Soares, Carlos Antonio Alvares Soares Ribeiro, Universidade Federal de Vicosa, Brazil

TUP.P.383 Board 383
ROOF-TOP DETECTION BASED ON STRUCTURAL ELEMENTS COMBINATION
Hao Feng, Zhiguo Jiang, Jihao Yin, Beijing University of Aeronautics & Astronautics, China

TUP.P.384 Board 384
THERMAL REMOTE SENSING FOR LAND SURFACE TEMPERATURE MONITORING: MARAQEH COUNTY, IRAN
Bakhtiar Feizizadeh, Thomas Blaschke, University of Salzburg, Austria

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Fabio Augusto Faria, Jefersson Alex dos Santos, Ricardo da Silva Torres, Anderson Rocha, Alexandre Xavier Falcão, University of Campinas, Brazil

TUP.P.386 Board 386
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Chunqiao Song, Bo Huang, The Chinese University of Hong Kong, Hong Kong SAR of China; Songcai You, Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, China

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THERMAL REMOTE SENSING FOR EXAMINING THE RELATIONSHIP BETWEEN URBAN LAND SURFACE TEMPERATURE AND LAND USE/COVER IN TABRIZ CITY, IRAN
Bakhtiar Feizizadeh, Thomas Blaschke, University of Salzburg, Austria

TUP.P.388 Board 388
A CLOUD DETECTION METHOD BASED ON COLOR MODEL AND UNDECIMATED WAVELET TRANSFORMATION
Dongxu He, Graduate University, CAS, China; Yu Meng, Institute of Remote Sensing Applications, CAS, China; Chengyi Wang, Jingbo Chen, Graduate University, CAS, China; jian Yang, Institute of Remote Sensing Applications, CAS, China

TUP.P.389 Board 389
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Aixia Dou, Institute of Geology, China Earthquake Administration, China; Xiaoqing Wang, Xiang Ding, Institute of Earthquake Science, China Earthquake Administration, China; Hu Qiu, Earthquake Administration of Tianjin municipality., China; Long Wang, Xiaoxiang Yuan, Institute of Earthquake Science, China Earthquake Administration, China

TUP.P.390 Board 390
AN OPTIMAL BOUNDARY DETERMINATION APPROACH FOR CLOUD REMOVAL IN SATELLITE IMAGE
Kang-Hua Lai, Chao-Hung Lin, National Cheng Kung University, Taiwan

TUP.P.391 Board 391
THE ADDED VALUE OF INTEGRATED CORRECTION MODELS FOR THE DETECTION OF FOREST TRANSITIONS IN MOUNTAIN AREAS
Steven Vanonckelen, Katholieke Universiteit Leuven, Belgium; Stefaan Lhermitte, Royal Netherlands Meteorological Institute (KNMI), Netherlands; Vincent Balthazar, Université Catholique de Louvain, Belgium; Anton Van Rompaey, Katholieke Universiteit Leuven, Belgium

Change Detection II

Session Chair: Francesca Bovolo, University of Trento

TUP.P.392 Board 392
UNSUPERVISED CHANGE DETECTION ON REMOTE SENSING IMAGES USING NON-LOCAL INFORMATION AND MARKOV RANDOM FIELD MODELS
Peng Liu, Center for Earth Observation and Digital Earth, CAS, China; Shengtao Sun, Yanshan University, China; Guoqing Li, Jibo Xie, Center for Earth Observation and Digital Earth, CAS, China; Yi Zeng, College of Information Science, Beijing Forestry University, China

TUP.P.393 Board 393
BAYESIAN CHANGE DETECTION BASED ON SPACE CONTEXTUAL INFORMATION AND EM ALGORITHM
Lizhong Qiu, Yongke Ding, Qiuze Yu, Wenxian Yu, Xingzhao Liu, Shanghai Jiao Tong University, China

TUP.P.394 Board 394
SPATIO-TEMPORAL INTERACTION FOR AERIAL VIDEO CHANGE DETECTION
Nicolas Bourdis, Denis Marraud, EADS France, France; Hichem Sahbi, Centre National de la Recherche Scientifique Telecom ParisTech, France

TUP.P.395 Board 395
OBJECT BASED IMAGE ANALYSIS (OBIA) AND DATA MINING (DM) IN LANDSAT TIME SERIES FOR MAPPING SOYBEAN IN INTENSIVE AGRICULTURAL REGIONS
Antônio Roberto Formaggio, Matheus Alves Vieira, Camilo Daleles Rennó, National Institute for Space Research (INPE), Brazil

TUP.P.396 Board 396
MAPPING AND MONITORING PRINCIPAL CROPLAND COVER/USE CHANGES IN MONGOLIA USING REMOTE SENSING
Erdenee Batzorig, Batbayar Banzragch, The Remote Sensing Society of Mongolia, Mongolia

TUP.P.397 Board 397
ADVANCED OBJECT-BASED CHANGE DETECTION USING VERY HIGH-RESOLUTION REMOTE SENSING IMAGERY
Clemens Listner, Irmgard Niemeyer, Forschungszentrum Jülich, Germany

TUP.P.398 Board 398
LANDSLIDE DETECTION WITH COLOR TRANSFORM IMAGE FUSION ON MULTISPECTRAL REMOTE SENSING IMAGES
Hsuan Ren, National Central University, Taiwan; Wei-Jen Liang, Industrial Technology Research Insititute, Taiwan

Image Pan-Sharpening and Fusion

Session Co-Chairs: Fabio Pacifici, DigitalGlobe, Inc.; Jenny Q. Du, Mississippi State University

TUP.P.399 Board 399 **QUALITY EVALUATION OF PANSHARPENING TECHNIQUES ON DIFFERENT LAND COVER TYPES**
Anabella Medina Machín, Javier Marcello Ruiz, Institute for Oceanography and Global Change / Universidad de Las Palmas de Gran Canaria, Spain; Dionisio Rodríguez, Signals and Communications Department. Universidad de Las Palmas de Gran Canaria, Spain; Francisco Eugenio, Javier Martín Abasolo, Institute for Oceanography and Global Change / Universidad de Las Palmas de Gran Canaria, Spain

TUP.P.400 Board 400 **A NEW DATA FUSION MODEL FOR GENERATING HIGH SPATIAL AND TEMPORAL RESOLUTION IMAGES**
Yongxi Huang, Xiaosong Li, Institute of Remote Sensing Applications, CAS, China; Lina Bai, Research Institute of Forest Resource Information Techniques, Chinese Academy of Forestry, China; Bingfang Wu, Hao Wang, Weiwei Zhu, Institute of Remote Sensing Applications, CAS, China

TUP.P.401 Board 401 **EVALUATION AND ANALYSIS OF FUSION ALGORITHMS FOR ACTIVE AND PASSIVE REMOTE SENSING IMAGE**
Paolo Gamba, University of Pavia, Italy; Pei Liu, China University of Mining and Technology, China; Peijun Du, Nanjing University, China; Hiu Lin, Xuzhou Normal University, China

TUP.P.402 Board 402 **LOW-RANK AND SPARSE MATRIX DECOMPOSITION-BASED PAN SHARPENING**
Kaixuan Rong, Shuang Wang, Xiaohua Zhang, Biao Hou, Xidian University, China

TUP.P.403 Board 403 **PERFORMANCE EVALUATION OF DIFFERENT REFERENCES BASED IMAGE FUSION QUALITY METRICS FOR QUALITY ASSESSMENT OF REMOTE SENSING IMAGE FUSION**
Wenjing Pei, Guian Wang, Xianchuan Yu, Beijing Normal University, China

TUP.P.404 Board 404 **FUSION OF MULTISPECTRAL AND PANCHROMATIC IMAGES USING LAB TRANSFORM BASED ON FOURIER FILTERING**
Liang Hu, Beijing University of Aeronautics & Astronautics, China; Bin Xiangli, Academy of Opto-Electronics, CAS, Beijing University of Aeronautics & Astronautics, China; Lijuan Su, Yan Yuan, Beijing University of Aeronautics & Astronautics, China

TUP.P.405 Board 405 **A NEW PANSHARPENING METHOD USING AN EXPLICIT IMAGE FORMATION MODEL REGULARIZED VIA TOTAL VARIATION**
Frosti Palsson, Johannes R. Sveinsson, Magnus O. Ulfarsson, Jon Atli Benediktsson, University of Iceland, Iceland

TUP.P.406 Board 406 **MARGIN BASED LIKELIHOOD MAP FUSION FOR TARGET TRACKING**
Jing Peng, Montclair State University, United States; Guna Seetharaman, AFRL/RITB, United States

TUP.P.407 Board 407 **COMPARING DIFFERENT IHS-BASED PAN-SHARPENING TECHNIQUES FOR WORLDVIEW-2 HIGH RESOLUTION SATELLITE IMAGERY**
Farhad Samadzadegan, Fatemeh Fathollahi, Mohammad Rezaee, Tehran University, Iran

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Image Analysis

Session Co-Chairs: Begum Demir, University of Trento; Mathieu Fauvel, University of Toulouse

TUP.P.408 Board 408 **NOISE ATTENUATION OF THE GEOPHYSICAL DATA USING THE FRAMELET TRANSFORM**
Pengliang Yang, Jinghuai Gao, Wenchao Chen, Xi'an Jiaotong University, China

TUP.P.409 Board 409 **AUTOMATIC ANNOTATION OF SATELLITE IMAGES VIA MULTI-FEATURE JOINT SPARSE CODING WITH SPATIAL RELATION CONSTRAINT**
Xinwei Zheng, Wenjuan Ren, Guangluan Xu, Yu Huang, Ge Liu, Hongqi Wang, Institute of Electronics, CAS, China

TUP.P.410 Board 410 **AN IMPROVED MOSAIC METHOD CONSIDERING ATMOSPHERIC DIFFUSION IN AEROSOL OPTICAL DEPTH RETRIEVAL CASE**
Jia Liu, Yong Xue, Hui Xu, Yingjie Li, Jie Guang, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China; Leiku Yang, School of Geography, Beijing Normal University, China

TUP.P.411 Board 411 **QUALITY EVALUATION OF THE CBERS-02B HIGH SPATIAL RESOLUTION IMAGE**
Ke Sun, Xuhui Shen, Institute of Earthquake Science, China Earthquake Administration, China; Lei Yang, China Center for Resources Satellite Date and Application, China

TUP.P.412 Board 412 **POST-PROCESSING TECHNIQUES FOR RADIOMETRIC IMAGES**
Stefan Siegenthaler, Marco Canavero, Axel Murk, IAP, University of Bern, Switzerland

TUP.P.413 Board 413 **HEDGES DETECTION USING LOCAL DIRECTIONAL FEATURES AND SUPPORT VECTOR DATA DESCRIPTION**
Mathieu Fauvel, David Sheeren, University of Toulouse, France; Jocelyn Chanussot, Grenoble Institute of Technology, France; Jon Atli Benediktsson, University of Iceland, Iceland

TUP.P.414 Board 414 **SEMI-AUTOMATIC ANNOTATION OF IMAGE REGIONS FOR A TEXTUAL SEARCH IN A SATELLITE IMAGE DATABASE**
Sahbi Bahroun, Ecole supérieure des communications de tunis, Tunisia; Nozha Boujemaa, Zied Belhadj, Institut National de la Recherche Agronomique (INRA), France

TUP.P.415 Board 415 **CIRCULAR OBJECT RECOGNITION FROM SATELLITE IMAGES**
Hind Taud, Juan Carlos Herrera-Lozada, Jesus Antonio Alvarez-Cedillo, Magdalena Marciano-Melchor, Ramon Silva-Ortigoza, Mauricio Olguin-Carbajal, Instituto Politécnico Nacional, Mexico

TUP.P.416 Board 416 **AN OBJECT-ORIENTED CLUSTERING ALGORITHM FOR VHR PANCHROMATIC IMAGES USING NONPARAMETRIC LATENT DIRICHLET ALLOCATION**
Yinfeng Qi, Hong Tang, Yang Shu, Li Shen, Jianwei Yue, Weiguo Jiang, Beijing Normal University, China

TUP.P.417 Board 417 **AUTOMATED GRAIN SIZING USING MARK-BASED WATERSHED ALGORITHM**
Han-Sheng Chuang, Chao-Hung Lin, National Cheng Kung University, Taiwan

TUP.P.418 Board 418 **FINE IMAGE MATCHING FOR NARROW BASELINE STEREOVISION**
Takeshi Arai, The University of Tokyo, Japan; Akira Iwasaki, Research Center for Advanced Science and Technology, Japan

TUP.P.419 Board 419 **ATMOSPHERIC CORRECTION OF SATELLITE IMAGES OVER RUGGED TERRAIN**
Yoshikazu Iikura, Hirosaki University, Japan

Image Registration and Enhancement

Session Chair: Jacqueline Le Moigne, NASA Goddard Space Flight Center

TUP.P.420 Board 420
HIGH-RESOLUTION SATELLITE IMAGE REGISTRATION USING LOCAL FEATURE AND CONTOUR FRAGMENT
Chao Tao, Zhengrong Zou, Central South University, China; Hanqiu Sun, The Chinese University of Hong Kong, China

TUP.P.421 Board 421
MODIFIED SIFT FOR MULTI-MODAL REMOTE SENSING IMAGE REGISTRATION
Mahmudul Hasan, Mark R. Pickering, Xiuping Jia, The University of New South Wales, Australia

TUP.P.422 Board 422
AUTOMATIC 3D COORDINATE ESTIMATION OF FEATURE POINTS FOR BUILDING MODELING USING STEREO IMAGES
Yuta Kurokawa, Junichi Susaki, Kyoto University, Japan

TUP.P.423 Board 423
INFLUENCE OF THE NATURE AND NUMBER OF GROUND CONTROL POINTS TO THE QUALITY OF REMOTE SENSING GEOMETRIC CORRECTIONS
Gerard Moré, CREAF, Spain; Pons Xavier, Universitat Autònoma de Barcelona, Spain

TUP.P.424 Board 424
IMPROVED REGISTRATION METHOD FOR INFRARED AND VISIBLE REMOTE SENSING IMAGE USING NSCT AND SIFT
Qingqing Huang, Jian Yang, Chengyi Wang, Jingbo Chen, Yu Meng, Institute of Remote Sensing Applications, CAS, China

TUP.P.425 Board 425
A REMOTE SENSING IMAGERY AUTOMATIC FEATURE REGISTRATION METHOD BASED ON MEAN-SHIFT
Jian Yang, Qingqing Huang, Bin Wu, Jiansheng Chen, Institute of Remote Sensing Applications, CAS, China

TUP.P.426 Board 426
A CUMULATIVE DISTRIBUTION FUNCTION BASED (CDF-BASED) METHOD FOR NORMALIZING MULTI-BEAM MICROWAVE OBSERVATIONS
Nan Ye, Jeffrey P. Walker, Christoph Rüdiger, Monash University, Australia

TUP.P.427 Board 427
A CONTOUR-BASED PIXEL SWAPPING METHOD FOR SUPER-RESOLUTION MAPPING
Yuan-Fong Su, National Taiwan University, Taiwan; Giles Foody, University of Nottingham, United Kingdom; Anuar Muad, Universiti Kebangsaan Malaysia, Malaysia; Ke-Sheng Cheng, National Taiwan University, Taiwan

TUP.P.428 Board 428
NOISE REDUCTION IN MODIS NDVI TIME SERIES DATA BASED ON SPATIAL-TEMPORAL ANALYSIS
Julio Oliveira, Jose Epiphanio, National Institute for Space Research (INPE), Brazil

TUP.P.429 Board 429
BILATERAL PYRAMID BASED PANSHARPENING OF MULTISPECTRAL SATELLITE IMAGES
Nur Huseyin Kaplan, Isin Erer, Istanbul Technical University, Turkey

TUP.P.430 Board 430
A NEW TECHNIQUE FOR VISUALIZATION OF FOREST FIRE SMOKE PLUMES USING MODIS DATA
Izumi Nagatani, Jun-Ichi Kudoh, GSIS Tohoku University, Japan; Koichi Kawano, Tohoku Institute of Technology, Japan

TUP.P.431 Board 431
A PHENOLOGY-PRESERVING FILTERING METHOD TO REDUCE NOISE IN NDVI TIME SERIES
Nan Jiang, Wenquan Zhu, Minjie Mou, Lingli Wang, Junzhe Zhang, Beijing Normal University, China

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Precipitation, Clouds and Atmospheric Topics

Session Co-Chairs: Dong-Bin Shin, Yonsei University; Luca Facheris, Universito di Firenze

TUP.P.432 Board 432
COMPLETE DESCRIPTION OF A HEAVY HAILSTORM OVER THE BASQUE COUNTRY PROVIDING A 3D REPRESENTATION OF LIGHTNING DETECTIONS AND WEATHER RADAR DATA
Iñigo Hernáez, Adasa Sistemas, Spain; Javier López, Tecnalia Research and Innovation, Spain

TUP.P.433 Board 433
PRELIMINARY RESULTS OF C-, KU-, AND KA-BAND MULTI-FREQUENCY RADIOMETRIC MEASUREMENTS OF CLEAR AIR AND CLOUDS BRIGHTNESS (ANTENNA) TEMPERATURES
Artashes Arakelyan, Institute of Radiophysics & Electronics of Armenian National Academy of Sciences, Armenia; Astghik Hambaryan, Ecoserv Remote Observation Centre Co.Ltd., Armenia; Arsen Arakelyan, ECOSERV remote Observation Centre Co.Ltd., Armenia

TUP.P.434 Board 434
SPACE-BORNE WIND LIDAR SYSTEMS RESEARCH AND GROUNDVALIDATION SYSTEM DESIGN AND EXPERIMENT
Ao-you Wang, Yu-liang Tao, Chun-xiao Xu, Fan-Jiang Yan, Long Gao, Ping-ping Luo, Beijing Institute of Space Mechanics & Electricity, China

TUP.P.435 Board 435
ANALYSIS OF THE INITIATION AND EVOLUTION OF THE STRONG CONVECTIVE CLOUD: A CASE STUDY IN SUWAN AREA
QingNi Huang, Center for Earth Observation and Digital Earth, CAS, China; ZhiQiang Cao, National Satellite Meteorological Center, China; Zheng Zhang, Academy of Opto-Electronics, CAS, China

TUP.P.436 Board 436
SPATIAL VARIABILITY OF HIGH FREQUENCY BRIGHTNESS TEMPERATURES FOR PASSIVE MICROWAVE REMOTE SENSING OF RAINFALL
Dong-Bin Shin, Yonsei University, Republic of Korea; Kyoung-Wook Jin, Korea Aerospace Research Institute, Republic of Korea

TUP.P.437 Board 437
EFFECTS OF PRECIPITATION ON IMAGES COLLECTED USING DIFFERENT OPERATIONAL MODES OF COSMO SKY MED
Luca Baldini, Nicoletta Roberto, Eugenio Gorgucci, Consiglio Nazionale delle Ricerche, Italy; Luca Facheris, Università di Firenze, Italy; Venkatachalam Chandrasekar, Colorado State University, United States

TUP.P.438 Board 438
PREDICTION OF RAIN ATTENUATION SERIES BASED ON DISCRETIZED SPECTRAL MODEL
Jie Chen, Cédric Richard, University of Nice Sophia-Antipolis, France; Paul Honeine, Technology University of Troyes, France; Jean-Yves Tourneret, University of Toulouse, France

TUP.P.439 Board 439
RAINDROP SIZE DISTRIBUTION (DSD) RETRIEVAL FOR X-BAND DUAL-POLARIZATION RADAR
Eiichi Yoshikawa, Osaka University, Japan; Venkatachalam Chandrasekar, Coloardo State University, United States; Tomoo Ushio, Zen Kawasaki, Osaka University, Japan

TUP.P.440 Board 440
DESIGN AND DEVELOPMENT STATUS OF THE EARTHCARE CLOUD PROFILING RADAR
Hirotaka Nakatsuka, Toshiyoshi Kimura, Yoshishiro Seki, Gaku Kadosaki, Yoshiya Iide, Kazuyuki Okada, Jun Yamaguchi, Japan Aerospace Exploration Agency (JAXA), Japan; Nobuhiro Takahashi, Yuichi Ohno, Hiroaki Horie, Kenji Sato, National Institute of Information and Communications Technology, Japan

TUP.P.441 Board 441
THE STATISTICAL RELATIONSHIP BETWEEN TROPICAL CYCLONE INTENSITY AND STRUCTURE FROM A GLOBAL SATELLITE DERIVED CLIMATOLOGY
Joshua Cossuth, Robert Hart, Florida State University, United States

Numerical Weather Prediction and Data Assimilation

Session Co-Chairs: Stefan Kneifel, University of Cologne; Fabrizio Cuccoli, Universito di Firenze/CNIT

TUP.P.443 Board 443
THE IMPACT OF AEROSOLS ON CLOUD AND PRECIPITATION PROCESSES: CLOUD-RESOLVING MODEL SIMULATIONS
Wei-Kuo Tao, Xiaowen Li, NASA, United States; Alexander Khain, Hebrew University of Jerusalem, Israel; Toshihisa Matsui, Stephen Lang, Joanne Simpson, NASA, United States

TUP.P.444 Board 444
PASSIVE MICROWAVE RADIANCE ESTIMATION BY COUPLING A LAND SURFACE EMISSIVITY MODEL WITH CRTM
Huoping Pan, Jiancheng Shi, Institute of Remote Sensing Applications, CAS, China; Hu Yang, National Satellite Meteorological Center, China; Tianxing Wang, Institute of Remote Sensing Applications, CAS, China

TUP.P.445 Board 445
COUPLED ATMOSPHERE AND LAND DATA ASSIMILATION SYSTEM (CALDAS): TOWARDS IMPROVING THE PREDICTABILITY OF NUMERICAL WEATHER PREDICTION MODELS
Mohamed Rasmy Abdul Wahid, Toshio Koike, The University of Tokyo, Japan; Hui Lu, Tsinghua University, China

TUP.P.446 Board 446
RECENT UPDATES TO THE CASA NOWCASTING SYSTEM
Evan Ruzanski, Vaisala, Inc., United States; Venkatachalam Chandrasekar, Colorado State University, United States

TUP.P.447 Board 447
COMPUTE CLOUD BASED WEATHER DETECTION AND WARNING SYSTEM
Dilip Kumar Krishnappa, Eric Lyons, David Irwin, Michael Zink, University of Massachusetts Amherst, United States

TUP.P.448 Board 448
A NEW REMOTE SENSING FILTER RADIOMETER EMPLOYING A FABRY-PEROT ETALON AND A CCD CAMERA FOR COLUMN MEASUREMENTS OF METHANE IN THE EARTH ATMOSPHERE
Elena Georgieva, University of Maryland, Baltimore County, United States; Wen Huang, SSAI, United States; William Heaps, NASA Goddard Space Flight Center, United States

TUP.P.449 Board 449
METEOSAT SECOND GENERATION SURFACE TEMPERATURE ASSIMILATION FOR WRF MODEL OVER CANARY ISLANDS DOMAIN
Javier Martín Abasolo, Institute for Oceanography and Global Change / Universidad de Las Palmas de Gran Canaria, Spain; Aday Perera, Francisco Eugenio, Institute of Oceanography and Global Change / Universidad de Las Palmas de Gran Canaria, Spain; Rafael Nebot, Canary Islands Institute of Technology (ITC), Spain; Javier Marcello Ruiz, Institute for Oceanography and Global Change / Universidad de Las Palmas de Gran Canaria, Spain; Gonzalo Piernavieja, Canary Islands Institute of Technology (ITC), Spain

TUP.P.450 Board 450
OPERATIONAL USE OF SATELLITE RADIANCE IN JMA MESOSCALE ANALYSIS
Masahiro Kazumori, Japan Meteorological Agency, Japan

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Atmospheric Sounding

Session Chair: Allen Larar, NASA Langley Research Center

TUP.P.451 Board 451
SIMULATING GPS RADIO OCCULTATIONS USING 3-D NUMERICAL RAY TRACING
Robert Norman, RMIT University, Australia; John Le Marshall, Bureau of Meteorology, Australia; Chuan-Sheng Wang, Brett Carter, Ying Li, Sarah Gordon, Kefei Zhang, RMIT University, Australia

TUP.P.452 Board 452
AN IMPROVED PHYSICAL METHOD WITH LINEAR SPECTRAL EMISSIVITY CONSTRAINT TO RETRIEVE LAND SURFACE TEMPERATURE, EMISSIVITY AND ATMOSPHERIC PROFILES FROM SATELLITE-BASED HYPERSPECTRAL THERMAL INFRARED DATA
Ning Wang, Academy of Opto-Electronics, CAS, China; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Ling-Ling Ma, Xinhong Wang, Yonggang Qian, Academy of Opto-Electronics, CAS, China; Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Chuan-Rong Li, Lingli Tang, Academy of Opto-Electronics, CAS, China

TUP.P.453 Board 453
A SIMULATION STUDY ON THE ATMOSPHERIC SOUNDING PERFORMANCE FOR THE FUTURE SPACE-BORNE MICROWAVE HYPERSPECTRAL RADIOMETER
Haibo Zhao, Yongfang Zhang, Cheng Zheng, Jungang Miao, Beihang University, China

TUP.P.454 Board 454
USING MODTRAN4 TO BUILD UP A GENERAL LOOK-UP-TABLE DATABASE FOR THE ATMOSPHERIC CORRECTION OF HYPERSPECTRAL IMAGERY
Shunshi Hu, Lifu Zhang, Muhammad Hasan Ali Baig, Qingxi Tong, Institute of Remote Sensing Applications, CAS, China

TUP.P.455 Board 455
COMPUTATIONAL STUDY OF ATMOSPHERIC TRANSFER RADIATION ON AN EQUATORIAL TROPICAL DESERT (LA TATACOA, COLOMBIA)
Camilo Delgado-Correal, Jorge Hernandez, Gabriel Castaño, Universidad Distrital Francisco Jose de Caldas, Colombia

TUP.P.456 Board 456
ANISAP PROJECT-ANALYSIS OF NORMALISED DIFFERENTIAL SPECTRAL ATTENUATION TECHNIQUE FOR INTER-SATELLITE ATMOSPHERIC PROFILING
Fabrizio Cuccoli, Consorzio Nazionale Interuniversitario per le telecomunicazioni, Italy; Luca Facheris, Università di Firenze, Italy

TUP.P.457 Board 457
RAY TRACING SIMULATION FOR GPS RADIO OCCULTATION IN NON-SPHERICALLY SYMMETRIC ATMOSPHERE WITH ECMWF ANALYSIS
Wen-Hao Yeh, Tsen-Chieh Chiu, National Central University, Taiwan; Eric Li, National Taipei University of Technology, Taiwan; Yuei-An Liou, Ming-Quey Chen, Cheng-Yung Huang, National Central University, Taiwan

TUP.P.458 Board 458
A HAZE MONITORING OVER NORTH CHINA PLAIN
Chuanyang Xu, College of Surveying & Land Information Engineering, Henan Polytechnic University, China; Zhongting Wang, Satellite Environment Center, Ministry of Environmental Protection, China; Shenshen Li, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China; Hui Chen, Satellite Environment Center, Ministry of Environmental Protection, China

TUP.P.459 Board 459
THE ATMOSPHERIC PROCESSES ASSOCIATED WITH THE TORNADIC SUPER-OUTBREAK OF APRIL 25TH THROUGH 28TH 2011 IN RELATION TO GLOBAL CHANGE
Warith Abdullah, Remata Reddy, Wilbur Walters, Ezat Heydari, Jackson State University, United States

TUP.P.460 Board 460
OPERATIONAL ESTIMATION OF LAND SURFACE TEMPERATURE, EMISSIVITY AND ATMOSPHERIC TEMPERATURE AND MOISTURE PROFILES FROM IASI INFRARED RADIANCES
Hua Wu, Bo-Hui Tang, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Ning Wang, Yonggang Qian, Academy of Opto-Electronics, CAS, China; Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, CAS, China

TUP.P.461 Board 461
ST RADAR SYSTEM FOR WIND PROFILING OVER HIMALAYAS
Viswanathan G, Samaresh Bhattacharya, Ram Sagar, Aryabhatta Research Institute of Observational Sciences (ARIES), India; Ramarao V, Sudhir K C, Udaya B M, Spanwave Technology Solutions Pvt Ltd, India; Swamy N, Balakrishnan S, Vikas Communications, India; Khanna L M, Electronics Corporation of India Ltd, India

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PRELIMINARY RESULTS ON THE ON-ORBIT CALIBRATION OF THE SUOMI NPP-CRIS INSTRUMENT
Denis Tremblay, Science Data Processing / NOAA, United States; Xin Jin, IMSG/NOAA, United States; Yong Han, NOAA, United States; Yong Chen, CIRA, Colorado State University / NOAA-STAR, United States; Likun Wang, NOAA / Center for Satellite Applications and Research / University of Maryland, United States

Aerosol Remote Sensing, Trace Gases, and Air Quality I

Session Chair: Itaru Sano, Kinki University

TUP.P.463 Board 463
AEROSOL AND BRDF/ALBEDO INVERSION OVER LAND FROM MSG/SEVIRI DATA
Yingjie Li, Yong Xue, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China; Leiku Yang, School of Geography, Beijing Normal University, China; Tingting Hou, Center for Earth Observation and Digital Earth, CAS, China; Jia Liu, Institute of Remote Sensing Applications, CAS, China

TUP.P.464 Board 464
AIR QUALITY ANALYSIS BASED ON PM2.5 DISTRIBUTION OVER CHINA
Xingwei He, Yong Xue, Yingjie Li, Jie Guang, Institute of Remote Sensing Applications, CAS, China; Leiku Yang, Beijing Normal University, China; Hui Xu, Institute of Remote Sensing Applications, CAS, China; Chi Li, Center for Earth Observation and Digital Earth, CAS, China

TUP.P.465 Board 465
AEROSOLS AND AIR QUALITY
Carolina Rojas Lafarga, Toatzin Padilla Arias, ITESM, Mexico

TUP.P.466 Board 466
EVALUATION OF LONG-TERM TROPOSPHERIC NO2 COLUMNS AND THE EFFECT OF DIFFERENT ECOSYSTEM IN YANGTZE RIVER DELTA
Miaomiao Cheng, Hong Jiang, Nanjing University, China; Zheng Guo, Beijing Normal University, China

TUP.P.467 Board 467
MULTI-WAVELENGTH LIDAR SYSTEM FOR THE CHARACTERIZATION OF TROPOSPHERIC AEROSOLS AND CLOUDS
Yusaku Mabuchi, Naohiro Manago, Gerry Bagtasa, Hayato Saitoh, Nobuo Takeuchi, Chiba University, Japan; Masanori Yabuki, Kyoto University, Japan; Tatsuo Shiina, Hiroaki Kuze, Chiba University, Japan

TUP.P.468 Board 468
ASSESSMENT OF NITROGEN DIOXIDE SIMULATIONS OVER EUROPE USING SATELLITE TOTAL COLUMN OBSERVATIONS
Maria Elissavet Koukouli, Dimitrios Akritidis, Eleni Katragkou, Prodromos Zanis, Eirini Zyrichidou, Dimitrios Balis, Aristotle University of Thessaloniki, Greece

TUP.P.469 Board 469
COMPARISON OF AEROSOL OPTICAL PROPERTIES RETRIEVED FROM DIFFERENT GROUND-BASED SKY RADIANCE OBSERVATION
Donghui Li, Zhengqiang Li, Kaitao Li, Institute of Remote Sensing Applications, CAS, China; Xufeng Xing, Shandong University of Science and Technology, China

TUP.P.470 Board 470
COMPARING REMOTELY SENSED AND MODELLED AEROSOL PROPERTIES FOR A REGION OF LOW AEROSOL OPTICAL DEPTH
Michael Hewson, Hamish McGowan, Stuart Phinn, The University of Queensland, Australia

TUP.P.471 Board 471
IMPLEMENTATION OF THE WRF-CHEM MODEL IN GRID COMPUTING AND GPU FOR REGIONAL AIR QUALITY FORECASTING
Chaker El Amrani, Abdelmalek Essaadi University, Morocco; Ian M. Hedgecock, Institute for Atmospheric Pollution, Italy

TUP.P.472 Board 472
VALIDAION OF NPP VIIRS SUSPENDED MATTER (SM) PRODUCT
Shobha Kondragunta, Istvan Laszlo, NOAA, United States; Jessica Ram, Riverside Technology, Inc., United States

TUP.P.473 Board 473
URBAN AEROSOL MONITORING OVER NING-BO FROM HJ-1
Zhongting Wang, Satellite Environment Center, Ministry of Environmental Protection, China; Zhanguo Gao, Enviroment Monitoring Center of Ningbo, China; Qing Li, Satellite Environment Center, Ministry of Environmental Protection, China; Weifeng Wang, Enviroment Monitoring Center of Ningbo, China; Liangfu Chen, Shenshen Li, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China

TUP.P.474 Board 474
A SEMI-EMPIRICAL OPTICAL DATA FUSION TECHNIQUE FOR MERGING AEROSOL OPTICAL DEPTH OVER CHINA
Hui Xu, Yong Xue, Jie Guang, Yingjie Li, Leiku Yang, Tingting Hou, Xingwei He, Jing Dong, Ziqiang Chen, Chinese Academy of Sciences, China

TUE POSTER

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Aerosol Remote Sensing, Trace Gases, and Air Quality II

Session Chair: Itaru Sano, Kinki University

TUP.P.475 Board 475
SPECTRAL BEHAVIOR OF IMAGINARY PART OF AEROSOL REFRACTIVE INDEX OBTAINED FROM GROUND-BASED SUN-SKY RADIOMETER MEASUREMENTS IN BEIJING, CHINA
Ling Wang, International Institute for Earth System Science, Nanjing University, China; Zhengqiang Li, Institute of Remote Sensing Applications, CAS, China; Qingjiu Tian, International Institute for Earth System Science, Nanjing University, China

TUP.P.476 Board 476
ATMOSPHERIC CORRECTION SYSTEM OF HJ-1 A/B CCD DEVELOPMENT AND PERFORMANCE TEST
Shengfang Ma, Lin Sun, Shandong University of Science and Technology, China

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RADIATIVE IMPACT OF BIOMASS BURNING EVENTS: THE OCTOBER 2010 SMOKE EPISODE IN SOUTH-EAST ASIA
Santo V. Salinas, Boon N. Chew, Soo Chin Liew, National University of Singapore, Singapore

TUP.P.478 Board 478
NASA'S DISCOVER-AQ AIRBORNE MEASUREMENTS QUANTIFY HOW THE SATELLITE-RETRIEVABLE BECOMES HEALTH-RELEVANT: THE EXAMPLE OF SMOG OZONE AND ITS FORMATION
Robert Chatfield, NASA Ames Research Center, United States; James Crawford, NASA Langely Research Center, United States; Robert Esswein, NASA (Ames Research Center / BAER), United States; Andrew Weinheimer, Alan Fried, National Center for Atmospheric Research, United States; Vijay Natraj, NASA Jet Propulsion Laboratory, United States; David Tarasick, Environment Canada, Canada; Bryan Johnson, NOAA, United States; Anne Thompson, The Pennsylvania State University, United States

TUP.P.479 Board 479
ANALYZING INFLUENCES OF STRUCTURE FUNCTION FORMULA, DISTANCE VALUE AND WINDOW SIZE ON RETRIEVING AEROSOL OPTICAL THICKNESS USING STRUCTURE FUNCTION METHOD
Chunyan Zhou, Ministry of Environmental Protection, China

TUP.P.480 Board 480
ABSORTION AND SCATTERING OF AEROSOLS RELATED WITH ITS EFFECTS OVER THE POPULATION'S RESPIRATORY SYSTEM IN THE GUADALAJARA METROPOLITAN AREA (GMA)
Melissa Consuelo Pérez, Ingrid Guadalupe Rodríguez León, Elia Nancy Rodríguez Navar, ITESM, Mexico

TUP.P.481 Board 481
DEVELOPMENT OF A NOVEL ALGORITHM TO CALCULATE THE OPTIC PROPERTIES OF TEMPORAL AEROSOLS THROUGH REMOTE SENSING DATA MEASUREMENTS: PROSPECTIVE STUDY
Gloria Elena Faus, ITESM, Mexico; Ivan E. Villalon-Turrubiates, ITESO, Universidad Jesuita de Guadalajara, Mexico; Edward Celarier, NASA Goddard Space Flight Center, United States; Dianne Q. Robinson, Hampton University, United States

TUP.P.482 Board 482
NUMERICAL DIFFERENCES OF OPTICAL PROPERTIES OF SOOT AEROSOL BETWEEN FRACTAL AGGREGATED SPHERES AND SINGLE EQUIVALENT MODEL APPROXIMATIONS
Yu Wu, Tao Yu, Tianhai Cheng, Donghai Xie, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China

TUP.P.483 Board 483
INTERPRETATION OF AEROSOL EVENTS IN TERMS OF RADIATION SIMULATIONS AND SATELLITE DATA
Sonoyo Mukai, Takuma Yokomae, Itaru Sano, Makiko Nakata, Kinki University, Japan

TUP.P.484 Board 484
REMOTE PERCEPTION ANALYSIS OF ATMOSPHERIC AEROSOLS AFFECTING CHAPALA´S LAKE AND PHYTOREMEDIATION AS A SUSTENTABLE ALTERNATIVE: PROSPECTIVE STUDY
Karla J. Rodriguez, Miguel A. Azori, Omar A. Posos, Gloria Elena Faus, Martha R. Hidalgo, ITESM, Mexico

TUP.P.485 Board 485
SPATIAL-TEMPORAL VARIATION OF ATMOSPHERIC PARTICLES IN LOCAL SCALE
Makiko Nakata, Tomio Nakano, Itaru Sano, Sonoyo Mukai, Kinki University, Japan

TUP.P.486 Board 486
AEROSOL OPTICAL DEPTH RETRIEVAL OVER ARCTIC REGION USING AATSR DATA
Linlu Mei, Institute of Remote Sensing Applications, CAS, China; Larysa Istomina, Wolfgang von Hoyningen-Huene, University of Bremen, Germany; Yong Xue, Institute of Remote Sensing Applications, CAS, China; Alexander Kokhanovsky, University of Bremen, Germany

TUP.P.487 Board 487
REGIONAL TREND ANALSIS OF THE AEROSOL OPTICAL DEPTH COMPARING TO MODIS AND MISR AEROSOL PRODUCTS
Jing Guo, Xingfa Gu, Tianhai Cheng, Donghai Xie, Hao Chen, Institute of Remote Sensing Applications, CAS, China

Ocean Biology

Session Chair: Handol Kim, Korea Aerospace Research Institute

TUP.P.487 Board 487
COMS AND COMS INR; TWO YEARS INTO THE MISSION
Han-Dol Kim, Korea Aerospace Research Institute, Republic of Korea

TUP.P.488 Board 488
DETECTING SUBMERGED AQUATIC VEGETATION WITH 8-BAND WORLDVIEW-2 SATELLITE IMAGES
Soo Chin Liew, Chew Wai Chang, National University of Singapore, Singapore

TUP.P.489 Board 489
REMOTE SENSING STUDY OF THE SEASONAL DISTRIBUTION OF PHYTOPLANKTON GROUPS IN THE SOUTH CHINA SEA
Fenfen Liu, Chuqun Chen, Chinese Academy of Sciences, China

TUP.P.490 Board 490
A COMPARATIVE ANALYSIS OF THE 'TRANSMITTANCE' METHOD BETWEEN USING INTEGRATING SPHERE AND FILTER HOLDERS FOR MEASURING LIGHT ABSORPTION BY AQUATIC PARTICLES
Lei Zou, Bing Zhang, Junsheng Li, Yang Song, Qian Shen, Liwei Li, Center for Earth Observation and Digital Earth, CAS, China

TUP.P.491 Board 491
A STUDY ON THE EFFECT OF DUST AND WIND ON PHYTOPLANKTON ACTIVITIES IN THE ARABIAN GULF
Maryam Al Shehhi, Imen Gherboudj, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

TUP.P.492 Board 492
ESTIMATION OF HEAVY METAL CONCENTRATION IN THE PEARL RIVER ESTUARINE WATERS FROM REMOTE SENSING DATA
Chuqun Chen, Fenfen Liu, Shilin Tang, South China Sea Institute of Oceanography, CAS, China

TUP.P.493 Board 493
CHLOROPHYLL-A MONITORING IN SRI LANKAN ESTUARIES USING ALOS/AVNIR-2 DATA
D.D.G.L. Dahanayaka, Hideyuki Tonooka, Ibaraki University, Japan; M.J.S. Wijeyaratne, University of Kelaniya, Sri Lanka; Atsushi Minato, Satoru Ozawa, Ibaraki University, Japan

TUP.P.494 Board 494
SIMULATION OF PLANKTON DYNAMICS IN THE HOOGHLY ESTUARY USING A HIGH RESOLUTION BIOPHYSICAL MODEL
Saswati Deb, Arun Chakraborty, CORAL, Indian Institute of Technology Kharagpur, India

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Ocean Surface Winds II

Session Co-Chairs: Paul Chang, NOAA/NESDIS; Vladimir Irisov, NOAA

TUP.P.495 Board 495
THE FULL-SCALE INVESTIGATIONS OF SURFACE WAVE VARIABILITY IN FIELD OF INHOMOGENEOUS FLOWS
Victor Bakhanov, Nikolai Bogatov, Alexei Ermoshkin, Olga Kemarskaya, Victor Titov, Institute of Applied Physics, Russian Academy of Sciences, Russian Federation

TUP.P.496 Board 496
SEA SURFACE WIND SPEED ESTIMATION BASED ON GNSS SIGNAL MEASUREMENTS
Kegen Yu, Chris Rizos, Andrew Dempster, University of New South Wales, Australia

TUP.P.497 Board 497
EFFECTS OF FOAM AND WIND WAVES ON MICROWAVE OCEAN EMISSION
Paul Hwang, Magdalena Anguelova, Derek Burrage, David Wang, Joel Wesson, Naval Research Laboratory, United States

TUP.P.498 Board 498
OPTICAL TECHNIQUE FOR INVESTIGATION OF GRAVITY – CAPILLARY WAVES
Victor Titov, Victor Bakhanov, Alexander Luchinin, Emma Zuikova, Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation

TUP.P.499 Board 499
NUMERICAL SIMULATION OF WIND SHADOW TYPE WAKES IN SAR IMAGERY
Silvia Matt, Alexander Soloviev, NOVA University, United States; Stephan Brusch, Susanne Lehner, German Aerospace Center (DLR), Germany

Ocean Surface Currents

Session Chair: Vladimir Irisov, NOAA

TUP.P.500 Board 500
HYDRODYNAMIC PARAMETRES ETIMATION VIA X-BAND RADAR IMAGES ANALYSIS: THE TEST CASE OF A HIGH SPEED VESSEL
Francesco Serafino, Giovanni Ludeno, National Research Council of Italy, Italy; Claudio Lugni, INSEAN, Italy; Andrea Orlandi, Consorzio LAMMA, Italy; Francesco Soldovieri, National Research Council of Italy, Italy

TUP.P.501 Board 501
MEASUREMENT OF OCEAN WAVES VELOCITY FIELDS FROM A SINGLE SPOT-5 DATASET USING CORRELATION BETWEEN PANCHROMATIC AND MULTISPECTRAL BANDS.
Marcello de Michele, BRGM, France; Sébastien Leprince, California Institute of Technology, United States; Jerome Thiebot, Université de Caen, France; Daniel Raucoules, BRGM, France; Renaud Binet, CEA, France

TUP.P.502 Board 502
INFLUENCE OF LARGE SCALE CHANGES IN WIND CLIMATE ON SEA LEVEL, WAVE CONDITIONS AND TURBIDITY IN THE COASTAL WATERS OF ESTONIA, BALTIC SEA
Ülo Suursaar, Robert Aps, Tiit Kullas, Katarina Oganjan, University of Tartu, Estonia

TUP.P.503 Board 503
OCEAN SURFACE CURRENTS FROM TERRASAR-X DUAL RECEIVE ANTENNA MODE ALONG-TRACK INTERFEROMETRY
William J. Emery, Waqas Qazi, University of Colorado, United States

TUP.P.504 Board 504
IMPROVEMENT OF SURFACE CURRENT MEASUREMENTS BY WIND-RANGE CORRECTIONS ACQUIRED WITH RADAR DOPPLER CURRENT PROFILER
Marius Cysewski, Friedwart Ziemer, Gottfried Schymura, Joerg Seemann, Helmholtz-Zentrum Geesthacht, Germany

TUP.P.505 Board 505
REFINEMENT OF THE SURFACE CURRENT FIELDS ESTIMATED BY REMOTE SENSING
Victor Daher, Rosa Paes, Gutemberg França, Federal University of Rio de Janeiro, Brazil

TUP.P.506 Board 506
ON SURFACE SIGNATURES OF SHIP WAKES
Stanislav Ermakov, Ivan Kapustin, Tatyana Lazareva, Rashid Kalimulin, Irina Sergievskaya, Institute of Applied Physics, Russian Federation

TUP.P.507 Board 507
VALIDATION AND QUALITY CONTROL OF A HF RADAR BASED CURRENT OBSERVATION SYSTEM IN THE GERMAN BIGHT
Joerg Seemann, Marius Cysewski, Friedwart Ziemer, Peter Perthun, Helmholtz Center Geesthacht, Germany

TUP.P.508 Board 508
PRACTICALITY OF VHF-BAND OCEAN RADAR TO SURFACE CURRENT OBSERVATION IN OPEN SEA AREA
Shin'ichi Sakai, Masafumi Matsuyama, Takaki Tsubono, Takumi Yoshii, Central Research Institute of Electric Power Industry, Japan; Yoshihiro Maruo, Tatsuo Nozaki, Japan Atomic Energy Agency, Japan

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Ocean Temperature and Salinity

Session Chair: Thomas Meissner, Remote Sensing Systems

TUP.P.509 Board 509
MONITORING OF IR CLEAR-SKY RADIANCES OVER OCEANS FOR SST FROM NPP/VIIRS, TERRA-AQUA/MODIS AND NOAA-METOP/AVHRR
Xingming Liang, NESDIS/STAR and CSU/CIRA, United States; Alexander Ignatov, NESDIS/STAR, United States; Korak Saha, NESDIS/STAR and CSU/CIRA, United States

TUP.P.510 Board 510
IMPACT OF THE LOCAL OSCILLATOR CALIBRATION ON THE SMOS SEA SURFACE SALINITY MAPS
Carolina Gabarro, Veronica Gonzalez, Justino Martinez, Sebastien Guimbard, Jerome Gourrion, Institut de Ciencies del Mar (ICM-CSIC), Spain; María Piles, Universitat Politècnica de Catalunya, Spain; Marcos Portabella, Unitat de Tecnología Marina (UTM-CSIC), Spain; Jordi Font, Institut de Ciencies del Mar (ICM-CSIC), Spain

TUP.P.511 Board 511
SPATIAL AND TEMPORAL MAPPING OF SST IN EAST MEDITERRANEAN (AEGEAN SEA) DURING 2005 - 2008
Konstantinos Topouzelis, Stefani Varnava, Andreas Georgiou, University of the Aegean, Greece

TUP.P.512 Board 512
DOES MODIS SEA SURFACE TEMPERATURE ACCURATELY REPRESENT THE TEMPERATURE OF THE DYNAMICALLY SIGNIFICANT SURFACE LAYER OF THE OCEAN?
Meghan Lobb, Joseph Buckley, Royal Military College of Canada, Canada

TUP.P.513 Board 513
DEVELOPMENT OF AN ALGORITHM TO PREDICT COASTAL BUOY TEMPERATURE FROM ADVANCED VERY HIGH RESOLUTION RADIOMETER(AVHRR)
Ignatius Kweku Williams, Rockson Ashitey-Armaah, University of Ghana, Ghana; Jeaime Powell, Kuchumbi Hayden, Elizabeth City State University, United States

TUP.P.514 Board 514
PRELIMINARY RESULTS OF SMOS SALINITY RETRIEVAL BY USING SUPPORT VECTOR REGRESSION (SVR)
Roberto Sabia, Mattia Marconcini, Thomas Katagis, Diego Fernández-Prieto, European Space Agency, Italy; Justino Martinez, Marcos Portabella, SMOS Barcelona Expert Centre / ICM-CSIC, Spain

TUP.P.515 Board 515
A NOVEL APPROACH IN REGIONAL TUNA FISHERIES MANAGEMENT USING LOW RESOLUTION SATELLITE DATA: A CASE STUDY FOR THE GULF OF GUINEA
Kwame Adu Agyekum, George Wiafe, Francis Nunoo, University of Ghana, Ghana

TUP.P.516 Board 516
THERMAL FRONT RETREIVALS FROM SAR IMAGERY
Hailan Kuang, Key Laboratory of Broadband Wireless Communications and Sensor Networks,Wuhan University of Technology, China; William Perrie, Bedford Institute of Oceanography, Canada; Wei Chen, Tao Xie, Wuhan University of Technology, China; Xin hua Liu, Key Laboratory of Broadband Wireless Communications and Sensor Networks,Wuhan University of Technology, China; Biao Zhang, Nanjing University of Information Science and Technology, China

Coastal Zones II

Session Chair: Wooil M. Moon, University of Manitoba

TUP.P.517 Board 517 **THE SIGNIFICANT WAVE HEIGHT DISTRIBUTION RETRIEVED FROM MARINE X-BAND RADAR IMAGES**
Zhongbiao Chen, Institute of Oceanology, CAS, China; Yijun He, Nanjing University of Information Science and Technology, China; Baoshu Yin, Institute of Oceanology, CAS, China; Zhongfeng Qiu, Nanjing University of Information Science and Technology, China

TUP.P.518 Board 518 **MACROBENTHOS HABITAT POTENTIAL MAPPING USING ARTIFICIAL NEURAL NETWORK MODELS**
Saro Lee, Korea Institute of Geoscience & Mineral Resources (KIGAM), Republic of Korea; Jae-Won Choi, National Disaster Management Institute, Republic of Korea; Inhye Park, University of Seoul, Republic of Korea; Bon Joo Koo, Joo-Hyung Ryu, Jong-Kuk Choi, Korea Ocean Research & Development Institute, Republic of Korea

TUP.P.519 Board 519 **SYNERGY AND FUSION OF OPTICAL AND SYNTHETIC APERTURE RADAR SATELLITE DATA FOR UNDERWATER TOPOGRAPHY ESTIMATION IN COASTAL AREAS**
Stephan Brusch, Andrey Pleskachevsky, Susanne Lehner, German Aerospace Center (DLR), Germany; Thomas Heege, EOMAP, Germany

TUP.P.520 Board 520 **TOPOGRAPHIC MAPPING OF WADDEN SEA, WITH SAR IMAGES AND WATERLEVEL MODEL DATA**
Zhen Li, Georg Heygster, Justus Notholt, University of Bremen, Germany

TUP.P.521 Board 521 **HYPERSPECTRAL FIELD DATABASE IN SUPPORT TO COASTAL WETLAND MAPPING**
Aurelie Dehouck, Virginie Lafon, GEO-Transfert, France; Bertrand Lubac, Université de Bordeaux, France; Stephane Kervella, GEO-Transfert, France; Driss Bru, Marjorie Schmeltz, Université de Bordeaux, France; Amel Roubache, GEO-Transfert, France

TUP.P.522 Board 522 **USE OF TECHNICALS OF REMOTE SENSING FOR THE DEVELOPMENT OF DIGITAL ELEVATION MODEL FROM VIDEO IMAGES**
Jean Espinoza, Miguel Albuquerque, Marine Silva, National Institute for Space Research (INPE), Brazil; Lauro Calliari, FURG, Brazil

TUP.P.523 Board 523 **MAPS, AERIAL PHOTOGRAPHS, ORTHOPHOTOS AND GPS DATA AS A SOURCE OF INFORMATION TO DETERMINE SHORELINE CHANGES, COASTAL GEOMORPHIC PROCESSES AND THEIR RELATION TO HYDRODYNAMIC CONDITIONS IN OSMUSSAAR ISLAND, THE BALTIC SEA**
Hannes Tõnisson, Institute of Ecology at Tallinn University, Estonia; Ülo Suursaar, University of Tartu, Estonia; Are Kont, Institute of Ecology at Tallinn University, Estonia

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Ocean Altimetry

Session Chair: Susanne Lehner, German Aerospace Center - DLR

TUP.P.524 Board 524 **MEASUREMENTS OF SIGNIFICANT WAVE HEIGHT AND SLOPE VARIANCE USING RADAR WITH A KNIFE-LIKE ANTENNA BEAM: NEW OPPORTUNITIES**
Vladimir Yu. Karaev, Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation

TUP.P.525 Board 525 **IMPACT OF DOPPLER FREQUENCY COMPENSATION ERRORS ON SPACEBORNE GNSS-R ALTIMETRY**
Hyuk Park, Adriano Camps, Enric Valencia, Universitat Politècnica de Catalunya, Spain

TUP.P.526 Board 526 **ENVISAT ALTIMETER SYSTEM: NEAR REAL TIME LONG-TERM MONITORING**
Sabrina Pinori, SERCO S.p.A., Italy; David Cotton, SATOC, United Kingdom; Jerome Louis, Telespazio France, France; Marco Talone, SERCO S.p.A., Italy; Pierre Féménias, European Space Agency, Italy

TUP.P.527 Board 527 **CROSS-CORRELATION WAVEFORM MODE: A CRITICAL REVIEW**
Francisco Martín, Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya, Spain; Salvatore D'Addio, Manuel Martín-Neira, European Space Agency, Netherlands

TUP.P.529 Board 529 **TRANSPONDER CALIBRATION OF THE ENVISAT RA-2 ALTIMETER SIGMA NOUGHT**
Nazzareno Pierdicca, Christian Bignami, Maurizio Fascetti, Massimo Mazzetta, Sapienza Università di Roma, Italy; Pierre Féménias, European Space Agency ESRIN, Italy; Carolina Loddo, Annalisa Martini, Sabrina Pinori, SERCO S.p.A., Italy; Monica Roca, isardSAT, S.L., Spain; Harry Jackson, SERCO S.p.A., Netherlands

Topography, Geology, Geomorphology I

Session Chair: Thomas Busche, German Aerospace Center - DLR

TUP.P.530 Board 530
AIRBORNE LIDAR SURVEY IN CLOUDY AND EXTREMELY HIGH-RELIEF MOUNTAINOUS TERRAIN OF TAIWAN
Wei-Chen Hsu, NCTU and LIDAR Technology Co., Taiwan; Li-Wei Wu, GeoForce Technology Co., Taiwan; Jin-King Liu, NCTU and LIDAR Technology Co., Taiwan

TUP.P.531 Board 531
IDENTIFYING SUITABLE AREAS FOR AGRICULTURAL EXPANSION IN THE WESTERN DESERT OF EGYPT BY MULTISENSOR DATA FUSION
Magaly Koch, Benjamin Burkholder, Boston University, United States; Ahmed Gaber, Tohoku University, Japan

TUP.P.532 Board 532
MULTI-SENSOR AND MULTI-TEMPORAL DATA FUSION FOR MEASUREMENT OF POST-ERUPTIVE DEFORMATION AND DEPOSITIONAL FEATURES AT AUGUSTINE VOLCANO, SOUTH-CENTRAL ALASKA
David McAlpin, Franz Meyer, University of Alaska Fairbanks Geophysical Institute, United States

TUP.P.533 Board 533
MAPPING OF PEGMATITE IN TANTALITE VALLEY REGION IN SOUTHERN NAMIBIA USING ASTER AND HYMAP DATA
Tatsumi Uezato, Shoko Oshigami, Yasushi Yamaguchi, Nagoya University, Japan; Astushi Momose, Yessy Arvelyna, Yuu Kawakami, Taro Yajima, Shuichi Miyatake, Japan Oil, Gas and Metals National Corporation, Japan; Anna-Karren Ngurno, Geological Survey of Namibia, Japan

TUP.P.534 Board 534
HIGH RESOLUTION DSM GENERATION FROM ALOS PRISM - MOSAIC DATASET -
Junichi Takaku, Remote Sensing Technology Center of Japan, Japan; Takeo Tadono, Japan Aerospace Exploration Agency (JAXA), Japan

TUP.P.535 Board 535
POLARIMETRIC INTERFEROMETIC COHERENCE OPTIMIZATION BASED DEM EXTRACTION METHOD FOR ALOS PALSAR DATA
Wei Zhou, Shandong University of Science and Technology, China; Erxue Chen, Chinese Academy of Forestry, China; Guolin Liu, Shandong University of Science and Technology, China; Wenmei Li, Qi Feng, Chinese Academy of Forestry, China; Xinshuang Wang, Xi'an University of Science and Technology, China

TUP.P.536 Board 536
MAPPING HAZARDOUS LOW-PH MATERIAL IN MINING ENVIRONMENT: MULTISPECTRAL AND HYPERSPECTRAL APROACHES
Veronika Kopacková, Czech Geological Survey, Czech Republic; Stephane Chevrel, Anna Bourguignon, BRGM, France; Petr Rojik, Sokolovská uhelná, France

TUP.P.537 Board 537
STUDY OF THE OYU TOLGOI CU-AU DEPOSIT CHARACTERISTICS USING MULTI-SPECTRAL ASTER DATA
Young-Sun Son, Moon-Kyung Kang, Wang-Jung Yoon, Chonnam National University, Republic of Korea

TUP.P.538 Board 538
A ROBUST METHOD FOR THE EXTRACTION OF INSTANTANEOUS ATTRIBUTES FROM SEISMIC DATA
Ping Wang, Jinghuai Gao, Xi'an Jiaotong University, China

TUP.P.539 Board 539
STUDY ON IGNEOUS ROCKS IDENTIFICATION USING FULL GRADIENT OF POTENTIAL FIELD BASED ON DISCRETE COSINE TRANSFORM
Weijian Hu, Tianyao Hao, Weiwei Jiang, Ya Xu, Song Huang, Institute of Geology and Geophysics, CAS, China

TUP.P.540 Board 540
AN INTEGRATED APPROACH TO THE INTERPRETATION OF HIGH-RESOLUTION AIRBORNE GEOPHYSICAL AND REMOTE SENSING DATA TO SIMPLIFY GEOLOGICAL EXPLORATION AND MAPPING FOR NAMIBIA
David Hutchins, Ivor Kahimise, Martin Negonga, Nortin Titus, Ismael Zaaruka, Geological Survey of Namibia, Namibia

TUP.P.541 Board 541
THE APPLICATION OF GEOEYE-1 STEREO PAIR IMAGES TO REGIONAL GRAVIMETRIC TERRAIN CORRECTIONS
Xiaoxia Huang, Xia Li, Hongga Li, Institute of Remote Sensing Applications, CAS, China; Minghua Zhang, Development Research Center of China Geological Survey, China

TUE POSTER

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Topography, Geology, Geomorphology II

Session Chair: Thomas Busche, German Aerospace Center - DLR

TUP.P.542 Board 542
A GENERALIZATION OF THE SMA APPROACH FOR TAILING SPECTRUM MODELING IN TUNISIAN SEMI-ARID CONTEXT
Nouha Mezned, Laboratoire des ressources minérales et environnement, Tunisia; Faten Alayet, Sâadi Abdeljaouad, Laboratoire des ressources minérales et environnement, Faculté des Sciences de Tunis, Tunisia

TUP.P.543 Board 543
EXTRACTION OF MINERAL ALTERATION ANOMALY ZONE FROM ASTER DATA IN INNER MONGOLIA, CHINA
Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgic Geology Bureau, China

TUP.P.544 Board 544
MODELING THE PROPAGATION OF DIFFUSIVE-VISCOUS WAVES USING FLUX CORRECTED TRANSPORT–FINITE DIFFERENCE METHOD
Haixia Zhao, Jinghuai Gao, Yichen Ma, Xi'an Jiaotong University, China

TUP.P.545 Board 545
SPECTRAL CHARACTERISTICS OF COAL MINE VEGETATION IN THE PRESS OF HEAVY METAL
Fengjie Yang, Shandong University of Science and Technology, China

TUP.P.546 Board 546
METHOD FOR EXTRACTING ALTERATION INFORMATION OF REMOTE SENSING GEOLOGY AND DISCUSSIONS OF THE EFFECT
Zhenyi Yang, Yan Lu, Fengjie Yang, Shandong University of Science and Technology, China

TUP.P.547 Board 547
BASED ON DEM OF THE JINSHAJIANG RIVER TUODING-SANJIANGKOU OF CHARACTERIZE OF THE FLUVIAL GEOMORPHOLOGY
Ming Dong, Huai Su, Zhengtao Shi, Qingzhong Ming, Yunnan Normal University, China

TUP.P.548 Board 548
STRUCTURAL MODEL OF OIL FIELD LIMESTONE RESERVOIR IN DENISOV DEPRESSION BASED ON ALOS PALSAR IMAGES AND SEISMIC EXPLORATION DATA
Marina Shuvaeva, Dmitry Trofimov, JSC RESENOIL, Russian Federation; Alexander Zakharov, FIRE RAS, Russian Federation

TUP.P.549 Board 549
THE APPLICATION OF MULTISOURCE REMOTE SENSING TECHNIQUES TO THE MINERAL EXPLORATION OF DEXIN PB-ZN MINING AREA IN ZEXU TOWNSHIP, XIETONGMEN COUNTY , SHIGASTE, TIBET
Guo Na, Chengdu University of Technology, China; Juxing Tang, Institute of Mineral Resources, China; Wang Maozhi, Tingbin Zhang, Xiaojuan Bie, Chengdu University of Technology, China

TUP.P.550 Board 550
REPRESENTATION OF DESERT SAND DUNES BY SURFACE ORIENTATIONS USING RADON TRANSFORM
Surender Varma Gadhiraju, Biplab Banerjee, Krishna Mohan Buddhiraju, Indian Institute of Technology, Bombay, India

TUP.P.551 Board 551
THE RESEARCH OF USING CONVERTED SHEAR WAVES ON THE GOB-AREAS DETECTION IN METAL MINES
Baishan Xu, Zhi Wang, Northeastern University, China; Yongzeng Wang, China Geologial Survey, China; Linsen Mu, Guangyi Shi, Northeastern University, China; Wei-jun Zhao, Shenyang Geological Survey Center, China Geological Survey, China

TUP.P.552 Board 552
SATELLITE IMAGE INTERPRETATION FOR TECTONIC ANALYSIS OF THE URMIA REGION, NORTHWESTERN IRAN
Akram Alizadeh, Urmia University, Iran (Islamic Republic of); Nasrollah Mansour, Technical University of Berlin, Germany

Data Management and Systems I

Session Chair: Nina Jackson, NOAA National Weather Service

TUP.P.552 Board 552 **EMERGING DATA QUALITY FROM GEOSS INTEGRATED CLEARINGHOUSES**
Ivette Serral, Paula Díaz, Joan Masó, Centre for Ecological Research and Forestry Applications, Spain; Xavier Pons, Universitat Autònoma de Barcelona, Spain

TUP.P.553 Board 553 **IDPS PRODUCT GENERATION**
Kerry Grant, Shawn Miller, Raytheon, United States

TUP.P.554 Board 554 **A GENERAL 3D REMOTE SENSING DATA BROWSER FOR FAST APPLICATION DEVELOPMENT**
Jiaju Wei, Kaizhi Wang, Xingzhao Liu, Shanghai Jiaotong University, China; Jiaqi Tang, Shanghai Institute of Satellite Engineering, China

TUP.P.555 Board 555 **PRODUCTION OF DIAS SATELLITE DATASETS JAXA'S CONTRIBUTION TO CEOP**
Kazuo Umezawa, Japan Aerospace Exploration Agency (JAXA), Japan

TUP.P.556 Board 556 **NASA'S STANDARDS PROCESS FOR EARTH SCIENCE DATA SYSTEMS**
Yonsook Enloe, Columbus Technologies and Services Inc, United States; Richard Ullman, NASA, United States

TUP.P.557 Board 557 **NPP PRE-LAUNCH TEST DATA COLLECTION AND ARCHIVE**
Michael Denning, Integrity Applications Incorporated, United States; Richard Ullman, NASA Goddard Space Flight Center, United States; Bruce Guenther, Heather Kilcoyne, NOAA/NESDIS/ Joint Polar Satellite Systems, United States; Charles Chandler, Muniz Engineering, Inc., United States; Julie Adameck, Adameck Consulting LLC, United States

TUP.P.558 Board 558 **RS AND GIS BASED URBAN FLOOD-CONTROL MANAGEMENT SYSTEM**
Yun Bai, Changchun Wu, Liuxin Li, Yang Liu, The Supervision and Command Center for Urban Administration in Xicheng District, China; Mingyi Du, Beijing University of Civil Engineering and Architecture, China

TUP.P.559 Board 559 **INTELLIGENT TECHNOLOGY FOR SPACE AND GROUND BASED MONITORING OF NATURAL OBJECTS IN CROSS-BODER EU-RUSSIA TERRITORY**
Yury Merkuryev, Riga Technical University, Latvia; Mikhail Okhtilev, Boriss Sokolov, St.Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russian Federation; Inese Trusina, Riga Technical University, Latvia; Vjacheslav Zelentsov, St.Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russian Federation

TUP.P.560 Board 560 **JPSS CGS C3 SEGMENT MCMURDO MULTIMISSION COMMUNICATIONS SYSTEM**
Colleen Higgins, John Urbano, Michael Jamilkowski, Raytheon Intelligence and Information Systems, United States

TUP.P.561 Board 561 **VEHICLE-MOUNTED OUTDOOR SIGNBOARD MANAGEMENT SYSTEM COMBINING MMS AND RFID TECHNOLOGIES**
Yang Liu, Mingyi Du, Changfeng Jing, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China

TUP.P.562 Board 562 **WATER INFORMATION SYSTEM PLATFORMS ADDRESSING CRITICAL SOCIETAL NEEDS IN THE MENA REGION**
Shahid Habib, NASA, United States; Claire Kfouri, The World Bank, United States; Mark Peters, USAID, United States

TUP.P.563 Board 563 **GLOBAL DISCRETE GRID SYSTEMS ANALYSIS AND COMPARISON**
Nan Lu, Chengqi Cheng, Peking University, China; Haijian Ma, National Earthquake Infrastructure Service, China; Yubo Yang, Peking University, China

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Session TUP.P Poster

Data Management and Systems II

Session Chair: Nwaneri Sam, Alcorn State

TUP.P.564 Board 564 **CURRENT STATUS AND DEVELOPMENT OF REMOTE SENSING TECHNOLOGY STANDARDIZATION IN CHINA**
Yuan-Yuan Jia, Lingli Tang, Chuan-Rong Li, Xinfang Yuan, Yonggang Qian, Academy of Opto-Electronics, CAS, China

TUP.P.565 Board 565 **USING ENVIRONMENTAL REMOTELY SENSED DATA FOR NATIONAL PUBLIC HEALTH APPLICATIONS**
Mohammad Al-Hamdan, William Crosson, Universities Space Research Association, United States; Sigrid Economou, Centers for Disease Control and Prevention, United States; Maurice Estes Jr, Sue Estes, Sarah Hemmings, Universities Space Research Association, United States; Shia Kent, University of Alabama Birmingham, United States; Mark Puckett, Centers for Disease Control and Prevention, United States; Dale Quattrochi, NASA Marshall Space Flight Center, United States; Gina Wade, Von Braun Center for Science and Innovation, United States; Leslie McClure, University of Alabama Birmingham, United States

TUP.P.566 Board 566 **VALIDATING SUB-PIXEL CLASSIFICATIONS: A COMPARISON OF APPROACHES USING AN ARTIFICIAL DATASET**
Stien Heremans, Jos Van Orshoven, KU Leuven (University of Leuven), Belgium

TUP.P.567 Board 567 **DEVELOPMENT OF A REAL-TIME URBAN REMOTE SENSING INITIATIVE IN THE MEDITERRANEAN REGION FOR EARLY WARNING AND MITIGATION OF DISASTERS**
Chaker El Amrani, Abdelmalek Essaadi University, Morocco; Gilbert L. Rochon, Tuskegee University, United States; Tarek El-Ghazawi, George Washington University, United States; Gülay Altay, Bogaziçi University, Turkey; Tajeddine Rachidi, Al Akhawayn University, Morocco

Ocean Surface Winds I

Session Co-Chairs: Naoto Ebuchi, Hokkaido University; David Weissman, Hofstra University

TUP.P.749 Board 749
VALIDATION OF SAR-DERIVED SEA SURFACE WIND PRODUCTS
Xiaofeng Li, National Oceanic and Atmospheric Administration, United States; Xiaofeng Yang, Institute of Remote Sensing Applications, CAS, China; William Pichel, NOAA, United States

TUP.P.750 Board 750
OCEAN SURFACE WIND RETRIEVAL FROM STATIONARY AND MOVING PLATFORM MARINE RADAR DATA
Björn Lund, Hans C. Graber, University of Miami, United States; Jochen Horstmann, NATO Undersea Research Centre, Italy; Eric Terrill, University of California, San Diego, United States

TUP.P.751 Board 751
FRACTAL-BASED CHARACTERIZATION OF OCEAN MICROWAVE RADIANCE
Victor Raizer, Zel Technologies, LLC, United States

TUP.P.752 Board 752
WIND AND PRECIPITATION JOINT OBSERVATION USING AIRBORNE SCATTEROMETER
Di Zhu, Xiaolong Dong, National Space Science Center/Center for Space Science and Applied Research, CAS, China; Shuyan Lang, National Satellite Ocean Application Service, China

TUP.P.753 Board 753
RAIN EFFECTS ON ASCAT RETRIEVED WINDS
Wenming Lin, Institut de Ciencies del Mar (ICM-CSIC), Spain; Marcos Portabella, Unitat de Tecnología Marina (UTM-CSIC), Spain; Ad Stoffelen, Royal Netherlands Meteorological Institute (KNMI), Netherlands; Antonio Turiel, Institut de Ciencies del Mar (ICM-CSIC), Spain; Anton Verhoef, Jeroen Verspeek, Royal Netherlands Meteorological Institute (KNMI), Netherlands; Joaquim Ballabrera, Unitat de Tecnología Marina (UTM-CSIC), Spain; Jur Vogelzang, Royal Netherlands Meteorological Institute (KNMI), Netherlands

TUP.P.754 Board 754
ON THE ROLE OF WIND MODULATION OF INTERNAL SOLITARY WAVE SIGNATURES IN SAR IMAGES
Xiaofeng Yang, Institute of Remote Sensing Applications, CAS, China; Xiaofeng Li, NOAA/NESDIS, United States; Ziwei Li, Institute of Remote Sensing Applications, CAS, China; William Pichel, NOAA/NESDIS, United States; Yang Yu, Institute of Remote Sensing Applications, CAS, China

TUP.P.755 Board 755
AN EXERIMENT FOR HIGH SPEED RETRIEVAL BY ENVISAT-ASAR CROSS-POLARIZED OBSERVATIONS
Jie Guo, Yantai Institute of Coastal Zone Research, CAS, China; Yijun He, Nanjing University of Information Science and Technology, China

TUP.P.756 Board 756
VALIDATION OF A SEA SURFACE MODEL FOR SIMULATIONS OF DYNAMIC MARITIME SAR IMAGES
Luis E. Yam, Jordi J. Mallorquí, Joan M. Rius, Universitat Politècnica de Catalunya, Spain

TUP.P.757 Board 757
ON THE AZIMUTH CUT-OFF WIND SPEED ESTIMATION FOR X-BAND COSMO-SKYMED SAR DATA
Antonio Montuori, Maurizio Migliaccio, Ferdinando Nunziata, Università degli Studi di Napoli Parthenope, Italy

TUP.P.758 Board 758
NUMERICAL SIMULATION OF NONLINEAR SEA SURFACE MICROWAVE REMOTE SENSING
David Miret, DNCS Toulon and Université du Sud-Toulon-Var, France; Gabriel Soriano, Université Aix-Marseille and Institut Fresnel, UMR CNRS 7249, France

TUP.P.759 Board 759
A WIND DIRECTION EXTENSION BASED ALGORITHM FOR SCATTEROMETER WIND VECTOR RETRIEVAL
Xuetong Xie, Guangzhou University, China; Mingsen Lin, National Satellite Ocean Application Service, China; Kehai Chen, Guangzhou University, China; Zhou Huang, Peking University, China; Lixia Liu, Dongxuan Tian, Xiaoning Wang, Wenxin Chen, Rongrong He, Institute of Space Radio Technology, China; Juhong Zou, National Satellite Ocean Application Service, China

TUP.P.760 Board 760
IMPACT OF THE OBSERVATION GEOMETRY ON THE GNSS-R DIRECT DESCRIPTORS USED FOR SEA STATE MONITORING
Enric Valencia, Adriano Camps, Hyuk Park, Nereida Rodriguez-Alvarez, Isaac Ramos-Perez, Universitat Politècnica de Catalunya, Spain

Tuesday, July 24 17:20 - 19:00 Poster Area
Session TUP.P Poster

Coastal Zones I

Session Co-Chairs: Joong-Sun Won, Yonsei University; Stephan Brusch, German Aerospace Center - DLR

TUP.P.761 Board 761
ANALYSIS OF NAUTICAL X-BAND RADAR IMAGES FOR THE GENERATION OF BATHYMETRIC AND CURRENT MAPS BY THE NSP METHOD
Francesco Serafino, Giovanni Ludeno, National Research Council of Italy, Italy; Stylianos Flampouris, Naval Research Laboratory, United States; Francesco Soldovieri, National Research Council of Italy, Italy

TUP.P.762 Board 762
ATMOSPHERIC COMPENSATION FOR WORLDVIEW-2 SATELLITE AND IN-WATER COMPONENT RETRIEVAL
Javier Concha, Aaron Gerace, Rochester Institute of Technology, United States

TUP.P.763 Board 763
COSMO-SKYMED VERSUS TERRASAR-X -BASED INTERFEROMETRY FOR MONITORING THE MOSE SETTLEMENTS AT THE VENICE LAGOON INLETS
Luigi Tosi, Institute of Marine Sciences, National Research Council, Italy; Tazio Strozzi, Gamma Remote Sensing, Switzerland; Pietro Teatini, University of Padova, Italy

TUP.P.764 Board 764
ANALYSIS OF OCEANIC FEATURES FROM DUAL-POLARIZATION HIGH RESOLUTION X-BAND SAR IMAGERY FOR OIL SPILL DETECTION PURPOSES
Domenico Velotto, Susanne Lehner, German Aerospace Center (DLR), Germany; Alexander Soloviev, Chris Maingot, Nova Southeastern University, United States

TUP.P.766 Board 766
A CASE STUDY OF INTERNAL WAVE-WAVE INTERACTION PATTERNS SHOWN IN THE SATELLITE IMAGES IN THE MID-ATLANTIC BIGHT
Jingshuang Xue, Björn Lund, Hans C. Graber, Roland Romeiser, University of Miami, United States

TUP.P.767 Board 767
MODELING OF ALS INTENSITY BEHAVIOR AS A FUNCTION OF INCIDENCE ANGLE FOR COASTAL ZONE SURFACE STUDY
Emilie Poullain, Franck Garestier, Patrice Bretel, Franck Levoy, M2C UMR-CNRS 6143, France

TUP.P.768 Board 768
EFFECTIVE SALT MARSH MONITORING BY A DECISION LEVEL FUSION OF OPTIC AND X-BAND SAR DATA
Yoon-Kyung Lee, Wook Park, Yonsei University, Republic of Korea; Joo-Hyung Ryu, Korea Ocean Research & Development Institute, Republic of Korea; Joong-Sun Won, Yonsei University, Republic of Korea

TUP.P.769 Board 769
USE OF OPTICAL AND RADAR DATA IN SYNERGY FOR MAPPING INTERTIDAL FLATS AND COASTAL SALT-MARSHES (ARCACHON LAGOON, FRANCE)
Aurelie Dehouck, Virginie Lafon, GEO-Transfert, France; Nicolas Baghdadi, IRSTEA, France; Vincent Marieu, Université de Bordeaux, France

TUP.P.770 Board 770
AUTONOMOUS THREE CHANNEL SPECTRORADIOMETER
Chew Wai Chang, National University of Singapore, Singapore; Lawrence Char, Charmaine Jia Hui Wong, Jennifer Jia'en Zhuang, Singapore Polytechnic, Singapore; Boredin Saengtuksin, National University of Singapore, Singapore; Amos Choon Ngee Goh, Singapore Polytechnic, Singapore; Soo Chin Liew, National University of Singapore, Singapore

TUP.P.771 Board 771
COMPARATIVE WORKS ON THE RELATIONS OF TIDAL CHANNEL DISTRIBUTION TO THE SURFACE SEDIMENTARY FACIES IN TIDAL FLATS
Jinah Eom, Jong-Kuk Choi, Joo-Hyung Ryu, Korea Ocean Research & Development Institute, Republic of Korea; Joong-Sun Won, Yonsei University, Republic of Korea; Han Jun Woo, Korea Ocean Research & Development Institute, Republic of Korea

TUP.P.772 Board 772
DETERMINATION OF SENSOR DEPTH FROM DOWNWELLING IRRADIANCE MEASUREMENTS
Philipp Groetsch, VU University Amsterdam, Netherlands; Peter Gege, German Aerospace Center (DLR), Germany

Video Poster Presentation

Video Poster Presentation

High Resolution SAR

Session Chair: Gerhard Krieger, German Aerospace Center - DLR

WEP.P.101 Board 101 **SAR MICROMOTION TARGET DETECTION BASED ON GAPPED SINE CURVES**
Bin Deng, Hongqiang Wang, Chengguang Wu, Yuliang Qin, Xiang Li, National University of Defense Technology, China

WEP.P.102 Board 102 **CHANGE DETECTION IN HIGH RESOLUTION SAR IMAGES: AMPLITUDE BASED ACTIVITY MAP COMPARED WITH THE COVAMCOH ANALYSIS**
Markus Boldt, Karsten Schulz, Fraunhofer IOSB, Germany

WEP.P.103 Board 103 **AZIMUTH AMBIGUITY OF MULTI-CHANNEL SAR**
Xile Ma, Zaoyu Sun, Zhen Dong, Haifeng Huang, National University of Defense Technology, China

WEP.P.104 Board 104 **SAR RANGE AMBIGUITY SUPPRESSION VIA SPARSE REGULARIZATION**
Jian Fang, Zongben Xu, Xi'an Jiaotong University, China; Chenglong Jiang, Bingchen Zhang, Wen Hong, Institute of Electronics, CAS, China

WEP.P.105 Board 105 **IMPACT OF ATMOSPHERIC PROPAGATION IN A KA-BAND SPACE-BORNE SAR FOR IMAGING AND INTERFEROMETRY**
Carlo Capsoni, Andrea Monti Guarnieri, Carlo Riva, Fabio Rocca, Lorenzo Luini, Politecnico di Milano, Italy

WEP.P.106 Board 106 **USING TERRASAR-X SAR INTERFEROMETRIC DATA TO DERIVE MAPS OF THE ATMOSPHERIC PHASE DELAY**
Pedro Mateus, Instituto Dom Luiz, Universidade de Lisboa, Portugal; Giovanni Nico, Istituto Applicazioni del Calcolo, Consiglio Nazionale delle Ricerche (CNR-IAC), Italy; João Catalão, Instituto Dom Luiz, Universidade de Lisboa, Portugal

WEP.P.107 Board 107 **INTERFEROMETRIC MULTI-CHROMATIC ANALYSIS OF COSMO-SKYMED DATA FOR HEIGHT RETRIEVAL**
Fabio Bovenga, Fabio Rana, Alberto Refice, National Research Council of Italy, Italy; Davide Oscar Nitti, Politecnico di Bari, Italy; Nicola Veneziani, National Research Council of Italy, Italy

WEP.P.108 Board 108 **DETECTION OF GROUND MOVING TARGETS IN COSMO-SKYMED SAR IMAGES**
Debora Pastina, Lorenzo Buratta, Fabrizio Turin, Sapienza Università di Roma, Italy

WEP.P.109 Board 109 **COSMO SKYMED AO PROJECTS - 3D RECONSTRUCTION AND STABILITY MONITORING OF THE THREE GORGES DAM**
Zhiying Wang, Politecnico di Milano, Hong Kong SAR of China; Daniele Perissin, Chinese University of Hong Kong, Hong Kong SAR of China

WEP.P.110 Board 110 **COMPARISON OF INTERFEROMETRIC PRODUCTS OF RECENT HIGH RESOLUTION X-BAND SAR MISSIONS AND PLATFORMS**
Ming Wei, Marcus Schwäbisch, Michael Wollersheim, Intermap Technologies Corp., Canada

Wednesday, July 25 17:20 - 19:00 Poster Area
Session WEP.P Poster

Persistent Scatterer, Implementation

Session Chair: Michael Eineder, German Aerospace Center - DLR

WEP.P.111 Board 111 **GLRT PERSISTENT SCATTERERS DETECTOR**
Alessandra Budillon, Gilda Schirinzi, University of Naples Parthenope, Italy; Manlio Tesauro, Università della Basilicata, Italy

WEP.P.112 Board 112 **RECEIVER'S BANDWIDTH FOR OPTIMUM PERFORMANCE OF INTERFEROMETRIC GNSS-R ALTIMETERS**
Daniel Pascual, Hyuk Park, Adriano Camps, Francisco Martín, Alberto Alonso-González, Enric Valencia, Universitat Politècnica de Catalunya, Spain; Salvatore D'Addio, European Space Agency, Netherlands

WEP.P.113 Board 113 **ANALYZING THE TOPOGRAPHIC INFLUENCE FOR THE PS-INSAR PROCESSING IN THE THREE GORGES REGION**
Peraya Tantianuparp, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing ,Wuhan University, China; Timo Balz, Teng Wang, Houjun Jiang, Lu Zhang, Mingsheng Liao, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China

WEP.P.114 Board 114 **THE PERFORMANCE OF SATELLITE RADAR REMOTE SENSING TECHNOLOGY IN GROUND SETTLEMENT MONITORING**
Yuxiao Qin, Daniele Perissin, Matthew Pang, The Chinese University of Hong Kong, Hong Kong SAR of China; Zhiying Wang, Plotecnico di Milano, Italy; Hui Lin, The Chinese University of Hong Kong, Hong Kong SAR of China

WEP.P.115 Board 115 **APPLICATION OF PERSISTENT SCATTERER INTERFEROMETRY FOR IDENTIFICATION OF LANDSLIDE AREAS OF HIMALAYAN REGION**
Subrahmanyeswara Rao Yalamanchili, Chandrakanta Ojha, Rinki Deo, Indian Institute of Technology, Bombay, India

WEP.P.116 Board 116 **COSMO SKYMED AO PROJECTS - PERSISTENT SCATTERER INSAR ANALYSIS OF MEXICO CITY SUBSIDENCE**
Batuhan Osmanoglu, University of Alaska Fairbanks, United States; Shimon Wdowinski, University of Miami - RSMAS, United States; Timothy H. Dixon, University of South Florida, United States; Enrique Cabral-Cano, Universidad Nacional Autonoma de Mexico, Mexico

WEP.P.117 Board 117 **PERSISTENT SCATTERER ESTIMATION USING OPTICAL REMOTE SENSING DATA, LAND COVER DATA AND TOPOGRAPHICAL MAPS**
Simon Plank, John Singer, Kurosch Thuro, Technische Universität München, Germany

WEP.P.118 Board 118 **FOUR LEVEL LEAST SQUARES ADJUSTMENT IN PERSISTENT SCATTERER INTERFEROMETRY FOR THE WIDE AREA PRODUCT**
Werner Liebhart, Technical University of Munich, Germany; Nico Adam, Fernando Rodriguez Gonzalez, Alessandro Parizzi, German Aerospace Center (DLR), Germany; Xiaoying Cong, Technical University of Munich, Germany

WEP.P.119 Board 119 **IMPLEMENTATION OF GPU-BASED ITERATIVE SHRINKAGE-THRESHOLDING ALGORITHM IN SPARSE MICROWAVE IMAGING**
Minming Geng, Ye Tian, Institute of Electronics, CAS, China; Jian Fang, Xi'an Jiaotong University, China; Bingchen Zhang, Yun Lin, Institute of Electronics, CAS, China

WEP.P.120 Board 120 **EOSAR, A SAR-SCENE SIMULATOR BASED UPON REAL TARGET AND BACKGROUND SIGNATURES**
Sergei Bokaderov, Anika Maresch, Hartmut Schimpf, Fraunhofer-FHR, Germany; Helmut Essen, Maxonic GmbH, Germany; Peter Wellig, ARMASUISSE, Switzerland

Deformation

Session Chair: Francesco De Zan, German Aerospace Center - DLR

WEP.P.121 Board 121 **COMPARISON OF TERRASAR-X AND RADARSAT-2 DEFORMATION TIME SERIES AND ESTIMATION OF ATMOSPHERIC PHASE CHARACTERISTICS IN SHORT-TIME INTERFEROGRAMS**
Steffen H.-G. Knospe, Clausthal University of Technology, Germany

WEP.P.122 Board 122 **PALSAR SCANSAR INTERFEROMETRY USING THE MODIFIED FULL APERTURE PROCESSING**
Masanobu Shimada, Japan Aerospace Exploration Agency (JAXA), Japan

WEP.P.123 Board 123 **APPLICATION OF SYNTHETIC APERTURE RADAR METHODS FOR MORPHOLOGICAL ANALYSIS OF THE SALAR DE UYUNI DISTAL FLUVIAL SYSTEM**
Anneleen Oyen, Roderik Koenders, Seyed Enayat Hosseini Aria, Roderik Lindenbergh, Jiaguang Li, Rick Donselaar, Delft University of Technology, Netherlands

WEP.P.124 Board 124 **COSEISMIC DEFORMATION FIELD DERIVED FROM ENVISAT/ASAR DATA AND FAULT SLIP INVERSION OF MS7.1 YUSHU EARTHQUAKE, CHINA IN 2010**
Chunyan Qu, Guohong Zhang, Xinjian Shan, Guifang Zhang, Xiaogang Song, Yunhua Liu, Institute of Geology, China Earthquake Administration, China

WEP.P.125 Board 125 **NUFFT APPLIED TO MOTION COMPENSATION IN THE NEAR-SPACE SAR IMAGING**
Haiguang Yang, Ye Yuan, Junjie Wu, Yulin Huang, Jianyu Yang, School of Electronic Engineering, University of Electronic Science and Technology of China, China

WEP.P.126 Board 126 **ATMOSPHERIC DELAY COMPENSATION IN DIFFERENTIAL SAR INTERFEROMETRY FOR VOLCANIC DEFORMATION MONITORING - STUDY CASE: EL HIERRO**
Xiaoying Cong, Technische Universität München, Germany; Michael Eineder, Thomas Fritz, German Aerospace Center (DLR), Germany

WEP.P.127 Board 127 **RADAR TRANSPONDERS AND THEIR COMBINATION WITH GNSS FOR DEFORMATION MONITORING**
Pooja Mahapatra, Hans van der Marel, Ramon Hanssen, Delft University of Technology, Netherlands; Rachel Holley, Fugro NPA, United Kingdom; Sami Samiei-Esfahany, Delft University of Technology, Netherlands; Marko Komac, Geological Survey of Slovenia, Slovenia; Alan Fromberg, System Engineering & Assessment Ltd., United Kingdom

WEP.P.128 Board 128 **DISPLACEMENT MONITORING AT SVARTEVATN DAM WITH INTERFEROMETRIC SAR**
Malte Voege, Regula Frauenfelder, Norwegian Geotechnical Institute, Norway; Yngvar Larsen, Northern Research Institute, Norway

WEP.P.129 Board 129 **THREE-DIMENSIONAL SURFACE DISPLACEMENT MAP OF THE 2008 WENCHUAN EARTHQUAKE DERIVED FROM PHASE CORRELATION (PC) SUB-PIXEL OFFSET METHOD AND ADAPTIVE LOCAL KRIGING (ALK) DINSAR DATA**
Meng-Che Wu, Jian-Guo Liu, Hongshi Yan, Philippa Jane Mason, Imperial College London, United Kingdom

WEP.P.130 Board 130 **MONITORING SOIL DEFORMATION USING PERSISTENT SCATTERS INTERFEROMETRY (PSI) TECHNIQUE: THE CASE STUDY OF THESSALY PREFECTURE (CENTRAL GREECE)**
Falah Fakhri, Harokopeio University Of Athens, Greece; Emmanouil Psomiadis, Agricultural University of Athens, Greece; Issaak Parcharidis, Harokopeio University Of Athens, Greece

WEP.P.131 Board 131 **L-BAND INSAR DECORRELATION ANALYSIS IN VOLCANIC TERRAINS USING AIRBORNE LIDAR DATA AND IN SITU MEASUREMENTS: THE CASE OF THE PITON DE LA FOURNAISE VOLCANO, FRANCE**
Mélanie Sedze, Institut de Physique du Globe de Paris / Institut National de l'Information Géographique et Forestière, France; Essam Heggy, NASA Jet Propulsion Laboratory, United States; Frédéric Bretar, Centre d'Etudes Techniques de l'Equipement, France; Daniel Berveiller, Laboratoire Ecologie, Systématique et Evolution, France; Stéphane Jacquemoud, Institut de Physique du Globe de Paris, France

WEP.P.132 Board 132 **COST-EFFECTIVE MONITORING OF LANDSLIDE MOVEMENT INTEGRATING CORNER REFLECTOR SAR INTERFEROMETRY INTO AN EARLY WARNING SYSTEM**
Michael Riedmann, Oliver Lang, Lutz Petrat, Jan Anderssohn, Astrium GEO-Information Services, Germany; John Singer, Kurosch Thuro, Technische Universität München, Germany; Otto Heunecke, Universität der Bundeswehr München, Germany; Thomas Wunderlich, Technische Universität München, Germany; Christian Minet, German Aerospace Center (DLR), Germany

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Session WEP.P Poster

DInSAR and Interferometry

Session Chair: Ramon Hanssen, Delft University of Technology

WEP.P.133 Board 133 **ROCK GLACIER MONITORING WITH SPACEBORNE SAR IN GRAECHEN, VALAIS, SWITZERLAND**
Jessica Papke, Tazio Strozzi, Andreas Wiesmann, Urs Wegmüller, Gamma Remote Sensing, Switzerland; Nicholas J. Tate, University of Leicester, United Kingdom

WEP.P.134 Board 134 **TIANJIN SUBURBS PS-QPS ANALYSIS AND VALIDATION WITH LEVELING DATA**
Qingli Luo, Daniele Perissin, Ozan Dogan, Hui Lin, ISEIS, Chinese University of Hong Kong, Hong Kong SAR of China; Wei Wang, Tianjin Institute of Surveying and Mapping, China

WEP.P.135 Board 135 **COMPARISON OF DINSAR AND PERSISTENT SCATTERER INTERFEROMETRY FOR GROUND-MOTION MONITORING IN THE VENICE LAGOON**
Penelope Kourkouli, Tazio Strozzi, Urs Wegmüller, Gamma Remote Sensing, Switzerland

WEP.P.136 Board 136 **REMOTE DETECTION AND ANALYSIS OF MASS MOVEMENTS IN THE VICINITY OF THE THREE GORGES DAM/ YANGTZE RIVER/ CHINA**
Michaela Frei, Hermann Kaufmann, Ye Xia, GeoResearchCenter, Germany

WEP.P.137 Board 137 **INFLUENCES OF DEM QUALITY PARAMETERS ON THE TOPOGRAPHIC PHASE CORRECTION IN DINSAR**
Diana Walter, Wolfgang Busch, TU Clausthal, Germany

WEP.P.138 Board 138 **ACCURATE DEM GENERATION BY COMBINING ASCENDING AND DESCENDING RADARGRAMMETRY WITH ULTRA-LONG BASELINE**
Qiang Chen, Haiqin Cheng, Guoxiang Liu, Yinghui Yang, Southwest Jiaotong University, China

WEP.P.139 Board 139 **ON THE USE OF COSMO-SKYMED SAR DATA AND NUMERICAL WEATHER MODELS FOR INTERFEROMETRIC DEM GENERATION**
Davide Oscar Nitti, Raffaele Nutricato, Francesca Intini, Politecnico di Bari / GAP srl, Italy; Fabio Bovenga, National Research Council of Italy, Italy; Maria Teresa Chiaradia, Politecnico di Bari, Italy; Rosa Pacione, E-GEOS / ASI-CGS, Italy; Francesco Vespe, Agenzia Spaziale Italiana, Italy

WEP.P.140 Board 140 **IONOSPHERIC EFFECT CORRECTION OF SAR INTERFEROGRAM USING MULTIPLE APERTURE SAR INTERFEROMETRY (MAI)**
Dong-Taek Lee, Hyung-Sup Jung, University of Seoul, Republic of Korea; Zhong Lu, United States Geological Survey, United States; Joong-Sun Won, Yonsei University, Republic of Korea

WEP.P.141 Board 141 **OMEGA-K ALGORITHM WITHOUT THE STOP-AND-GO APPROXIMATION FOR HIGH RESOLUTION SAR IMAGE RECONSTRUCTION**
Angel Ribalta, Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Germany

WEP.P.142 Board 142 **MULTIDIMENSIONAL VERY HIGH RESOLUTION SAR INTERFEROMETRY FOR MONITORING ENERGETIC STRUCTURES**
Gabriel Vasile, GIPSA-lab / CNRS, France; Didier Boldo, EDF R&D, France; Rémy Boudon, EDF, France; Guy d'Urso, EDF R&D, France

WEP.P.143 Board 143 **SBAS AND PS MEASUREMENT FUSION FOR ENHANCING DISPLACEMENT MEASUREMENTS**
Carmen Patrascu, Anca Andreea Popescu, University Politehnica of Bucharest, Romania; Mihai Datcu, German Aerospace Center (DLR), Germany

Compressed Sensing, Coregistration

Session Chair: Octavio Ponce Madrigal, German Aerospace Center - DLR

WEP.P.144 Board 144 **A NOVEL SAR IMAGING STRATEGY BASED ON COMPRESSED SENSING**
Wentao Lv, Junfeng Wang, Wenxian Yu, Shanghai Jiao Tong University, China

WEP.P.145 Board 145 **SIDE-LOOKING 3D IMAGING OF CROSS-TRACK THREE-APERTURE SYNTHETIC APERTURE RADAR BASED ON COMPRESSIVE SENSING**
Lie-Chen Li, Daojing Li, Xiu-Min Teng, Zhou-Hao Pan, Bo Liu, Institute of Electronics, CAS, China

WEP.P.146 Board 146 **A SCANNING ORDER DESIGN METHOD OF JUMPING SPOTLIGHT SAR TO SIMPLIFY IMAGING PROCESSING**
Huaping Xu, Zhongyuan Xiao, Jing Gao, Chun-Sheng Li, Ze Yu, Beihang University, China

WEP.P.147 Board 147 **IMAGING METHOD WITH COMPRESSED SAR RAW DATA BASED ON COMPRESSED SENSING**
Jian Cheng, Fufei Gu, Youqing Bai, Air Force Engineering University, China; Lan Zhang, Unit 92911 of PLA, China; Qun Zhang, Air Force Engineering University, China

WEP.P.148 Board 148 **A FAST SAR IMAGE SIDELOBE SUPPRESSION METHOD BASED ON COMPRESSIVE SENSING**
Peng Xiao, Chun-Sheng Li, Beihang University, China; Yongqiang Zhang, Beijing Institute of Tracking and Telecommunication Technology, China; Zhiqian Wang, Beihang University, China

WEP.P.149 Board 149 **SPACEBORNE SAR RANGE FOCUSING BASED ON COMPRESSED SENSING**
Jianhu Gao, Jie Chen, Lvqian Zhang, Beihang University, China

WEP.P.150 Board 150 **PARAMETER ESTIMATION WITH NARROWBAND INTERFERENCE SUPPRESSION BASED ON COMPRESSED SENSING**
Jun Zhang, Yueli Li, Bin Deng, National University of Defense Technology, China

WEP.P.151 Board 151 **PERFORMANCE ANALYSIS OF SAR SUPER-RESOLUTION IMAGING BASED ON CS THEORY**
Ya'nan Duan, Ze Yu, Haiying Wei, Beihang University, China

WEP.P.152 Board 152 **ON THE MOSAIC MODE SPACEBORNE SAR**
Xiaolei Han, ShiQiang Li, Weidong Yu, Robert Wang, Institute of Electronics, CAS, China

WEP.P.153 Board 153 **AN AUTOFOCUS APPROACH FOR MODEL ERROR CORRECTION IN COMPRESSED SENSING SAR IMAGING**
Shunjun Wei, Xiaoling Zhang, Jun Shi, University of Electronic Science and Technology of China, China

WEP.P.154 Board 154 **AN IMPROVED METHOD FOR SAR IMAGE CO-REGISTRATION USING MOVING COHERENCE SURFACE FITTING**
Haiqin Cheng, Qiang Chen, Guoxiang Liu, Yinghui Yang, Southwest Jiaotong University, China

WEP.P.155 Board 155 **A NEW INSAR COREGISTRATION STRATEGY FOR GEOPHYSICAL APPLICATIONS**
Teng Wang, Sigurjon Jonsson, King Abdullah University of Science and Technology, Saudi Arabia

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Multibaseline, Filtering, Advanced Observations

Session Chair: Francisco Lopez-Dekker, German Aerospace Center - DLR

WEP.P.156 Board 156 **A NOVEL NONPARAMETRIC METHOD OF GROUND MOVING TARGET INDICATION BASED ON BI-CHANNEL SAR-ATI**
Mingjie Zheng, Ruliang Yang, Robert Wang, Jiang Ni, Institute of Electronics, CAS, China

WEP.P.157 Board 157 **ANALYSIS OF CHANNEL CAPACITY FOR MIMO SAR MODEL**
Yanqing Zhu, Jie Chen, Wei Yang, Pengbo Wang, Beihang University, China

WEP.P.158 Board 158 **MULTICHANNEL INSAR DEM RECONSTRUCTION THROUGH CLOSED-FORM ROBUST CHINESE REMAINDER THEOREM**
Zhihui Yuan, Graduate School of CAS, China; Fei Li, Yunkai Deng, Robert Wang, Institute of Electronics, CAS, China; Gang Liu, Graduate School of CAS, China

WEP.P.159 Board 159 **SPECTRAL SPECKLE FILTER FOR SAR IMAGERY**
Gintautas Palubinskas, German Aerospace Center (DLR), Germany

WEP.P.160 Board 160 **DEFORMATION ESTIMATION VIA OBJECT ADAPTIVE PHASE FILTERING AND L1-NORM BASED SBAS TECHNIQUE**
Kanika Goel, Nico Adam, German Aerospace Center (DLR), Germany

WEP.P.161 Board 161 **PYRAMID NON-LOCAL MEAN FILTER FOR INTERFEROMETRIC PHASE DENOISING**
Runpu Chen, Weidong Yu, Yunkai Deng, Robert Wang, Gang Liu, Yunfeng Shao, Institute of Electronics, CAS, China

Airborne SAR, SAR Applications

Session Chair: Marc Rodriguez-Cassola, German Aerospace Center - DLR

WEP.P.162 Board 162 **DETERMINATION OF VERTICAL ANTENNA PATTERN OF HIGH-RESOLUTION AIRBORNE SAR AND RADIOMETRIC CALIBRATION**
Qing Wang, Qiming Zeng, Jian Jiao, Xiao Zhou, Cunren Liang, Sheng Gao, Institute of RS and GIS, Peking University, China

WEP.P.163 Board 163 **AUTO-REGISTRATION IMAGING ALGORITHM FOR AIRBORNE DUAL-ANTENNA INTERFEROMETRIC SAR**
Yinwei Li, Maosheng Xiang, Yongfei Mao, Lideng Wei, Xingdong Liang, Institute of Electronics, CAS, China

WEP.P.164 Board 164 **A METHOD OF AIRBORNE INSAR DEM RECONSTRUCTION IN LAYOVER AREAS**
Fangfang LI, Bing Han, Xue LIN, Donghui Hu, Chibiao Ding, Institute of Electronics, CAS, China

WEP.P.165 Board 165 **MONITORING PERMAFROST ENVIRONMENTS WITH INSAR AND POLARIMETRY, CASE STUDIES FROM CANADA**
Naomi Short, Brian Brisco, Kevin Murnaghan, CCRS, Canada

WEP.P.166 Board 166 **EXTRACTION OF DAMAGED BUILDINGS DUE TO THE 2011 TOHOKU, JAPAN EARTHQUAKE TSUNAMI**
Wen Liu, Fumio Yamazaki, Chiba University, Japan; Hideomi Gokon, Shunichi Koshimura, Tohoku University, Japan

WEP.P.167 Board 167 **ATMOSPHERE MITIGATION IN MOUNTAINOUS AREAS FOR PERSISTENT SCATTERER INTERFEROMETRY**
Nico Adam, German Aerospace Center (DLR), Germany; Xiaoying Cong, Technische Universität München, Germany; Fernando Rodriguez Gonzalez, German Aerospace Center (DLR), Germany

WEP.P.168 Board 168 **GEOSYNCHRONOUS SAR IMAGE FORMATION BASED ON ADVANCED HYPERBOLIC RANGE EQUATION**
Xiu Wu, Shunsheng Zhang, Jing Li, Wenchen Cao, University of Electronic Science and Technology of China, China

WEP.P.169 Board 169 **AN SATELLITE SYNCHRONOUS OBSERVATION EXPERIMENT ON OIL SLICK DETECTION WITH COSMO X-SAR IMAGE**
Yang Liu, Youyan Zhang, Liqun Zou, Research Institute of Petroleum Exploration & Development, PetroChina, China; Jian Mu, Shanhong Huang, PetroChina Exploration &Production Company, China

WEP.P.170 Board 170 **ACTIVITIES OF THE SAR APPLICATION RESEARCH COMMITTEE OF JAPAN**
Takashi Nonaka, Tadashi Sasagawa, PASCO Corporation, Japan

WEP.P.171 Board 171 **A COMPARISON OF TEXTURE AND AMPLITUDE BASED UNSUPERVISED SAR IMAGE CLASSIFICATIONS FOR URBAN AREA EXTRACTION**
Koray Kayabol, Josiane Zerubia, Ayin, INRIA, Netherlands

WEP.P.172 Board 172 **SIGNIFICANCE OF THE ADDITIONAL RANGE-AZIMUTH COUPLING TERM IN FMCW SAR PTRS**
Yue Liu, Yunkai Deng, Robert Wang, Institute of Electronics, CAS, China

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High Performance Computing and Data Correction in Hyperspectral Imagery

Session Co-Chairs: Antonio Plaza, University of Extremadura; Paul Gader, University of Florida

WEP.P.172 Board 172 **PARALLEL COMPUTING OF COVARIANCE MATRIX AND ITS APPLICATION ON HYPERSPECTRAL DATA PROCESS**
Mao-Zhi Wang, Chengdu University of Technology, China; Da-Ming Wang, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources (AGRS), China; Wen-Xi Xu, Bin-Yang Chen, Ke Guo, Chengdu University of Technology, China

WEP.P.173 Board 173 **HARDWARE ACCELERATION OF THE INTEGER KARHUNEN-LOÈVE TRANSFORM ALGORITHM FOR SATELLITE IMAGE COMPRESSION**
Chafik Egho, Surrey Space Centre, University of Surrey, United Kingdom; Tanya Vladimirova, University of Leicester, United Kingdom

WEP.P.174 Board 174 **RELEVANCE OF TRANSFORMATION TECHNIQUES IN RAPID ENDMEMBER IDENTIFICATION AND SPECTRAL UNMIXING: A HYPESPECTRAL REMOTE SENSING PERSPECTIVE**
Keshav Dev Singh, Desikan Ramakrishnan, Indian Institute of Technology, Bombay, India; Lalu Mansinha, University of Western Ontario, Canada

WEP.P.175 Board 175 **BLIND ATMOSPHERIC CORRECTION OF HYPERSPECTRAL IMAGES GATHERED BY HIGH SPECTRAL RESOLUTION SENSORS**
Alessandro Barducci, Donatella Guzzi, Cinzia Lastri, Paolo Marcoionni, Vanni Nardino, Ivan Pippi, Istituto di Fisica Applicata, Italy

WEP.P.176 Board 176 **PARALLEL IMPLEMENTATION FOR SAM ALGORITHM BASED ON GPU AND DISTRIBUTED COMPUTING**
Haicheng Qu, Harbin Institute of Technology / Liaoning Technology University, China; Junping Zhang, Yushi Chen, Harbin Institute of Technology, China; Hao Chen, Zhouhan Lin, HIT, China

WEP.P.177 Board 177 **PARALLEL IMPLEMENTATION OF VERTEX COMPONENT ANALYSIS FOR HYPERSPECTRAL ENDMEMBER EXTRACTION**
Jose M. R. Alves, Instituto de Telecomunicações, Portugal; Jose M.P. Nascimento, Instituto Superior de Engenharia de Lisboa, Portugal; Jose M. Bioucas-Dias, Vítor Silva, Instituto de Telecomunicações, Portugal; Antonio Plaza, Hyperspectral Computing Laboratory, Spain

WEP.P.178 Board 178 **RAPID HYPERSPECTRAL BRDF MEASUREMENT SYSTEM**
Marc Schwarzbach, Maria von Schoenermark, German Aerospace Center (DLR), Germany; Ursula Kirchgaessner, University of Stuttgart, Germany

WEP.P.179 Board 179 **HIGH PERFORMANCE GCP-BASED PARTICLE SWARM OPTIMIZATION OF ORTHORECTIFICATION OF AIRBORNE PUSHBROOM IMAGERY**
Javier Reguera-Salgado, Julio Martín-Herrero, University of Vigo, Spain

WEP.P.180 Board 180 **AN OPTIMAL-TRUNCATION-BASED TUCKER DECOMPOSITION METHOD FOR HYPERSPECTRAL IMAGE COMPRESSION**
Hao Chen, Wei Lei, Shuang Zhou, Ye Zhang, Harbin Institute of Technology, China

WEP.P.181 Board 181 **HYPERSPECTRAL FLIGHT-LINE LEVELING AND SCATTERING CORRECTION FOR IMAGE MOSAICS**
Derek Rogge, Martin Bachmann, German Aerospace Center (DLR), Germany; Benoit Rivard, Jilu Feng, University of Alberta, Canada

Spectral Unmixing, Feature Extraction

Session Co-Chairs: Yanfeng Gu, Harbin Institute of Technology; Devis Tuia, École Polytechnique Fédérale de Lausanne

WEP.P.182 Board 182 **FEATURE EXTRACTION FOR HYPERSPECTRAL IMAGES USING MAX RELEVANCE, MIN REDUNDANCY CRITERION AND A TWO LAYER PERCEPTRON**
Mehdi Kamandar, Hassan Ghassemian, Tarbiat Modares University, Iran

WEP.P.183 Board 183 **A REGULARIZATION MODIFICATION TO LINEAR SPECTRAL UNMIXING ALGORITHM**
Ye Zhang, Ran Wei, Hao Chen, Harbin Institute of Technology, China; Shi Tian Tong, Zhe Jiang University, China; Yan Qi Lao, Harbin Institute of Technology, China

WEP.P.184 Board 184 **LINEAR SPECTRAL UNMIXING WITH GENERALIZED CONSTRAINT FOR HYPERSPECTRAL IMAGERY**
Yuhang Zhang, Xiao Fan, Ye Zhang, Ran Wei, Harbin Institute of Technology, China

WEP.P.185 Board 185 **A NOVEL MULTIPLE ENDMEMBER SPECTRAL MIXTURE ANALYSIS USING SPECTRAL ANGLE DISTANCE**
Charoula Andreou, Vassilia Karathanassi, National Technical University of Athens, Greece

WEP.P.186 Board 186 **COMPARISON OF HYPERION SPECTRAL UNMIXING ENDMEMBERS TO MATERIAL SPECTRAL PROFILES FROM OAXACA, MEXICO**
Kelly Canham, Nina Raqueno, William Middleton, David Messinger, Rochester Institute of Technology, United States

WEP.P.187 Board 187 **SPECTRAL UNMIXING BASED ON IMPROVED EXTENDED SUPPORT VECTOR MACHINES**
Xiaofeng Li, Northeast Institute of Geography and Agroecology, CAS, China; Liguo Wang, Harbin Engineering University, China; Xiuping Jia, University College, Australian Defence Force Academy, University of New South Wales, Australia

WEP.P.188 Board 188 **AN APPROACH FOR FULLY CONSTRAINED LINEAR SPECTRAL UNMIXING BASED ON DISTANCE GEOMETRY**
Hanye Pu, Wei Xia, Bin Wang, Liming Zhang, Gengming Jiang, Fudan University, China

WEP.P.189 Board 189 **FEATURE EXTRACTION OF HYPERSPECTRAL IMAGES BASED ON REFORMULATE COMPUTATION OF BETWEEN CLASS SCATTER MATRIXES**
Tayeb Alipourfard, Kerman Graduate University of Technology, Iran; Barat Mojaradi, Iran University of Science and Technology, Iran; Ali Esmaeily, Kerman Graduate University of Technology, Iran

WEP.P.190 Board 190 **SEABED ESTIMATION USING TRIPLE NMF METHOD.**
Olivier Eches, Mireille Guillaume, Institut Fresnel, France

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Classification of Hyperspectral Data

Session Co-Chairs: Mauro Dalla Mura, Grenoble Institute of Technology; Bjorn Waske, University of Bonn

WEP.P.191 Board 191 **LOCALITY-PRESERVING DISCRIMINANT ANALYSIS FOR HYPERSPECTRAL IMAGE CLASSIFICATION USING LOCAL SPATIAL INFORMATION**
Wei Li, Mississippi State University, United States; Saurabh Prasad, University of Houston, United States; Zhen Ye, Northwestern Polytechnical University, China; James Fowler, Mississippi State University, United States; Minshan Cui, University of Houston, United States

WEP.P.192 Board 192 **EVALUATION OF SIMILARITY MEASURE METHODS FOR HYPERSPECTRAL REMOTE SENSING DATA**
Junzhe Zhang, Wenquan Zhu, Lingli Wang, Nan Jiang, Beijing Normal University, China

WEP.P.193 Board 193 **APPLYING A DYNAMIC SUBSPACE MULTIPLE CLASSIFIER FOR REMOTELY SENSED HYPERSPECTRAL IMAGE CLASSIFICATION**
Jinn-Min Yang, National Taichung University of Education, Taiwan

WEP.P.194 Board 194 **COMBINER OF CLASSIFIERS USING GENETIC ALGORITHM FOR CLASSIFICATION OF REMOTE SENSED HYPERSPECTRAL IMAGES**
Andrey Bicalho Santos, Arnaldo de Albuquerque Araújo, Federal University of Minas Gerais, Brazil; David Menotti, Federal University of Ouro Preto, Brazil

WEP.P.195 Board 195 **COINTEGRATION THEORY FOR ADAPTIVE TARGET DETECTION IN HYPERSPECTRAL IMAGES**
Jihao Yin, Chao Gao, Beihang University, China; Xiuping Jia, The University of New South Wales, Australian Defence Force Academy, Australia

WEP.P.196 Board 196 **CLASSIFICATION OF HYPERSPECTRAL IMAGES BASED ON WEIGHTED DMPS**
Örsan Aytekin, Middle East Technical University, Turkey; Mauro Dalla Mura, Fondazione Bruno Kessler, Italy; Ilkay Ulusoy, Middle East Technical University, Turkey; Jon Atli Benediktsson, University of Iceland, Iceland

WEP.P.197 Board 197 **A NOVEL DECISION FUSION APPROACH TO IMPROVING CLASSIFICATION ACCURACY OF HYPERSPECTRAL IMAGES**
Esra Tunc Gormus, Nishan Canagarajah, Alin Achim, University of Bristol, United Kingdom

WEP.P.198 Board 198 **HYPERSPECTRAL IMAGE CLASSIFICATION WITH SPECTRAL GRADIENT ENHANCEMENT FOR EMPIRICAL MODE DECOMPOSITION**
Alp Ertürk, M. Kemal Güllü, Sarp Ertürk, Kocaeli University, Turkey

WEP.P.199 Board 199 **A CLASS OF ROBUST ESTIMATES FOR DETECTION IN HYPERSPECTRAL IMAGES USING ELLIPTICAL DISTRIBUTIONS BACKGROUND**
Joana Frontera-Pons, Melanie Mahot, Supelec/SONDRA, France; Jean-Philippe Ovarlez, Office National d'Etudes et de Recherches Aérospatiale/SONDRA, France; Frédéric Pascal, Supelec/SONDRA, France; Sze Kim Pang, DSO National Laboratories, Singapore; Jocelyn Chanussot, GIPSA-lab, France

WEP.P.201 Board 201 **EXPLOITING SPECTRAL-SPATIAL PROXIMITY FOR CLASSIFICATION OF HYPERSPECTRAL DATA ON MANIFOLDS**
Hsiuhan Lexie Yang, Melba M. Crawford, Purdue University, United States

Applications of Hyperspectral Imagery

Session Co-Chairs: Peijun Li, Peking University; Alberto Villa, Aresys

WEP.P.202 Board 202 **RICE GROWTH STATE ESTIMATION BY HYPERSPECTRAL MANIFOLD LEARNING**
Kuniaki Uto, Takahiro Harano, Yukio Kosugi, Tokyo Institute of Technology, Japan

WEP.P.203 Board 203 **THE APPLICATION OF FIELD IMAGING SPECTROMETER SYSTEM(FISS) IN ARCHEOLOGY OF ANCIENT COPPER SMELTING SITE**
Qingting Li, Linlin Lu, Center for Earth Observation and Digital Earth, CAS, China; Xue Liu, Qingxi Tong, Institute of Remote Sensing Applications, CAS, China

WEP.P.204 Board 204 **ESTIMATING SOIL CARBON CONTENT IN DIVERSE ECOSYSTEMS BASED ON HYPERSPECTRAL ANALYSIS**
Yoshio Inoue, National Institute for Agro-Environmental Sciences, Japan; Xiaochun Zhi, University of Tsukuba, Japan

WEP.P.205 Board 205 **THE SPECTRAL REFLECTANCE OF SHIP WAKES BETWEEN 400 AND 900 NANOMETERS**
Robert Wright, University of Hawaii at Monoa, United States; Justin Deloatch, Stephanie Osgood, Jinchun Yuan, Elizabeth City State University, United States

WEP.P.206 Board 206 **DETERMINATION OF LIGNIN CONTENT IN NORWAY SPRUCE FOLIAGE USING NIR SPECTROSCOPY AND HYPERSPECTRAL DATA**
Lucie Kupková, Markéta Potucková, Michaela Buricová, Charles University in Prague, Czech Republic; Veronika Kopacková, Czech Geological Survey, Czech Republic; Zuzana Lhoták ová, Jana Albrechtová, Charles University in Prague, Czech Republic

WEP.P.207 Board 207 **QUANTIFYING THE UNCERTAINTIES IN THE USE OF REMOTELY-SENSED HYPERSPECTRAL IMAGERY FOR MONITORING DUST**
Cindy Ong, Commonwealth Scientific and Industrial Research Organisation, Australia

WEP.P.208 Board 208 **QUANTITATIVE MAPPING OF SURFACE SOIL MOISTURE WITH HYPERSPECTRAL IMAGERY USING THE HYSOMA INTERFACE**
Sabine Chabrillat, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany; Michael Whiting, University of California, Davis, United States; Stephane Guillaso, Berlin University of Technology, Germany; Andreas Eisele, Soeren-Nils Haubrock, Hermann Kaufmann, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany

WEP.P.209 Board 209 **EVALUATION OF NON-LINEAR SPECTRORADIOMETRIC MODELLING FOR CLASSIFICATION OF SAVANNA GRASS SPECIES**
Nichola Knox, SANSA, South Africa; Andrew K. Skidmore, University Twente, Netherlands; Paida Mangara, SANSA, South Africa

WEP.P.210 Board 210 **THE IMPORTANCE OF SPATIAL, SPECTRAL AND TEMPORAL CONSTRAINTS FOR A HYPERSPECTRAL MODELING OF VEGETATIONAL CONTINUUM AND HABITAT ASSESSMENT PARAMETER**
Carsten Neumann, Sibylle Itzerott, Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany; Gabriele Weiss, Ecostrat GmbH, Germany

WEP.P.211 Board 211 **GENETIC ALGORITHM BASED NEW SEQUENCE OF PRINCIPAL COMPONENT REGRESSION (GA-NSPCR) FOR FEATURE SELECTION AND YIELD PREDICTION USING HYPERSPECTRAL REMOTE SENSING DATA**
Sidik Mulyono, Mohamad Ivan Fanany, T Basaruddin, Universitas Indonesia, Indonesia

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Optical and Infrared Modelling I

Session Chair: Jose Moreno, University of Valencia

WEP.P.213 Board 213 **A NEW DIRECTIONAL BRIGHTNESS TEMPERATURE MODEL SUITS TO THE POLYMORPHISM CANOPY WITHIN THE WHOLE GROWTH CIRCLE**
Yongming Du, Qinhuo Liu, Hua Li, Biao Cao, Li Li, Institute of Remote Sensing Applications, CAS, China

WEP.P.214 Board 214 **IMPROVED METHOD OF LAND SURFACE EMISSIVITY RETRIEVAL FROM LANDSAT TM/ETM+ DATA**
QingNi Huang, HuaDong Guo, XiaoHuan Xi, XinWu Li, XiaoPing Du, Huaining Yang, Center for Earth Observation and Digital Earth, CAS, China

WEP.P.215 Board 215 **EXTENDING RGM TO SIMULATE THE DIRECTIONAL REFLECTANCE FOR COMPLEX MOUNTAINOUS REGIONS**
Donghui Xie, Beijing Normal University, China; Peijuan Wang, Chinese Academy of Meteorological Sciences, China; Guangjian Yan, Qijiang Zhu, Beijing Normal University, China

WEP.P.216 Board 216 **RETRIEVING AEROSOL OPTICAL THICKNESS (AOT) OVER THE DESERT OF THE UNITED ARAB EMIRATES (UAE) USING MSG/ SEVIRI INFRARED MEASUREMENTS**
Imen Gherboudj, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

WEP.P.217 Board 217 **INFLUENCES ON IMAGE QUALITY OF FILTER INSTALLATION ERRORS FOR AIRBORNE MULTI-SPECTRAL CAMERA**
Xuguo Zhang, Dakai Zhu, Li Wang, Zhaorong Lin, Beijing Institute of Space Mechanics & Electricity, China

WEP.P.218 Board 218 **TO RETRIEVE ALBEDO FROM AIR-BORNE WIDAS BASED ON A PRIOR BRDF DATABASE**
Hu Zhang, Ziti Jiao, Qiang Liu, Xingying Huang, Xiaowen Li, Beijing Normal University, China

WEP.P.219 Board 219 **DISCRIMINATION SOIL SALINIZATION DISTRIBUTION IN THE MIDDLE REGION OF HEIHE RIVER BASIN USING TM DATA**
Yueru Wu, Xujun Han, Weizhen Wang, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

WEP.P.220 Board 220 **RETRIEVAL OF LAND SURFACE TEMPERATURE(LST)BASED ON SUPPORT VECTOR MACHINE(SVM)FROM HJ-1B DATA WITH SINGLE-CHANNEL**
Adu Gong, Wenyu Liu, Yue Shan, Xi Chen, Jianwei Yue, Beijing Normal University, China

WEP.P.221 Board 221 **COVARIANCE TRACE FOR POLARIMETRIC ANOMALY DETECTION**
Joao Romano, U.S. Army Armament RDEC, United States; Dalton Rosario, Nasser Nasrabadi, U.S. Army Research Laboratory, United States

WEP.P.222 Board 222 **MODELING SOIL NADIR REFLECTANCE BASED ON AN EXTENDED PRICE MODEL**
Chongya Jiang, Hongliang Fang, Institute of Geographic Sciences and Natural Resources Research, CAS, China

WEP.P.223 Board 223 **A WIRELESS PLANT STRUCTURE PARAMETERS INSTRUMENT FOR REMOTE SENSING GROUND VALIDATION APPLICATION**
Yonghua Qu, Jingdi Wang, Hongmin Zhou, Beijing Normal University, China

Optical and Infrared Modelling II

Session Chair: Jose Moreno, University of Valencia

WEP.P.224 Board 224 **GPU-BASED ACCELERATION FOR MONTE CARLO RAY-TRACING OF COMPLEX 3D SCENE**
Yuguang Li, Xu Dai, Feng Zhao, Hong Shang, Beijing University of Aeronautics & Astronautics, China

WEP.P.225 Board 225 **STUDY OF URBAN HEAT ISLAND AND ITS INTERPLAY WITH IMPERVIOUS SURFACE IN DONGGUAN, CHINA**
Ya Ma, Aimin Liu, Gaodi Xie, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Yi Zou, Guangzhou Institute of Geochemistry, CAS, China; Wenli Qiang, Institute of Geographic Sciences and Natural Resources Research, CAS, China

WEP.P.226 Board 226 **BRDF MODELING COMPARISON IN HOTSPOT EFFECT WITH MODIFIED KERNEL-DRIVEN MODELS**
Xingying Huang, Ziti Jiao, Yadong Dong, Xiaowen Li, Hu Zhang, School of Geography, Beijing Normal University, China

WEP.P.227 Board 227 **AN APPROACH ON IMPROVING MODIS ALBEDO PRODUCT BY USING THE INFORMATION FROM MODIS LAI PRODUCT**
Huazhu Xue, Jindi Wang, Han Ma, Yan Liu, Hu Zhang, Yonghua Qu, Beijing Normal University, China

WEP.P.228 Board 228 **AN IMPROVED ALBEDO ALGORITHM USING MONO-ANGLE REMOTE SENSING DATA IN RUGGED TERRAIN AND PRELIMINARY VALIDATION**
Xiaojie Zhao, Qinhuo Liu, Jianguang Wen, Qiang Liu, Institute of Remote Sensing Applications, CAS, China

WEP.P.229 Board 229 **A SEMI-ANALYTIC METHOD TO SPEED UP THE CONVERGENCE OF SUCCESSIVE ORDER OF SCATTERING MODEL**
Weizhen Hou, Institute of Remote Sensing Applications, CAS, China; Qiu Yin, Shanghai Center for Satellite Remote Sensing Applications, China; Zhengqiang Li, Yalan Liu, Institute of Remote Sensing Applications, CAS, China

WEP.P.230 Board 230 **EVALUATION OF SPECTRAL ANGLE INDEX FROM LANDSAT TM IMAGE FOR CROP RESIDUE COVER ESTIMATION**
Miao Zhang, Bingfang Wu, Jihua Meng, Qiangzi Li, Taifeng Dong, Institute of Remote Sensing Applications, CAS, China

WEP.P.230 Board 230 **A TRACEABLE GROUND TO ON-ORBIT RADIOMETRIC CALIBRATIOM SYSTEM FOR THE SOLAR REFLECTIVE WAVELENGTH REGION**
Donald Heath, Heath Earth/Space Spectroradiometric Calibration Consulting, LLC., United States; Georgi Georgiev, Sigma Space Corporation, United States

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Hyperspectral Image Processing

Session Chair: Paul Gader, University of Florida

WEP.P.230 Board 230 **IMPLEMENTATION OF A COVARIANCE-BASED PRINCIPAL COMPONENT ANALYSIS ALGORITHM FOR HYPERSPECTRAL IMAGING APPLICATIONS WITH MULTI-THREADING IN BOTH CPU AND GPU**
Jian Zhang, Kim Hwa Lim, National University of Singapore, Singapore

WEP.P.231 Board 231 **ENDMEMBER LABELING AND SPECTRAL LIBRARY BUILDING AND UPDATING BASED ON HYPERSPECTRAL IMAGES**
Dimitris Sykas, Vassilia Karathanassi, National Technical University of Athens, Greece

WEP.P.232 Board 232 **A NEW HIERARCHICAL CLASSIFIER FOR HYPERSPCTRAL DATA WITH SIMILAR SPECTRUM**
Junping Zhang, Xuewen Zhang, Ye Zhang, Harbin Institute of Technology, China

WEP.P.233 Board 233 **A ROBUST EVIDENTIAL FISHER DISCRIMINANT FOR MULTI-TEMPORAL HYPERSPECTRAL IMAGES CLASSIFICATION**
Selim Hemissi, Imed Riadh Farah, Karim Saheb Ettabaa, ENSI, Tunisia; Basel Solaiman, Télécom Bretagne, France

WEP.P.234 Board 234 **SPECTRAL–SPATIAL CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON SEMI-SUPERVISED AND LEVEL SET METHODS**
Shuang Zhou, Xuewen Zhang, Junping Zhang, Hao Chen, Harbin Institute of Technology, China

WEP.P.235 Board 235 **PRELIMINARY VALIDATION OF A METHOD FOR SIMULATING HYPERSPECTRAL BANDS FROM MULTISPECTRAL IMAGES**
Tomasz Berezowski, Jaroslaw Chormanski, Warsaw University of Life Sciences, Poland; Jonathan Cheung-Wai Chan, Vrije Universiteit Brussel, Belgium

WEP.P.236 Board 236 **MULTI-SPECTRAL IMAGE INTER-BAND REGISTRATION TECHNOLOGY RESEARCH**
Zhou Fang, Chunxiang Cao, Institute of Remote Sensing Applications, CAS, China; Wanshou Jiang, Wuhan University, China; Wei Ji, Min Xu, Chinese Academy of Sciences, China; Shilei Lu, State Forestry Administration, China

WEP.P.237 Board 237 **ASPECTS OF ATMOSPHERIC AND TOPOGRAPHIC CORRECTION OF HIGH SPATIAL RESOLUTION IMAGERY**
Daniel Schläpfer, ReSe Applications Schläpfer, Switzerland; Rudolf Richter, German Aerospace Center (DLR), Germany; Tobias Kellenberger, swisstopo, Switzerland

Image Segmentation

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Gang Gang Dong, Na Wang, School of Electronic Science and Engineering, National University of Defense Technology, China; Can bin Hu, Université de Rennes 1, France; Yongmei Jiang, School of Electronic Science and Engineering, National University of Defense Technology, China

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Borja Rodríguez, José Antonio Malpica, Maria C. Alonso, Alcala University, Spain

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Biplab Banerjee, Surender Varma G., Krishna Mohan Buddhiraju, Indian Institute of Technology, Bombay, India

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Marcus F. S. Saldanha, Corina da Costa Freitas, Sidnei J. S. Sant'Anna, National Institute for Space Research (INPE), Brazil

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Session Chair: Devis Tuia, École Polytechnique Fédérale de Lausanne

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Ivan E. Villalon-Turrubiates, Instituto Tecnológico y de Estudios Superiores de Occidente, ITESO, Mexico; Jessica Blas-Salazar, Yehoshua Aguilar-Molina, Universidad de Guadalajara, Mexico

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Li Liu, Yun Shao, Fengli Zhang, Chinese Academy of Sciences, China; Xu Lu, Wuhan University, China

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Guangyun Zhang, Xiuping Jia, Ngai M Kwok, University of New South Wales, Australia

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Yasser Maghsoudi, Michael Collins, University of Calgary, Canada; Donald Leckie, Natural Resource Canada, Canada

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Session Co-Chairs: John Kerekes, Rochester Institute of Technology; Swarnaiyoti Patra, University of Trento

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Wei Zhang, Wei Wu, Yan Cui, Qi Wen, National Disaster Reduction Center of China, China

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Anthony Amankwah, University of Witswatersrand, South Africa; Chris Aldrich, Curtin University of Technology, Australia

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Ge Liu, Wenzhe Zhao, Feng Li, Yaseng Zhang, Xinwei Zheng, Hongqi Wang, Institute of Electronics, CAS, China

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Jing-jing Ge, Zhao-Rong Lin, Da-Kai Zhu, Beijing Institute of Space Mechanics & Electricity, China

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Jakub P. Walawender, Institute of Meteorology and Water Management – National Research Institute (IMGW-PIB); Jagiellonian University, Poland; Monika J. Hajto, Institute of Meteorology and Water Management – National Research Institute (IMGW-PIB), Poland; Piotr Iwaniuk, ESRI Polska, Poland

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Yuanbo Liu, Nanjing Institute of Geography and Limnology, CAS, China

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Wen Shao, Wen Yang, Gang Liu, Jie Liu, Wuhan University, China

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Sergio Cerdeira-Estrada, CONABIO, Mexico; Thomas Heege, EOMAP GmbH & Ko.KG, Germany; Melanie Kolb, CONABIO, Mexico; Sabine Ohlendorf, EOMAP GmbH & Ko.KG, Germany; Abigail Uribe, CONABIO, Mexico; Andreas Müller, EOMAP GmbH & Ko.KG, Germany; Rodrigo Garza, UMDI-Sisal, F. Ciencias, UNAM., Mexico; Rainer A. Ressl, CONABIO, Mexico; Raúl Aguirre, Instituto de Geografía, UNAM, Mexico; Ismael Mariño, CINVESTAV-Mérida, Mexico; Rodolfo Silva, Raúl Martell, Instituto de Ingeniería. UNAM, Mexico

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Linghong Ke, The Hong Kong Polytechnic University, Hong Kong SAR of China; Chunqiao Song, The Chinese University of Hong Kong, Hong Kong SAR of China; Xiaoli Ding, The Hong Kong Polytechnic University, Hong Kong SAR of China

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Session Co-Chairs: Antonio Plaza, University of Extremadura; Prashanth Marpu, Masdar Institute of Science and Technology

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Shuang Wang, Yitang Yang, Guohui Yang, Biao Hou, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education of China, China

WEP.P.263 Board 263 **TOWARDS EFFICIENT SATELLITE IMAGE TIME SERIES ANALYSIS: COMBINATION OF DYNAMIC TIME WARPING AND QUASI-FLAT ZONES**
Jonathan Weber, Université de Lorraine, France; François Petitjean, Pierre Gançarski, University of Strasbourg/LSIIT, France

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Lu Wang, Hongying Zhao, Peking University, China; Shiyi Guo, China University of Mining and Technology, China; Ying Mai, Sijie Liu, Peking University, China

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Syed Irteza Ali Khan, Christopher Barnes, David Anderson, Georgia Institute of Technology, United States

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Kristen Wallis, Geoffrey Akers, Peter Collins, Richard Davis, Alan Frazier, Mark Oxley, Andrew Terzuoli, AFIT, United States

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Radu Radescu, Andreea Honciuc, Mihai Datcu, Polytechnic University of Bucharest, Romania

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Paolo Addesso, Roberto Conte, Maurizio Longo, Rocco Restaino, Gemine Vivone, University of Salerno, Italy

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Lei Gao, Wenchao Chen, Jinghuai Gao, Xi'an Jiaotong University, China

Remote Sensing of Snow Properties II

Session Chair: Edward Kim, NASA Goddard Space Flight Center

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Giuseppe Parrella, German Aerospace Center (DLR), Germany; Annalisa Della Corte, Università degli Studi di Napoli Federico II, Italy; Irena Hajnsek, German Aerospace Center (DLR), Germany; Antonio Iodice, Università degli Studi di Napoli Federico II, Italy

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François Vachon, Danielle De Sève, Yves Choquette, Frédéric Guay, Institute of Research of Hydro-Québec, Canada

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Remote Sensing of Mountain Glaciers

Session Chair: Tazio Strozzi, Gamma Remote Sensing

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Reet Kamal Tiwari, Ravi P. Gupta, Indian Institute of Technology, Roorkee, India; Rudiger Gens, Anupma Prakash, University of Alaska Fairbanks, United States

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Lei Huang, Zhen Li, Center for Earth Observation and Digital Earth, CAS, China

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Lu Zhang, Huadong Guo, Peng Ji, Key Laboratory of Digital Earth, Center for Earth Observation and Digital Earth, CAS, China; Jie Chen, Beijing University of Aeronautics & Astronautics, China

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Jianmin Zhou, Zhen Li, Panpan Tang, Chinese Academy of Sciences, China

WEP.P.277 Board 277 **MONITORING GLACIER SURFACE VELOCITY IN WEST KUNLUN MOUNTAIN USING OFFSET TRACKING METHODS BASED ON ALOS/PALSAR IMAGES**
Zhixing Ruan, Huadong Guo, Guang Liu, Shiyong Yan, Center for Earth Observation and Digital Earth, CAS, China

WEP.P.278 Board 278 **EXTRACTION OF GLACIER SURFACE ELEVATION AND VELOCITY IN HIGH ASIA WITH ERS-1/2 TANDEM SAR DATA: APPLICATION TO PURUOGANGRI ICE FIELD, TIBETAN PLATEAU**
Lin Liu, Liming Jiang, Hansheng Wang, Institute of Geodesy and Geophysics, CAS, China

WEP.P.279 Board 279 **USING OPTICAL STEREO DATA TO ASSESS GLACIER MASS CHANGES IN THE HIGH MOUNTAINS OF ASIA SINCE THE 1960S**
Tobias Bolch, Universität Zürich, Switzerland; Tino Pieczonka, Angela Ender, Technische Universität Dresden, Germany

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Malcolm LeCompte, Elizabeth City State University, United States

Remote Sensing of Ice Sheets and Glaciers

Session Co-Chairs: Martin Horwath, TUM; Beata Csatho, Univ. Buffalo

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Seung Hee Kim, Duk-Jin Kim, Seoul National University, Republic of Korea

WEP.P.282 Board 282 **MONITORING ANTARCTIC ICE SHEET MELTING PERIODS WITH SSM/I 19H GHZ DATA AND TIME SERIES ANALYSIS**
Yufang Ye, University of Bremen, Germany; Xiao Cheng, Beijing Normal University, China; Xinwu Li, Lei Liang, Chinese Academy of Sciences, China; Georg Heygster, Institute of Environmental Physics, University of Bremen, Germany

WEP.P.283 Board 283 **GLACIER SURFACE VELOCITIES FROM SAR FEATURE TRACKING IN SOUTH SHETLAND ISLANDS, ANTARCTICA**
Batuhan Osmanoglu, University of Alaska Fairbanks, United States; Hilke Gieseke, Bonn University, Germany; Francisco J. Navarro, Technical University of Madrid, Spain; Martin Rückamp, University of Hamburg, Germany; Ulrike Falk, Bonn University, Germany; Maria Isabel Corcuera, Technical University of Madrid, Spain; Regine Hock, University of Alaska Fairbanks, United States; Matthias Braun, University of Erlangen, Germany

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Junchao Shi, Massimo Menenti, Roderik Lindenbergh, Delft University of Technology, Netherlands

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Ana-Maria Ilisei, Adamo Ferro, Lorenzo Bruzzone, University of Trento, Italy

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Sabine Baumann, Technische Universität München, Germany

WEP.P.287 Board 287 **RECENT ADVANCES IN MEASUREMENT OF GLACIER FLOW USING REPEAT OPTICAL IMAGES**
Andreas Kääb, Torborg Heid, Misganu Debella-Gilo, University of Oslo, Norway

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Hyangsun Han, Hoonyol Lee, Kangwon National University, Republic of Korea

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Anneleen Oyen, Andrew Hooper, Delft University of Technology, Netherlands; Matt King, Newcastle University, United Kingdom

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Cryosphere: Sea Ice Poster

Session Chair: Duk-jin Kim, Seoul National University

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Ewa Slominska, Wojciech Marczewski, Jan Slominski, Space Research Centre, Polish Academy of Sciences, Poland

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Hiroyuki Wakabayashi, Yuta Mori, Nihon University, Japan; Kazuki Nakamura, National Institute of Advanced Industrial Science and Technology, Japan; Chan-Su Yang, Korea Ocean Research & Development Institute, Republic of Korea

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Kyung-Kuk Kang, Claude Duguay, Interdisciplinary Centre on Climate Change (IC3), Canada

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Rudiger Gens, Lisa Wirth, Angelica Floyd, Ed Barker, University of Alaska Fairbanks, United States

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Annakaisa von Lerber, Aalto University, Finland; Marko Mäkynen, Markku Similä, Finnish Meteorological Institute, Finland; Pauli Sievinen, Martti Hallikainen, Aalto University, Finland

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Sascha Willmes, University of Trier, Germany; Marcel Nicolaus, Alfred Wegener Institute for Polar and Marine Research, Germany; Christian Haas, University of Alberta, Canada

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Georg Heygster, Marcus Huntemann, University of Bremen, Germany

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Vladimir Zabeline, Yi Luo, Environment Canada, Canada

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Marta Zygmuntowska, Kirill Khvorostovsky, Stein Sandven, Nansen Environmental and Remote Sensing Center, Norway

WEP.P.299 Board 299 **CLOUD DISCRIMINATION AND SURFACE CLASSIFICATION FOR THE SEA ICE ALBEDO RETRIEVAL FROM MODIS DATA**
Larysa Istomina, Georg Heygster, University of Bremen, Germany

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Charles Laymon, Universities Space Research Association, United States; Joseph Casas, NASA, United States; Martin Kress, Von Braun Center for Science and Innovation, United States; Jeff McCracken, Paul Meyer, NASA, United States; Stephen Spehn, DOD European Command, United States; Steve Tanner, University of Alabama Huntsville, United States; Gina Wade, Von Braun Center for Science and Innovation, United States

Permafrost and Seasonally Frozen Ground

Session Co-Chairs: Annett Bartsch, TU Wien; Monique Bernier, INRS

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Zhenguo Hao, Lixin Zhang, Lingmei Jiang, Shaojie Zhao, Lijiao Xiao, Beijing Normal University, China

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Toru Sakai, Tetsuya Hiyama, Junko Fujiwara, Research Institute for Humanity and Nature, Japan; Semen Gotovtsev, Leonid Gagarin, Melnikov Permafrost Institute, Russian Federation

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Shaojie Zhao, Lixin Zhang, Tao Zhang, Zhenguo Hao, Linna Chai, Zhongjun Zhang, Beijing Normal University, China

WEP.P.304 Board 304 **PHASE TRANSITION ANALYSIS IN FREEZING MOIST SOILS CARRIED OUT ON THE BASIS OF PHASE TRANSITIONS CHARACTERISTIC TO THE DIFFERENT TYPES OF SOIL WATER**
Valery Mironov, Igor Savin, Yuri Lukin, Andrew Karavaisky, Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation

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SAR Calibration and Validation

Session Chair: Manfred Zink, German Aerospace Center - DLR

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Ye Yun, Qiming Zeng, Jian Jiao, Cunren Liang, Qing Wang, Xiao Zhou, Dapeng Yan, Peking University, China

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Rafael Rincon, NASA, United States; Temilola Fatoyinbo, Kenneth Jon Ranson, Guoqing Sun, Manohar Deshpande, NASA Goddard Space Flight Center, United States; Richard Hale, University of Kansas, United States; Arvind Bhat, Intelligent Automation Inc, United States; Martin Perrine, Cornelis Du Toit, Quenton Bonds, Victor Marrero, Paul James, NASA Goddard Space Flight Center, United States

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Liang Li, Jun Hong, Feng Ming, Institute of Electronics, CAS, China

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Xiao Zhou, Qiming Zeng, Jian Jiao, Qing Wang, Sheng Gao, Peking University, China

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Yu Okada, Tadashi Hamasaki, Shohei Nakamura, Masao Tsuji, Kenichi Hariu, Mitsubishi Electric Corporation, Japan; Yukihiro Kankaku, Shinichi Suzuki, Yuji Osawa, Japan Aerospace Exploration Agency (JAXA), Japan

WEP.P.310 Board 310 **ANTENNA MODEL REFINEMENT TECHNIQUE FROM SAR DATA: A STUDY ON THE ENVISAT ASAR INSTRUMENT**
Alberto Villa, Davide Giudici, Davide D'Aria, Andrea Recchia, ARESYS, Italy; Nuno Miranda, European Space Agency ESRIN, Italy

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David Small, University of Zurich, Switzerland

WEP.P.312 Board 312 **EVALUATION OF DIHEDRAL CORNER REFELECTOR FOR P-BAND POLSAR CALIBRATION**
Yu Wang, Xingdong Liang, Institute of Electronics, CAS, China

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Tatsuharu Kobayashi, Toshihiko Umehara, Jyunpei Uemoto, Makoto Satake, Shoichiro Kojima, Takeshi Matsuoka, Akitsugu Nadai, Seiho Uratsuka, National Institute of Information and Communications Technology, Japan

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Lee Burchett, Stephen Hartzell, Garrett Hoffar, Jonathan Mautz, Clark Taylor, Andrew Terzuoli, AFIT, United States

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Marco Bianchi, Fabrizio Novali, Alessio Rucci, Andrea Tamburini, TRE - TeleRilevamento Europa s.r.l., Italy

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Dan Johan Weydahl, Knut Eldhuset, Norwegian Defence Research Establishment, Norway

SAR Instruments, Mitigation, Simulation

Session Chair: Manfred Zink, German Aerospace Center - DLR

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THE COREH2O END TO END SIMULATOR: ARCHITECTURE AND SIMULATION RESULTS ANALYSIS
Michele Scagliola, Davide Giudici, ARESYS, Italy; Juan Ramon Acarreta, Enrique Del Pozo, DEIMOS Space, Spain; Christopher Buck, European Space Agency ESTEC, Netherlands

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AN END-TO-END SIMULATION FRAMEWORK FOR OPTIMIZING THE DESIGN OF SPACE-BORNE IMAGING SYSTEMS
Sebastien Tailhades, German Aerospace Center (DLR), Germany

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WYPSAR: WIDE-SWATH YIELDS BY PARTIAL SIGNAL OF SYNTHETIC APERTURE RADAR
Qi Chen, Haifeng Huang, Feng He, Zaoyu Sun, National University of Defense Technology, China

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INVESTIGATION ON MIMO SAR IMAGING BASED ON OFDM-LFM WAVEFORM
Qian Chen, Yunkai Deng, Robert Wang, Institute of Electronics, CAS, China; Yadong Liu, China Academy of Space Technology, China

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IMPROVING FMCW SAR SYSTEM PERFORMANCE BY DIGITAL BEAMFORMING
Qin Xin, Zhan Wang, ZhiHong Jiang, Kan HuangFu, National University of Defense Technology, China

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A NOVEL METHOD FOR DUAL CHANNEL POLSAR RAW DATA COMPRESSION
Lihong Kang, Bin Zou, Dewu Wang, Lamei Zhang, Ye Zhang, Harbin Institute of Technology, China

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DAMAGE DETECTION OF THE GREAT EAST JAPAN EARTHQUAKE BY THE AIRBORNE SAR (PI-SAR2) OF NICT
Tatsuharu Kobayashi, Toshihiko Umehara, Jyunpei Uemoto, Makoto Satake, Shoichiro Kojima, Takeshi Matsuoka, Akitsugu Nadai, Seiho Uratsuka, National Institute of Information and Communications Technology, Japan

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A MULTI-MODE SPACE-BORNE SAR SIMULATOR BASED ON SBRAS
Qi Chen, Anxi Yu, Zaoyu Sun, Haifeng Huang, National University of Defense Technology, China

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A SELECTION OF METASENSING AIRBORNE CAMPAIGNS AT L- , X- AND KU- BAND
Adriano Meta, Ernesto Imbembo, Christian Trampuz, Alex Coccia, Giulio De Luca, MetaSensing B.V., Netherlands

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DETECTION AND MITIGATION OF RADIO FREQUENCY INTERFERENCE IN SMOS DATA
Rita Castro, Antonio Gutiérrez, José Barbosa, Deimos Engenharia, Portugal

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PAZ GROUND SEGMENT
María-José González-Bonilla, Eva Vega, Nuria Alfaro, Beatriz Gómez, National Institute for Aerospace Technology, Spain

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RADARSAT-2 MISSION OPERATIONS STATUS
Phillipe Rolland, Marielle Chabot, René Périard, Pierre Ledantec, Camille Decoust, MDA, Canada

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Active Microwave Calibation and New Sensor I

Session Chair: Paul Siqueira, siqueira@engin.umass.edu

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EXPERIMENTAL STUDY ON ACCURATE 3-DIMENSIONAL IMAGING METHOD BASED ON EXTENDED RPM FOR ROTATING TARGET
Shouhei Kidera, Tetsuo Kirimoto, University of Electro-Communications, Japan

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MULTI-TEMPORAL RADAR BACKSCATTERING MEASUREMENT OF WHEAT FIELDS AND THEIR RELATIONSHIP WITH BIOLOGICAL VARIABLES
Mingquan Jia, Ling Tong, Yan Chen, Junming Gao, University of Electronic Science and Technology of China, China

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RECENT DEVELOPMENTS IN RADAR ALTIMETRY OVER LAND AND APPLICATIONS TO FUTURE ALTIMETRIC MISSIONS
Marco Meloni, Guido Vingione, SERCO S.p.A., Italy; Paolo Ferrazzoli, Tommaso Parrinello, Tor Vergata University of Rome, Italy

WEP.P.332 Board 332
INTERCOMPARISON OF ACTIVE MICROWAVE DERIVED SURFACE STATUS AND MODIS LAND SURFACE TEMPERATURE AT HIGH LATITUDES
Christoph Paulik, Annett Bartsch, Daniel Sabel, Wolfgang Wagner, Vienna University of Technology, Austria; Claude Duguay, Aiman Soliman, University of Waterloo, Canada

WEP.P.333 Board 333
CRYOSAT-2 CALIBRATION OF DATATION, RANGE AND INTERFEROMETRIC PHASE, USING AN ESA TRANSPONDER
Monica Roca, isardSAT, S.L., Spain; Marco Fornari, European Space Agency ESTEC, Netherlands; Albert Garcia, isardSAT, S.L., Spain; Mercedes Reche, Pildo Labs, S.L., Spain; Pablo Nilo Garcia, isardSAT, S.L., Spain; Robert Cullen, European Space Agency ESTEC, Netherlands

WEP.P.334 Board 334
QUALITY ANALYSIS FOR IMAGES ACQUIRED BY A NEW MICROWAVE STARING CORRELATION IMAGING TECHNIQUE
Yong-Sheng Zhou, Qi Wang, Ling-Ling Ma, Chuan-Rong Li, Lingli Tang, Yaokai Liu, Academy of Opto-Electronics, CAS, China

WEP.P.335 Board 335
CROSS-CALIBRATION OF ERS-1 AND ERS-2 WIND SCATTEROMETERS; TOWARDS A HOMOGENEOUS 20-YEAR-LONG WIND VECTOR MONITORING OF THE EARTH
Marco Talone, SERCO S.p.A., Italy; Raffaele Crapolicchio, European Space Agency, Italy; Giovanna De Chiara, European Centre for Medium-Range Weather Forecasts, United Kingdom; Xavier Neyt, Anis Elyouncha, Royal Military Academy, Belgium; Lidia Saavedra de Miguel, SERCO S.p.A., Italy; Gareth Davies, VEGA Space Ltd, United Kingdom; Bojan Bojkov, European Space Agency, Italy

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SURFACE ROUGHNESS PARAMETER UNCERTAINTIES ON RADAR BASED SOIL MOISTURE RETRIEVALS
Alicia Joseph, NASA Goddard Space Flight Center, United States; Rogier Van Der Velde, Geo-Information Science and Earth Observation (ITC), University of Twente, Netherlands; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Zhongbo Su, Geo-Information Science and Earth Observation (ITC), University of Twente, Netherlands; Timothy Gish, USDA ARS, United States

WEP.P.338 Board 338
OPTIMUM TWO-DIMENSIONAL TRANSMIT-RECEIVER DESIGN
Hui Sheng, Kaizhi Wang, Xingzhao Liu, Shanghai Jiao Tong University, China

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IN-ORBIT CALIBRATION AND PERFORMANCE EVALUAIOTN OF HY-2 SCATTEROMETER
Xiaoning Wang, Lixia Liu, Haoqiang Shi, Chinese Academy of Space Technology, China; Xiaolong Dong, Di Zhu, Center for Space Science and Applied Research, CAS, China

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KU-BAND RADAR ALTIMETER FOR SURFACE ELEVATION MEASUREMENTS IN POLAR REGIONS USING A WIDEBAND CHIRP GENERATOR WITH IMPROVED LINEARITY
Daniel Gomez-Garcia, Fernando Rodriguez-Morales, Carl Leuschen, Sivaprasad Gogineni, University of Kansas, United States

Active Microwave Calibation and New Sensor II

Session Chair: Paul Siqueira, University of Massachusetts

WEP.P.341 Board 341 **MONITORING ASCAT CALIBRATION USING OCEAN BACKSCATTER**
Craig Anderson, Hans Bonekamp, EUMETSAT, Germany

WEP.P.342 Board 342 **S-BAND BACKSCATTERING ANALYSIS OF WHEAT USING TOWER-BASED SCATTEROMETER**
Qikai Sun, China University of Mining and Technology, China; Fengli Zhang, Yun Shao, Li Liu, Guojun Wang, Kim Li, Institute of Remote Sensing Applications, CAS, China; Xiaoli Wang, China University of Mining and Technology, China

WEP.P.343 Board 343 **CALIBRATION OF THE NASA DUAL-FREQUENCY, DUAL-POLARIZED, DOPPLER RADAR**
Manuel Vega, NASA Goddard Space Flight Center, United States; Venkatachalam Chandrasekar, Cuong Nguyen, Kumar Vijay Mishra, Colorado State University, United States; James Carswell, Remote Sensing Solutions GmbH, United States

WEP.P.344 Board 344 **DOPPLER VELOCITY CALIBRATION STUDY FOR CLOUD PROFILING RADAR ON EARTHCARE**
Hiroaki Horie, Yuichi Ohno, Kenji Sato, Katsuhiro Nakagawa, Nobuhiro Takahashi, National Institute of Information and Communications Technology, Japan

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Advances in Microwave Radiometers and Calibration Techniques

Session Chair: Hyuk Park, Universitat Politècnica de Catalunya

WEP.P.345 Board 345 **ERROR MODEL AND CALIBRATION OF SYNTHETIC APERTURE INTERFEROMETRIC RADIOMETER BASED ON VISIBILITY FUNCTION**
Ke Chen, Wei Guo, Hong Yang, Rong Jin, Guanli Yi, Fei Hu, Huazhong University of Science and Technology, China; Jinhai Sun, Science and Technology on Electromagnetic Scattering Laboratory, China

WEP.P.346 Board 346 **CALIBRATION OF STAGGERED Y-SHAPED ARRAY BY 120 DEGREE ROTATION**
Rong Jin, Qingxia Li, Ke Chen, Guanli Yi, Hong Yang, Huazhong University of Science and Technology, China; Jian Dong, Central South University, China; Jinhai Sun, Science and Technology on Electromagnetic Scattering Laboratory, China

WEP.P.347 Board 347 **CALIBRATION AND IMAGE RECONSTRUCTION FOR THE HURRICANE IMAGING RADIOMETER (HIRAD)**
Christopher Ruf, University of Michigan, United States; J. Brent Roberts, Sayak Biswas, Mark James, Timothy Miller, NASA Marshall Space Flight Center, United States

WEP.P.348 Board 348 **A COMBINED L-BAND SYNTHETIC APERTURE RADIOMETER AND FAN-BEAM SCATTEROMETER FOR SOIL MOISTURE AND OCEAN SALINITY MEASUREMENT**
Hao Liu, Xiangkun Zhang, Lijie Niu, Xin Zhao, Cheng Zhang, Ji Wu, Jingye Yan, Qiong Wu, Weiguo Zhang, National Space Science Center/Center for Space Science and Applied Research, CAS, China

WEP.P.349 Board 349 **REVIEW OF THE IMAGE RECONSTRUCTION TECHNIQUES USED IN SMOS DATA PROCESSING**
Antonio Gutiérrez, Rita Castro, José Barbosa, Deimos Engenharia, Portugal; Eric Anterrieu, Institut de Recherche en Astrophysique et Planétologie, France

WEP.P.350 Board 350 **RESEARCH ON TIPPING CALIBRATION AND EXPONENT CALIBRATION BASED ON LN2 FOR GROUND-BASED MULTI-CHANNEL MICROWAVE RADIOMETER**
Jieying He, Shengwei Zhang, Yu Zhang, Center for Space Science and Applied Research, CAS, China

WEP.P.351 Board 351 **VALIDATION AND EXPERIMENTAL TESTS OF THE PAU-SYNTHETIC APERTURE RADIOMETER**
Isaac Ramos-Perez, Giuseppe Forte, Adriano Camps, Xavier Bosch-Lluis, Nereida Rodriguez-Alvarez, Enric Valencia, Hyuk Park, Mercè Vall-llossera, Universitat Politècnica de Catalunya Nord, Spain

WEP.P.352 Board 352 **INVESTIGATION OF GAS ABSORPTION MODELS FROM 22GHZ TO 60GHZ AND ANALYSIS OF RADIOMETER CALIBRATION TECHNIQUES AT 530HPA**
Gerrit Maschwitz, Susanne Crewell, Ulrich Löhnert, University of Cologne, Germany; Thomas Rose, Radiometer Physics GmbH, Germany; David D. Turner, National Severe Storms Laboratory, NOAA, United States

WEP.P.353 Board 353 **AN INVESTIGATION OF ANTENNA CHARACTERIZATION TECHNIQUES IN MICROWAVE REMOTE SENSING CALIBRATION**
Derek Houtz, Dazhen Gu, David Walker, National Institute of Standards and Technology, United States; James Randa, National Institute of Standards and Technology / University of Colorado Boulder, United States

WEP.P.354 Board 354 **AN EVALUATION OF ANTARCTICA AS A CALIBRATION TARGET FOR PASSIVE MICROWAVE SATELLITE MISSIONS**
Edward J. Kim, NASA Goddard Space Flight Center, United States

WEP.P.355 Board 355 **GNSS-R REFLECTED SIGNALS POLARIZATION CHARACTERISTICS: THEORETICAL STUDY ON VEGETATION REMOTE SENSING**
Xuerui Wu, Ying Li, Dalian Maritime University, China

Microwave Radiometer Missions

Session Co-Chairs: Satoko Mizobuchi, Japan Aerospace Exploration Agency; Nadia Karouche, CNES

WEP.P.355 Board 355 **AN EMISSIVITY-BASED LAND SURFACE TEMPERATURE RETRIEVAL ALGORITHM**
Yubao Qiu, Huadong Guo, Center for Earth Observation and Digital Earth, CAS, China; Jiancheng Shi, Institute for Computational Earth System Science, University of California, United States; Juha Lemmetyinen, Finnish Meteorological Institute, Finland; Lijuan Shi, Center for Earth Observation and Digital Earth, CAS, China

WEP.P.356 Board 356 **DATA CAL/VAL OF FY-3/HY-2 MWRI WITH INTERCALIBRATION OF AQUA/AMSR-E**
Ya-Qiu Jin, Hao Chen, Fudan University, China

WEP.P.357 Board 357 **DESIGN OF THE SECOND GENERATION MICROWAVE HUMIDITY SOUNDER (MWHS-II) FOR CHINESE METEOROLOGICAL SATELLITE FY-3**
Shengwei Zhang, Jing Li, Zhenzhan Wang, Hongjian Wang, Maohua Sun, Jingshan Jiang, Jieying He, Center for Space Science and Applied Research, CAS, China

WEP.P.358 Board 358 **A FIVE-FREQUENCY BANDS QUASI-OPTICAL MULTIPLEXER FOR GEOSTATIONARY ORBIT MICROWAVE RADIOMETER**
Yongfang Zhang, Jungang Miao, Haibo Zhao, Guangbin Cui, Yan Shi, Beihang University, China

WEP.P.359 Board 359 **AN EMPIRICAL CORRECTION FOR THE MWR BRIGHTNESS TEMPERATURE SMEAR EFFECT**
Spencer Farrar, University of Central Florida, United States; Martin Labanda, Maria Marta Jacob, Sergio Masuelli, CONAE, Argentina; Sayak Biswas, University of Central Florida, United States; Hector Raimondo, CONAE, Argentina; Linwood Jones, University of Central Florida, United States

WEP.P.360 Board 360 **MEGHA-TROPIQUES SATELLITE MISSION : IN FLIGHT PERFORMANCE RESULTS**
Nadia Karouche, C. Goldstein, Alain Rosak, C. Malassingne, G. Raju, Centre National d'Études Spatiales, France

WEP.P.361 Board 361 **A DIGITAL CORRELATION FULL-POLARIMETRIC MICROWAVE RADIOMETER DESIGN AND CALIBRATION**
Zhenzhan Wang, Jingyi Liu, Hao Lu, Wei Zheng, Xinbiao Wang, Bin Li, NSSC, China

WEP.P.362 Board 362 **A SPACE-BORNE PASSIVE MICROWAVE RADIOMETER FOR THE SPACE PROGRAMME OF A DEVELOPING NATION**
George Calder-Potts, Michael Inggs, University of Cape Town, South Africa

WEP.P.363 Board 363 **IMPROVEMENT IN CALIBRATION ALGORITHM OF THE AOS (ACOUSTO-OPTICAL SPECTROMETER) USING IN-ORBIT MEASUREMENT DATA**
Satoko Mizobuchi, Japan Aerospace Exploration Agency (JAXA), Japan; Hiroyuki Ozeki, Toho University, Japan; Ken-ichi Kikuchi, Satoshi Ochiai, Philippe Baron, National Institute of Information and Communications Technology, Japan; Toshiyuki Nishibori, Japan Aerospace Exploration Agency (JAXA), Japan

WEP.P.364 Board 364 **EVALUATION OF ATMS CROSS TRACK ASYMMETRY**
Tong Zhu, CIRA, Colorado State University, United States; Fuzhong Weng, NOAA/NESDIS/Center for Satellite Applications and Research, United States

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Lidar Performance and Processing

Session Co-Chairs: Michael Cathcart, Georgia Tech Research Institute; John Kerekes, Rochester Institute of Technology

WEP.P.365 Board 365 **POWER BUDGET AND PERFORMANCE ASSESSMENT FOR THE RSLAB MULTISPECTRAL ELASTIC/RAMAN LIDAR SYSTEM**
Dhiraj Kumar, Diego Lange, Francesc Rocadenbosch, Sergio Tomás, Michaël Sicard, Constantino Muñoz, Adolfo Comerón, Universitat Politècnica de Catalunya / Institut d'Estudi Espacials de Catalunya (IEEC/CRAE), Spain

WEP.P.366 Board 366 **BACKSCATTERED SIGNAL LEVEL AND SNR VALIDATION METHODOLOGY FOR TROPOSPHERIC ELASTIC LIDARS**
Diego Lange, Dhiraj Kumar, Francesc Rocadenbosch, Universitat Politècnica de Catalunya / Institut d'Estudi Espacials de Catalunya (IEEC/CRAE), Spain

WEP.P.367 Board 367 **MODEL RETRIEVAL BASED ON POINT CLOUD ENCODING OF AIRBORNE LIDAR**
Jyun-Yuan Chen, Po-Chi Hsu, Chao-Hung Lin, National Cheng Kung University, Taiwan

Hyperspectral Applications: Passive Optical and Hyperspectral Sensors

Session Chair: Jeffery Puschell, Raytheon

WEP.P.368 Board 368 **AN APPROACH TO FULLY UNSUPERVISED HYPERSPECTRAL UNMIXING**
Wolfgang Gross, Hendrik Schilling, Wolfgang Middelmann, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), Germany

WEP.P.369 Board 369 **NON UNIFORM SAMPLING FOR REMOTE SENSING IMAGES**
Marie Chabert, University of Toulouse, France; Bernard Lacaze, TeSA Laboratory, France

WEP.P.370 Board 370 **QUATERNION-BASE DIRECT GEO-REFERENCING ALGORITHM FOR ISSAC**
Changyong Dou, Huadong Guo, Center for Earth Observation and Digital Earth, CAS, China; Xiaodong Zhang, University of North Dakota, United States; Huaining Yang, National Earthquake Response Support Service, China

WEP.P.371 Board 371 **DIRECTIONAL DEGRADATION OF SPECTRALON DIFFUSER UNDER IONIZING RADIATION FOR CALIBRATION OF SPACE-BASED SENSORS**
Georgi Georgiev, Sigma Space Corporation, United States; James J. Butler, NASA Goddard Space Flight Center, United States; Matthew Kowalewski, Universities Space Research Association, United States; L. Ding, Sigma Space Corporation, United States

WEP.P.372 Board 372 **OPERATIONALIZING A RESEARCH SENSOR: MODIS TO VIIRS**
Kerry Grant, Jeffery Puschell, Shawn Miller, Raytheon, United States

WEP.P.373 Board 373 **ON USING BRDF MODELS FOR ASSESSMENT OF RADIOMETRIC STABILITY OF SONORAN DESERT**
Wonkook Kim, Shunlin Liang, University of Maryland, United States; Changyong Cao, NOAA, United States

WEP.P.374 Board 374 **USAGE OF CLOUD CLIMATE DATA IN OPERATION MISSION PLAN SIMULATION FOR JAPANESE FUTURE HYPERSPECTRAL AND MULTISPECTRAL SENOR: HISUI**
Kenta Ogawa, Rakuno Gakuen University, Japan; Tsuneo Matsunaga, Satoru Yamamoto, National Institute for Environmental Studies, Japan; Osamu Kashimura, Tetsushi Tachikawa, Japan Space Systems, Japan; Satoshi Tsuchida, National Institute of Advanced Industrial Science and Technology, Japan; Jun Tanii, Japan Space Systems, Japan; Shuichi Rokugawa, University of Tokyo, Japan

WEP.P.375 Board 375 **GEO-LOCATION CORRECTION OF CBERS 2B IMAGERY USING FAST TEMPLATE MATCHING ON A GPU**
Guido Lemoine, Jacek Syryczynski, Martina Giovalli, European Commision, Joint Research Centre, Italy

WEP.P.376 Board 376 **NOISE REDUCTION IN GRIDDED AIRS BRIGHTNESS TEMPERATURE GRIDS USING THE MODIS OBSCOV ALGORITHM**
David Chapman, Milton Halem, Phuong Nguyen, Jeff Avery, University of Maryland, Baltimore County, United States

WEP.P.377 Board 377 **RADIOMETRIC AND GEOMETRIC SCARAB-MEGHA-TROPIQUES GROUND CALIBRATION COMPARISON WITH FIRST IN ORBIT CALIBRATION**
Alain Rosak, Thierry Tremas, Nadia Karouche, Laurène Gillot, Olivier Simonella, Centre National d'Etudes Spatiales, France

WEP.P.378 Board 378 **DLR'S NEW TRACEABLE RADIANCE STANDARD "RASTA"**
Thomas Schwarzmaier, Andreas Baumgartner, Peter Gege, Claas Köhler, Karim Lenhard, German Aerospace Center (DLR), Germany

WEP.P.379 Board 379 **IN-ORBIT OPTICAL PERFORMANCE ASSESSMENT OF GEOSTATIONARY OCEAN COLOR IMAGER**
Eunsong Oh, Seongick Cho, Yu-Hwan Ahn, YoungJe Park, Joo-Hyung Ryu, Korea Ocean Research & Development Institute, Republic of Korea; Sug-Whan Kim, Yonsei University, Republic of Korea

WEP.P.380 Board 380 **A FIELD PORTABLE HYPERSPECTRAL GONIOMETER FOR COASTAL CHARACTERIZATION**
Charles Bachmann, Deric Gray, Andrei Abelev, U.S. Naval Research Laboratory, United States; William Philpot, Cornell University, United States; Robert Fusina, U.S. Naval Research Laboratory, United States; Joseph Musser, Stephen F. Austin University, United States; Michael Vermillion, U.S. Naval Research Laboratory, United States; Katarina Doctor, Maurice White, George Mason University, United States; Georgi Georgiev, Sigma Space Corporation, United States

WEP.P.381 Board 381 **THE DEIMOS-1 MISSION: ABSOLUTE AND RELATIVE CALIBRATION ACTIVITIES AND RADIOMETRIC OPTIMISATION**
Francisco Lozano, Alfredo Romo, Cristina Moclán, Jorge Gil, Fabrizio Pirondini, ELECNOR DEIMOS Imaging SLU, Spain

WEP.P.382 Board 382 **STRATEGIES FOR VALIDATION OF CERES INSTRUMENTS ABOARD THE NPP AND TERRA/AQUA SATELLITES**
Z. Peter Szewczyk, G. Louis Smith, Science Systems and Applications, Inc., United States; Kory J. Priestley, NASA Langley Research Center, United States

WEP.P.383 Board 383 **EFFECT OF SENSOR DEGRADATION ON MULTI-SPECTRAL AEROSOL RETRIEVAL FROM GOES-R/ABI AND NPP/VIIRS**
Istvan Laszlo, NOAA, United States; Hongqing Liu, Riverside Technology, Inc., United States; Shobha Kondragunta, NOAA, United States; Heather Q. Cronk, Integrity Applications Incorporated, United States; Jessica Ram, Riverside Technology, Inc., United States

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UAV Sensors, Platforms and Technology

Session Chair: Marc Schwarzbach, German Aerospace Center - DLR

WEP.P.384 Board 384 **DEVELOPMENT OF CIRCULARLY POLARIZED SYNTHETIC APERTURE RADAR ONBOARD UNMANNED AERIAL VEHICLE (CP-SAR UAV)**
Josaphat Tetuko Sri Sumantyo, Chiba University, Japan

WEP.P.385 Board 385 **HELICOPTER UAV SYSTEMS FOR IN SITU MEASUREMENTS AND SENSOR PLACEMENT**
Marc Schwarzbach, Konstantin Kondak, Maximilian Laiacker, German Aerospace Center (DLR), Germany; Chia-Yen Shih, Pedro Jose Marron, University of Duisburg-Essen, Germany

WEP.P.386 Board 386 **AIRWORTHINESS ENHANCEMENT BY FORWARD LOOKING CAMERA FOR A LOW COST UAV-BASED PERSONAL REMOTE SENSING PLATFORM**
Johannes Kaplanek, University of Weingarten / Utah State University, Germany; Austin Jensen, YangQuan Chen, Utah State University, United States

Ground-Based Systems

Session Chair: Jens Fischer, German Aerospace Center - DLR

WEP.P.387 Board 387 **EXPERIMENTAL RESULTS OF A GROUND-BASED INTERFEROMETRIC SAR**
Biying Lu, Qian Song, Xin Sun, Xiang Zhang, Zhimin Zhou, National University of Defense Technology, China

WEP.P.388 Board 388 **THE SIGNAL PROCESSOR SYSTEM FOR THE NASA DUAL-FREQUENCY DUAL-POLARIZED DOPPLER RADAR**
Kumar Vijay Mishra, Venkatachalam Chandrasekar, Cuong Nguyen, Colorado State University, United States; Manuel Vega, Colorado State University / NASA Goddard Space Flight Center, United States

WEP.P.389 Board 389 **LATEST OBSERVATION RESULTS OF THE KU-BAND BROADBAND RADAR (BBR) NETWORK PROJECT**
Tomoo Ushio, Eiichi Yoshikawa, Shigeharu Shimamura, Zen Kawasaki, Osaka University, Japan; Naoki Matayoshi, Japan Aerospace Exploration Agency (JAXA), Japan

WEP.P.390 Board 390 **SENSOR PLACEMENT OF MULTISTATIC RADAR SYSTEM BY USING GENETIC ALGORITHM**
Pengzheng Lei, Xiaotao Huang, Jian Wang, Xile Ma, National University of Defense Technology, China

WEP.P.391 Board 391 **ESTIMATION OF FLIGHT ALTITUDE IN HIGH FREQUENCY SURFACE WAVE RADAR**
Kongrui Zhao, Harbin Institute of Technology, China; Gongjian Zhou, Harbin Institute of Techonolgy, China; Changjun Yu, Taifan Quan, Harbin Institute of Technology, China

WEP.P.392 Board 392 **INTRODUCTION TO THE NEW METASENSING GROUND-BASED SAR: TECHNICAL DESCRIPTION AND DATA ANALYSIS**
Sabine Rödelsperger, Alex Coccia, Daniel Vicente, Adriano Meta, MetaSensing B.V., Netherlands

WEP.P.393 Board 393 **A LOW COST WIRELESS SENSOR NETWORK FOR LANDSLIDE HAZARD MONITORING**
Karthik Srinivasan, Burgess Howell, USRA Science and Technology Institute, United States; Eric Anderson, Africa Flores, University of Alabama Huntsville, United States

WEP.P.394 Board 394 **A ROTATIONAL HIGH-RESOLUTION SAR ON A TOWER AT MULTI-FREQUENCIES**
Ji-Hwan Hwang, Soon-gu Kweon, Yisok Oh, Hongik University, Republic of Korea

WEP.P.395 Board 395 **SENSITIVITY ANALYSIS OF RADIOMETRICAL CALIBRATION MODEL TO SYSTEM SETTINGS BASED ON FIELD IMAGING SPECTROMETERS**
Changping Huang, Lifu Zhang, Qingxi Tong, Institute of Remote Sensing Applications, CAS, China

WEP.P.396 Board 396 **THE ANALYSIS OF ERRORS FOR FIELD EXPERIMENT BASED ON POV-RAY**
Hong Shang, Feng Zhao, Huijie Zhao, Beijing University of Aeronautics & Astronautics, China

WEP.P.397 Board 397 **CORRELATION BETWEEN EROSION PATTERNS AND ROCKFALL HAZARD SUSCEPTIBILITY IN HILLTOP FORTIFICATIONS BY TERRESTRIAL LASER SCANNING AND DIAGNOSTIC INVESTIGATIONS**
Deodato Tapete, Giovanni Gigli, Francesco Mugnai, Pietro Vannocci, Elena Pecchioni, Stefano Morelli, Riccardo Fanti, Nicola Casagli, University of Firenze, Italy

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Hyperspectral Imagery for the Monitoring of the Environment

Session Co-Chairs: Mathieu Fauvel, INPT-ENSAT Toulouse; Francesca Bovolo, University of Trento

WEP.P.725 Board 725 **DETECTION OF INVASIVE PLANT WITH HYPERSPECTRAL IMAGERY IN THE RIVERBED OF KINU RIVER, JAPAN**
Shan Lu, Northeast Normal University, China; Yo Shimizu, Jun Ishii, Izumi Washitani, Kenji Omasa, The University of Tokyo, Japan

WEP.P.726 Board 726 **ESTIMATION OF LEAF WATER CONTENT FROM FAR INFRARED (2.5 -14 µM) SPECTRA USING CONTINUOUS WAVELET ANALYSIS**
Saleem Ullah, Andrew K. Skidmore, University of Twente, Netherlands; Mohammad Naeem, Abdul Wali Khan University Mardan, Pakistan; Martin Schlerf, Centre Research Public Gabriel Lippmann (CRPGL), Luxembourg

WEP.P.727 Board 727 **THE EXTRACTION OF ALTERED ROCK IN VEGETATION-COVERED AREA USING TARGET DETECTION TECHNIQUE**
Qingting Li, Bing Zhang, Linlin Lu, Qizhong Lin, Center for Earth Observation and Digital Earth, CAS, China

WEP.P.728 Board 728 **ANALYSIS OF THE RED EDGE FEATURE OF PLANTS CONTAMINATED BY DIESEL AND GASOLINE AS INDICATOR OF SMALL LEAKAGES ALONG UNDERGROUND PIPELINES**
Ieda Sanches, Carlos Souza-Filho, Luciola Magalhaes, Giuliana Quiterio, Marcos Alves, UNICAMP, Brazil; Wilson Oliveira, PETROBRAS, Brazil

WEP.P.729 Board 729 **HYPERSPECTRAL CHARACTERISTICS OF SEAWATER INTRUSION IN PEARL RIVER DELTA, CHINA BASED ON LABORATORY EXPERIMENTS**
Yu Jiu Xiong, Sun Yat-Sen University, China; GuoYu Qiu, Peking University, China; Xiao Hong Chen, Sheng Lin Tan, Sun Yat-Sen University, China; Haixia Feng, Shandong Jiaotong University, China

WEP.P.730 Board 730 **A STUDY ON DETECTING THE POPPY FIELD USING HYPERSPECTRAL REMOTE SENSING TECHNIQUES**
Akihiro Nakazawa, Jong-Hwan Kim, Takuji Mitani, Shinya Odagawa, Asia Air Survey Co., Lyd., Japan; Tomomi Takeda, Japan Space Systems, Japan; Chiaki Kobayashi, Infoserve Inc., Japan; Osamu Kashimura, Japan Space Systems, Japan

WEP.P.731 Board 731 **RELEVANCE OF SPECTROSCOPIC APPROACH IN THE RETRIEVAL OF SUSPENDED SEDIMENT CONCENTRATION (SSC) IN CASE-II WATERS: AN INVESTIGATION IN THE HIGH TURBID WATERS OF GULF OF CAMBAY, INDIA**
Ramakrishnan Desikan, Kusuma Kilingaru Nadumane, Rishikesh Bharti, Madhumita Das, Indian Institute of Technology, India

WEP.P.732 Board 732 **ASSESSMENT OF HYPERSPECTRAL CLASSIFICATION METHODS FOR BENTHIC COVER TYPE MAPPING**
Jyrki Tuominen, Tarmo Lipping, Tampere University of Technology, Finland

WEP.P.733 Board 733 **HYPERSPECTRAL VEGETATION INDICES FOR CROP CHLOROPHYLL ESTIMATION: ASSESSMENT, MODELING AND VALIDATION**
Peirong Lin, Qiming Qin, Heng Dong, Qingye Meng, School of Earth and Space Science, Peking University, China

WEP.P.734 Board 734 **AIRBORNE INFRARED HYPERSPECTRAL IMAGER FOR INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE APPLICATIONS**
Philippe Lagueux, Telops Inc, Canada; Eldon Puckrin, Caroline Turcotte, Defence R&D Canada, Canada; John Bastedo, PV Labs, Canada; Martin Chamberland, Vincent Farley, Telops Inc, Canada

WEP.P.735 Board 735 **EFFECTS OF SIGNAL CONTAMINATION IN RX DETECTION OF LOCAL HYPERSPECTRAL ANOMALIES**
Stefania Matteoli, Marco Diani, Giovanni Corsini, University of Pisa, Italy

WEP.P.736 Board 736 **MCM'10: AN EXPERIMENT FOR SATELLITE MULTI-SENSORS CROP MONITORING FROM HIGH TO LOW RESOLUTION OBSERVATIONS**
Frédéric Baup, Rémy Fieuzal, Claire Marais-Sicre, Jean-François Dejoux, Valérie le Dantec, Patrick Mordelet, Martin Claverie, Olivier Hagolle, Armand Lopes, Pascal Keravec, Eric Ceschia, Arnaud Mialon, Centre d'Etudes Spatiales de la Biosphère, France; Richard Kidd, Institute of Photogrammetry and Remote Sensing, Austria

Video Poster Presentation

Remote Sensing of Snow Properties I

Session Chair: Edward Kim, NASA Goddard Space Flight Center

WEP.P.737 Board 737 **SNOW PROFILE MEASUREMENTS WITH A NEW METHOD**
Panu Lahtinen, Finnish Meteorological Institute, Finland

WEP.P.738 Board 738 **THE CHANGE OF SEASONAL SNOW SURFACE ROUGHNESS IN SODANKYLÄ FINNISH LAPLAND DURING WINTERS 2009 AND 2010**
Kati Anttila, Terhikki Manninen, Finnish Meteorological Institute, Finland; Tuure Karjalainen, Mericon Oy, Finland; Panu Lahtinen, Aku Riihelä, Niilo Siljamo, Finnish Meteorological Institute, Finland

WEP.P.739 Board 739 **STOCHASTICALLY BASED WET SNOW MAPPING WITH SAR DATA**
Nikola Besic, GIPSA-lab / Grenoble INP, France; Gabriel Vasile, GIPSA-lab / CNRS, France; Jocelyn Chanussot, GIPSA-lab / Grenoble INP, France; Srdjan Stankovic, University of Montenegro, Yugoslavia; Jean-Philippe Ovarlez, Office National d'Etudes et de Recherches Aérospatiale, France; Guy d'Urso, Didier Boldo, EDF R&D, France; Jean-Pierre Dedieu, LTHE / CNRS, France

WEP.P.740 Board 740 **WET SNOW DETECTION IN THE SOUTH OF CHINA BY PASSIVE MICROWAVE REMOTE SENSING**
Jinmei Pan, Lingmei Jiang, Lixin Zhang, Beijing Normal University, China

WEP.P.741 Board 741 **TIME SERIES ANALYSIS OF DUAL-POL COSMO-SKYMED IMAGES FOR MONITORING SNOW COVER IN ALPINE AREAS**
Claudia Notarnicola, Thomas Schellenberger, Bartolomeo Ventura, Marc Zebisch, EURAC, Italy; Vito Maddalena, Raffaella Ratti, Maria Lucia Tampellini, Compagnia Generale per lo Spazio SpA, Italy

WEP.P.742 Board 742 **SPATIAL AND TEMPORAL SERIES ANALYSIS OF SNOW COVER EXTENT AND SNOW WATER EQUIVALENT FOR SATELLITE PASSIVE MICROWAVE DATA IN THE NORTHERN HEMISPHERE (1978-2010)**
Zhen Li, Jiuliang Liu, Bangsen Tian, Center for Earth Observation and Digital Earth, CAS, China

WEP.P.743 Board 743 **TERRASAR-X APPLICATION FOR MONITORING SNOW COVER AND GLACIER FACIES**
Thomas Nagler, Helmut Rott, Karl Voglmeier, ENVEO IT GmbH, Austria; Dana Floricioiu, German Aerospace Center (DLR), Germany

WEP.P.744 Board 744 **SNOW-COVER DEPLETION FROM SURFACE OBSERVATION SNOW WATER EQUIVALENT (SWE) AND MODIS SNOW-COVERED AREA DATA**
Amir Kashipazha, Steven Fassnacht, Graham Sexstone, Stephanie Kampf, Colorado State University, United States

WEP.P.745 Board 745 **A DYNAMIC ALGORITHM FOR MAPPING OF SNOW COVER USING SSMI DATA**
Danielle De Sève, François Vachon, Yves Choquette, Hydro-Quebec, Canada

WEP.P.746 Board 746 **MINE INDUCED DEFORMATION MEASUREMENTS USING SAR INTERFEROMETRY AT HIGH LATITUDES**
Anura Wickramanayake, Stephen Hobbs, Cranfield University, United Kingdom; Stefan Buehler, Jonas Ekman, Luleå University of Technology, Sweden

WEP.P.747 Board 747 **SNOW MONITORING OVER MOUNTAINOUS REGIONS WITH POLSAR C-BAND DATA**
Xavier Banque-Casanovas, Antonio Reppucci, Starlab Barcelona S.L., Spain; Yu Zhan, Carlos López-Martínez, Universitat Politècnica de Catalunya, Spain

WEP.P.748 Board 748 **AIRBORNE DETECTION OF RECENTLY DISTURBED SNOW BY SHORTWAVE INFRARED HYPERSPECTRAL IMAGING**
George Leblanc, Ray Soffer, National Research Council Canada, Canada; Margaret Kalacska, McGill University, Canada

Scattering and SAR Techniques I

Session Co-Chairs: Scott Hensley, NASA Jet Propulsion Laboratory; Antonio Iodice, University of Naples

THP.P.398 Board 398 **SLOPE PROBABILITY DENSITY FUNCTION OF THE OCEAN WAVES FROM SPACEBORNE RADAR OBSERVATIONS**
Xiaoqing Chu, South China Sea Institute of Oceanology, CAS, China; Yijun He, Nanjing University of Information Science and Technology, China; Vladimir Yu. Karaev, Institute of Applied Physics, Russian Academy of Sciences, Russian Federation

THP.P.399 Board 399 **COHERENT SCATTERING OF ELECTROMAGNETICWAVES FROM TWO-LAYER ROUGH SURFACES WITHIN THE KIRCHHOFF REGIME**
Alireza Tabatabaeenejad, Mahta Moghaddam, University of Michigan, United States

THP.P.400 Board 400 **A NEW METHOD OF IMPROVING THE ACCURACY OF THE HYPERBOLIC RANGE EQUATION**
Zhao Bingji, Qi Xiangyang, Deng Yunkai, Wang Robert, Song Hongjun, Luo Yunhua, Chinese Academy of Sciences, China

THP.P.401 Board 401 **MUSIC AND ICA ALGORITHMS APPLIED TO FULL POLARIMETRIC ISAR IMAGING**
Jeffrey Hall, Saibun Tjuatja, The University of Texas at Arlington, United States

THP.P.402 Board 402 **FRACTAL SURFACE SYNTHESIS FOR REMOTE SENSING**
Daniele Riccio, Giuseppe Ruello, Università degli Studi di Napoli Federico II, Italy

THP.P.403 Board 403 **PHYSICAL MODELS FOR SAR SPECKLE SIMULATION**
Gerardo Di Martino, Antonio Iodice, Daniele Riccio, Giuseppe Ruello, Università degli Studi di Napoli Federico II, Italy

THP.P.404 Board 404 **ESTIMATION OF VEGETATION EFFECTS IN MORNITORING FREEZE/THAW BY MODELING AND MICROWAVE RADIOMETER**
Zhongjun Zhang, College of Information Science and Technology,Beijing Normal University, China; Lixin Zhang, Shaojie Zhao, School of Geography and Remote Sensing, Beijing Normal University, China; Xuemei Shen, VMware Information Technology(China) Inc., China

THP.P.405 Board 405 **ANALYSIS OF BACKSCATTERING MODELLING IMPROVEMENTS FOR SOIL ROUGHNESS AND MOISTURE ESTIMATION**
Mehrez Zribi, Monique Dechambre, Centre National de la Recherche Scientifique, France; Nicolas Baghdadi, CEMAGREF, France; Aurélie Lemorvan, Centre National de la Recherche Scientifique, France

THP.P.406 Board 406 **3-DIMENSIONAL STOKES VECTOR CONSIDERATION FOR COMPACT POLARIMETRIC SAR EXPLOITATION**
Ramin Sabry, DRDC Ottawa, Canada

THP.P.407 Board 407 **VOLUMETRIC AND INTERFACIAL INHOMOGENEITIES OF RANDOM SEMI-INFINITE MEDIA: A UNIFIED PERTURBATIVE SCATTERING MODEL**
Pasquale Imperatore, Antonio Iodice, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

THP.P.408 Board 408 **EM BISTATIC SCATTERING BY SEA SURFACE AND EXPERIMENTAL STUDY OF THE HYDRODYNAMIC PHENOMENA**
Slahedine Ben Khadra, Ali Khenchaf, ENSTA Bretagne, France; Kais Ben Khadhra, University of Waterloo, Canada

THP.P.409 Board 409 **MULTIPLE ELECTROMAGNETIC SCATTERING FROM TWO FINITE ORIENTED CYLINDERS AT OBLIQUE INCIDENCE**
Veronica Santalla Del Rio, Loreto Abalde-Lima, Christos G. Christodoulou, Universidad de Vigo, Spain

Video Poster Presentation

Scattering and SAR Techniques II

Session Chair: Roger Lang, George Washington University

THP.P.410 Board 410 **AN IMPROVED TOPOGRAPHY AND APERTURE DEPENDENT MOTION COMPENSATION ALGORITHM**
Virginia Zamparelli, University of Cassino, Italy; Stefano Perna, University of Naples Parthenope, Italy; Gianfranco Fornaro, National Research Council of Italy, Italy

THP.P.411 Board 411 **SCATTERING ANALYSIS OF FLAT MAGNETIC DIPOLES EMBEDDED IN CHIRAL MULTILAYER STRUCTURES**
Nilson Rabelo, Instituto Tecnologico de Aeronautica, Brazil; Sidnei J. S. Sant'Anna, National Institute for Space Research (INPE), Brazil; Jose Lacava, David Fernandes, Instituto Tecnologico de Aeronautica, Brazil

THP.P.412 Board 412 **PARAMETER ANALYSIS OF PRECIPITATION EFFECTS ON SEA SURFACE SCATTERING**
Jiamei Li, National Space Science Center/Center for Space Science and Applied Research, CAS, China; Saibun Tjuatja, The University of Texas at Arlington, United States; Xiaolong Dong, Di Zhu, National Space Science Center/Center for Space Science and Applied Research, CAS, China

THP.P.413 Board 413 **A GENERALIZED RADAR SCATTERING MODEL FOR MULTISPECIES FORESTS WITH MULTILAYER SUBSURFACE SOIL**
Mariko Burgin, University of Michigan, United States; Alireza Tabatabaeenejad, Mahta Moghaddam, University of Southern California, United States

THP.P.414 Board 414 **ESTIMATING TARGET-INDUCED AZIMUTH ENVELOPE FOR SAR IMAGE FORMATION AND FEATURE EXTRACTION**
Yesheng Gao, Kaizhi Wang, Xingzhao Liu, Shanghai Jiao Tong University, China

THP.P.415 Board 415 **DOUBLE SCATTERING, REACTIONS AND SINGULAR PERTURBATION: THE VPRT APPROACH.**
Pasquale Imperatore, Antonio Iodice, Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

THP.P.416 Board 416 **A PHYSICS-BASED TARGET DISCRIMINATION APPROACH WITH COMPRESSIVE SENSING**
Wang Pengyu, Song Qian, Zhou Zhi-Min, NUDT, China

THP.P.417 Board 417 **SCATTERING SIMULATION AND RECONSTRUCTION OF A 3D COMPLEX TARGET ABOVE BACKGROUND SURFACE USING SIMO DOWNWARD-LOOKING RADAR**
Ya-Qiu Jin, Wei Li, Fudan University, China

THP.P.418 Board 418 **MICROWAVE SCATTERING MODEL OF SEA FOAM**
Victor Raizer, Zel Technologies, LLC, United States

THP.P.419 Board 419 **A TWO LAYER WATER CLOUD MODEL**
Long Liu, Yun Shao, Kun Li, Huaze Gong, Institute of Remote Sensing Applications, CAS, China

THP.P.420 Board 420 **A PROPAGATION TOOLBOX FOR ADVANCED MODELLING OF COHERENT PROPAGATION EFFECTS ON ACTIVE MICROWAVE REMOTE SENSING**
Vincent Fabbro, Nicolas Jeannin, Office National d'Etudes et de Recherches Aérospatiale, France; Kahina Djafri, Université Catholique de Louvain-la-Neuve, Belgium; Yannick Beniguel, IEEA, France; Thierry Deloues, Office National d'Etudes et de Recherches Aérospatiale, France; Danielle Vanhoenacker-Janvier, Université Catholique de Louvain-la-Neuve, Belgium; Joel Lemorton, Office National d'Etudes et de Recherches Aérospatiale, France

THP.P.421 Board 421 **RAY TRACING TO PREDICT INSOLATION IN URBAN ENVIRONMENT**
Enrico M. Vitucci, Vittorio Degli-Esposti, Leo Capriotti, University of Bologna, Italy

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Scattering and SAR Techniques III

Session Chair: Simon Yueh, NASA Jet Propulsion Laboratory

THP.P.422 Board 422 **A NEW RECIPROCAL 3D MODEL OF SCATTERING BY A FINITE DIELECTRIC CYLINDER: APPLICATION TO FOREST REMOTE SENSING**
Mahmoud Kanj, Laboratoire des Signaux et Systèmes, France; Sami Bellez, Cyril Dahon, Hélène Roussel, Laboratoire d'Electronique et d'Electromagnétisme, France; Bernard Duchêne, Laboratoire des Signaux et Systèmes, France

THP.P.423 Board 423 **MULTILAYER SNOWPACK BACKSCATTERING MODEL AND ASSIMILATION OF TERRASAR-X SATELLITE DATA**
Xuan-Vu Phan, GIPSA-lab, France; Laurent Ferro-Famil, Institut d'Electronique et des Télécommunications de Rennes, France; Michel Gay, GIPSA-lab, France; Yves Durand, Marie Dumont, Centre d'Etude de la Neige, France; Guy d'Urso, EDF R&D, France

THP.P.424 Board 424 **3-D COHERENT IMAGING BY CYLINDRICAL SCANNING MICROWAVE SYSTEMS**
Roberta Autieri, Fabio Baselice, Alessandro Grassia, Vito Pascazio, Gilda Schirinzi, Università degli Studi di Napoli Parthenope, Italy

THP.P.425 Board 425 **PREDICTIONS OF PLUME RADIATION AS A FUNCTION OF ARTIFICIAL SIGNATURES**
Sam Nwaneri, Alcorn State University, United States; Benjamin Uchenna Nwaneri, Lagos State University, Nigeria; TeAmbreya Weathersby, Alcorn State University, United States

SAR Polarimetry I

Session Co-Chairs: Alberto Alonso-González, Universitat Politècnica de Catalunya; Riochi Sato, Niiagata University

THP.P.426 Board 426
CROSS-CALIBRATION OF FULL POLARIMETRIC RIX AND TERRASAR-X DATA
Nuria Gimeno, Beatriz Gómez, Adolfo López, Patricia Cifuentes, National Institute for Aerospace Technology, Spain; José Carlos Nieto, University of Alcalá, Spain

THP.P.427 Board 427
URBAN DENSITY ESTIMATION FROM POLARIMETRIC SAR IMAGES USING POLARIZATION ORIENTATION ANGLE
Muneyoshi Kajimoto, Junichi Susaki, Kyoto University, Japan

THP.P.428 Board 428
A NOVEL AUTOFOCUSING TECHNIQUE BASED ON PGA FOR THE POLARIMETRIC SAR APPLICATION
Zheng Lu, Zegang Ding, Teng Long, Liang Chen, Beijing Institute of Technology, China

THP.P.429 Board 429
DEMONSTRATION OF REPEAT-PASS POLINSAR USING UAVSAR: THE RMOG MODEL
Marco Lavalle, Scott Hensley, NASA Jet Propulsion Laboratory, United States

THP.P.430 Board 430
ORTHO-RECTIFICATION OF POLARIMETRIC RADARSAT-2/RCM DATA WITH ACCURATE LIDAR DSM
Thierry Toutin, Huili Wang, Natural Resources Canada, Canada; Pierre Chomaz, Ecole Nationale des Sciences Géographiques, France; Eric Pottier, Université de Rennes 1, France

THP.P.431 Board 431
MODEL BASED OIL SPILL DETECTION USING POLARIMETRIC SAR
Arnt B. Salberg, Øystein Rudjord, Anne H. S. Solberg, Norwegian Computing Center, Norway

THP.P.432 Board 432
CLASSIFICATION OF PINGPONG COSMO-SKYMED IMAGERY USING SUPERVISED AND UNSUPERVISED NEURAL NETWORK ALGORITHMS
Miguel Penalver, Chiara Pratola, Irene Fabrini, Fabio Del Frate, Giovanni Schiavon, Domenico Solimini, Tor Vergata University of Rome, Italy

THP.P.433 Board 433
SPECKLE FILTERING ALGORITHM FOR POLARIMETRIC SAR BASED ON MEAN SHIFT
Bo Pang, Shiqi Xing, Yongzhen Li, Xuesong Wang, National University of Defense Technology, China

THP.P.434 Board 434
VOLUME SCATTERING POWER RESTRICTION BASED ON CORRELATION COEFFICIENTS FOR POLARIMETRIC SAR MODEL-BASED DECOMPOSITIONS
Shunichi Kusano, Tohoku University, Japan; Konstantinos P. Papathanassiou, German Space Center, Germany; Motoyuki Sato, Tohoku University, Japan

THP.P.435 Board 435
POLARIMETRIC SAR TARGET DETECTION BASED ON POLARIZATION SYNTHESIS
Na Wang, Canbin Hu, Ling Jun Zhao, School of Electronic Science and Engineering, National University of Defense Technology, China; Yongmei Jiang, School of Electronic Science and Engineering, China; Gang Yao Kuang, School of Electronic Science and Engineering, National University of Defense Technology, China

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SAR Polarimetry II

Session Co-Chairs: Samuel Foucher, Centre de recherche informatique de Montréal; Olivier D'Hondt, Technical University of Berlin

THP.P.436 Board 436
QUANTITATIVE COMPARISON OF TERRAIN HEIGHT ACCURACY BETWEEN X-BAND AND L-BAND POLARIMETRIC SAR INTERFEROMETRY
LiYing Xu, ShiQiang Li, Weidong Yu, Robert Wang, Institute of Electronics, CAS, China

THP.P.437 Board 437
COMPERATIVE ANALYSIS OF X-, C- AND L-BAND 4-COMPONENT POLSAR DECOMPOSITIONS WITH A CROSS-POL DOUBLE BOUNCE COMPONENT
Sang-Hoon Hong, Korea Aerospace Research Institute, Republic of Korea; Shimon Wdowinski, University of Miami, United States

THP.P.438 Board 438
ASYMMETRIC DECOMPOSITION METHOD BASED ON ORIENTATION-ANGLE-COMPENSATED COHERENCY MATRIX
Bin Zou, Ning Cao, Xiao Wang, Harbin Institute of Technology, China

THP.P.439 Board 439
A GS-BASED BUILT-UP AREA DETECTION METHOD USING POLARIMETRIC SAR IMAGES
Lamei Zhang, Da Lu, Wenyan Tang, Harbin Institute of Technology, China

THP.P.440 Board 440
GROWING STOCK VOLUME RETRIEVAL IN BOREAL FOREST FROM ALOS L-BAND POLARIMETRIC COHERENCE.
Tanvir Ahmed Chowdhury, Christian Thiel, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

THP.P.441 Board 441
DESIGN AND VALIDATION OF WIDEBAND DUAL POLARIZED P-BAND ANTENNA ARRAY FOR NASA/GSFC'S ECOSAR RADAR
Manohar Deshpande, NASA Goddard Space Flight Center, United States

SAR Image Analysis

Session Chair: Kostas Papathanassiou, German Aerospace Center - DLR

THP.P.442 Board 442
PHASE WRAP ERROR CORRECTION FOR MICRONAVIGATION IN SYNTHETIC APERTURE SYSTEMS
Stefan Leier, Abdelhak M. Zoubir, Technische Universität Darmstadt, Germany

THP.P.443 Board 443
POLARIMETRIC ULTRAWIDEBAND RADAR
Elke Malz, Rudolf Zetik, Pavel Semashko, Reiner S. Thomä, Ilmenau University of Technology, Germany; Alexia Paolo Garzia Ariza, MEDAV GmbH, Germany

THP.P.444 Board 444
OBSERVATIONS OF LIDAR BACKSCATTER FROM SNOWFALL AT TWO SITES
Kaoru Matsuda, Mamoru Kubo, Kanazawa University, Japan; K. Muramoto, Ishikawa National College of Technology, Japan

THP.P.445 Board 445
STUDY OF MORPHOLOGICAL CROWN CONTROL IN LIDAR-DERIVED CANOPY HEIGHT MODEL
Dan Zhao, Yong Pang, Zengyuan Li, Lina Bai, Chinese Academy of Forestry, China

THP.P.446 Board 446
ANALYSIS OF POLARIMETRIC SHIP SIGNATURES WITH RADARSAT-2 QUAD-POL IMAGERY
Fan Wu, Chao Wang, Hong Zhang, Bo Zhang, Center for Earth Observation and Digital Earth, CAS, China

THP.P.447 Board 447
MCMC ESTIMATION OF FINITE GENERALIZED GAMMA MIXTURE MODEL
Yan-Hui Zou, Heng-Chao Li, Southwest Jiaotong University, China

THP.P.448 Board 448
A NEW ALGORITHM OF SPECKLE FILTERING USING STOCHASTIC DISTANCES
Leonardo Torres, Tamer Cavalcante, Alejandro C. Frery, Universidade Federal de Alagoas - UFAL, Brazil

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Image Information: Environmental and Hazard Applications

Session Chair: Irena Hajnsek, ETH/DLR

THP.P.449 Board 449
FIRE ANALYSIS OF THE RUSSIAN FAR EAST IN THE PASSED SEVEN YEARS
Koichi Kawano, Tohoku Institute of Technology, Japan; Naoyuki Komatsu, TTK Co.,Ltd., Japan

THP.P.450 Board 450
ESTIMATION OF CROP EXTENT USING MULTI-TEMPORAL PALSAR DATA
Nada Milisavljevic, Royal Military Academy, Belgium; Francesco Holecz, Sarmap, Switzerland; Isabelle Bloch, Télécom ParisTech, France; Damien Closson, Royal Military Academy, Belgium; Francesco Collivignarelli, Sarmap, Switzerland

THP.P.451 Board 451
REMOTE SENSING INFORMATION OF MINERALIZING ALTERATION EXTRACTION METHODS
Li Chen, Qiming Qin, Chao Chen, Hongbo Jiang, Peking University, China

THP.P.452 Board 452
EVALUATION OF USING THE MODIFIED WATER DEFICIT INDEX DERIVED FROM MODIS VEGETATION INDEX AND LAND SURFACE TEMPERATURE PRODUCTS FOR MONITORING DROUGHT
Wen Wang, Zhong-Zhong Zhang, Xiao-Gang Wang, Huimin Wang, Hohai University, China

THP.P.453 Board 453
MULTI-SCALE REMOTE SENSING MONITORING SYSTEM FACING FOREST RESOURCES SUPERVISION IN CHINA
Chaozong Xia, Guosheng Huang, Academy of Forest Inventory and Planning, State Forestry Administration, China; Xiyun Liu, Beijing Forestry University, China

THP.P.454 Board 454
INTERCOMPARISON AND UNCERTAINTY ANALYSIS OF GLOBAL MODIS, CYCLOPES, AND GLOBCARBON LAI PRODUCTS
Hongliang Fang, LREIS, China; Shanshan Wei, Chongya Jiang, IGSNRR, CAS, China

THP.P.455 Board 455
MONITORING URBAN SPRAWL FROM SATELLITE IMAGE TIME SERIES
François Petitjean, LSIIT - University of Strasbourg, France; Anne Puissant, LIVE - University of Strasbourg, France; Pierre Gançarski, University of Strasbourg/LSIIT, France

THP.P.456 Board 456
ANALYSIS OF ERROR IN FRACTION OF VEGETATION COVER PROPAGETED FROM BAND-CORRELATED ERRORS IN ENDMEMBER SPECTRA
Hiroki Yoshioka, Kenta Obata, Yasuhiro Ikuta, Aichi Prefectural University, Japan

THP.P.457 Board 457
AFFORESTATION PARCELS EXACT RECOGNITION BASED ON FINE REMOTE SENSING DATA FOR THE CONVERSION OF CROPLAND TO FOREST PROJECT
Chaozong Xia, Yuxing Zhang, Academy of Forest Inventory and Planning, State Forestry Administration, China; Weibing Wang, Forest Resources Protection Office of Xinglong Forestry Bureau, China

THP.P.458 Board 458
COASTLINE EXTRACTION FROM SAR COSMO-SKYMED DATA USING A NEW NEURAL NETWORK ALGORITHM
Daniele Latini, Fabio Del Frate, Tor Vergata University of Rome, Italy; Francesco Palazzo, SERCO S.p.A., Italy; Andrea Minchella, RSAC Ltd, Italy

Image Information Extraction: Detection of Man-made Features

Session Chair: Claudio Persello, University of Trento

THP.P.459 Board 459 **BUILDING UNIT DENSITY DETECTION FROM HIGH RESOLUTION TERRASAR_X IMAGE BASED ON MATHEMATICAL MORPHOLOGICAL OPERATORS**
Yongfeng Cao, Caixia Su, Jianjuan Liang, Guizhou Normal University, China

THP.P.460 Board 460 **HIGHWAY MAP MATCHING ALGORITHM BASED ON FLOATING CAR DATA**
Yue Zhao, Qiming Qin, Jun Li, Chao Xie, Runqiang Chen, Peking University, China

THP.P.461 Board 461 **QUERY AND RETRIEVAL OF LAND COVER PATTERNS**
Jaroslaw Jasiewicz, Adam Mickiewicz University, Poland; Tomasz Stepinski, University of Cincinnati, United States

THP.P.462 Board 462 **COMPARING OF LINEAMENTS EXTRACTION FROM ALOS AND LANDSAT IMAGES FOR SUPPORTING EXPLORATION OF GEOTHERMAL FIELD IN INDONESIA**
Fatwa Ramdani, Graduate School of Science, Tohoku University, Japan

THP.P.463 Board 463 **GENERATING GROUND REFERENCE DATA FOR A GLOBAL IMPERVIOUS SURFACE SURVEY**
James C. Tilton, Eric Brown de Colstoun, Robert E. Wolfe, NASA Goddard Space Flight Center, United States; Bin Tan, Earth Resources Technology, Inc., United States; Chengquan Huang, University of Maryland, United States

THP.P.464 Board 464 **VEHICLE DETECTION BASED ON MORPHOLOGY FROM HIGHWAY AERIAL IMAGES**
Zezhong Zheng, University of Electronic Science and Technology of China, China; Xiaoting Wang, Chengdu University of Information Technology, China; Guoqing Zhou, Guilin University of Technology, China; Ling Jiang, University of Electronic Science and Technology of China, China

THP.P.465 Board 465 **COMPARISON OF 3D BUILDINGS RECONSTRUCTED BY DIFFERENT DATA SOURCES**
Guoqing Zhou, Guilin University of Technology, China; Kai Yan, Wuming Zhang, Guangjian Yan, Yiming Chen, Beijing Normal University, China; Pierre Grussenmeyer, Mostafa Mohamed, University of Strasbourg, France

THP.P.466 Board 466 **RECOGNITION OF DORMERS FROM LIDAR DATA USING SUPPORT VECTOR MACHINE**
Mehran Satari Abrovi, University of Isfahan, Iran

THP.P.467 Board 467 **THE EXTRACTION OF BUILDINGS ELEVATION INFORMATION ON UAV DSM**
Jiansheng Chen, Yu Meng, Jian Yang, Jingbo Chen, Bin Wu, Institute of Remote Sensing Applications, CAS, China

THP.P.468 Board 468 **FOURIER BASED FEATURE DESCRIPTORS FOR RAILROAD EXTRACTION FROM AERIAL IMAGES**
Ersin Karaman, Umut Çınar, Ekin Gedlk, Yasemin Yardimci, Ugur Halici, Middle East Technical University, Turkey

THP.P.469 Board 469 **FRAMEWORK DESIGN AND IMPLEMENTATION FOR OIL TANK DETECTION IN OPTICAL SATELLITE IMAGERY**
Chenxian Zhu, Bin Liu, Yuhao Zhou, Qiuze Yu, Xingzhao Liu, Wenxian Yu, Shanghai Jiao Tong University, China

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Information Extraction for Atmospheric and Environmental Applications

Session Chair: Kostas Papathanassiou, German Aerospace Center - DLR

THP.P.470 Board 470 **CLOUD DETECTION BASED ON SEGMENTATION WITH STATISTICAL AND GEOMETRY FEATURES**
Bangyu Li, Xia Li, Insttitue of Software, CAS, China

THP.P.471 Board 471 **ADAPTIVE EXTRACTION OF WATER IN URBAN AREAS BASED ON LOCAL ITERATION USING HIGH-RESOLUTION MULTI-SPECTRAL IMAGE**
Yanan Zhou, Jiancheng Luo, Zhanfeng Shen, Xi Cheng, Xiaodong Hu, Institute of Remote Sensing Applications, CAS, China

THP.P.472 Board 472 **MERGING MODIS AND AMSR-E SEA SURFACE TEMPERATURE DATA BASED ON WAVELET TRANSFORM**
Lijian Shi, Qimao Wang, Bin Zou, National Satellite Ocean Application Service, China; Yingni Shi, Army, PLA, China; Xiaoming Li, German Aerospace Center (DLR), Germany

THP.P.473 Board 473 **ANALYSING VARIETY OF VEGETATION INDICES VALUES USING DIFFERENT METHODS FOR MAPPING OIL PALM CLOSED-CANOPY COMPOSITION IN SOUTHERN RIAU PROVINCE, INDONESIA**
Fatwa Ramdani, Graduate School of Science, Tohoku University, Japan

THP.P.474 Board 474 **QUERY BY EXAMPLE IN EARTH-OBSERVATION IMAGE ARCHIVE USING DATA COMPRESSION-BASED APPROACH**
Daniela Espinoza-Molina, German Aerospace Center (DLR), Germany; M. Quartulli, Visual Interaction and Communication Technologies Centre, Germany; Datcu Datcu, German Aerospace Center (DLR), Germany

THP.P.476 Board 476 **TROPICAL CYCLONES SIMILARITY ANALYSIS BASED ON MANIFOLD LEARNING**
Wenfeng Qiao, Yuan-Xiang Li, Shiqian Liu, Xiao Liu, Shanghai Jiao Tong University, China

THP.P.477 Board 477 **MODELING OF ATMOSPHERIC TRANSPORT OF CHEMICAL SPECIES IN THE POLAR REGIONS**
Christoph S. Garbe, Jevgeni Vihharev, University of Heidelberg, Germany

THP.P.478 Board 478 **HIERARCHICAL ONTOLOGY DEVELOPMENT AND SEMANTICS RETRIEVAL FOR LAND USE DATA**
Chiao-Ling Kuo, Jung-Hong Hong, National Cheng Kung University, Taiwan

THP.P.479 Board 479 **BAYESIAN FORMULATION OF DSD RETRIEVAL ALGORITHM FOR DUAL-POLARLIZED X-BAND WEATHER RADAR NETWORK**
Eiichi Yoshikawa, Osaka University, Japan; Venkatachalam Chandrasekar, Colorado State University, United States; Tomoo Ushio, Zen Kawasaki, Osaka University, Japan

Information Extraction: Signal Processing Applications

Session Chair: Esra Erten, ITU

THP.P.480 Board 480 **CHARACTERIZATION OF EM SEA CLUTTER WITH ALPHA-STABLE DISTRIBUTION**
Anthony Fiche, Jean-Christophe Cexus, Ali Khenchaf, Majid Rochdi, ENSTA Bretagne, France; Arnaud Martin, Université de Rennes 1, France

THP.P.481 Board 481 **SEISMIC THIN BED RESPONSES AND THICKNESS APPROXIMATIONS**
Qiang Li, Jinghuai Gao, Xi'an Jiaotong University, China

THP.P.482 Board 482 **SIMULATION OF FULL-WAVEFORM FROM SLOPE TERRAIN AND POTENTIAL METHOD FOR SLOPE ESTIMATION**
Zhongyi Quan, Lijun Xu, Xiaolu Li, Beihang University, China

THP.P.483 Board 483 **THE ANALYSIS ON THE ACCURACY OF DEM RETRIEVAL BY THE GROUND LIDAR POINT CLOUD DATA EXTRACTION METHODS IN MOUNTAIN FOREST AREAS**
Haibing Xiang, Chunxiang Cao, Huicong Jia, Min Xu, State Key Laboratory of Remote Sensing Science, China; Ranga B. Myneni, Boston University, United States

THP.P.484 Board 484 **MULTI-DIMENSIONAL COHERENCE DEBLENDING OF SIMULTANEOUS SOURCES**
Heiko Claussen, Siemens Corporation, Corporate Research and Technology, United States; Vladan Radosavljevic, Temple University, United States; Justinian Rosca, Siemens Corporation, Corporate Research and Technology, United States

THP.P.485 Board 485 **SAR SUPERRESOLUTION IMAGING ALGORITHM BASED ON SPATIALLY VARIANT APODIZATION**
Ping Zhang, Zhen Li, Jianmin Zhou, Center for Earth Observation and Digital Earth, CAS, China

THP.P.486 Board 486 **SEISMIC VELOCITY PICKING BY SIMULATED ANNEALING**
Kou-Yuan Huang, Kai-Ju Chen, Jia-Rong Yang, National Chiao Tung University, Taiwan

THP.P.487 Board 487 **A STUDY ON CLUSTERING FOR ANOMALOUS SIGNAL DETECTIONS FROM ELECTROMAGNETIC WAVE DATA**
Satoshi Urata, Hiroshi Yasukawa, Graduate School of Aichi Prefectural University, Japan; Akitoshi Itai, Chubu University, Japan; Ichi Takumi, Nagoya Institute of Technology, Japan

THP.P.488 Board 488 **A PRIORI KNOWLEDGE-BASED POST-DOPPLER STAP FOR TRAFFIC MONITORING APPLICATIONS**
Stefan Baumgartner, Gerhard Krieger, German Aerospace Center (DLR), Germany

THP.P.489 Board 489 **2D TSVD TO ENHANCE THE RESOLUTION OF RADIOMETER DATA**
Flavia Lenti, university of Insubria, Italy; Ferdinando Nunziata, Maurizio Migliaccio, university of Parthenope, Italy; Giuseppe Rodriguez, university of Cagliari, Italy

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Information Extraction: Classification and Fusion

Session Co-Chairs: Stefan Baumgartner, German Aerospace Center - DLR; Giorgio Licciardi, INGP

THP.P.490 Board 490 **GREEN AND BLUE BELT NETWORKS: MAPPING CONNECTIVITY AREAS AT A REGIONAL SCALE USING MEDIUM AND HIGH SPATIAL RESOLUTION SATELLITE IMAGES**
Laurence Hubert-Moy, Jean Nabucet, Rémi Lecerf, Simon Dufour, COSTEL, UMR CNRS 6554 LETG- OSU Rennes, France; Françoise Burel, ECOBIO, UMR CNRS 6553- OSU Rennes, France

THP.P.491 Board 491 **COMPARISON OF OBJECT-ORIENTED AND MAXIMUM LIKELIHOOD CLASSIFICATION OF LAND USE IN KARST AREA**
Guoqing Zhou, Shengyun Xiong, Guilin University of Technology, China

THP.P.492 Board 492 **ONTOLOGY DRIVEN HIERARCHICAL COARSE-TO-FINE-GRAINED CLASSIFICATION FRAMEWORK FOR HIGH-RESOLUTION REMOTE SENSING IMAGE MINING**
Ranga Raju Vatsavai, Bhudhendra Bhaduri, Oak Ridge National Laboratory, United States

THP.P.493 Board 493 **MULTILAYER PERCEPTRON WITH PARTICLE SWARM OPTIMIZATION FOR WELL LOG DATA INVERSION**
Kou-Yuan Huang, Kai-Ju Chen, Ming-Che Huang, National Chiao Tung University, Taiwan; Liang-Chi Shen, University of Houston, Taiwan

THP.P.494 Board 494 **AUTOMATIC REGISTRATION OF HIGH-RESOLUTION OPTICAL AND SAR IMAGES BASED ON AN INTEGRATED INTENSITY- AND FEATURE-BASED APPROACH**
Youkyung Han, Yongmin Kim, Junho Yeom, Seoul National University, Republic of Korea; Dongyeob Han, Chonnam National University, Republic of Korea; Yongil Kim, Seoul National University, Republic of Korea

THP.P.495 Board 495 **A SPA-BASED K-MEANS CLUSTERING ALGORITHM FOR THE REMOTE SENSING INFORMATION EXTRACTION**
Xiangjian Xie, Junsan Zhao, Hongbo Li, Wanqiang Zhang, Lei Yuan, Kunming University of Science and Technology, China

THP.P.496 Board 496 **THE DYNAMICALLY REMOTE SENSING MONITORING AND IMPACTS OF CLIMATIC CHANGE ON MAQU WETLAND IN 2002-2010**
Han Lanying, Ni Guo, Yaohui Li, Institute of Arid Meteorology, China Meteorological Administration, China; pengli Ma, Dong Yin, Northwest Regional Climate Center, CMA, China

THP.P.497 Board 497 **MATHEMATICAL MORPHOLOGY APPROACH TO DETECT FARMLAND CONDITIONS FROM ALOS/PALSAR DATA AFTER THE 2011 OFF THE PACIFIC COAST OF TOHOKU JAPAN EARTHQUAKE AND TSUNAMI**
Yasuharu Yamada, National Agriculture and Food Research Organization, Japan

Image Information Extraction

Session Chair: Esra Erten, ITU

THP.P.498 Board 498
EMISSIVITY MEASUREMENT FOR LOW EMISSIVITY OBJECTS BY TWO BLACKBODY TUBE METHODS
Yuan Rong, Hongbo Su, Renhua Zhang, Yongmin Yang, Institute of Geographic Sciences and Natural Resources Research, CAS, China

THP.P.499 Board 499
STUDY ON HIGHWAY GEOLOGICAL DISASTERS KNOWLEDGE BASE FOR REMOTE SENSING IMAGES INTERPRETATION
Yalan Liu, Yuhuan Ren, Leiqiu Hu, Zhumei Liu, Institute of Remote Sensing Applications, CAS, China

THP.P.500 Board 500
ASSESSMENT OF EARTH OBSERVATION DATA CONTENT BASED ON DATA COMPRESSION -APPLICATION TO SETTLEMENTS UNDERSTANDING
Jayashree Chadalawada, Daniela Espinoza-Molina, Mihai Datcu, German Aerospace Center (DLR), Germany

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SUPER-RESOLUTION ISAR IMAGING USING POLARIMETRIC TECHNIQUES FOR SUBSPACE DIMENSIONALITY
Jon Mitchell, Saibun Tjuatja, The University of Texas at Arlington, United States

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GEOMETRY-AIDED SUBSPACE PROJECTION FOR MITIGATING RANGE-DEPENDENCE OF THE CLUTTER SPECTRUM IN FORWARD-LOOKING AIRBORNE RADAR
Xiaopeng Yang, Yongxu Liu, Teng Long, Beijing Institute of Technology, China

THP.P.503 Board 503
ASSESSING SCALE FACTOR IN INDICATOR GEOSTATISTICS BASED SUPER RESOLUTION MAPPING
Peijun Li, Peking University, China; Huiran Jin, State University of New York College of Environmental Science and Forestry, United States; Haiqing Xu, Peking University, China

THP.P.504 Board 504
A DESCALLOPING TECHNIQUE BASED ON MULTI RESOLUTION ANALYSIS FOR COSMO-SKYMED SCANSAR DATA
Domenico Schiavulli, Antonio Sorrentino, Maurizio Migliaccio, University Parthenope, Italy

THP.P.505 Board 505
COMPARATIVE STUDY ON ESTIMATION OF NITROGEN CONTENT IN THE HETEROGENIOUS TYPICAL STEPPE USING VARIOUS RED EDGE POSITION EXTRACTION TECHNIQUES
Dandan Wei, Xiaobing Li, Hong Wang, Han Wang, Wanyu Wen, Beijing Normal University, China

THP.P.506 Board 506
CLIMATICALLY-ACTIVE GASES IN THE EASTERN BOUNDARY UPWELLING AND OXYGEN MINIMUM ZONE (OMZ) SYSTEMS
Christoph S. Garbe, University of Heidelberg, Germany; A. Butz, Karlsruher Institut für Technologie (KIT), Germany; I. Dadou, B. Dewitte, Veronique Garçon, S. Illig, A. Paulmier, Joel Sudre, Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (CNRS/CNES/UPS/IRD), France; H. Yahia, INRIA Bordeau Sud-Ouest, France

THP.P.507 Board 507
ANALYSIS OF HOMELAND SECURITY AND ECONOMIC SURVEY USING SPECIAL MISSIONS UNMANNED AERIAL VEHICLE UTILITIES
Victoria Moss, Delandria Jones, Sam Nwaneri, Alcorn State University, United States

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Land Cover and Change

Session Chair: Brian Salmon, University of Pretoria

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BURNINGS IN THE BRAZILIAN SAVANNA: A PRELIMINARY ANALYSIS ON KEY BIOPHYSICAL DRIVERS USING MODIS AND TRMM DATA
Arielle Arantes, Laerte Ferreira, Fernando Araujo, Federal University of Goiás, Brazil

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LAND CONDITION DIAGNOSIS BASED ON MULTI-RESOLUTION ANALYSIS AND WAVELET TRANSFORM
Hong Wang, State Key Laboratory of Earth Surface Processes and Resource Ecology, China; Huiling Long, Beijing Research Center for Information Technology in Agriculture, China; Xiaobing Li, Jing Wu, Yunwei Qiao, State Key Laboratory of Earth Surface Processes and Resource Ecology, China

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MULTITEMPORAL SAR IMAGES CHANGE DETECTION BASED ON JOINT SPARSE REPRESENTATION OF PAIR DICTIONARIES
Wei Li, Jiayu Chen, Pei Yang, Hong Sun, Signal Processing Laboratory, School of Electronic Information, Wuhan University, China

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ATLAS ANALYSIS ON LAND USE SPATIAL-TEMPORAL CHANGES IN MIANZHU CITY, CHINA
Ronghua Zhang, Rui Sun, Beijing Normal University, China; Guiwu Su, Institute of Geology, China Earthquake Administration, China; Hongwei Xu, Beijing Normal University, China

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INTERACTIVE CHANGE DETECTION TECHNIQUES IN MULTITEMPORAL MULTISPECTRAL REMOTE SENSING IMAGES
Haikel Alhichri, Yakoub Bazi, Naif Alajlan, Sayed M. Ahmad, King Saud University, Saudi Arabia

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LAND COVER CLASSIFICATION USING MULTI-TEMPORAL SAR DATA AND OPTICAL DATA FUSION WITH ADAPTIVE TRAINING SAMPLE SELECTION
Kamolratn Chureesampant, Junichi Susaki, Kyoto University, Japan

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CHANGE DETECTION OF THE NATIONAL LAND COVER DATASET OF MEXICO
Rene R. Colditz, Ricardo M. Llamas, Rainer A. Ressl, National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico

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PIXEL BASED CHANGE DETECTION USING AN ENSEMBLE OF FUZZY AND BINARY LOGIC OPERATIONS
Murat Ilsever, Utku Altunkaya, Cem Ünsalan, Yeditepe University, Turkey

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FAST DETECTION OF CHANGED BLOCKS IN LAND USE MAP
Bin Wu, Jian Yang, Yu Meng, Jingbo Chen, Chinese Academy of Sciences, China; Chengyi Wang, Graduate University, CAS, China; Dongxu He, Jiansheng Chen, Chinese Academy of Sciences, China

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RULE-BASED IMAGE CLASSIFICATION METHOD FOR CHANGE DETECTION IN SHANGHAI USING LANDSAT DATA
Jin A Lee, University of Science & Technology, Republic of Korea; Sung Soon Lee, Korea Institute of Geoscience and Mineral Resources, Republic of Korea

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AUTOMATIC UNSUPERVISED CHANGE DETECTION USING MULTI-TEMPORAL POLARIMETRIC SAR DATA
Kamolratn Chureesampant, Junichi Susaki, Kyoto University, Japan

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GENERATING 30-M LAND SURFACE ALBEDO BY INTEGRATING LANDSAT AND MODIS DATA FOR UNDERSTANDING THE DISTURBANCE EVOLUTION
Yanmin Shuai, Earth Resources Technology Inc. at NASA/GSFC, United States; Jeffrey Masek, NASA Goddard Space Flight Center, United States; Feng Gao, USDA ARS, United States; Christopher Williams, Clark University, United States; Crystal Schaaf, University of Massachusetts Boston, United States

Land Cover: Urban and Interface Areas

Session Chair: Arief Wijaya, Center for International Forestry Research

THP.P.520 Board 520
URBAN LAND USE/COVER CHANGE AND ITS EFFECTS ON URBAN ECOSYSTEM SERVICES
Longyu Shi, Lijie Gao, Chunming Li, Haowei Wang, Cuiping Wang, Institute of Urban Environment, CAS, China

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THE EFFECTS OF SHADOW REMOVAL ON ACROSS-DATE SETTLEMENT TYPE CLASSIFICATION OF QUICKBIRD IMAGES
Francois Pierre Sarel Luus, University of Pretoria, South Africa; Frans van den Bergh, CSIR Meraka Institute, South Africa; Bodhaswar Tikanath Jugpershad Maharaj, University of Pretoria, South Africa

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OBJECT-BASED CLASSIFICATION AND BUILDING EXTRACTION BY INTEGRATING AIRBORNE LIDAR DATA AND AERIAL IMAGE
Yongmin Kim, Youkyung Han, Junho Yeom, Seoul National University, Republic of Korea; Dongyeob Han, Chonnam National University, Republic of Korea; Yongil Kim, Seoul National University, Republic of Korea

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AN APPROACH FOR QUICKLY LABELING LAND COVER TYPES FOR MULTIPLE EPOCHS AT GLOBALLY SELECTED LOCATIONS
Min Feng, Chinese Academy of Sciences, China; Chengquan Huang, Joseph Sexton, Saurabh Channan, Raghuram Narasimhan, John Townshend, University of Maryland, United States

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LET'S GET DIRTY: SATELLITE SCAN MIRROR CONTAMINATION
Matthijs Krijger, Ralph Snel, SRON Space Research, Netherlands

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USING VOLUNTEERED DATA IN LAND COVER MAP VALIDATION: MAPPING TROPICAL FORESTS ACROSS WEST AFRICA
Giles Foody, Doreen Boyd, University of Nottingham, United Kingdom

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DETECTING LAND COVER CHANGE BY EVALUATING THE INTERNAL COVARIANCE MATRIX OF THE EXTENDED KALMAN FILTER
Brian Salmon, University of Pretoria, South Africa; Waldo Kleynhans, Frans van den Bergh, Council for Scientific and Industrial Research, South Africa; Jan Olivier, University of Tasmania, Australia; Konrad Wessels, Council for Scientific and Industrial Research, South Africa

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GRAPH MATCHING BASED CHANGE DETECTION IN SATELLITE IMAGES
Murat Ilsever, Cem Ünsalan, Yeditepe University, Turkey

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QUANTITATIVE ANALYSIS OF SURFACE DEFORMATION IN NORTHERN VIETNAM FAULT ZONE BY SAR INTERFEROMETRY
Chin-Fu Chao, Kun-Shan Chen, Chih-Tien Wang, Chih-Yuan Chu, National Central University, Taiwan

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DETECTING GEOGRAPHIC HOTSPOTS OF HUMAN-INDUCED LAND DEGRADATION IN VIETNAM AND CHARACTERIZATION OF THEIR SOCIAL-ECOLOGICAL TYPES
Quyet Manh Vu, Quang Bao Le, Roland W. Scholz, Swiss Federal Institute of Technology Zurich, Switzerland; Paul. L.G Vlek, University of Bonn, Germany

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ASSESSMENT OF DEFORESTATION DRIVERS AND NATIONAL CARBON EMISSIONS USING REMOTE SENSING ANALYSIS
Arief Wijaya, Erika Romijn, Center for International Forestry Research, Indonesia; Saipul Rahman, Ministry of Forestry, Indonesia; Martin Herold, Wageningen University, Netherlands; Louis Verchot, Center for International Forestry Research, Indonesia

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Change and Forests

Session Chair: Feng Gao, USDA ARS

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Rodrigo Pisani, Paulina Riedel, Kelton Costa, Rodrigo Nakamura, UNESP, Brazil; Clayton Pereira, Gustavo Rosa, São Paulo State University, Brazil; Joao Papa, UNESP, Brazil

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IMPLICATIONS OF INTERPRETING TROPICAL DRY FOREST SUCCESSION AFTER RADIOMETRIC CORRECTION OF CHRIS/PROBA IMAGES
Virginia Garcia-Millan, Universidad Pablo de Olavide, Spain; G. Arturo Sanchez-Azofeifa, University of Alberta, Canada; Gonzalo Malvarez Garcia, Universidad Pablo de Olavide, Spain; Gerard Moré, Xavier Pons, Universitat Autònoma de Barcelona, Spain; M. Yamanaka, University of Alberta, Canada

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SEQUENTIAL CLASSIFICATION OF MODIS TIME SERIES
Trienko Grobler, University of Pretoria, South Africa; Etienne Ackermann, Rice University, United States; Augustinus van Zyl, Waldo Kleynhans, Brian Salmon, University of Pretoria, South Africa; Jan Olivier, University of Tasmania, Australia

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AUTOMATIC CLASSIFICATION OF LAND COVER CHANGE ASSOCIATED WITH THE BRAZILIAN SUGARCANE EXPANSION OVER THE LAST DECADE
Marcio Pupin Mello, Marcos Adami, Daniel Alves Aguiar, Bernardo Friedrich Theodor Rudorff, National Institute for Space Research (INPE), Brazil

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CONSIDERING ENVIRONMENTAL CUES IN LAND COVER CLASSIFICATION: THE CASE OF AFRICAN SAVANNAS
Christian Hüttich, Friedrich-Schiller-Universität Jena, Germany; Martin Herold, Wageningen University, Netherlands; Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

THP.P.536 Board 536
THE POTENTIAL FOR MAPPING WILDFIRE BURN SCARS IN WEST VIRGINIA, USA, USING LANDSAT IMAGERY
Timothy Warner, West Virginia University, United States

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LAND COVER CLASSIFICATION BY SUPPORT VECTOR MACHINES USING MULTI-TEMPORAL POLARIMETRIC SAR DATA
Qi Feng, Er-Xue Chen, Zengyuan Li, Ying Guo, Wei Zhou, Weimei Li, Guangcai Xu, Chinese Academy of Forestry, China

THP.P.538 Board 538
ANALYSIS OF LAND COVER CHANGING IN COASTAL PLAIN BY THE 2011 OFF THE PACIFIC COAST OF TOHOKU EARTHQUAKE AND TSUNAMI WITH ALOS SATELLITE IMAGES
Hideki Hashiba, College of Science and Technology, Nihon University, Japan; Toshiro Sugimura, Remote Sensing Technology Center of Japan, Japan

THP.P.539 Board 539
AN ADAPTIVE AND AUTOMATED METHOD FOR MASKING CLOUD ON LANDSAT DATA
Da-Cheng Li, Ping Tang, Chinese Academy of Sciences, China; Yan-Qin Ge, Chinese Industry of Building Materials, China; Jian Yang, Chinese Academy of Sciences, China

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SLOPE ESTIMATIONS IN FOREST AREA FROM WAVEFORM AND DEM
Xiaolu Li, Duan Li, Lijun Xu, Beihang University, China

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TERRAIN SLOPE CALCULATION FROM WAVEFORM OF AIRBORNE LIDAR
Xiaolu Li, Lijun Xu, Beihang University, China; Changwei Wang, Beijing Institute of Automatic Control Equipment, China

Mapping Change

Session Chair: Jordi Inglada, CESBIO-CNES

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IMPROVEMENT OF PANCHROMATIC IKONOS IMAGE CLASSIFICATION BASED ON STRUCTURAL NEURAL NETWORK
Weibao Zou, Chang'an University, China

THP.P.543 Board 543
OBJECT-BASED DETECTION OF AGRICULTURAL LAND USE CHANGES AND DYNAMICS ON TENERIFE (CANARY ISLANDS)
Sebastian Günthert, University of Education Heidelberg and University Heidelberg, Germany; Simone Naumann, University of Education Heidelberg, Germany; Alexander Siegmund, University of Education Heidelberg and University Heidelberg, Germany

THP.P.544 Board 544
CHANGE DETECTION METHOD FOR PASTURE DEGRADATION USING RGB COLOR COMPOSITE IMAGE OF MULTITEMPORAL LANDSAT TM - A CASE STUDY OF THE INNER MONGOLIAN SETTLEMENT REGION
Suriga Suriga, Miki Hashimoto, Buho Hoshino, Rakuno Gakuen University, Japan; Saixialt Saixialt, Inner Mogolian Normal University, China; Sumiya Ganzorig, Rakuno Gakuen University, Japan

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SAR IMAGE CHANGE DETECTION BASED ON LOW RANK MATRIX DECOMPOSITION
Xiangrong Zhang, Yaoguo Zheng, Jie Feng, Shuiping Gou, Xidian University, China

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CHANGE DETECTION BASED ON POLARIZATION DECOMPOSITION USING RADARSAT-2 QUAD-POL DATA
Yixian Tang, Hong Zhang, Chao Wang, Meng Liu, Center for Earth Observation and Digital Earth, CAS, China

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CALIBRATED LANDSAT TM LAI RETRIEVAL FOR MONITORING VEGETATION COVER CHANGE AFTER ECOLOGICAL RELEASES TO THE LOWER TARIM RIVER
Haijing Wang, Irena Hajnsek, Wolfgang Kinzelbach, ETH Zürich, Switzerland

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SPATIAL AND TEMPORAL PATTERNS OF FOREST REGENERATION IN DEFORESTED AREAS OF THE EASTERN AMAZON
André Lima, André Moscardo Salles Almeida Luz, Thiago Sanna Freire Silva, Veronika Leitold, Samuel Coura, National Institute for Space Research (INPE), Brazil; Luiz Eduardo Oliveira e Cruz de Aragão, University of Exeter, United Kingdom; Bernardo Friedrich Theodor Rudorff, Antônio Roberto Formaggio, Yosio Edemir Shimabukuro, National Institute for Space Research (INPE), Brazil

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EVALUATION OF MULTI-TEMPORAL ALOS / PALSAR FOR MONITORING THE BRAZILIAN AMAZON RAINFOREST
Gildardo Sánchez, Yosio Edemir Shimabukuro, Dalton Valeriano, National Institute for Space Research (INPE), Brazil

THP.P.550 Board 550
EVALUATION OF THE POTENTIAL OF ALOS PALSAR POLARIMETRIC DATA FOR LAND-COVER CLASSIFICATION IN THE NORTHERN PART OF TIMAN-PECHORIAN PETROLEUM PROVINCE
Alexandra Rusanova, Irina Smirnova, VNIIKAM, Russian Federation

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AGRICULTURAL LAND USE MAPPING IN THE SUDANIAN SAVANNA OF WEST AFRICA: CURRENT STATUS AND FUTURE POSSIBILITIES
Gerald Forkuor, Tobias Landmann, Christopher Conrad, University of Wuerzburg, Germany; Stefan Dech, German Aerospace Center (DLR), Germany

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DERIVING 2011 CULTIVATED LAND COVER DATA SETS USING USDA NATIONAL AGRICULTURAL STATISTICS SERVICE HISTORIC CROPLAND DATA LAYERS
Claire Boryan, Zhengwei Yang, USDA ARS, United States; Liping Di, George Mason University, United States

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Session Chair: Ramesh Shrestha, UH NCALM

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Shailesh Shrestha, Zbigniew Bochenek, Institute of Geography and Cartography, Poland; Claire Smith, University of Leicester, United Kingdom

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LANDSLIDES VOLUMETRIC ESTIMATION BY USING LIDAR DATA AND SEDIMENT PRODUCTION RATE METHOD
Ming-Chee Wu, Mon-Shieh Yang, Huang-Chen Liu, National Cheng Kung University, Taiwan; Jin-King Liu, Taiwan Group on Earth Observations (TGEO), Taiwan

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ANALYSIS OF FREQUENCY AND SPATIAL VARIATIONS OF DROUGHT IN KAZAKHSTAN FOR THE PERIOD 2000-2010
Lev F. Spivak, Irina Vitkovskaya, Space Research Institute of the National Space Agency of the Republic of Kazakhstan, Kazakhstan; Raushan Bokusheva, Swiss Federal Institute of Technology Zurich, Switzerland; Madina Batyrbayeva, Space Research Institute of the National Space Agency of the Republic of Kazakhstan, Kazakhstan

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THE VARIATION ANALYSIS OF LAND SURFACE ALBEDO IN BEIJING IN RECENT TEN YEAES
Haixia Feng, Shandong Jiaotong University, China; Heng Dong, Chao Chen, Qingye Meng, Peking University, China; Guoqiang An, Shandong Provincial Institute of Land Surveying and Planning, China

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ANALYSIS ON THE RELATION BETWEEN STATISTICAL SIMILARITY MEASURES AND AGRICULTURAL PARAMETERS: A CASE STUDY
Olga Chesnokova, ETH Zürich / MFB GeoConsulting, Switzerland; Esra Erten, Istanbul Technical University, Turkey; Irena Hajnsek, ETH Zürich, Switzerland

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CONSTRUCTION OF AN ECO-RISK ASSESSMENT SYSTEM IN ARID-OASIS AREAS OF CHINA BASED ON RS AND GIS MODEL
Ruofan Wang, Zhongren Nan, Chengcheng Li, Lanzhou University, China

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ESTIMATES OF LAND USE AND LAND COVER CHANGE AND SOIL LOSS IN THE BRAZILIAN CERRADO THROUGH GEOTECHNOLOGY
Kleber Trabaquini, Moisés Galvão, Antônio Roberto Formaggio, Lênio Soares Galvão, National Institute for Space Research (INPE), Brazil

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LAND COVER AND LAND SURFACE TEMPERATURE INTERACTIONS IN DESERT AREAS: A CASE STUDY OF ABU DHABI (UAE)
Michele Lazzarini, Prashanth Reddy Marpu, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

THP.P.561 Board 561
CHANGE DETECTION OF POLARIMETRIC SAR IMAGES APPLIED TO SPECIFIC LAND COVER TYPE
Meng Liu, Hong Zhang, Chao Wang, Yixian Tang, Center for Earth Observation and Digital Earth, CAS, China

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SPATIAL AND TEMPORAL DYNAMICS OF LAND COVER IN BEIJING
Mingyi Du, Guoyin Cai, Beijing University of Civil Engineering and Architecture, China

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THE IMPACT OF LAND USE AND LAND COVER CHANGES ON LAND SURFACE TEMPERATURE IN A RAPIDLY URBANIZING MEGACITY
Ashraf Dewan, Robert Corner, Curtin University, Australia

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ADDING A TEMPORAL DIMENSION TO THE RUSLE MODEL: APPLICATION TO THE PORTUGUESE WEST COAST
Cristina Lira, Rui Taborda, Ana Mafalda Carapuço, César Andrade, Universidade de Lisboa, Portugal

Biodiversity and Forest Health

Session Co-Chairs: Tim Malthus, CSIRO; Dar A. Roberts, University of California, Santa Barbara

THP.P.565 Board 565 **A OBSERVATION OF PREDICTOR OF JAPANESE OAK WILT USING HIGH SPECTRAL SENSOR**
Ryotaro Komura, Ishikawa National College of Technology, Japan; Kojiro Esaki, Ishikawa Forest Experiment Station, Japan

THP.P.566 Board 566 **HEDGEROW DETECTION IN HRS AND VHRS IMAGES FROM DIFFERENT SOURCE (OPTICAL, RADAR)**
Danielle Ducrot, Antoine Masse, Abir Ncibi, Centre d'Etudes Spatiales de la Biosphère, France

THP.P.567 Board 567 **DETECTING THE INVASIVE FIRE TREE IN HAWAIIAN RAINFORESTS THROUGH MULTI-TEMPORAL UNMIXING OF HYPERION IMAGERY**
Ben Somers, Flemish Institute for Technological Research (VITO), Belgium; Gregory P. Asner, Carnegie Institution for Science, United States

THP.P.568 Board 568 **ANALYSIS OF FISHEYE PHOTOGRAPHY FOR MONITORING CANOPY STRUCTURE DURING LARCH SAWFLY OUTBREAK**
Mamoru Kubo, S. Gavrilov, Kanazawa University, Japan; K. Muramoto, Ishikawa National College of Technology, Japan; N. Kamata, University of Tokyo, Japan

THP.P.569 Board 569 **MAPPING PLANT STRATEGY TYPES AND DERIVATIVES WITH IMAGING SPECTROSCOPY**
Hannes Feilhauer, University of Erlangen, Germany; Sebastian Schmidtlein, University of Bonn, Germany

THP.P.570 Board 570 **EARLY DETECTION OF ASH EMERALD ASH BORER (EAB) INFESTATION USING HYPERSPECTRAL IMAGERY**
Kongwen Zhang, Baoxin Hu, York University, Canada; Ian Hanou, AMEC Earth and Environmental Inc, United States; Linhai Jin, Chinese Academy of Sciences, China

THP.P.571 Board 571 **BIODIVERSITY MULTI-SOURCE MONITORING SYSTEM: FROM SPACE TO SPECIES (BIO_SOS)**
Palma Blonda, Cristina Tarantino, Maria Adamo, Consiglio Nazionale delle Ricerche - Istituto di Studi sui Sistemi Intelligenti per l'Automazione, Italy; Carmela Marangi, Consiglio Nazionale delle Ricerche IAC, Italy; Dimopoulos Panayotis, UOI, Greece; Maria Petrou, CERTH, Greece; Rob Jongman, Alterra, Netherlands; Harini Nagendra, ATREE, India; Daniela Iasillo, PKI, Italy; Alain Arnoud, Altamira Information, Spain; Paola Mairota, UNIBA, Italy; Joao Honrado, CIBIO, Portugal; Emilio Padoa Schioppa, UNIMIB, Italy; Richard Lucas, ABERY, United Kingdom; Laurent Durieux, IRD, France; Stelios Bollanos, PKH, Greece; Laura Candela, ASI, Italy; Jordi Inglada, UPS-CESBIO, France

THP.P.572 Board 572 **BINARY PARTITION TREE AS A HYPERSPECTRAL SEGMENTATION TOOL FOR TROPICAL RAINFORESTS**
Guillaume Tochon, Jean-Baptiste Feret, Roberta E. Martin, Raul Tupayachi, Carnegie Institution for Science, United States; Jocelyn Chanussot, GIPSA-lab, France; Gregory P. Asner, Carnegie Institution for Science, United States

THP.P.573 Board 573 **FOREST HEIGHT ESTIMATION USING SEMI-INDIVIDUAL TREE DETECTION IN MULTI-SPECTRAL 3D AERIAL DMC DATA**
Jörgen Wallerman, Jonas Bohlin, Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden

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Forest Biomass and Carbon

Session Chair: Sassan Saatchi, NASA Jet Propulsion Laboratory

THP.P.574 Board 574 **ESTIMATION OF CARBON SEQUESTRATION BY USING VEGETATION INDICES**
Kuan-Tsung Chang, Minghsin University of Science and Technology, Taiwan; Long-Shin Liang, National Central University, Taiwan; Fong-Gee Yiu, Minghsin University of Science and Technology, Taiwan; Ruei-Yuan Wang, National Central University, Taiwan

THP.P.575 Board 575 **THEORETICAL STUDY ON GNSS-R VEGETATION BIOMASS**
Xuerui Wu, Ying Li, Jin Xu, Dalian Maritime University, China

THP.P.576 Board 576 **COMPARING SMALL-FOOTPRINT LIDAR AND FOREST INVENTORY DATA FOR SINGLE STRATA BIOMASS ESTIMATION – A CASE STUDY OVER A MULTI-LAYERED MEDITERRANEAN FOREST**
Antonio Ferraz, Institut National de l'information Géographique et Forestière, France; Gil Gonçalves, Universidade de Coimbra, Portugal; Paula Soares, Margarida Tomé, Instituto Superior de Agronomia, Universidade Técnica de Lisboa, Portugal; Clement Mallet, Institut National de l'information Géographique et Forestière, France; Stéphane Jacquemoud, Institut de Physique du Globe de Paris, France; Frédéric Bretar, CETE Normandie Centre, France; Luisa Pereira, Universidade de Aveiro, Portugal

THP.P.577 Board 577 **OPTIMAL SUPPORT VECTOR MACHINES FOR FOREST ABOVE-GROUND BIOMASS ESTIMATION FROM MULTISOURCE REMOTE SENSING DATA**
Ying Guo, Zengyuan Li, Xu Zhang, Erxue Chen, Lina Bai, Xin Tian, Chinese Academy of Forestry, China; Qisheng He, Hohai University, China; Qi Feng, Wenmei Li, Chinese Academy of Forestry, China

THP.P.578 Board 578 **TROPICAL FOREST REMOTE SENSING SERVICES FOR THE DEMOCRATIC REPUBLIC OF CONGO CASE INSIDE THE EU FP7 'RECOVER' PROJECT (1ST ITERATION)**
Jörg Haarpaintner, Kathrin Einzmann, Norut, Norway; Donata Pedrazzani, Maria Teresa Mateos San Juan, Marta Gomez Gimenez, GMV, Spain; Johannes Heinzel, Fabian Enssle, Albert-Ludwigs University Freiburg, Germany; Landing Mane, OSFAC, Democratic Republic of the Congo

THP.P.579 Board 579 **BIOMASS ASSESSMENT IN AFRICAN FOREST-SAVANNA USING ALOS PALSAR DATA**
Stéphane Mermoz, Thuy Le Toan, Ludovic Villard, Yannick Lasne, Centre d'Etudes Spatiales de la Biosphère, France

THP.P.580 Board 580 **SCINTILLATION IMPACTS ON THE BIOMASS P-BAND SPACE-BASED SAR**
Neil Rogers, Shaun Quegan, University of Sheffield, United Kingdom

THP.P.581 Board 581 **EVALUATION OF DIFFERENT METHODS FOR FOREST REGIONAL BIOMASS MAPPING FROM UAVSAR DATA**
Zhiyu Zhang, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China; Xingling Wang, National Disaster Reduction Center of China, China; Wenjian Ni, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China; Guoqing Sun, Wenli Huang, University of Maryland, College Park, United States; Zhifeng Guo, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China

THP.P.582 Board 582 **MAPPING OF LAND COVER AND ABOVEGROUND BIOMASS IN THE AMAZON BASIN FROM MULTI-SENSOR DATA FUSION**
Wayne S. Walker, Alessandro Baccini, Josef M. Kellndorfer, Woods Hole Research Center, United States; Claudia M. Stickler, Amazon Environmental Research Institute, United States

Change Detection I

Session Co-Chairs: Leif Erikkson, Chalmers University of Technology; Gustaf Sandberg, Chalmers University of Technology

THP.P.583 Board 583
STABILITY OF GAMMA-NAUGHT AND THE PALSAR BASED FOREST MRV SYSTEM
Masanobu Shimada, Manabu Watanabe, Takeshi Motooka, Tomohiro Shiraishi, Rajesh Thapa, Japan Aerospace Exploration Agency (JAXA), Japan; Takuya Itoh, Osamu Isoguchi, Tsutomu Yamanokuchi, Remote Sensing Technology Center of Japan, Japan

THP.P.584 Board 584
MONITORING AND MODELING LAND SURFACE DYNAMICS IN BERMEJO RIVER BASIN, ARGENTINA: TIME SERIES ANALYSIS OF MODIS AND AMSR-E DATA
Veronica Daniela Barraza Bernadas, Francisco Grings, Pablo Perna, Mercedes Salvia, Institute for Astronomy and Physics of the Space, Argentina; Anibal Carbajo, University of Buenos Aires, Argentina; Paolo Ferrazzoli, Tor Vergata University of Rome, Italy; Haydee Karszenbaum, Institute for Astronomy and Physics of the Space, Argentina

THP.P.585 Board 585
THE POTENTIAL OF MODIS FOR DROUGHT MONITORING IN NORTHERN CHINA
Huiling Long, Wenjiang Huang, Xiaodong Yang, Yansheng Dong, Beijing Research Center for Information Technology in Agriculture, China

THP.P.586 Board 586
INTERACTIONS BETWEEN CLIMATE CHANGE AND HUMAN ACTIVITIES IN DRYLAND DEGRADATION IN BEIJING-TIANJIN SAND-STORM SOURCE REGION, CHINA
Jing-Hui Liu, Jian-Jun Wu, Zhi-Tao Wu, Beijing Normal University, China; Ai-Feng Lü, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Jianwei Yue, Beijing Normal University, China

THP.P.587 Board 587
ESTIMATION OF INSTANTANEOUS FIRE FLAMING AND SMOLDERING SIZE TO AMAZON RAINFOREST
Gabriel Pereira, Francielle Cardozo, Elisabete Moraes, Yosio Edemir Shimabukuro, Saulo Freitas, National Institute for Space Research (INPE), Brazil

THP.P.588 Board 588
SPATIO-TEMPORAL DISTRIBUTION OF FOREST FIRES AND VEGETATION RECOVERY IN THE NORTHEAST OF CHINA
Kunpeng Yi, Hiroshi Tani, Xiufeng Wang, Meng Guo, Hokkaido University, Japan; Guosheng Zhong, Hokkaido university, Japan

THP.P.589 Board 589
CONTRIBUTION OF TERRASAR-X RADAR IMAGES TEXTURE FOR FOREST MONITORING
Hajar Benelcadi, Pierre-Louis Frison, Université Paris-Est Marne la Vallée, France; Cédric Lardeux, Anne Cécile Capel, Jean Baptiste Routier, ONF International, France; Jean-Paul Rudant, Université Paris-Est Marne la Vallée, France

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MONITORING THE IMPACT OF REDD+ IMPLEMENTATION IN THE UNESCO KAFA BIOSPHERE RESERVE, ETHIOPIA
Ben DeVries, Valerio Avitabile, Lammert Kooistra, Martin Herold, Wageningen University and Research Centre, Netherlands

THP.P.591 Board 591
FOREST MAPPING AND MONITORING IN TASMANIA USING MULTI-TEMPORAL LANDSAT AND ALOS-PALSAR DATA
Eric A. Lehmann, Zheng-Shu Zhou, Peter Caccetta, Commonwealth Scientific and Industrial Research Organisation, Australia; Anthony Milne, Anthea Mitchell, The University of New South Wales, Australia; Kim Lowell, University of Melbourne, Australia; Alex Held, Commonwealth Scientific and Industrial Research Organisation, Australia

THP.P.592 Board 592
BACKSCATTER SIGNATURES OF WIND-THROWN FOREST IN SATELLITE SAR IMAGES
Leif E. B. Eriksson, Chalmers University of Technology, Sweden; Johan E.S. Fransson, Swedish University of Agricultural Sciences, Sweden; Maciej J. Soja, Chalmers University of Technology, Sweden; Maurizio Santoro, Gamma Remote Sensing, Switzerland

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Vegetation Phenology and Productivity

Session Chair: Daniel Doktor, UFZ

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MULTI-TEMPORAL ANALYSIS OF MODIS LAND PRODUCTS OVER THE AMAZON REGION
Juan-Carlos Jiménez-Muñoz, José-Antonio Sobrino, Cristian Mattar, University of Valencia, Spain; Yadvinder Malhi, University of Oxford, Spain

THP.P.594 Board 594
DISCRIMINATING PLANT SPECIES ACROSS DIVERSE ECOSYSTEMS WITH IMAGING SPECTROSCOPY
Keely Roth, Dar Roberts, University of California, Santa Barbara, United States; Philip Dennison, University of Utah, United States

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GROSS PRIMARY PRODUCTION ESTIMATION BY COMBINING MODIS PRODUCTS AND AMERIFLUX DATA THROUGH ARTIFICIAL NEURAL NETWORK FOR CROPLANDS
Xiaolei Yu, Zhaocong Wu, Wanshou Jiang, Wuhan University, China

THP.P.596 Board 596
PHENOLOGY ESTIMATION FROM METEOSAT SECOND GENERATION DATA
Yves Julien, José-Antonio Sobrino, Guillem Soria, Global Change Unit, Spain

THP.P.597 Board 597
SPATIOTEMPORAL VARIATIONS OF SATELLITE-DERIVED PHENOLOGY IN THE TIBETAN PLATEAU
Linlin Lu, Qingting Li, Center for Earth Observation and Digital Earth, CAS, China; Cuizhen Wang, University of Missouri, United States; Huadong Guo, Li Zhang, Center for Earth Observation and Digital Earth, CAS, China

THP.P.598 Board 598
MAPPING BIOPHYSICAL PROPERTIES AT A EUROPEAN TEMPERATE FOREST ECOSYSTEM
Henning Buddenbaum, Pyare Püschel, Joachim Hill, University of Trier, Germany

THP.P.599 Board 599
CONSTRAINING MODEL SIMULATIONS OF GPP USING SATELLITE RETRIEVED LEAF CHLOROPHYLL
Rasmus Houborg, Alessandro Cescatti, Mirco Migliavacca, European Commision, Joint Research Centre, Italy

THP.P.600 Board 600
THE SPATIAL SCALE RESEARCH OF MODIS LAI PRODUCT AUTHETICITY VERIFICATION
Wei Wei, Yunping Chen, Ling Tong, University of Electronic Science and Technology of China, China

THP.P.601 Board 601
SPATIAL-TEMPORAL CHARACTERISTICS OF NPP BASED ON PROCESSED MODEL FROM 2002 TO 2010 IN GANSU PROVINCE, NORTHWEST CHINA
Peijuan Wang, Chinese Academy of Meteorological Sciences, China; Donghui Xie, Beijing Normal University, China; Youhao E, Yanyan Xu, Chinese Academy of Meteorological Sciences, China

THP.P.602 Board 602
SPECTRAL COMPATIBILITY OF VIIRS VEGETATION INDICES WITH MODIS AND AVHRR: AN ASSESSMENT USING A GLOBAL SET OF EO-1 HYPERION HYPERSPECTRAL IMAGES
Tomoaki Miura, Joshua Turner, University of Hawaii at Manoa, United States

THP.P.603 Board 603
ESTIMATING TERRESTRIAL VEGETATION PRIMARY PRODUCTIVITY USING SATELLITE SAR DATA
Shuai Gao, Zheng Niu, Mingquan Wu, Chenzhou Liu, Institute of Remote Sensing Applications, CAS, China

Foliage and Canopy Characterisation

Session Co-Chairs: Sivasathivel Kandasamy, INRA; Mark Chopping, Montclair State University

THP.P.604 Board 604 **RETRIEVAL OF LEAF AREA INDEX WITH PROSAIL MODEL AND MULTI-ANGLE DATA**
Lijuan Wang, Insititute of Remote Sensing Application, CAS, China; Taifeng Dong, shuai Gao, Institute of Remote Sensing Applications, CAS, China; Zheng Niu, Insititute of Remote Sensing Application, CAS, China; Guimin Zhang, Institute of Rock and Soil Mechanics, CAS, China

THP.P.605 Board 605 **NEAR-REAL TIME ESTIMATES OF LEAF AREA INDEX FROM AVHRR TIME SERIES DATA**
Sivasathivel Kandasamy, Aleixandre Verger, Frédéric Baret, Marie Weiss, Samuel Buis, Institut National de la Recherche Agronomique (INRA), France

THP.P.606 Board 606 **ESTIMATION OF CANOPY GAP FRACTION BASED ON MULTI SCANNING DATA FROM TERRESTRIAL LASER SCANNER**
Yunfei Bao, Institute of Remote Sensing Applications, CAS, China

THP.P.607 Board 607 **A METHOD OF UPSCALING GROUND MEASUREMENTS OF LEAF AREA INDEX BASED ON TAYLOR SERIES EXPANSION MODEL**
Yan Liu, Jindi Wang, Hongmin Zhou, Huazhu Xue, Beijing Normal University, China

THP.P.608 Board 608 **RETRIEVAL OF SINGLE SCATTERING ALBEDO OF WINTER WHEAT IN NORTH CHINA PLAIN BASED ON AMSR-E DATA**
Fengmin Wu, Linna Chai, Lixin Zhang, Lingmei Jiang, Juntao Yang, Beijing Normal University, China

THP.P.609 Board 609 **ESTIMATING TAPER DIAMETER AND STEM FORM OF PINUS RADIATA IN AUSTRALIA BY TERRESTRIAL LASER SCANNING**
Fadhillah Norzahari, Russell Turner, Samsung Lim, John Trinder, University of New South Wales, Australia

THP.P.610 Board 610 **CALCULATION OF TREES HEIGHT USING PRISM-DSM**
Masuo Takahashi, Masanobu Shimada, Takeo Tadono, Manabu Watanabe, Japan Aerospace Exploration Agency (JAXA), Japan

THP.P.611 Board 611 **ASSESSING CARBON CHANGES IN PEAT SWAMP FOREST ENVIRONMENTS WITH AIRBORNE LIDAR IN CENTRAL KALIMANTAN, INDONESIA**
Viktor Boehm, Kalteng Consultants, Germany

THP.P.612 Board 612 **GEOMETRIC-OPTICAL MODELING WITH MISR OVER THE KOLA PENINSULA**
Mark Chopping, Montclair State University, United States

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Retreival of Forest Structural Attributes

Session Chair: Francesco Mattia, CNR - National Research Council of Italy

THP.P.613 Board 613 **THE IMPACT OF RESIDUAL MOTION DEVIATIONS ON FOREST HEIGHT INVERSION BY SAR REMOTE SENSING**
Hanwei Sun, Tao Zeng, Radar Research Lab, China; Jian Yang, Tsinghua University, China

THP.P.614 Board 614 **COMPREHENSIVE QUANTITATIVE TREE MODELS FROM TLS DATA**
Markku Akerblom, Pasi Raumonen, Mikko Kaasalainen, Tampere University of Technology, Finland; Sanna Kaasalainen, Harri Kaartinen, Geodetic Institute, Finland

THP.P.615 Board 615 **TIME SERIES OF COSMO-SKYMED DATA FOR LANDCOVER CLASSIFICATION AND SURFACE PARAMETER RETRIEVAL OVER AGRICULTURAL SITES**
Francesco Mattia, Giuseppe Satalino, Anna Balenzano, Consiglio Nazionale delle Ricerche, Italy; Guido D'Urso, Fulvio Capodici, Università degli Studi di Napoli Federico II, Italy; Vito Iacobellis, Politecnico di Bari, Italy; Pamela Milella, Autorità di Bacino della Puglia, Italy; Andrea Gioia, Politecnico di Bari, Italy; Michele Rinaldi, Sergio Ruggieri, Consiglio per la Ricerca e la Sperimentazione in Agricoltura (CRA), Italy; Luigi Dini, Agenzia Spaziale Italiana, Italy

THP.P.616 Board 616 **SAR RADARGRAMMETRY AND SCANNING LIDAR IN PREDICTING FOREST CANOPY HEIGHT**
Mikko Vastaranta, Markus Holopainen, University of Helsinki, Finland; Mika Karjalainen, Finnish Geodetic Institute, Finland; Ville Kankare, University of Helsinki, Finland; Juha Hyyppä, Sanna Kaasalainen, Finnish Geodetic Institute, Finland; Hannu Hyyppä, Aalto University, Finland

THP.P.617 Board 617 **BASED ON PROSAIL AND FOUR SCALE MODEL TO ESTIMATION LAI FROM HJ-1B CCD2 DATA IN ZHANGYE**
Jing Zhao, Jing Li, Qinhuo Liu, Institute of Remote Sensing Applications, CAS and Beijing Normal University, China

THP.P.618 Board 618 **MAPPING OF ALOS PALSAR 2D-BASED FOREST STEM VOLUME CLASSIFICATION MAP**
Min-Gee Hong, In-Kyu Jeong, Joonsoo Choi, Choen Kim, Kookmin University, Republic of Korea

THP.P.619 Board 619 **ESTIMATION OF STAND VOLUME USING NONPARAMETRIC CHARACTERISTICS OF AIRBORNE LIDAR DATA**
Woo-Kyun Lee, Doo-Ahn Kwak, Taejin Park, Jong Yeol Lee, Korea University, Republic of Korea

THP.P.620 Board 620 **INFLUENCE OF BISTATIC ANGLE AND FOREST STRUCTURE DESCRIPTION ON CLASSICAL POLARIMETRIC PARAMETERS**
Etienne Everaere, Elise Colin Koeniguer, Office National d'Etudes et de Recherches Aérospatiale, France; Laetitia Thirion-Lefevre, SONDRA, France; Antonello de Martino, LPICM, France

THP.P.621 Board 621 **CANOPY CLASSIFICATION WITH S-BAND POLARIMETRIC SAR DATA**
Raffaella Guida, University of Surrey, United Kingdom; Antonio Natale, Università degli Studi di Napoli Federico II, Italy; Rachel Bird, Philip Whittaker, SSTL Ltd., United Kingdom; Martin Cohen, David Hall, EADS Astrium Ltd., United Kingdom

THP.P.622 Board 622 **EMPIRICAL ASSESSMENT OF X-/C-HH INSAR, L-QUAD POLINSAR, AND LIDAR CANOPY HEIGHT MODEL**
M. Lorraine Tighe, Intermap Technologies Corp., United States; Douglas King, Carleton University, Canada; Heiko Balzter, University of Leicester, United Kingdom

Characterising Land Surfaces

Session Chair: Kostas Papathanassiou, German Aerospace Center - DLR

THP.P.623 Board 623
MAPPING LAND USE COVER IN AMAZON REGION WITH COSMO SKYMED DATA
Alessandra Gomes, Luis Sadeck, National Institute for Space Research (INPE) - Amazon Regional Center, Brazil; Waldiza Brandão, Telespazio Brasil, Brazil

THP.P.624 Board 624
THE DEVELOPMENT OF MICROWAVE VEGETATION INDICES ACCORDING TO WINDSAT DATA
Yunqing Li, Jiancheng Shi, Qiang Liu, Institute of Remote Sensing Applications, CAS, China

THP.P.625 Board 625
CLUTTER FROM MOUNTAIN TERRAIN AT 94 GHZ
Helmut Essen, Maxonic GmbH, Germany; Stefan Sieger, Gregor Biegel, Anika Maresch, Andreas Danklmayer, Fraunhofer-FHR, Germany

THP.P.626 Board 626
ATMOSPHERIC EFFECTS ON VEGETATION INDICES OF TM AND ETM+ IMAGES FROM A TROPICAL REGION USING THE 6S MODEL
Mauro A. Homem Antunes, Federal Rural University of Rio de Janeiro, Brazil; José Marinaldo Gleriani, Federal University of Viçosa, Brazil; Paula Debiasi, Federal Rural University of Rio de Janeiro, Brazil

THP.P.627 Board 627
A STATUS REPORT ON AUSCOVER CALVAL (AUSTRALIAN ACTIVITIES IN CALIBRATION AND VALIDATION)
Simon Jones, Mariela Soto-Berelov, RMIT University, Australia; Tim Malthus, Alex Held, Commonwealth Scientific and Industrial Research Organisation, Australia; Kasper Johansen, The University of Queensland, Australia; Lola Suárez, RMIT University, Australia; Ben Sparrow, University of Adelaide, Australia

THP.P.628 Board 628
RADAR AND OPTICAL REMOTE SENSING TIME-SERIES FOR MONITORING CHANGES IN TROPICAL FOREST IN GUYANA
Johannes Reiche, Martin Herold, Dirk Hoekman, Jan Verbesselt, Wageningen University, Netherlands

THP.P.629 Board 629
PARAMETERIZATION OF A TREE-SCALE FOREST PROCESS-BASED MODEL WITH VERY HIGH RESOLUTION SATELLITE IMAGES
Guerric Le Maire, Yann Nouvellon, Olivier Roupsard, CIRAD, France; Christophe Proisy, Pierre Couteron, IRD, France; Jean Dauzat, Mathias Christina, Fabien Charbonnier, CIRAD, France; Jose-Luiz Stape, North Carolina State University, United States

THP.P.630 Board 630
SEMI-AUTOMATIC EXTRACTION OF DIGITAL SURFACE MODEL USING ALOS/PRISM DATA WITH ENVI
Wenjian Ni, Zhifeng Guo, Zhiyu Zhang, Institute of Remote Sensing Applications, CAS, China; Guoqing Sun, Wenli Huang, University of Maryland, United States

Thursday, July 26 17:20 - 19:00 Poster Area
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Quantifying Vegetation Processes and Structure

Session Co-Chairs: Richard Lucas, Aberystwyth University; Tishampati Dahr, University of Adelaide

THP.P.631 Board 631
MAPPING FOREST ABOVE-GROUND BIOMASS AND ITS CHANGES FROM LVIS WAVEFORM DATA
Wenli Huang, Guoqing Sun, Ralph Dubayah, University of Maryland, College Park, United States; Zhiyu Zhang, Chinese Academy of Sciences, United States; Wenjian Ni, University of Maryland, United States

THP.P.632 Board 632
BOREAL FOREST BIOMASS MAPPING WITH P-BAND SAR BACKSCATTER
Maciej J. Soja, Gustaf Sandberg, Chalmers University of Technology, Sweden; Lars M.H. Ulander, Swedish Defence Research Agency, Sweden

THP.P.633 Board 633
FDTD BASED VEGETATION SIMULATION - APPLICATION TO MULTIPLE WAVELENGTHS AND VEGETATION SPECIES
Tishampati Dhar, Doug Gray, Carl Menges, University of Adelaide, Australia

THP.P.634 Board 634
CANOPY LAYERING: EXPLORING VERTICAL FOREST STRUCUTURE AT THE LANDSCAPE SCALE
Amanda Whitehurst, Ralph Dubayah, Anuradha Swatantran, University of Maryland, United States; J. Bryan Blair, NASA Goddard Space Flight Center, United States; Michelle Hofton, University of Maryland, United States

THP.P.635 Board 635
UK-DMC2 SATELLITE DATA FOR DERIVING BIOPHYSICAL PARAMETERS OF OIL PALM TREES IN MALAYSIA
Kasturi Devi Kanniah, Kian Pang Tan, Universiti Teknologi Malaysia, Malaysia; Arthur Philip Cracknell, University of Dundee, United Kingdom

THP.P.636 Board 636
STATUS OF X-BAND SAR APPLICATIONS IN FORESTRY
Steffen Kuntz, Astrium / Infoterra GmbH, Germany

THP.P.637 Board 637
FOREST MONITORING IN CONGO BASIN WITH COMBINED USE OF SAR C- & L-BAND
Kathrin Einzmann, Jörg Haarpaintner, Yngvar Larsen, Norut, Norway

THP.P.638 Board 638
ABOVEGROUND BIOMASS ESTIMATION OF TROPICAL PEAT SWAMP FORESTS USING SAR AND OPTICAL DATA
Sandra Englhart, Ludwig-Maximilians-Universität München, Germany; Jonas Franke, Vanessa Keuck, Remote Sensing Solutions GmbH, Germany; Florian Siegert, Ludwig-Maximilians-Universität München / Remote Sensing Solutions GmbH, Germany

THP.P.639 Board 639
THE GRASS PROJECT: GNSS REFLECTOMETRY ANALYSIS FOR BIOMASS MONITORING - EXPERIMENTAL CAMPAIGNS
Alejandro Egido, Marco Caparrini, Starlab Barcelona S.L., Spain; Simonetta Paloscia, Emanuele Santi, Consiglio Nazionale delle Ricerche IFAC, Italy; Leila Guerriero, Tor Vergata University of Rome, Italy; Nazzareno Pierdicca, Sapienza Università di Roma, Italy; Nicolas Floury, European Space Agency, Netherlands

THP.P.640 Board 640
POLARIMETRIC C BAND DATA FOR DEFORESTATION MAPPING IN BRAZILIAN TROPICAL FOREST
Emerson Servello, IBAMA, Brazil; Tatiana Kuplich, Yosio Edemir Shimabukuro, National Institute for Space Research (INPE), Brazil; Edson Sano, IBAMA, Brazil

Remote Sensing for Disease and Environmental Stress Detection

Session Chair: Irena Hajnsek, ETH Zürich / DLR

THP.P.641 Board 641
VALIDATION OF BIPLS FOR IMPROVING YIELD ESTIMATION OF RICE PADDY FROM HYPERSPECTRAL DATA IN WEST JAVA, INDONESIA
Taichi Takayama, Atsushi Uchida, Hozuma Sekine, Kotaro Fukuhara, Keigo Yoshida, Mitsubishi Research Institute, Inc., Japan; Osamu Kashimura, Japan Space Systems, Japan; Sidik Muljono, Arief D, M Evri, Muhamad Sadly, Agency for the Assessment and Application of Technology (BPPT), Indonesia

THP.P.642 Board 642
SPECTRAL DIFFERENCES OF OPPOSITE SIDES OF STRIPE RUST INFESTED WINTER WHEAT LEAVES USING ASD'S LEAF CLIP
Jinling Zhao, Lin Yuan, Juhua Luo, Shizhou Du, Linsheng Huang, Wenjiang Huang, Beijing Research Center for Information Technology in Agriculture, China

THP.P.643 Board 643
TREND ANALYSIS OF MODIS TIME-SERIES USING DIFFERENT VEGETATION INDICES FOR MONITORING OF CROPLAND DEGRADATION AND ABANDONMENT IN CENTRAL ASIA
Olena Dubovyk, Gunter Menz, Asia Khamzina, University of Bonn, Germany

THP.P.644 Board 644
SPECTRAL DISEASE INDICES FOR THE DETECTION AND DIFFERENTIATION OF PLANT DISEASES
Anne-Katrin Mahlein, Till Rumpf, Pascal Welke, Ulrike Steiner, Heinz-Wilhelm Dehne, Lutz Plümer, Erich-Christian Oerke, University Bonn, Germany

THP.P.645 Board 645
ANALYSIS OF MODIS LAI/FAPAR TIME SERIES DATA FOR DROUGHT MONITORING IN THE ROMANIAN MURES BASIN
Argentina Teodora Nertan, Gheorghe Stancalie, National Meteorological Administration, Romania

THP.P.646 Board 646
RESPONSE OF NDVI OF SPRING WHEAT TO CLIMATE WARMING IN MINQIN OF CHINA
Dihua Cai, Institute of Arid Meteorology, China Meteorological Administration, China; Xiaowen Zhang, Lanzhou University of Finance and Economics, China; Shiqian Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, CAS, China

THP.P.647 Board 647
TESTING CROP STRESS BY MODIS VEGETATION INDEX IN THE NORTH CHINA PLAIN
Xiaodong Wang, State Key Laboratory of Earth Surface Processes and Resource Ecology, China; Yansheng Dong, Beijing Research Center for Information Technology in Agriculture, China; Jianwei Yue, Beijing Normal University, China; Hongping Chen, State Key Laboratory of Earth Surface Processes and Resource Ecology, China

THP.P.648 Board 648
USING MODIS IMAGERY TO ESTIMATE THE DAMAGE OF RAINFED RICE IN NORTHEASTERN THAILAND
Yuei-An Liou, Hsueh-Chun Sha, National Central University, Taiwan

THP.P.649 Board 649
MONITORING WHEAT QUALITY PROTEIN CONTENT IN CRITICAL PERIOD BASED DIVISION BY REMOTE SENSING
Wang Dacheng, Li Yufei, Fan Wenjie, Qiming Qin, Institute of RS and GIS, Peking University, China

THP.P.650 Board 650
EVI'S ESTIMATION TO IMPROVE THE MONITORING OF SUGARCANE USING TRMM SATELLITE DATA
Renata Ribeiro do Valle Gonçalves, Jurandir Zullo Junior, Priscila Pereira Coltri, Cepagri/ Unicamp, Brazil; Luciana Alvim dos Santos Romani, Embrapa Agriculture Informatics, Brazil

THP.P.651 Board 651
REGULARIZATION STRATEGIES FOR AGRICULTURAL MONITORING: THE ENMAP VEGETATION ANALYZER (AVA)
Katja Richter, Tobias Hank, Ludwig-Maximilians-Universität München, Germany; Clement Atzberger, University of Natural Resources and Life Sciences (BOKU), Austria; Matthias Locherer, Wolfram Mauser, Ludwig-Maximilians-Universität München, Germany

THP.P.652 Board 652
MONITORING BIENNIAL BEARING EFFECT ON COFFEE YIELD USING MODIS REMOTE SENSING IMAGERY
Tiago Bernardes, Maurício Alves Moreira, Marcos Adami, Bernardo Friedrich Theodor Rudorff, National Institute for Space Research (INPE), Brazil

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Urban Remote Sensing II

Session Chair: Paolo Gamba, University of Pavia

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STRUCTURAL VULNERABILITY IN THE AFFECTED AREA OF THE 2011 TOHOKU EARTHQUAKE TSUNAMI, INFERRED FROM THE POST-EVENT AERIAL PHOTOS
Hideomi Gokon, Shunichi Koshimura, Tohoku University, Japan

THP.P.653 Board 653
DETAILED REPRODUCTION OF THREE-DIMENSIONAL CROWN SHAPE AND FOLIAGE DISTRIBUTION OF TREES IN AN URBAN AREA USING HIGH-RESOLUTION AIRBORNE LIDAR
Haruki Oshio, Takashi Asawa, Tokyo Institute of Technology, Japan; Akira Hoyano, The Open University of Japan, Japan; Satoshi Miyasaka, Nakanihon Air Service CO., LTD, Japan

THP.P.654 Board 654
ADAPTIVE FILTERING OF INTERFEROMETRIC PHASES AT BUILDING LOCATION
Clemence Dubois, Antje Thiele, Stefan Hinz, Karlsruhe Institute of Technology (KIT), Germany

THP.P.655 Board 655
A COMPLEX DATA BASED BUILDING EDGE DETECTOR FOR TANDEM-X MISSION
Fabio Baselice, Giampaolo Ferraioli, Università degli Studi di Napoli Parthenope, Italy; Diego Reale, Consiglio Nazionale delle Ricerche, Italy

THP.P.656 Board 656
DETERMINATION OF MECHANISMS THAT CAN OCCUR IN NLOS URBAN CANYON
Azza Mokadem, Laetitia Thirion-Lefevre, Supelec, France; Elise Koeniguer, Office National d'Etudes et de Recherches Aérospatiale, France; Florence Tupin, Télécom ParisTech, France

THP.P.657 Board 657
NOVEL SPECTRAL SIMILARITY MEASURE FOR HIGH RESOLUTION URBAN SCENES
Bin Chen, Anthony Vodacek, Nathan Cahill, Rochester Institute of Technology, United States

THP.P.658 Board 658
FRACTAL MAPS DEPENDENCE ON SAR LOOK ANGLE
Gerardo Di Martino, Antonio Iodice, Daniele Riccio, Giuseppe Ruello, Università degli Studi di Napoli Federico II, Italy; Ivana Zinno, Istituto per il Rilevamento elettromagnetico dell'Ambiente (IREA) - CNR, Italy

THP.P.659 Board 659
MAN-MADE STRUCTURE EDGE DETECTOR USING A SINGLE COSMO-SKYMED SPOTLIGHT IMAGE
Fabio Baselice, Giampaolo Ferraioli, Vito Pascazio, Università degli Studi di Napoli Parthenope, Italy

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Jin A Lee, University of Science & Technology, Republic of Korea; Sung Soon Lee, Korea Institute of Geoscience and Mineral Resources, Republic of Korea

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Yakoub Bazi, Naif Alajlan, Salim Malek, Mohamed A. Bencherif, King Saud University, Saudi Arabia

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Kenichi Honda, Taira Nakanishi, Masamichi Haraguchi, Naruo Mushiake, Tomoharu Iwasaki, Kokusai Kogyo Co., LTD., Japan; Hiroyuki Satoh, Toshihide Kobori, Yoshikazu Yamaguchi, Public Works Research Institute, Japan

Modeling and Estimation of Hydrological and Vegetation Parameters in Agricultural Regions

Session Chair: Thomas Jagdhuber, German Aerospace Center - DLR

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Xiaohe Gu, Yansheng Dong, Li Ma, Yingying Dong, Beijing Research Center for Information Technology in Agriculture, China

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Priscila Pereira Coltri, Jurandir Zullo Junior, Renata Ribeiro do Valle Gonçalves, University of Campinas, Brazil; Luciana Alvim dos Santos Romani, Brazilian Agricultural Research Corporation (EMBRAPA), Brazil; Hilton Silveira Pinto, University of Campinas, Brazil

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SIMULTANEOUS USAGE OF OPTIC AND THERMAL HYPERSPECTRAL SENSORS FOR CROP WATER STRESS CHARACTERIZATION
Luca Pipia, Fernando Pérez, Anna Tardà, Lucas Martínez, Roman Arbiol, Institut Cartogràfic de Catalunya, Spain

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INTEGRATION OF MULTI-RESOLUTION DATA FOR CROP LAI ESTIMATION BASED ON CONTINUOUS WAVELET
Yingying Dong, Jihua Wang, Beijing Research Center for Information Technology in Agriculture;Institute of Agricultural Remote Sensing & Information System Application, Zhejiang University, China; Cunjun Li, Guijun Yang, Xingang Xu, Jinling Zhao, Wenjiang Huang, Beijing Research Center for Information Technology in Agriculture, China

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Taifeng Dong, Bingfang Wu, Jihua Meng, Qiangzi Li, Miao Zhang, Institute of Remote Sensing Applications, CAS, China

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Yiming Chen, Wuming Zhang, Kai Yan, Xiaowen Li, Beijing Normal University, China; Guoqing Zhou, Guilin University of Technology, China

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Lukáš Brodský, Gisat, Czech Republic; Herve Poilvé, Astrium GEO-Information Services, France; Václav Vobora, Gisat, Czech Republic; Patrice Bicheron, Astrium GEO-Information Services, France; Tomáš Soukup, Gisat, Czech Republic; Marek Tinz, Astrium GEO / Infoterra GmbH, Germany

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Vrushali Patil, Surya Durbha, Adinarayana J, Indian Institute of Technology, Bombay, India

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Zhenfeng Zang, Zhongren Nan, Ruofan Wang, Bin Yan, Lanzhou University, China

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REMOTE SENSIG METHODS APPLIED TO QUANTIFY THE WATER BALANCE IN AN OLD IRRIGATION COMMUNITY
Pere Serra, Universitat Autònoma de Barcelona, Spain; Enric Queralt, Comunitat Usuaris Aigües Delta Llobregat, Spain; Cristhian Pin, Parc Agrari Baix Llobregat, Spain; Oscar Gonzalez, Universitat Autònoma de Barcelona, Spain

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ACTUAL EVAPOTRANSPIRATION BY USE OF MODIS DATA
Raffaella Matarrese, Ivan Portoghese, Michele Vurro, National Research Council of Italy, Italy; Pietro Soldo, Consorzio di Bonifica per la Capitanata, Italy

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Session Chair: Paolo Gamba, University of Pavia

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EXPLORING URBAN HEAT ISLANDS IN USA OVER LAST 10 YEARS USING MODIS AND LANDSAT
Ping Zhang, NASA Goddard Space Flight Center / ERT, United States; Marc Imhoff, Robert E. Wolfe, Lahouari Bounoua, NASA Goddard Space Flight Center, United States

THP.P.762 Board 762
TSUNAMI FLOW MEASUREMENT USING THE VIDEO RECORDED DURING THE 2011 TOHOKU TSUNAMI ATTACK
Shunichi Koshimura, Satomi Hayashi, Tohoku University, Japan

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THE MITIGATION EFFECT OF CONFIGURATION AND CONTEXT OPTIMIZATION OF URBAN HOLDINGS ON HEAT ISLAND
Yupeng Liu, Deyong Yu, Bin Xun, State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University, China

THP.P.764 Board 764
MODELING OF BUILDINGS IN DENSE URBAN AREAS FROM AIRBORNE LIDAR AND AERIAL PHOTOGRAPH
Junichi Susaki, Kyoto University, Japan

THP.P.765 Board 765
URBANIZATION AND ITS IMPACT ON ENVIRONMENTAL QUALITY IN SHANGHAI
Linli Cui, Shanghai Center for Satellite Remote Sensing and Application, China; Jun Shi, Shanghai Climate Center, Shanghai Meteorological Bureau, China; Zhao Chen, Fudan University, China

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TEMPERATURE DIURNAL CHANGE OF WALLS AND THE EFFECT ON MODELING URBAN THERMAL ANISOTROPY
Hao Sun, Yunhao Chen, Wenfeng Zhan, Beijing Normal University, China; Wei Ma, China Metallurgical Geology Bureau, China

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Çaglar Senaras, Baris Yüksel, HAVELSAN A.S., Turkey; Mete Özay, Fatos Yarman Vural, Middle East Technical University, Turkey

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Linlin Lu, Qingting Li, Huadong Guo, Center for Earth Observation and Digital Earth, CAS, China; Martino Pesaresi, Daniele Ehrlich, Institute for the Protection and Security of the Citizen, European Commission, Joint Research Centre, Italy

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TEMPORAL ANALYSIS OF URBAN HEAT ISLAND AND RADIATION BALANCE FOR A DESERT URBAN AREA
Michele Lazzarini, Hosni Ghedira, Masdar Institute of Science and Technology, United Arab Emirates

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Xiaofeng Zhao, Huina Wang, Feng Chen, Institute of Urban Environment, CAS, China

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Dapeng Yan, Qiming Zeng, Peking University, China; Xiaofang Guo, Daqing Ge, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources (AGRS), China

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Pei Tao, Yunping Chen, Ling Tong, University of Electronic Science and Technology of China, China

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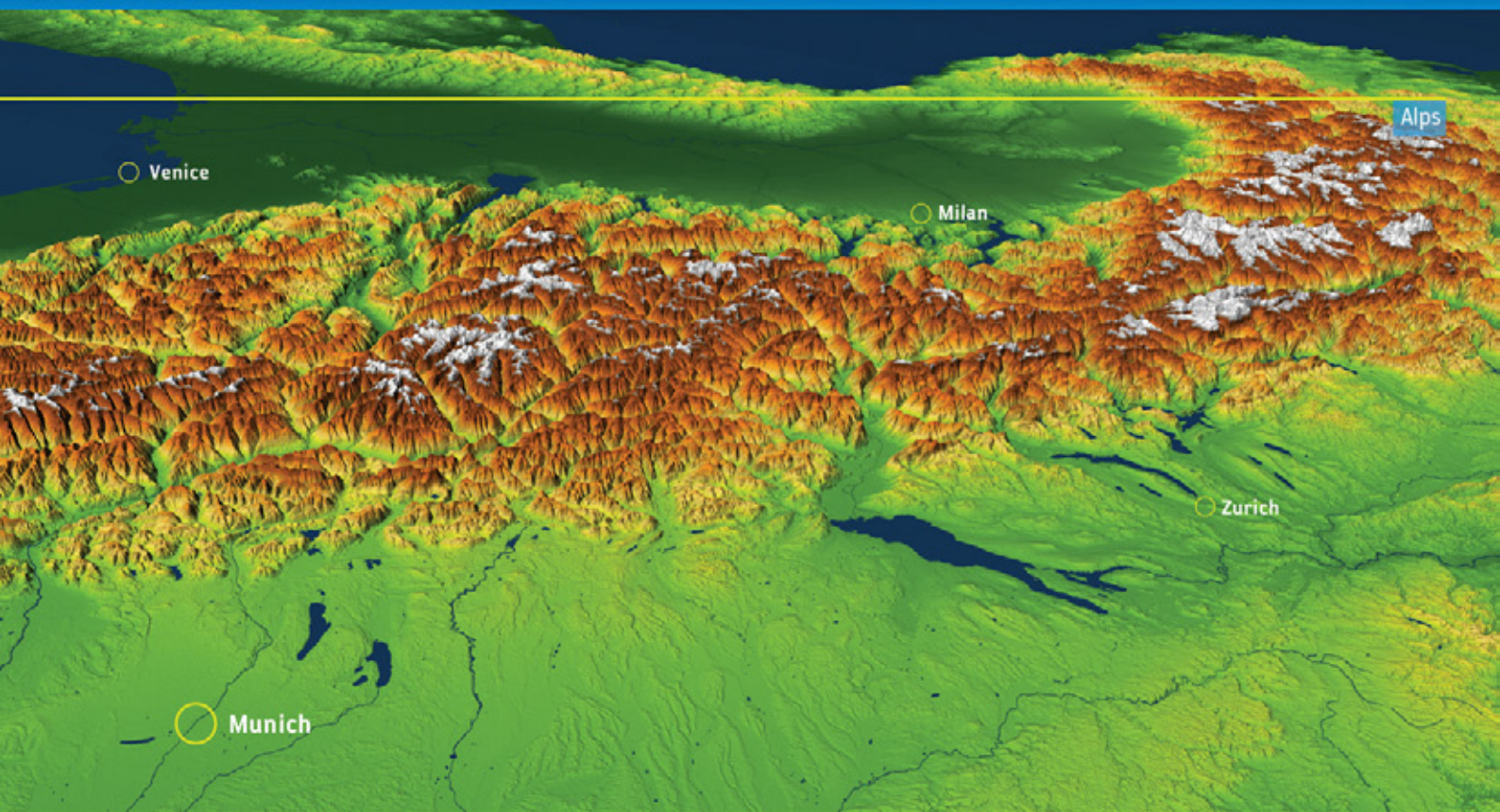
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