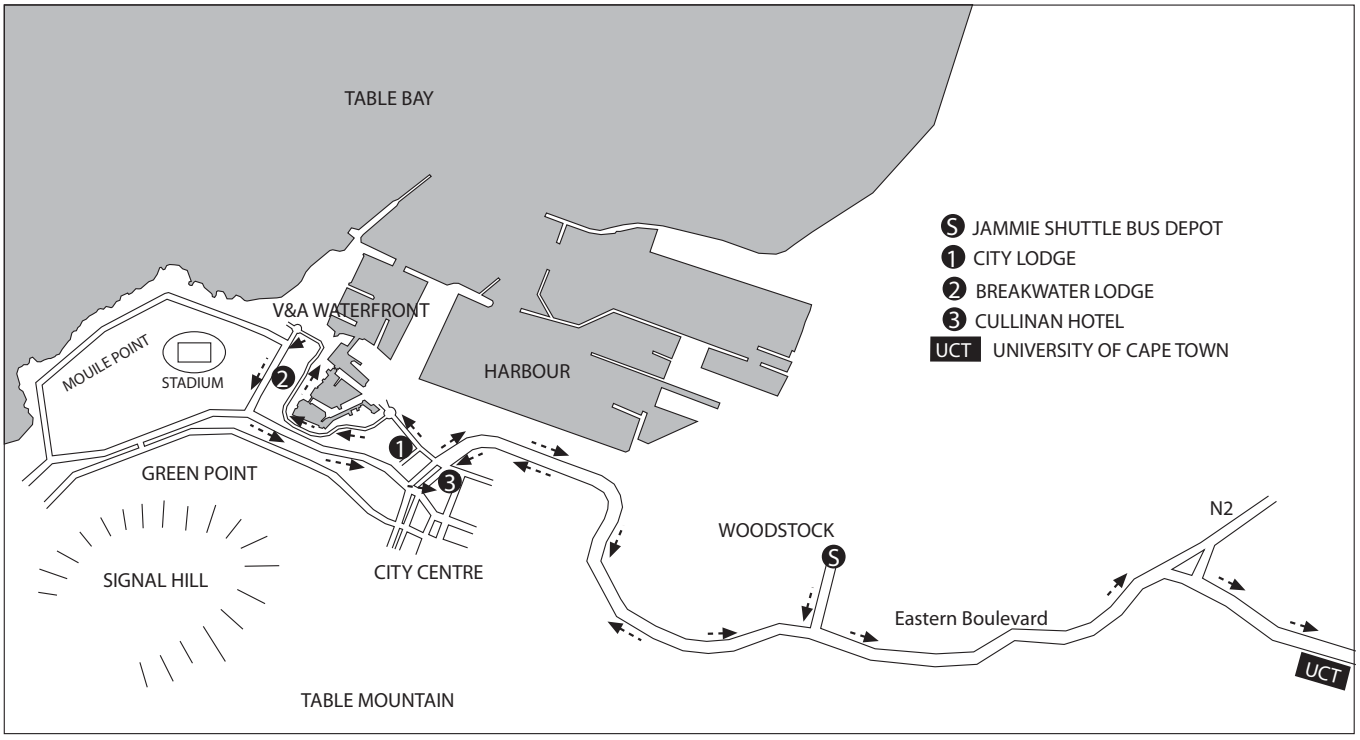
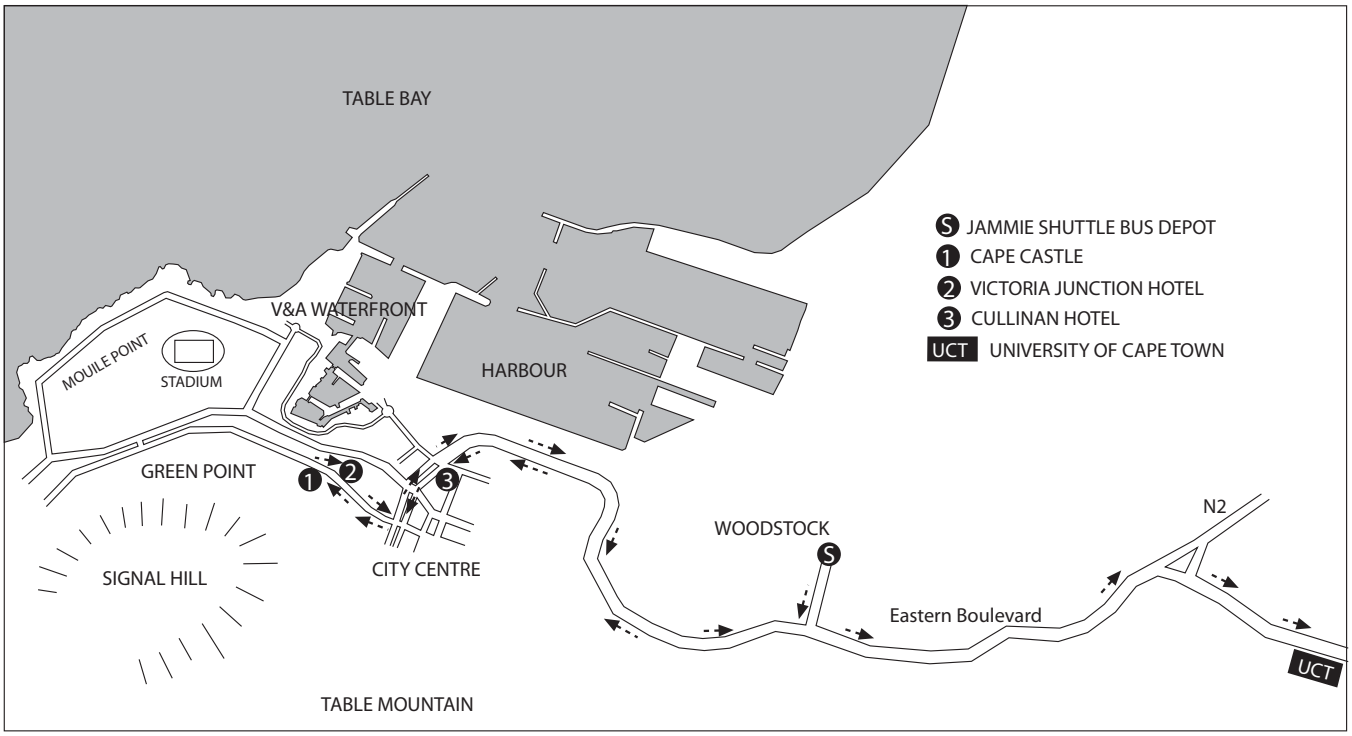
Table of Contents

Bus Circuits to and from IGARSS 2009 Venues and Hotels ii
Map of University of Cape Town Campus iii
Map of Menzies Building iv
Map of Jameson and Molly Blackburn Buildings v
Maps of Leslie Building vi
Exhibitors and Exhibition Hours viii
Poster Session Layout (Jameson Hall) ix
Emergency Nos. and Security Information x
Safety Cautions x
Hotels Addresses and Telephone Numbers x
Taxis x
Bus Schedule x
Registration, Access to Conference and Press Accreditation x
Lunches and Special Dietary Requirements xi
Schedule Overview xii
Sponsors xvii
Greetings from GRSS President xvii
General Chair's Welcome xvii
Technical Programme Overview xix
Local Organizing Committee xx
Theme Coordinators and Session Organizers xxi
Invited Session Organizers xxi
Reviewers xxii
About Cape Town xxviii
Visitor Information xxviii
Weather xxix
Local time xxix
Currency xxix
Taxation xxix
Internet Access xxix
Tutorials xxx
Short Courses on Remote Sensing and Geospatial Sciences xxx
Technical Committee and Business Meeting Programme xxxi
Oral Presentation Instructions xxxii
Poster Presentation Instructions xxxii
K-12 Outreach Activities xxxii
Social Events xxxiv
Student Paper Prize Competition xxxv
Awards xxxvi
IEEE GRSS Membership xxxvii
IEEE GRSS Chapters xxxix
Future IGARSS Symposia xl
Opening and Plenary Agenda xl
Technical Programme 1
Topical Session Index 146
Author Index 153

Bus Circuits to and from IGARSS 2009 Venues and Hotels

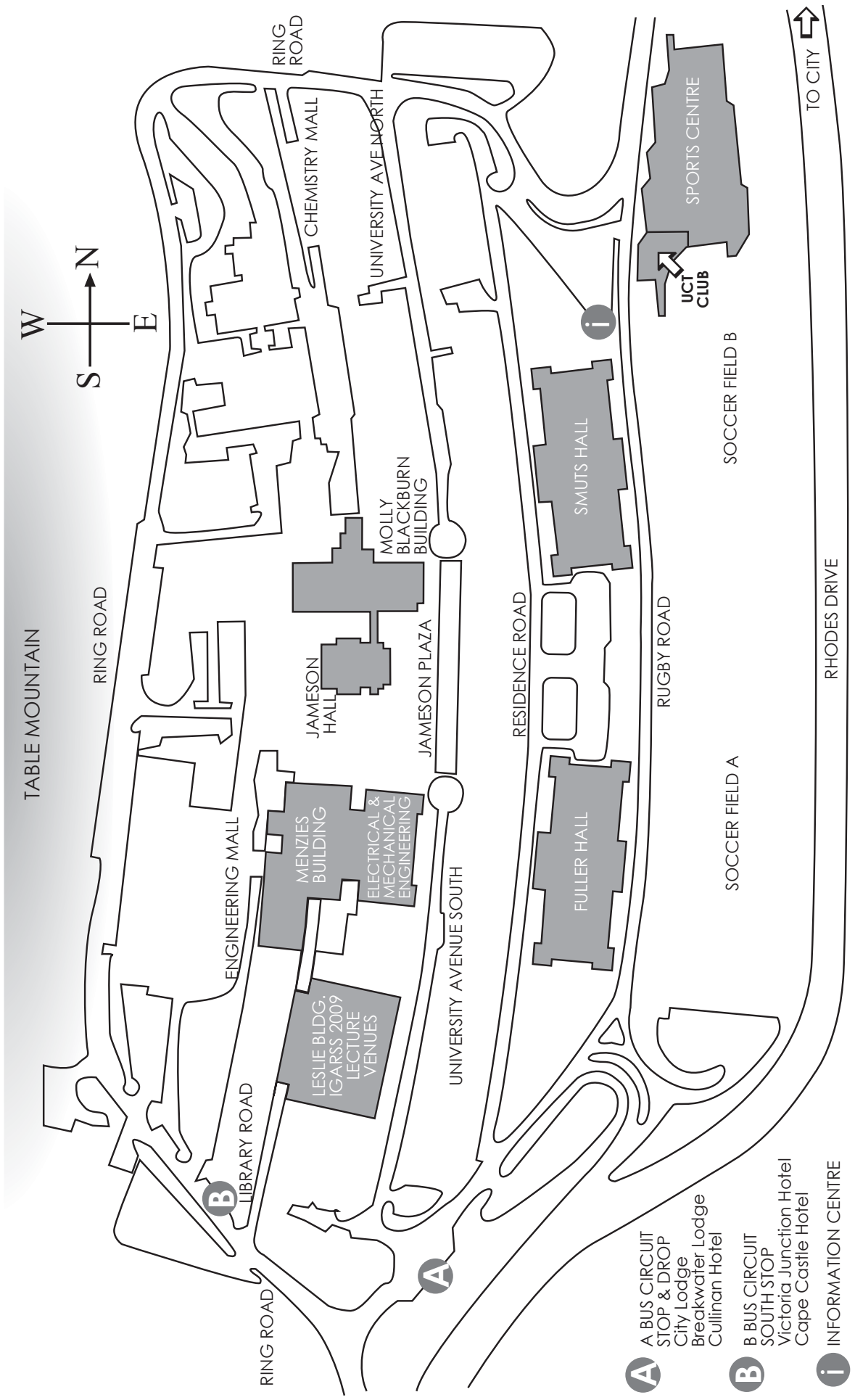


A BUS CIRCUIT

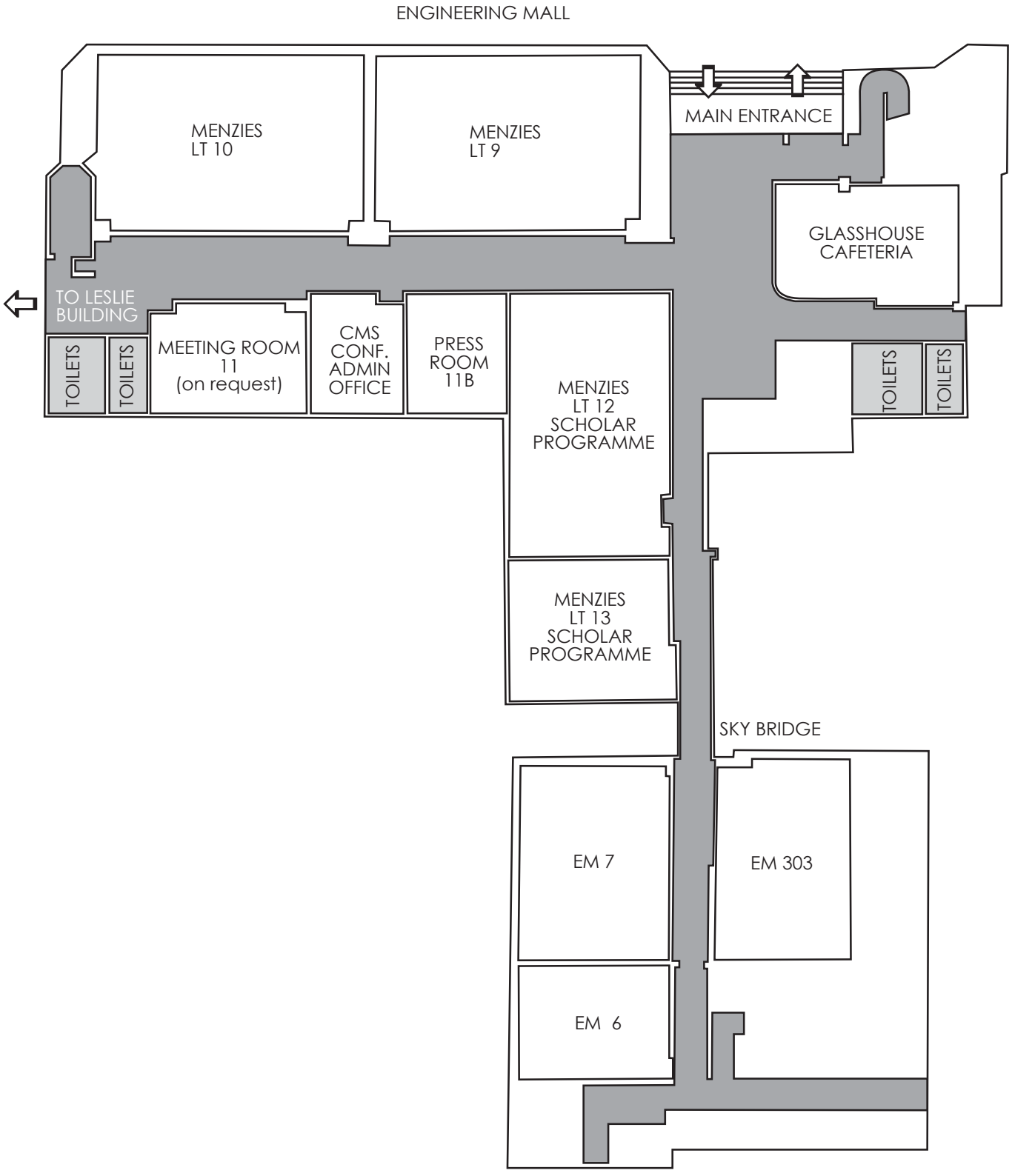


B BUS CIRCUIT

Map of University of Cape Town Campus

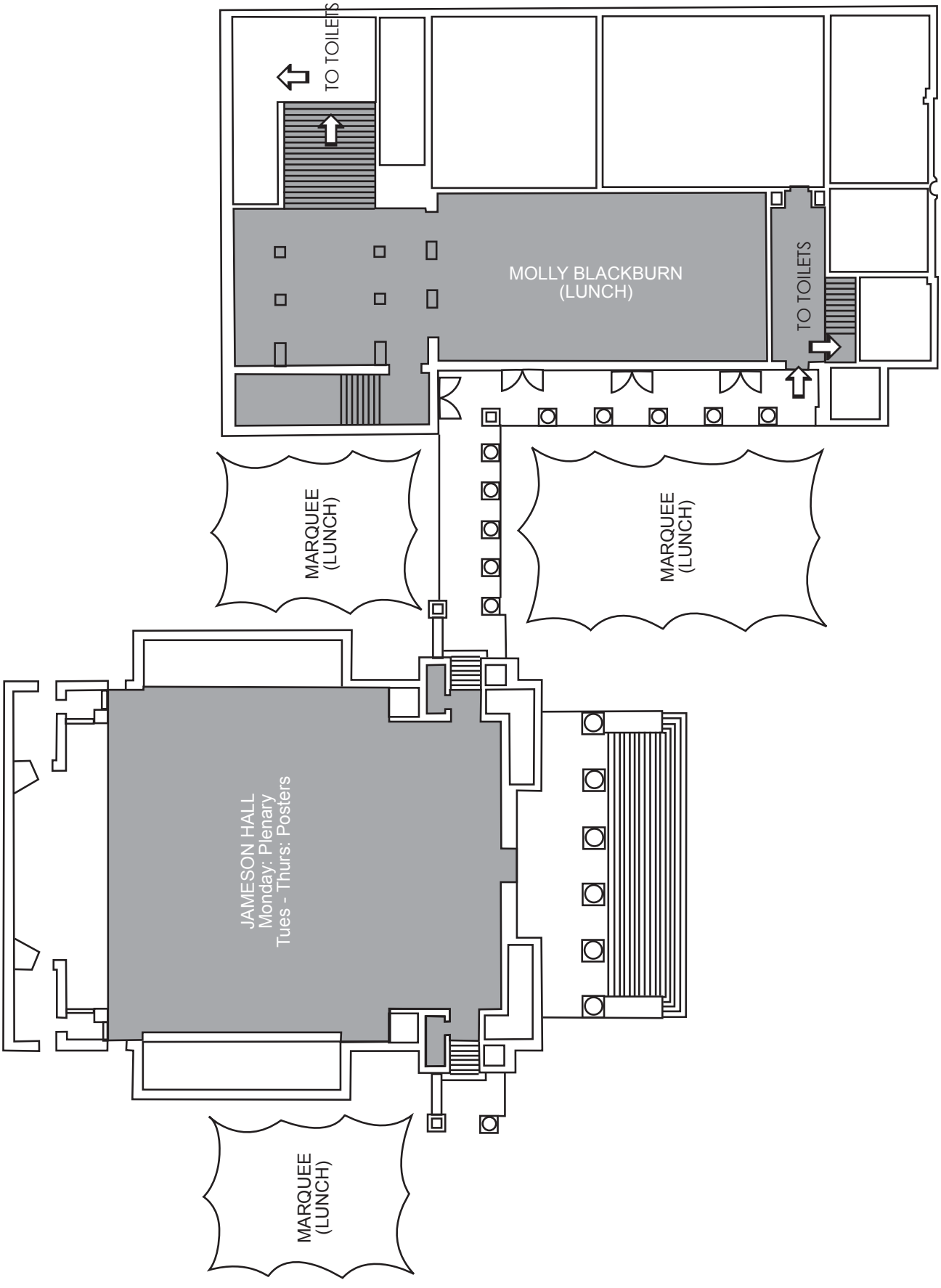


Map of Menzies Building



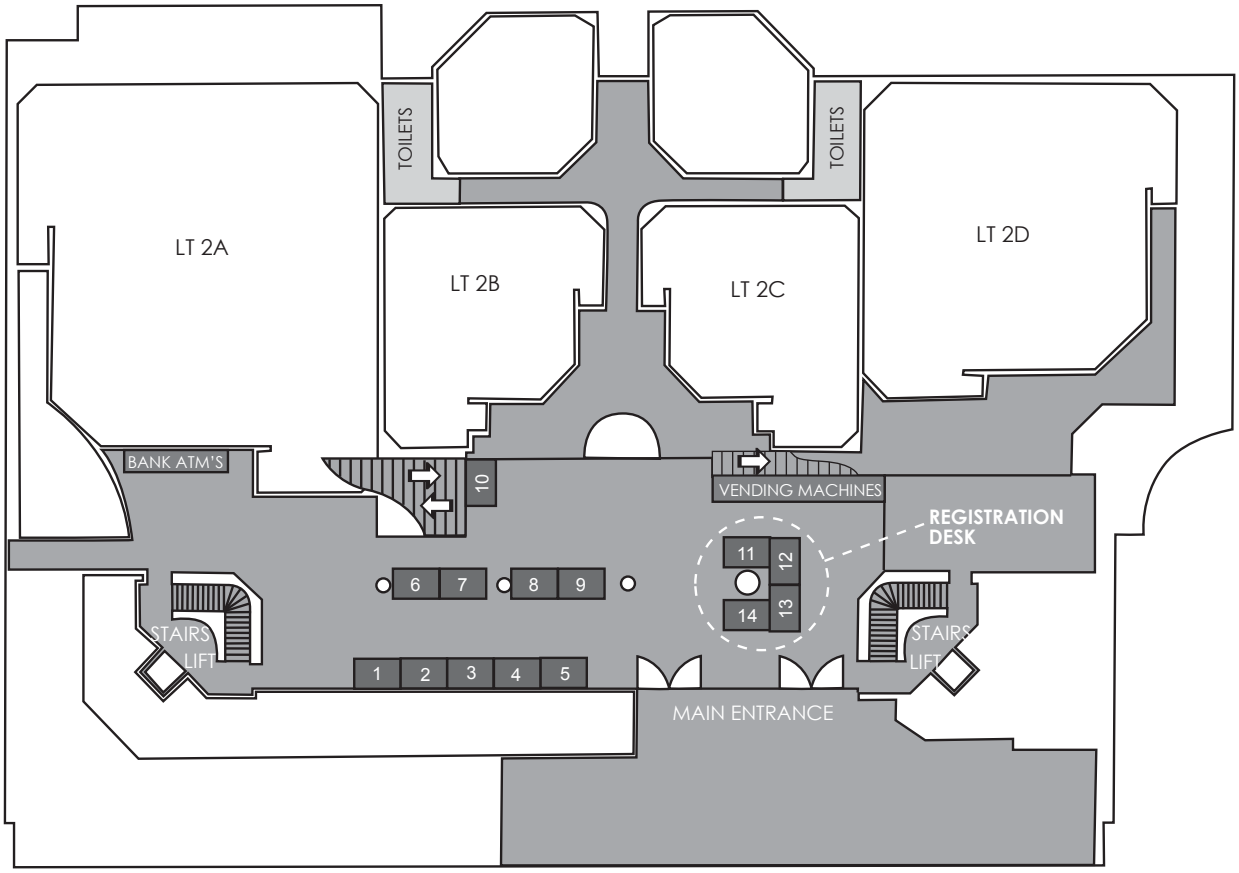
MENZIES & EM BUILDINGS Level 3
IGARSS 2009 sessions, venues & admin.

Map of Jameson and Molly Blackburn Buildings

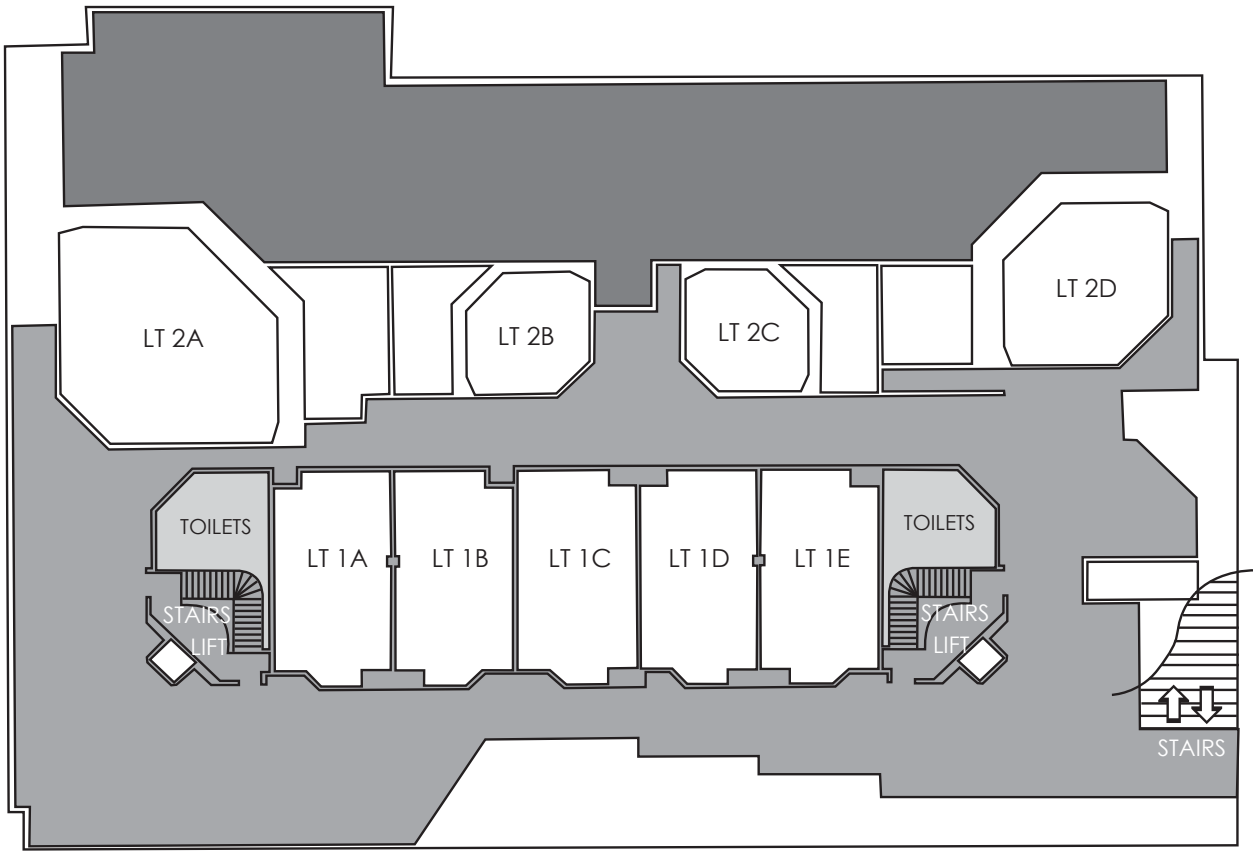


JAMESON HALL, MOLLY BLACKBURN BUILDING & MARQUEE

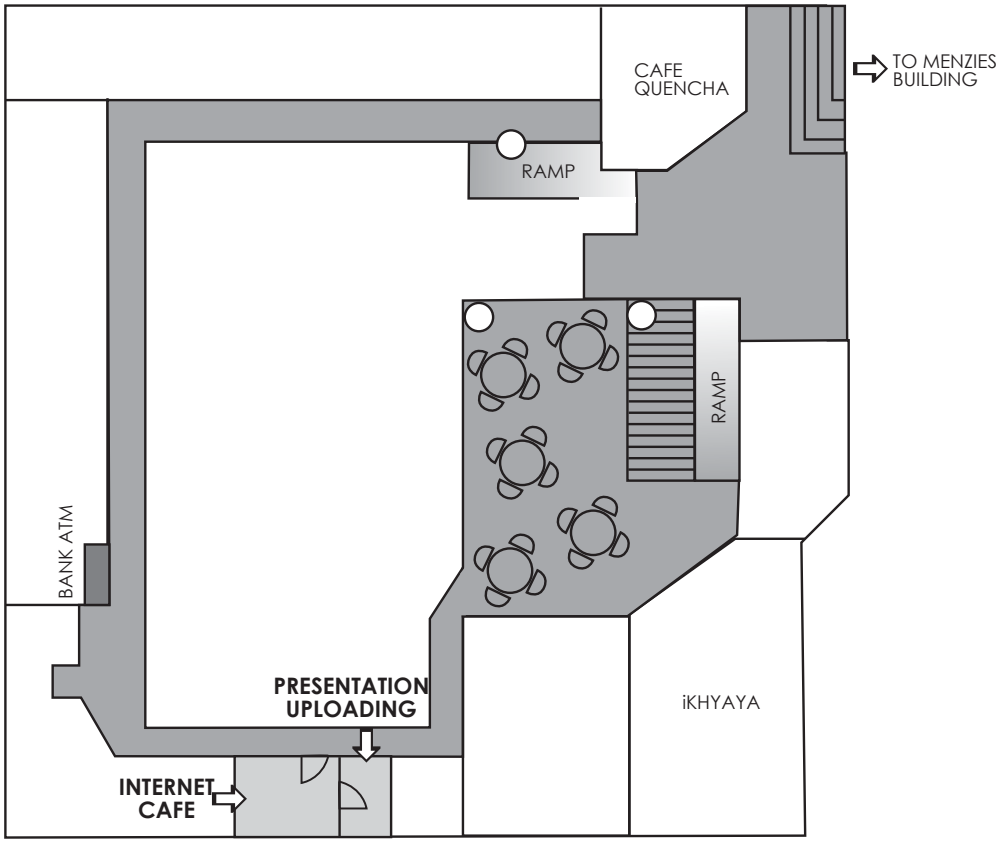
Maps of Leslie Building



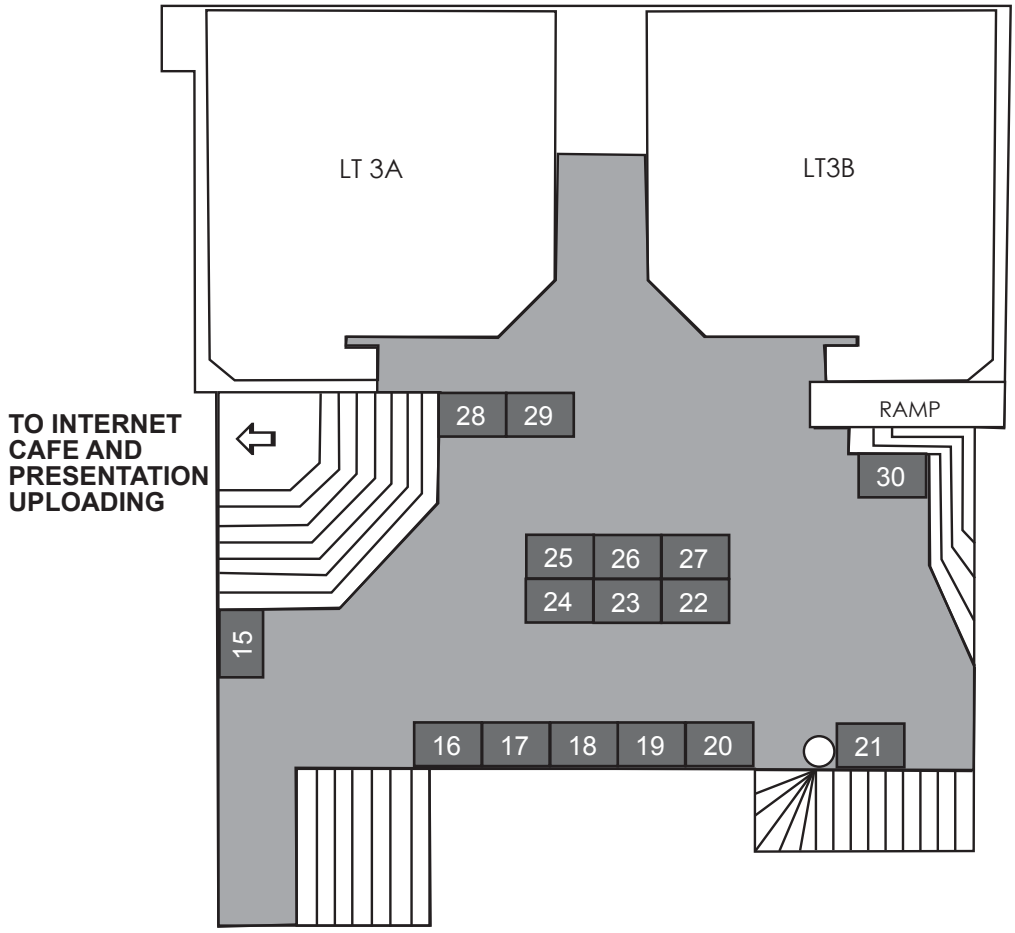
LESLIE BUILDING GROUND FLOOR LEVEL 2
IGARSS 2009 sessions, venues & exhibition



LESLIE BUILDING GROUND FLOOR LEVEL 1
IGARSS 2009 sessions, venues & exhibition



LESLIE BUILDING UPPER MEZZANINE LEVEL
IGARSS 2009 sessions, venues & exhibition



LESLIE BUILDING LOWER MEZZANINE LEVEL
IGARSS 2009 sessions, venues & exhibition

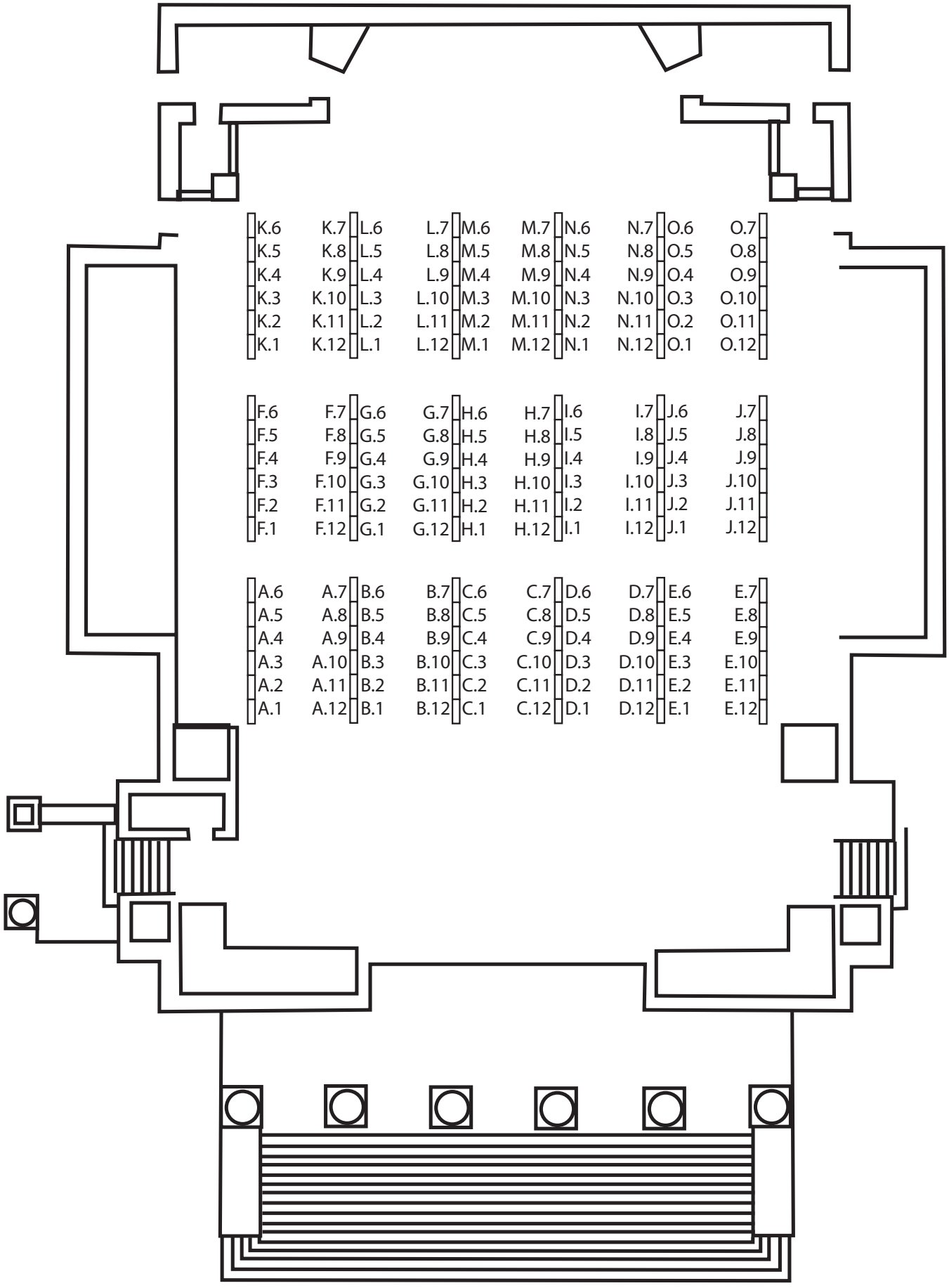
Exhibitors and Exhibition Hours

Exhibit Hours:

Tuesday, July 14: 10:00 – 16:00
Wednesday, July 15: 10:00 – 16:00
Thursday, July 16: 10:00 – 16:00

Booth Nos.	Exhibitor
1 and 2	GRSS / IGARSS 2009
3	Korea Aerospace Research Institute (KARI)
4 and 5	Surrey Satellite Technology
6 and 7	Japan Aerospace Exploration Agency (JAXA)
8	Pacific Geomatics
9	GeoEye
10	Virtalis
11, 12, 13, 14	IGARSS Registration
15	Southern Mapping Company
16	GIMS (Pty) Ltd
17	ERSDAC (Earth Remote Sensing Data Analysis Center)
18	Orbital Systems, Ltd.
20	MDA Geospatial Services Inc.
21	Canadian Space Agency
22, 23, 24	Agricultural Research Council Institute for Soil, Climate and Water
25	MapAfrica
26	Taylor & Francis
27	ITRES Research Limited
28	CREASO GmbH
29 and 30	NASA
31	Council for Geoscience

Poster Session Layout (Jameson Hall)



Emergency Nos. and Security Information

Campus Protection Services (CPS)
..... 021 650 2222 or 2223
Bernard Soules (Duty Security Manager)
.....082 801 2968
Gary Dyssel (Alternate Maanager).....082 377 0206
Warren Williams (Supervisor).....079 213 0412

Call above numbers for any security, safety or health related problems.

Safety Cautions

Cape Town, like any large city, has risks of theft and criminality. Additional security guards will be on patrol in and around the University of Cape Town venues for the duration of the conference. Nevertheless, please take sensible precautions, both on and off campus, such as:

- Do not walk around alone.
- Avoid lonely or dark streets and places.
- Do not draw money at automatic tellers in lonely places or if there are strangers in the vicinity. Preferably, have a friend standing by, and avoid being distracted by strangers while operating an ATM, or draw money from the hotels or inside banks.
- Avoid carrying cameras or obvious tourist attire when walking in city streets.
- Lock valuable in the room safes provided by the hotels, including your lap tops (if they will fit) when you leave your room.
- Do not leave valuables in cars, especially not visible on back seats.
- Lock car doors while in transit.

Hotels Addresses and Telephone Numbers

TRANSPORT CIRCUIT A: (refer to maps, left)

- Breakwater Lodge - V&A Waterfront 0214061911
- Cullinan Hotel - 1 Cullinan Street Cape Town 0214186920
- City Lodge Waterfront - Dock Road Waterfront 021 4199450

TRANSPORT CIRCUIT B: (refer to maps, left)

- Cape Castle - 3 Main Road Green Point 021 4391016
- Victoria Junction - Somerset Road Green Point 021 4181234

Taxis

Use only metered taxis.

Ensure that the meter is set at the start off each journey.

Fixed fares may apply to airport transits – check with your hotel concierge.

- Excite Taxis 021 4484444
- Marine Taxis 021 4340434

Bus Schedule

Buses will depart from the designated hotels in time for the morning sessions, departing from approx. 08:00 onwards.

Buses will return delegates to the hotels in the evening, from 18:00 onwards, departing from the Circuit A or Circuit B pick up/drop off points (refer to maps for your appropriate bus).

Day-time Shuttle: for the convenience of guests, a shuttle to and from the hotels to the conference venue will operate every half-hour during the day.

Evening shuttle: An evening shuttle will run from the University to the Waterfront for delegates staying at UCT campus residences.

Please display your conference badge to gain access to the designated transport.

Bus transport will be provided to and from the official evening events.

Registration, Access to Conference and Press Accreditation

The IGARSS Registration desk will be on the Ground Floor, Level 2 of the Leslie Building.

Registration Desk Hours

Sunday, July 12:	07:30 – 17:30
Monday, July 13:	07:30 – 17:30
Tuesday, July 14:	07:30 – 17:30
Wednesday, July 15:	07:30 – 17:30
Thursday, July 16:	07:30 – 17:30
Friday, July 17 :	07:30 – 17:30

Access and Registration Badges

IGARSS 2009 is a private event, hosted on the campus of the University of Cape Town. Except for the opening plenary session in the Jameson Hall on Monday 13th July, which is open to the public, the sessions and exhibition are limited to delegates who have completed registration fees and paid the requisite fees, or invited guests who must be made known to the Local Organising Committee. One day registration facilities are provided for incidental visitors to the meetings.

Delegates are requested to wear their name tags at all times while in the conference precinct. Identification may be requested for entrance to the buildings or venues, including the Tuesday evening IGARSS BY NIGHT dinners.

Media

For press accreditation, please contact the registration desk. An office has been set aside for the media. For media contact, please contact Harold Annegarn, General Conference Chair (083 628 4210, hannegarn@gmail.com)

Lunches and Special Dietary Requirements

Lunches will be served from a number of locations, including the Leslie Building, and Molly Blackburn Building adjacent to the Jameson Hall.

Please present a lunch voucher to receive your selected choice of lunch.

Vegetarian options available at selected points – lookout for signs.

Kosher food available at the Kaplan Centre (Library Road south)

Halaal food available at Africa Cuisine (Food court in Steve Biko Students Union & behind (on the mountain side of) the Oppenheimer Institute

IGARSS lunch vouchers will also be honoured at these special diet outlets.

Sunday, July 12

	Menzies EM7 (3rd fl.)	Menzies Red Lab Ext (5th fl.)	Menzies EM6 (3rd fl.)	Menzies Red Lab (5th fl.)	Menzies Blue Lab (4th fl.)	Menzies EM303 (3rd fl.)	Menzies Geomatics Lab (5th fl.)
08:30 - 17:30	FD-1: Understanding and Interpretation of High Resolution SAR Images	FD-3: Applied hyperspectral remote sensing	FD-6: SAR Polarimetry: Basics, Processing Techniques and Applications	FD-7: Recent Advances in Classification	FD-8: Accessing and using MISR products in climate and environmental research		
13:30 - 17:30						HD-1: Modeling the Spectral Responses of Natural Materials under Varying Environmental Parameters: Theoretical and Practical Challenges	HD-6: Introduction to Remote Sensing and Geo-processing Using GRASS GIS
17:30 - 19:30	Welcome Reception, Leslie Building						

Monday, July 13

	Leslie 2A	Leslie 2D	Menzies M9	Menzies M10	Leslie 2B	Leslie 2C	Leslie 3A	Leslie 3B	Leslie 1A	Leslie 1B	Leslie 1C	Leslie 1D	Leslie 1E
09:00 - 12:40	Opening and Plenary Sessions												
14:20 - 16:00	MO3.01: The Maturing A-Train Constellation: Integrated Systems Earth Science and Applications	MO3.02: Geological Applications I	MO3.03: Optical Modeling and Inversion	MO3.04: Sentinel-1, The European Radar Constellation I	MO3.05: SAR	MO3.06: Hyperspectral Sensing I	MO3.07: Forest Resources of Africa	MO3.08: TRMM and GPM I	MO3.09: NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation I	MO3.010: Satellite Sensor Synergy: Observing the African Large Marine Ecosystems I	MO3.011: Satellite Sensing of High Ocean Surface Winds	MO3.012: Panel Session: Opportunities in Global Earth Observation	MO3.013: The TIGER Initiative: Supporting African Efforts Towards a Water Observation System I
16:00 - 16:20	Break												
16:20 - 18:00	MO4.01: NASA's Earth Venture Initiative and the Venture Class Missions	MO4.02: Geological Applications II	MO4.03: Optical Modeling	MO4.04: Sentinel-1, The European Radar Constellation II	MO4.05: Ground Penetrating Radar Algorithms and Applications: Hazard Detection and Subsurface Mapping	MO4.06: Hyperspectral Sensing II	MO4.07: Ocean Surface Scattering	MO4.08: TRMM and GPM II	MO4.09: NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation II	MO4.010: Satellite Sensor Synergy: Observing the Global Marine Ecosystems II	MO4.011: Satellite Sea Surface Temperature	MO4.012: GEOSS Implementation—Uniting Perspectives	MO4.013: The TIGER Initiative: Supporting African Efforts Towards a Water Observation System II

Tuesday, July 14

	Leslie 2A	Leslie 2D	Menzies M9	Menzies M10	Leslie 2B	Leslie 2C	Leslie 3A	Leslie 3B	Leslie 1A	Leslie 1B	Leslie 1C	Leslie 1D	Leslie 1E
09:00 - 10:40	TU1.01: ALOS and other ESA Third Party Missions - Applications for Africa I	TU1.02: TerraSAR-X: Scientific Results I	TU1.03: BiStatic SAR	TU1.04: The Operational Sentinels: New Possibilities for Science I	TU1.05: Student Paper Contest I	TU1.06: Hyperspectral Imagers: Calibration, Modeling & Compensation I	TU1.07: Rough Surface Scattering Techniques	TU1.08: Sensors and Algorithms for Landmine Detection	TU1.09: Target and Object Detection	TU1.010: Active/Passive Microwave Remote Sensing of Terrestrial Snow I	TU1.011: Frequency Allocation for Remote Sensing and RFI mitigation for microwave radiometry	TU1.012: GNSS Remote Sensing of Atmosphere, Ocean and Land I	TU1.013: Remote Sensing for a Better Understanding of Savanna Processes and Dynamics I
10:40 - 11:00	Break												
11:00 - 12:40	TU2.01: ALOS and other ESA Third Party Missions - Applications for Africa II	TU2.02: TerraSAR-X: Scientific Results II	TU2.03: Bistatic SAR: Instruments, Experiments and Applications	TU2.04: The Operational Sentinels: New Possibilities for Science II	TU2.05: Student Paper Contest II	TU2.06: Hyperspectral Imagers: Calibration, Modeling & Compensation II	TU2.07: Volume Scattering	TU2.08: The Use of Ocean Colour Data at Regional Scales: Methodological Considerations and Applications	TU2.09: Hyperspectral Image Classification and Feature Extraction	TU2.010: Active/Passive Microwave Remote Sensing of Terrestrial Snow II	TU2.011: NPOESS Microwave Contributions to Weather Forecasting	TU2.012: GNSS Remote Sensing of Atmosphere, Ocean and Land II	TU2.013: Remote Sensing for a Better Understanding of Savanna Processes and Dynamics II
12:40 - 14:20	Lunch Break (See Poster Section)												
12:00 - 14:00	Young Professionals / GOLD Luncheon, Smuts Dining Hall at Residence Road												
14:20 - 16:00	TU3.01: RADARSAT I	TU3.02: TanDEM-X: The Mission Status	TU3.03: COSMO-SkyMed Mission: Status and Results I	TU3.04: 18 years ESA ERS and ENVISAT Earth Observations	TU3.05: Performance of Operational Surface Deformation Measurements from Radar Interferometry I	TU3.06: Data Assimilation into Numerical Models	TU3.07: Special Techniques On Volume and Surface Scattering	TU3.08: Coastal Ocean Biology and Water Quality	TU3.09: Kernel-Based Feature Extraction and Classification	TU3.010: Microwave and Optical Remote Sensing of Snow	TU3.011: Mapping Innundated Wetlands with Spaceborne Remote Sensing I	TU3.012: GNSS Remote Sensing of Atmosphere, Ocean and Land III	TU3.013: The Southern African Regional Science Initiative - SAFARI 2000 I
16:00 - 16:20	Break												
16:20 - 18:00	TU4.01: RADARSAT II	TU4.02: New SAR Systems	TU4.03: COSMO-SkyMed Mission: Status and Results II	TU4.04: Airborne and Ground Based Radar Measurements in Support of Space Based Instruments I	TU4.05: Performance of Operational Surface Deformation Measurements from Radar Interferometry II	TU4.06: Collaborative Adaptive Sensing of the Atmosphere	TU4.07: Soil Moisture Retrievals and Applications in Africa	TU4.08: Change Detection	TU4.09: Estimation and Classification Techniques and Applications	TU4.010: Remote Sensing of Land Ice and Glaciers	TU4.011: Mapping Innundated Wetlands with Spaceborne Remote Sensing II	TU4.012: GOES-R, Status and Applications from the next Generation U.S. Geostationary Satellite System	TU4.013: The Southern African Regional Science Initiative - SAFARI 2000 II
19:30 - 22:00	IGARSS by Night, Buses to depart from hotels at 19:00+; return by bus to hotels from ~21:45.												

Tuesday, July 14, Poster Sessions

	Poster Area A	Poster Area B	Poster Area C	Poster Area D	Poster Area E	Poster Area F	Poster Area G	Poster Area H	Poster Area I	Poster Area J	Poster Area K	Poster Area L	Poster Area M	Poster Area N	Poster Area O
12:40 - 14:20	TUP.A: Geological Applications I	TUP.B: Geological Applications II	TUP.C: Geological Applications III	TUP.D: Lidar Sensing	TUP.E: Hyperspectral and Optical Sensing	TUP.F: Ocean Biology Posters	TUP.G: Ocean Remote Sensing: Measurements and Simulations	TUP.H: Atmospheric Sensing, Aerosols and Chemistry	TUP.I: UAV and Airborne Sensing	TUP.J: Land Surface Snow and Ice B	TUP.K: Land Surface Snow and Ice A	TUP.L: Land Surface Snow and Ice C	TUP.M: Geospatial Analysis and Appplications	TUP.N: Electromagnetics and Radiative Transfer	TUP.O: Microwave Scattering and Propagation

Wednesday, July 15

	Leslie 2A	Leslie 2D	Menzies M9	Menzies M10	Leslie 2B	Leslie 2C	Leslie 3A	Leslie 3B	Leslie 1A	Leslie 1B	Leslie 1C	Leslie 1D	Leslie 1E
09:00 - 10:40	WE1.01: Advanced Methods for Polarimetric Information Extraction II	WE1.02: Three-dimensional SAR I	WE1.03: Active Sensing of Ocean Waves, Currents and Rain	WE1.04: Airborne and Ground Based Radar Measurements in Support of Space Based Instruments II	WE1.05: Quantitative Remote Sensing for Geomorphology and Active Tectonics I	WE1.06: Data Processing and Management	WE1.07: Soil Moisture Ocean Salinity (SMOS) Mission	WE1.08: Mathematical Morphology in Remote Sensing	WE1.09: Precipitation: Measurements, Analysis and Technology I	WE1.010: Sea Ice	WE1.011: Remote Sensing of Soil Properties	WE1.012: Human Health and Landscape Epidemiology	WE1.013: Remote Sensing of Fire Occurrence and Characteristics in Africa: Operational and Science Applications
10:40 - 11:00	Break												
11:00 - 12:40	WE2.01: Polarimetry	WE2.02: Three-dimensional SAR II	WE2.03: High Resolution Satellite Sensing of Ocean Waves	WE2.04: Advanced Concepts for Image Analysis I	WE2.05: Quantitative Remote Sensing for Geomorphology and Active Tectonics II	WE2.06: Remote Sensing Data Applications	WE2.07: Ocean Biology from Space	WE2.08: Registration	WE2.09: Precipitation: Measurements, Analysis and Technology II	WE2.010: Optical Sensors Calibration	WE2.011: Soil Moisture Field Experiments and Modeling	WE2.012: Desertification and Deforestation	WE2.013: Remote Sensing for Biodiversity in Africa - From Observations to Informed Actions for Biodiversity Assessments
12:40 - 14:20	Lunch Break (See Poster Section)												
12:45 - 14:15	Technical Committee and Chapter Chairs Luncheon, Smuts Dining Hall												
14:20 - 16:00	WE3.01: Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions I	WE3.02: SAR Missions and Calibration	WE3.03: Surface Salinity and Surface Processes	WE3.04: Coastal and Wetlands Applications I	WE3.05: Monitoring a Changing Continent with ALOS Sensors I	WE3.06: Data Mining and Machine Learning for Remote Sensing	WE3.07: Modeling and Applications of Active and Passive Ocean Sensing	WE3.08: Classification of Hyperspectral Data	WE3.09: Clouds: Measurements, Analysis and Technology I	WE3.010: Optical Sensors Technologies	WE3.011: Soil Moisture Active Passive (SMAP) Mission	WE3.012: Urban Remote Sensing I	WE3.013: The Contribution of Remote Sensing Towards Sustainable Mining Development Practices I
16:00 - 16:20	Break												
16:20 - 18:00	WE4.01: Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions II	WE4.02: High Resolution InSAR with Emphasis on Complex Scattering Scenarios	WE4.03: Monitoring of Soil Moisture and Vegetation Biomass on a Global Scale by Using Microwave Sensors	WE4.04: Remote Sensing Assessment of Vegetation State and Land Degradation	WE4.05: Monitoring a Changing Continent with ALOS Sensors II	WE4.06: Advanced Methods for Polarimetric Signal Processing	WE4.07: Image Classification	WE4.08: Pansharpening and Resolution enhancement	WE4.09: Clouds: Measurements, Analysis and Technology II	WE4.010: Calibration of Interferometric Microwave Radiometers	WE4.011: Vegetation Structure and Biomass I	WE4.012: Urban Remote Sensing II	WE4.013: The Contribution of Remote Sensing Towards Sustainable Mining Development Practices II
19:30 - 21:30	Wine Tasting Evening, Buses depart hotels at 19:00+												
18:30 - 21:00	Soccer Match, Soccer Field B, Adjacent to the Sports Center near the UCT Club and Smuts Hall on Rugby Road, Buses return to hotels at 20:00, 20:30, and 21:00.												

Wednesday, July 15, Poster Sessions

	Poster Area A	Poster Area B	Poster Area C	Poster Area D	Poster Area E	Poster Area F	Poster Area G	Poster Area H	Poster Area I	Poster Area J	Poster Area K	Poster Area L	Poster Area M	Poster Area N	Poster Area O
12:40 - 14:20	WEP.A: Urban and Built environment	WEP.B: Coastal and Wetlands Applications Posters I	WEPC: Remote sensing for Pollution and Urban Area Monitoring	WEP.D: Optical Sensors Calibration II	WEP.E: Land Cover Characterization	WEP.F: Agroecosystems II	WEP.G: Soil Moisture Remote Sensing - Passive	WEP.H: Soil Moisture Remote Sensing - Active	WEP.I: Soil Properties	WEP.J: Vegetation Physiology and Biophysics	WEP.K: Fire and Disturbance	WEP.L: Clouds and Precipitation	WEP.M: Monitoring of the Environment	WEP.N: Inverse Problems and Techniques	WEP.O: Classification and Data Mining

Thursday, July 16

	Leslie 2A	Leslie 2D	Menzies M9	Menzies M10	Leslie 2B	Leslie 2C	Leslie 3A	Leslie 3B	Leslie 1A	Leslie 1B	Leslie 1C	Leslie 1D	Leslie 1E
09:00 - 10:40	TH1.01: Ionosphere Effects in Polarimetric and Interferometric SAR Imagery I	TH1.02: Low Frequency SAR Calibration, Processing, Modelling and Applications I	TH1.03: Ten Years of MODIS Earth Observations I	TH1.04: Coastal and Wetlands Applications I	TH1.05: Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas I	TH1.06: High Performance Geocomputation and Remote Sensing I	TH1.07: Inversion of Land Surface and Biophysical Properties I	TH1.08: Source Separation: From ICA to Unmixing	TH1.09: Segmentation-Based Image Analysis and Classification	TH1.010: Calibration of Microwave Radiometers	TH1.011: Vegetation Structure and Biomass II	TH1.012: Active Remote Sensing and Land Characterization	TH1.013: Lidar-Based Remote Sensing - the Next Wave I
10:40 - 11:00	Break												
11:00 - 12:40	TH2.01: Ionosphere Effects in Polarimetric and Interferometric SAR Imagery II	TH2.02: Low Frequency SAR Calibration, Processing, Modelling and Applications II	TH2.03: Ten Years of MODIS Earth Observations II	TH2.04: Coastal and Wetlands Applications II	TH2.05: Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas II	TH2.06: High Performance Geocomputation and Remote Sensing II	TH2.07: Inversion of Land Surface and Biophysical Properties II	TH2.08: Image Segmentation and Textures	TH2.09: Time-series Analyses for Change Detection	TH2.010: Hyperspectral Remote Sensing in Africa I	TH2.011: Remote Sensing of Vegetation Processes I	TH2.012: Geostationary Data Products; Land Surface Temperature	TH2.013: Lidar-Based Remote Sensing - the Next Wave II
12:40 - 14:20	Lunch Break (See Poster Section)												
14:20 - 16:00	TH3.01: Remote Sensing for Sea Pollution	TH3.02: High-Resolution SAR Image processing	TH3.03: Recent Advances in Hyperspectral Unmixing and Information Extraction I	TH3.04: Coastal and Wetlands Applications III	TH3.05: Measuring Earth Dynamics using L-Band Interferometry	TH3.06: Open Source Initiatives for Remote Sensing - Orfeo Toolbox I	TH3.07: Data Fusion I	TH3.08: Advanced Concepts for Image Analysis II	TH3.09: Remote Sensing and Geospatial Information Technology for Agricultural Decision Support	TH3.010: Optical Sensing Methods and Systems	TH3.011: Remote Sensing of LAI	TH3.012: Land Use / Land Cover Classification - Africa Focus I	TH3.013: Lidar Sensing
16:00 - 16:20	Break												
16:20 - 18:00	TH4.01: Advanced Methods for Polarimetric Information Extraction I	TH4.02: Interferometry I	TH4.03: Recent Advances in Hyperspectral Unmixing and Information Extraction II	TH4.04: Remote Sensing for Land and Air Pollution Monitoring	TH4.05: Tropospheric Propagation Effects in Radar Mesaurements	TH4.06: Open Source Initiatives for Remote Sensing - Orfeo Toolbox II	TH4.07: Data Fusion II	TH4.08: Remote Sensing of Land Hydrological Parameters for Application to Floods and Landslides Management	TH4.09: Ship Detection and Classification: Application of SAR techniques in the framework of High Resolution sensors	TH4.010: UAV Sensing	TH4.011: Remote Sensing of Vegetation Processes II	TH4.012: Land Use / Land Cover Classification - Africa Focus II	TH4.013: Phenology, Inter-annual Change and Modelling
20:00 - 22:00	Awards Banquet, Buses to depart from the Leslie Building at 19:30.												

Thursday, July 16, Poster Sessions

	Poster Area A	Poster Area B	Poster Area C	Poster Area D	Poster Area E	Poster Area F	Poster Area G	Poster Area H	Poster Area I	Poster Area J	Poster Area K	Poster Area L	Poster Area M	Poster Area N	Poster Area O
12:40 - 14:20	THP.A: Land Use and Land Cover	THP.B: Remote Sensing of Land Surface Properties and Wetlands	THP.C: Forest and Vegetation Applications	THP.D: Buildings and Urban Areas	THP.E: Data Processing I	THP.F: Data Processing and Data Compression	THP.G: Classification Techniques and Applications	THP.H: Interferometry	THP.I: SAR Instruments, Missions and Calibration	THP.J: SAR Posters A	THP.K: SAR Posters B	THP.L: Microwave Radiometry: Instruments and Applications			

Friday, July 17

	Leslie 2A	Leslie 2D	Menzies M9	Menzies M10	Leslie 2B	Leslie 2C	Leslie 3A	Leslie 3B	Leslie 1A	Leslie 1B	Leslie 1C	Leslie 1D	Leslie 1E
09:00 - 10:40	FR1.01: SAR Polarimetry: Theory and Applications I	FR1.02: Interferometry II	FR1.03: Imaging Spectroscopy Initiatives in Europe	FR1.04: Satellite Photo/ Radargrammetry with the New Generation of High-resolution Sensors I	FR1.05: Geospatial Based Analysis I	FR1.06: High Performance Computing for Hyperspectral Image Analysis I	FR1.07: A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors I	FR1.08: Global DEM Interoperability: ASTER GDEM: Initial Assessment I	FR1.09: Spatiotemporal Data Mining and Pattern Discovery I	FR1.010: Urban Applications I	FR1.011: Forest Mapping	FR1.012: Atmospheric Sensing and Profiling	FR1.013: Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass I
10:40 - 11:00	Break												
11:00 - 12:40	FR2.01: SAR Polarimetry: Theory and Applications II	FR2.02: Interferometry and SAR	FR2.03: Recent Advances in Microwave Radiometer Technology	FR2.04: Satellite Photo/ Radargrammetry with the New Generation of High-resolution Sensors II	FR2.05: Geospatial Based Analysis II	FR2.06: High Performance Computing for Hyperspectral Image Analysis II	FR2.07: A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors II	FR2.08: Global DEM Interoperability: ASTER GDEM: Initial Assessment II	FR2.09: Spatiotemporal Data Mining and Pattern Discovery II	FR2.010: Urban Applications II	FR2.011: Wetlands and Flooding	FR2.012: Remote Sensing of the Upper Atmosphere	FR2.013: Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass II
12:40 - 14:20	Lunch Break												
14:20 - 16:00	FR3.01: Active Microwave Sensors	FR3.02: Interferometry - Moving Targets	FR3.03: Present and Future of Satellite Altimetry I	FR3.04: Remote Sensing Tools for Plant Production System Management	FR3.05: Geospatial Applications		FR3.07: Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives I		FR3.09: Advances in Data Systems for Future Missions and Earth Science Research I	FR3.010: Remote Sensing Education	FR3.011: Agroecosystems	FR3.012: Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition I	FR3.013: Water Monitoring with MERIS and AATSR in Africa
16:00 - 16:20	Break												
16:20 - 18:00	FR4.01: Active Microwave Sensor Applications		FR4.03: Present and Future of Satellite Altimetry II		FR4.05: Geodesy in Africa		FR4.07: Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives II		FR4.09: Advances in Data Systems for Future Missions and Earth Science Research II		FR4.011: Challenges in Integrating Information From New Earth Science Missions for Societal Applications	FR4.012: Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition II	

Sponsors

The IGARSS'09 Local Organising Committee would like to thank the organisations that have sponsored the symposium, either directly through monetary grants, or indirectly through supporting the volunteer duties of office bearers of the society, or making available facilities. Many of the sustaining donors, including international space agencies have continued their support, and this is much appreciated as South Africa and Africa have taken steps to develop their own space agencies.

The commercial vendors who have taken exhibition space play an important complementary role to the research and application aspects that constitute the technical part of the programme, and are an integral part of the life of the GRSS symposia. Please take time to visit the exhibition booths and to engage the representatives.

The innovative *IGARSS Short Course Programme in Remote Sensing and Geospatial Science* has been funded by a generous grant from the South African National Research Foundation, acting on behalf of the Department of Science and Technology.

Greetings from GRSS President

Welcome to IGARSS09. The IEEE Geoscience and Remote Sensing Society's annual IGARSS Symposia are now recognised as the #1 scientific and technical remote sensing event of the year. The growing importance of remotely sensed data in providing information for the sustainable development of our planetary resources and its contribution to understanding and monitoring the impact of climatic change provide a unique backdrop for the presentation of ideas, models, instruments and the application results of our research to be provided to the wider scientific community at this Symposium.

We look forward to a collegial, information-rich and stimulating time in Cape Town this coming July.

Sincerely,

Tony Milne
President, IEEE Geoscience and Remote Sensing Society

General Chair's Welcome

Welcome to Africa, to South Africa and Cape Town for IGARSS 2009. The IEEE Geoscience and Remote Sensing Society has become a truly international society, with more than 50% of the membership now residing outside the United States of America. IGARSS, the premier annual symposium of the Society, is the gathering place where the ferment of ideas gains strength from presentations, vigorous interchanges, technical planning meetings, and renewal and creation of networking opportunities. It is through these networks of collaboration that the Society flourishes. For the first time, the GRSS symposium has been brought to African soil, giving an enhanced opportunity for geospatial scientists and administrators of Africa to engage with the global community of Earth observation scientists.

The staging of IGARSS'09 in Africa is the realisation of a long and deliberate process to engage Africa into the global community, led the by former GRSS President Charles Luther. It was through the special Africa Session, convened by Charles, at the IGARSS'01 in Sydney that Mike Inggs and I were first had the notion of holding the symposium in Africa. Charles has made several subsequent visits to Africa to reinforce the links. This cooperation was built also on a respectful engagement with the African Association of Remote Sensing of the Environment (AARSE). GRSS senior members have participated in the last three bi-annual conferences of AARSE, leading to the signing of a Memorandum of Understanding between the two societies. This

MOU was signed by GRSS president, Tony Milne, and AARSE President Tsehaie Woldai, in October 2008 at the AARSE Conference in Ghana.

South Africa played a leading role in the creation of the Global Earth Observation System of Systems, as one of the four founding co-chairs. It is fitting that one of the leading themes of IGARSS'09 is a reflection on the achievements and further prospects of GEOSS, as a voluntary global organisation for the use of coordinated Earth observation systems for the betterment of the human condition. As members of GRSS and or AARSE, I believe we are all committed to this ideal. We are privileged to have three keynote speakers who will reflect on this theme. Dr José Achache, the Secretary General of GEOSS, who is a frequent and always welcome visitor to South Africa, will give a perspective of GEOSS. Dr. Wilbur Ottichilo, the former Director of the Regional Centre for Mapping of Resources for Development (RCMRD) in Nairobi, has the an authoritative background to address the issues of geospatial sciences and development from an African perspective. Under his leadership, the RCMRD became a leading institution for training geospatial scientists and technicians for the whole of East Africa. From a scientific and technical perspective, we welcome the presentation of Dr Masami Hato, ASTER GDS Project Manager from ERSDAC, Japan, who will announce the recent release of the ASTER Global Digital Elevation Model. DEM is a remote sensing product of particular value in development. The information and the manner in which Aster GDEM are to be distributed follow the GEOSS principles of open sharing, as an illustration of how advanced science can contribute to African development. The GEOSS theme will be further developed through a dedicated panel session on GEOSS on Monday afternoon. This panel has been convened by Jay Pearlman and Granville Paules, both staunch champions of GEOSS, and will be mediated by Robert (Bob) Scholes, one of the co-authors of the GEOSS founding documents. This discussion promises to be a significant milestone in the GEOSS discussions task.

IGARSS'09 Technical Programme Co-Chairs, Mike Inggs and Roger King, supported by the IT wizardry of Lance Cotton (Conference Management Services) have led the coordination of a comprehensive and diverse technical programme. The format of the IGARSS allows for many sub-symposia, compiled by special interest groups. This year we had an overwhelming number of theme session proposals, and the Programme Committee had a tough task to select and filter these into an operational programme with thirteen parallel sessions. Despite the perceptions of Cape Town being a distant and expensive-to-reach destination, the number of themes and abstracts submitted reflected a strong and active support of the general format of IGARSS meetings, and of the meeting itself. On behalf of all participants, I thank the Technical Programme Chairs, committee members and reviewers for a superbly executed job.

An important aspect of activities of both GRSS and AARSE is educational outreach. IGARSS'09 sees a major innovation, in the form of a series of week-long training workshops on a range of remote sensing topics. The instructors for these courses and their host institutions have generously given their time for preparation and presentation of these courses, and in many cases also travel expenses. Six courses have been presented, with an average attendance of 15 participants. Participants were given hand-on training in the computer laboratories of the University of Cape Town and Stellenbosch. The Education Committee was headed by Andiswa Mlisa, Janine Engelbrecht and Brigitte Leblon, who used much creativity to initiate this innovative project. The courses will be evaluated by an independent assessor to judge whether they should become a regular feature of IGARSS meetings.

Other outreach activities continued, including the one and half-day tutorials, and a scholar outreach programme. Again, Linda Hayden led the activities, with support continuing from NOAA. The target audience on this occasion are maths and science learners from disadvantaged communities in the Cape Town area, who are part of the University of Cape Town SHAWCO science enrichment programme.

On a personal note I need to thank three individuals who through their personal commitment and institutional actions have contributed greatly to the training of young African scientists and professionals in the fields of remote sensing and environmental sciences: Michael King, formerly of Nasa GSFC; Tsehaie Woldai, ITC Netherlands; and Guenter Helas, formerly of Max Planck Institute for Chemistry, Mainz.

We thank the many volunteers who have given service on the Local Organizing Committee, the Technical Programme Committee and the hundreds of reviewers, the Outreach Committee, Billene Mercer and her staff at Conference Management Services, Inc. and Judy Mackintosh who administered the local IGARSS office. I thank Michael Sears, Finance Chair, who ably kept

IGARSS'09 within budget and within the often vexing constraints of financial accountability. Bev Terry is thanked for stepping in at short notice to coordinate final planning of the Short Course programme.

The University of Cape Town and staff are thanked for their generosity in making available their magnificent campus for the hosting of this event. The University of Johannesburg has allowed and supported my extended distractions from regular duties to attend to the organisation of IGARSS'09, with especial support from Dean of Science, Kinta Burger.

The generosity of sustaining donors Nasa, NOAA and JAXA are greatly appreciated.

On behalf of the Local Organising Committee, we wish you an intellectually stimulating symposium and a week of comradeship and good times in Cape Town.

Harold Annegarn
IGARSS'09 General Chair
University of Johannesburg, 27 June 2009

Technical Programme Overview

It is a pleasure to have been given the responsibility for organizing the IGARSS technical programme. Now in its 29th year, IGARSS is the premier conference in the remote sensing field, providing a unique opportunity for world-renowned experts in geoscience and remote sensing to meet and have meaningful and enjoyable interactions. Being a conference, it should provide an immediacy that is not possible with archival journals. To ensure this, we made some small changes from the past to ensure as wide a participation as possible.

Invited Sessions are an excellent opportunity for cognate researchers to exchange the latest results in their specialisation. We thus opened up the call for Invited Sessions to an extremely large database of the Remote Sensing community. The result was an unprecedented number of proposals. We then let natural attrition cull this list (i.e., only the organisers that were active in ensuring that their invitees submitted abstracts in time were able to retain their sessions). We believe that our invited contributors are going to be able to catch us all up with the leading edge of their field and we will all have a chance to renew old acquaintances.

Consistent with last year's IGARSS in Boston, the submission rate this year has been very high, with 2083 abstracts submitted. In order to maintain a high-quality technical programme, abstracts were assigned to 1607 reviewers by 48 dedicated experts on the Technical Programme Committee. An average of 3.4 reviews for each contributed abstract was received from the wider scientific and technical community. The large number of Invited Sessions resulted in a body of 109 invited session organizers, The Technical Programme Committee, which includes 48 theme coordinators/session organizers, met in Atlanta on February 29 to organize 1885 accepted presentations to form the technical programme.

The large number of reviewers per paper has attracted criticism from some, as being an onerous load. Our feeling was that the abstracts are short, and exposing a wider audience to the material of the conference can only be good for the future of the conference and the society. Reviewers had to tackle only as many abstracts as they wished, and we found that having a range of scores to work with made us more confident in selecting the papers.

The presentations at IGARSS 2009 are organized into 211 half sessions of 5 oral papers each and 99 interactive sessions of up to 12 posters each. The technical programme covers the theme areas of geoscience, including studies of the land, oceans, atmosphere, and cryosphere; as well as the full extent of remote sensing topics, from electromagnetic modelling, design of sensors and missions, and advanced image/signal analysis techniques, to applications, education and policy. We were pleased to note a good response for themes related to the African continent.

In an effort to place more importance on the interactive sessions, posters will be displayed all day, from at least 9:00 to 18:30, each day from Tuesday to Thursday. Since the Conference has decided to provide lunch, we have placed the food dispensing areas amongst and adjacent to the posters, to make it easy for delegates to browse the posters during an extended lunch break of 2 hours. This is expected to provide a valuable opportunity for interactions and technical discussions between presenters and other IGARSS participants.

Co-chairs of oral sessions are requested to keep the time schedule listed in the programme regardless of any no-shows to facilitate delegates moving from session to session to follow papers of interest to them. The technical programme includes only those presentations for which a presenting author had registered for the symposium by press time. In addition, the co-chairs of both oral and interactive sessions have been requested to record which specific presentations were given. Those that are not presented at IGARSS will not be published in

the proceedings that will be available on DVD and on IEEE Xplore following the symposium.

Panel Sessions

After the Plenary Session on Monday morning, a few of the afternoon sessions have some paper slots available for panel discussion: consult the conference programme for these.

Acknowledgments

We thank the IGARSS 2009 Technical Programme Committee wholeheartedly for their extensive and persistent hard work to formulate the technical programme. In addition, there was overwhelming response from the community in reviewing the abstracts. We would like to thank the 1607 reviewers for their generous support. Finally, Conference Management Services (CMS, Inc.) has contributed greatly to the implementation of the IGARSS 2009 technical programme. We thank the professional staff and especially applaud Lance Cotton of CMS, Inc. for his outstanding support of our work.

We wish you an informative and enjoyable experience at IGARSS 2009. Enjoy the beautiful scenery and exciting culture in and around the city of Cape Town, "The fairest cape in all the world" (Sir Francis Drake, 1580).

Michael Inggs
University of Cape Town and the Centre for High Performance Computing

and

Roger King
Mississippi State University and the Center for Advanced Vehicular Systems

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About Cape Town

The Mother City of South Africa, Cape Town is the oldest city in southern Africa. As South Africa's third-largest city, Cape Town occupies one of the world's most stunning locations, and is heralded as one of the most beautiful cities on earth. Cape Town is a pro at showing visitors a good time.

There are plenty of great wildlife viewing and photo opportunities, from the penguins at Boulders Beach to the elephant, lion, buffalo, giraffe, zebra and rhino at Aquilla Game Reserve.

Cape Town is crammed with galleries displaying amazing artwork and shops selling wonderfully inventive crafts. You are likely to hear locals speak German and French, as well as Afrikaans, Xhosa and English. Discovering the Mother City's true diversity and spirit is all part of getting the most out your visit. Cape Town's historic buildings have been preserved and businesses are booming. Factor in those stunning mountains, magnificent surf beaches and outstanding vineyards and you'll soon discover - like many before you - that it's easy to lose track of time while exploring all the wonders of this unique Southern African city.

The Victoria and Alfred Waterfront is one of the most successful areas in the world and one of Cape Town's top attractions. The hotels under contract for the conference are located in this area, and you will be able to take pre-scheduled, dedicated shuttle transportation from the conference hotels directly to the University of Cape Town to attend the technical sessions.

The shopping here in the Victoria and Alfred Waterfront includes over 300 stores and a choice of more than 30 restaurants. If you do two things on the Waterfront, you should consider a boat trip to Robben Island and visit the Two Oceans Aquarium. From June to November you can also book a whale watching cruise. Beer lovers should make time to visit the Mitchell's Brewery or Paulaner to sample the excellent handmade ales. For an excellent wine shop try Caroline's Fine Wine Cellar.

As beautiful as the surrounding beaches and vineyards can be, it's the rugged wilderness of Table Mountain, coated in unique flora that grabs everyone's attention. The mountainous slopes sustain some 9,000 species, as the world's most varied botanic kingdom. Table Mountain - now protected within a national park that covering 75% of the peninsula - remains at Cape Town's heart. This backdrop is the city's adventure playground.

We highly recommend:

- V&A Waterfront
- Robben Island
- Table Mountain Cableway
- Cape Point Nature reserve
- Kirstenbosch Gardens
- The Winelands

http://www.igarss09.org/LocalTours.asp

Visitor Information

Visitor Information Centre on UCT campus – see map of UCT.

Prime Time Tours exhibition booth – Leslie building.

Cape Town tourism:
http://www.tourismcapetown.co.za/
http://www.cape-town.org/

PREFERRED TRAVEL AGENT TO IGARSS'09

Tour Specials — Cape Town and Surrounds

Cape Point – Full day..... R675
Cape Point – Half Day..... R475
Winelands – Full day..... R675
Winelands – half day..... R475
City Tour and Table Mountain – Half day
..... R520
Private game Reserve – Full day R1,975
Township Tour and Robben Island – Full day
..... R700
Hermanus – Full day R675
Kirstenbosch – Half Day R390

Other tours and pre- and post-conference travel by arrangement. To book your tour visit our travel desk in the Leslie Social Sciences Building or call Cheryl on 0824117672.

Weather

Cape Town weather is generally mild, making the city a year-round destination.

Cape Town's winter (June to August) can be cold and wet, but seldom does the mercury drop below 10°C. You will often get perfectly temperate days in between.

Average winter temperature: 18.5 ºC

Local time

Cape Town is two hours ahead of GMT.

Currency

Currency: 1 South African Rand (R)=100 cents

Denominations:

Coins of 5c, 10c, 20c, 50c, R1, R2, R5

Notes of R10, R20, R50, R100, R200

Latest **exchange rates** can be easily requested from your hotel, any currency exchange bureau or log on to: http://www.oanda.com/convert/classic

On 25 June 2009 the exchange rates were US$1.00 ~ R8.00

Credit and charge cards are widely accepted, including American Express, Bank of America, Diners, MasterCard, and Visa. Some ATM's give cash advances. Traveler's cheques are also widely accepted and exchanged. Different commission charges are incurred depending on which bank you use and which traveler's cheques you have.

Most banks are open Mon-Fri 0900-1530 and Sat 0900-1100.

Auto banks are found on UCT campus and in all major shopping areas and operate on a 24-hour basis.

Tips: 10-15% of the total bill is generally accepted for tipping. Some restaurants add 10% automatically if the party is large than ten in size.

Taxation

Currently set at 14%, Value Added Tax (VAT) must be included in the price of most goods and services.

Foreign visitors are not exempt for paying VAT on purchased goods. They may, however, claim back VAT paid on items taken out of the country when the total valued exceeds R250. The refund may be lodged with the VAT Refund Administrator's offices, which are situated at Johannesburg and Cape Town International Airports, various land border posts and designated commercial harbours.

Please note that the refund claim should only be lodged with the South African Customs Authorities at points of departure where the VAT Refund Administrator is present.

Internet Access

Wireless Internet access will be available throughout the duration of the symposium free of charge in the Leslie building. Login names and passwords will be supplied on registration.

The Internet Café is located in the Leslie building (South side lab 1) – see map of Leslie Upper Mezzanine Level for details. Computers will be available for attendees to access the internet during the symposium.

The Oral Presentation upload station is located next to the Internet Café - see map of Leslie Upper Mezzanine Level for details.

Hours:

Sunday July 12:	08:00 – 18:30
Monday July 13 to Friday July 17:	08:00 – 17:30

Tutorials

Full-Day Tutorials
Sunday 12 July, 8:30 – 17:30

FD-1: Understanding and Interpretation of High Resolution SAR Images (Location: Menzies EM7)
Presented by: Mihai Datcu, German Aerospace Center, DLR Oberpfaffenhofen; Klaus Seidel, Swiss Federal Institute of Technology, ETH Zurich

FD-3: Applied hyperspectral remote sensing (Location: Menzies Red Lab Ext)

Presented by van der Meijde M., van der Werff H. M.A., Department of Earth System Analysis, ITC, Netherlands.

FD-6: SAR Polarimetry: Basics, Processing Techniques and Applications (Location: Menzies EM6)
Presented by: Eric Pottier, Laurent Ferro-Famil, IETR UMR CNRS 6164, University of Rennes 1, France

FD-7: Recent Advances in Classification (Location: Menzies Red Lab)
Presented by: Ranga Raju Vatsavai and Surya S. Durbha

FD-8: Accessing and using MISR products in climate and environmental research (Location: Menzies Blue Lab)
Presented by: Michel M. Verstraete, Charles Thompson, NASA Jet Propulsion Laboratory (JPL)

Half-Day Tutorials
Sunday 12 July, 13:30 – 17:30

HD-1: Modeling the Spectral Responses of Natural Materials under Varying Environmental Parameters: Theoretical and Practical Challenges (Location: Menzies EM303)
Presented by: Gladimir V. G. Baranoski, School of Computer Science, University of Waterloo

HD-6: Introduction to Remote Sensing and Geo-processing Using GRASS GIS (Location: Menzies Geomatics Lab)
Presented by: Brendon Wolff-Piggott, Integrated GeoData Solutions, South Africa

Short Courses on Remote Sensing and Geospatial Sciences

The IGARSS 2009 short course programme is an innovation for the GRSS annual symposia. These short courses were presented in the week prior to IGARSS 2009 (6th to 11 July) and are included in this programme for the record. Courses comprised 32 or 40 hours of instruction and supervised practical work in computer laboratories.

SC-1: GEONETCAST and the monitoring of African marine ecosystems
Tuesday July 7 to Saturday July 11 July, 8:30 – 17:30
Presenters: Val Byfield, National Oceanography Centre, Southampton, United Kingdom and Stuart Bernard, CSIR, Stellenbosch, South Africa

SC-3: Processing of Reflected and Occulted Global Navigation Satellite System (GNSS) Signals for Earth Remote Sensing
Tuesday July 7 to Friday July 10 July, 8:30 – 17:30
Presenter: James L. Garrison, University of Purdue, Lafayette IN

SC-4: MODIS direct broadcast data for enhanced forecasting and real-time environmental decision making
Tuesday July 7 to Friday July 10 July, 8:30 – 17:30
Presenters: Allen Huang, Liam Gumley, Kathy Strabala, SSEC, University of Wisconsin, WI; Philip Frost, Meraka Institute, Pretoria

SC-7: SAR and Interferometric processing for land applications
Monday July 6 to Friday July 10 July, 8:30 – 17:30
Presenters: Paolo Pasquali, SARMAP S.A., Purasca, Switzerland

SC-9: Advanced Satellite Techniques for Environmental Monitoring (ASTEM)
Monday July 6 to Friday July 10 July, 8:30 – 17:30
Presenters: Valerio Tramutoli, University of Basilicata, Nicola Pergola, Teodosio Lacava, Institute of Methodologies for Environmental Analysis of Italian National Research Council

SC-10: GEONETCAST and Water Security
Tuesday 7 to Saturday 11 July, 8:30 – 17:30
Presenters: Tsehaie Woldai, Ben Maathuis, Chris Mannaerts, Department of Water Resources and Earth Systems Analysis, ITC, The Netherlands

Technical Committee and Business Meeting Programme

Ad hoc meeting room: Meeting Room 11, Menzies Building (adjacent to CMS Conference admin office) is available for ad hoc meetings, discussions and press interviews. Please enquire about availability from the conference admin office or registrations desk.

Date & Time	Event	Venue	Access
Sunday 12 July 08:30 – 16:30	IEEE GRSS AdCom meeting	**The Cullinan, a Southern Sun Hotel** 1 Cullinan Street Cape Town Waterfront 8001 Tel: 27 021 415 4000 **Meeting Rooms:** Protea 1 & 2	AdCom members
Monday 13 July 12:45 – 14:00	**Session Chairs Briefing** and Luncheon. Mike Inggs, Roger King, Co-Chairs, Technical Programme Committee	Smuts Residence Dining Hall	Session Chairs, Technical Chairs and assigned student monitors, Jon Ward
Monday 13 July 14:20 – 17:30	**Earth & Environment** Taylor & Francis/ Routledge. Convener, Lizzy Seal, Managing Editor	Menzies Building, Level 7 Seminar Room	Invited participation, business meeting
Monday 13 July 18:0 – 19:30	**Minority and African students forum** Conveners: Chuck Luther and Linda Hayden	Menzies Building, Level 3, Meeting Room 11.	All sponsored students from African and USA minority student activities
Monday 13 July 18:30 - 21:00	**GRSS Editors Forum** Dinner and Discussion. Convenor: Christopher Ruf	UCT Club, Upper Campus	GRSS Editors, sub-editors and aspirant editors
Tuesday 14 July 17:00 – 19:00	**FARS - Frequency Allocations in Remote Sensing** Chair: Shannon Brown	Menzies Building, Level 7, Seminar Room	Members of FARS Committee and interested delegates.
Tuesday 14 July 14:20 – 17:00	**GEO/GEOSS** follow on discussion; Further African collaboration on GEOSS activities. Convenor: Bob Scholes, Jay Pearlman, Alex Fortescue	Menzies Building, Level 6, JB Martin Board Room	GEO representatives and interested delegates. GEO secretariat, SAC, DST, CSIR, Meraka.
Wed. 15 July 12:45 – 14:15	**IEEE GRSS Technical Chairs and Chapters Lunch**	Smuts Residence Dining Hall	Ticketed or by invitation. Technical Committee Chairs and Chapter Chairs
Wed. 15 July 17:00 – 19:00	**African Association for Remote Sensing of the Environment** Council Meeting. Convener: Tsehaie Woldai	Menzies Building, Level 7, Seminar Room	AARSE Council members and associates.
Thur. 16 July 14:00 – 16:00	**Trace gas and air pollution monitoring from space** – discussion on cooperation between SSEC, Univ. of Wisconsin, EPA and South Africa. Convenors: Alan Huang & Harold Annegarn	Menzies Building, Level 7, Seminar Room	All interested parties: SSEC, UW; SAWS, Eskom, Sasol, CRG Wits, UNW, UW, DST.

Oral Presentation Instructions

- All oral presenters must check in and load their presentations in the Presentation Uploading Room (South side Lab 1, Upper Mezzanine Level, Leslie Building). Please sign the register that you have uploaded your files.
- It is preferable to load all files to the IGARSS server on the day prior to the scheduled presentation. The cut-off for uploads is no less than one hour prior to the start of the session, i.e. the previous day for first thing in the morning session, 9:20 am for the second morning session, 12:20 for the first afternoon session and 14:20 for the second afternoon session.
- Each oral presentation, including questions and answers, must be less than 20 minutes in length. Due to the large number of parallel sessions, session co-chairs will follow the printed schedule strictly.
- Oral presenters are required to use the laptops provided in the presentation rooms.
- Presentation files may be created in Adobe Acrobat (.pdf) (recommended format) or Microsoft PowerPoint (Laptops in presentation rooms will be loaded with Office 2003 with a 2007 reader only). Movies or animations need to be able to run using MPEG, Windows Media Player, Macromedia Flash Player or Apple QuickTime.
- Please note that while there will be wireless Internet access available in the presentation rooms, we cannot guarantee either connection speed or availability for your particular presentation time, and we strongly encourage you not to rely on Internet access for your presentation.

Oral presentation file upload hours:

Sunday July 12: 14:00 – 17:30
Monday July 13 – Friday July 17: 08:00 – 18:30

Poster Presentation Instructions

- Posters will be displayed from 09:00 to 18:30 on the day on which they are scheduled.
- Presenting authors are requested to be available at their posters during the lunch break/poster sessions from 12:40 to 14:20.
- Posters must be removed at the conclusion of the poster session by 19:30 latest.
- Poster boards will be available along with the necessary mounting hardware.
- The poster should not be larger than 1.9 meters in height and 0.9 meters in width.

K-12 Outreach Activities

Times: I: 0900-1200, II: 1240-1420, III: 1515-1700

	Wed.		Thur.		
	I	II	I	II	III
(A) CERSER/IGARSS GPS Hands-On Training	X		X		
(B) CERSER/IGARSS Remote Sensing Art Workshop	X	X	X	X	X
(C) Mathematics of Remote Sensing Team Contest		X			X
(D) IGARSS Scavenger Hunt		X	X	X	X
(E) IGARSS and You Photo Shoot	X		X		X
(F) NOAA Seminars	X	X	X	X	X
(G) IGARSS Research Poster Session		X		X	
(H) Earthzine Membership Drive	X	X	X	X	X

(A) CERSER/IGARSS GPS Hands-On Training

Students will first receive instructions on how to operate the devices. They will then be presented with the challenge of navigating to preselected local sites and recording data. Pairs of students will use hand-held GPS to complete the tasks.

(B) CERSER/IGARSS Remote Sensing Art Workshop

Students provide a visual insight into how experiences at IGARSS'09 have impacted them. Close your eyes and visualize some of the highlights of IGARSS 2009 including registration, exhibits, people, posters, etc. What colors do you recall seeing the most (yellow, blue, etc.)? Use those colors and sights in your design of an IGARSS 2009 Mousepad. Mousepads and paints will be provided by The ECSU Center of Excellence in Remote Sensing Education and Research (CERSER).

(C) Mathematics of Remote Sensing Team Contest

Student teams bring their collective wisdom to the solution of mathematics problems related to remote sensing and climate change. You can sign up to join a team at the education and outreach booth. Teams are challenged to solve 20 multiple choice mathematics questions. Awards are presented to each member of the winning teams.

(D) IGARSS Scavenger Hunt

Students write four questions that they will ask the scientist and vendors. They take their questions to the Education Outreach booth for approval and signature. Questions can ask about remote sensing

or why they enjoy their job or what subjects are most important to study, what does a certain word or image mean what is the importance of remote sensing, What is GIS, What is GPS, etc. Students then visit with vendor booths and meet with scientists and engineers. They ask questions and get a signature. Rewards are provided for all who complete the IGARSS scavenger hunt.

(E) IGARSS and You Photo Shoot

Have your photo taken and printed on the cover of the IGARSS Education Outreach programme flier.

(F) NOAA Seminars

Nina Jackson of the National Oceanic and Atmospheric Administration will conduct discussions and demonstrations of educational products for learners to help build understanding of the science of Earth's systems and the stewardship of our planet.

Operational Environmental Satellites: An overview of the NOAA operational environmental satellites, Geostationary Operational Environmental Satellites (GOES) and the Polar Orbiting Environmental Satellites (POES). After a short question and answer period, the students will play the "GOES POES Wild World of Weather Adventure Game" prepared by the Jet Propulsion Laboratory (JPL) under contract to NASA & NOAA.

Bathymetry, Topography and You: Discussion of the importance of satellite data and data measurement. After a short question and answer period, the students will punch out, fold flaps, and create an icosahedron globe generated and prepared by the NOAA National Geophysical Data Center.

Operational Environmental Satellites: An overview of the NOAA operational environmental satellite, Geostationary Operational Environmental Satellites (GOES). After a short question and answer period, the students will construct a mystery book of weather, space weather, and search and rescue prepared by the Jet Propulsion Laboratory (JPL) under contract to NASA & NOAA.

(G) IGARSS Research Poster Session

Hundreds of research posters will be on display related to themes that have a strong link to the development of the African continent, as well as themes that have international relevance. Authors will be available at their posters for discussion of their research and to share their methods with the participants.

(H) Earthzine Membership Drive

Earthzine will kick off its 2009 Student Essay Competition Sustainability through Earth Observation and Engineering. Representatives will distribute the essay competition information and help you to sign up for an Earthzine membership.

2009 Earthzine Student Essay Competition

Sustainability through Earth Observation and Engineering

Earthzine invites you to submit an essay for the 2009 Student Essay Competition: Sustainability through Earth Observation and Engineering. Earthzine, an online environmental journal, is conducting a competition to encourage undergraduate and graduate students to creatively examine the benefits that new technological systems in Earth observation and engineering can have on sustainability. Students are encouraged to submit essays that follow one of the two dominate themes in sustainability: social equity and environmental protection. Essays should also be related to one or more of Earthzine's focal topics: Agriculture, Biodiversity, Climate, Disasters, Ecosystems, Energy, Health, Water, or Weather. Essays should follow Earthzine's Writers' Guidelines.

After initial review, Earthzine will post several essays on its webpage. The author(s) of the essay will be invited to lead a blog about their essay and to participate in blogs of competing essays. Winners will be determined through an Earthzine Readers' Choice Vote based on the quality of the essay and the quality of the blog. Prizes will be given for first place ($500), second place ($250), and third place ($150).

Submission Guidelines: Queries may be sent to David Mullins, Ph.D., Associate Education Editor, at any time (dmullins@sf.edu). The deadline for the submission of essays is October 17, 2009. Blogging will occur November 15-December 15, 2009. Winners will be announced on Earthzine on December 21, 2009, which is the Winter Solstice. Check for more information on Earthzine.

Social Events

Date & Time	Event	Venue	Access
Sunday 12 July 17:30 to 19:30	Welcoming Reception	Leslie Social Science Building foyer	All delegates
Monday 13 July 12:45 – 14:00	Session Chairs Briefing and Luncheon	Smuts Residence Dining Hall	Session chairs and assigned student monitors
Monday 13 July 18:30 - 21:00	GRSS Editors' Dinner and Discussion	UCT Club, Upper Campus	Editors, sub-editors and aspirant editors
Tuesday 14 July 12:45 – 14:15	Young Professionals & GOLD (Graduates Of the Last Decade) Luncheon ‡ (Refer to note below.) Host: Shannon Brown	Smuts Residence Dining Hall	Ticketed (Ask at registration desk for purchase of additional tickets). * Additional delegates welcome.
Tuesday 14 July 19:30 -22:00 (Buses depart from hotels at 19:00+; return by bus to hotels from ~21:45)	IGARSS 2009 by Night	Dinner at various theme restaurants †Refer to notes below	All full registration delegates. Check ticket to confirm your choice.
Wednesday 15 July 12:45 – 14:15	Technical Chairs and Chapters Lunch	Smuts Residence Dining Hall	Ticketed or by invitation. Technical Committee Chairs and Chapter Chairs
Wednesday 15 July 18:30 – 21:00 Buses return to hotels at 20:00 20:30 and 21:00	International Soccer Match. GRSS International Football Association (GIFA) Supremo: Paul Siqueira, siqueira@ecs.umass.edu	Rugby Field below Smuts Hall. Drinks and supper available at UCT Club after matches at own cost.	Players and spectators (open access, no charge. IGARSS T-shirt for sale)
Wednesday 15 July 19:30 – 21:30 (Buses depart hotels at 19:00+)	Wine Tasting evening (includes snack supper)	Cape Town Castle	Ticketed (Ask at registration desk for purchase of additional tickets).
Thursday 16 July 20:00 – 22:00 (Buses depart hotels at 19:30+)	IGARSS'09 Awards Gala Dinner	Mt Nelson Hotel Banquet Hall	Ticketed (Ask at registration desk for purchase of additional tickets)

‡Young Professionals & GOLD (Graduates Of the Last Decade) Luncheon

Luncheon for recent graduates and young professionals to introduce them to the vision and mission of GRSS, to meet senior members of the Society and to meet each other as future leaders in the RS profession. Additional tickets available at the registrations desk. New members of this informal network welcome.

†Theme restaurants:

Please note that tickets are exclusive to the venue named on the ticket. Admission by ticket only.

5 Flies – fine dining set in an historical Cape Dutch building
Jonkershuis – historical dining room on the Groote Schuur Wine Estate.
Catharina's Retaurant – site of first winery in the Cape, Steenberg Wine Estate.
Africa Café; Marcos Restaurant; Gold Museum; Nyoni's Kraal – African cuisine

Student Paper Prize 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 Cape Town. Three prizes will be presented: First Prize (Mikio Takagi Student Prize) US$500, Second Prize US$300, Third Prize US$200, plus certificates for each. Following the special session at IGARSS, a complimentary ticket to the GRSS Annual Awards Banquet will be given to all ten finalists. The ten finalists are listed below (the finalist's name and affiliation are underlined on each paper):

TU1.O5.1: THE CONTRIBUTION OF CHRIS/PROBA DATA FOR TROPICAL PEAT SWAMP LANDSCAPE DISCRIMINATION PURPOSES
Veraldo Liesenberg; Freiberg University of Mining and Technology
Hans-Dieter Viktor Boehm; Kalteng Consultans
Richard Gloaguen; Freiberg University of Mining and Technology

TU1.O5.2: A NOVEL APPROACH TO THE SELECTION OF SPATIALLY INVARIANT FEATURES FOR CLASSIFICATION OF HYPERSPECTRAL IMAGES
Claudio Persello; University of Trento
Lorenzo Bruzzone; University of Trento

TU1.O5.3: LEARNING THE RELEVANT IMAGE FEATURES WITH MULTIPLE KERNELS
Devis Tuia; University of Lausanne
Giona Matasci; University of Lausanne
Gustavo Camps-Valls; Universitat de Valencia
Mikhail Kanevski; University of Lausanne

TU1.O5.4: A CHANGE DETECTION ALGORITHM FOR RETRIEVING HIGH-RESOLUTION SURFACE SOIL MOISTURE FROM SMAP L-BAND RADAR AND RADIOMETER OBSERVATIONS
Maria Piles; Universitat Politecnica de Catalunya
Adriano Camps; Universitat Politecnica de Catalunya
Dara Entekhabi; Massachusetts Institute of Technology

TU1.O5.5: CHARACTERIZATION OF L-BAND RADIO FREQUENCY INTERFERENCE ACROSS THE CONTINENTAL USA USING A KURTOSIS DETECTOR
Sidharth Misra; University of Michigan
Christopher Ruf; University of Michigan

TU2.O5.1: MICROWAVE SCATTERING PROPERTIES OF DRY SNOW USING THE BI-CONTINOUS RANDOM MEDIA
Xiaolan Xu; University of Washington
Kung-Hau Ding; Air Force Research Laborator
Leung Tsang; University of Washington

TU2.O5.2: TOPOGRAPHY OF SAND COVERED BEDROCK USING A TWO-FREQUENCY AIRBORNE INTERFEROMETRIC SAR MEASUREMENTS
Adel Elsherbini; University of Michigan
Kamal Sarabandi; University of Michigan

TU2.O5.3: INVESTIGATION ON THE APPLICATIONS OF DECORRELATION ANALYSIS IN POLARIMETRIC SAR INTERFEROMETRY
Yong-Sheng Zhou; National Key Laboratory of Microwave Imaging Technology
Wen Hong; National Key Laboratory of Microwave Imaging Technology
Fang Cao; National Key Laboratory of Microwave Imaging Technology

TU2.O5.4: HIGH RESOLUTION SUBSURFACE IMAGING OF DEEP TARGETS BASED ON DISTRIBUTED SENSOR NETWORKS
Fikadu Dagefu; University of Michigan, Ann Arbor
Kamal Sarabandi; University of Michigan, Ann Arbor

Awards

IEEE Geosciences and Remote Sensing Society Awards to be presented at IGARSS 2009.

At the Plenary Assembly, Monday, 13 July 2009

IEEE Fellow Awards

Prof. Mahta Moghaddam, University of Michigan, Ann Arbor, MI, USA:
"For contributions to forward and inverse scatteringtechniques for radar remote sensing."

Prof. Ian Cumming, University of British Columbia, Vancouver, Canada:
"For achievements in synthetic aperture radar signal processing."

Prof. Helmut Rott, Universität Innsbruck, Innsbruck, Austria:
"For contributions to microwave techniques for evaluating climate change."

Prof. Sebastiano B. Serpico, University of Genoa, Genova, Italy:
"For contributions to pattern recognition for remote sensing image analysis."

Prof. Yisok Oh, Hongik University, Seoul, Korea:
"For contributions to microwave remote sensing of soil moisture and surface roughness."

Dr. Simon H. Yueh, Jet Propulsion Laboratory, Pasadena, CA, USA:
"For contributions to polarimetric radar and radiometer remote sensing."

IEEE GRS-S Distinguished Achievement Award

Dr. Jong-Sen Lee, US Naval Research Laboratory (retired), Washington, DC, USA:
"For significant technical contributions in the field of Synthetic Aperture Radar (SAR), polarimetric and interferometric SAR information processing and applications."

IEEE GRS-S Outstanding Service Award for 2009

Prof. William (Bill) Emery, University of Colorado, Boulder ,CO, USA:
"In recognition of his outstanding service for the benefit and advancement of the IEEE Geoscience and Remote Sensing Society"

IEEE GRS-S Education Award for 2009

Prof. V. Chandrasekar, Colorado State University, Fort Collins, CO, USA:
"In recognition of his significant educational contributions to Geoscience and Remote Sensing"

At the Awards Banquet, Thursday, 16 July 2009

IEEE GRSS Certificates of Recognition

Dr. Diane Evans:
"For your Continuous Contributions and Leadership to the GRS-S AdCom and the GRS-Society."

Prof. David Weissman:
"For your Continuous Contributions and Leadership to the GRS-S AdCom and the GRS-Society."

IEEE GRSS Membership

Why should I become a GRSS Member:

I would like to encourage you to join GRSS if you are not a member. In the following, I enumerate the advantages and benefits of being a member.

Advantages and Benefits of Being a Member of the IEEE Geoscience and Remote Sensing Society:

1. You can make a bigger impact on Remote Sensing through the Society. With the Earth

Observing System (EOS) and most of the Earth System Science Pathfinder (ESSP) satellites in orbit, the upcoming National Polar Orbiting Operational environmental Satellite System (NPOESS) and first tier of NRC Decadal Survey-recommended missions, remote sensing will play increasingly important roles in solutions to environmental problems, the study of global climate change and the monitoring of natural disasters. We are a transnational society. Our Society is a member of the International Group

on Earth Observations (GEO). In 2005, we held two IEEE GEOSS Workshops, in Seoul and in South Africa. In view of 9/11 and the on-going war in Iraq, subsurface sensing and foliage penetration problems have emerged as important tools for demining and target detection. We see great strides in remote sensing instrumentation, data processing, and applications. The IEEE-GRS Society is one of IEEE's fastest growing societies. The Society strives to address remote sensing policies and research directions. By being a member, you can be a part of this important voice. You can make a bigger impact on these issues.

2. You can readily access our three premier journals: the IEEE Transactions on Geoscience and Remote Sensing, the IEEE Geoscience and Remote Sensing Letters and the new IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, which was launched in 2008. Our Society's archival publications represent the forefront of remote sensing science, technology and applications. The Transactions are among the premier journals in IEEE as well as remote sensing journals in terms of citation index and impact factor. Members can access the latest issues either on-line or via hard copies in the mail.

3. You can participate in our six Technical Committees: They are Instrumentation and Future Technologies, Data Archives and Distribution, Data Fusion, International Spaceborne Imaging Spectroscopy, Frequency Allocations in Remote Sensing and Remote Sensing Applications. The Technical Committees work together to review the state of art of technology in these research areas. They make important impacts on the future directions of remote sensing technologies. You can be a member and participate in this process.

4. You can attend IGARSS at a reduced rate and also participate in the planning of IGARSS. Our annual international symposium reports on the recent advances in remote sensing. The

IGARSS attendance continues to increase. More than 1000 people attended every IGARSS from 2000 to 2008, with more than 1500 at IGARSS 2007 in Barcelona and more than 1700 at IGARSS 2008 in Boston. Members are entitled to reduced registration fees. You can also help in the planning of IGARSS. If you are an expert in the technical topics of Land, Oceans, Atmosphere, Cryosphere, Analysis Techniques, Applications, Electromagnetics and Radiative Transfer, Sensors and Platforms, Education and Policy, etc., you may be asked to serve on the Technical Programme Committee. You can also volunteer to organize special sessions.

5. You can utilize the Resources provided by the Society, such as Education, Industrial Relations and current state-of-the-art information of the IEEE GRSS (http://www.grss-ieee.org/).

The Society expends substantial efforts in remote sensing education initiatives, development and collection of educational resources for K-12, college/ graduate education as well as continuing education for professionals. Members can access these resources. We are strengthening our industry relations programme. As a member, you can connect to our industrial partners via this initiative.

6. Other benefits of IEEE Members include subscription to IEEE journals in fields related to remote sensing, career and employment resources, and favorable rates in IEEE insurance programs. They are listed at http://www.ieee.org/web/membership/benefits/index.html

In the meantime, if you have suggestions concerning the Society, please do not hesitate to let me know.

Sincerely yours,
Anthony Milne
President
IEEE-GRSS
Phone: 61-2-9385 8097; 61-2-9451-4628
t.milne@unsw.edu.au

Membership Options

Membership is open to professionals and students with varying levels of academic accomplishment and work experience.

Full Membership is available to those professionals that have demonstrated competence in an IEEE field. To apply, complete a Member Application Form and select GRSS as an additional Society Membership.

A Student Member must carry at least 50% of a normal, full-time academic programme as a registered undergraduate or graduate student in a regular course of study in IEEE designated fields. Student Member fees are extremely low, and benefits are equal to those of Member grade. To apply, complete a Student Member Application Form and select GRSS as an additional Society Membership.

Affiliate Membership is available to those professionals who seek to affiliate themselves with GRSS but do not seek IEEE membership. Affiliates of GRSS enjoy full benefits of the Society, including monthly, on-line access to the Transactions on Geoscience and Remote Sensing, Geoscience and Remote Sensing Letters, Journal of Selected Topics in Applied Earth Observations and Remote Sensing (J-STARS), as well as the quarterly GRSS Newsletter and reduced symposium fees. To apply, complete an Affiliate Member Application Form.

Membership Fees

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	Full year	Half year	Full Year	Half Year	Full Year	Half Year	
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United States	$4.00	$56.00	$30.00	$36.00	$28.00	$18.00	$15.00
Canada (incl. GST)	$4.00	$56.00	$30.00	$36.00	$28.00	$18.00	$15.00
Canada (incl. HST)	$4.00	$56.00	$30.00	$36.00	$28.00	$18.00	$15.00
Africa, Europe, Middle East	$4.00	$56.00	$30.00	$36.00	$28.00	$18.00	$15.00
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Asia, Pacific	$4.00	$56.00	$30.00	$36.00	$28.00	$18.00	$15.00

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Future IGARSS Symposia

IGARSS'10 - Honolulu, Hawaii, USA
Co-Chairs: Dr. Karen M. St. Germain and Dr. Paul Smits
July 26-30, 2010

IGARSS'11 - Sendai, Japan
Chair: Prof. Motoyuki Sato
1 - 5 August, 2011

IGARSS'12 - Munich, Germany
Co-Chairs: Prof. Alberto Moreira and Dr. Yves-Louis Desnos
July 22-27, 2012

IGARSS'13 - Melbourne, Australia
Chair: Mr. Peter Woodgate
July 2013 (dates TBD)

Opening and Plenary Agenda

IGARSS 2009 OPENING PLENARY SESSION PROGRAMME
AND KEYNOTE TALKS
13 July 2009, Jameson Hall, University of Cape Town
Master of Ceremonies: Prof Harold Annegarn, IGARSS'09 General Chair

09:00 Dignitaries enter hall.

09:10 **Prof Tony Milne, President of IEEE Geosciences and Remote Sensing Society**
Welcome to the delegates as President of IEEE GRSS, host organization.

09:18 **Dr Max Price, Vice Chancellor, University of Cape Town**
Welcome to UCT and introduction of the Minister of Science and Technology

09:25 **Minister of Science and Technology, The Hon. Naledi Pandor, MP**
Welcome international delegates to South Africa and official opening of IGARSS'09

09:45 **Prof Tsehaie Woldai**, President of the African Association of Remote Sensing of the Environment (AARSE), co-host organization.
Welcome to delegates as President of AARSE; response and appreciation to the Minister of Science and Technology.

09:57 **Minister and Vice Chancellor depart.**

10:00 **Presentation of IEEE GRSS Awards:** Awards to be announced by **Prof Martti Hallikainen**, Co-Chair, IEEE GRSS Awards Committee.
x6 Fellow Awards, Distinguished Achievement Award; Outstanding Service Award; Education Award.

10:20 Tea and coffee break

10:55 **Plenary Session continued: INVITED KEYNOTE PRESENTATIONS**

11:00 **Dr José Achache**, Secretariat Director, Group on Earth Observation, Geneva.
Reflections on the successes and prospectus of the Global Earth Observation System of Systems.

11:40 **Dr. Wilbur Ottichilo**, Member of Parliament, Kenya; former Director General, Regional Centre for Mapping of Resources for Development, Nairobi; and former Vice-President for East African Region, African Association for Remote Sensing of the Environment.
Geospatial and Space Sciences – A perspective in terms of African development.

12:10 **Dr Masami Hato**, ASTER GDS Project Manager from ERSDAC, Japan.
ASTER and Global Digital Elevation Model G_DEM.

12:40 Lunch break
Lunch and briefing session for Session Chairs in Smuts Hall

14:20 to 16:00 **MO3.O12 Panel Discussion: GEO/GEOSS Collaboration - Opportunities in Global Earth Observation.** Co-Chairs: Robert Scholes, CSIR and Michael Tanner
Venue: Leslie 1D

MO3.O1: Monday, July 13, 14:20 - 16:00

MO3.O1 **The Maturing A-Train Constellation: Integrated Systems Earth Science and Applications**

Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 2A
Chair: Steve Volz

14:20
MO3.O1.1 **CONSTELLATIONS: A NEW PARADIGM FOR EARTH OBSERVATIONS**
Angelita Kelly, NASA Goddard Space Flight Center, United States; Stephen Volz, Cheryl Yuhas, NASA Headquarters, United States; Warren Case, SGT, Inc., United States

14:40
MO3.O1.2 **AMSR-E AND ITS FOLLOW-ON, AMSR2**
E. Lobl, R. Spencer, University of Alabama in Huntsville, United States; K. Imaoka, K. Nakagawa, EORC/JAXA, Japan

15:00
MO3.O1.3 **MODES OF NATURAL AND FORCED CLIMATE VARIABILITY IN 6 YEARS OF AIRS AND AMSU DATA**
Alexander Ruzmaikin, Hartmut Aumann, Jet Propulsion Laboratory, California Institute of Technology, United States

15:20
MO3.O1.4 **INSIGHTS INTO TROPOSPHERIC CHEMISTRY: NEW RESULTS UTILIZING EOS TES, OMI, AND MOPITT ON THE A-TRAIN**
Annmarie Eldering, Kevin Bowman, John Worden, Reinhard Beer, Jet Propulsion Laboratory/ Caltech, United States; Pawan Bhartia, NASA Goddard Space Flight Center, United States; Pieternel Levelt, Royal Netherlands Meteorological Institute, Netherlands; John Gille, David Edwards, Merritt Deeter, National Center for Atmospheric Research, United States

MO3.O2: Monday, July 13, 14:20 - 16:00

MO3.O2 **Geological Applications I**

Session Type: Oral-Contributed
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 2D
Chair: Vern Singhroy

14:20
MO3.O2.1 **DRAINAGE NETWORK AND SEISMOLOGICAL ANALYSIS OF ACTIVE TECTONICS IN NANGA PARBAT HARAMOSH MASSIF, PAKISTAN**
Faisal Shahzad, Syed Amer Mahmood, Richard Gloaguen, Remote Sensing Group, Germany

14:40
MO3.O2.2 **GULLY EROSION MAPPING USING ASTER DATA AND DRAINAGE NETWORK ANALYSIS IN THE MAIN ETHIOPIAN RIFT**
Moncef Bouaziz, Arief Wijaya, Richard Gloaguen, TU-Freiberg, Institut für Geologie, Germany

15:00
MO3.O2.3 **SOME EARLY DEFORMATION MEASUREMENT RESULTS FROM UAVSAR**
Scott Hensley, JPL, United States; Howard Zebker, Stanford University, United States; Cathleen Jones, Thierry Michel, Alex Fore, Marc Simard, Charles Le, Bruce Chapman, Ron Muellerschoen, JPL, United States

15:20
MO3.O2.4 **TEMPERATURE, COLOR AND DEFORMATION MONITORING OF VOLCANIC REGIONS IN NEW ZEALAND**
Karen Joyce, Sergey Samsonov, Gill Jolly, GNS Science, New Zealand

15:40
MO3.O2.5 **INSAR MONITORING OF LANDSLIDES USING RADARSAT AND ALOS**
Vern Singhroy, CCRS, Canada

MO3.O3: Monday, July 13, 14:20 - 16:00

MO3.O3 **Optical Modeling and Inversion**
Session Type: Oral-Contributed
Time: Monday, July 13, 14:20 - 16:00
Place: Menzies M9
Chair: Shunlin Liang

14:20
MO3.O3.1 **COMPARISON OF LST RETRIEVAL ALGORITHMS BETWEEN SINGLE-CHANNEL AND SPLIT-WINDOWS FOR HIGH-RESOLUTION INFRARED CAMERA**
Li Zhu, China Environmental Monitoring Centre, Beijing, China; Jiaguo Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Chuanqing Wu, China Environmental Monitoring Centre, Beijing, China; Bingfeng Yang, Nanjing Normal University, Jiangsu, Nanjing, China; Qing Li, China Environmental Monitoring Centre, China; Hui Gong, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

14:40
MO3.O3.2 **LIGHT SCATTERING BY THIN CURVED DIELECTRIC SURFACE AND CYLINDER**
S. Selim Seker, Bogazici University, Turkey; Gokhan Apaydin, University of Technology, Switzerland

15:00
MO3.O3.3 **TEST OF THE SAIL-THERMIQUE RADIATIVE TRANSFER MODEL FOR SIMULATING THERMAL INFRARED EMISSIVITY AND EMISSIVITY SPECTRA OF PLANT CANOPIES**
Albert Olioso, INRA, France; Jose Sobrino, Guilhem Soria, University of Valencia, Spain; Michaël Chelle, INRA, France; Benoît Duchemin, Frederic Jacob, IRD, France

15:20
MO3.O3.4 **AUTOMATIC GENERATION OF EMISSIVITY MAPS ON A EUROPEAN SCALE**
Eduardo Caselles, University of Valencia, Spain; Francisco Abad, Polytechnic University of Valencia, Spain; Enric Valor, Joan Miquel Galve, Vicente Caselles, University of Valencia, Spain

15:40
MO3.O3.5 **MAPPING HIGH-RESOLUTION LAND SURFACE RADIATIVE FLUXES FROM MODIS**
Shunlin Liang, University of Maryland, United States

MO3.O4: Monday, July 13, 14:20 - 16:00

MO3.O4 **Sentinel-1, The European Radar Constellation I**
Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Menzies M10
Co-Chairs: Evert Attema and Malcolm Davidson

14:20
MO3.O4.1 **SENTINEL-1 MISSION OVERVIEW**
Evert Attema, Malcolm Davidson, Paul Snoeij, Bjorn Rommen, Nicolas Floury, European Space Agency, Netherlands

14:40
MO3.O4.2 **ANALYSIS OF SENTINEL-1 MISSION CAPABILITIES**
Paul Snoeij, Evert Attema, European Space Agency, Netherlands; Andrea Pietropaolo, Thales Alenia Space Italia, Italy; Vanessa Mastroddi, InterConsulting, Italy; Michelangelo L'Abbate, Claudio Bruno, Thales Alenia Space Italia, Italy

15:00
MO3.O4.3 **THE SENTINEL-1 C-SAR INSTRUMENT DESIGN**
Friedhelm Rostan, Markus Huchler, Sebastian Riegger, EADS Astrium GmbH, Germany; Renato Croci, Thales Alenia Space Italia, Italy; Ramon Torres, ESA-ESTEC, Netherlands

15:20
MO3.O4.4 **FDBAQ A NOVEL ENCODING SCHEME FOR SENTINEL-1**
Paul Snoeij, Evert Attema, European Space Agency, Netherlands; Andrea Monti Guarnieri, Fabio Rocca, Politecnico di Milano, Italy

15:40
MO3.O4.5 **INNOVATIVE AND EFFICIENT STRATEGY OF CALIBRATING SENTINEL-1**
Marco Schwerdt, Benjamin Bräutigam, Björn Döring, Manfred Zink, German Aerospace Centre, Germany

MO3.O5: Monday, July 13, 14:20 - 16:00

MO3.O5 **SAR**
Session Type: Oral-Contributed
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 2B
Chair: Jakob van Zyl

14:20
MO3.O5.1 **EFFICIENT CONFIGURATIONS OF SAR SENSORS FOR IMPROVED RANGE RESOLUTION**
Diego Cristallini, Debora Pastina, Pierfrancesco Lombardo, University of Rome, Italy

14:40
MO3.O5.2 **COHERENT MULTI-FREQUENCY-BAND RESOLUTION ENHANCEMENT FOR SYNTHETIC APERTURE RADAR**
Evan Zaugg, David Long, Brigham Young University, United States; Matthew Edwards, Alex Margulis, ARTEMIS Inc., United States

15:00
MO3.O5.3 **3D SAR FOCUSING FOR SUBSURFACE POINT TARGETS**
Majid Albahkali, Mahta Moghaddam, University of Michigan, United States

15:20
MO3.O5.4 **ADAPTIVE SCAN-ON-RECEIVE BASED ON SPATIAL SPECTRAL ESTIMATION FOR HIGH-RESOLUTION, WIDE-SWATH SYNTHETIC APERTURE RADAR**
Federica Bordoni, Marwan Younis, Eduardo Makhoul Varona, Gerhard Krieger, Microwaves and Radar Institute (IHR), German Aerospace Center (DLR), Germany

15:40
MO3.O5.5 **FOCUSING SYNTHETIC APERTURE SONAR (SAS) DATA WITH THE OMEGA-K TECHNIQUE**
Riccardo De Paulis, Eni E&P Division, Italy; Claudio Prati, Fabio Rocca, Silvia Scirpoli, Stefano Tebaldini, Politecnico, Italy

MO3.O6: Monday, July 13, 14:20 - 16:00

MO3.O6 **Hyperspectral Sensing I**
Session Type: Oral-Contributed
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 2C
Co-Chairs: David Goodenough and Jay Pearlman

14:20
MO3.O6.1 **SPECTRAL STABILITY MONITORING OF AN IMAGING SPECTROMETER BY MEANS OF ONBOARD SOURCES**
Petra D'Odorico, Edoardo Alberti, Francesco Dell'Endice, Andreas Hueni, Michael Schaepman, Remote Sensing Laboratories, Dept. of Geography, University of Zurich, Switzerland

14:40
MO3.O6.2 **PLEIADES-HR SYSTEM QUALIFICATION: A FOCUS ON GROUND PROCESSING AND IMAGE PRODUCTS PERFORMANCES, A FEW MONTHS BEFORE LAUNCH**
Simon Baillarin, Laurent Lebegue, Philippe Kubik, Centre National d'Etudes Spatiales, France

15:00
MO3.O6.3 **COMPARISON OF AVIRIS AND AISA FOR CHEMISTRY MAPPING**
David G. Goodenough, Natural Resources Canada, Canada; K. Olaf Niemann, University of Victoria, Canada; Geoff Quinn, Piper Gordon, Ashley Gross, Natural Resources Canada, Canada; Tian Han, University of Victoria, Canada; Geordie Hobart, Hao Chen, Andrew Dyk, Natural Resources Canada, Canada

15:20
MO3.O6.4 **OFFSHORE HYDROCARBON SEEPAGE CHARACTERIZATION THROUGH SPECTROSCOPY, QUIMIOMETRY AND OPTICAL REMOTE SENSING**
Talita Lammoglia, Carlos Souza Filho, Geosciences Institute, University of Campinas, Brazil

15:40
MO3.O6.5 **VISUALISATION, PROCESSING AND STORAGE OF SPECTRODIRECTIONAL DATA BASED ON THE SPECTRAL DATABASE SPECCHIO**
Andreas Hueni, Stefan Rey, Daniel Schläpfer, Juerg Schopfer, Mathias Kneubühler, University of Zurich, Switzerland

MO3.O7: Monday, July 13, 14:20 - 16:00

MO3.O7 **Forest Resources of Africa**
Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 3A
Co-Chairs: Iain Woodhouse and Mavuto Tembo

14:20
MO3.O7.1 **DISTRIBUTION OF ABOVEGROUND BIOMASS IN AFRICAN WOODLAND SAVANNAS**
Sassan Saatchi, Jet Propulsion Laboratory, United States; Niall Hanan, Colorado State University, United States; Wolfgang Buermann, University of California, Los Angeles, United States; Edward Mitchard, University of Edinburgh, United Kingdom; Herman H. Shugart, University of Virginia, United States

14:40
MO3.O7.2 **REMOTE SENSING AND FOREST RESOURCES IN SUB-SAHARAN AFRICA**
Pauline Dube, B. P. Parida, Mogodisheng M. B. Sekhwela, University of Botswana, Botswana; Balakidzi B. Nduna, Ministry of Education, Botswana

15:00
MO3.O7.3 **DETECTING CHANGES OF WOODY BIOMASS IN FOUR AFRICAN FOREST-SAVANNA LANDSCAPES USING MULTI-TEMPORAL L-BAND SAR**
Edward Mitchard, Edinburgh University, United Kingdom; Sassan Saatchi, Jet Propulsion Laboratory, United States; Patrick Meir, Iain Woodhouse, Edinburgh University, United Kingdom; Lee White, Gabon Delegation to UNFCCC, Gabon; Katherine Abernethy, University of Stirling, United Kingdom

15:20
MO3.O7.4 **DETECTION OF LAND COVER CHANGES IN EL RAWASHDA FOREST, SUDAN: A SYSTEMATIC COMPARISON**
Wafa Nori, Irmgard Niemeyer, Technische Universität Bergakademie Freiberg, Germany

15:40
MO3.O7.5 **LONG TERM MONITORING OF WOODLAND COVER AND BIOMASS CARBON IN AFRICAN WOODLANDS**
John Grace, Iain Woodhouse, Casey Ryan, Mathew Williams, University of Edinburgh, United Kingdom

MO3.O8: Monday, July 13, 14:20 - 16:00

MO3.O8 **TRMM and GPM I**
Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 3B
Co-Chairs: V. Chandrasekar and Shuji Shimizu

14:20
MO3.O8.1 **UAE MAPPED ATTENUATION AT RF FREQUENCIES (UAE-MARF)**
Abdulla Bushahab, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates; Khaled Mubarak, Ali M. Dawood, Raed Shubair, Khalifa University of Science, Technology and Research, United Arab Emirates

14:40
MO3.O8.2 **SPACE-BORNE MEASUREMENTS OF CHANGES IN CLOUD OPTICAL THICKNESS AND CLOUD DROP SIZE ASSOCIATED WITH PRECIPITATION**
Takahisa Kobayashi, Ahoro Adachi, Meteorological Research Institute, Japan

15:00
MO3.O8.3 **VALIDATION OF SATELLITE RAINFALL PRODUCTS OVER DIFFERENT PARTS OF AFRICA**
Tufa Dinku, International Research Institute for Climate and Society (IRI), United States

15:20
MO3.O8.4 **THE NPP ATMOSPHERE PRODUCT EVALUATION AND ALGORITHM TEST ELEMENT (PEATE): A FACILITY FOR QUANTITATIVE ASSESSMENT OF VIIRS ATMOSPHERE PRODUCTS AND GENERATION OF CLIMATE DATA RECORDS**
Liam Gumley, Hank Revercomb, Bob Holz, Scott Mindock, Steve Dutcher, Geoff Cureton, Space Science and Engineering Center, University of Wisconsin-Madison, United States

15:40
MO3.O8.5 **NEW REMOTE SENSING TECHNIQUES IN IDENTIFYING THE OCEANIC ORIGIN OF THE PRECIPITATION JUMP IN THE SAHEL**
W. Timothy Liu, Xiaosu Xie, Jet Propulsion Laboratory, United States

MO3.O9: Monday, July 13, 14:20 - 16:00

MO3.O9 **NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation I**

Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 1A
Co-Chairs: Bruce Guenther and Xiaoxiong (Jack) Xiong

14:20
MO3.O9.1 **THE NPOESS PREPARATORY PROJECT: POST-LAUNCH CALIBRATION/VALIDATION PLAN OVERVIEW**
Karen St.Germain, NPOESS Integrated Program Office, United States

14:40
MO3.O9.2 **NASA CALIBRATION AND CHARACTERIZATION IN THE NPOESS PREPARATORY PROJECT (NPP)**
James Butler, Xiaoxiong (Jack) Xiong, NASA's Goddard Space Flight Center, United States; Hassan Oudrari, Chunhui Pan, Science Systems and Applications, Inc., United States; James Gleason, NASA's Goddard Space Flight Center, United States

15:00
MO3.O9.3 **NPP ADVANCED TECHNOLOGY MICROWAVE SOUNDER (ATMS): SENSOR CALIBRATION AND PRELIMINARY DATA PRODUCT PERFORMANCE**
William Blackwell, Laura G. Jairam, R. Vincent Leslie, Massachusetts Institute of Technology - Lincoln Lab, United States

15:20
MO3.O9.4 **NPP CLOUDS AND THE EARTH'S RADIANT ENERGY SYSTEM (CERES) PREDICTED SENSOR PERFORMANCE CALIBRATION AND PRELIMINARY DATA PRODUCT PERFORMANCE**
Kory Priestley, NASA's Langley Research Center, United States

15:40
MO3.O9.5 **THE NPOESS PREPARATORY PROJECT (NPP) CROSS-TRACK INFRARED SCANNER (CRIS) PREDICTED SENSOR PERFORMANCE CALIBRATION AND PRELIMINARY DATA PRODUCT PERFORMANCE**
Gail Bingham, Chad Fish, Vladimir V. Zavyalov, Christopher D. Barnet, Dave Tobin, Larrabee Strow, Denise Hagan, Utah State University, United States

MO3.O10: Monday, July 13, 14:20 - 16:00

MO3.O10 **Satellite Sensor Synergy: Observing the African Large Marine Ecosystems I**

Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 1B
Chair: Johnny Johannessen

14:20
MO3.O10.1 **DAILY COASTAL UPWELLING INDEX DERIVED FROM MODIS SST DATA AND SURF ZONE THERMISTORS**
Ruth Branch, University of Washington, United States; Christo Whittle, Maya Pfaff, George Branch, University of Cape Town, South Africa

14:40
MO3.O10.2 **RECIPE FOR SYNERGETIC ANALYSES OF SATELLITE DATA OF THE GREATER AGULHAS CURRENT REGIME**
Johnny A. Johannessen, Nansen Environmental and Remote Sensing Center, Norway; Bertrand Chapron, IFREMER, France; Fabrice Collard, CLS, France; Vladimir Kudryavtsev, NIERSC, Russian Federation; Marjolaine Rouault, CSIR, South Africa

15:00
MO3.O10.3 **CASE STUDIES OF SATELLITE TRMM MICROWAVE IMAGER SIGNATURES OF SEA SURFACE COOLING ASSOCIATED WITH TROPICAL CYCLONES OVER THE SOUTH-WEST INDIAN OCEAN**
Alberto Mavume, Universidade Eduardo Mondlane, Mozambique; Lars Rydberg, University of Gothenburg, Sweden; Mathieu Rouault, Johann Lutjeharms, University of Cape Town, South Africa

15:20
MO3.O10.4 **OBSERVATIONS OF THERMAL VARIATIONS IN THE MIXED LAYER DEPTH OF THE EQUATORIAL ATLANTIC**
Kwame Agyekum, George Wiafe, Department of Oceanography & Fisheries, University of Ghana, Ghana; Bob Houghton, Lamont-Doherty Earth Observatory, United States; Shaun Dolk, NOAA, United States; Thomas Drake, Coastal Geosciences Program, Office Naval Research, United States; Augustus Vogel, African Partnership Station, United States

15:40
MO3.O10.5 **DEVELOPMENT OF AN INTEGRATED COASTAL EROSION ASSESSMENT PROGRAM ALONG THE COASTLINE OF GHANA**
George Wiafe, Selorm Ababio, Department of Oceanography and Fisheries, University of Ghana, Ghana; Addo Appeaning, Cheryl Hapke, Accra Polytechnic, Ghana; Kwame Agyekum, Department of Oceanography and Fisheries, University of Ghana, Ghana; Tom Lipmann, University of New Hampshire, United States; Dano Roelvink, UNESCO-IHE, Netherlands; Andrew Ashton, Woods Hole Oceanographic Institution, United States; Thomas Drake, Coastal Geosciences Program, Office of Naval Research, United States; Augustus Vogel, Africa Partnership Station, United States

MO3.O11: Monday, July 13, 14:20 - 16:00

MO3.O11 **Satellite Sensing of High Ocean Surface Winds**
Session Type: Oral-Contributed
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 1C
Co-Chairs: Mark Bourassa and Alex Voronovich

14:20
MO3.O11.1 **ON SYNTHETIC APERTURE RADAR BACKSCATTERED CROSS-SECTIONS UNDER HURRICANES**
Hui Shen, Institute of Oceanology, Chinese Academy of Sciences, China; William Perrie, Bedford Institute of Oceanography, Canada; Yijun He, Institute of Oceanology, Chinese Academy of Sciences, China; Zhongfeng Qiu, Institute of Oceanology, China

14:40
MO3.O11.2 **WIND RETRIEVAL OF TROPICAL CYCLONES USING C-BAND SYNTHETIC APERTURE RADARS**
Jochen Horstmann, NATO Undersea Research Center, Italy; Xiaofeng Li, William G. Pichel, NOAA/NESDIS, United States

15:00
MO3.O11.3 **VALIDATION OF REMOTELY-SENSED HURRICANE FORCE WINDS IN EXTRATROPICAL CYCLONES**
Paul Chang, Zorana Jelenak, National Oceanic and Atmospheric Administration, United States; James Carswell, Remote Sensing Solutions, Inc., United States; Stephen Frasier, Tao Chu, University of Massachusetts, United States

15:20
MO3.O11.4 **STATISTICAL STUDY OF WIND FIELD DISTRIBUTION WITHIN EXTRA-TROPICAL CYCLONES FROM 7-YEARS OF QUIKSCAT WIND DATA**
Zorana Jelenak, NOAA/NESDIS/StAR, United States; Joseph Sienkiewicz, Khalil Ahmad, NOAA/NWS/NCEP/OPC, United States; Paul Chang, NOAA/NESDIS/StAR, United States

15:40
MO3.O11.5 **THE COMBINED EFFECT OF SURFACE RAIN AND WIND ON SCATTEROMETER OBSERVATIONS OF SURFACE ROUGHNESS**
David Weissman, Hofstra University, United States; Mark Bourassa, Florida State University, United States

MO3.O12: Monday, July 13, 14:20 - 16:00

MO3.O12 **Panel Session: Opportunities in Global Earth Observation**
Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 1D
Co-Chairs: Robert Scholes and Michael Tanner

MO3.O12.1 **PANEL SESSION: OPPORTUNITIES IN GLOBAL EARTH OBSERVATION**
Robert Scholes, CSIR, South Africa

MO3.O13: Monday, July 13, 14:20 - 16:00

MO3.O13 **The TIGER Initiative: Supporting African Efforts Towards a Water Observation System I**
Session Type: Oral-Invited
Time: Monday, July 13, 14:20 - 16:00
Place: Leslie 1E
Co-Chairs: Diego Fernández Prieto and Carey Rajah

14:20
MO3.O13.1 **EARTH OBSERVATION AND GIS: INTEGRATION WITHIN A PROBABILISTIC APPROCH FOR GOUNDWATER PROSPECTING IN ARID ZONE (IGHREM, MOROCCO)**
Ahmed Er-raji, Driss El Hadani, CRTS, Morocco

14:40
MO3.O13.2 **MONITORING MANGROVES EVOLUTION OF BOANAMARY USING LANDSAT DATA (NORTH WEST OF MADAGASCAR)**
Fanja Razafindramasy, Solofo Rakotondraompiana, University of Antananarivo, Madagascar

15:00
MO3.O13.3 **REMOTE SENSING AND GEOLOGICAL MAPPING FOR A GROUNDWATER RECHARGE MODEL IN THE ARID AREA OF SEBT RBRYKINE: DOUKKALA, WESTERN MOROCCO.**
Kamal Labbassi, Amina Tajdi, University of El Jadida, Morocco; Ahmed Er-raji, Royal Centre of Remote Sensing, Morocco

15:20
MO3.O13.4 **THE MEDIUM RESOLUTION SOIL MOISTURE DATASET: OVERVIEW OF THE SHARE ESA DUE TIGER PROJECT**
Marcela Doubkova, Annett Bartsch, Carsten Pathe, Daniel Sabel, Wolfgang Wagner, Vienna University of Technology, Austria

15:40
MO3.O13.5 **MAPPING AND MONITORING URBAN GROWTH ON WETLANDS IN HUMID TROPICAL CONTEXT USING EARTH OBSERVATION TECHNOLOGY: CASE STUDY OF MANGROVE ZONES AROUND DOUALA IN CAMEROON**
Ngouanet Chrétien, University of Dschang, Cameroon; Ojuku Tiafack, University of Yaounde 1, Cameroon; Dzalla Ngangue Guy Charly, University of Douala, Cameroon

MO4.O1: Monday, July 13, 16:20 - 18:00

MO4.O1 **NASA's Earth Venture Initiative and the Venture Class Missions**
Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 2A
Chair: Steve Volz

MO4.O1.1 **EARTH SCIENCE PROGRAM OVERVIEW—ROLE OF THE VENTURE INITIATIVE**
Stephen Volz, NASA Earth Science Division, United States

MO4.O1.2 **ESSP EARTH VENTURE OVERVIEW**
Ed Grigsby, NASA Earth Systems Science Pathfinder Program, United States

MO4.O1.3 **THE IMPORTANCE OF TECHNOLOGY READINESS IN NASA EARTH VENTURE MISSIONS**
George Komar, James Wells, NASA Goddard Space Flight Center, United States

MO4.O1.4 **PANEL SESSION--OPPORTUNITIES AND CHALLENGES FOR THE EARTH VENTURE**
Ed Grigsby, NASA Langley Research Center, United States

MO4.O2: Monday, July 13, 16:20 - 18:00

MO4.O2 **Geological Applications II**
Session Type: Oral-Contributed
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 2D
Chair: Vern Singhroy

16:20
MO4.O2.1 **A HIGH SPEED MICROWAVE INTERFEROMETER USED FOR MONITORING STROMBOLI VOLCANO**
Linhsia Noferini, Daniele Mecatti, Giovanni Macaluso, Massimiliano Pieraccini, Carlo Atzeni, Maurizio Ripepe, University of Firenze, Italy

16:40
MO4.O2.2 **HYDROCARBON SEEPAGE DETECTION THROUGH GEOBOTANIC AND MULTISPECTRAL AND MULTI-TEMPORAL REMOTE SENSING**
Carlos Souza Filho, Vagney Augusto, Talita Lammoglia, Wilson Oliveira, University of Campinas/Geosciences Institute, Brazil

17:00
MO4.O2.3 **ERS-ENVISAT TANDEM CROSS-INTERFEROMETRY COHERENCE ESTIMATION**
Urs Wegmüller, Maurizio Santoro, Charles Werner, Tazio Strozzi, Andreas Wiesmann, Gamma Remote Sensing AG, Switzerland

17:20
MO4.O2.4 **HIGH RANGE RESOLUTION DIRECTIONAL BOREHOLE RADAR FOR 3-D FRACTURE DELINEATION**
Motoyuki Sato, Takuya Takayama, Tohoku University, Japan

17:40
MO4.O2.5 **DETECTION OF PHYLLOSILICATE MINERAL ZONATIONS ON MARS BY CONTEXTUAL PROCESSING OF MARS EXPRESS OMEGA IMAGERY**
Harald van der Werff, Frank van Ruitenbeek, Freek D. van der Meer, ITC, Netherlands

MO4.O3: Monday, July 13, 16:20 - 18:00

MO4.O3 **Optical Modeling**
Session Type: Oral-Contributed
Time: Monday, July 13, 16:20 - 18:00
Place: Menzies M9
Chair: Robert Sundberg

16:20
MO4.O3.1 **ADVANCES IN BRDF FIELD MEASUREMENT: NEW PRINCIPLE AND INSTRUMENT**
Marc Schwarzbach, Maria von Schoenermark, Universitaet Stuttgart, Germany

16:40
MO4.O3.2 **THE NEW ANGULAR & SPECTRAL KERNEL MODEL FOR BRDF AND ALBEDO RETRIEVAL**
Sihan Liu, Qiang Liu, Qinhuo Liu, Jianguang Wen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Xiaowen Li, Beijing Nomal University, China; Xiaozhou Xin, Qing Xiao, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

17:00
MO4.O3.3 **A MODEL FOR INSTANTANEOUS FAPAR RETRIEVAL: THEORY AND VALIDATION**
Xin Tao, Peking University, China; Dacheng Wang, Zhejiang University, China; Daihui Wu, Binyan Yan, Wenjie Fan, Xiru Xu, Yanjuan Yao, Peking University, China

17:20
MO4.O3.4 **IMPROVED FULL SPECTRUM CLOUDY SCENE SIMULATION**
Robert Sundberg, Steven Richtsmeier, Spectral Sciences, Inc., United States; Raymond Haren, AFRL/RYJT, United States

17:40
MO4.O3.5 **ON THE PREDICTIVE MODELING OF VISIBLE LIGHT INTERACTION WITH FRESH AND ENVIRONMENTALLY STRESSED MONOCOTYLEDONOUS LEAVES**
Gladimir Baranoski, University of Waterloo, Canada

MO4.O4: Monday, July 13, 16:20 - 18:00

MO4.O4 **Sentinel-1, The European Radar Constellation II**
Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Menzies M10
Co-Chairs: Malcolm Davidson and Evert Attema

16:20
MO4.O4.1 **ANALYSIS OF THE SENTINEL-1 RADAR CONFIGURATION FOR SEA ICE MAPPING APPLICATIONS**
Wolfgang Dierking, Alfred Wegener Institute for Polar and Marine Research, Germany

16:40
MO4.O4.2 **SENTINEL - 1 INTERFEROMETRY APPLICATIONS**
Ramon Hanssen, Delft University of Technology, Netherlands; Fabio Rocca, Politecnico di Milano, Italy

17:00
MO4.O4.3 **ACCURACY OF SENTINEL-1 GEOPHYSICAL INFORMATION PRODUCTS**
Malcolm Davidson, Evert Attema, Nicolas Floury, Bjorn Rommen, Paul Snoeij, ESA, Netherlands

17:20
MO4.O4.4 **SENTINEL-1 LAND SURFACE PARAMETER APPLICATIONS**
Christiane Schmullius, Oliver Cartus, Tanja Reidel, University Jena, Germany; Maurizio Santoro, Gamma Remote Sensing Corporation, Switzerland; Robert Eckardt, Nicole Richter, Carolin Thiel, Christian Thiel, University Jena, Germany

MO4.O5: Monday, July 13, 16:20 - 18:00

MO4.O5 **Ground Penetrating Radar Algorithms and Applications: Hazard Detection and Subsurface Mapping**
Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 2B
Co-Chairs: Carey Rappaport and Motoyuki Sato

16:20
MO4.O5.1 **PHYSICAL LIMITATIONS ON DETECTING TUNNELS USING UNDERGROUND FOCUSING SPOTLIGHT SYNTHETIC APERTURE RADAR**
Carey Rappaport, Jose Angel Martinez Lorenzo, Northeastern University, United States

16:40
MO4.O5.2 **IMAGING OF UNDERGROUND ANOMALIES USING RF TOMOGRAPHY AND LATERAL WAVES**
Lorenzo Lo Monte, General Dynamics Information Technology, United States; Danilo Erricolo, University of Illinois at Chicago, United States; Francesco Soldovieri, Consiglio Nazionale delle Ricerche, Italy; Michael C. Wicks, Air Force Research Laboratory, United States

17:00
MO4.O5.3 **MODELING AND VALIDATION OF GPR WAVE SCATTERING WITH THE SEMI-ANALYTIC MODE MATCHING ALGORITHM: CHOOSING OPTIMAL COORDINATE SCATTERING CENTERS**
Ann Morgenthaler, Carey Rappaport, Northeastern University, United States

17:20
MO4.O5.4 **A NEURAL NETWORK ELECTROMAGNETIC APPROACH FOR GPR PAVEMENT DIAGNOSTIC: A PRELIMINARY STUDY**
Salvatore Caorsi, Mattia Stasolla, University of Pavia, Italy

17:40
MO4.O5.5 **2-1/2 DIMENSIONAL BISTATIC GPR PROPAGATION AND SCATTERING MODELING OF ROADWAYS AND TUNNELS WITH PROJECTED 2D FDTD**
Kimberly Belli, Christopher Udall, Carey Rappaport, Sara Wadia-Fascetti, Northeastern University, United States

MO4.O6: Monday, July 13, 16:20 - 18:00

MO4.O6 **Hyperspectral Sensing II**
Session Type: Oral-Contributed
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 2C
Co-Chairs: Jay Pearlman and David Goodenough

16:20
MO4.O6.1 **FEATURE REDUCTION OF HYPERSPECTRAL DATA USING AUTOASSOCIATIVE NEURAL NETWORKS ALGORITHMS**
Giorgio Licciardi, Riccardo Duca, Fabio Del Frate, Università di tor Vergata Roma, Italy

16:40
MO4.O6.2 **A SPECTRAL FITTING MODEL FOR CHLOROPHYLL FLUORESCENCE RETRIEVAL AT GLOBAL SCALE**
Marina Mazzoni, Pierluigi Falorni, Donatella Guzzi, Ivan Pippi, Consiglio Nazionale delle Ricerche, Italy; Wouter Verhoef, International Institute for Geo-Information Science and Earth Observation, Netherlands

17:00
MO4.O6.3 **REQUIREMENTS ON SPECTRAL RESOLUTION OF REMOTE SENSING DATA FOR CROP STRESS DETECTION**
Jonas Franke, Thorsten Mewes, University of Bonn, Center for Remote Sensing of Land Surfaces (ZFL), Germany; Gunter Menz, University of Bonn, Remote Sensing Research Group (RSRG), Germany

17:20
MO4.O6.4 **IMAGE QUALITY EVALUATION ON CHINESE FIRST EARTH OBSERVATION HYPERSPECTRAL SATELLITE**
Bing Zhang, Zhengchao Chen, Junsheng Li, Lianru Gao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

17:40
MO4.O6.5 **ASTER IN MINERAL EXPLORATION: REVIEWS AND PROSPECTS**
Carlos Souza Filho, University of Campinas, Brazil

MO4.O7: Monday, July 13, 16:20 - 18:00

MO4.O7 **Ocean Surface Scattering**
Session Type: Oral-Contributed
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 3A
Chair: Valery Zavorotny

16:20
MO4.O7.1 **NUMERICAL MODELING OF DOPPLER SPECTRUM EVOLUTION FOR SIGNALS SCATTERED BY BREAKING WAVES**
Valery Zavorotny, Alexander Voronovich, NOAA/ Earth System Research Laboratory, United States

16:40
MO4.O7.2 **A POLARIMETRIC SEA SURFACE BACKSCATTERING MODEL**
Attilio Gambardella, Ferdinando Nunziata, Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy

17:00
MO4.O7.3 **TEMPORAL COHERENCE OF THE ELECTROMAGNETIC FIELD SCATTERED BY A MOVING SEA SURFACE IN L-BAND**
Arnaud Coatanhay, ENSIETA, France

17:20
MO4.O7.4 **ELECTROMAGNETIC WAVE SCATTERING FROM OCEAN SURFACE AT LOW GRAZING ANGLES**
Naheed Sajjad, Ali Khenchaf, Arnaud Coatanhay, Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement, France

17:40
MO4.O7.5 **ON THE PRACTICAL APPLICABILITY OF KIRCHHOFF APPROACH FOR SCATTERING FROM FRACTAL SURFACES**
Giorgio Franceschetti, Antonio Iodice, Università degli Studi di Napoli Federico II, Italy; Stefano Perna, Università degli Studi di Napoli Parthenope, Italy; Daniele Riccio, Università degli Studi di Napoli Federico II, Italy

MO4.O8: Monday, July 13, 16:20 - 18:00

MO4.O8 **TRMM and GPM II**
Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 3B
Co-Chairs: V. Chandrasekar and Shuji Shimizu

16:20
MO4.O8.1 **IMPROVING RAINFALL ESTIMATION FROM GROUND BASED RADAR MEASUREMENTS USING NEURAL NETWORKS**
Amin Alqudah, Yanting Wang, V. Chandrasekar, Colorado State University, United States

16:40
MO4.O8.2 **DETECTING TROPICAL CYCLONE WATER VAPOR TRANSPORTATION WITH THE TRMM AND ADVANCED MICROWAVE SOUNDING UNIT (AMSU)**
Xin Wang, Xiang Fang, Hong Qiu, Yuanjing Zhu, China Meteorological Administration, China

17:00
MO4.O8.3 **COMBINE KU AND KA BAND OBSERVATIONS OF PRECIPITATION AND RETRIEVALS FOR GPM GROUND VALIDATION**
Minda Le, V. Chandrasekar, Sanghun Lim, Colorado state university, United States

17:20
MO4.O8.4 **LEVEL 1 ALGORITHM DEVELOPMENT OF SPACEBORNE DUAL-FREQUENCY PRECIPITATION RADAR (DPR) FOR GPM**
Shuji Shimizu, Naofumi Yoshida, Japan Aerospace Exploration Agency, Japan; Hiroshi Hanado, National Institute of Information and Communications Technology, Japan; Tomohiko Higashiuwatoko, Remote Sensing Technology Center of Japan, Japan

17:40
MO4.O8.5 **A LONG-TERM TREND OBSERVED IN TRMM/PR MONTHLY RAINFALL PRODUCTS AND AN EVALUATION OF SAMPLING ERROR BY A BOOTSTRAP METHOD**
Yasuhisa Iida, Takuji Kubota, JAXA, Japan; Toshio Iguchi, NICT, Japan; Riko Oki, JAXA, Japan

MO4.O9: Monday, July 13, 16:20 - 18:00

MO4.O9 **NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation II**

Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 1A
Co-Chairs: Bruce Guenther and Xiaoxiong (Jack) Xiong

16:20
MO4.O9.1 **NPP OZONE MAPPING AND PROFLIER SUITE (OMPS) SENSOR CALIBRATION AND PREDICTED DATA PRODUCT PERFORMANCE**
Scott Janz, NASA's Goddard Space Flight Center, United States; Glen Jaross, Matthew Kowalewski, Science Systems and Applications, Inc., United States; Lawrence Flynn, Bruce Guenther, NOAA, United States; Quinn Remund, Juan Rodriguez, Ball Aerospace & Technologies Corp., United States; Paul Lee, James Done, Northrop Grumman Space Technology, United States

16:40
MO4.O9.2 **NPP VISIBLE/INFRARED IMAGING RADIOMETER SUITE (VIIRS) RADIOMETRIC CALIBRATION AND PREDICTED DATA PRODUCT PERFORMANCE**
Frank DeLuccia, Aerospace, Corp, United States

17:00
MO4.O9.3 **MICROWAVE MEASUREMENTS ON NPP AND NPOESS WITH THE ADVANCED TECHNOLOGY MICROWAVE SOUNDER AND THE MICROWAVE IMAGER/SOUNDER**
David Kunkee, Aerospace, Corp, United States

17:20
MO4.O9.4 **MET OFFICE AND ECMWF CONTRIBUTION TO NPP AND NPOESS CAL/VAL EFFORT**
Nigel Atkinson, Stephen English, United Kingdom Met Office, United Kingdom; William Bell, European Center for Medium-Range Weather Forecast, United Kingdom

17:40
MO4.O9.5 **IMPROVED DESTRIPING FOR TERRA AND AQUA MODIS DATA: ALGORITHM DESCRIPTION AND QUANTITATIVE RADIOMETRIC ASSESSMENT**
Liam Gumley, Kathy Strabala, W. Paul Menzel, Space Science and Engineering Center, University of Wisconsin-Madison, United States

MO4.O10: Monday, July 13, 16:20 - 18:00

MO4.O10 **Satellite Sensor Synergy: Observing the Global Marine Ecosystems II**

Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 1B
Chair: Johnny Johannessen

16:20
MO4.O10.1 **SEA SURFACE TEMPERATURE AND CHLOROPHYLL SATELLITE OBSERVATIONS OF INSTABILITY WAVES IN THE TROPICAL ATLANTIC OCEAN**
Milton Kampel, Ramon M. Freitas, Luciano P. Pezzi, Instituto Nacional de Pesquisas Espaciais, Brazil

16:40
MO4.O10.2 **A PRELIMINARY ASSESSMENT ON THE PERFORMANCE OF THE ASAR RADIAL CURRENT PRODUCT IN THE AGULHAS CURRENT REGION**
Marjolaine Rouault, Council for Scientific and Industrial Research, Ecosystem Earth Observation, South Africa; Fabrice Collard, Collecte Localisation Satellites, Radar Division, France; Johnny A. Johannessen, Nansen Environmental and Remote Sensing Center, Norway

17:00
MO4.O10.3 **SEA SURFACE TEMPERATURE SURVEY USING METEOSAT SECOND GENERATION ALONG THE SENEGALESE COAST**
Mbaye Diop, Laboratoire d'Enseignement et de Recherche en Géomatique, Campus universitaire de l'ESP, Senegal

17:20
MO4.O10.4 **OBSERVATION OF MESOSCALE EDDIES BY USING SAR DATA COMPLEMENTED WITH OPTICAL REMOTE SENSING AND IN SITU MEASUREMENTS**
Rivo Uiboupin, Jaan Laanemets, Tallinn University of Technology, Estonia

17:40
MO4.O10.5 **MONITORING OF ENTEROMORPHA PROLIFERA IN QINGDAO MARINE BY EXPLOITING THE SYNERGY OF ACTIVE AND PASSIVE REMOTE SENSING DATA**
Di Wu, Bing Zhang, Junsheng Li, Yuangfeng Wu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Hao Zhang, Qian Shen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

MO4.O11: Monday, July 13, 16:20 - 18:00

MO4.O11 **Satellite Sea Surface Temperature**
Session Type: Oral-Contributed
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 1C
Co-Chairs: Yi Chao and Akira Shibata

16:40
MO4.O11.2 **VALIDATIONS OF AMSR-E SST IN ARCTIC OCEAN**
Akira Shibata, Meteorological Research Institute, Japan

17:00
MO4.O11.3 **QA FOR SATELLITE SEA SURFACE TEMPERATURES USING THE ISAR SHIP-BORNE RADIOMETRIC SYSTEM**
Werenfrid Wimmer, Ian Robinson, National Oceanography Centre, Southampton, United Kingdom; Craig Donlon, European Space Research & Technology Centre, Netherlands

17:20
MO4.O11.4 **RELATIONSHIP BETWEEN SEA REGIONS WITH HIGH THERMAL VARIABILITY AND WILDFIRES FROM 1981 TO 2008**
Laia Nuñez-Casillas, Manuel Arbelo, Universidad de La Laguna, Spain; Jose Andres Moreno-Ruiz, Universidad de Almería, Spain; Pedro A. Hernandez-Leal, Africa Barreto, Alfonso Alonso-Benito, Universidad de La Laguna, Spain

17:40
MO4.O11.5 **PRE-PROCESSING TECHNIQUES AND FEATURES EXTRACTION FOR OCEAN MESO-SCALE STRUCTURES DETECTION IN SST IMAGES**
Guillaume Noel, Yskandar Hamam, F'SATIE, South Africa; Laurent Drapeau, IRD, France

MO4.O12: Monday, July 13, 16:20 - 18:00

MO4.O12 **GEOSS Implementation—Uniting Perspectives**
Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 1D
Chair: Jay Pearlman

16:20
MO4.O12.1 **INSPIRE: A EUROPEAN CONTRIBUTION TO GEOSS**
Paul Smits, European Commission, Joint Research Centre Institute for Environment and Sustainability Spatial Data Infrastructures Unit, Netherlands

16:40
MO4.O12.2 **THE NAMIBIAN FLOOD/VECTOR DISEASE SENSORWEB PILOT PROJECT FOR EARLY WARNING**
Stuart Frye, NASA SensorWeb Project, United States; Guido Van Langenhove, Hydrological Services Namibia, Namibia; Joerg Szarzinski, Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), United States; Dan Mandl, Pat Cappelaere, NASA SensorWeb Project, United States; Karen Moe, NASA-Earth Science Technology Office, United States; Granville Paules, Kelly Anderson, United States

17:00
MO4.O12.3 **IMPLEMENTATION OF THE GEOSS ARCHITECTURE USING OPEN GEOSPATIAL CONSORTIUM (OGC) STANDARDS FOR GEOINFORMATICS**
Ingo Simonis, Open Geospatial Consortium, Inc. / International Geospatial Services Institute GmbH, Germany; George Percivall, Open Geospatial Consortium, Inc., Germany

17:20
MO4.O12.4 **GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS CAPACITY BUILDING IN AFRICA**
Andiswa Mlisa, I. Salooje, Umvoto Africa (Pty) Ltd., South Africa

17:40
MO4.O12.5 **HUMAN CAPITAL DEVELOPMENT: THE KEY TO UNLOCKING THE FULL POTENTIAL FOR SPACE SCIENCE APPLICATIONS**
V. Munsami, T. Sebitloane, Department of Science and Technology, South Africa

MO4.O13: Monday, July 13, 16:20 - 18:00

MO4.O13 **The TIGER Initiative: Supporting African Efforts Towards a Water Observation System II**

Session Type: Oral-Invited
Time: Monday, July 13, 16:20 - 18:00
Place: Leslie 1E
Co-Chairs: Diego Fernández Prieto and Carey Rajah

16:20
MO4.O13.1 **CAPACITY NEEDS AND CAPACITY BUILDING TO SUPPORT A WATER OBSERVATION SYSTEM FOR AFRICA**
Zoltán Vekerdy, Arno M. van Lieshout, International Institute for Geo-Information Science and Earth Observation (ITC), Netherlands; Diego Fernández-Prieto, European Space Agency (ESA), Italy

16:40
MO4.O13.2 **USE OF EARTH OBSERVATION TO INVESTIGATE THE WATER QUALITY OF LAKE MANZALA**
Mona Faisal, Akram Elganzori, Drainage Research Institute, Egypt; Thomas Puestow, C-CORE, Canada

17:00
MO4.O13.3 **LAND COVER CLASSIFICATION AND CHANGE DETECTION AS A BASIS FOR HYDROLOGICAL RUNOFF MODELING IN THE MAIN ETHIOPIAN RIFT VALLEY**
Susanne Haas, Richard Gloaguen, TU Bergakademie Freiberg, Germany

17:20
MO4.O13.4 **TIGER: EARTH OBSERVATION TO IMPROVE AFRICAN WATER RESOURCES MANAGEMENT**
Diego Fernandez, European Space Agency (ESA), Italy; Francesco Palazzo, SERCO SPA, Italy; Annukka Lipponen, United Nations Educational Scientific and Cultural Organisation (UNESCO), France; Steve Iris, Canadian Space Agency (CSA), Canada

17:40
MO4.O13.5 **CONTRIBUTION OF SATELLITE IMAGE TO COMMON MANAGEMENT OF SHARED RESOURCES. CASE OF NWSAS THROUGH GEOAQUIFER.**
Djamel Latrech, Sahara and Sahel Observatory, Tunisia

TU1.O1: Tuesday, July 14, 09:00 - 10:40

TU1.O1 **ALOS and other ESA Third Party Missions - Applications for Africa I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 2A
Co-Chairs: Yves-Louis DESNOS and Bianca HOERSCH

9:00
TU1.O1.1 **ALOS AND ESA THIRD PARTY MISSIONS FOR APPLICATIONS IN EUROPE AND AFRICA**
Bianca Hoersch, European Space Agency, Italy

9:20
TU1.O1.2 **STEREO EVALUATION OF ALOS PRISM AND IKONOS DATA IN YEMEN**
Rupert Müller, Mathias Schneider, German Aerospace Center DLR, Germany; Pullur Variem Rhadadevi, ADRIN Advanced Data Processing Research Institute, India; Peter Reinartz, German Aerospace Center DLR, Germany; Friedhelm Schwonke, Federal Institute for Geosiences and Natural Resources BGR, Germany

9:40
TU1.O1.3 **SYNERGETIC USE OF MULTI-TEMPORAL ALOS PALSAR AND ENVISAT ASAR DATA FOR TOPOGRAPHIC/LAND COVER MAPPING AND MONITORING AT NATIONAL SCALE IN AFRICA**
Francesco Holecz, Massimo Barbieri, Alessio Cantone, Paolo Pasquali, Stefano Monaco, sarmap, Switzerland

10:00
TU1.O1.4 **EXPLOITATION OF ALOS-PALSAR SAR FULL-POLARIMETRY DATA TO THE MAPPING OF AN AFRICAN REGION**
Eric Pottier, IETR UMR CNRS 6164 - University of Rennes 1, France; Laurent Ferro-Famil, IETR UMR CNRS 6164, France

10:20
TU1.O1.5 **GEOLOGICAL MAPPING IN THE ZONE OF CHOTTS, TUNISIA, USING ALOS SENSORS.**
Jean-Paul Deroin, University of Reims, France; Damien Dhont, Majed Jabbour, University of Pau, France; Jean Chorowicz, University of Paris 6, France; Bénédicte Fruneau, University of Paris Est-Marne la Vallée, France

TU1.O2: Tuesday, July 14, 09:00 - 10:40

TU1.O2 **TerraSAR-X: Scientific Results I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 2D
Co-Chairs: Birgit Wessel and Irena Hajnsek

9:00
TU1.O2.1 **EXTRACTION OF TRAFFIC FLOWS AND SURFACE CURRENT INFORMATION USING TERRASAR-X ALONG-TRACK INTERFEROMETRY DATA**
Steffen Suchandt, Hartmut Runge, Alexander Kotenkov, Helko Breit, Ulrich Steinbrecher, German Aerospace Center (DLR), Germany

9:20
TU1.O2.2 **ANALYSIS OF FIRST TERRASAR-X ALONG-TRACK INSAR-DERIVED SURFACE CURRENT FIELDS**
Roland Romeiser, University of Miami, United States; Steffen Suchandt, Hartmut Runge, Ulrich Steinbrecher, German Aerospace Center (DLR), Germany

9:40
TU1.O2.3 **MONITORING A TUNNELING IN AN URBANIZED AREA WITH TERRASAR-X INTERFEROMETRY – SURFACE DEFORMATION MEASUREMENTS AND ATMOSPHERIC ERROR TREATMENT**
Steffen Knospe, Wolfgang Busch, Clausthal University of Technology, Germany

10:00
TU1.O2.4 **INVESTIGATION OF TERRASAR-X AND RADARSAT-2 DATA FOR RIVER ICE CLASSIFICATION**
Stephane Mermoz, IETR, INRS, France; Sophie Allain, IETR, France; Monique Bernier, INRS, France; Eric Pottier, IETR, France

10:20
TU1.O2.5 **MULTI-THEMATIC EXPLOITATION OF TERRASAR-X IMAGES IN THE CONTEXT OF THE KALIDEOS REFERENCE DATASETS**
Sébastien Garrigues, Stéphane May, CNES, France; Nicolas Baghdadi, Cemagref, France; Isabelle Champion, INRA, France; Jean-Luc Froger, OPGC, France; Thierry Rabaute, CS, France; Philippe Durand, Nadine Pourthié, CNES, France

TU1.O3: Tuesday, July 14, 09:00 - 10:40

TU1.O3 **BiStatic SAR**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 09:00 - 10:40
Place: Menzies M9
Co-Chairs: Jordi Mallorqui and Ya-Qiu Jin

9:00
TU1.O3.1 **EXPERIMENTAL RESULTS WITH BISTATIC SAR TOMOGRAPHY**
Sergi Duque, Paco López-Dekker, Jordi J. Mallorquí, Universitat Politècnica de Catalunya, Spain; Adib Y. Nashashibi, Amit M. Patel, University of Michigan, United States

9:20
TU1.O3.2 **STUDY ON BISTATIC SAR OCEAN WAVE IMAGING MECHANISM**
Ying Yu, Xiaoqing Wang, Minhui Zhu, Jin-Song Chong, The Institute of Electronics, Chinese Academy of Sciences, China

9:40
TU1.O3.3 **A NEW CALCULATION METHOD OF NUSAR FOR TRANSLATIONAL VARIANT BISTATIC SAR**
Xiaolan Qiu, Donghui Hu, Chibiao Ding, Institute of Electronics, Chinese Academy of Sciences, China

10:00
TU1.O3.4 **A GPS SIGNAL BASED NUMERIC RANGE MIGRATION ALGORITHM OF SPACE-SURFACE BISTATIC SAR**
Jie Zhen, Xidian University, China; Zhenhua Zhang, Chinese Aerospace Science and Technology Corp., China; Shunjun Wu, Xidian University, China

10:20
TU1.O3.5 **CHIRP SCALING ALGORITHM FOR PARALLEL BISTATIC SAR PROCESSING**
Zhenhua Zhang, China Aerospace Science and Technology corporation, China; Lianghai Li, China Aerospace Science and Technology Corporation, China; Jie Zhen, Mengdao Xing, Zheng Bao, XiDian University, China

TU1.O4: Tuesday, July 14, 09:00 - 10:40

TU1.O4 **The Operational Sentinels: New Possibilities for Science I**
Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Menzies M10
Co-Chairs: Josef Aschbacher and Michael Berger

9:00
TU1.O4.1 **GMES SPACE COMPONENT: STATUS AND PROSPECTS**
Josef Aschbacher, Pierre Potin, ESA, Italy

9:20
TU1.O4.2 **SENTINEL-1 MISSION OVERVIEW AND IMPLEMENTATION STATUS**
Malcolm Davidson, Evert Attema, Paul Snoeij, Guido Levrini, ESA, Netherlands

9:40
TU1.O4.3 **SENTINEL-2 OPTICAL HIGH RESOLUTION MISSION FOR GMES LAND OPERATIONAL SERVICES**
Ferran Gascon, Philippe Martimort, François Spoto, Umberto Del Bello, ESA ESTEC, Netherlands

10:00
TU1.O4.4 **SENTINEL-3 MISSION OVERVIEW**
Bruno Berruti, Craig Donlon, Johannes Frerick, Ulf Klein, Constantin Mavrocordatos, Jens Nieke, Bernd Seitz, Jürgen Stroede, Helge Rebhan, European Space Agency, Netherlands

10:20
TU1.O4.5 **SENTINEL 4 AND 5 - GLOBAL ATMOSPHERIC DATA FOR ENVIRONMENTAL APPLICATIONS**
Michael Berger, ESA ESRIN, Italy

TU1.O5: Tuesday, July 14, 09:00 - 10:40

TU1.O5 **Student Paper Contest I**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 2B
Co-Chairs: Martti Hallikainen and Steven Reising

9:00
TU1.O5.1 **THE CONTRIBUTION OF CHRIS/PROBA DATA FOR TROPICAL PEAT SWAMP LANDSCAPE DISCRIMINATION PURPOSES**
Veraldo Liesenberg, Freiberg University of Mining and Technology, Germany; Hans-Dieter Viktor Boehm, Kalteng Consultans, Germany; Richard Gloaguen, Freiberg University of Mining and Technology, Germany

9:20
TU1.O5.2 **A NOVEL APPROACH TO THE SELECTION OF SPATIALLY INVARIANT FEATURES FOR CLASSIFICATION OF HYPERSPECTRAL IMAGES**
Claudio Persello, Lorenzo Bruzzone, University of Trento, Italy

9:40
TU1.O5.3 **LEARNING THE RELEVANT IMAGE FEATURES WITH MULTIPLE KERNELS**
Devis Tuia, Giona Matasci, University of Lausanne, Switzerland; Gustavo Camps-Valls, Universitat de Valencia, Spain; Mikhail Kanevski, University of Lausanne, Switzerland

10:00
TU1.O5.4 **A CHANGE DETECTION ALGORITHM FOR RETRIEVING HIGH-RESOLUTION SURFACE SOIL MOISTURE FROM SMAP L-BAND RADAR AND RADIOMETER OBSERVATIONS**
Maria Piles, Adriano Camps, Universitat Politecnica de Catalunya, Spain; Dara Entekhabi, Massachusetts Institute of Technology, United States

10:20
TU1.O5.5 **CHARACTERIZATION OF L-BAND RADIO FREQUENCY INTERFERENCE ACROSS THE CONTINENTAL USA USING A KURTOSIS DETECTOR**
Sidharth Misra, Christopher Ruf, University of Michigan, United States

TU1.O6: Tuesday, July 14, 09:00 - 10:40

TU1.O6 **Hyperspectral Imagers: Calibration, Modeling & Compensation I**
Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 2C
Co-Chairs: Alexander Berk and Francesco Dell'Endice

9:00
TU1.O6.1 **LABORATORY CHARACTERIZATION OF THE HYPERSPECTRAL IMAGER FOR THE COASTAL OCEAN (HICO)**
Daniel Korwan, Robert Lucke, Naval Research Laboratory, United States; Norman McGlothlin, Steven Butcher, Daniel Wood, Praxis, Inc, United States; Jeffrey Bowles, Michael Corson, William Snyder, Naval Research Laboratory, United States; Curtiss Davis, Oregon State University, United States; Davidson Chen, Naval Research Laboratory, United States

9:20
TU1.O6.2 **AN ATMOSPHERIC CORRECTION ITERATIVE METHOD FOR HIGH SPECTRAL RESOLUTION AEROSPACE IMAGING SPECTROMETERS**
Donatella Guzzi, Alessandro Barducci, Paolo Marcoionni, Ivan Pippi, CNR-IFAC, Italy

9:40
TU1.O6.3 **HYPERSPECTRAL IMAGER CHARACTERIZATION AND CALIBRATION**
John T. Woodward IV, Steven W. Brown, Allan W. Smith, Keith R. Lykke, National Institute of Standards and Technology, United States

10:00
TU1.O6.4 **CALIBRATION ALGORITHMS FOR AN IMAGING SPECTROMETER**
Francesco Dell'Endice, Remote Sensing Laboratories - University of Zurich, Switzerland

10:20
TU1.O6.5 **COMPENSATION OF ATMOSPHERIC AND DIRECTIONAL EFFECTS IN MODIS REFLECTANCE DATA**
Crystal Schaaf, Boston University, United States; Eric Vermote, University of Maryland, United States; Miguel Román, Boston University, United States; Gail Anderson, Air Force Research Laboratory, United States

TU1.O7: Tuesday, July 14, 09:00 - 10:40

TU1.O7 **Rough Surface Scattering Techniques**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 3A
Co-Chairs: Yang Du and Kamal Sarabandi

9:00
TU1.O7.1 **UNPOLARIZED INFRARED EMISSIVITY OF OIL FILM ON SEA SURFACES**
Nicolas Pinel, Christophe Bourlier, Université de Nantes, France

9:20
TU1.O7.2 **HYBRID OF THE METHOD OF MOMENTS/ MONTE CARLO TECHNIQUE AND A SURFACE SCATTERING MODEL FOR ESTIMATING THE RADAR BACKSCATTERS OF HARVESTED FARM FIELDS**
Yisok Oh, Ji-Hwan Hwang, Hongik University, Republic of Korea

9:40
TU1.O7.3 **A FAST NUMERICAL METHOD FOR SCATTERING FROM DIELECTRIC ROUGH SURFACES**
Bin Liu, Yang Du, Zhejiang University, China

10:00
TU1.O7.4 **BISTATIC REFLECTION AND TRANSMISSION OF ELECTROMAGNETIC SCATTERING BY ROUGH SURFACES WITH LARGE HEIGHTS AND SLOPES**
Ding Liang, University of Washington, United States; Peng Xu, Wuhan University, China; Kun-Shan Chen, National Central University, Taiwan; Zhiqian Gui, Leung Tsang, University of Washington, United States

10:20
TU1.O7.5 **DEVELOPMENT OF A SIMPLE SCATTERING MODEL FOR VEGETATION CANOPIES AND EXAMINATION OF ITS VALIDITY WITH SCATTEROMETER MEASUREMENTS OF GREEN-ONION FIELDS**
Yisok Oh, Soon-Gu Kwon, Hongik University, Republic of Korea

TU1.O8: Tuesday, July 14, 09:00 - 10:40

TU1.O8 **Sensors and Algorithms for Landmine Detection**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 3B
Chair: Joseph Wilson

9:00
TU1.O8.1 **ESTIMATION AND APPLICATION OF DISCRETE SPECTRUM OF RELAXATIONS FOR ELECTROMAGNETIC INDUCTION RESPONSES**
Mu-Hsin Wei, Waymond Scott, James Mcclellan, Georgia Institute of Technology, United States

9:20
TU1.O8.2 **NUMERICAL MODELING OF A SPIRAL-ANTENNA GPR SYSTEM**
Michael McFadden, Waymond Scott, Georgia Institute of Technology, United States

9:40
TU1.O8.3 **WIENER PREDICTION-BASED CHANGE DETECTION FOR LOCATING MINES IN MULTILOOK SAR IMAGERY**
Nasser Nasrabadi, US Army Researcl laboratory, United States

10:00
TU1.O8.4 **A STUDY OF ACOUSTIC METHODS FOR COMPLIANT LANDMINES DETECTION BY USING THE SURFACE ACCELERATION PARAMETER**
Andrea Bulletti, Samuela Valentini, Giovanni Borgioli, Lorenzo Capineri, Marco Calzolai, University of Florence, Italy; Marina Mazzoni, National Council of Researches, Italy

10:20
TU1.O8.5 **THREE-DIMENSIONAL REAL-TIME LOCALIZATION OF SUBSURFACE OBJECTS – FROM THEORY TO EXPERIMENTAL VALIDATION**
Leonardo Lizzi, Federico Viani, Paolo Rocca, Giacomo Oliveri, Manuel Benedetti, Andrea Massa, ELEDIA Research Group - University of Trento, Italy

TU1.O9: Tuesday, July 14, 09:00 - 10:40

TU1.O9 **Target and Object Detection**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 1A
Co-Chairs: Farid Melgani and Jordi Inglada

9:00
TU1.O9.1 **AN AUTOMATIC METHOD FOR COUNTING OLIVE TREES IN VERY HIGH SPATIAL REMOTE SENSING IMAGES**
Yakoub Bazi, Al-Jouf University, Saudi Arabia; Farid Melgani, University of Trento, Italy; Hamed Al-Sharari, Al-Jouf University, Saudi Arabia

9:20
TU1.O9.2 **FOCUS PRE-PROCESSING CHAIN FOR OBJECT DETECTION IN HIGH RESOLUTION REMOTE SENSING IMAGES**
Julien Michel, Cyrille Valladeau, CS, France; Jordi Inglada, CNES, France

9:40
TU1.O9.3 **TARGET DETECTION WITH SPATIO-SPECTRAL DATA VIA CONCORDANCE LEARNING**
Murat Dundar, Indiana University - Purdue University (IUPUI), United States

10:00
TU1.O9.4 **ON THE EFFECTS OF PAN-SHARPENING TO TARGET DETECTION**
Andrea Garzelli, Luca Capobianco, Filippo Nencini, University of Siena, Italy

10:20
TU1.O9.5 **CONTRIBUTION OF THE INTER-CHANNEL POLARIMETRIC COHERENCE FOR SOIL CLASSIFICATION**
Hamdi Jenzri, Riadh Abdelfattah, Higher School of Communications of Tunis, Tunisia

TU1.O10: Tuesday, July 14, 09:00 - 10:40

TU1.O10 **Active/Passive Microwave Remote Sensing of Terrestrial Snow I**
Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 1B
Co-Chairs: J C Shi and Leung Tsang

9:00
TU1.O10.1 **RETRIEVAL OF SNOW PARAMETERS FROM KU-BAND AND X-BAND RADAR BACKSCATTER MEASUREMENTS**
Helmut Rott, Markus Heidinger, Thomas Nagler, ENVEO IT GmbH, Austria; Donald Cline, NOAA-NOHRSC, United States; Simon Yueh, NASA-JPL, United States

9:20
TU1.O10.2 **CHARACTERISTICS OF SNOW COVER AND SNOW MELT IN NORTHERN EURASIA FROM MICROWAVE RADIOMETER OBSERVATIONS: RELATION TO THE EXTENT OF PERMAFROST**
Jouni Pulliainen, Matias Takala, Ari Laaksonen, Heikki Järvinen, Kari Luojus, Anna Luomaranta, Kirsti Jylhä, Finnish Meteorological Institute, Finland

9:40
TU1.O10.3 **COMPARISON WITH CLPX II AIRBORNE DATA AT ALASKA AND COLORADO WITH DMRT THEORY**
Xiaolan Xu, Ding Liang, Konstantinos Andreadis, Tsang Leung, University of Washington, United States; Edward Josberger, United States Geological Survey, United States

10:00
TU1.O10.4 **ESTIMATION OF SNOW WATER EQUIVELANT USING A PARAMETERIZED SNOW SCATTERING MODEL**
Jinyang Du, Institute for Remote Sensing Applications, CAS, China; Jiancheng Shi, Institute for Computational Earth System Sciences, United States

10:20
TU1.O10.5 **EXPERIMENTAL AND MODELING STUDIES OF MICROWAVE REMOTE SENSING OF SEASONAL SNOW**
Martti Hallikainen, Helsinki University of Technology, Finland; Juha Lemmetyinen, Finnish Meteorological Institute, Finland; Pauli Sievinen, Helsinki University of Technology, Finland

TU1.O11: Tuesday, July 14, 09:00 - 10:40

TU1.O11 **Frequency Allocation for Remote Sensing and RFI mitigation for microwave radiometry**

Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 1C
Co-Chairs: Shannon Brown and Chris Ruf

9:00

TU1.O11.1 **AIRBORNE L-BAND RFI OBSERVATIONS IN THE SMAPVEX08 CAMPAIGN WITH THE L-BAND INTERFERENCE SUPPRESSING RADIOMETER**
Ninoslav Majurec, James Park, Noppasin Niamsuwan, Mark Frankford, Joel Johnson, Ohio State University, United States

9:40

TU1.O11.3 **INVERSION ALGORITHM FOR ESTIMATING RADIO FREQUENCY INTERFERENCE CHARACTERISTICS BASED ON KURTOSIS MEASUREMENTS**
Sidharth Misra, Christopher Ruf, University of Michigan, United States

10:00

TU1.O11.4 **PERFORMANCE ANALYSIS OF A CROSS-FREQUENCY DETECTOR OF PULSED SINUSOIDAL RFI IN MICROWAVE RADIOMETRY**
Baris Guner, Joel Johnson, Ninoslav Majurec, The Ohio State University, United States

TU1.O12: Tuesday, July 14, 09:00 - 10:40

TU1.O12 **GNSS Remote Sensing of Atmosphere, Ocean and Land I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 1D
Co-Chairs: Attila Komjathy and Shuanggen Jin

9:00

TU1.O12.1 **NON-SPACE APPLICATIONS OF GNSS-R: FROM RESEARCH TO OPERATIONAL SERVICES. EXAMPLES OF WATER AND LAND MONITORING SYSTEMS.**
Alejandro Egido, Starlab, Spain; Matthieu Delas, Star2Earth, Netherlands; Miquel Garcia, Marco Caparrini, Starlab, Spain

9:20

TU1.O12.2 **ADVANCED PARIS ALTIMETER BASED ON DELAY COMPENSATION OF DOPPLER WAVEFORMS**
Salvatore D'Addio, Manuel Martín-Neira, European Space Agency, Netherlands

9:40

TU1.O12.3 **COMPARING WIND SPEED RETRIEVALS FROM GPS REFLECTOMETRY WITH SFMR SURFACE WIND SPEEDS IN HURRICANE IKE (2008)**
Valery Zavorotny, NOAA, United States; Dennis Akos, University of Colorado, United States; Edward Walsh, NASA, United States

10:00

TU1.O12.4 **AN EVALUATION OF GEODETIC GPS RECEIVERS FOR MEASURING SURFACE SOIL MOISTURE**
Kristine Larson, University of Colorado, United States; Valery Zavorotny, NOAA, United States; John Braun, UCAR, United States; Andria Bilich, NGS, United States; Eric Small, University of Colorado, United States; Ethan Gutmann, NCAR, United States

10:20

TU1.O12.5 **SIMULATION OF GNSS RETURNS FOR DELAY-DOPPLER ANALYSIS OF THE OCEAN SURFACE**
Maria Paola Clarizia, National Oceanography Centre Southampton (NOCS), United Kingdom; Maurizio Di Bisceglie, Università degli Studi del Sannio, Italy; Carmela Galdi, Universita' degli Studi del Sannio, Italy; Christine Gommenginger, Meric Srokosz, National Oceanography Centre Southampton (NOCS), United Kingdom

TU1.O13: Tuesday, July 14, 09:00 - 10:40

TU1.O13 **Remote Sensing for a Better Understanding of Savanna Processes and Dynamics I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 09:00 - 10:40
Place: Leslie 1E
Co-Chairs: Renaud Mathieu and Robert Scholes

9:00
TU1.O13.1 **DETAILED STRUCTURAL CHARACTERISATION OF THE SAVANNA FLUX SITE AT SKUKUZA, SOUTH AFRICA**
Alecia Kirton, Robert Scholes, CSIR, South Africa; Michel Verstraete, JRC, Italy; Sally Archibald, Kathleen Mennell, CSIR, South Africa; Gregory Asner, Carnegie Institute, Stanford University, United States

9:20
TU1.O13.2 **SPECTRAL VARIABILITY WITHIN SPECIES AND ITS EFFECTS ON SAVANNA TREE SPECIES DISCRIMINATION**
Moses Azong Cho, Pravesh Debba, Renaud Mathieu, Bongani Majeke, Council for Scientific and Industrial Research, South Africa; Jan van Aardt, Center for Imaging Science, United States

9:40
TU1.O13.3 **INFLUENTIAL ECOLOGICAL FACTORS TO BE CONSIDERED WHEN MAPPING GRASS BIOCHEMICAL CONCENTRATION IN AN AFRICAN SAVANNA SYSTEM**
Nichola Knox, Andrew Skidmore, International Institute for Geoinformation Science and Earth Observation, Netherlands

10:00
TU1.O13.4 **FRACTIONAL COVER AND STRUCTURAL VARIATIONS ALONG A LAND USE DEGRADATION GRADIENT IN SAVANNAS IN AND AROUND THE KRUGER NATIONAL PARK, SOUTH AFRICA**
Renaud Mathieu, CSIR Natural Resource and the Environment, South Africa; Konrad Wessels, CSIR Meraka, South Africa; Gregory Asner, Carnegie Institute, Stanford University, United States; David Knapp, Stanford University, United States; Jan van Aardt, Rochester Institute of Technology, United States; Moses Azong Cho, CSIR Natural Resource and the Environment, South Africa; Barend Erasmus, University of the Witwatersrand, South Africa; Izak Smit, South African National Parks, South Africa

10:20
TU1.O13.5 **THREE-DIMENSIONAL WOODY VEGETATION STRUCTURE ACROSS LAND-USE INTENSITIES IN A SEMI-ARID SAVANNA**
Jolene Fisher, Barend Erasmus, Edward Witkowski, University of the Witwatersrand, South Africa; Jan van Aardt, Rochester Institute of Technology, United States; Gregory Asner, Carnegie Institute, Stanford University, United States; Ty Kennedy-Bowdoin, David Knapp, Ruth Emerson, James Jacobson, Carnegie Institution for Science, United States; Renaud Mathieu, Konrad Wessels, Natural Resources in the Environment, South Africa

TU2.O1: Tuesday, July 14, 11:00 - 12:40

TU2.O1 **ALOS and other ESA Third Party Missions - Applications for Africa II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 2A
Co-Chairs: Yves-Louis DESNOS and Bianca HOERSCH

11:00
TU2.O1.1 **CHRIS/PROBA TOOLBOX FOR HYPERSPECTRAL AND MULTIANGULAR DATA EXPLOITATIONS**
Luis Alonso, Luis Gómez-Chova, Jose Moreno, University of Valencia, Spain; Luis Guanter, GFZ-Potsdam, Germany; Carsten Brockmann, Norman Fomferra, Ralf Quast, Brockmann Consult, Germany; Peter Regner, ESA-ESRIN, Italy

11:20
TU2.O1.2 **THE USE OF ALOS PALSAR FOR SUPPORTING SUSTAINABLE FOREST USE IN SOUTHERN AFRICA: A CASE STUDY IN MALAWI**
Gemma F. Cassells, Iain Woodhouse, Edward Mitchard, University of Edinburgh, United Kingdom; Mavuto Tembo, University of Mzuzu, Malawi

11:40
TU2.O1.3 **L-BAND AND C-BAND INSAR STUDIES OF AFRICAN VOLCANIC AREAS**
Christelle Wauthier, 1: Royal Museum for Central Africa / 2: University of Liège, Belgium; Anneleen Oyen, Petar Marinkovic, Institute of Earth Observation and Space Systems, Delft University of Technology, Netherlands; Valérie Cayol, Laboratoire Magmas et Volcans, Université Blaise Pascal, France; José Fernández, Pablo Gonzalez, Instituto de Astronomia y Geodesia (CSIC-UCM), Spain; Ramon Hanssen, Institute of Earth Observation and Space Systems, Delft University of Technology, Netherlands; François Kervyn, 1: Royal Museum for Central Africa / 2: Centre d'Informations Géographiques SODERU, Belgium; Nicolas d'Oreye, National Museum of Natural History, Luxembourg; Manoochehr Shirzaei, Thomas Walter, GeoForschungsZentrum (GFZ), Germany

12:00
TU2.O1.4 **SYNTHETIC APERTURE RADAR DATA EMPLOYED FOR SOIL MOISTURE ESTIMATION IN THE PIKETBERG REGION, SOUTH AFRICA**
Jeanine Engelbrecht, Council for Geoscience, South Africa

12:20
TU2.O1.5 **INTEGRATION AND APPLICATION OF REMOTE SENSING DATA TOWARDS THE SOUTH AFRICAN NATIONAL BIODIVERSITY ASSESSMENT (NSBA)**
Christoph Schultz, Mathieu Rouget, Nokuthula Wistebaar, Zuziwe Jonas, South African National Biodiversity Institute, South Africa

TU2.O2: Tuesday, July 14, 11:00 - 12:40

TU2.O2 **TerraSAR-X: Scientific Results II**
Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 2D
Co-Chairs: Irena Hajnsek and Birgit Wessel

11:00
TU2.O2.1 **PRELIMINARY TERRASAR-X OBSERVATIONS FOR TEMPERATE GLACIERS ON THE CHAMONIX MONT BLANC TEST SITE**
Olivier Harant, GIPSA-lab, France; Renaud Fallourd, LISTIC, France; Lionel Bombrun, Michel Gay, GIPSA-lab, France; Emmanuel Trouve, LISTIC, France; Gabriel Vasile, GIPSA-lab, France; Jean-Marie Nicolas, TELECOM ParisTech, France

11:20
TU2.O2.2 **COMPARISON OF HELICOPTER-BORNE THIN SEA ICE THICKNESS PROFILES WITH POLARIMETRIC SIGNATURES OF DUAL-POL TERRASAR-X DATA**
Thomas Busche, Irena Hajnsek, Konstantinos Papathanassiou, German Aerospace Center, Germany; Thomas Krumpen, Lasse Rabenstein, Jens Hoelemann, Alfred Wegener Institute, Germany; Christian Haas, University of Alberta, Canada; Sascha Willmes, University of Trier, Germany

11:40
TU2.O2.3 **TERRASAR-X OBSERVATIONS OF THE RECOVERY GLACIER SYSTEM, ANTARCTICA**
Kenneth Jezek, The Ohio State University, United States; Dana Floricioiu, German Aerospace Center, Germany; Katy Farness, The Ohio State University, United States; Nestor Yague-Martinez, Michael Eineder, German Aerospace Center, Germany

12:00
TU2.O2.4 **FRACTURE EVOLUTION ON WILKINS ICE SHELF, ANTARCTICA**
Angelika Humbert, University of Münster, Germany; Matthias Braun, University of Bonn, Germany; Dietmar Gross, Ralf Müller, Darmstadt Univ. of Technology, Germany

12:20
TU2.O2.5 **DETERMINATION OF VARIATIONS IN GLACIER SURFACE MOVEMENTS THROUGH HIGH RESOLUTION INTERFEROMETRY; BYLOT ISLAND, CANADA**
Ken Whitehead, Brian Moorman, Pablo Wainstein, University of Calgary, Canada

TU2.O3: Tuesday, July 14, 11:00 - 12:40

TU2.O3 **Bistatic SAR: Instruments, Experiments and Applications**
Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Menzies M9
Co-Chairs: Paco López Dekker and Jordi J. Mallorqui

11:00
TU2.O3.1 **BISTATIC EXPERIMENT WITH THE UWB-CARABAS SENSOR - FIRST RESULTS AND PROSPECTS FOR FUTURE APPLICATIONS**
Daniel Henke, Arnold Barmettler, Erich Meier, University of Zurich, Switzerland

11:20
TU2.O3.2 **RESULTS AND ANALYSIS OF HYBRID BISTATIC SAR EXPERIMENTS WITH SPACEBORNE, AIRBORNE AND STATIONARY SENSORS**
Ingo Walterscheid, Thomas Espeter, Christoph Gierull, Jens Klare, Andreas R. Brenner, Joachim H. G. Ender, FGAN-FHR, Germany

11:40
TU2.O3.3 **NEW PROCESSING APPROACH AND RESULTS FOR BISTATIC TERRASAR-X/F-SAR SPACEBORNE-AIRBORNE SAR EXPERIMENTS**
Marc Rodriguez-Cassola, Pau Prats, Stefan Baumgartner, Gerhard Krieger, Anton Nottensteiner, Ralf Horn, Irena Hajnsek, Alberto Moreira, DLR, Germany

12:00
TU2.O3.4 **CONFIGURATION, SYNCHRONIZATION AND IMAGING FOR A BISTATIC SAR EXPERIMENT UNDERGOING PREPARING**
Xiaolan Qiu, Liangjiang Zhou, Xingdong Liang, Donghui Hu, Chibiao Ding, Institute of Electronics, Chinese Academy of Sciences, China

12:20
TU2.O3.5 **REPEAT-PASS INTERFEROMETRY USING A FIXED-RECEIVER AND ERS-2/ENVISAT AS TRANSMITTERS OF OPPORTUNITY**
Sergi Duque, Paco López-Dekker, Jordi J. Mallorquí, Juan C. Merlano, Universitat Politècnica de Catalunya, Spain

TU2.O4: Tuesday, July 14, 11:00 - 12:40

TU2.O4 **The Operational Sentinels: New Possibilities for Science II**
Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Menzies M10
Co-Chairs: Josef Aschbacher and Michael Berger

11:00
TU2.O4.1 **THE USE OF THE SENTINEL MISSIONS FOR SCIENCE**
Michael Berger, ESA ESRIN, Italy

11:20
TU2.O4.2 **POTENTIAL CONTRIBUTION TO EARTH SYSTEM SCIENCE: OCEANS AND CRYOSPHERE**
Johnny A. Johannessen, Nansen Environmental and Remote Sensing Center, Norway

12:00
TU2.O4.4 **POTENTIAL CONTRIBUTION OF GMES / SENTINELS TO EARTH SYSTEM SCIENCE: LAND SURFACE**
Jose Moreno, University of Valencia, Spain

12:20
TU2.O4.5 **THE SENTINEL-1 MISSION: CONTRIBUTION TO THE SOLID EARTH SCIENCES**
Ramon Hanssen, Andy Hooper, Delft University of Technology, Netherlands

TU2.O5: Tuesday, July 14, 11:00 - 12:40

TU2.O5 **Student Paper Contest II**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 2B
Co-Chairs: Steven Reising and Martti Hallikainen

11:00
TU2.O5.1 **MICROWAVE SCATTERING PROPERTIES OF DRY SNOW USING THE BI-CONTINOUS RANDOM MEDIA**
Xiaolan Xu, University of Washington, United States; Kung-Hau Ding, Air Force Research Laborator, United States; Leung Tsang, University of Washington, United States

11:20
TU2.O5.2 **TOPOGRAPHY OF SAND COVERED BEDROCK USING A TWO-FREQUENCY AIRBORNE INTERFEROMETRIC SAR MEASUREMENTS**
Adel Elsherbini, Kamal Sarabandi, University of Michigan, United States

11:40
TU2.O5.3 **INVESTIGATION ON THE APPLICATIONS OF DECORRELATION ANALYSIS IN POLARIMETRIC SAR INTERFEROMETRY**
Yong-Sheng Zhou, Wen Hong, Fang Cao, National Key Laboratory of Microwave Imaging Technology, China

12:00
TU2.O5.4 **HIGH RESOLUTION SUBSURFACE IMAGING OF DEEP TARGETS BASED ON DISTRIBUTED SENSOR NETWORKS**
Fikadu Dagefu, Kamal Sarabandi, University of Michigan, Ann Arbor, United States

TU2.O6: Tuesday, July 14, 11:00 - 12:40

TU2.O6 **Hyperspectral Imagers: Calibration, Modeling & Compensation II**
Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 2C
Co-Chairs: Alexander Berk and Francesco Dell'Endice

11:00
TU2.O6.1 **RECENT DEVELOPMENTS IN THE MODTRAN(R) ATMOSPHERIC MODEL AND IMPLICATIONS FOR HYPERSPECTRAL COMPENSATION**
Alexander Berk, Spectral Sciences, Inc, United States; Gail Anderson, United States Air Force Laboratories, United States; Prabhat Acharya, Spectral Sciences, Inc, United States; Brett Gossage, Invariant Corporation, United States

11:20
TU2.O6.2 **AFFINE COMPENSATION OF ILLUMINATION IN HYPERSPECTRAL REMOTE SENSING IMAGES**
Pedro Latorre Carmona, Universidad Jaume I, Spain; Jose Moreno, Universidad de Valencia, Spain; Filiberto Pla, Universidad Jaume I, Spain; Crystal Schaaf, Boston University, United States

11:40
TU2.O6.3 **ATMOSPHERIC CORRECTION OF ENMAP DATA OVER LAND AND WATER**
Rudolf Richter, DLR - German Aerospace Center, Germany; Thomas Heege, EOMAP GmbH, Germany; Luis Guanter, GFZ-Geo-Research-Center, Germany; Xingjuan Wang, Andreas Mueller, DLR-German Aerospace Center, Germany; Hermann Kaufmann, Telegrafenberg 326, Germany

12:00
TU2.O6.4 **ATMOSPHERIC COMPENSATION FOR IMAGING SPECTROMETER SYSTEMS WITH CHANGING IMAGING GEOMETRY**
Gerald W. Felde, Gail P. Anderson, Thomas W. Cooley, Air Force Research Laboratory, United States; Robert W. McMullen, Boston College, United States

12:20
TU2.O6.5 **PRACTICAL ILLUMINATION CORRECTION OF SATELLITE IMAGERY IN CONSIDERATION OF ANISOTROPIC SKYLIGHT COMPONENT**
Yoshikazu Iikura, Hirosaki Unversity, Japan

TU2.O7: Tuesday, July 14, 11:00 - 12:40

TU2.O7 **Volume Scattering**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 3A
Co-Chairs: Roger Lang and Sassn Saatchi

11:00
TU2.O7.1 **FOAM EMISSIVITY MODELS FOR MICROWAVE OBSERVATIONS OF OCEANS FROM SPACE**
Magdalena D. Anguelova, Peter W. Gaiser, Naval Research Laboratory, United States; Victor Raizer, Zel Technologies, LLC, United States

11:20
TU2.O7.2 **RADAR SOUDER ECHOES FROM STRATIFIED MEDIA WITH ROUGH INTERFACES AND SIMULATION OF LUNAR EXPLORATION**
Ya-Qiu Jin, Wenzhe Fa, Fudan University, China

11:40
TU2.O7.3 **MODELING IMPACTS OF ENVIORNMENTAL CONDITIONS AND VARIABILITY OF FOREST ARCHITECTURE ON POLARIMETRIC INTERFEROMETRIC MEASUREMENTS OF FOREST HEIGHT**
Sassan Saatchi, Shadi Oveisgharan, Jet Propulsion Laboratory, United States

12:00
TU2.O7.4 **REFINEMENTS AND TESTS OF A MICROWAVE EMISSION MODEL FOR FORESTS**
R. Rahmoune, A. Della Vecchia, Paolo Ferrazzoli, Leila Guerriero, Tor Vergata University, Italy; Fernando Martin-Porqueras, ESA/ESTEC, Netherlands

12:20
TU2.O7.5 **A UNIFIED POLARIMETRIC APPROACH FOR SAR SEA OIL SLICK OBSERVATION**
Ferdinando Nunziata, Attilio Gambardella, Maurizio Migliaccio, Università degli Studi di Napoli Parthenope, Italy

TU2.O8: Tuesday, July 14, 11:00 - 12:40

TU2.O8 **The Use of Ocean Colour Data at Regional Scales: Methodological Considerations and Applications**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 3B
Chair: Mark Dowell

11:00
TU2.O8.1 **TAILORED ALGORITHMS FOR OCEAN COLOUR APPLICATIONS AT REGIONAL SCALES: GEOGRAPHIC AND OPTICAL APPROACHES**
Mark Dowell, European Commission - Joint Research Centre, Italy; Stewart Bernard, Council for Scientific and Industrial Research, South Africa

11:20
TU2.O8.2 **OCEAN COLOUR OBSERVATION SYSTEMS FOR HARMFUL ALGAL BLOOMS IN THE BENGUELA**
Stewart Bernard, Council for Scientific and Industrial Research, South Africa; Lisl Robertson, University of Cape Town, South Africa

11:40
TU2.O8.3 **VALIDATION OF MERIS OCEAN COLOUR RADIOMETRY IN THE SOUTHERN BENGUELA**
Lisl Robertson, Stewart Bernard, Alex Fawcett, Oceanography Department, University of Cape Town, South Africa

12:00
TU2.O8.4 **REMOTE SENSING OF WATER QUALITY PARAMETERS AND CYANOBACTERIAL ALGAL BLOOMS USING MULTI-SPECTRAL MERIS AND LANDSAT, AND IN SITU HYPERSPECTRAL RADIOMETRIC DATA, IN ZEEKOEVLEI LAKE, CAPE TOWN, SOUTH AFRICA**
Mark Matthews, Stewart Bernard, Kevin Winter, University of Cape Town, South Africa

12:20
TU2.O8.5 **SATELLITE ESTIMATES OF PHYTOPLANKTON PRIMARY PRODUCTION AT SANTOS BIGHT, SOUTHWESTERN-SOUTH ATLANTIC: COMPARISON OF ALGORITHMS**
Milton Kampel, Instituto Nacional de Pesquisas Espaciais - INPE, Brazil; Shubha Sathyendranath, Plymouth Marine Laboratory, United Kingdom; Salvador A. Gaeta, Instituto Oceanográfico da Universidade de São Paulo, Brazil

TU2.O9: Tuesday, July 14, 11:00 - 12:40

TU2.O9 **Hyperspectral Image Classification and Feature Extraction**

Session Type: Oral-Contributed
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 1A
Co-Chairs: Joydeep Ghosh and Bor-Chen Kuo

11:00
TU2.O9.1 **SPATIALLY ADAPTIVE CLASSIFICATION OF HYPERSPECTRAL DATA WITH GAUSSIAN PROCESSES**
Goo Jun, Joydeep Ghosh, The University of Texas at Austin, United States

11:20
TU2.O9.2 **AN EFFICIENT HIERARCHICAL HYPERSPECTRAL IMAGE CLASSIFICATION USING BINARY QUATERNION-MOMENT-PRESERVING THRESHOLDING TECHNIQUE**
Lena Chang, National Taiwan Ocean University, Taiwan; Yang-Lang Chang, National Taipei University of Technology, Taiwan; Ching-Min Cheng, Chunghwa Telecommunictation, Taiwan

11:40
TU2.O9.3 **ABUNDANCE ESTIMATION OF SPECTRALLY SIMILAR MINERALS**
Pravesh Debba, The Council for Scientific and Industrial Research (CSIR), South Africa

12:00
TU2.O9.4 **OPTIMIZING WAVELETS FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Abdelhamid Daamouche, Ecole Nationale Polytechnique of Algiers, Algeria; Farid Melgani, University of Trento, Italy; Latifa Hamami, Ecole Nationale Polytechnique of Algiers, Algeria

12:20
TU2.O9.5 **SEMI-SUPERVISED CONTEXTUAL CLASSIFICATION AND UNMIXING OF HYPERSPECTRAL DATA BASED ON MIXTURE DISTRIBUTIONS**
Ryuei Nishii, T. Ozaki, Y. Sawamura, Kyushu University, Japan

TU2.O10: Tuesday, July 14, 11:00 - 12:40

TU2.O10 **Active/Passive Microwave Remote Sensing of Terrestrial Snow II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 1B
Co-Chairs: J C Shi and Leung Tsang

11:00
TU2.O10.1 **MODELING OF EMISSION FROM SNOW-COVERED GROUND FOR PASSIVE MICROWAVE REMOTE SENSING**
Lingmei Jiang, Beijing Normal Universtiy, China; Saibun Tjuatja, The University of Texas at Arlington, United States; Jiancheng Shi, University of California, Santa Barbara, United States

11:20
TU2.O10.2 **ON THE RETRIEVAL OF THE SNOW TEMPERATURE PROFILE ON THE ANTARCTIC PLATEAU AT DOME-C FROM MICROWAVE DATA**
Marco Brogioni, CNR-IFAC, Italy

11:40
TU2.O10.3 **A COMBINED MICROWAVE EMISSION MODEL FOR COLD LAND**
Tianjie Zhao, Lixin Zhang, Lingmei Jiang, Beijing Normal University, China; Jiancheng Shi, University of California, Santa Barbara, United States; Shaojie Zhao, Jinmei Pan, Linna Chai, Yongpan Zhang, Beijing Normal University, China

12:00
TU2.O10.4 **MONITORING OF SNOW COVER PROPERTIES DURING THE SPRING MELTING PERIOD IN FORESTED AREAS**
Jarkko Koskinen, Jouni Pulliainen, Kari Luojus, Finnish Meteorological Institute, Finland

12:20
TU2.O10.5 **MULTI.TEMPORAL OBSERVATIONS OF SNOW COVER CHARACTERISTICS IN ALPINE REGIONS WITH MULTIFREQUENCY PASSIVE MICROWAVE SENSORS AND COMPARISON WITH C-BAND SAR DATA.**
Paolo Pampaloni, Marco Brogioni, Giovanni Macelloni, Simonetta Paoloscia, Enrico Palchetti, Simone Pettinato, Emanuele Santi, National Research Council, Italy; Andrea Crepaz, Anselmo Cagnati, ARPA Veneto, Italy

TU2.O11: Tuesday, July 14, 11:00 - 12:40

TU2.O11 **NPOESS Microwave Contributions to Weather Forecasting**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 1C
Co-Chairs: Mustufa Bahrain and Rebecca Hamilton

11:00
TU2.O11.1 **LESSONS LEARNED AND HERITAGE APPLICATION FOR DEVELOPMENT OF THE MICROWAVE IMAGER/SOUNDER (MIS)**
Rebecca Hamilton, Chris Brann, United States Air Force, United States; David Kunkee, Dan M. Walker, Robert Platt, The Aerospace Corporation, United States

11:20
TU2.O11.2 **PERFORMANCE CHARACTERISTICS OF THE NPOESS MICROWAVE IMAGER/ SOUNDER (MIS) RADIOMETER**
David Kunkee, Dan M. Walker, Craig K. Smith, David A. Thompson, Ye Hong, Robert Platt, The Aerospace Corporation, United States

11:40
TU2.O11.3 **TRADE STUDIES FOR OFFSET REFLECTORS WITH APPLICATIONS FOR CONICAL SCANNING RADIOMETERS**
David A. Thompson, David Kunkee, The Aerospace Corporation, United States

12:00
TU2.O11.4 **FUTURE MICROWAVE IMAGER/SOUNDER (MIS) DATA PRODUCTS: TEMPERATURE DATA RECORDS (TDR), SENSOR DATA RECORDS (SDR) AND ENVIRONMENTAL DATA RECORDS (EDR)**
Ye Hong, The Aerospace Corporation, United States; Derek Reimer, NPOESS Integrated Program Office, United States; David Kunkee, Dan M. Walker, The Aerospace Corporation, United States; Chris Brann, Rebecca Hamilton, NPOESS Integrated Program Office, United States

12:20
TU2.O11.5 **ADVANCED TECHNOLOGY MICROWAVE SOUNDER (ATMS) ON THE NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NPOESS)**
David Kunkee, Ye Hong, David A. Thompson, The Aerospace Corporation, United States

TU2.O12: Tuesday, July 14, 11:00 - 12:40

TU2.O12 **GNSS Remote Sensing of Atmosphere, Ocean and Land II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 1D
Co-Chairs: Attila Komjathy and Shuanggen Jin

11:00
TU2.O12.1 **SEA ALTIMETRY AND SCATTEROMETRY USING GPS EARTH REFLECTED SIGNALS**
Antonio Rius, Estel Cardellach, Instituto Ciencias del Espacio (CSIC/IEEC), Spain

11:20
TU2.O12.2 **SIMULATION OF REFLECTED BOC-MODULATED SATELLITE NAVIGATION SIGNALS**
James Garrison, Purdue University, United States

11:40
TU2.O12.3 **THE PARIS IN-ORBIT DEMONSTRATOR**
Manuel Martín-Neira, Salvatore D'Addio, European Space Agency, ESTEC, Netherlands; Christopher Buck, Nicolas Floury, Roberto Pietro-Cerdeira, European Space Agency, Netherlands

12:00
TU2.O12.4 **PROSPECTS OF RADAR ALTIMETRY AND GNSS REFLECTOMETRY FOR GEODYNAMIC STUDIES**
C.K. Shum, Hyongki Lee, The Ohio State University, United States; P.A.M. Abusali, University of Texas, United States; Alexander Braun, University of Calgary, Canada; Guy de Carufel, Georgia Fotopouloous, University of Toronto, Canada; Chungyen Kuo, National Cheng Kung University, Taiwan

12:20
TU2.O12.5 **ATMOSPHERIC REMOTE SENSING USING GNSS IN THE AUSTRALASIAN REGION: FROM TEMPERATE CLIMATES TO THE TROPICS**
Chris Rizos, Samsung Lim, University of New South Wales, Australia; Tajul Musa, Shahrum Ses, Amir Sharifuddin, Universiti Teknologi Malaysia, Malaysia; Kefei Zhang, RMIT University, Australia

TU2.O13: Tuesday, July 14, 11:00 - 12:40

TU2.O13 **Remote Sensing for a Better Understanding of Savanna Processes and Dynamics II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 11:00 - 12:40
Place: Leslie 1E
Co-Chairs: Renaud Mathieu and Robert Scholes

11:00
TU2.O13.1 **FIRE AS BROWSER:USING LIDAR TO VISUALISE AND QUANTIFY WOODY STRUCTURE ON A LONG-TERM FIRE EXPERIMENT IN AN AFRICAN SAVANNA**
Izak Smit, South African National Parks, South Africa; Gregory Asner, Carnegie Institute, Stanford University, United States; Navashni Govendor, South African National Parks, South Africa; Shaun Levick, Ty Kennedy-Bowdoin, David Knapp, Ruth Emerson, James Jacobson, Carnegie Institution for Science, United States; Renaud Mathieu, Konrad Wessels, Council for Scientific and Industrial Research, South Africa; Barend Erasmus, University of the Witwatersrand, South Africa; Basjan van Aardt, Rochester Institute of Technology, United States

11:20
TU2.O13.2 **A COST-EFFECTIVE, RULE-BASED TECHNIQUE TO IMPROVE FORESTRY INVENTORY ON A NATIONAL SCALE**
Garth Stephenson, Adriaan Van Niekerk, Stellenbosch University, South Africa

11:40
TU2.O13.3 **CONNECTING THE DOTS BETWEEN LASER WAVEFORMS AND HERBACEOUS BIOMASS FOR ASSESSMENT OF LAND DEGRADATION USING SMALL-FOOTPRINT WAVEFORM LIDAR DATA**
Jiaying Wu, Jan van Aardt, Rochester Institute of Technology, United States; Gregory Asner, Carnegie Institute, Stanford University, United States; Renaud Mathieu, Council for Scientific and Industrial Research, South Africa; Ty Kennedy-Bowdoin, David Knapp, Carnegie Institution for Science, United States; Konrad Wessels, Council for Scientific and Industrial Research, South Africa; Barend Erasmus, University of the Witwatersrand, South Africa; Izak Smit, Kruger National Park, South Africa

12:00
TU2.O13.4 **TESTING THE UTLITY OF MAPPING ACACIA MEARNSII USING EO-1 HYPERION HYPERSPECTRAL DATA**
Nitesh Poona, Innocent Shezi, Fethi Ahmed, University of KwaZulu-Natal, South Africa

12:20
TU2.O13.5 **USING MISR FULL SPATIAL RESOLUTION LEVEL 1B2 DATA TO CHARACTERIZE THE SAVANNAH ENVIRONMENT AROUND THE SKUKUZA CSIR RESEARCH SITE**
Michel Verstraete, EC DG-JRC, Italy; Linda Hunt, SSAI, United States; Robert Scholes, CSIR, South Africa

TUP.A: Tuesday, July 14, 12:40 - 14:20

TUP.A **Geological Applications I**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area A
Chair: Scott Hensley

TUP.A.1 **TIME-QUEFRENCY ANALYSIS FOR DETECTION OF INTERVALS BETWEEN PROXIMITY SIMILAR EVENTS**
Koji Nagano, Ken-Ichi Itakura, Muroran Institute of Technology, Japan

TUP.A.2 **APPLICATION OF SAR REMOTE SENSING DATA TO LITHOLOGICAL MAPPING: A CASE STUDY IN RAILWAY GEOLOGICAL SURVEY**
Qulin Tan, JiaoJiao Gao, Xiaofang Li, Beijing Jiaotong University, China

TUP.A.3 **INVERSE Q FILTERING TO ENHANCE SEISMIC RESOLUTION**
Ning Tu, Wen-Kai Lu, Tsinghua University, China

TUP.A.4 **VALIDATION OF WATERSHED SCALE SOIL MOISTURE DERIVED FROM MODIS REMOTE SENSING DATA: A CASE STUDY IN THE YIHE BASIN OF CHINA**
Wanchang Zhang, Chinese Academy of Sciences, China; Jiongfeng Chen, Nanjing University, China; Qingguo Tai, Shandong Meteorological Bureau, China; Lingzhi Wu, Linyi Meteorological Bureau, China

TUP.A.5 **FAST EXTRACTING AND CHANGE DETECTION OF DAMMED LAKES USING HIGH-RESOLUTION SAR IMAGES: A CASE STUDY OF TANGJIASHAN DAMMED LAKE**
Yun Shao, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Shiang Wang, Wei Tian, Huaze Gong, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences & Graduate University of Chinese Academy of Sciences, China; Fengli Zhang, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.A.6 **NEOTECTONIC INFORMATION FROM DRAINAGE BASIN GEOMETRY IN THE TAJIK DEPRESSION**
Alexandra Kaessner, Richard Gloaguen, TU Bergakademie Freiberg, Germany

TUP.A.7 **A SUITALBE SOLUTION FOR EXTRACTION OF ALTERATION ANOMALIES FROM THE REMOTE SENSING DATA: A CASE STUDY OF THE BAOGUTU PORPHYRY COPPER DEPOSIT INTRUSION, XINJIANG, CHINA USING ASTER DATA**
Yu Chen, Qizhong Lin, Huadong Guo, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Yongming Wei, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Qinjun Wang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.A.8 **THE DEVELOPMENT AND ENGINNERING APPLICATION OF BOREHOLE RADAR IN CHINA**
Sheng Zhong, Sichuan University, China; Lixin Wu, Northeastern University, China; Chuanying Wang, The Chinese Academy of Science, China; Shanjun Liu, Northeastern University, China

TUP.A.9 **SPATIAL SUBDIVISION AND CODING OF A GLOBAL THREE-DIMENSIONAL GRID:SPHERE DEGENERATED-OCTREE GRID**
Jie-Qing Yu, Lixin Wu, Beijing Normal University, China

TUP.A.10 **USING PERMANENT SCATTERER INSAR TO DETECT LAND SUBSIDENCE AND GROUND FISSURES: A CASE STUDY IN XI'AN CITY**
Daqing Ge, Yan Wang, Ling Zhang, Xiaofang Guo, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources (AGRS), China

TUP.A.11 **DEVELOPMENT OF AUTOMATIC GEOLOGICAL LINEAMENT EXTRACTION SOFTWARE FOR SUPPORTING CONSTRUCTION ACTIVITIES**
Chang-Uk Hyun, Hyeong-Dong Park, Seoul National University, Republic of Korea

TUP.A.12 **REMOTE SENSING ANALYSIS OF QUATERNARY DEFORMATION USING RIVER NETWORKS IN HINDUKUSH REGION**
Syed Amer Mahmood, Faisal Shahzad, Richard Gloaguen, TU Freiberg, Germany

TUP.B: Tuesday, July 14, 12:40 - 14:20

TUP.B **Geological Applications II**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area B
Chair: Karen Joyce

TUP.B.1 **INSAR DISPLACEMENTS ASSOCIATED TO THE NOVEMBER 2006 NYAMULAGIRA ERUPTION**
Valérie Cayol, Lab. Magmas et Volcans, Université Blaise Pascal – UMR 6524, France; Nicolas d'Oreye, Dept. of Geophysics/ Astrophysics, National Museum of Natural History, Luxembourg; François Kervyn, Christelle Wauthier, Dept. of Geology, Royal Museum for Central Africa, Belgium; GVO Team, Goma Volcanological Observatory, Democratic Republic of the Congo

TUP.B.2 **EVALUATION OF GROUNDWATER RESOURCES USING GEO-SPATIAL INFORMATION AND DEVELOPMENTS IN EARTH OBSERVATION TECHNIQUES**
Andiswa Mlisa, Chris Hartnady, Umvoto Africa, South Africa

TUP.B.4 **A STUDY ON RECOGNITION CHARACTERIZATION OF PASSIVE SUPER LOW FREQUENCY ELECTROMAGNETIC EXPLORING CURVES OF GOAF**
Qiming Qin, Baishou Li, Xia Ye, Hongbo Jiang, Rongbo Cui, Wei Tian, Peking University, China

TUP.B.5 **DESIGN AND DEVELOPMENT OF PASSIVE SUPER LOW FREQUENCY ELECTROMAGNETIC DATA PROCESSING SOFTWARE**
Rongbo Cui, Qimin Qin, Baishou Li, Qingpei Wang, Peking University, China

TUP.B.7 **REMOTE SENSING EROSION ESTIMATION**
Richard Gloaguen, TU Bergakademie Freiberg, Germany

TUP.B.8 **A METHOD OF CORRECTION FOR MARINE SEISMIC ACQUISITION**
Ji Wang, Wen-Kai Lu, Tsinghua University, China

TUP.B.9 **RESEARCH ON METHOD FOR 3D URBAN GEOLOGICAL MODELING**
De-Fu Che, Chun-Hua Xiu, Northeastern University, China; Zuo-Ru Yin, Kailuan Mining Graup, China

TUP.B.10 **A CONVENIENT DESIGNATION FOR THE OPTIMAL HYDRAULIC CROSS-SECTION OF "RECTANGLE-V" SHAPED DRAINAGE CANAL OF VISCOUS DEBRIS FLOW**
Yong You, Jinfeng Liu, Chinese Academy of Sciences, China; Xingzhang Chen, Southwest University of Science and Technology, China; Huali Pan, Chinese Academy of Sciences, China

TUP.B.11 **RESERCH ON DRIVING FACTORS OF LAND SUBSIDENCE WITH REMOTE SENSING TECHNOLOGY**
Lin Zhu, Huili Gong, Xiaojuan Li, Yaoming Su, Lingling Jin, Capital Normal University, China

TUP.B.12 **ANALYSIS OF THE PYROPHYLLITE DEPOSIT ALTERATION AREA IN NOHWA ISLAND OF KOREAN PENINSULA USING ASTER IMAGES**
Moon-Kyung Kang, Young-Sun Son, Wang-Jung Yoon, Chonnam National University, Republic of Korea

TUP.C: Tuesday, July 14, 12:40 - 14:20

TUP.C **Geological Applications III**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area C
Chair: Tazio Strozzi

TUP.C.1 **ESTIMATION OF SEISMIC INTENSITY DUE TO THE 2008 WENCHUAN EARTHQUAKE**
Byeong-Pyo Jeong, National Institute of Information and Communications Technology, Japan; Masafumi Hosokawa, Shisaku Zama, National Research Institute of Fire and Disaster, Japan; Osamu Takizawa, National Institute of Information and Communications Technology, Japan

TUP.C.3 **A GEOSPATIAL INFORMATION PORTAL FOR EMERGENCY MANAGEMENT OF NATRUAL DISASTERS**
Yong Tu, Qi Li, Xi Mao, Peking University, China

TUP.C.4 **CHARACTERISTICS AND RISK ANALYSIS OF QINGLIN DEBRIS FLOW INDUCED BY "5.12" WENCHUAN EARTHQUAKE IN BEICHUAN COUNTY, SICHUAN, CHINA**
Xingzhang Chen, Southwest University of Science and Technology, China; Yong You, Peng Cui, Jinfeng Liu, Chinese Academy of Sciences, China

TUP.C.7 **THE IMPORTANCE OF REMOTE SENSING IN THE MONITORING OF VOLCANIC ACTIVITY IN THE GOMA REGION (DR OF CONGO): EXPERIENCE FROM THE GORISK PROJECT.**
Anne-Catherine van Overbeke, Royal Museum for Central Africa, Belgium; Monfort Bagalwa, Goma Volcanological Observatory, Congo; Jacques Durieux, United Nation Risk Management Unit, Congo; Deogracias Kavotha, Goma Volcanological Observatory, Democratic Republic of the Congo; François Kervyn, Centre d'Informations Géographiques / Royal Museum for Central Africa, Congo; Antoine Kies, University of Luxembourg, Luxembourg; François Lukaya, Goma Volcanological Observatory, Democratic Republic of the Congo; Prudence Mitangala, Centre scientifique et médical de l'ULB pour ses activités de coopération, Belgium; Nicolas d'Oreye, National Museum of Natural History, Luxembourg; Etoy Osodundu, Goma Volcanological Observatory, Congo; Benoît Smets, Royal Museum for Central Africa, Belgium; Dario Tedesco, Second University of Naples, Italy; Christelle Wauthier, Royal Museum for Central Africa / University of Liège, Belgium; Mathieu Yalire, Goma Volcanological Observatory, Congo

TUP.C.8 **POST-SEISMIC CRUSTAL DEFORMATION DETECTION ON COHERENT TARGETS: A CASE STUDY IN KUNLUN FAULT AFTER 2001 KOKOXILI EARTHQUAKE**
Yanmei Zhang, Institute of Earthquake Science, China Earthquake Administration, China; Xiao Cheng, Beijing Normal University, China

TUP.C.9 **ANALYSIS ON THE WATER VAPOR ANOMALY BEFORE WENCHUAN EARTHQUAKE BASED ON MODIS DATA**
Shanjun Liu, Institute for Geo-informatics & Digital Mine Research, Northeastern University, China; Lihua Cui, College of Resources and Environment, Hebei Polytechnic University, China; Lixin Wu, Zhi Wang, Institute for Geo-informatics & Digital Mine Research, Northeastern University, China

TUP.C.10 **THE JANUARY 2002 ERUPTION OF NYIRAGONGO VOLCANO (DRC) CAPTURED BY INSAR**
Christelle Wauthier, 1: Royal Museum for Central Africa / 2: University of Liège, Belgium; Valérie Cayol, Laboratoire Magmas et Volcans, Université Blaise Pascal, France; François Kervyn, 1: Royal Museum for Central Africa / 2: Centre d'Informations Géographiques SODERU, Belgium; Nicolas d'Oreye, National Museum of Natural History, Luxembourg

TUP.C.11 **THE MW 5.9 FEBRUARY 3RD 2008 BUKAVU EARTHQUAKE**
Nicolas d'Oreye, National Museum of Natural History, Luxembourg; Pablo Gonzalez, Institute of Astronomy and Geodesy (CSIC-UCM), Spain; Ashley Shuler, Lamont-Doherty Earth Observatory, Columbia University, United States; Louis Bagalwa, Goma Volcanological Observatory, Democratic Republic of the Congo; Goran Ekström, Lamont-Doherty Earth Observatory, Columbia University, United States; Deogracias Kavotha, Goma Volcanological Observatory, Democratic Republic of the Congo; François Kervyn, Royal Museum of Central Africa, Belgium; François Lukaya, Etoy Osodundu, Goma Volcanological Observatory, Democratic Republic of the Congo; Adrien Oth, European Center for Geodynamics and Seismology, Luxembourg

TUP.C.12 **EARTHQUAKE INTENSITY ESTIMASTION AND DAMAGE DETECTION USING REMOTE SENSING DATA FOR GLOBAL RESCUE OPERATIONS**
Masafumi Hosokawa, National Research Institute of Fire and Disaster, Japan; Byeong-Pyo Jeong, Osamu Takizawa, National Institute of Information and Communications Technology, Japan

TUP.D: Tuesday, July 14, 12:40 - 14:20

TUP.D **Lidar Sensing**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area D
Chair: Gary Gimmestad

TUP.D.1 **CSIR-NLC MOBILE LIDAR FOR ATMOSPHERE REMOTE SENSING**
Sivakumar Venkataraman, Council for Scientific and Industrial Research, South Africa; Melaku Tesfaye, CSIR - National Laser Centre, South Africa; Joel Botai, University of Pretoria, South Africa; Dineo Moema, Ameeth Sharma, Christoph Bollig, Council for Scientific and Industrial Research, South Africa; C. J . DeW. Hannes Rautenbach, University of Pretoria, South Africa

TUP.D.2 **CHARACTERIZATION OF SOIL SURFACE ROUGHNESS FROM TERRISTRIAL LASER SCANNER**
Wenjian Ni, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China; Guoqing Sun, University of Maryland, United States; Zhifeng Guo, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China; Yong Pang, Institute of Forest Resource Information Techniques, Chinese Academy of Forest, China

TUP.D.3 **SPECTRAL RATIO LIDAR FOR OBJECTS DETECTION**
Shalei Song, Pingxiang Li, Wei Gong, Liangpei Zhang, Bo Zhu, Lilei Lv, Daoxi Zhang, Wuhan University, China

TUP.D.4 **AUTOMATED EXTRACTION OF BUILDING GEOMETRIC FEATURES FROM RAW LIDAR DATA**
Zhi Wang, Lixin Wu, College of Resources and Civil Engineering, Northeastern University, China

TUP.D.5 **SIMULATION OF 3D LASER SYSTEMS**
Gerard Berginc, Michel Jouffroy, THALES, France

TUP.E: Tuesday, July 14, 12:40 - 14:20

TUP.E **Hyperspectral and Optical Sensing**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area E
Chair: Jan van Aardt

TUP.E.1 **A FIRST APPROACH TO AUTOMATIC MONITORING PROCEDURE OF CASE II WATER QUALITY FROM HJ-1 SATELLITE IMAGES**
Yuanfeng Wu, Bing Zhang, Junsheng Li, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Hao Zhang, Qian Shen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Di Wu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.E.2 **A DUAL-SWATH BUCKEYE EO IMAGING SYSTEM AND ITS APPLICATIONS FOR EMERGENCY RESPONSE TO NATURAL DISASTERS**
Xiuhong Sun, Flight Landata, Inc, United States

TUP.E.3 **ESTIMATION OF THE MTF OF A SATELLITE IMAGING-SYSTEM FROM CELESTIAL SCENES**
Sagi Faran, Israeli Aerospace Industries, MBT Space-Division, Israel; Itay Eshet, Aeroxel ltd, Israel; Nissim Yehezkel, Israeli Aerospace Industries, MBT Space-Division, Israel; Jonathan Molcho, Department of Electrical and Computer Engineering, Ben Gurion University, Israel

TUP.E.4 **SIZE-OF-SOURCE EFFECT AND DISTANCE EFFECT ESTIMATION OF THREE TRANSFER RADIOMETERS FOR PREFLIGHT CROSS-CALIBRATION EXPERIMENT**
Fumihiro Sakuma, National Institute of Advanced Industrial Science and Industry, Japan; Shuji Kawakami, Akihiko Kuze, Japan Aerospace Exploration Agency, Japan

TUP.E.5 **VICARIOUS CALIBRATION OF THE VISIBLE AND NEAR-INFRARED CHANNELS OF VARIOUS IN-FLIGHT RADIOMETERS BY DUNHUANG SITE IN 2008**
Yuan Li, Zhiguo Rong, Jingjing Liu, Lijun Zhang, Institute of Satellite Meteorology, China

TUP.E.7 **DEVELOPING A NEURAL-NETWORK-BASED BRDF MODEL FOR THE UAE COASTAL AND INLAND ZONES**
Ali Al Suwaidi, Adnan Al Rais, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates; Hosni Ghedira, American University in Dubai, United Arab Emirates; Marouane Temimi, NOAA-CREST, United States

TUP.E.9 **ALISEO ON MIOSAT: AN AEROSPACE IMAGING INTERFEROMETER FOR EARTH OBSERVATION**
Alessandro Barducci, Francesco Castagnoli, Guido Castellini, Donatella Guzzi, Paolo Marcoionni, Ivan Pippi, CNR-IFAC, Italy

TUP.F: Tuesday, July 14, 12:40 - 14:20

TUP.F **Ocean Biology Posters**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area F
Chair: Stewart Bernard

TUP.F.1 **ANALYSIS ON WATER INHERENT OPTICAL PROPERTIES IN LIAODONG BAY OF CHINA**
Miao-Fen Huang, Dalian Fisheries University, China; Jun-Wu Tang, Qing-Jun Song, National Satellite Ocean Application Service, China; Xu-Feng Xing, Dalian Fisheries University, China

TUP.F.2 **ZOOPLANKTON TRANSPORT AND DISTRIBUTIONS IN THE GULF OF LIONS: ESTIMATES FROM A LAGRANGIAN MODEL AND OPTICAL REMOTE SENSING DATA**
Zhongfeng Qiu, Andrea Doglioli, Francois Carlotti, Aix Marseille Université, France

TUP.F.3 **REMOTELY-SENSED INVESTIGATION OF THE IMPACT OF YANGTZE RIVER'S DISCHARGE TO THE EAST CHINA SEA**
Chuqun Chen, Shilin Tang, Ping Shi, Haigang Zhan, South China Sea Institute of Oceanography, China

TUP.F.4 **MONITORING OF HARBOR DREDGING USING REMOTE SENSING AND OPTICAL IN SITU DATA**
Liis Sipelgas, Urmas Raudsepp, Tallinn University of Technology, Estonia

TUP.F.5 **RELATIONSHIP BETWEEN RED TIDE EVENT AND BROAD CURRENT PATTERN DERIVED FROM OCEAN SURFACE RADAR IN A CLOSED SEA**
Shin'ichi Sakai, Takumi Yoshii, Takaki Tsubono, Masafumi Matsuyama, Central Research Insitute of Electric Power Industry, Japan; Akihide Tada, Takehiro Nakamura, Nagasaki University, Japan

TUP.F.6 **CHLOROPHYLL CONCENTRATION ALGORITHMS IN APULIAN COASTAL AREAS**
Vito De Pasquale, ISSIA-CNR, Italy; Raffaella Matarrese, Università di Bari, Italy; Guido Pasquariello, ISSIA-CNR, Italy; Maria Teresa Chiaradia, Università di Bari, Italy

TUP.G: Tuesday, July 14, 12:40 - 14:20

TUP.G **Ocean Remote Sensing: Measurements and Simulations**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area G
Co-Chairs: Seubson Soisuvarn and Yves Quilfen

TUP.G.2 **3D COASTAL BATHYMETRY RECONSTRUCTION USING TOPSAR DATA**
Maged Marghany, Department of Remote Sensing Faculty of Geoinformation Science and Engineering Universiti Teknologi Malaysia, Malaysia

TUP.G.3 **RADAR SIGNAL RETRODIFFUSION BY WATER SURFACE**
Jean-François Nouvel, ONERA, France; Jean-Claude Souyris, CNES, France

TUP.G.4 **FINITE DIFFERENCE MODEL FOR MODELING SEA SURFACE CURRENT FROM RADARSAT-1 SAR DATA**
Maged Marghany, Faculty of Geoinformation Science and Engineering Universiti Teknologi, Malaysia

TUP.G.5 **SEA SURFACE SIMULATION FOR SAR REMOTE SENSING BASED ON THE FRACTAL MODEL**
Ding Guo, University of Electronic Science and Technology of China;State key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, CAS.;Demonstration Center of Spaceborne Remote Sensing National Space Administration,, China; Xingfa Gu, University of Electronic Science and Technology of China;State key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications of China;Demonstration Center of Spaceborne Remote Sensing National Space Administration, China; Tao Yu, Xiaoying Li, Hui Xu, Jingjun Zheng, State key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications of China;Demonstration Center of Spaceborne Remote Sensing National Space Administration, China

TUP.G.6 **MERIDIONAL VARIABILITY IN SMOS SALINITY RETRIEVALS: TRADE-OFF BETWEEN SENSITIVITY TO GEOPHYSICAL EFFECTS AND INCREASED TEMPORAL SAMPLING**
Roberto Sabia, Adriano Camps, Marco Talone, Mercè Vall-Llossera, Universitat Politècnica de Catalunya, Spain; Jordi Font, Institut de Ciències del Mar, Spain

TUP.G.7 **CHARACTERISTICS OF SIGNIFICANT WAVE HEIGHT IN CHINA SEAS AND THEIR ADJACENT WATERS FROM MERGED ALTIMETRY DATA**
Jingsong Yang, Xiaoyan Chen, Rong Zhang, Juan Wang, Weigen Huang, Second Institute of Oceanography, State Oceanic Administration, China

TUP.G.8 **DESIGN OF AN AIRBORNE FULL-POLARIZED RADAR SCATTEROMETER FOR OCEAN SURFACE REMOTE SENSING**
Xiaolong Dong, Di Zhu, Bo Sun, Heguang Liu, Center for Space Science and Applied Research, Chinese Academy of Sciences, China

TUP.G.9 **TOGA - A GNSS REFLECTIONS INSTRUMENT FOR REMOTE SENSING USING A DIGITAL PHASED ARRAY**
Stephan Esterhuizen, Tom Meehan, David Robison, Jeff Tien, Jet Propulsion Laboratory, United States

TUP.G.11 **SPATIO-TEMPORAL INDEXING OF THE QUIKSCAT WIND DATA**
Félix Rodríguez Rodríguez, Manuel Barrena García, University of Extremadura, Spain

TUP.G.12 **GNSS REFLECTOMETRY: APPLICATIONS AND PROGRESSES**
Shuanggen Jin, O. Luo, Korea Astronomy and Space Science Institute, Republic of Korea

TUP.H: Tuesday, July 14, 12:40 - 14:20

TUP.H **Atmospheric Sensing, Aerosols and Chemistry**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area H
Chair: Shenshen Li

TUP.H.1 **DESIGN AND APPLICATION OF HAZE OPTIC THICKNESS RETRIEVAL MODEL FOR BEIJING OLYMPIC GAMES**
Shenshen Li, Liangfu Chen, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China; Fengbin Zheng, Computer and Information Engineering College, Henan University, China; Dong Han, Zifeng Wang, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China

TUP.H.2 **RETREIVAL OF TROPOSPHERIC NITROGEN DIOXIDE VERTICAL COLUMN DENSITY DURING THE 2008 SUMMER OLYMPIC GAMES IN BEIJING**
Dong Han, Liangfu Chen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, ; Weimin Wu, Education Technology Department, Qingdao University, China; Shenshen Li, Zifeng Wang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.H.3 **RESEARCH ON DARK DENSE VEGETATION ALGORITHM BASED ON ENVIRONMENTAL SATELLITE CCD DATA**
Shenshen Li, Liangfu Chen, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China; Zhongting Wang, Qing Li, Environmental Satellite Center Preparing Office, State Environmental Protection Ministry, China; Fengbin Zheng, Computer and Information Engineering College, Henan University, China

TUP.H.4 **PROVISON OF REAL-TIME TROPOSPHERE DELAY CORRECTIONS BY UTILIZATION OF GENERAL PURPOSE GRAPHICS PROCESSING UNITS**
Thomas Hobiger, Ryuichi Ichikawa, Yasuhiro Koyama, Tetsuro Kondo, NICT, Japan

TUP.H.5 **A TECHNIQUE TO DERIVE THE SPATIAL DISTRIBUTION OF RAIN INTENSITY FROM NWP DATA**
Carlo Capsoni, Lorenzo Luini, Politecnico di Milano, Italy

TUP.H.6 **THE RETRIEVAL OF AEROSOL OVER LAND SURFACES FROM CBERS02B IN BEIJING AREA**
Zhongting Wang, Environmental Satellite Center Preparing Office, China; Lijuan Zhang, China University of Geosciences, China; Liangfu Chen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Qing Li, Environmental Satellite Center Preparing Office, China; Shenshen Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.H.7 **SIMULTANEOUS RETRIEVAL OF GEOPHYSICAL PROPERTIES AND ATMOSPHERIC PARAMETERS FROM THE INFRARED HYPERSPECTRAL RESOLUTION SOUNDING DATA USING NEURAL NETWORK TECHNIQUE**
Ning Wang, Bo-Hui Tang, Zhao-Liang Li, Chinese Academy of Sciences, China

TUP.H.8 **DESIGN, SIMULATION AND OPTIMIZATION OF GROUND BASED MICROWAVE SPECTROMETER FOR ATMOSPHERIC PROFILE SOUNDING**
Xiaolong Dong, Yuchi Zhou, Shengwei Zhang, Bo Sun, Heguang Liu, Center for Space Science and Applied Research, Chinese Academy of Sciences, China

TUP.H.9 **CHARACTERIZATION OF AEROSOL PHYSICAL AND OPTICAL PROPERTIES FROM A COMBINATION OF GROUND-BASED AND HAND-HELD SUN-PHOTOMETER DATA OF SINGAPORE**
Santo V. Salinas, Boon N. Chew, Soo Chin Liew, National University of Singapore, Singapore

TUP.H.10 **FOG FORECASTING, DETECTION AND MONITORING IN THE UAE USING SEVIRI-MSG DATA**
Abdulla Bushahab, Ali Al Suwaidi, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates; Hosni Ghedira, American University in Dubai, United Arab Emirates; Khaled Mubarak, Khalifa University of Science, Technology, and Research (KUSTAR), United Arab Emirates

TUP.I: Tuesday, July 14, 12:40 - 14:20

TUP.I **UAV and Airborne Sensing**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area I
Chair: Kannappan Palaniappan

TUP.I.1 **DESIGN OF A STAND ALONE NAVIGATION SYSTEM USING POSITION ESTIMATION ALGORITHM**
M. Jayachandran, Al-Fetah University, Libyan Arab Jamahiriya; Manikandan J, National Institute of Technology Trichy (NIT-T), India; Yousef Hwegy, Al-Fatah University, Libyan Arab Jamahiriya

TUP.I.4 **HIGH-COMPACTED FM-CW SAR FOR BOARDING ON SMALL UAVS**
Rene Acevo-Herrera, Albert Aguasca, Jordi J. Mallorquí, Xavier Fàbregas, UPC, Spain

TUP.I.5 **THE DESIGN AND IMPLEMENTATION FOR UAV POLARIZATION REMOTE SENSING SYSTEM**
Lei Yan, Huabo Sun, Hongzhao Tang, Pengqi Gao, Peking University, China; Rui Liang, China University of Mining & Technology, China

TUP.I.6 **RECTIFICATION FOR LINEAR PUSHBROOM IMAGE OF UAV**
Ling Zhu, Wuming Zhang, Beijing Normal University, China; Ruoming Shi, Beijing University of Civil Engineering and Architecture, China

TUP.I.7 **FULLY AUTOMATIC AND ROBUST UAV CAMERA CALIBRATION USING CHESSBOARD PATTERNS**
Koen Douterloigne, Sidharta Gautama, Wilfried Philips, Ghent University, Belgium

TUP.I.8 **USING AERIAL IMAGES TO CALIBRATE THE INERTIAL SENSORS OF A LOW-COST MULTISPECTRAL AUTONOMOUS REMOTE SENSING PLATFORM (AGGIEAIR)**
Austin Jensen, Yiding Han, Yangquan Chen, Utah State University, United States

TUP.I.10 **ESA AIRBORNE CAMPAIGNS – A NEW SOURCE OF DATA FOR REMOTE SENSING SCIENCE**
Malcolm Davidson, Remo Bianchi, Patrick Wursteisen, ESA, Netherlands

TUP.J: Tuesday, July 14, 12:40 - 14:20

TUP.J **Land Surface Snow and Ice B**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area J
Chair: Ya-Qiu Jin

TUP.J.1 **DETECTION OF SNOW AND FROST DISASTER IN SOUTHERN CHINA USING AMSR-E SCATTERING AND POLARIZATION INDEXES**
Ya-Qiu Jin, Hao Chen, Fudan University, China

TUP.J.2 **OBSERVATIONS OF SEASONAL SNOW COVER AND SNOW MASS IN THE SOUTHERN HEMISPHERE FROM 1979-2006 USING PASSIVE MICROWAVE DATA**
James Foster, Dorothy Hall, NASA, United States; John Eylander, USAF/AFWA, United States

TUP.J.3 **A NEW, BLENDED SNOW PRODUCT USING VISIBLE, PASSIVE MICROWAVE AND SCATTEROMETER SATELLITE DATA**
James Foster, Dorothy Hall, NASA, United States; John Eylander, USAF, United States

TUP.J.4 **MERGING FLAT/FOREST AND MOUNTAINOUS SNOW PRODUCTS FOR EXTENDED EUROPEAN AREA**
Panu Lahtinen, Finnish Meteorological Institute, Finland; Aydin Gurol Erturk, Turkish State Meteorological Service, Turkey; Jouni Pulliainen, Jarkko Koskinen, Finnish Meteorological Institute, Finland

TUP.J.6 **A COMPARATIVE STUDY ON SNOW COVER MONITORING OF DIFFERENT SPECIAL RESOLUTION REMOTE SENSING IMAGES**
Hongbo Jiang, Qiming Qin, Ning Zhang, Shaohua Zhao, Lin You, Heng Dong, Peking University, China

TUP.J.7 **RELATIONSHIP BETWEEN SNOW GRAIN MORPHOLOGY AND IN-SITU CALIBRATED NEAR INFRARED PHOTOGRAPHS**
Alexandre Langlois, Alain Royer, Benoît Montpetit, Université de Sherbrooke, Canada; Ghislain Picard, Ludovic Brucker, Laurent Arnaud, CNRS-Université Joseph Fourier, France; Kalifa Goïta, Université de Sherbrooke, Canada; Michel Fily, CNRS-Université Joseph Fourier, France

TUP.J.9 **MULTI-SQUINT RADAR SOUNDER PROCESSING**
Ernesto Rodriguez, Ana Bertran, Chandini Veeramachaneni, Eric Belz, Xiaoqing Wu, JPL/CalTech, United States; Kenneth Jezek, Ohio State University, United States; Sivaprasad Gogineni, Kansas University, United States

TUP.K: Tuesday, July 14, 12:40 - 14:20

TUP.K **Land Surface Snow and Ice A**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area K
Chair: William Blake

TUP.K.1 **ESTABLISHING A BASE CAMP SERVER FOR REMOTE SENSING OF ICE SHEETS IN ILLULISSAT, GREENLAND**
Linda Hayden, Je'aime Powell, Eric Akers, Elizabeth City State University, United States

TUP.K.2 **DERIVATION OF GLACIER VELOCITY FROM SAR AND OPTICAL DATA WITH FEATURE TRACKING**
Lei Huang, Center for Earth Observation & Digital Earth, Chinese Academy of Sciences. 2, Graduate University, CAS, China; Zhen Li, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.K.3 **THE GLACIER MOVEMENT ESTIMATION AND ANALYSIS WITH INSAR IN THE QINHAI-TIBETAN PLATEAU**
Zhen Li, Jianmin Zhou, Bangsen Tian, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.K.4 **EVALUATION OF GLACIER RUNOFF IN TAILAN BASIN BY MONTHLY DEGREE-DAY MODEL**
Shiqiang Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China; Xiaowen Zhang, Lanzhou Commercial College, China

TUP.K.5 **DISTRIBUTION OF WINTER FROZEN SOIL DEPTH IN QILIAN MOUNTAIN AND ITS RESPONSE TO TEMPERATURE CHANGE**
Jinsong Wang, Hongfen Zhang, Institute of Arid Meteorology, China; Zhiguo Liu, Lanzhou Central Meteorological Observatory, China; Bin Huang, Institute of Arid Meteorology, China

TUP.K.6 **COMPARISON OF MODELED AND OBSERVED SUPRAGLACIAL LAKES AT THE WESTERN MARGIN OF THE GREENLAND ICE SHEET**
Steven Palmer, Aud Sundal, Andrew Shepherd, Peter Nienow, University of Edinburgh, United Kingdom

TUP.K.7 **EAST ANTARCTIC ICE SHEETS:CHARACTERIZING ICE SHEET THICKNESS AND HYDROLOGIC POTENTIAL OF SUB-GLACIAL LAKE ENVIRONMENTS**
Randy Justin, Pennsylvania State University, United States; Eduardo Cabret, University of Puerto Rico at Mayagüez, Puerto Rico; Sridhar Anandakrishnan, Pennsylvania State University, United States

TUP.K.8 **SEA ICE CO NCENTRATION AND TYPE ANALYSIS FROM DUAL POL RADARSAT-2 AND MODIS IMAGES IN THE BALTIC SEA**
Rivo Uiboupin, Liis Sipelgas, Marine Systems Institute at Tallinn University of Technology, Estonia

TUP.K.9 **GROUND BASED SAR SURVEY OF BASAL INTERFACE AT NEEM DRILL SITE**
William Blake, Carl Leuschen, Claude Laird, Center for Remote Sensing of Ice Sheets, United States; Dorthe Dahl-Jensen, Niels Bohr Institute, Denmark

TUP.K.10 **GEOPEBBLES: WIRELESS SENSORS NODES FOR SEISMIC MONITORING OF ICE SHEETS**
Jerome Mitchell, University of Kansas, United States; Peter Burkett, Sridhar Anandakrishnan, The Pennsylvania State University, United States

TUP.K.11 **POTENTIALS OF RADARSAT-2 DATA TO MONITOR FREEZING/THAWING CYCLES OVER AGRICULTURAL LANDS IN CANADA**
Louis-Philippe Rousseau, Ramata Magagi, Université de Sherbrooke, Canada; Robert Leconte, École de technologie supérieure, Canada; Aaron Berg, University of Guelph, Canada; Brenda Toth, Environment Canada, Canada

TUP.L: Tuesday, July 14, 12:40 - 14:20

TUP.L **Land Surface Snow and Ice C**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area L
Chair: Hiroshi Kimura

TUP.L.1 **THE RESULTS OF PRELIMINARY MEASUREMENTS OF SNOW AND WATER ICE MICROWAVE REFLECTION AND EMISSION ANGULAR DEPENDENCES AT 5,6GHZ**
Astghik Hambaryan, Artashes Arakelyan, Hrant Muradyan, Vanik Karyan, Gagik Hovhannisyan, Arsen Arakelyan, Melanya Grigoryan, Izabela Hakobyan, Mushegh Manukyan, ECOSERV Remote Observation Centre Co. Ltd., Armenia

TUP.L.2 **REGIONAL RETRIEVAL OF SNOW WATER EQUIVALENT (SWE) USING THERMODYNAMIC SNOW MODELS IN QUÉBEC, CANADA**
Alexandre Langlois, Université de Sherbrooke, Canada; Ludovic Brucker, CNRS-Université Joseph Fourier, France; Jacqueline Kohn, Alain Royer, Université de Sherbrooke, Canada; Chris Derksen, Environment Canada, Canada; Patrick Cliche, Université de Sherbrooke, Canada; Ghislain Picard, CNRS-Université Joseph Fourier, France; Jean-Marie Willemet, Centre National de Recherches Météorologiques, France; Michel Fily, CNRS-Université Joseph Fourier, France

TUP.L.3 **ESTIMATION OF ACCUMULATION AREA RATIO OF A GLACIER FROM MULTI-TEMPORAL SATELLITE IMAGES USING SPECTRAL UNMIXING**
Jonathan Cheung-Wai Chan, Jeremy Van Ophem, Philippe Huybrecht, Vrije Universiteit Brussel, Belgium

TUP.L.4 **LATITUDINAL VARIATIONS OF SNOW PROPERTIES USING PASSIVE MICROWAVE DATA OVER NORTH EASTERN CANADA**
Alexandre Langlois, Université de Sherbrooke, Canada; Ludovic Brucker, CNRS-Université Joseph Fourier, France; Alain Royer, Université de Sherbrooke, Canada; Michel Fily, Ghislain Picard, Laurent Arnaud, CNRS-Université Joseph Fourier, France; Chris Derksen, Environment Canada, Canada; Kalifa Goïta, Université de Sherbrooke, Canada; Anne Walker, Environment Canada, Canada; Patrick Cliche, Patrick Harvey-Collard, Université de Sherbrooke, Canada

TUP.L.5 **THE ATMOSPHERE INFLUENCE TO AMSR-E MEASUREMENTS OVER SNOW-COVERED AREA: SIMULATION AND EXPERIMENT**
Yubao Qiu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Jiancheng Shi, Institute for Computational Earth System Science, University of California, United States; Juha Lemmetyinen, Anna Kontu, Jouni Pulliainen, Finnish Meteorological Institute (FMI), Arctic Research Centre, Finland; Huadong Guo, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; James R. Wang, NASA Goddard Space Flight Center, Finland; Lingmei Jiang, School of Geography, Beijing Normal University, China; Martti Hallikainen, Department of Radio Science and Engineering, Helsinki University of Technology, Finland; Li Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.L.6 **IMPROVED SNOW DEPTH RETRIEVAL ALGORITHM IN CHINA AREA USING PASSIVE MICROWAVE REMOTE SENSING DATA**
Sheng Chang, Beijing Normal University, China; Jiancheng Shi, University of California, Santa Barbara, United States; Lingmei Jiang, Lixin Zhang, Beijing Normal University, China; Hu Yang, China Meteorological Administration, China

TUP.L.7 **EVALUATING SNOW DEPTH IN WESTERN CHINA BASED ON PASSIVE MICROWAVE REMOTE SENSING**
Xiaojun Yin, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jiancheng Shi, Institute for Computational Earth System Science, University of California, Santa Barbara, United States; Jinyang Du, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jiang Lingmei, State Key Laboratory of Remote Sensing Science, Beijing Normal University, China

TUP.L.8 **ANALYSIS ON FACTORS AFFECTING THE DEVELOPMENT OF ALPINE PERMAFROST IN CENTRAL-EASTERN QILIANSHAN MOUNTAINS, NORTHWEST CHINA**
Jing Li, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences; Anyang Normal University, China; Yu Sheng, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China; Shixing Jiao, Anyang Normal University, China; Guojing Yang, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

TUP.L.9 **SNOW COVER EFFECTS ON SAR INTERFEROGRAMS**
Hiroshi Kimura, Sho Ohara, Gifu University, Japan

TUP.L.10 **MEASUREMENT AND SIMULATION OF THE SNOW PROPERTIES AT AN ALPINE VALLEY SITE**
Yu Liu, Lingmei Jiang, Beijing Normal University, China; Jiancheng Shi, University of California, Santa Barbara, United States; Lixin Zhang, Jinmei Pan, Shaojie Zhao, Yongpan Zhang, Beijing Normal University, China

TUP.L.11 **SNOW DENSITY ESTIMATION USING POLARIMETRIC ASAR DATA**
Gulab Singh, Gopalan Venkataraman, Indian Institute of Technology Bombay, India

TUP.L.12 **DISASTER MONITORING AND EARLY-WARNING SYSTEM FOR SNOW AVALANCHE ALONG TIANSHAN HIGHWAY**
Xudong Liu, Yalan Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Li Li, China Trans GEOMATICS CO.LTD, China; Yuhuan Ren, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.M: Tuesday, July 14, 12:40 - 14:20

TUP.M **Geospatial Analysis and Appplications**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area M
Chair: Paul Smits

TUP.M.1 **ESTABLISHMENT AND APPLICATION OF NWA SYSTEM IN WATERSHED ECOSYSTEM QUALITY ASSESSMENT BASED ON RS AND GIS**
Chunxia Yuan, Yaowen Xie, Chuanyan Zhao, Zhaodong Feng, Lanzhou University, China

TUP.M.2 **NEW TECHNIQUES OF REMOTE SENSING IN THE UNIVERSITY OF ARCHITECTURE AND PLANNING**
Ruoming Shi, Min Xu, Ling Zhu, Beijing University of Civil Engineering and Architecture, China

TUP.M.3 **STUDY ON TOBACCO SPATIAL AGGLOMERATION PATTERNBASED ON REMOTE SENSING AND GIS METHODS IN HENAN PROVINCE, CHINA**
Mengzhi Deng, Chinese Academy of Sciences, China; Daihui Wu, Peking University, China; Fuxin Li, Henan Province Tobacco Corporation, China; Wenjie Fan, Peking University, China

TUP.M.4 **HIGH-SPEED RAILWAY LOCATION DESIGN USING GIS**
Dongwei Qiu, Mingyi Du, Shuqiang Lu, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China

TUP.M.5 **LBS-P: A LBS PLATFORM SUPPORTING ONLINE MAP SERVICES**
Yingwei Luo, Xiaolin Wang, Xiao Pang, Haibo Wang, Peking University, China

TUP.M.6 **RESEARCH ON EFFICIENT VISUALIZATION TECHNIQUES FOR HIGH RESOLUTION REMOTE SENSING DATA**
Jing Nong Weng, Jian Huang, Heng Cai, Beihang University, China

TUP.M.7 **AN IMPROVED FRACTAL CONSTRUCTION ON 3D DEM TERRAIN PROFILE**
Wenbin He, Zheng Niu, Chinese Academy of Sciences, China; Lijiao Liang, Dongguan University of Technology, China

TUP.M.8 **DISCUSS AND RESEARCH ON THE CHANGING OF THE SILK ROAD USING GEO-SPATIAL TECHNOLOGY**
Jiantao Bi, Xingxing Wang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

TUP.M.9 **HOW TO DECIDE THE UNITS OF DRAINAGE PATTERN OF GENERALIZATION**
Lili Jiang, Qingwen Qi, An Zhang, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

TUP.M.10 **GIS-BASED SUPPORT MODELS FOR THE DEVELOPMENT OF ERHAI LAKE WATERSHED MANAGEMENT INFORMATION SYSTEM**
Junsan Zhao, Kunming University of Science and Technology, China

TUP.M.11 **TOPOGRAPHY POLARIZATION ORIENTATION SHIFT ANALYSIS OF VEGETATED TERRAIN USING L BAND POLSAR DATA**
Yang Li, Fang Cao, Wen Hong, 1. National Key Laboratory of Microwave Imaging Technology. 2. Institute of Electronics, Chinese Academy of Sciences, China

TUP.M.12 **RESEARCH AND APPLICATION OF PLANNING SUPPORT SYSTEM BASED ON 3S TECHNIQUES FOR POST-DISASTER RECONSTRUCTION AFTER WENCHUAN EARTHQUAKE IN CHINA**
Wensheng Zhou, Feng Mao, Ze Liu, Qiang Li, Qiang Fu, Tsinghua University, China

TUP.N: Tuesday, July 14, 12:40 - 14:20

TUP.N **Electromagnetics and Radiative Transfer**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area N
Co-Chairs: Yisok Oh and Adriano Camps

TUP.N.1 **SIMULATION SYSTEM DEVELOPMENT OF INFRARED REMOTE SENSING IMAGES:HJ-1B CASE**
Guijun Yang, National Engineering Research Center for Information Technology in Agriculture, China; Qinhuo Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Zhurong Xing, Shandong university of science and technology Department of photogrammetry and remote sensing ,Qingdao 266510,China, China; Wenjiang Huang, National Engineering Research Center for Information Technology in Agriculture, China; Xian Li, School of Geomatics , Liaoning Technical University, China

TUP.N.2 **A DISCRETE INTERFEROMETRIC MODEL FOR A LAYER OF RANDOM MEDIUM**
S. Selim Seker, Bogazici University,Turkey; Roger Lang, George Washington University, United States

TUP.N.4 **THE COHERENT MICROWAVE EMISSION OF FREEZING SOIL: EXPERIMENTAL RESEARCH AND MODEL SIMULATION**
Shaojie Zhao, Lixin Zhang, Yongpan Zhang, Lingmei Jiang, Weipo Xing, Tianjie Zhao, Beijing Normal University, China

TUP.N.5 **SENSITIVE ANALYSIS OF VARIOUS MEASUREMENT ERRORS ON TEMPEARTURE AND EMISSIVITY SEPARATION METHOD WITH HYPERSPECTRAL DATA**
Xiaoying Ouyang, Xinhong Wang, Bo-Hui Tang, Zhao-Liang Li, Chinese Academy of Sciences, China

TUP.N.6 **CANOPY MODELING AND VALIDATION FOR ROW PLANTED CROPS OF KEY GROWTH STAGES**
Yanjuan Yao, Peking University, China; Qiang Liu, Qinhuo Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Wenjie Fan, Peking University, China; Xiaowen Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.N.7 **EXPERIMENTS OF SOIL MOISTURE RETRIEVAL BASED ON EXTENDED KALMAN FILTER**
Ruofei Zhong, Qin Li, Wenji Zhao, Capital Normal University, China

TUP.N.8 **SYNTHETIC RETRIEVAL OF AEROSOL OPTICAL DEPTH AND SURFACE REFLECTANCE USING TERRA AND AQUA PLATFORMS IN SEMI-ARID REGIONS**
Jie Guang, Yong Xue, Xiaowen Li, Ying Wan, Yingjie Li, Jianwen Ai, Linyan Bai, Linlu Mei, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TUP.N.9 **MICROWAVE SATELLITE DATA APPLIED FOR AGRICULTURE AREA - CASE STUDY POLAND**
Katarzyna Dabrowska - Zielinska, Andrzej Ciolkosz, Wanda Kowalik, Maria Budzynska, Institute of Geodesy and Cartography, Poland

TUP.N.10 **COMBINED USE OF CASSINI RADAR ACTIVE AND PASSIVE MEASUREMENTS TO CHARACTERIZE TITAN MORPHOLOGY**
Bartolomeo Ventura, Dipartimento Interateneo Fisica bari, Italy; Domenico Casarano, CNR IRPI, Italy; Claudia Notarnicola, EURAC, Italy; Michael Janssen, JPL, United States; Francesco Posa, Dipartimento Interateneo di Fisica, Italy

TUP.N.11 **AN IMPROVEMENT OF METHOD FOR MONITORING DROUGHT USING REMOTE SENSING**
Ji Zhu, 1. State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences. 2. Shijiazhuang University of Economics., China; Jiancheng Shi, University of California, Santa Barbara, United States; Hanfang Chu, Shijiazhuang University of Economics, China; Qiang Feng, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Angsheng Wang, Institute of Atomspheric Physics, Chinese Academy of Sciences, China

TUP.N.12 **STUDY ON THE BACKSCATTERING CHARACTERISTIC OF TYPICAL EARTH SUBSTANCES IN NORTHWEST OF CHIANA**
Zengcan Liu, Yan Chen, Ling Tong, Mingquan Jia, Chunliang Xu, Electronics University of Electronic Science and Technology of China, China

TUP.O: Tuesday, July 14, 12:40 - 14:20

TUP.O **Microwave Scattering and Propagation**
Session Type: Poster
Time: Tuesday, July 14, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area O
Co-Chairs: Mahta Mohhaddam and Kyle McDonald

TUP.O.1 **MICROWAVE RADIATIVE TRANSFER AT FREQUENCIES OF AMSU-B: EFFECTS OF UNCERTAINTIES IN ICE PERMITTIVITY ON BRIGHTNESS TEMPERATURES**
Xinxin Xie, Jungang Miao, Wei Wang, Beihang University, China

TUP.O.2 **PASSIVE REAL-TIME LOCALIZATION THROUGH WIRELESS SENSOR NETWORKS**
Federico Viani, Mauro Martinelli, Luca Ioriatti, Manuel Benedetti, Andrea Massa, ELEDIA Research Group - University of Trento, Italy

TUP.O.3 **DELAY-DOPPLER MAPS STUDY OVER OCEAN, LAND AND ICE FROM SPACE**
Pau Ferre-Lillo, Nereida Rodriguez-Alvarez, Xavier Bosch-Lluis, Enric Valencia, Juan Fernando Marchan-Hernandez, Isaac Ramos-Perez, Adriano Camps, Politechnical University of Catalonia (UPC), Spain

TUP.O.5 **TEMPORAL VARIATION OF SIMULATED RICE BACKSCATTERING OF S-BAND HJ-1 SAR**
Fengli Zhang, Kun Li, Xiaofang Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Maosong Xu, Academy of Forestry Inventory, Planning and Designing, State Forestry Administration, China

TUP.O.6 **ELECTROMAGNETIC SCATTERING FROM MULTIPLE CYLINDERS**
Wenzhe Yan, Dawei Liu, Zhejiang University, China; Hong Tat Ewe, Tunku Abdul Rahman University, Malaysia; Du Yang, Zhejiang University, China

TUP.O.8 **POLARIZATION PLANE ROTATION EFFECTS ON SAR POLARIMETRIC ATTRIBUTES**
Sidnei Sant'Anna, Instituto Nacional de Pesquisas Espaciais, Brazil; José Lacava, David Fernandes, Instituto Tecnológico de Aeronáutica, Brazil

TUP.O.9 **MICROWAVE SCATTERING BEHAVIOUR ANALYSIS OF TYPICAL TARGETS WITH SAR IMAGE**
Xiaofang Li, Beijing Jiaotong University, China; Kun Li, Fengli Zhang, Yun Shao, State Key Laboratory of Remote Sensing Science, China; Qulin Tan, Beijing Jiaotong University, China

TUP.O.10 **QUASIOPTICAL BEAM PROPAGATION FOR REMOTE SENSING**
Stanislav Zvanovec, Pavel Pechac, Milos Mazanek, Czech Technical University in Prague, Czech Republic

TUP.O.11 **CORRECTION OF TARGET DATA TAKING INTO CONSIDERATION THE TROPOSPHERE REFRACTIVITY**
Igor Shirokov, George Jandieri, Yuri Gimpilevich, Igor Serdyuk, Georgian Technical University, Georgia

TUP.O.12 **ON THE VALUE OF HIGH RESOLUTION WEATHER MODELS FOR ATMOSPHERIC MITIGATION IN SAR INTERFEROMETRY**
Shizhuo Liu, Delft University of Technology, Netherlands; Ágnes Mika, BMT ARGOSS, Netherlands; Ramon Hanssen, Delft University of Technology, Netherlands

TU3.O1: Tuesday, July 14, 14:20 - 16:00

TU3.O1 **RADARSAT I**
Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 2A
Co-Chairs: Satish Srivastava and Shabeer Ahmed

14:20
TU3.O1.1 **RESULTS AND PROGRAM STATUS OF RADARSAT-1**
Surendra Parashar, Canadian Space Agency, Canada

14:40
TU3.O1.2 **RADARSAT-2 GOVERNMENT ORDER HANDLING OPERATION**
Satish Srivastava, Daniel Bujold, Canadian Space Agency, Canada

15:00
TU3.O1.3 **RADARSAT-2: CAPABILITIES AND BENEFITS FOR THE CANADIAN GOVERNMENT**
Daniel De Lisle, Luc Brule, Denis Auger, Canadian Space Agency, Canada

15:20
TU3.O1.4 **RADARSAT-2 INITIAL SYSTEM OPERATIONS AND PERFORMANCE**
Anthony Hillman, Philippe Rolland, Rene Periard, Marielle Chabot, Charlie Chen, MDA, Canada; Nick Martens, Telesat, Canada

15:40
TU3.O1.5 **IMAGE QUALITY AND CALIBRATION OF RADARSAT-2**
Anthony Luscombe, MDA, Canada

TU3.O2: Tuesday, July 14, 14:20 - 16:00

TU3.O2 **TanDEM-X: The Mission Status**
Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 2D
Co-Chairs: Gerhard Krieger and Irena Hajnsek

14:20
TU3.O2.1 **TANDEM-X: SCIENCE ACTIVITIES AND PROPOSAL SUBMISSION**
Irena Hajnsek, Thomas Busche, Alberto Moreira, German Aerospace Center, Germany

14:40
TU3.O2.2 **TANDEM-X DEM CALIBRATION: CORRECTION OF SYSTEMATIC DEM ERRORS BY BLOCK ADJUSTMENT**
Astrid Gruber, Birgit Wessel, Martin Huber, German Aerospace Center (DLR), Germany

15:00
TU3.O2.3 **PROCESSING SYSTEM AND ALGORITHMS FOR THE TANDEM-X MISSION**
Michael Eineder, Thomas Fritz, Helko Breit, Nico Adam, DLR, Germany; Nestor Yague-Martinez, TU-München, Germany; Marie Lachaise, Ramon Brcic, DLR, Germany

15:20
TU3.O2.4 **ENSURING GLOBALLY THE TANDEM-X HEIGHT ACCURACY: ANALYSIS OF THE REFERENCE DATA SETS ICESAT, SRTM AND KGPS-TRACKS**
Martin Huber, Birgit Wessel, Detlev Kosmann, German Aerospace Center, Germany; Andreas Felbier, Technische Universitaet Muenchen (TUM), Germany; Volker Schwieger, University of Stuttgart, Germany; Martin Habermeyer, Anna Wendleder, Achim Roth, German Aerospace Center, Germany

15:40
TU3.O2.5 **SINGLE PASS X-BAND SAR INTERFEROMETRY FOR FOREST PARAMETER ESTIMATION: A FIRST ASSESSMENT OF THE TANDEM-X POTENTIAL**
Florian Kugler, Seung-Kuk Lee, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany; Irena Hajnsek, German Aerospace Center, Germany

TU3.O3: Tuesday, July 14, 14:20 - 16:00

TU3.O3 **COSMO-SkyMed Mission: Status and Results I**
Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Menzies M9
Co-Chairs: Alessandro Coletta and Fabrizio Battazza

14:20
TU3.O3.1 **COSMO-SKYMED MISSION STATUS: THREE OUT OF FOUR SATELLITES IN ORBIT**
Giovanni Valentini, Fabrizio Battazza, Alessandro Coletta, Fabio Covello, Gemma Manoni, ASI - Agenzia Spaziale Italiana, Italy

14:40
TU3.O3.2 **ACCESS, USE AND DATA EXPLOITATION OF THE COSMO-SKYMED SYSTEM**
Fabrizio Battazza, Alessandro Coletta, Fabio Covello, Gemma Manoni, Giovanni Valentini, ASI - Agenzia Spaziale Italiana, Italy

15:00
TU3.O3.3 **SAR INTERFEROMETRY ANALYSES AND EXPERIMENTS WITH COSMO-SKYMED**
Mario Costantini, Federico Minati, Fabio Malvarosa, Telespazio/e-GEOS, Italy; Fabrizio Battazza, ASI - Agenzia Spaziale Italiana, Italy

15:20
TU3.O3.4 **SEA SURFACE TRANSPORT DERIVED BY FREQUENT REVISIT TIME SERIES OF COSMO-SKYMED SAR DATA**
Achille Ciappa, Luca Pietranera, Telespazio/e-GEOS, Italy; Alessandro Coletta, ASI - Agenzia Spaziale Italiana, Italy

15:40
TU3.O3.5 **COSMO-SKYMED CONTRIBUTION IN OIL SPILL MONITORING OF THE MEDITERRANEAN SEA**
Francesco Nirchio, Italian Space Agency, Italy; Gianfranco Pandiscia, Giovanni Ruggieri, Telespazio, Italy; Rosalia Santoleri, ISAC-CNR, Italy; Francesco Tataranni, Consorzio Innova, Italy; Antonio Giancaspro, Telespazio, Italy; Paolo Trivero, Università Piemonte Orientale, Italy; Nadia Pinardi, INGV, Italy; Andrea Masini, FlyBy, Italy; Chiara Castellani, ACS, Italy

TU3.O4: Tuesday, July 14, 14:20 - 16:00

TU3.O4 **18 years ESA ERS and ENVISAT Earth Observations**

Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Menzies M10
Co-Chairs: Yves-Louis DESNOS and Wolfgang LENGERT

14:20
TU3.O4.1 **18 YEARS ESA ERS AND ENVISAT EARTH OBSERVATIONS**
Wolfgang Lengert, Yves-Louis Desnos, ESA, Italy

14:40
TU3.O4.2 **18 YEARS OF INTERFEROMETRY**
Fabio Rocca, Politecnico, Italy

15:00
TU3.O4.3 **18 YEARS OF SAR OCEAN IMAGING WITH FOCUS ON THE GREATER AGULHAS CURRENT REGIME**
Johnny A. Johannessen, Nansen Environmental and Remote Sensing Center, Norway; Bertrand Chapron, IFREMER, France; Fabrice Collard, CLS, France; Vladimir Kudryavtsev, NIERSC, Russian Federation; Harald Johnsen, Norut, Norway

15:20
TU3.O4.4 **THE CONTRIBUTION OF 18 YEARS OF ALTIMETRY TO THE UNDERSTANDING OF OCEANIC PLANETARY WAVES**
Paolo Cipollini, National Oceanography Centre, Southampton, United Kingdom

15:40
TU3.O4.5 **THE ATSR SERIES - PIONEERING THE TRANSITION FROM EXPERIMENTAL SENSOR TO OPERATIONAL SYSTEM FOR CLIMATE MONITORING AND OTHER APPLICATIONS**
David Llewellyn-Jones, University of Leicester, United Kingdom

TU3.O5: Tuesday, July 14, 14:20 - 16:00

TU3.O5 **Performance of Operational Surface Deformation Measurements from Radar Interferometry I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 2B
Co-Chairs: Michael Eineder and Scott Hensley

14:20
TU3.O5.1 **DESDYNI'S ABILITY TO ESTIMATE SOURCE PARAMETERS FOR SOLID EARTH SCIENCE APPLICATIONS**
Paul Rosen, Andrea Donnellan, Jet Propulsion Laboratory, United States; Bradford Hager, Massachusetts Institute of Technology, United States; Zhen Liu, Paul Lundgren, Jet Propulsion Laboratory, United States; Mark Simons, California Institute of Technology, United States; Frank Webb, Sang-Ho Yun, Jet Propulsion Laboratory, United States

14:40
TU3.O5.2 **ON THE SENTINEL-1 POTENTIAL FOR SURFACE DEFORMATION MAPPING**
Ramon Hanssen, Delft University of Technology, Netherlands; Fabio Rocca, Politecnico di Milano, Italy; Evert Attema, European Space Agency, Netherlands

15:00
TU3.O5.3 **SCIENTIFIC REQUIREMENTS AND FEASABILITY ON AN L-BAND MISSION DEDICATED TO MEASURE SURFACE DEFORMATION**
Michael Eineder, DLR, Germany; Anke Friedrich, LMU, Germany; Christian Minet, Richard Bamler, DLR, Germany; Frederic Flerit, LMU, Germany; Irena Hajnsek, DLR, Germany

15:20
TU3.O5.4 **MISSION DESIGN AND PERFORMANCE FOR SYSTEMATIC DEFORMATION MEASUREMENTS WITH A SPACEBORNE SAR SYSTEM**
Francesco De Zan, Pau Prats, Gerhard Krieger, German Aerospace Center (DLR), Germany

15:40
TU3.O5.5 **DEFORMATION MONITORING USING THE ALOS PALSAR**
Masanobu Shimada, Yousuke Miyagi, JAXA, Japan

TU3.O6: Tuesday, July 14, 14:20 - 16:00

TU3.O6 **Data Assimilation into Numerical Models**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 2C
Chair: Joaquin Muñoz Sabater

14:20
TU3.O6.1 **THE ECMWF SURFACE ANALYSIS: USE OF ACTIVE AND PASSIVE MICROWAVE DATA FOR SOIL MOISTURE ANALYSIS**
Patricia de Rosnay, Gianpaolo Balsamo, ECMWF, United Kingdom; Matthias Drusch, ESA, Netherlands; Klaus Scipal, TU Wien, Austria; Joaquín Muñoz Sabater, ECMWF, United Kingdom

14:40
TU3.O6.2 **IMPACT STUDIES OF AMSR-E OCEAN SURFACE WIND SPEED DATA IN NWP AT JMA**
Masahiro Kazumori, Japan Meteorological Agency, Japan

15:00
TU3.O6.3 **ASSIMILATING FY-3A VASS DATA INTO CHINESE 3DVAR ASSIMILATION SYSTEM(GRAPES 3DVAR)**
Qifeng Lu, Xuebao Wu, Peng Zhang, Songyan Gu, Chaohua Dong, National Satellite Meteorological Center, CMA, China; Jiandong Gong, National Meteorological Center, CMA, China; Xueshun Shen, Chinese Academy of Meteorological Sciences, China; Chenli Qi, Gang Ma, National Satellite Meteorological Center, CMA, China

15:20
TU3.O6.4 **EARLY DETECTION OF HURRICANES ORIGIN IN OCEANS WITH REMOTE SENSING METHODS AND INFORMATION MODELING TECHNLOGIES**
Alexander Grankov, Sergey Golovachev, Vladimir Krapivin, Alexander Mil'shin, Anatolij Shutko, Gennadij Zagorin, Vladimir Soldatov, Alexander Chukhlantsev, Institute of Radioengineering and Electronics, Russian Academy of Sciences (IRE RAS), Russian Federation

15:40
TU3.O6.5 **DATA ASSIMILATION FOR CONVECTIVE CELLS TRACKING IN MSG IMAGES**
Claire Thomas, IRISA - Univ Rennes 1, France; Thomas Corpetti, IRISA - COSTEL - CNRS, France; Etienne Mémin, IRISA - INRIA, France

TU3.O7: Tuesday, July 14, 14:20 - 16:00

TU3.O7 **Special Techniques On Volume and Surface Scattering**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 3A
Chair: Guillaume Hochard

14:20
TU3.O7.1 **MODELLING OF ROUGHNESS EFFECTS ON ELECTROMAGNETIC WAVES PROPAGATION ABOVE SAE SURFACE USING 3D PARABOLIC EQUATION.**
Othmane Benhmammouch, Natacha Caouren, Ali Khenchaf, ENSIETA, France

14:40
TU3.O7.2 **COMPARISON BETWEEN ELECTROMAGNETIC SCATTERING BY A RAIN INDUCED SEA SURFACE ROUGHNESS AND FIELD DATA**
Piotr Sobieski, Christophe Craeye, Universite catholique de Louvain, Belgium; Larry Bliven, NASA, United States

15:00
TU3.O7.3 **STABLE COHERENT AREA IN SAR INTERFEROMETRY**
Guillaume Hochard, Telecom-Paristech, France; Renaud Binet, CEA, France; Jean-Marie Nicolas, Telecom-Paristech, France

15:20
TU3.O7.4 **ANALYZING RADAR BACKSCATTER OF LAND WITHIN THE TRMM FOOTPRINT USING HIGH RESOLUTION SAR**
Jason Fritz, V. Chandrasekar, Colorado State University, United States

15:40
TU3.O7.5 **RAY-TRACED TROPOSPHERE SLANT DELAYS FROM NUMERICAL WEATHER MODELS AS CORRECTIONS FOR INSAR**
Thomas Hobiger, NICT, Japan; Masato Furuya, Youhei Kinoshita, Hokkaido University, Japan; Ryuichi Ichikawa, Yasuhiro Koyama, NICT, Japan

TU3.O8: Tuesday, July 14, 14:20 - 16:00

TU3.O8 **Coastal Ocean Biology and Water Quality**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 3B
Co-Chairs: Samir Ahmed and Eurico D'Sa

14:20
TU3.O8.1 **RETRIEVAL OF WATER CONSTITUENTS FROM MULTIPLE EARTH OBSERVATION SENSORS IN COASTAL AND INLAND WATER ENVIRONMENTS**
Thomas Heege, Viacheslav Kiselev, EOMAP GmbH & Co.KG, Germany; Daniel Odermatt, University of Zuerich, Switzerland; Jörg Heblinski, EOMAP GmbH & Co.KG, Germany; Klaus Schmieder, University of Hohenheim, Germany; Tri Vho Khac, Trinh Thi Long, Southern Institute for Water Resources, Viet Nam

14:40
TU3.O8.2 **DETECTION OF SHORT-TERM CHLOROPHYLL-A CHANGE WITH SEA SURFACE COOLING FROM SATELLITE DATA**
Yoshimi Kawai, Japan Agency for Marine-Earth Science and Technology, Japan; Akiyoshi Wada, Japan Meteorological Agency, Japan

15:00
TU3.O8.3 **NIR REFLECTANCE AND ITS APPLICATION TO FLUORESCENCE, CHLOROPHYLL AND ALGAL BLOOM RETRIEVALS IN COASTAL WATERS**
Samir Ahmed, Alex Gilerson, Jing Zhou, Ruhul Amin, Rushane Dyer, Barry Gross, Fred Moshary, City College of the City University of NY, United States

15:20
TU3.O8.4 **MONITORING TURBIDITY AND SUSPENDED SEDIMENT CONCENTRATION OF COASTAL AND INLAND WATERS USING SATELLITE DATA**
Soo Chin Liew, Boredin Saengtuksin, Leong Keong Kwoh, National University of Singapore, Singapore

15:40
TU3.O8.5 **RETRIEVAL OF INHERENT OPTICAL PROPERTIES OF TURBID COASTAL WATERS USING ACTIVE AND PASSIVE OPTICAL REMOTE SENSING**
Jonathan Barton, Michael Jasinski, National Aeronautics and Space Administration, Goddard Space Flight Center, United States

TU3.O9: Tuesday, July 14, 14:20 - 16:00

TU3.O9 **Kernel-Based Feature Extraction and Classification**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 1A
Co-Chairs: Jon Benediktsson and Gustavo Camps-Valls

14:20
TU3.O9.1 **RANDOM ENSEMBLE FEATURE SELECTION FOR LAND COVER MAPPING**
Anthony Gidudu, Bolanle Abe, Tshilidzi Marwala, University of the Witwatersrand, South Africa

14:40
TU3.O9.2 **KERNEL PRINCIPAL COMPONENT ANALYSIS FOR THE CONSTRUCTION OF THE EXTENDED MORPHOLOGICAL PROFILE**
Mathieu Fauvel, MISTIS-INRIA, LJK, France; Jocelyn Chanussot, GIPSA-lab, Grenoble INP, France; Jón Atli Benediktsson, University of Iceland, Iceland

15:00
TU3.O9.3 **FEATURE SELECTION FOR HYPERSPECTRAL DATA BASED ON MODIFIED RECURSIVE SUPPORT VECTOR MACHINES**
Rui Zhang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jianwen Ma, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Xue Chen, Qingxi Tong, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

15:20
TU3.O9.4 **SUPPORT VECTOR SELECTION AND ADAPTATION FOR CLASSIFICATION OF EARTHQUAKE IMAGES**
Gulsen Taskin Kaya, Istanbul Technical University, Turkey; Okan K. Ersoy, Purdue University, United States; Mustafa E. Kamasak, Istanbul Technical University, Turkey

15:40
TU3.O9.5 **AN EMPIRICAL MODE DECOMPOSITION AND COMPOSITE KERNEL APPROACH TO INCREASE HYPERSPECTRAL IMAGE CLASSIFICATION ACCURACY**
Begüm Demir, Sarp Ertürk, Kocaeli University, Turkey

TU3.O10: Tuesday, July 14, 14:20 - 16:00

TU3.O10 **Microwave and Optical Remote Sensing of Snow**

Session Type: Oral-Contributed
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 1B
Co-Chairs: Martti Hallikainen and Paolo Pampaloni

14:20

TU3.O10.1 **SNORTEX (SNOW REFLECTANCE TRANSITION EXPERIMENT): REMOTE SENSING MEASUREMENT OF THE DYNAMIC PROPERTIES OF THE BOREAL SNOW-FOREST IN SUPPORT TO CLIMATE AND WEATHER FORECAST: REPORT OF IOP-2008**

Jean-Louis Roujean, CNRS / Météo France, France; Terhikki Manninen, Anna Kontu, Finnish Meteorological Institute, Finland; Jouni Peltoniemi, Finnish Geodetic Institute, Finland; Olivier Hautecoeur, CNRS / Météo France, France; Aku Riihelä, Panu Lahtinen, Niilo Siljamo, Hanne Suokanerva, Timo Sukuvaara, Finnish Meteorological Institute, Finland; Sanna Kaasalainen, Finnish Geodetic Institute, Finland; Osmo Aulamo, Veijo Aaltonen, Laura Thölix, Juha Karhu, Finnish Meteorological Institute, Finland; Juha Suomalainen, Teemu Hakala, Harri Kaartinen, Finnish Geodetic Institute, Finland

14:40

TU3.O10.2 **SEVEN YEARS OF SNOW COVER MONITORING WITH MODIS TO MODEL CATCHMENT DISCHARGE IN NEW ZEALAND**

Pascal Sirguey, School of Surveying, University of Otago, New Zealand; Renaud Mathieu, CSIR–NRE, Earth Observation Research Group, South Africa; Yves Arnaud, IRD–LTHE, LGGE, France; Blair Fitzharris, Department of Geography, University of Otago, New Zealand

15:00

TU3.O10.3 **EVALUATION OF THE SINGLE REFERENCE IMAGE SNOW-COVERED AREA ESTIMATION METHOD FOR THE BOREAL FOREST ZONE**

Kari Luojus, Jouni Pulliainen, Finnish Meteorological Institute, Finland; Sari Metsämäki, Finnish Environment Institute, Finland

15:20

TU3.O10.4 **USING ANALYTICAL DESCRIPTION OF SNOW BRDF FOR VISIBLE CHANNEL CALIBRATION**

Igor Appel, IMSG, United States

15:40

TU3.O10.5 **EXPERIMENTAL VALIDATION ACTIVITIES OF HUT SNOW EMISSION MODEL**

Juha Lemmetyinen, Anna Kontu, Finnish Meteorological Institute, Finland; Yubao Qiu, Chinese Academy of Sciences, China; Jouni Pulliainen, Finnish Meteorological Institute, Finland; Martti Hallikainen, Helsinki University of Technology, Finland

TU3.O11: Tuesday, July 14, 14:20 - 16:00

TU3.O11 **Mapping Innundated Wetlands with Spaceborne Remote Sensing I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 1C
Co-Chairs: Kyle McDonald and Mahta Moghaddam

14:20

TU3.O11.1 **ASSEMBLY OF AN INUNDATED WETLANDS EARTH SYSTEM DATA RECORD: GLOBAL MONITORING OF WETLANDS EXTENT AND DYNAMICS**

Erika Podest, Kyle McDonald, Bruce Chapman, Jet Propulsion Laboratory, United States; John Kimball, The University of Montana, United States; Laura Hess, University of California in Santa Barbara, United States; Mahta Moghaddam, The University of Michigan, United States; Elaine Matthews, NASA Goddard Institute for Space Studies, United States; Catherine Prigent, Observatoire de Paris, France

14:40

TU3.O11.2 **INUNDATION MAPPING FOR GLOBAL WETLAND REGIONS: THE ALOS KYOTO & CARBON INITIATIVE WETLANDS PRODUCTS**

Laura Hess, University of California, Santa Barbara, United States; Ake Rosenqvist, Joint Research Centre, Italy; John Lowry, National Centre for Tropical Wetland Research, Australia; Maycira Costa, University of Victoria, Canada; Dirk Hoekman, SarVision, Netherlands; Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère, France; Richard Lucas, University of Aberystwyth, United Kingdom; Kyle McDonald, Jet Propulsion Laboratory, United States; Anthony Milne, University of New South Wales, Australia; Lisa Rebelo, International Water Management Institute, Ethiopia; William Salas, Applied Geosolutions, United States; Kevin Telmer, University of Victoria, Canada

15:00

TU3.O11.3 **MONITORING OF INUNDATED WETLAND ECOSYSTEMS WITH INTEGRATED SATELLITE REMOTE SENSING**

Erika Podest, Kyle McDonald, Ronny Schroeder, Jet Propulsion Laboratory, United States

15:20

TU3.O11.4 **GLOBAL WETLAND INUNDATION DYNAMICS DERIVED FROM PASSIVE AND ACTIVE MICROWAVE REMOTE SENSING**

Ronny Schroeder, Kyle McDonald, Erika Podest, Jet Propulsion Lab, California Institute of Technology, United States; Reiner Zimmermann, University of Hohenheim, Germany

15:40

TU3.O11.5 **MODELING MANGROVE FOREST PRODUCTIVITY AT THE LANDSCAPE SCALE WITH REMOTE SENSING**

Marc Simard, Temilola E. Fatoyinbo, Jet Propulsion Laboratory, United States

TU3.O12: Tuesday, July 14, 14:20 - 16:00

TU3.O12 **GNSS Remote Sensing of Atmosphere, Ocean and Land III**

Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 1D
Co-Chairs: Shuanggen Jin and Attila Komjathy

14:20
TU3.O12.1 **THREE-DIMENSIONAL ATMOSPHERIC MOISTURE RETRIEVAL USING GNSS**
Susan Skone, Natalya Nicholson, University of Calgary, Canada

14:40
TU3.O12.2 **IMAGING THE IONOSPHERE OVER SOUTHERN AFRICA USING GNSS SIGNALS: APPLICATIONS IN RADIO ASTRONOMY AND SPACE WEATHER**
Ben Opperman, Pierre Cilliers, Hermanus Magnetic Observatory, South Africa

15:00
TU3.O12.3 **INVESTIGATION OF IONOSPHERIC SCINTILLATION OVER SOUTH AFRICA AND THE SOUTH ATLANTIC ANOMALY USING GPS SIGNALS: FIRST RESULTS**
Pierre Cilliers, Ben Opperman, Rory Meyer, Hermanus Magnetic Observatory, South Africa

15:20
TU3.O12.4 **PREDICTION OF TOTAL ELECTRON CONTENT OVER SOUTH AFRICA USING GLOBAL POSITIONING SYSTEM AND NEURAL NETWORKS**
John Bosco Habarulema, Lee-Anne McKinnell, Hermanus Magnetic Observatory/Rhodes University, South Africa; Pierre Cilliers, Ben Opperman, Hermanus Magnetic Observatory, South Africa

15:40
TU3.O12.5 **GPS ASSISTANCE IN MODELLING THE SOUTHERN AFRICAN IONOSPHERE**
Lee-Anne McKinnell, John Bosco Habarulema, Hermanus Magnetic Observatory/Rhodes University, South Africa; Pierre Cilliers, Hermanus Magnetic Observatory, South Africa; Ben Opperman, Hermanus Magnetic Observatory/Rhodes University, South Africa

TU3.O13: Tuesday, July 14, 14:20 - 16:00

TU3.O13 **The Southern African Regional Science Initiative - SAFARI 2000 I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 14:20 - 16:00
Place: Leslie 1E
Co-Chairs: Steven Platnick and Harold Annegarn

14:20
TU3.O13.1 **ENSO AND COUPLING OF ATMOSPHERIC TRANSPORTS OVER TROPICAL AND SUB-TROPICAL SOUTHERN AFRICA**
Joseph Katongo Kanyanga, Zambia Meteorological Department, Zambia; Harold Annegarn, University of Johannesburg, South Africa; Daniel Nyanganyura, University of Johannesburg, South Africa and Max Planck Institute for Chemistry, Germany; Robert J. Swap, University of Virginia, United States

14:40
TU3.O13.2 **CHARACTERIZATION OF AEROSOL AND SURFACE BRDF IN SOUTHERN AFRICA FROM AIRBORNE MEASUREMENTS TAKEN DURING SAFARI 2000**
Charles Gatebe, UMBC/NASA GSFC, United States

15:00
TU3.O13.3 **THE AEROSOL MEASUREMENT AND PROCESSING SYSTEM AND APPLICATIONS TO AFRICAN STUDIES**
Susan Paradise, Michael Garay, Amy Braverman, Brian Wilson, Jet Propulsion Laboratory, United States

15:20
TU3.O13.4 **CLIMATOLOGY OF AEROSOL OPTICAL PROPERTIES IN SOUTHERN AFRICA**
Antonio Queface, Eduardo Mondlane University, Mozambique; Stuart Piketh, University of the Witwatersrand, South Africa; Alberto Mavume, Eduardo Mondlane University, Mozambique; Thomas Eck, Si-Chee Tsay, NASA Goddard, United States

15:40
TU3.O13.5 **EXPLORING RADIANCE VERTICAL PROFILES TO INVESTIGATE ATMOSPHERIC AEROSOL STRATIFICATION BY COMBINING MEASUREMENTS AND MODELING**
Julião Cumbane, Universidade Edurado Mondlane, Mozambique; Charles Gatebe, NASA Goddard Space Flight Center, United States; Michael King, University of Colorado, United States; Harold Annegarn, University of Johannesburg, South Africa

TU4.O1: Tuesday, July 14, 16:20 - 18:00

TU4.O1 **RADARSAT II**
Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 2A
Co-Chairs: Satish Srivastava and Shabeer Ahmed

16:20
TU4.O1.1 **RADARSAT-1 AND -2 GOVERNMENT CALIBRATION ACTIVITIES**
Stephane Cote, Canadian Space Agency, Canada; Stephanie Muir, Calian Technologies Ltd, Canada; Satish Srivastava, Canadian Space Agency, Canada; Tom Lukowski, Defence R&D Canada, Canada; Robert Hawkins, Natural Resources Canada, Canada

16:40
TU4.O1.2 **RADARSAT-2 ADVANCED POLARIMETRIC APPLICATIONS**
Gordon Staples, MDA, Canada

17:00
TU4.O1.3 **RADARSAT CONSTELLATION, PROJECT OBJECTIVES AND STATUS**
Guy Séguin, Canadian Space Agency, Canada

17:20
TU4.O1.4 **TERRASAR-X AND RADARSAT-2 FOR CROP CLASSIFICATION AND ACREAGE ESTIMATION**
Heather McNairn, Jiali Shang, Catherine Champagne, Xianfeng Jiao, Agriculture and Agri-Food Canada, Canada

17:40
TU4.O1.5 **OPERATIONAL ICE MONITORING WITH RADARSAT-2 – BEYOND SCANSAR WIDE HH**
Roger De Abreu, Matt Arkett, Angela Cheng, Gaetan Langlois, Tom Zagon, Andre April, Vladimir Zabeline, Canadian Ice Service, Canada

TU4.O2: Tuesday, July 14, 16:20 - 18:00

TU4.O2 **New SAR Systems**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 2D
Co-Chairs: Ralf Horn and Akitsugu Nadai

16:20
TU4.O2.1 **F-SAR – DLR'S NEW MULTIFREQUENCY POLARIMETRIC AIRBORNE SAR**
Ralf Horn, Anton Nottensteiner, Andreas Reigber, Jens Fischer, Rolf Scheiber, German Aerospace Center (DLR), Germany

16:40
TU4.O2.2 **RBX: THE NEW X-BAND RADAR FROM INTA**
Marcos García Rodríguez, Juan Francisco Cores Muradas, Juan Ramón Larrañaga Sudupe, Instituto Nacional de Técnica Aeroespacial, Spain

17:00
TU4.O2.3 **THE RADARSAT CONSTELLATION MISSION: MEETING THE GOVERNMENT OF CANADA'S NEEDS AND REQUIREMENTS**
Dean Flett, Yves Crevier, Ralph Girard, Canadian Space Agency, Canada

17:20
TU4.O2.4 **DEVELOPMENT OF X-BAND AIRBORNE POLARIMETRIC AND INTERFEROMETRIC SAR WITH SUB-METER SPATIAL RESOLUTION**
Akitsugu Nadai, Seiho Uratsuka, Toshihiko Umehara, Takeshi Matsuoka, Tatsuharu Kobayashi, Makoto Satake, National Institute of Information and Communications Technology, Japan

17:40
TU4.O2.5 **INTASAR PROGRAM**
María José González Bonilla, Beatriz Gómez Miguel, Juan Manuel Cuerda Muñoz, Juan Ramón Larrañaga Sudupe, Marcos García Rodríguez, Instituto Nacional de Técnica Aeroespacial (INTA), Spain

TU4.O3: Tuesday, July 14, 16:20 - 18:00

TU4.O3 **COSMO-SkyMed Mission: Status and Results II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Menzies M9
Co-Chairs: Alessandro Coletta and Fabrizio Battazza

16:20
TU4.O3.1 **USE OF COSMO-SKYMED DATA FOR SEISMIC RISK MANAGEMENT IN THE FRAMEWORK OF THE ASI-SIGRIS PROJECT**
Stefano Salvi, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Stefano Vignoli, Advanced Computer Systems, Italy; Marco Serra, Agenzia Spaziale Italiana, Italy; Vittorio Bosi, Dipartimento della Protezione Civile, Italy

16:40
TU4.O3.2 **QUANTITATIVE ANALYSIS OF STRIPMAP AND SPOTLIGHT SAR INTERFEROMETRY WITH COSMO-SKYMED CONSTELLATION**
Davide Oscar Nitti, Politecnico di Bari, Italy; Raffaele Nutricato, Geophysical Applications Processing s.r.l. - Politecnico di Bari, Italy; Fabio Bovenga, Consiglio Nazionale delle Ricerche, Italy; Fabio Rana, GAP srl – Politecnico di Bari, Italy; Domenico Conte, Politecnico di Bari, Italy; Giovanni Milillo, Agenzia Spaziale Italiana, Italy; Luciano Guerriero, Politecnico di Bari, Italy

17:00
TU4.O3.3 **THE OPERA PROJECT: EO-BASED FLOOD RISK MANAGEMENT IN ITALY**
Giorgio Boni, CIMA Research Foundation, Italy; Laura Candela, ASI, Italy; Fabio Castelli, University of Florence, Italy; Silvana Dellepiane, University of Genova, Italy; Monica Palandri, Telespazio S.p.A., Italy; Davide Persi, Hydrodata S.p.A., Italy; Nazzareno Pierdicca, University of Rome La Sapienza, Italy; Roberto Rudari, CIMA Research Foundation, Italy; Sebastiano B. Serpico, University of Genova, Italy; Franco Siccardi, CIMA Research Foundation, Italy; Cosimo Versace, Acrotec s.r.l. and COS(OT) consortium, Italy

17:20
TU4.O3.4 **USING COSMO-SKYMED DATA FOR FLOOD MAPPING: SOME CASE-STUDIES**
Nazzareno Pierdicca, Marco Chini, Luca Pulvirenti, Sapienza University of Rome, Italy; Laura Candela, Italian Space Agency, Italy; Paolo Ferrazzoli, Leila Guerriero, Tor Vergata University, Italy; Giorgio Boni, Franco Siccardi, CIMA Foundation, Italy; Fabio Castelli, University of Florence, Italy

17:40
TU4.O3.5 **POMPEI PROJECT: MONITORING AND DISCOVERY OF ARCHAEOLOGICAL SITES USING REMOTE SENSING TECHNIQUES**
Gianfranco Pandiscia, e-GEOS/Telespazio, Italy; Giovanni Milillo, Luigi Dini, ASI, Italy; Tina Lorè, Antonio Valentino, INNOVA, Italy; Franco Marucci, ASI, Italy

TU4.O4: Tuesday, July 14, 16:20 - 18:00

TU4.O4 **Airborne and Ground Based Radar Measurements in Support of Space Based Instruments I**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Menzies M10
Co-Chairs: Dara Entekhabi and Delwyn Moller

16:20
TU4.O4.1 **AIRBORNE MICROWAVE RADIOMETRIC MEASUREMENTS OF SOIL MOISTURE AND COMPARISON WITH SAR DATA**
Emanuele Santi, Simonetta Paloscia, Paolo Pampaloni, Simone Pettinato, Marco Brogioni, CNR-IFAC, Italy

16:40
TU4.O4.2 **EXTRAPOLATION OF AIRBORNE POLARIMETRIC AND INTERFEROMETRIC SAR DATA FOR VALIDATION OF BIO-GEO-RETRIEVAL ALGORITHMS FOR FUTURE SPACEBORNE SAR MISSIONS**
Rolf Scheiber, Seung-Kuk Lee, Konstantinos Papathanassiou, German Aerospace Center (DLR), Germany; Nicolas Floury, European Space Agency (ESA), Netherlands

17:00
TU4.O4.3 **DLR'S MULTI-MODE AIRBORNE SAR CAMPAIGNS FOR ENVIRONMENTAL PARAMETER ESTIMATION**
Irena Hajnsek, Konstantinos Papathanassiou, Rolf Scheiber, Ralf Horn, Pau Prats, Alberto Moreira, German Aerospace Center, Germany

17:20
TU4.O4.4 **PALS-ADD AND AIRBORBE CAMPAIGNS TO SUPPORT SOIL MOISTURE AND SEA SURFACE SALINITY MISSIONS**
Simon Yueh, Steve Dinardo, Steven Chan, Eni Njoku, California Institute of Technology, United States; Thomas Jackson, Rajat Bindlish, United States Department of Agriculture, United States; Joel Johnson, Ohio State University, United States; Jeffrey Piepmeier, Goddard Space Flight Center, United States; Christopher Ruf, University of Michigan, United States

17:40
TU4.O4.5 **HIGH-RESOLUTION KU-BAND AIRBORNE SAR SYSTEM AND CCD FIELD TEST EXPERIMENT**
Hideki Hasegawa, Yu Okada, Noboru Oishi, Masayoshi Tsuchida, Yosuke Nakano, Masafumi Iwamoto, Yoshihisa Hara, Mitsubishi Electric Corporation, Japan

TU4.O5: Tuesday, July 14, 16:20 - 18:00

TU4.O5 **Performance of Operational Surface Deformation Measurements from Radar Interferometry II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 2B
Co-Chairs: Scott Hensley and Michael Eineder

16:20
TU4.O5.1 **THE IMPACT OF IONOSPHERIC PATH DELAY ON GEODYNAMIC PARAMETER RETRIEVAL FROM L-BAND SAR**
Franz Meyer, Jeremy Nicoll, Peter Webley, Jeff Freymueller, University of Alaska Fairbanks, United States; Mark Fahnestock, University of New Hampshire, United States

16:40
TU4.O5.2 **IMPACT OF ATMOSPHERIC WATER VAPOR ON THE DESIGN OF A KU BAND GEOSYNCHRONOUS SAR SYSTEM**
Andrea Monti Guarnieri, Fabio Rocca, Politecnico, Italy; Antoni Broquetas Ibars, Universitat Politecnica de Catalunya, Spain

17:00
TU4.O5.3 **EARTHQUAKE DAMAGE INFORMATION EXTRACTION FROM SAR INTENSITY IMAGERY**
Yanfang Dong, Xiaoqing Wang, Aixia Dou, Institute of Earthquake Science, China Earthquake Administration, China; Qi Li, Institute for Geo-Resources and Environment,National Institute of Advanced Industrial Science and Technology, Japan; Long Wang, Xiang Ding, Yan Wang, Institute of Earthquake Science, China Earthquake Administration, China

17:20
TU4.O5.4 **SATELLITE GROUND DEFORMATION MEASUREMENTS: AN ON-DEMAND GRID INSAR PROCESSING SYSTEM EXPLOITING THE SBAS ALGORITHM**
Francesco Casu, IREA-CNR, Italy; Roberto Cossu, Luigi Fusco, ESA, Italy; Simone Guarino, Riccardo Lanari, Michele Manunta, IREA-CNR, Italy; Giuseppe Mazzarella, Università degli studi di Cagliari, Italy; Eugenio Sansosti, IREA-CNR, Italy

17:40
TU4.O5.5 **ROBUST SATELLITE TECHNIQUES FOR THERMAL VOLCANIC ACTIVITY MONITORING, EARLY WARNING AND POSSIBLE PREDICTION OF NEW ERUPTIVE EVENTS**
Francesco Marchese, Carolina Filizzola, CNR, Italy; Giuseppe Mazzeo, University of Basilicata, Italy; Rossana Paciello, Nicola Pergola, CNR, Italy; Valerio Tramutoli, University of Basilicata, Italy

TU4.O6: Tuesday, July 14, 16:20 - 18:00

TU4.O6 **Collaborative Adaptive Sensing of the Atmosphere**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 2C
Co-Chairs: Charles Luther and Steven Reising

16:20
TU4.O6.1 **ATTENUATION MARGIN REQUIREMENTS IN A NETWORKED RADAR SYSTEM FOR OBSERVATION OF PRECIPITATION**
V Chandrasekar, Delbert Willie, Yanting Wang, Sanghun Lim, Colorado State University, United States; David J. McLaughlin, University of Massachusetts Amherst, United States

16:40
TU4.O6.2 **DIFFERENTIAL REFLECTIVITY (ZDR) CALIBRATION FOR CASA RADAR NETWORK USING PROPERTIES OF THE OBSERVED MEDIUM**
Jorge Trabal, University of Massachusetts, United States; V. Chandrasekar, Colorado State Universiy, United States; Eugenio Gorgucci, Istituto di Scienze dell' Atmosfera e del Clima, Italy; David J. McLaughlin, University of Massachusetts, United States

17:00
TU4.O6.3 **A MEASUREMENT STUDY OF A SENSOR/ACTUATOR NETWORK FOR METEOROLOGICAL OBSERVATIONS**
Michael Zink, Eric Lyons, David Westbrook, Jim Kurose, University of Massachusetts Amherst, United States

17:20
TU4.O6.4 **COVERAGE COMPARISON OF SHORT RANGE RADAR NETWORKS VS. CONVENTIONAL WEATHER RADAR: CASE STUDY IN THE NORTHWESTERN UNITED STATES**
Jorge L. Salazar, Anthony P. Hopf, Robert F. Contreras, Brenda Philips, University of Massachusetts, United States; Eric J. Knapp, UMASS-CASA, United States; David J. McLaughlin, University of Massachusetts, United States; Jerry Brotzge, Keith Brewster, University of Oklahoma, United States

17:40
TU4.O6.5 **CASA PHASED ARRAY RADAR SYSTEM DESCRIPTION, SIMULATION AND PRODUCTS**
Anthony P. Hopf, Jorge L. Salazar, Rafael Medina, Vijay Venkatesh, Eric J. Knapp, Stephen Frasier, David J. McLaughlin, University of Massachusetts, United States

TU4.O7: Tuesday, July 14, 16:20 - 18:00

TU4.O7 **Soil Moisture Retrievals and Applications in Africa**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 3A
Co-Chairs: Yann Kerr and John Qu

16:20
TU4.O7.1 **MONITORING SOIL MOISTURE CHANGE IN NORTH AFRICA WITH USING SATELLITE REMOTE SENSING AND LAND DATA ASSIMILATION SYSTEM**
Hui Lu, Toshio Koike, Hydeyuki Fujii, Hiroyuki Tsutsui, Tetsu Ohta, Katsunori Tamagawa, The University of Tokyo, Japan

16:40
TU4.O7.2 **EVALUATION OF A SOIL MOISTURE DATA ASSIMILATION SYSTEM OVER WEST AFRICA**
John Bolten, National Aeronautics and Space Administration, United States; Wade Crow, United States Department of Agriculture, United States; Xiwu Zhan, National Oceanic and Atmospheric Administration, United States; Thomas Jackson, Curt Reynolds, United States Department of Agriculture, United States

17:00
TU4.O7.3 **ACCESS TO SOIL MOISTURE VALUES OVER A SAHELIAN AREA: MODELING, REMOTE SENSING, AND GROUND MEASUREMENTS.**
Claire Gruhier, François Cabot, Yann Kerr, CESBIO, France; Patricia De Rosnay, ECMWF, United Kingdom

17:20
TU4.O7.4 **APPLICATION OF DESDYNI TO WATER RESOURCE DECISION SUPPORT**
Diane Evans, Tom Farr, Paul Rosen, Jet Propulsion Laboratory, United States

17:40
TU4.O7.5 **EXAMINING THE SOIL MOISTURE SPATIAL VARIABILITY USING THE ASAR GLOBAL MONITORING MODE SOIL MOISTURE PRODUCT OVER THE NAFE05 AREA**
Venkat Lakshmi, University of South Carolina, United States

TU4.O8: Tuesday, July 14, 16:20 - 18:00

TU4.O8 **Change Detection**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 3B
Co-Chairs: Lorenzo Bruzzone and Gregoire Mercier

16:20
TU4.O8.1 **ICA AND KERNEL ICA FOR CHANGE DETECTION IN MULTISPECTRAL REMOTE SENSING IMAGES**
Silvia Marchesi, Lorenzo Bruzzone, University of Trento, Italy

16:40
TU4.O8.2 **A VARIATIONAL LEVEL-SET METHOD FOR UNSUPERVISED CHANGE DETECTION IN REMOTE SENSING IMAGES**
Yakoub Bazi, Al-Jouf University, Saudi Arabia; Farid Melgani, University of Trento, Italy

17:00
TU4.O8.3 **CONDITIONAL MIXED STATE MODEL FOR STRUCTURAL CHANGE ANALYSIS FROM VERY HIGH RESOLUTION OPTICAL IMAGES**
Benjamin Belmudez, CASIA / INRIA, China; Veronique Prinet, Institute of Automation, Chinese Academy of Sciences (CASIA), China; Jian-Feng Yao, Univ. Rennes 1, France; Patrick Bouthemy, Xavier Descombes, INRIA, France

17:20
TU4.O8.4 **SIMILARITY MEASURE BETWEEN VECTOR DATA BASES AND OPTICAL IMAGES FOR CHANGE DETECTION**
Jean-Yves Tourneret, IRIT-ENSEEIHT-TéSA, France; Vincent Poulain, Centre National d'Etudes Spatiales, France; Marie Chabert, IRIT-ENSEEIHT-TéSA, France; Jordi Inglada, Centre National d'Etudes Spatiales, France

17:40
TU4.O8.5 **SEMI-SUPERVISED CHANGE DETECTION VIA GAUSSIAN PROCESSES**
Keming Chen, Chunlei Huo, Institute of Automation, Chinese Academy of Sciences, China; Zhixin Zhou, Beijing Institute of Remote Sensing, China; Hanqing Lu, Jian Cheng, Institute of Automation, Chinese Academy of Sciences, China

TU4.O9: Tuesday, July 14, 16:20 - 18:00

TU4.O9 **Estimation and Classification Techniques and Applications**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 1A
Co-Chairs: Sebastiano Serpico and Tokiyasu Sato

16:20
TU4.O9.1 **AUTOMATIC UNSUPERVISED CLASSIFICATION OF SNOW-COVERED AREAS BY DECISION-TREE CLASSIFICATION AND MINIMUM-ERROR THRESHOLDING**
Giorgia Macchiavello, CIMA Foundation, Italy; Gabriele Moser, Giorgio Boni, Sebastiano B. Serpico, University of Genoa, Italy

16:40
TU4.O9.2 **A DATA INTERPRETION CHAIN FOR HYPERSPECTRAL REMOTE SENSING DATA AIMED AT BASIC VEGETATION MAPPING APPLICATIONS**
Karoly Bakos, Paolo Gamba, Università di Pavia, Italy

17:00
TU4.O9.3 **AUTOMATIC AND HIGH-PRECISE EXTRACTION OF WATER INFORMATION USING A HIERARCHICAL ITERATIVE METHOD**
Jiancheng Luo, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Yongwei Sheng, University of California, United States; Zhanfeng Shen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Junli Li, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, China

17:20
TU4.O9.4 **FUSION OF HYPERSPECTRAL AND LIDAR REMOTE SENSING DATA FOR THE ESTIMATION OF TREE STEM DIAMETERS**
Michele Dalponte, Lorenzo Bruzzone, University of Trento, Italy; Damiano Gianelle, Fondazione E. Mach, Italy

17:40
TU4.O9.5 **EVALUATING ROBUSTNESS OF A HMM-BASED CLASSIFICATION SYSTEM OF VOLCANO-SEISMIC EVENTS AT COLIMA AND POPOCATEPETL VOLCANOES**
Guillermo Cortés, Universidad de Granada, Spain; Raúl Arámbula, Universidad Autónoma de México, Mexico; Ligdamis A. Gutiérrez, Carmen Benítez, Universidad de Granada, Spain; Jesús Ibañéz, Instituto Andaluz de Geofísica, Spain; Philippe Lesage, Universidad Autónoma de México, France; Isaac Álvarez, Luz García, Universidad de Granada, Spain

TU4.O10: Tuesday, July 14, 16:20 - 18:00

TU4.O10 **Remote Sensing of Land Ice and Glaciers**
Session Type: Oral-Contributed
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 1B
Co-Chairs: Mark Drinkwater and Helmut Rott

16:20
TU4.O10.1 **DOMEX-2 : L-BAND MICROWAVE EMISSION MEASUREMENTS OF THE ANTARCTIC PLATEAU**
Giovanni Macelloni, Marco Brogioni, CNR-IFAC, Italy; Andrea Crepaz, Centro Difesa Valanghe, Italy; Mark Drinkwater, ESA/ESTEC, Netherlands; Jonathan Zaccaria, PNRA, France

16:40
TU4.O10.2 **ICE MOTION OF ANTARCTIC PENINSULA OUTLET GLACIERS ABOVE LARSEN ICE SHELF OBSERVED BY TERRASAR-X IMAGE TIME SERIES**
Helmut Rott, Thomas Nagler, ENVEO IT GmbH, Austria; Michael Eineder, Dana Floricioiu, DLR IMF, Germany

17:00
TU4.O10.3 **CASE STUDIES OF FROZEN GROUND MONITORING USING PALSAR/ALOS DATA**
Nicolas Longépé, Takeo Tadono, Masanobu Shimada, JAXA, Japan; Eric Pottier, Sophie Allain, University of Rennes, France

17:20
TU4.O10.4 **POLARIMETRIC ICE SOUNDING AT P-BAND: FIRST RESULTS**
Jorgen Dall, Technical University of Denmark, Denmark

17:40
TU4.O10.5 **SURFACE VELOCITY AND VARIATIONS OF OUTLET GLACIERS OF THE PATAGONIA ICEFIELDS BY MEANS OF TERRASAR-X**
Dana Floricioiu, Michael Eineder, German Aerospace Center (DLR), Germany; Helmut Rott, Univ. of Innsbruck, Austria; Nestor Yague-Martinez, German Aerospace Center (DLR), Germany; Thomas Nagler, ENVEO IT, Austria

TU4.O11: Tuesday, July 14, 16:20 - 18:00

TU4.O11 **Mapping Innundated Wetlands with Spaceborne Remote Sensing II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 1C
Co-Chairs: Kyle McDonald and Mahta Moghaddam

16:20
TU4.O11.1 **MAPPING CANADIAN WETLANDS USING L-BAND RADAR SATELLITE IMAGERY**
Jane Whitcomb, Mahta Moghaddam, University of Michigan, United States; Kyle McDonald, Erika Podest, Jet Propulsion Laboratory, United States

16:40
TU4.O11.2 **ESTIMATING CARBON STOCK SIZES AND DISTRIBUTION OF METHANE SOURCES FOR UPPER AMAZON PALM SWAMP ECOSYSTEMS USING IN SITU MEASUREMENTS, OPTICAL IMAGERY AND AND MULTI-TEMPORAL MAPPING WITH PASSIVE AND ACTIVE MICROWAVES**
Reiner Zimmermann, University of Hohenheim, Germany; Viviana Horna, University of Goettingen, Germany; Kyle McDonald, Ronny Schroeder, Erika Podest, Jet Propulsion Lab, United States; Heiner Flessa, Hermann Behling, University of Goettingen, Germany; Pedro Vasquez, Universidad Nacional Agraria La Molina, Peru; Johannes Dietz, World Agroforestry Center Nairobi, Kenya; Matthias Heckmann, University of York, United Kingdom; Annett Boerner, Max Planck Institute for Biogeochemistry, Germany

17:00
TU4.O11.3 **CALIBRATION, PARAMETERIZATION AND APPLICATION OF MERIS WATER CONSTITUENT ALGORITHMS FOR PREALPINE LAKES**
Daniel Odermatt, University of Zurich, Switzerland; Viacheslav Kiselev, Thomas Heege, EOMAP GmbH & Co., Germany; Mathias Kneubühler, University of Zurich, Switzerland; Claudia Giardino, Mariano Bresciani, National Research Council (CNR-IREA), Italy; Jens Nieke, ESA/ESTEC, Netherlands; Klaus Itten, University of Zurich, Switzerland

17:20
TU4.O11.4 **LANDSCAPE CHANGE DETECTION USING FUZZY DECISION MAKING AND GRFM JERS-1 DATA CLASSIFICATION ON WETLANDS IN THE CENTRAL AMAZONIA, BRAZIL**
Carlos Beisl, Alexandre Evsukoff, Federal University of Rio de Janeiro, Brazil; Fernando Pellon de Miranda, Petrobras Research and Development Center, Brazil

17:40
TU4.O11.5 **ANALYSIS OF LAKE SHRINKAGE ACROSS THE TIBETAN PLATEAU USING REMOTE SENSING TECHNOLOGY**
Cheng Qiao, Jiancheng Luo, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Yongwei Sheng, University of California, United States; Zhanfeng Shen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Junli Li, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, China

TU4.O12: Tuesday, July 14, 16:20 - 18:00

TU4.O12 **GOES-R, Status and Applications from the next Generation U.S. Geostationary Satellite System**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 1D
Co-Chairs: Hal J. Bloom and Steve Goodman

16:20
TU4.O12.1 **THE NEXT GENERATION GEOSTATIONARY OPERATIONAL ENVIRONMENTAL SATELLITE: GOES-R THE UNITED STATES ADVANCED WEATHER SENTINEL**
Hal Bloom, NOAA/NESDIS USA, United States

16:40
TU4.O12.2 **GOES-R SATELLITE PROVING GROUND AND USER READINESS**
Steven J. Goodman, James J. Gurka, DOC/NOAA/NESDIS, United States; Timothy J. Schmit, Mark DeMaria, NOAA/NESDIS, United States

17:00
TU4.O12.3 **GOES-R ALGORITHM WORKING GROUP**
Mitchell Goldberg, Jaime Daniels, Walter Wolf, Lihang Zhou, Kenneth Lowe, NOAA/NESDIS, United States

17:20
TU4.O12.4 **PREPARING FOR RAINFALL NOWCASTING IN THE GOES-R ERA USING SEVIRI AND POLAR-ORBITING MICROWAVE DATA OVER AFRICA**
Robert Kuligowski, National Oceanic and Atmospheric Administration, United States

17:40
TU4.O12.5 **GOES-R OVERVIEW OF AVIATION APPLICATIONS FOR DETECTION OF CONVECTION, TURBULENCE, AND VOLCANIC ASH**
Wayne Feltz, University of Wisconsin-Madison Cooperative Institute for Meteorological Satellite Studies, United States

TU4.O13: Tuesday, July 14, 16:20 - 18:00

TU4.O13 **The Southern African Regional Science Initiative - SAFARI 2000 II**

Session Type: Oral-Invited
Time: Tuesday, July 14, 16:20 - 18:00
Place: Leslie 1E
Co-Chairs: Steven Platnick and Harold Annegarn

16:20

TU4.O13.1 **OPTICAL AND MICROPHYSICAL RETRIEVALS OF MARINE STRATOCUMULUS CLOUDS OFF THE COAST OF NAMIBIA FROM SATELLITE AND AIRCRAFT**
Steven Platnick, NASA GSFC, United States; Michael King, University of Colorado, United States; Paul Hubanks, Wyle, United States; Galina Wind, G.Thomas Arnold, NASA GSFC, United States

16:40

TU4.O13.2 **AIRBORNE IMAGING DIFFERENTIAL OPTICAL ABSORPTION SPECTROSCOPY: TRACE-GAS MEASUREMENTS FROM THE SUBURBS TO THE SUB-CONTINENT**
Stephen Broccardo, Stuart Piketh, University of the Witwatersrand, South Africa; Klaus-Peter Heue, Ulrich Platt, Universitat Heidelberg, Germany

17:00

TU4.O13.3 **PERSPECTIVES ON POLAR-ORBITING INFRARED SOUNDERS FOR APPLICATION IN REGIONAL AIR QUALITY MONITORING**
Nadia Smith, Johannesburg University, South Africa; Allen Huang, Elisabeth Wiesz, University of Wisconsin-Madison, United States; Harold Annegarn, University of Johannesburg, South Africa

17:20

TU4.O13.4 **LAKE VICTORIA WATER BIO-OPTICAL COMPOUNDS ASSESSMENT THROUGH HIGH SPATIAL AND SPECTRAL RESOLUTION SATELLITE IMAGERY**
Rosa Maria Cavalli, Lorenzo Fusilli, CNR, Italy; Giovanni Laneve, Sapienza Università di Roma, Italy; Stefano Pignatti, Federico Santini, CNR, Italy

WE1.O1: Wednesday, July 15, 09:00 - 10:40

WE1.O1 **Advanced Methods for Polarimetric Information Extraction II**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 2A
Co-Chairs: Ridha Touzi and Jong-Sen Lee

9:00
WE1.O1.1 **SELECTABLE TARGET DETECTOR USING THE POLARIZATION FORK**
Armando Marino, Iain Woodhouse, The University of Edinburgh, United Kingdom

9:20
WE1.O1.2 **HIERARCHICAL SEGMENTATION OF POLARIMETRIC SAR IMAGES USING HETEROGENEOUS CLUTTER MODELS**
Lionel Bombrun, GIPSA-lab, France; Jean-Marie Beaulieu, Laval University, Canada; Gabriel Vasile, GIPSA-lab, France; Jean-Philippe Ovarlez, ONERA, France; Frédéric Pascal, SONDRA Research Alliance, France; Michel Gay, GIPSA-lab, France

9:40
WE1.O1.3 **PARAMETRIC VERSUS NON-PARAMETRIC COMPLEX-VALUES IMAGE ANALYSIS**
Jagmal Singh, Matteo Soccorsi, Mihai Datcu, DLR, Germany

10:00
WE1.O1.4 **BUILDING EXTRACTION FROM POLARIMETRIC INTERFEROMETRIC SAR DATA USING BAYESIAN NETWORK**
Wenju He, Olaf Hellwich, Berlin University of Technology, Germany

10:20
WE1.O1.5 **ANALYSIS OF SAR IMAGE TIME-SERIES WITH A TIME-FREQUENCY METHOD**
Céline Tison, CNES, France

WE1.O2: Wednesday, July 15, 09:00 - 10:40

WE1.O2 **Three-dimensional SAR I**
Session Type: Oral-Invited
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 2D
Co-Chairs: Fabrizio Lombardini and Scott Hensley

9:00
WE1.O2.1 **3D ANALYSIS OF SCATTERING EFFECTS BASED ON RAY TRACING TECHNIQUES**
Stefan Auer, Xiaoxiang Zhu, Technische Universität München, Germany; Stefan Hinz, Universität Karlsruhe, Germany; Richard Bamler, German Aerospace Center, Germany

9:20
WE1.O2.2 **TOMOGRAPHIC 3D RECONSTRUCTION FROM AIRBORNE CIRCULAR SAR**
Muriel Pinheiro, Pau Prats, Rolf Scheiber, Matteo Nannini, Andreas Reigber, German Aerospace Center (DLR), Germany

9:40
WE1.O2.3 **JOINT SAR IMAGING AND DEM RECONSTRUCTION FROM MULTICHANNEL LAYOVER-AFFECTED SAR DATA**
Fabio Baselice, Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Universita' di Napoli Parthenope, Italy

10:00
WE1.O2.4 **3D CHARACTERIZATION OF BUILDINGS IN A DENSE URBAN ENVIRONMENT USING L-BAND POL-INSAR DATA WITH IRREGULAR BASELINES**
Yue Huang, Laurent Ferro-Famil, University of Rennes 1, Institute of Telecommunications and Electronics of Rennes, France

10:20
WE1.O2.5 **3D TOPOGRAPHY AND FOREST RECOVERY FROM AN L-BAND SINGLE-PASS AIRBORNE POLINSAR SYSTEM**
Bryan Mercer, Qiaoping Zhang, Intermap Technologies Corp., Canada; Marcus Schwaebisch, Intermap Technologies Gmbh, Germany; Michael Denbina, Intermap Technologies Corp., Canada

WE1.O3: Wednesday, July 15, 09:00 - 10:40

WE1.O3 **Active Sensing of Ocean Waves, Currents and Rain**

Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Menzies M9
Co-Chairs: Werner Alpers and Gordon Farquharson

9:00
WE1.O3.1 **MAPPING OCEAN WIND BY BROADBAND ACOUSTIC INTERFEROMETRY**
Alexander Voronovich, Cecile Penland, NOAA, United States

9:20
WE1.O3.2 **SWELL INFLUENCE ON OCEAN SURFACE ROUGHNESS AND RADAR SCATTERING FROM THE OCEAN SURFACE**
Paul Hwang, Naval Research Laboratory, United States; William Plant, University of Washington, United States

9:40
WE1.O3.3 **IMPROVING SEA STATES MONITORING OF NAUTICAL RADAR USING DISPERSION RELATION OF NONLINEAR OCEAN WAVES**
Haiyan Li, Graduate University of the Chinese Academy of Sciences, China; Limin Cui, Zhong Feng Qiu, Institute of Oceanology, Chinese Academy of Sciences, China; Shu Fang Zhang, Marine Environmental Monitoring Center, China; Yijun He, Institute of Oceanology, Chinese Academy of Sciences, China

10:00
WE1.O3.4 **ON SENSITIVITY OF KUROSHIO MODELING IN THE LUZON STRAIT WITH ERS-1/2 WIND FIELD FORCING**
Guoqiang Liu, Yijun He, Hui Shen, Institute of Oceanology, Chinese Academy of Sciences, China

10:20
WE1.O3.5 **OCEAN SURFACE BACKSCATTERING AT EXTREMELY LOW GRAZING ANGLES OBSERVED BY C-BAND POLARIMETRIC DOPPLER WEATHER RADAR**
Makoto Satake, Seiji Kawamura, National Inst. of Info. and Com. Technology, Japan; Yukari Shusse, Nagoya University, Japan; Katsuhiro Nakagawa, Toshio Iguchi, National Inst. of Info. and Com. Technology, Japan

WE1.O4: Wednesday, July 15, 09:00 - 10:40

WE1.O4 **Airborne and Ground Based Radar Measurements in Support of Space Based Instruments II**

Session Type: Oral-Invited
Time: Wednesday, July 15, 09:00 - 10:40
Place: Menzies M10
Co-Chairs: Delwyn Moller and Dara Entekhabi

9:00
WE1.O4.1 **NEAR-NADIR KA-BAND RADAR BACKSCATTERING STATISTICS FOR SURFACE WATER INTERFEROMETRIC ALTIMETRY**
Delwyn Moller, Remote Sensing Solutions, United States; Ernesto Rodriguez, Jet Propulsion Laboratory, California Institute of Technology, United States

9:20
WE1.O4.2 **SOIL MOISTURE RETRIEVAL FROM C- AND L-BAND RADAR OBSERVATIONS ACQUIRED DURING THE CORN GROWTH CYCLE**
Alicia Joseph, NASA/GSFC, United States; Rogier van der Velde, International Institute for Geo-Information Science and Earth Observation (ITC), Netherlands; Peggy O'Neill, NASA/GSFC, United States; Roger Lang, George Washington University, United States; Timothy Gish, United States Department of Agriculture, United States

9:40
WE1.O4.3 **DUAL WAVELENGTH, DUAL POLARIZED RADAR SYSTEM FOR GPM GROUND VALIDATION EXPERIMENTS**
James Carswell, Remote Sensing Solutions, United States; M. Schwaller, Manuel Vega, NASA Goddard Space Flight Center, United States; V. Chandrasekar, Colorado State University, United States

10:00
WE1.O4.4 **DESIGNING AND SIMULATING THE NEXT GENERATION OCEAN VECTOR WINDS MISSION**
Ernesto Rodriguez, Bryan Stiles, Stephen Durden, Dragana Perkovic, Daniel Esteban-Fernandez, Svetla Hristova-Veleva, Scott Dunbar, Robert Gaston, JPL/CalTech, United States; Zorana Jelenak, Paul Chang, NOAA/NESDIS/STAR, United States

10:20
WE1.O4.5 **EVALUATING THE SURFACE WATER OCEAN TOPOGRAPHY MISSION HYDROLOGIC OBSERVATIONS**
Konstantinos Andreadis, University of Washington, United States; Michael Durand, Ohio State University, United States; Sylvain Biancamaria, LEGOS, France; Elizabeth Clark, University of Washington, United States; Ernesto Rodriguez, NASA JPL, United States; Delwyn Moller, Remote Sensing Solutions, United States; Doug Alsdorf, Ohio State University, United States; Dennis Lettenmaier, University of Washington, United States; Nelly Mognard, LEGOS, CNES, France

WE1.O5: Wednesday, July 15, 09:00 - 10:40

WE1.O5 **Quantitative Remote Sensing for Geomorphology and Active Tectonics I**
Session Type: Oral-Invited
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 2B
Chair: Richard Gloaguen

9:00
WE1.O5.1 **SURVEY OF LANDSLIDE ACTIVITY AND ROCKGLACIER MOVEMENT IN THE SWISS ALPS WITH TERRASAR-X**
Tazio Strozzi, Gamma Remote Sensing, Switzerland; Reynald Delaloye, University of Fribourg, Switzerland; Hugo Raetzo, Swiss Federal Office for the Environment, Switzerland; Urs Wegmüller, Charles Werner, Andreas Wiesmann, Gamma Remote Sensing, Switzerland

9:20
WE1.O5.2 **SEMI-DETERMINISTIC ESTIMATION OF EROSION WITH REMOTE SENSING DATA**
Mathias Leidig, Richard Gloaguen, Technical University Bergakademie Freiberg, Germany

9:40
WE1.O5.3 **DETECTION OF MICROWAVE SIGNALS ASSOCIATED WITH ROCK FAILURES IN AN EARTHQUAKE FROM SATELLITE-BORNE MICROWAVE RADIOMETER DATA**
Takashi Maeda, Japan Aerospace Exploration Agency, Japan; Tadashi Takano, Nihon University, Japan

10:00
WE1.O5.4 **ROBUST SATELLITE TECHNIQUES (RST) FOR MONITORING THERMAL ANOMALIES IN SEISMICALLY ACTIVE AREAS**
Carolina Aliano, Rosita Corrado, University of Basilicata, Italy; Carolina Filizzola, National Research Council, Italy; Nicola Genzano, University of Basilicata, Italy; Vito Lanorte, Basilicata Region, Italy; Giuseppe Mazzeo, University of Basilicata, Italy; Nicola Pergola, National Research Council, Italy; Valerio Tramutoli, University of Basilicata, Italy

10:20
WE1.O5.5 **COSEISMIC SURFACE DEFORMATION CAUSED BY THE WENCHUAN M8 EARTHQUAKE FROM INSAR DATA ANALYSIS**
Xiaogang Song, Xinjian Shan, Chunyan Qu, Guifang Zhang, Limin Guo, Guohong Zhang, Institute of Geology, China Earthquake Administration, China

WE1.O6: Wednesday, July 15, 09:00 - 10:40

WE1.O6 **Data Processing and Management**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 2C
Co-Chairs: Liping Di and Hampapuram Ramapriyan

9:00
WE1.O6.1 **ASI-VOLCANIC RISK SYSTEM (SRV): A PILOT PROJECT TO DEVELOP EO DATA PROCESSING MODULES AND PRODUCTS FOR VOLCANIC ACTIVITY MONITORING, FIRST RESULTS.**
Massimo Musacchio, Malvina Silvestri, Maria Fabrizia Buongiorno, Claudia Spinetti, Stefano Corradini, Valerio Lombardo, Luca Merucci, INGV, Italy; Eugenio Sansosti, IREA, Italy; Sergio Pugnaghi, Sergio Teggi, UNIMORE, Italy; Stefano Vignoli, ACS, Italy; Angelo Amodio, G+, Italy; Luigi Dini, ASI, Italy

9:20
WE1.O6.2 **THE POLAR DATA CATALOGUE: SECURING THE IPY LEGACY THROUGH ARCHIVING OF METADATA AND DATA**
Ellsworth LeDrew, University of Waterloo, Canada

9:40
WE1.O6.3 **ASSESSING EXISTING SPATIAL DATA INFRASTRUCTURE (SDI) FRAMEWORK FOR DISASTER MANAGEMENT (DM) IN WEST AFRICA; A CASE OF SPATIAL INFRASTRUCTURE ACCESS BY THE EMERGENCY AGENCIES IN NIGERIA.**
Olufunmilayo Thontteh, Regional Center for Training in Aerospace Surveys (RECTAS), Nigeria

10:00
WE1.O6.4 **TABLE LOOK-UP LOSSLESS COMPRESSION USING INDEX ARCHIVING**
Radu Radescu, Polytechnic University of Bucharest, Romania; Roger King, Mississippi State University, United States

10:20
WE1.O6.5 **CLIMATE DATA PROCESSING MADE CHEAP**
Scott Mindock, University of Wisconsin, Madison, United States

WE1.O7: Wednesday, July 15, 09:00 - 10:40

WE1.O7 **Soil Moisture Ocean Salinity (SMOS) Mission**

Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 3A
Co-Chairs: Venkat Lakshmi and Patricia de Rosnay

9:00
WE1.O7.1 **THE SMOS MISSION A NEW TOOL FOR MONITORING KEY ELEMENTS OF THE GLOBAL WATER CYCLE**
Yann Kerr, François Cabot, CESBIO, France; Philippe Waldteufel, IPSL-SA, France; Achim Hahne, ESA-ESTEC, Netherlands; Susanne Mecklenburg, ESA-ESRIN, Italy

9:20
WE1.O7.2 **THE PROTOTYPE SMOS SOIL MOISTURE ALGORITHM**
Yann Kerr, CESBIO, France; Philippe Waldteufel, IPSL-SA, France; Philippe Richaume, François Cabot, CESBIO, France; Jean-Pierre Wigneron, INRA EPHYSE, France; Ali Mahmoodi, Array Systems Computing Inc., Canada; Steven Delwart, ESA-ESTEC, Canada

9:40
WE1.O7.3 **OVERVIEW ON CALIBRATION AND VALIDATION ACTIVITIES FOR ESA'S SOIL MOISTURE AND OCEAN SALINITY MISSION**
Susanne Mecklenburg, Catherine Bouzinac, Steven Delwart, European Space Agency, Italy

10:00
WE1.O7.4 **ECMWF ACTIVITES IN PREPARATION FOR THE LAUNCH OF THE SMOS SATELLITE**
Joaquín Muñoz Sabater, Patricia de Rosnay, Gianpaolo Balsamo, Matthias Drusch, European Center for Medium-Range Weather Forecast, United Kingdom

10:20
WE1.O7.5 **THE DEVELOPMENT OF MICROWAVE VEGETATION INDEX FOR FUTURE SMOS APPLICATIONS**
Liang Chen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jiancheng Shi, Institute for Computational Earth System Science, United States

WE1.O8: Wednesday, July 15, 09:00 - 10:40

WE1.O8 **Mathematical Morphology in Remote Sensing**

Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 3B
Co-Chairs: Selim Aksoy and Maria Petrou

9:00
WE1.O8.1 **MULTISCALE STOCHASTIC WATERSHED FOR UNSUPERVISED HYPERSPECTRAL IMAGE SEGMENTATION**
Jesus Angulo, Santiago Velasco-Forero, MINES Paristech, France; Jocelyn Chanussot, Grenoble Institute of Technology, France

9:20
WE1.O8.2 **MORPHOLOGICAL ATTRIBUTE FILTERS FOR THE ANALYSIS OF VERY HIGH RESOLUTION REMOTE SENSING IMAGES**
Mauro Dalla Mura, University of Trento, University of Iceland, Italy; Jón Atli Benediktsson, Björn Waske, University of Iceland, Iceland; Lorenzo Bruzzone, University of Trento, Italy

9:40
WE1.O8.3 **EROSION AFTER GRADIENT (ERAGRAD) MORPHOLOGICAL PROFILE**
Rik Bellens, Sidharta Gautama, Ghent University, Belgium

10:00
WE1.O8.4 **CLASSIFICATION BASED MARKER SELECTION FOR WATERSHED TRANSFORM OF HYPERSPECTRAL IMAGES**
Yuliya Tarabalka, Jocelyn Chanussot, Grenoble Institute of Technology, France; Jón Atli Benediktsson, University Of Iceland, Iceland

10:20
WE1.O8.5 **MORPHOLOGICAL IMAGE DISTANCES FOR HYPERSPECTRAL DIMENSIONALITY EXPLORATION USING KERNEL-PCA AND ISOMAP**
Santiago Velasco-Forero, Jesus Angulo, MINES Paristech, France; Jocelyn Chanussot, Grenoble Institute of Technology, France

WE1.O9: Wednesday, July 15, 09:00 - 10:40

WE1.O9 **Precipitation: Measurements, Analysis and Technology I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 1A
Co-Chairs: Luca Baldini and Mengitsu Wolde

9:00
WE1.O9.1 **ANALYSIS OF THE MEAN RAINDROP SHAPE MODEL FOR DUAL POLARIZATION RADAR RAINFALL ESTIMATION**
Eugenio Gorgucci, Luca Baldini, Consiglio Nazionale delle Ricerche, Italy

9:20
WE1.O9.2 **ESTIMATIONS OF SNOWFALL PARAMETERS FROM RADAR MEASUREMENTS AT DIFFERENT FREQUENCIES**
Sergey Matrosov, University of Colorado and NOAA ESRL, United States; Carroll Campbell, NOAA, United States; David Kingsmill, Ellen Sukovich, University of Colorado and NOAA ESRL, United States; Timothy Schneider, NOAA, United States

9:40
WE1.O9.3 **MONITORING WINTER MARINE WEATHER SYSTEMS USING SATELLITE MULTISENSOR OBSERVATIONS AND GROUND-BASED DATA**
Leonid Mitnik, Maia Mitnik, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russian Federation; Elizaveta Zabolotskikh, Nansen International Environmental and Remote Sensing Centre, Russian Federation; Irina Gurvich, Michael Pichugin, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russian Federation

10:00
WE1.O9.4 **RADIO BASE NETWORK AND TOMOGRAPHIC PROCESSING FOR REAL TIME ESTIMATION OF THE RAINFALL RATE FIELDS**
Fabrizio Cuccoli, Luca Facheris, CNIT, Italy; Stefano Gori, University of Firenze, Italy

10:20
WE1.O9.5 **GROUND-BASED REMOTE SENSING OF SNOWFALL THROUGH ACTIVE AND PASSIVE SENSOR SYNERGY**
Ulrich Löhnert, Stefan Kneifel, University of Cologne, Germany; Martin Hagen, Deustches Zentrum für Luft und Raumfahrt, Germany; Lutz Hirsch, Max Planck Institute for Meteorology, Germany; Alessandro Battaglia, University of Bonn, Germany

WE1.O10: Wednesday, July 15, 09:00 - 10:40

WE1.O10 **Sea Ice**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 1B
Chair: Mohammed Shokr

9:00
WE1.O10.1 **SEA ICE TYPE CLASSIFICATION FROM MULTICHANNEL PASSIVE MICROWAVE DATASETS**
Nick Hughes, Norwegian Meteorological Institute, Norway

9:20
WE1.O10.2 **ANALYSIS OF C-BAND POLARIMETRIC RADAR BACKSCATTER FROM MELT POND COVERED FIRST-YEAR SEA ICE**
Randall Scharien, John Yackel, University of Calgary, Canada

9:40
WE1.O10.3 **SEA ICE SAR CLASSIFICATION BASED ON EDGE FEATURES**
Juha Karvonen, Finnish Meteorological Institute (FMI), Finland; Martti Hallikainen, Helsinki University of Technology, Finland

10:00
WE1.O10.4 **TRENDS OF SEA ICE DISTRIBUTION IN THE CANADIAN ARCHIPELAGO REGION**
Mohammed Shokr, Tom Agnew, Environment canada, Canada

10:20
WE1.O10.5 **DETECTION OF ICE SHELF VARIATION AT WESTERN SIDE OF LUTZOW HOLM BAY, ANTARCTICA**
Tsutomu Yamanokuchi, Remote Sensing Technology Center of Japan, Japan; Koichiro Doi, Kazuo Shibuya, Shigeru Aoki, National Insitute of Polar Research, Japan

WE1.O11: Wednesday, July 15, 09:00 - 10:40

WE1.O11 **Remote Sensing of Soil Properties**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 1C
Co-Chairs: John Bolten and Artashes Arakelyan

9:00
WE1.O11.1 **ANGULAR DEPENDENCE OF THE EMISSIVITY OF BARE SOILS IN THE THERMAL INFRARED**
Vicente García, Maria Mira, Enric Valor, Vicente Caselles, César Coll, Joan Miquel Galve, University of Valencia, Spain

9:20
WE1.O11.2 **RECOVERING SPECTRAL EMISSIVITY WITH ASTER-THERMAL DATA FROM TENERIFE ISLAND**
Africa Barreto, Manuel Arbelo, Laia Nuñez-Casillas, Pedro A. Hernandez-Leal, Alejandro Gonzalez-Calvo, Alfonso Alonso-Benito, Universidad de La Laguna, Spain

9:40
WE1.O11.3 **CHARACTERIZATION OF SALT-AFFECTED SOILS USING HYPERSPECTRAL REMOTE SENSING DATA - A CASE STUDY OF MATHURA DISTRICT, UTTAR PRADESH, INDIA**
Gautam Ghosh, S. K. Saha, Suresh Kumar, Indian Institute of Remote Sensing, India

10:00
WE1.O11.4 **OPTIMIZATION OF IMAGE PARAMETERS USING A HYPERSPECTRAL LIBRARY: APPLICATION TO SOIL IDENTIFICATION**
Sivasathivel Kandasamy, Audrey Minghelli-Roman, François Tavin, University of Burgundy, France; Sandrine Mathieu, Thalès Alenia Space, France; Liu Weidong, Institute of Urban Meteorology, China; Frédéric Baret, INRA, France; Pierre Gouton, University of Burgundy, France

10:20
WE1.O11.5 **THE MAPPING AND MODELLING OF SOIL PATTERNS BY APPLYING SPATIAL DATA INTEGRATION TECHNIQUES ON VARIOUS RASTER LAYERS**
Hennie van den Berg, IRIS International, South Africa; Harold Weepener, ARC-ISCW, South Africa

WE1.O12: Wednesday, July 15, 09:00 - 10:40

WE1.O12 **Human Health and Landscape Epidemiology**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 1D
Co-Chairs: Venkataraman Lakshmi and Yaroslav Savenko

9:00
WE1.O12.1 **MAPPING THE RISK OF RIFT VALLEY FEVER RE-EMERGENCE IN SOUTHERN AFRICA USING REMOTE SENSING DATA**
Assaf Anyamba, NASA Goddard Space Flight Center, United States; Kenneth Linthicum, USDA-Center for Medical, Agricultural, & Veterinary Entomology, United States; Jennifer Small, NASA Goddard Space Flight Center, United States; Robert Swanepoel, National Institute for Communicable Diseases, South Africa; Seth Britch, USDA-Center for Medical, Agricultural, & Veterinary Entomology, United States; Edwin Pak, NASA Goddard Space Flight Center, United States; Pierre Formenty, World Health Organization, Switzerland; Stephan DeLaRocque, FAO - Food and Agriculture Organisation of the United Nations, Italy

9:20
WE1.O12.2 **EARTH OBSERVATION AND SPATIAL ANALYSIS FOR AN EARLY WARNING SYSTEM FOR MENINGITIS OR MALARIA**
Kathrin Weise, Jena-Optronik GmbH, Germany

9:40
WE1.O12.3 **DETECTING SOIL HEAVY METAL ELEMENTS CONTENT BASED ON REFLECTANCE SPECTRA**
Lu Wang, Yunxuan Zhou, East China Normal University, China; Qizhong Lin, Chinese Academy of Sciences, China; Yongming Xu, Nanjing University of Information Science and Technology, China; Hui Li, Chinese Academy of Sciences, China

10:00
WE1.O12.4 **SPATIAL VARIATION OF INHALABLE PARTICULATE MATTER AND ITS INFLUENCE FACTOR ANALYSIS DURING THE REGIONAL AIR POLLUTION STUDY**
Wen-Hui Zhao, Huili Gong, Wen-Ji Zhao, Lin Zhu, Capital Normal University, China; Tao Tang, State University of New York College at Buffalo, United States

10:20
WE1.O12.5 **RS & GIS BASED ASSESSMENT OF ADSORPTIVE NON-POINT SOURCE POLLUTION IN EUCALYPTUS AND RUBBER PLANTATION AT THE WATER SOURCE AREA OF HAINAN**
Hongjuan Zeng, Donghai Zheng, Shengtian Yang, Xuelei Wang, Yunfei Gao, Zhuo Fu, Beijing Normal University, China

WE1.O13: Wednesday, July 15, 09:00 - 10:40

WE1.O13 **Remote Sensing of Fire Occurrence and Characteristics in Africa: Operational and Science Applications**

Session Type: Oral-Invited
Time: Wednesday, July 15, 09:00 - 10:40
Place: Leslie 1E
Co-Chairs: David Roy and Philip Frost

9:00
WE1.O13.1 **THE SPATIAL DYNAMICS OF FIRE IN THE AMAZON BASIN AND SATELLITE NEEDS FOR CHARACTERIZING THESE DYNAMICS IN THE CONGO BASIN**
Mark A. Cochrane, Christopher P. Barber, Erik Lindquist, South Dakota State University, United States; Carlos M. Jr. Souza, Instituto do Homem e Meio Ambiente na Amazônia (IMAZON), Brazil

9:20
WE1.O13.2 **REMOTE SENSING CONTRIBUTIONS TO FOREST FIRE RISK ASSESSMENT**
Emilio Chuvieco, Universidad de Alcalá, Spain

9:40
WE1.O13.3 **CONTINENTAL AFRICA BIOMASS BURNING TEMPORAL DYNAMICS DERIVED FROM MSG SEVIRI**
Gareth Roberts, Martin Wooster, Emmanouil Lagoudakis, Patrick Freeborn, Weidong Xu, Kings College London, United Kingdom

10:00
WE1.O13.4 **HUMAN IMPACTS ON THE CHARACTERISTICS OF FIRE IN AFRICA - AN ANALYSIS OF BURNT AREA, FIRE SIZE, AND FIRE NUMBER AS DETERMINED FROM REMOTELY SENSED IMAGERY**
Sally Archibald, CSIR, South Africa; Robert Scholes, Council for Scientific and Industrial Research, South Africa; David Roy, V. Lehsten, South Dakota State University, United States

10:20
WE1.O13.5 **HUMANIZING REGIONAL-SCALE STUDIES OF AFRICAN FIRE REGIMES**
Paul Laris, California State University, Long Beach, United States

WE2.O1: Wednesday, July 15, 11:00 - 12:40

WE2.O1 **Polarimetry**

Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 2A
Co-Chairs: Nick Stacy and Tom Ainsworth

11:00
WE2.O1.1 **ON THE ACCURACY OF SCATTERERS LOS ROTATION ESTIMATION PROCEDURES IN RADAR POLARIMETRY**
Rafael Zandona-Schneider, German Aerospace Center (DLR), Germany

11:20
WE2.O1.2 **VALIDATION OF RADARSAT-2 POLARIMETRIC SAR MEASUREMENTS OF OCEAN WAVES**
Yijun He, Institute of Oceanology, Chinese Academy of Sciences, China; Biao Zhang, William Perrie, Bedford Institute of Oceanography, Canada

11:40
WE2.O1.3 **MOMENT-BASED GOODNESS-OF-FIT TESTS FOR POLARIMETRIC RADAR DATA**
Stian Normann Anfinsen, Torbjørn Eltoft, Anthony Doulgeris, University of Tromsø, Norway

12:00
WE2.O1.4 **COMPACT POLARIMETRY: NEURAL NETWORK ASSISTED RECONSTRUCTION OF FULL POLARIMETRIC INFORMATION**
Thanh Hai Le, Nanyang Technological University, Singapore; Ken Yoong Lee, Ian McLoughlin, Timo Bretschneider, EADS Innovation Works Singapore, Singapore

12:20
WE2.O1.5 **POLARIMETRIC RADAR CHARACTERISTICS ACCORDING TO DIFFERENT LAND COVER TYPES USING POLSAR DATA**
Moon-Kyung Kang, Wang-Jung Yoon, Chonnam National University, Republic of Korea

WE2.O2: Wednesday, July 15, 11:00 - 12:40

WE2.O2 **Three-dimensional SAR II**
Session Type: Oral-Invited
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 2D
Co-Chairs: Fabrizio Lombardini and Scott Hensley

11:00
WE2.O2.1 **DETECTION OF DOUBLE SCATTERERS IN SAR TOMOGRAPHY**
Antonio De Maio, University of Naples, Italy; Gianfranco Fornaro, Antonio Pauciullo, Diego Reale, National Research Council (CNR), Italy

11:20
WE2.O2.2 **FULL-RESOLUTION ADAPTIVE DIFFERENTIAL TOMOGRAPHY**
Fabrizio Lombardini, University of Pisa, Italy

11:40
WE2.O2.3 **ASPECTS OF 3D TOMOGRAPHY FOR MULTIPLE-PASS SPOTLIGHT-MODE AIRBORNE SAR**
Paul Pincus, DSTO, Australia; Doug Gray, University of Adelaide, Australia; Mark Preiss, DSTO, Australia

12:00
WE2.O2.4 **A COMPARATIVE TOMOGRAPHIC EVALUATION OF AIRBORNE MULTI-BASELINE SAR DATA AT P- AND L-BAND**
Othmar Frey, Erich Meier, University of Zurich, Switzerland

12:20
WE2.O2.5 **A THREE-DIMENSIONAL IMAGING ALGORITHM FOR TOMOGRAPHY SAR**
Xiaozhen Ren, Xiaofei Yin, Ruliang Yang, Weidong Yu, Institute of Electronics, Chinese Academy of Sciences, China

WE2.O3: Wednesday, July 15, 11:00 - 12:40

WE2.O3 **High Resolution Satellite Sensing of Ocean Waves**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Menzies M9
Co-Chairs: Jochen Horstmann and Paul Hwang

11:00
WE2.O3.1 **HIGH RESOLUTION OCEAN WINDS RETRIEVED FROM TERRASAR-X**
Jochen Horstmann, NATO Undersea Research Center, Italy; Donald R. Thompson, Johns Hopkins University, United States; Alexis Mouche, CLS, France; Wolfgang Koch, GKSS Research Center, Germany; Nathaniel S. Winstead, Frank M. Monaldo, Johns Hopkins University, United States

11:20
WE2.O3.2 **SUBSATELLITE EXPERIMENTS IN A NORTH-EAST PART OF THE BLACK SEA**
Victor Bakhanov, Institute of Applied Physics Russian Academy of Sciences, Russian Federation; Nikolai Bogatov, Aleksei Ermoshkin, Emma Zuykova, Vasilii Kazakov, Olga Kemarskaya, Institute of Applied Physics RAS, Russian Federation; Yulia Troitskaya, Victor Titov, Institute of Applied Physics Russian Academy of Sciences, Russian Federation; Irina Repina, Obukhov Instituteof Atmospheric Physics Russian Academy of Sciences, Russian Federation

11:40
WE2.O3.3 **STUDY OF ATMOSPHERIC FRONTAL LINES OVER SEA AREAS BORDERED BY COASTAL MOUNTAIN RANGES USING MULTISENSOR SATELLITE DATA AND NUMERICAL MODELS**
Werner Alpers, University of Hamburg, Germany

12:00
WE2.O3.4 **NON-LINEAR INTERNAL WAVES IN THE BANDA SEA ON SATELLITE SYNTHETIC APERTURE RADAR AND VISIBLE IMAGES**
Leonid Mitnik, Vyacheslav Dubina, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences, Russian Federation

12:20
WE2.O3.5 **SURFACE MANIFESTATIONS OF NON-TIDAL INTERNAL WAVES IN THE NORTH-EASTERN BLACK SEA AS VIEWED BY SATELLITE SENSORS**
Marina Mityagina, Space Research Institute of Russian Academy of Sciences, Russian Federation; Olga Lavrova, Space Research Institute of Russian Academy of Sciences, Russian Federation

WE2.O4: Wednesday, July 15, 11:00 - 12:40

WE2.O4 **Advanced Concepts for Image Analysis I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Menzies M10
Co-Chairs: Maria Petrou and Jordi Inglada

11:00
WE2.O4.1 **EXPLOITING MARKOV RANDOM FIELDS IN MICROWAVE TOMOGRAPHY**
Roberta Autieri, Universita' di Napoli Parthenope, Italy; Michele D'Urso, Selex Sistemi Integrati, Italy; Tommaso Isernia, Universita' Mediterranea di Reggio Calabria, Italy; Vito Pascazio, Universita' di Napoli Parthenope, Italy

11:20
WE2.O4.2 **A VARIATIONAL BAYESIAN APPROACH TO REMOTE SENSING IMAGE CHANGE DETECTION**
Keming Chen, Zhenglong Li, Jian Cheng, Institute of Automation, Chinese Academy of Sciences, China; Zhixin Zhou, Beijing Institute of Remote Sensing, China; Hanqing Lu, Institute of Automation, Chinese Academy of Sciences, China

11:40
WE2.O4.3 **MULTI-SCALE IMAGE ANALYSIS OF SATELLITE DATA USING PERCEPTUAL GROUPING**
Geerinck Thomas, Cosmin Mihai, Mohamed Jabloun, Iris Vanhamel, Hichem Sahli, Vrije Universiteit Brussel, Belgium

12:00
WE2.O4.4 **FIRST ASSESSMENT OF THE PERMANENT SCATTERER LINEAR DISPLACEMENT MODEL IN AIRBORNE INSAR TIME SERIES**
Karlus Alexander Câmara de Macedo, OrbiSat, Brazil; Rolf Scheiber, Alberto Moreira, German Aerospace Center (DLR), Germany

12:20
WE2.O4.5 **COMPLEXWAVELET REGULARIZATION FOR SOLVING INVERSE PROBLEMS IN REMOTE SENSING**
Mikael Carlavan, Pierre Weiss, Laure Blanc-Féraud, Josiane Zerubia, INRIA/I3S/CNRS, France

WE2.O5: Wednesday, July 15, 11:00 - 12:40

WE2.O5 **Quantitative Remote Sensing for Geomorphology and Active Tectonics II**
Session Type: Oral-Invited
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 2B
Chair: Richard Gloaguen

11:00
WE2.O5.1 **INSAR REPEAT INTERVAL: ERROR ANALYSIS AND IMPACTS ON DETERMINING POSTSEISMIC GEOPHYSICAL PROCESSES**
Andrea Donnellan, Jay Parker, Jet Propulsion Laboratory, California Institute of Technology, United States

11:20
WE2.O5.2 **EROSION IN THE HIMALAYAS ON CATCHMENT SCALE. INTEGRATIVE REMOTE SENSING ASSESMENT**
Christoff Andermann, Stéphane Bonnet, Universté de Rennes 1, France; Richard Gloaguen, TU Bergakademie Freiberg, Germany

11:40
WE2.O5.3 **USE OF NEURAL NETWORKS AND SAR INTERFEROMETRY FOR THE AUTOMATIC RETRIEVAL OF TECTONIC PARAMETERS**
Salvatore Stramondo, INGV, Italy; Fabio Del Frate, Matteo Picchiani, Giovanni Schiavon, Tor Vergata University, Italy

12:00
WE2.O5.4 **REMOTE SENSING STUDY OF THE HYDROLOGIC HISTORY OF THE EASTERN SAHARA**
Tom Farr, Ron Blom, Jet Propulsion Laboratory, United States; Philippe Paillou, Observatoire Aquitain des Sciences de l'Univers, France

12:20
WE2.O5.5 **USING REMOTE SENSING AND SPATIAL ANALYSIS TO UNDERSTAND LANDSLIDE DISTRIBUTION AND DYNAMICS IN NEW ZEALAND**
Karen Joyce, Grant Dellow, Phil Glassey, GNS Science, New Zealand

WE2.O6: Wednesday, July 15, 11:00 - 12:40

WE2.O6 **Remote Sensing Data Applications**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 2C
Co-Chairs: Jay Pearlman and Surya Durbha

11:00
WE2.O6.1 **TEACHING AND LEARNING REMOTE SENSING WITH NEW TECHNOLOGIES**
Raffaella Guida, Surrey Space Center, University of Surrey, United Kingdom

11:20
WE2.O6.2 **FAUCON NOIR UAV PROJECT - DEVELOPMENT OF A SET OF TOOLS FOR MANAGING, VISUALIZING AND MOSAICKING CENTIMETRIC UAV IMAGES**
Antoine Gademer, ESIEA Recherche / Université Paris-Est, France; Florent Mainfroy, Laurent Beaudoin, ESIEA Recherche, France; Jean-Paul Rudant, Université Paris-Est, France

11:40
WE2.O6.3 **MANAGING TERRESTRIAL CARBON IN THE NORTHEASTERN U.S.: EARLY EXPERIENCES WITH RGGI**
Richard Houghton, Thomas Stone, Scott Goetz, Josef Kellndorfer, The Woods Hole Research Center, United States

12:00
WE2.O6.4 **THE DESIGN AND REALIZATION OF THE SPATIAL DATABASE FOR EMERGENCY EARTHQUAKE DAMAGE ASSESSMENT BASED ON RS AND GIS**
Long Wang, Xiaoqing Wang, Xiang Ding, Aixia Dou, Institute of Earthquake Science, China Earthquake Administration, China

12:20
WE2.O6.5 **TREATY MONITORING FROM SPACE - SATELLITE IMAGERY ANALYSIS WITHIN COMPLIANCE VERIFICATION REGIMES**
Irmgard Niemeyer, Technische Universität Bergakademie Freiberg, Germany

WE2.O7: Wednesday, July 15, 11:00 - 12:40

WE2.O7 **Ocean Biology from Space**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 3A
Co-Chairs: M. Bouvet and Thomas Heege

11:00
WE2.O7.1 **THE MERIS WATER PRODUCTS: PERFORMANCE, CURRENT ISSUES AND POTENTIAL FUTURE IMPROVEMENTS**
Marc Bouvet, ESA/ESTEC, Netherlands; Philippe Goryl, ESA, Italy; Jean-Paul Huot, ESA/ESTEC, Netherlands; David Antoine, Laboratoire Océanographie Villefranche-sur-mer, France; Kathryn Barker, ARGANS, United Kingdom; Ludovic Bourg, ACRI, France; Pierre-Yves Deschamps, Laboratoire d'Optique Atmosphérique, France; Roland Doerffer, GKSS, Germany; Juergen Fischer, Freie Universitat Berlin, Germany; Constant Mazeran, ACRI, France; Michael Ondrusek, NOAA, United States; Richard Santer, Université du Littoral, France; Jeremy Werdell, NASA, United States; Francis Zagolski, PARBLEU, Canada; Giuseppe Zibordi, JRC, Italy

11:20
WE2.O7.2 **VIIRS OCEAN PRODUCTS FROM NPOESS / NPP**
Justin Ip, Hiroshi Agravante, Bruce Hauss, Sid Jackson, Merit Shoucri, Nancy Andreas, Northrop Grumman Aerospace Systems, United States; Curtis Mobley, Sequoia Scientific, Inc., United States

11:40
WE2.O7.3 **COMPARISON OF TWO ATMOSPHERIC CORRECTION ALGORITHMS IN COASTAL WATERS FOR SEAWIFS IMAGES: VALIDATION AND SENSITIVITY STUDY**
Cédric Jamet, Hubert Loisel, LOG/Université du Littoral-Côte d'Opale, France; Kevin Ruddick, MUMM, Belgium; David Doxaran, LOV/CNRS, France; David Dessailly, LOG/Université du Littoral-Côte d'Opale, France

12:00
WE2.O7.4 **RETRIEVAL OF SUSPENDED SEDIMENT CONCENTRATION IN THE PEARL RIVER ESTUARY FROM MERIS USING SUPPORT VECTOR MACHINES**
Shilin Tang, Qing Dong, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Chuqun Chen, Fenfen Liu, South China Sea Institute of Oceanology, Chinese Academy of Sciences, China; Guangyu Jin, Affiliated Computer Services, Canada

12:20
WE2.O7.5 **TEMPORAL AND SPATIAL VARIATIONS OF SEA SURFACE TEMPERATURE AND CHLOROPHYLL A IN COASTAL WATERS OF NORTH CAROLINA**
Brittany Maybin, Spelman College, United States; Yao Messan, North Carolina Agriculture & Technical State University, United States; Phillip Moore, St. Augustine's College, United States; Linda Hayden, Jinchun Yuan, Elizabeth City State University, United States

WE2.O8: Wednesday, July 15, 11:00 - 12:40

WE2.O8 **Registration**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 3B
Co-Chairs: Du Peijun and Younan Nick

11:00
WE2.O8.1 **REGISTRATION OF MULTISPECTRAL SATELLITE IMAGES WITH ORIENTATION-RESTRICTED SIFT**
Mehmet Firat Vural, ASELSAN Inc., Turkey; Yasemin Yardimci, Alptekin Temizel, Middle East Technical University, Turkey

11:20
WE2.O8.2 **IMAGE NAVIGATION AND REGISTRATION IMPROVEMENTS USING GPS**
Joseph Harris, IEM Inc, France; Ahmed Kamel, Kamel Engineering Services, United States; Handol Kim, Korean Aerospace Research Institute, Republic of Korea

11:40
WE2.O8.3 **ROBUST EXTRACTION OF CONTROL-POINT PAIRS FOR ELASTIC REGISTRATION OF HIGH-RESOLUTION SATELLITE IMAGES**
Javier Gonzalez, Vicente Arevalo, Cipriano Galindo, University of Málaga, Spain

12:00
WE2.O8.4 **ROBUST REGISTRATION OF SATELLITE IMAGES WITH LOCAL DISTORTIONS**
Alfio Borzì, Universita' degli Studi del Sannio, Italy; Maurizio Di Bisceglie, Università degli Studi del Sannio, Italy; Carmela Galdi, Generoso Giangregorio, Universita' degli Studi del Sannio, Italy

12:20
WE2.O8.5 **ROBUST FEATURE MATCHING AND SELECTION METHODS FOR MULTISENSOR IMAGE REGISTRATION**
Ye Zhang, Yan Guo, Yanfeng Gu, School of Electronics and Information Technique, Harbin Institute of Technology, China

WE2.O9: Wednesday, July 15, 11:00 - 12:40

WE2.O9 **Precipitation: Measurements, Analysis and Technology II**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 1A
Co-Chairs: Luca Baldini and Mengitsu Wolde

11:00
WE2.O9.1 **PRECIPITATION DATA MERGING USING GENERAL LINEAR REGRESSION**
Anish Turlapaty, Nicolas Younan, Valentine Anantharaj, Mississippi State University, United States

11:20
WE2.O9.2 **NRC AIRBORNE W AND X-BAND (NAWX) RADAR CAPABILITIES AND PERFORMANCE**
Mengistu Wolde, National Research Council of Canada, Canada; Andrew Pazmany, ProSensing Inc., United States

11:40
WE2.O9.3 **ESTIMATION OF RAINFALL RATE FROM TERRESTRIAL MICROWAVE LINK MEASUREMENTS**
Robert Watson, Duncan Hodges, University of Bath, United Kingdom

12:00
WE2.O9.4 **VALIDATION OF RADAR BASED ICE WATER CONTENT RETRIEVAL ALGORITHMS USING CLOUDSAT AND AIRBORNE RADAR AND IN-SITU MEASUREMENTS**
Faisal Boudala, Environment Canada, Canada; Mengistu Wolde, National Research Council of Canada, Canada; George Isaac, Stewart Cober, Dave Hudak, Emvironment Canada, Canada; Zlatko Vukovic, Hong Lin, Environment Canada, Canada

12:20
WE2.O9.5 **WAVEFORM CONSIDERATIONS FOR DUAL-POLARIZATION DOPPLER WEATHER RADAR WITH SOLID-STATE TRANSMITTERS**
Nitin Bharadwaj, Kumar Vijay Mishra, Chandrasekar Chandra, Colorado State University, United States

WE2.O10: Wednesday, July 15, 11:00 - 12:40

WE2.O10 **Optical Sensors Calibration**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 1B
Co-Chairs: Georgi T. Georgiev and Karen St. Germain

11:00
WE2.O10.1 **PERFORMANCE OF MODIS THERMAL EMISSIVE BANDS ON-ORBIT CALIBRATION ALGORITHMS**
Xiaoxiong (Jack) Xiong, NASA/GSFC, United States; Tiejun Chang, SSAI, United States

11:20
WE2.O10.2 **REFLECTANCE-BASED CALIBRATION OF BEIJING-1 MICRO-SATELLITE**
Zhengchao Chen, Bing Zhang, Xiaoyong Zhang, Hao Zhang, Junsheng Li, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

11:40
WE2.O10.3 **LONG-TERM CALIBRATION STUDY OF GRAY-SCALE SPECTRALON DIFFUSERS BRDF**
Georgi Georgiev, Science Systems and Applications, Inc, United States; James Butler, NASA - GSFC, United States

12:00
WE2.O10.4 **NORMALIZATION OF ILLUMINATION CONDITIONS FOR GROUND BASED HYPERSPECTRAL MEASUREMENTS USING DUAL FIELD OF VIEW SPECTRORADIOMETERS AND BRDF CORRECTIONS**
Jan Stuckens, Ben Somers, Willem W. Verstraeten, Rony Swennen, K.U.Leuven, Belgium; Pol Coppin, Katholieke Universiteit Leuven, Belgium

12:20
WE2.O10.5 **A SOUTH AFRICAN INITIATIVE FOR PRE-FLIGHT RADIOMETRIC CALIBRATION OF SATELLITE IMAGERS**
Derek Griffith, Meena D. Lysko, Dirk Bezuidenhout, CSIR, South Africa

WE2.O11: Wednesday, July 15, 11:00 - 12:40

WE2.O11 **Soil Moisture Field Experiments and Modeling**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 1C
Co-Chairs: Simonetta Paloscia and Hui Lu

11:00
WE2.O11.1 **THE GPS AND RADIOMETRIC JOINT OBSERVATIONS EXPERIMENT AT THE REMEDHUS SITE (ZAMORA-SALAMANCA REGION, SPAIN)**
Alessandra Monerris, Nereida Rodriguez-Alvarez, Mercè Vall-Llossera, Adriano Camps, Maria Piles, UPC, Spain; Jose Martínez-Fernández, Nilda Sanchez-Martin, Carlos Perez-Gutierrez, Guido Baroncini-Turricchia, Universidad de Salamanca, Spain; Rene Acevo-Herrera, Albert Aguasca, UPC, Spain

11:20
WE2.O11.2 **MICROWAVE SOIL MOISTURE RETRIEVAL UNDER TREES USING A MODIFIED TAU-OMEGA SCATTERING MODEL**
Peggy O'Neill, NASA Goddard Space Flight Center, United States; Roger Lang, Mehmet Kurum, George Washington University, United States; Alicia Joseph, NASA Goddard Space Flight Center, United States; Michael Cosh, Thomas Jackson, US Dept. of Agriculture/ Agricultural Research Service, United States

11:40
WE2.O11.3 **A PHYSICAL MODEL FOR MICROWAVE RADIOMETRY OF FOREST CANOPIES**
Mehmet Kurum, Roger Lang, The George Washington University, United States; Cuneyt Utku, Peggy O'Neill, NASA Goddard Space Flight Center, United States

12:00
WE2.O11.4 **SENSITIVITY OF L-BAND BRIGHTNESS TEMPERATURES TO SOIL ROUGHNESS PARAMETERIZATION. THE SMOSREX CASE STUDY.**
Joaquín Muñoz Sabater, Patricia de Rosnay, Gianpaolo Balsamo, European Center for Medium-Range Weather Forecast, United Kingdom

12:20
WE2.O11.5 **SOIL MOISTURE RETRIEVAL FROM HUT-2D SYNTHETIC APERTURE RADIOMETER DATA**
Jaakko Seppänen, Juha Kainulainen, Juha Lemmetyinen, Kimmo Rautiainen, Martti Hallikainen, Marko Mäkynen, Helsinki University of Technology, Finland

WE2.O12: Wednesday, July 15, 11:00 - 12:40

WE2.O12 **Desertification and Deforestation**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 1D
Co-Chairs: M. Grippa and Jean-Louis Roujean

11:00
WE2.O12.1 **MONITORING DESERTIFICATION USING EO TECHNOLOGIES: EXPERIENCE OF THE ESA DUE DESERTWATCH PROJECT**
Marc Paganini, European Space Agency, Italy; Gaetano Pace, Paolo Castracane, ACS, Italy; Diego Fernández-Prieto, European Space Agency, Italy; Juan Puigdefabregas, Estación Experimental de Zonas Aridas (EEZA), Spain; Hedwig van Delden, RIKS, Netherlands; Massimo Iannetta, ENEA, Italy; Joachim Hill, University of Trier, Germany

11:20
WE2.O12.2 **LAND USE/COVER CHARACTERIZAITOIN WITH MODIS TIME SERIES DATA WITH HYBRID CLASSIFICATION MOTHED OVER AUSTRALIA FOR 2001 AND 2003**
Kaishan Song, Mingming Jia, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China; Mohsin Hafeez, International Water Centre, Charles Sturt University, Australia; Zongming Wang, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China; Dongmei Lu, Computer Science and Engineering College, Jilin Architectural and Civil Egineering Institute, China; lihong Zeng, Dianwei Liu, Bai Zhang, Jia Du, Qingfeng Liu, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China

11:40
WE2.O12.3 **CHANGE DETECTION IN THE SEMI-ARID LANDSCAPE USING RADIOMETRIC ROTATION APPLIED TO REMOTE SENSING DATA**
João Roberto Santos, National Institute for Space Research - INPE, Brazil, Brazil; Carlos A. Mena, Talca University, Chile, Chile; Francisco Dario Maldonado, Fundação de Ciência, Aplicações e Tecnologias Espaciais - FUNCATE, Brazil; John E. Gajardo, Talca University, Chile, Chile; Marcio de Morrison Valeriano, National Institute for Space Research - INPE, Brazil, Brazil; Yony M. Ormazábal, Yohana A. Morales, Talca University, Chile, Chile

12:00
WE2.O12.4 **500M SPATIAL RESOLUTION LAND COVER MAP IN INSULAR SOUTHEAST ASIA**
Jukka Miettinen, Choong Min Wong, Soo Chin Liew, Centre for Remote Imaging, Sensing and Processing, Singapore

12:20
WE2.O12.5 **ANALYSIS OF MULTI-TEMPORAL LAND OBSERVATION AT C-BAND**
Carolin Thiel, Oliver Cartus, Robert Eckardt, Nicole Richter, Christian Thiel, Christiane Schmullius, Friedrich-Schiller-University Jena, Germany

WE2.O13: Wednesday, July 15, 11:00 - 12:40

WE2.O13 **Remote Sensing for Biodiversity in Africa - From Observations to Informed Actions for Biodiversity Assessments**
Session Type: Oral-Invited
Time: Wednesday, July 15, 11:00 - 12:40
Place: Leslie 1E
Co-Chairs: Tobias Landmann and Rene Colditz

11:00
WE2.O13.1 **USING REMOTE SENSING AND EXPERT KNOWLEDGE TO MAP LANDSCAPE-LEVEL LAND DEGRADATION IN NAMAQUALAND - SOUTH AFRICA**
Nokuthula Wistebaar, South African National Biodiversity Institute, South Africa; Prof Timm Hoffman, University of Cape Town, South Africa; Phil Desmet, Private Consultant, South Africa; Mathieu Rouget, Zuziwe Jonas, South African National Biodiversity Institute, South Africa; Christoph Schults, South African National Biodiveristy Institute, South Africa

11:20
WE2.O13.2 **MONITORING BIODIVERSITY FROM SPACE: THE ESA DIVERSITY PROJECT**
Marc Paganini, European Space Agency, Italy; Benjamin Koetz, University of Zurich, Switzerland; Diego Fernández-Prieto, European Space Agency, Italy; Stefan Kleeschulte, Geoville, Austria; Peter Mumby, Marine Spatial Ecology Lab, University of Exeter, United Kingdom; Philipe Gaspar, CLS, France; Lasse Pettersson, Nansen Environmental and Remote Sensing Center, Norway

11:40
WE2.O13.3 **ADDING SPATIAL ATTRIBUTES TO LANDCOVER DATA – AN ECOLOGICAL PERSPECTIVE.**
Martin Wegmann, Dept. of Remote Sensing, Univ. Wuerzburg, Germany; Michael Schmidt, Stefan Dech, German Aerospace Center (DLR) – German Remote Sensing Data Center (DFD), Germany

12:00
WE2.O13.4 **COMBINATION OF REMOTE SENSING AND IN SITU MEASUREMENTS FOR A DETAILED ASSESSMENT OF BIOPHYSICAL PROPERTIES OF EAST AFRICAN RAINFORESTS: A CASE STUDY FOR KAKAMEGA FOREST, KENYA, AND BUDONGO FOREST, UGANDA**
Kraus Tanja, Michael Schmidt, Stefan Dech, German Aerospace Center, Germany; Cyrus Samimi, University of Vienna, Austria

12:20
WE2.O13.5 **USING REMOTE SENSING AND GIS TO MAP PHYTODIVERSITY OF ARLY NATIONAL PARK, EASTERN BURKINA FASO**
Oumarou Ouédraogo, Adjima Thiombiano, Université de Ouagadougou, Burkina Faso; Karen Hahn-Hadjali, Goethe-University, Germany; Sita Guinko, Université de Ouagadougou, Burkina Faso

WEP.A: Wednesday, July 15, 12:40 - 14:20

WEP.A **Urban and Built environment**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area A
Co-Chairs: Peijun Du and Devis Tuia

WEP.A.2 **FUSION OF SAR AND OPTICAL DATA FOR URBAN EXTENT EXTRACTION IMPROVEMENT**
Mattia Stasolla, Paolo Gamba, Università di Pavia, Italy

WEP.A.3 **A HIERACHICAL MODEL FOR BUILDING ROOFTOP EXTRACTION FROM SINGLE AERIAL IMAGE**
Qiongchen Wang, Zhiguo Jiang, Beihang University, China

WEP.A.4 **AN ANALYSIS ON THE COUPLING RELATIONSHIP BETWEEN URBAN VEGETATION AND LAND SURFACE TEMPERATURE IN HANGZHOU BASED ON ASTER IMAGERY**
Chudong Huang, Qianhu Chen, Si'ai Ying, Feng Zhao, Zhejiang University of Technology, China, China; Yun Shao, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Wenbo Yu, Fuying Liu, Zhejiang University of Technology, China, China; Jinsong Chen, The Chinese university of Hong Kong, Hong Kong SAR of China; Xin Xu, Zhejiang University of Technology, China, China; Jing Li, College of Foreign Studies, Zhejiang Chinese Medical University, China

WEP.A.6 **MAPPING URBAN TREE COVERAGE USING OBJECT-ORIENTED IMAGE ANALYSIS METHOD: A CASE STUDY**
Qulin Tan, Beijing Jiaotong University, China; Jinfei Wang, The University of Western Ontario, Canada

WEP.A.7 **MAPPING URBAN SURFACE IMPERVIOUSNESS USING SPOT MULTISPECTRAL SATELLITE IMAGES**
Qulin Tan, Beijing Jiaotong University, China; Zhengjun Liu, Chinese Academy of Surveying and Mapping, China; Xiaofang Li, Beijing Jiaotong University, China

WEP.A.9 **LAND SUBSIDENCE MONITORING AND FLOOD SIMULATION USING MULTI-TEMPORAL DIGITAL ELEVATION MODELS**
Pai-Hui Hsu, National Taiwan University, Taiwan; Wen-Ray Su, National Science & Technology Center for Disaster Reduction, Taiwan

WEP.A.10 **STUDY OF THERMAL ENVIRONMENT BASED ON REMOTE SENSING IN BEIJING-CAPITAL ZONE**
Dan Meng, Huili Gong, Xiaojuan Li, Wenji Zhao, Zhaoning Gong, Lin Zhu, Deyong Hu, Capital Normal University, China

WEP.B: Wednesday, July 15, 12:40 - 14:20

WEP.B **Coastal and Wetlands Applications Posters I**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area B
Chair: Shahid Habib

WEP.B.3 **EXPLORING THE POTENTIAL OF MODIS VISIBLE AND THERMAL CHANNELS IN MONITORING AND ASSESSING THE IMPACT OF DESALINATION PLANT DISCHARGES IN THE ARABIAN GULF**
Ammar Al Muhairi, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates; Hosni Ghedira, American University in Dubai, United Arab Emirates; Khaled Mubarak, Khalifa University of Science, Technology, and Research (KUSTAR), United Arab Emirates

WEP.B.4 **REMOTELY SENSED STUDY OF AIR-SEA CO2 FLUXES VARIABILITY IN THE NORTHERN SOUTH CHINA SEA**
Fenfen Liu, LED, South China Sea Institute of Oceanology, Chinese Academy of Sciences, China; Shilin Tang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Chuqun Chen, LED, South China Sea Institute of Oceanology, Chinese Academy of Sciences, China

WEP.B.7 **LINEAR ALGORITHM FOR SALINITY DISTRIBUTION MODELLING FROM MODIS DATA**
Maged Marghany, Department of Remote Sensing Faculty of Geoinformation Science and Engineering Universiti Teknologi Malaysia, Malaysia

WEP.B.10 **ESTIMATION OF VEGETATION NET PRIMARY PRODUCTIVITY OF BEIJING YEYAHU WETLAND BASED ON REMOTE SENSING**
Yaoming Su, Lin Zhu, Huili Gong, Wenji Zhao, Lingling Jing, Capital Normal University, China

WEP.C: Wednesday, July 15, 12:40 - 14:20

WEP.C **Remote sensing for Pollution and Urban Area Monitoring**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area C
Co-Chairs: Giovanni Laneve and Fabio Del Frate

WEP.C.2 **POTENTIAL ANALYSIS OF MARITIME OIL SPILL MONITORING BASED ON MODIS THERMAL INFRARED DATA**
Ying Li, Guo-xin Lan, Dalian Maritime University, China; Jijun LI, Shangdong Maritime Safety Administration, China; Long Ma, Dalian Maritime Universiy, China

WEP.C.3 **RESEARCH ON OIL SPILL IDENTIFICATION BASED ON TEXTURE FEATURES-A CASE STUDY OF "HEBEI SPIRIT" ACCIDENT**
Long Ma, Ying LI, Dalian Maritime University, China; Baocheng Zhang, Shandong Maritime Safety Administration, China; Yu LIU, Chao Gao, Shuiming YU, Dalian Maritime University, China

WEP.C.4 **REMOTE SENSING TECHNIQUES FOR OIL SLICK MONITORING IN OFFSHORE OIL AND GAS EXPLORATION AND EXPLOITATION ACTIVITIES -CASE STUDY IN BOHAI SEA,CHINA**
Wuyi Yu, Xiaoping Qi, Yang Liu, Research Institute of Petroleum Exploration and Development, China

WEP.C.6 **OPERATIONAL APPLICATIONS OF RADARSAT-2 FOR THE ENVIRONMENTAL MONITORING OF OIL SLICKS IN THE SOUTHERN GULF OF MEXICO**
Karen Bannerman, MDA, Canada; Miguel Herrera, PEMEX, Mexico; Fernando Pellon de Miranda, Petrobras, Brazil; Enrico Pedroso, LabSAR Coppetec, Brazil; Ricardo Gomez, MDA, Mexico; Oscar Lopez, PEMEX, Mexico

WEP.C.9 **PULSE COUPLED NEURAL NETWORKS FOR AUTOMATIC FEATURES EXTRACTION FROM COSMO-SKYMED AND TERRASAR-X IMAGERY**
Fabio Del Frate, Università degli Studi di Roma "Tor Vergata", Italy; Giorgio Licciardi, Fabio Pacifici, Chiara Pratola, Domenico Solimini, Tor Vergata University, Italy

WEP.C.11 **GETTING IT FOR FREE: USING GOOGLE EARTH AND ILWIS TO MAP SQUATTER SETTLEMENTS IN JOHANNESBURG**
Ashley William Gunter, Monash South Africa and University of Johannesburg, South Africa

WEP.C.12 **3D SPATIAL MODELING FOR URBAN SURFACE AND SUBSURFACE SEAMLESS INTEGRATION**
De-Fu Che, Li-Xin Wu, Northeastern University, China; Zuo-Ru Yin, Kailuan Mining Graup, China

WEP.D: Wednesday, July 15, 12:40 - 14:20

WEP.D **Optical Sensors Calibration II**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area D
Co-Chairs: J. H. Song and Fumihiro Sakuma

WEP.D.1 **VICARIOUS CALIBRATION OF CCD ON CBERS02B USING GONGGER TEST SITE**
Hui Gong, Tao Yu, Guoliang Tian, Xingfa Gu, Hailiang Gao, Xiaoying Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; David Jupp, Yi Qin, CMAR, CSIRO, Australia

WEP.D.2 **CALIBRATION OF VISIBLE AND NEAR-INFRARED CHANNELS OF THE FY1C USING TIME-SERIES OBSERVATION BASED ON PSEUDO-INVARIANT TARGET SITES IN CHINA**
Hailiang Gao, Xingfa Gu, Tao Yu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Xiuqing Hu, National Satellite Meteorological Center, China Meteorological Administration, China; Xiaoying Li, Hui Gong, Jiaguo Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.D.3 **EVALUATION OF AUTOMATED RADIATIVE TRANSFER MODELLING IN AN OPERATIONAL ENVIRONMENT ON POORLY CALIBRATED MEDIUM RESOLUTION SATELLITE IMAGERY**
Wolfgang Lück, CSIR SAC, South Africa; Melanie Vogel, CSIR NRE, South Africa

WEP.E: Wednesday, July 15, 12:40 - 14:20

WEP.E **Land Cover Characterization**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area E
Co-Chairs: Precious Wistebaar and Iain Woodhouse

WEP.E.1 **PARAGE PROJECT: ASSESSING AGRI-ENVIRONMENTAL IMPACTS IN THE FRENCH WEST INDIES AND FRENCH GUIANA**
Florence Baillarin, SPOT IMAGE, France; Gérard Laine, Stéphane Dupuy, CIRAD, France; Béatrice Ariaux, SIG BEA, France; Jean-Marie Fotsing, Kenji Ose, IRD, France; Ghislain Gonzales, SPOT IMAGE, France

WEP.E.2 **A STUDY ON LAND COVER CLASSIFICATION BASED ON HJ-1 CCD IMAGE**
Yuhuan Ren, Yalan Liu, Junchuan Fan, Hua Xu, Ling Yi, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.E.3 **THE IMPACT OF CLIMATE CHANGE ON POTENTIAL DISTRIBUTION OF SPECIES IN SEMI-ARID REGION: A CASE STUDY OF QINGHAI SPRUCE (PICEA CRASSLIOLIA) IN QILIAN MOUNTAIN, GANSU PROVINCE,CHINA**
Zhonglin Xu, Chuanyan Zhao, Zhaodong Feng, Huanhua Peng, Chao Wang, Lanzhou University, China

WEP.E.4 **UNSUPERVISED SEGMENTATION OF AGRICULTURAL REGIONS USING TERRASAR-X IMAGES**
Emmanuel Bratsolis, University of Athens, Greece

WEP.E.5 **TOPOGRAPHIC PROFILE RETRIEVAL USING THE INTERFERENCE PATTERN GNSS-R TECHNIQUE**
Nereida Rodriguez-Alvarez, Juan Fernando Marchan-Hernandez, Adriano Camps, Xavier Bosch-Lluis, Enric Valencia, Isaac Ramos-Perez, Mercè Vall-Llossera, Alessandra Monerris, Politechnical University of Catalonia (UPC), Spain; Jose Martínez-Fernández, Carlos Perez-Gutierrez, Guido Baroncini-Turricchia, Nilda Sanchez-Martin, CIALE, University of Salamanca, Spain; Juan Manuel Nieto, Politechnical University of Catalonia (UPC), Spain

WEP.E.6 **PALEOTERRAIN MODEL OF THE YAMATO MARSH, PALM BEACH COUNTY, FLORIDA**
Mary Beth Crile, ITT Corporation, United States; Charles Roberts, Florida Atlantic University, United States

WEP.E.7 **REMOTE SENSING MONITORING FOR VEGETATION CHANGE IN MINING AREA BASED ON SPOT-VGT NDVI**
Baodong Ma, Institute for Geoinformatics & Digital Mine Research, Northeastern University, China; Lixin Wu, Academy of Disaster Reduction and Emergency Management, Beijing Normal University, China; Shanjun Liu, Institute for Geoinformatics & Digital Mine Research, Northeastern University, China

WEP.E.8 **URBAN DYNAMIC CHANGE DETECTION IN SOUTHEASTERN CHINA BASED ON INTERFEROMETRIC SAR**
Hong Chi, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Guoqing Sun, University of Maryland/ Institute of Remote Sensing Applications, Chinese Academy of Sciences, United States; Feilong Ling, Fuzhou University/Institute of Forest Resources Information techniques Chinese Academy of Forestry, China

WEP.E.9 **MONITORING SLOW GROUND MOUVEMENTS AROUND TUNIS CITY BY DIFFERENT SAR INTERFEROMETRIC MEASURES**
Ferdaous Chaabane, Khaoula Elagouni, Moez Baccouche, Ecole Superieure des Communications de Tunis, Tunisia; Nadine Pourthié, Céline Tison, Centre National d'Etudes Spatiales, France; Pierre Briole, Ecole Normale Supérieure, France

WEP.E.10 **COMPARING OF THE GRAIN PRODUCTIVITY FOR CULTIVATED LAND OCCUPATION AND COMPENSATION IN SOUTHEAST AND MIDDLE CHINA**
Bilin Xiao, Yinjun Chen, Bu Lu, Institute of Agricultural Resources and Regionnal Planning, Chinese Academy of Agricultural Sciences, China; Jing Chen, Beijing Geely University, China; Wilko Schweers, Institute of Agricultural Resources and Regionnal Planning, Chinese Academy of Agricultural Sciences, China; Qingchun Zhang, Land Consolidation and Rehabilitation Center (LCRC), The Ministry of Land Resources, China; Yong Wang, Institute of Agricultural Resources and Regionnal Planning, Chinese Academy of Agricultural Sciences, China

WEP.E.11 **LAND COVER CHANGES BETWEEN 1977 AND 2007 IN HORQIN SANDY LAND, INNER MONGOLIA AUTONOMOUS REGION, CHINA**
Hasi Bagan, Yoshiki Yamagata, Yoshifumi Yasuoka, National Institute for Environmental Studies, Japan

WEP.E.12 **SUB-CLASSIFICATION OF FARMLAND IN HIGH RESOLUTION RS IMAGES BASED ON TEXTURAL AND SPECTRAL FEATURES**
Shuqiang Lu, Juhui Tian, Dongwei Qiu, Mingyi Du, Ruoming Shi, Beijing University of Civil Engineering and Architecture, China

WEP.F: Wednesday, July 15, 12:40 - 14:20

WEP.F **Agroecosystems II**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area F
Co-Chairs: Juan Lopez-Sanchez and Brilliant Petja

WEP.F.1 **MULTIPLE CROP YIELD PREDICTION USING DUAL-POLARIMETRIC TERRASAR-X STRIPMAP IMAGERY**
Tishampati Dhar, Doug Gray, University of Adelaide, Australia; Carl Menges, Apogee Imaging International, Australia

WEP.F.2 **LIFE-CYCLE SPECTRAL VARIATION ANALYSIS OF CORN LEAVES USING HYPERTEMPORAL AND HYPERSPECTRAL IN SITU MEASUREMENT DATA**
Hao Wu, Suhong Liu, Ying Qu, Beijing Normal University, China

WEP.F.3 **STUDY ON OPERATIONAL APPLICATIONS IN CROP GROWTH AND DROUGHT MONITORING USING MULTIPLE SATELLITE DATA: CASE STUDY IN XINJIANG, CHINA**
Chuanfu Xia, Jing Li, Qiang Liu, Qinhuo Liu, Yong Tang, Yanjuan Yao, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by the Institute of Remote Sensing Applications of Chinese Academy of Sciences and Beijing Normal University, China

WEP.F.4 **THE IDENTIFICATION OF INDICATOR GRASS SPECIES OF GRASSLAND DEGRADATION BASED ON THE FIELD SPECTRAL CHARACTERISTICS**
Huanjiong Wang, Peking University, China; Lei Zhou, Chinese Academy of Agricultural, China; Binyan Yan, Yaokui Cui, Daihui Wu, Wenjie Fan, Xiru Xu, Peking University, China

WEP.F.5 **CLUES: A WEB-BASED LAND USE EXPERT SYSTEM FOR THE WESTERN CAPE**
Adriaan Van Niekerk, Stellenbosch University, South Africa

WEP.F.6 **DATA REDUCTION OF HYPERSPECTRAL REMOTE SENSING DATA FOR CROP STRESS DETECTION USING DIFFERENT BAND SELECTION METHODS**
Thorsten Mewes, Jonas Franke, Gunter Menz, University of Bonn, Germany

WEP.F.7 **PARAMETER-FREE CLUSTERING: APPLICATION TO FAWNS DETECTION**
Daniele Cerra, Martin Israel, Mihai Datcu, German Aerospace Centre (DLR), Germany

WEP.F.8 **DETECTION OF WATER DEFICIT USING OPTICAL DATA - CASE STUDY POLAND**
Katarzyna Dabrowska - Zielinska, Maria Budzynska, Wanda Kowalik, Alexandre Guerra, Institute of Geodesy and Cartography, Poland

WEP.F.9 **IRRIGATION WATER AMOUNT IN SEMI-ARID CROPLANDS USING TIME SERIES OF FORMOSAT-2 IMAGES**
Benoît Duchemin, Iskander Benhadj, IRD, France; Rachid Hadria, UCAM, Morocco; Olivier Hagolle, CNES, France; Mohamed Hakim Kharrou, ORMVAH, Morocco; Bernard Mougenot, IRD, France; Dominique Courault, INRA, France; Abdelghani Chehbouni, IRD, France

WEP.F.10 **SPATIALIZATION OF CROP LEAF AREA INDEX AND BIOMASS BY COMBINING A SIMPLE CROP MODEL SAFY AND HIGH SPATIAL AND TEMPORAL RESOLUTIONS REMOTE SENSING DATA**
Martin Claverie, Valérie Demarez, CESBIO, France; Benoît Duchemin, IRD, France; Olivier Hagolle, CNES, France; Pascal Keravec, Bernard Marciel, Eric Ceschia, Jean-Francois Dejoux, Gérard Dedieu, CESBIO, France

WEP.F.11 **REMOTE SENSING SOLUTIONS FOR CONSERVATION CHALLENGES: DEALING WITH HETEROGENEITY**
Barend Erasmus, University of the Witwatersrand, South Africa

WEP.F.12 **USING 15 YEARS OF LAND COVER CHANGE DATA TO INFORM CONSERVATION PLANNING**
Kaera Coetzer, Barend Erasmus, Edward Witkowski, University of the Witwatersrand, South Africa

WEP.G: Wednesday, July 15, 12:40 - 14:20

WEP.G **Soil Moisture Remote Sensing - Passive**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area G
Co-Chairs: Peggy O'Neill and Maria Piles

WEP.G.1 **MODELLING SMOS BRIGHTNESS TEMPERATURE BY USE OF COUPLED SVAT AND RADIATIVE TRANSFER MODELS OVER THE VALENCIA ANCHOR STATION**
Silvia Juglea, Yann Kerr, Arnaud Mialon, CESBIO, France; Ernesto Lopez-Baeza, Aurelio Cano, Universitat de Valencia, Spain; Jean-Christophe Calvet, Météo-France / CNRM, France; Ahmad Albitar, CESBIO, France; Jean-Pierre Wigneron, EPHYSE INRA, France

WEP.G.2 **USE OF IN SITU AND MODELLED SOIL MOISTURE ESTIMATES TO EVALUATE MICROWAVE REMOTELY SENSED PRODUCTS IN SOUTHWESTERN FRANCE**
Clement Albergel, CNRM/GAME (Météo-France, CNRS), France; Christoph Rüdiger, Department of Civil and Environmental Engineering, The University of Melbourne, Melbourne, Australia, France; Jean-Christophe Calvet, Dominique Carrer, CNRM/GAME (Météo-France, CNRS), France; Thierry Pellarin, LTHE (UMR 5564), Grenoble, France

WEP.G.3 **ANALYSIS OF 7 YEARS AQUA AMSR-E DERIVED SOIL MOISTURE DATA OVER INDIA**
Subrahmanyeswara Rao Yalamanchili, Amruta Chaudhuri, Indian Institute of Technology Bombay, India

WEP.G.4 **ON THE PROBLEM OF MODELLING AND CORRECTING THE INFLUENCE OF THE RELIEF ON THE OBSERVATIONS OF MICROWAVE RADIOMETERS**
Luca Pulvirenti, Nazzareno Pierdicca, Frank Silvio Marzano, Sapienza, University of Rome, Italy

WEP.G.6 **EFFECTS OF TOPOGRAPHY ON THE L-BAND EMISSION OF SOILS. ANALYSIS OF COSMOS-AUSTRALIA CAMPAIGN**
Albert Zurita, EADS CASA Espacio, Spain; Peter van Oevelen, International GEWEX Project Office, United States; Mark Drinkwater, Roger Haagmans, European Space Agency - ESA/ESTEC, Netherlands

WEP.G.7 **ADVANCED MULTI-TEMPORAL PASSIVE MICROWAVE DATA ANALYSIS FOR SOIL WETNESS MONITORING AND FLOOD RISK FORECAST**
Teodosio Lacava, Giovanni Calice, Irina Coviello, Institute of Methodologies for Environmental Analysis (IMAA) - National Research Council (CNR), Italy; Giuseppe Mazzeo, University of Basilicata, Italy; Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA) - National Research Council (CNR), Italy; Valerio Tramutoli, Department of Engineering and Physics of the Environment (DIFA), University of Basilicata, Italy

WEP.G.8 **THE EFFECT OF DEW ON THE X-BAND TERRESTRIAL BRIGHTNESS TEMPERATURE DURING SMEX05**
Jinyang Du, Thomas Jackson, USDA Agricultural Research Service, United States; Brian Hornbuckle, Iowa State University, United States; Rajat Bindlish, Michael Cosh, USDA Agricultural Research Service, United States; Erik Kabela, Savannah River National Laboratory, United States; Li Li, Naval Research Laboratory, United States

WEP.G.9 **VALIDATION OF PASSIVE MICROWAVE REMOTELY SENSED SOIL MOISTURE (AMSR-E) PRODUCTS IN THE YIHE CATCHMENT, SHANDONG PROVINCE OF CHINA**
Jiongfeng Chen, Nanjing University, China; Wanchang Zhang, Chinese Academy of Sciences, China; Kexin Zhang, Xuemei Lv, Linyi Meteorological Bureau, China

WEP.G.10 **DEVELOPING LAND DATA ASSIMILATION SYSTEM BASED ON ENKF, 3DVAR TECHNOLOGY AND COMMUNITY LAND MODEL**
Qifeng Lu, Zhongdong Yang, Hu Yang, Zhaojun Zhen, Yanmeng Bi, Guicai Li, National Satellite Meteorological Center, CMA, China

WEP.H: Wednesday, July 15, 12:40 - 14:20

WEP.H **Soil Moisture Remote Sensing - Active**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area H
Co-Chairs: Roger Lang and Clement Albergel

WEP.H.1 **SURFACE PARAMETERS RETRIEVAL FROM ALLUVIAL FAN IN EJINA AREA OF INNER MONGOLIA USING MULTI-POLARIZATION SAR DATA**
Jingjuan Liao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Zizhen Pang, State Key Laboratory of Remote Sensing, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.H.2 **SUB-CANOPY GROUND CHARACTERISTICS RETRIEVAL OF POLINSAR USING SPECTRAL ANALYSIS TECHNIQUE**
Yue Huang, University of Rennes 1, Institute of Telecommunications and Electronics of Rennes, France; Xinwu Li, Chinese Academy of Sciences, China; Laurent Ferro-Famil, Eric Pottier, University of Rennes 1, Institute of Telecommunications and Electronics of Rennes, France; Huadong Guo, Chinese Academy of Sciences, China

WEP.H.4 **PRELIMINARY MEASUREMENTS OF BARE SOIL AND WAVED WATER SURFACE MICROWAVE REFLECTION AND EMISSION ANGULAR DEPENDENCES AT 5,6GHZ**
Astghik Hambaryan, Artashes Arakelyan, Hrant Muradyan, Vanik Karyan, Gagik Hovhannisyan, Arsen Arakelyan, Melanya Grigoryan, Izabela Hakobyan, Mushegh Manukyan, ECOSERV Remote Observation Centre Co. Ltd., Armenia

WEP.H.5 **SYNERGY OF DATA OF BARE SOIL, SNOW, ICE AND WAVED WATER SURFACE MICROWAVE REFLECTION AND EMISSION ACQUIRED BY C AND KA-BAND COMBINED SCATTEROMETER-RADIOMETER SYSTEMS**
Artashes Arakelyan, Hrant Muradyan, Astghik Hambaryan, Vanik Karyan, Gagik Hovhannisyan, Melanya Grigoryan, Arsen Arakelyan, Sargis Darbinyan, ECOSERV Remote Observation Centre Co. Ltd., Armenia

WEP.H.6 **USE OF RADARSAT-2 IMAGES TO DEVELOP A SCALING METHOD OF SOIL MOISTURE OVER AN AGRICULTURAL AREA**
Imen Gherboudj, Ramata Magagi, University of sherbrooke, Canada; Aaron Berg, University of Guelph, Canada; Brenda Toth, Environment Canada, Canada

WEP.H.7 **MODELING THE EFFECT OF SURFACE ROUGHNESS ON THE BACKSCATTERING COEFFICIENT AND EMISSIVITY OF A SOIL-LITTER MEDIUM USING A NUMERICAL MODEL**
Heather Lawrence, Bordeaux 1 University and Institut National de la Recherche Agronomique (INRA), France; François Demontoux, Bordeaux 1 University, France; Jean-Pierre Wigneron, Institut National de la Recherche Agronomique (INRA), France; Pierre Borderies, ONERA(Office National d'Etudes et de Recherches Aérospatiales) French Aerospace Laboratory, France; Philippe Paillou, Bordeaux 1 University, France; Liang Chen, Jiancheng Shi, University of California, United States

WEP.H.8 **DERIVATION OF SURFACE SOIL MOISTURE USING MULTI-ANGLE ASAR DATA IN THE MIDDLE STREAM OF HEIHE RIVER BASIN**
Shuguo Wang, Xujun Han, Xin Li, Rui Jin, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China; Hui Lu, University of Tokyo, Japan

WEP.H.9 **IMPROVEMENT OF SOIL PARAMETER INVERSION RESULTS OF LS AND S BAND POLARIMETRIC IMAGES FROM EMSL DATA**
Qiang Yin, Wen Hong, Fang Cao, Institute of Electronics, Chinese Academy of Sciences, China

WEP.H.10 **INFERRING SOIL MOISTURE IN WEIHE BASIN WITH MODIS PRODUCT**
Wanchang Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences, China; Zhao-Yuan Tong, Nanjing University, China

WEP.H.12 **SOIL MOISTURE IMPACT ON LAB MEASURED REFLECTANCE OF BARE SOILS IN THE OPTICAL DOMAIN [0.4 - 15 µM]**
Audrey Lesaignoux, Sophie Fabre, Xavier Briottet, ONERA, France; Albert Olioso, INRA, France

WEP.I: Wednesday, July 15, 12:40 - 14:20

WEP.I **Soil Properties**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area I
Co-Chairs: H. M. van den Berg and Y. S. Rao

WEP.I.1 **ESTIMATING EVAPOTRANSPIRATION BY SATELLITE SENSORS OVER A HETEROGENEOUS LANDSCAPE**
Yani Liu, Xiaozhou Xin, Qinhuo Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.I.2 **APPLICATION OF TWO SHORTWAVE INFRARED WATER STRESS INDICES TO DROUGHT MONITORING OVER NORTHWESTERN CHINA**
Shaohua Zhao, Qiming Qin, Lin You, Yunjun Yao, Nan Yang, Peking University, China; Jianping Li, Ningxia Provincial Institute of Meteorology, China

WEP.I.7 **SPATIAL CLUSTER ANALYSIS OF HYDROLOGICAL DROUGHT INDICATOR IN AN OASIS ECOSYSTEM**
Meng-Lung Lin, Aletheia University, Taiwan; Chien-Min Chu, National Taiwan University, Taiwan

WEP.I.8 **MARKOV RANDOM FIELD MODEL-BASED SOIL MOISTURE CONTENT SEGMENTATION FROM MODIS SATELLITE DATA**
Ken-Chung Ho, Yu-Chang Tzeng, Chun-Long Woo, National United University, Taiwan

WEP.I.9 **COMPRISION STUDY ON MAPPING OF ET IN THE CIA OF MURRUMBIDGEE CATCHMENT WITH REMOTE SENSED SATELLITE DATA: EXAMPLES FROM NATIONAL AIRBORNE FIELD EXPERIMENTATION**
Kaishan Song, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China; Mohsin Hafeez, Charles Sturt University, Wagga Wagga, Australia; Jia Du, Dianwei Liu, Zongming Wang, Lihong Zeng, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China; Umair Rabbani, International Centre of Water for Food Security, Charles Sturt University, China

WEP.I.10 **DOWNSCALING OF SOIL MOISTURE RETRIEVED FROM MULTI-SENSOR REMOTE SENSING DATA OVER THE ZHANGHE IRRIGATION AREA, CHINA**
Dengzhong Zhao, Debao Tan, Sui Zhang, Changjiang River Scientific Research Institute, China

WEP.I.11 **SUBSURFACE MICROWAVE REMOTE SENSING AND SCATTERING MODELLING ON HYPER-SALINE SOIL: EXAMPLE OF LOP NUR**
Huaze Gong, Yun Shao, Aimin Cai, Chou Xie, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.I.12 **DETECTION OF SUBSURFACE HYPER-SALINE SOIL IN LOP NUR USING FULL-POLARIMETRIC SAR DATA**
Yun Shao, Huaze Gong, Chou Xie, Aimin Cai, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.J: Wednesday, July 15, 12:40 - 14:20

WEP.J **Vegetation Physiology and Biophysics**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area J
Co-Chairs: Kyle McDonald and Silvia Huber

WEP.J.1 **RELATIONSHIPS BETWEEN MICROCLIMATE, VEGETATION AND SOIL TEMPERATURES, AND INITIATION OF XYLEM SAP FLUX DURING SEASONAL THAW TRANSITIONS IN A BOREAL FOREST AND THEIR CHARACTERIZATION WITH RADAR REMOTE SENSING**
Kyle McDonald, Erika Podest, David Ganem, Jet Propulsion Lab, California Institute of Technology, United States; Reiner Zimmermann, University of Hohenheim, Germany

WEP.J.2 **INVESTIGATION ON THE WATER STRESS IN ALPINE VEGETATION USING HYPERSPECTRAL SENSORS**
Buho Hoshino, Rakuno Gakuen University, Japan; Gaku Kudo, Hokkaido University, Japan; Tetsuo Yabuki, Masami Kaneko, Rakuno Gakuen University, Japan; Sumiya Ganzorig, Hokkaido University, Japan

WEP.J.3 **A SIMPLIFIED PROCEDURE FOR A LARGE SCALE LAI INVERSION FROM HIGH RESOLUTION SATELLITE DATA**
Alemu Gonsamo, Petri Pellikka, University of Helsinki, Finland

WEP.J.4 **SPECTRAL-BASED DETECTION OF GANODERMA DISEASE INFECTION IN OIL PALM**
Helmi Zulhaidi Mohd Shafri, Mohd Rozni Mohd Yusof, Mohd Izzudin Anuar, Nasrulhapiza Hamdan, Afizzul Misman, Universiti Putra malaysia, Malaysia

WEP.J.5 **ANALYSING DROUGHT RELATED STRESS IN A SEMI-ARID ENVIRONMENT USING MSG-SEVIRI TIME SERIES ANALYSIS**
Silvia Huber, Rasmus Fensholt, Simon Proud, University of Copenhagen, Denmark; Cheikh Mbow, Université Cheikh Anta Diop de Dakar, Denmark

WEP.J.6 **RESEARCH ON THE POLARIZED CHARACTERISTIC OF LEAF**
Donghui Xie, Beijing Normal University, China; Peijuan Wang, Chinese Academy of Meteorological Sciences, China; Qijiang Zhu, Beijing Normal University, China

WEP.J.8 **REMOTE SENSING OF TRENTINO FOREST BIOPHYSICAL VARIABLES USING IRS SATELLITE DATA**
Loris Vescovo, Sergio Tonolli, Michele Dalponte, Markus Neteler, Fondazione Edmund Mach, CRI, Italy; Lorenzo Bruzzone, Dept. of Information Engineering and Computer Science, University of Trento, Italy; Damiano Gianelle, Fondazione Edmund Mach, CRI, Italy

WEP.J.9 **EVALUATION OF PADDY YIELD AND QUALITY ESTIMATION METHODS BASED ON VARIOUS VEGETATION INDICES, NDSI AND PLS USING BRDF-CORRECTED AIRBORNE HYPERSPECTRAL DATA**
Shinya Odagawa, Masatane Kato, Earth Remote Sensing Data Analysis Center, Japan; Tomoyuki Suhama, PASCO corporation, Japan; Jiro Sasaki, Miyagi Prefectural Furukawa Agricultural Experiment Station, Japan; Kuniaki Uto, Yukio Kosugi, Tokyo Institute of Technology, Japan; Genya Saito, Tohoku University, Japan

WEP.J.10 **RESPONSE OF VEGETATION COVERAGE ON CLIMATE CHANGE IN ARID MOUNTAIN OF NORTHWEST CHINA**
Lihua Zhou, Guojing Yang, Yongjian Ding, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

WEP.J.11 **ASSIMILATION OF FIELD MEASURED LAI INTO CROP GROWTH MODEL BASED ON SCE-UA OPTIMIZATION ALGORITHM**
Jianqiang Ren, Fushui Yu, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China; Yunyan Du, The State Key Laboratory of Resources and Environmental Information System, Institute of Geographic Science and Natural Resources Research, Chinese Academy of Sciences, China; Jun Qin, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China; Zhongxin Chen, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China

WEP.J.12 **IMAGING SYSTEM OF SOLOR-INDUCED PLANT FLUORESCENCE FOR MONITORING OF PLANT LIVING STATUS**
Hirokazu Tanaka, Yasunori Saito, Kazuki Kobayashi, Tomoaki Kanayama, Fumitoshi Kobayashi, Shinshu University, Japan

WEP.K: Wednesday, July 15, 12:40 - 14:20

WEP.K **Fire and Disturbance**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area K
Co-Chairs: Philip Lewis and Liana Anderson

WEP.K.1 **FUSION OF ALOS PALSAR AND LANDSAT ETM DATA FOR LAND COVER CLASSIFICATION AND BIOMASS MODELING USING NON LINEAR METHODS**
Arief Wijaya, Richard Gloaguen, Remote Sensing Group, TU Bergakademie, Germany

WEP.K.2 **SATELLITE MONITORING OF DISTURBANCES IN ARCTIC ECOSYSTEMS**
Ana Prieto-Blanco, Mathias Disney, Philip Lewis, José Gómez-Dans, University College London, United Kingdom; Sangram Ganguly, Boston University, United States

WEP.K.3 **MAPPING AND MONITORING CLEAR-CUTS IN SWEDISH FOREST USING ALOS PALSAR SATELLITE IMAGES**
Andreas Pantze, Anders H. Krantz, Johan E.S. Fransson, Håkan Olsson, Swedish University of Agricultural Sciences, Sweden; Maurizio Santoro, GAMMA Remote Sensing, Switzerland; Leif E.B. Eriksson, Lars M. H. Ulander, Chalmers University of Technology, Sweden

WEP.K.4 **BACKSCATTER PROPERTIES OF MULTITEMPORAL TERRASAR-X DATA AND THE EFFECTS OF INFLUENCING FACTORS ON BURN SEVERITY EVALUATION, IN A MEDITTERANEAN PINE FOREST**
Mihai Tanase, University of Zaragoza, Spain; Maurizio Santoro, Gamma Remote Sensing AG, Switzerland; Juan de la Riva, Fernando Perez-Cabello, University of Zaragoza, Spain

WEP.K.5 **ESTIMATION OF THE BURNED BIOMASS BASED ON THE QUASI-CONTINUOUS MSG/ SEVIRI EARTH OBSERVATION SYSTEM**
Giovanni Laneve, Giancarlo Santilli, Enrico Cadau, Sapienza Università di Roma, Italy

WEP.K.6 **FOREST TYPE DISCRIMINATION USING POLARIMETRIC RADARSAT 2 DATA**
Maosong Xu, Academy of Forestry Inventory, Planning and Designing, State Forestry Administration, China; Fengli Zhang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Zhongsheng Xia, Forest Resource Management and Conservation Station, China; Chou Xie, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Xiaofang Li, Institute of Remote Sensing Applications, Chinese Academy of sciences, China; Kun Li, Zi Wan, Huaze Gong, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Wei Tian, Institute of Remote Sensing Applications, Chinese Academy of sciences, China

WEP.K.7 **ASSESSMENT OF DUAL AND FULL POLARIMETRIC MODE OF PALSAR DATA FOR LAND USE OCCUPATION AND DEFORESTATION OVER EQUATORIAL REGIONS**
Cedric Lardeux, Calvin Dikongo Ndjomba, David Niamen, Pierre-Louis Frison, University Paris-Est Marne la vallée, France; Eric Pottier, University of Rennes 1, France; Jean-Paul Rudant, University Paris-Est Marne la vallée, France

WEP.K.8 **THE FOREST WATCH SERVICE: AUTOMATED FORESTRY GEOINFORMATION PRODUCTS FROM REMOTE SENSING IMAGERY**
Wolfgang Lück, CSIR / SAC, South Africa

WEP.K.9 **AN IMPROVED ALGORITHM OF WILD FIRE DETECTION FOR MODIS IMAGERY**
Koji Nakau, Haruyoshi Katayama, Yoshihiko Okamura, Masahiro Suganuma, Masataka Naitoh, Japan Aerospace Exploration Agency, Japan; Yoshio Tange, Earth Observation Research Center, Japan

WEP.K.10 **DEVELOPMENT AND VALIDATION OF A 7 YEAR, 500M DAILY BURNT AREA PRODUCT FOR THE BOREAL FORESTED ZONE**
Charles George, France Gerard, Centre for Ecology and Hydrology, United Kingdom

WEP.K.11 **AUTOMATED PROCESSING TECHNIQUES FOR THE GENERATION OF A NATIONAL FOREST PLANTATION MASK FOR 1972 USING HISTORIC HIGH RESOLUTION IMAGERY FROM CORONA, AERIAL PHOTOGRAPHY AND LANDSAT MSS.**
Wolfgang Lück, CSIR / SAC, South Africa

WEP.L: Wednesday, July 15, 12:40 - 14:20

WEP.L **Clouds and Precipitation**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area L
Co-Chairs: Luca Baldini and David Hudak

WEP.L.1 **GEOMETRIC CLOUD TOP HEIGHT ASSIGNMENT BY GEOSYNCHRONOUS METEOROLOGICAL SATELLITE IMAGES**
Feng Lu, Jianmin Xu, National Satellite Meteorological Center(NSMC), China; W. Paul Menzel, Christopher S. Velden, Cooperative Institute for Meteorological Satellite Studies (CIMSS), United States

WEP.L.2 **DETECTING V-STORMS USING METEOSAT SECOND GENERATION SEVIRI IMAGE AND ITS APPLICATIONS: A CASE STUDY OVER WESTERN TURKEY**
Aydin Gurol Erturk, Turkish State Meteorological Service, Turkey; Humberto Barbosa, Universidade Federal de Alagoas, Brazil

WEP.L.3 **DOMINANT CHARACTERISTICS OF SURFACE CLIMATE CHANGE OVER NW CHINA IN 1960-2006**
Pengxiang Wang, CMA Lanzhou Research Institute of Arid Meteorology & Gansu/CMA Key Laboratory for Arid Climate Change and Disaster Reduction, China

WEP.L.5 **UNCERTAINTIES IN PHASE AND FREQUENCY ESTIMATION WITH A MAGNETRON RADAR: IMPLICATION FOR CLEAR AIR AND PRECIPITATION MEASUREMENTS.**
Francesc Junyent, V. Chandrasekar, Nitin Bharadwaj, Colorado State University, United States

WEP.L.6 **THE CHANGE CHARACTERISTICS OF SANDSTORM IN GANSU PROVINCE AND ITS IMPACTS TO AGRICULTURE**
Landong Sun, CMA Lanzhou Research Institute of Arid Meteorology & Gansu/CMA Key Laboratory for Arid Climate Change and Disaster Reduction, China

WEP.L.7 **IMPACT OF CLIMATE CHANGE ON PRECIPITATION IN THE UPSTREAM OF LIUJIAXIA RESERVOIR**
Landong Sun, Jingjing Lin, CMA Lanzhou Research Institute of Arid Meteorology & Gansu/CMA Key Laboratory for Arid Climate Change and Disaster Reduction, China

WEP.L.8 **REMOTE SENSING OF CLOUD COVER IN THE HIGH ALTITUDE REGION FROM MTSAT-1R DATA DURING THE HEIHE EXPERIMENT**
Gaoli Su, Xiaozhou Xin, Qinhuo Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Binrong Zhou, Meteorological scientific research institute of Qinhai Province,, China

WEP.L.9 **THE DYNAMICS OF WATER DEPLETION AND GLOBAL WARMING**
Benjamin Uchenna Nwaneri, Lagos State University, Nigeria; Abigail Lartey, Alabama A&M University, United States; Faithful Ogadi Ugorji, Wisconsin International University, Nigeria; Sam O. Nwaneri, Alcorn State University, United States

WEP.L.11 **CLOUD AMOUNT AND AEROSOL CHARACTERISTIC RESEARCH IN THE ATMOSPHERE OVER HUBEI PROVINCE, CHINA**
Yingying Ma, Wei Gong, Zhongmin Zhu, Liangpei Zhang, Pingxiang Li, Wuhan University, China

WEP.M: Wednesday, July 15, 12:40 - 14:20

WEP.M **Monitoring of the Environment**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area M
Co-Chairs: Emmanuel Trouve and Jenny Du

WEP.M.2 **AN IMPROVED METHOD FOR MAPPING DEBRIS-COVERED GLACIERS WITH SATELLITE MULTISPECTRAL IMAGE DATA AND DIGITAL ELEVATION MODEL**
Xiaowen Zhang, Lanzhou Commercial College, China; Shiqiang Zhang, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

WEP.M.3 **A METHOD FOR COMPOSITING MODIS SATELLITE IMAGES TO REMOVE CLOUD COVER**
Alexander Fraser, Robert Massom, Kelvin Michael, University of Tasmania, Australia

WEP.M.5 **CLOUD MOTION ESTIMATION IN SEVIRI IMAGE SEQUENCES**
Javier Marcello, Francisco Eugenio, University of Las Palmas of Gran Canaria, Spain; Ferran Marques, Technical University of Catalonia, Spain

WEP.M.6 **DISTRIBUTED TARGETS DETECTION BASED ON LOCAL SPECTRAL HISTOGRAMS AND AGENTS**
Xichi Hu, Minhui Zhu, Institute of Electronics, Chinese Academy of Sciences, China

WEP.M.7 **A DATA-FUSION BASED SEMI-AUTOMATIC TREE COUNTING ALGORITHM FOR USE IN EUCALYPTUS GRANDIS PLANTATIONS**
Wesley Roberts, CSIR, South Africa; Fethi Ahmed, University of KwaZulu-Natal, South Africa; Jan van Aardt, Rochester Institute of Technology, United States

WEP.M.8 **AIRBORNE RADAR DEPTH SOUNDING OF FAST FLOWING GLACIERS**
Logan Smith, William Blake, Anthony Hoch, Jilu Li, Carl Leuschen, Sivaprasad Gogineni, Center for the Remote Sensing of Ice Sheets, United States

WEP.N: Wednesday, July 15, 12:40 - 14:20

WEP.N **Inverse Problems and Techniques**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area N
Co-Chairs: Andrea Massa and Mahta Moghaddam

WEP.N.1 **ACCURACY IMPROVEMENT OF MAXIMUM LIKELIHOOD INVERSION OF FOREST HEIGHTS WITH POLINSAR DATA**
Lulu Tan, Ruliang Yang, Weidong Yu, Institute of electronics, Chinese Academy of Sciences, China

WEP.N.3 **ESTIMATING LEAF AREA INDEX BY COUPLING RADIATIVE TRANSFER MODEL AND A DYNAMIC MODEL FROM MULTI-SOURCE REMOTE SENSING DATA**
Xiyan Wu, Zhiqiang Xiao, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by Beijing Normal University and Institute of Remote Sensing Applications, CAS, Research Center for Remote Sensing and GIS, School of Geography, Beijing Normal University, China

WEP.N.5 **MODIS AND LANDSAT ETM+ SCALING STUDY ON THE DAILY EVAPOTRANSPIRATION OVER HETEROGENEOUS LANDSCAPES**
Yani Liu, Xiaozhou Xin, Qinhuo Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.N.6 **ESTIMATING LAND SURFACE ENERGY AND WATER FLUXES BY USING THE LAND DATA ASSIMILATION SYSTEM DEVELOPED AT THE UNIVERSITY OF TOKYO (LDASUT)**
Hui Lu, Toshio Koike, The University of Tokyo, Japan; Kun Yang, The Institute of Tibet Plateau Research, China; Hiroyuki Tsutsui, Katsunori Tamagawa, The University of Tokyo, Japan

WEP.N.7 **LAND SURFACE TEMPERATURE RETRIEVAL FROM MODIS AND AMSR-E ON THE TIBET PLATEAU**
Liying Li, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China; Jiancheng Shi, Jinyang Du, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.N.8 **COMPARISON OF GAUSSIAN AND RAYLEIGH NOISE MODELS IN INVERSION OF SUBSURFACE PARAMETERS OF LAYERED ROUGH SURFACES USING SIMULATED ANNEALING**
Alireza Tabatabaeenejad, Mahta Moghaddam, University of Michigan, United States

WEP.N.9 **MODEL FREE GRAVIMETRIC DETECTION**
Hoyt Koepke, Marina Meila, University of Washington, United States

WEP.N.10 **AN ATMOSPHERIC CORRECTION METHOD FOR REMOTELY SENSED HYPERSPECTRAL THERMAL INFRARED DATA**
Xinhong Wang, Academy of Opto-electronics, Chinese Academy of Sciences, China; Xiaoying Ouyang, Zhao-Liang Li, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Xiaoguang Jiang, Lingling Ma, Academy of Opto-electronics, Chinese Academy of Sciences, China

WEP.N.11 **TARGET TRACKING ENHANCEMENT USING A KALMAN FILTER IN THE PRESENCE OF INTERFERENCE**
Sherif Elgamel, John Soraghan, University of Strathclyde, United Kingdom

WEP.N.12 **ISAR IMAGING FOR MULTIPLE MOVING TARGETS BASED ON RANGE PROFILE SEPARATION**
Yanan Li, 1. National University of Defense Technology 2. National University of Singapore, Singapore; Yaowen Fu, 1. National University of Defense Technology 2. McMaster University, Canada; Xiang Li, National University of Defense Technology, China; Le-Wei Li, National University of Singapore, Singapore

WEP.O: Wednesday, July 15, 12:40 - 14:20

WEP.O **Classification and Data Mining**
Session Type: Poster
Time: Wednesday, July 15, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area O
Co-Chairs: Surya Durbha and Farid Melgani

WEP.O.1 **A FUZZY FUSION ALGORITHM TO COMBINE MULTIPLE CLASSIFIERS**
Bor-Chen Kuo, Chih-Sheng Huang, National Taichung University, Taiwan; Hsiang-Chuan Liu, Asia University, Taiwan; Chih-Cheng Hung, Southern Polytechnic State University, United States

WEP.O.2 **SIMULATED ANNEALING TECHNIQUES IN CONTEXTUAL FUZZY C-MEANS APPROACH FOR SUB-PIXEL CLASSIFICATION**
Amitava Dutta, Anil Kumar, Indian Institute of Remote Sensing, India; Valentyn Tolpekin, ITC, Netherlands

WEP.O.3 **EFFICIENT INCORPORATION OF MARKOV RANDOM FIELDS IN CHANGE DETECTION**
Henrik Aanaes, Allan Aasbjerg Nielsen, Jens Michael Carstensen, Rasmus Larsen, Bjarne Ersbøll, Technical University of Denmark, Denmark

WEP.O.4 **ACTIVE LEARNING FOR CLASSIFICATION OF REMOTE SENSING IMAGES**
Lorenzo Bruzzone, Claudio Persello, University of Trento, Italy

WEP.O.5 **CLASSIFICATION OF A REFERENCE IMAGE USING AUXILIARY IMAGES**
Orlando Alves Máximo, Instituto de Estudos Avançados, Brazil; David Fernandes, Instituto Tecnológico de Aeronáutica, Brazil

WEP.O.6 **IDENTIFYING SOCIOECONOMIC PATERNS IN URBAN AREAS TROUGH FUZZY MODELING AND OBJECT ORIENTED IMAGE CLASSIFICATION**
Alexandre Evsukoff, Adriano Vasconcelos, Alexandre Carvalho, Carlos Beisl, COPPE/ UFRJ, Brazil

WEP.O.7 **FEASIBILITY OF ECO-ENVIRONMENTAL GRADIENT INFORMATION EXTRACTION WITH IMAGING SPECTROSCOPY IN KARST REGION, SOUTHWEST CHINA**
Yuemin Yue, Kelin Wang, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China; Bo Liu, State Key Lab of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Ru Li, Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong SAR of China; Quanjun Jiao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Yizun Yu, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China

WEP.O.8 **MULTIPLE TECHNIQUES FOR LUNAR SURFACE MINERALS MAPPING USING SIMULATED DATA**
Haixia He, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Bing Zhang, Zhengchao Chen, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Ru Li, Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong SAR of China

WEP.O.9 **A STUDY ON SPECTRAL CHARACTERISTICS EXTRACTION USING FOURIER APPROXIMATION THEORY**
Xu Sun, Bing Zhang, Lianru Gao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Lina Yang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

WEP.O.11 **SPATIAL HYPERSPECTRAL IMAGE CLASSIFICATION BY PRIOR SEGMENTATION**
Jef Driesen, Guy Thoonen, Paul Scheunders, University of Antwerp, Belgium

WE3.O1: Wednesday, July 15, 14:20 - 16:00

WE3.O1 **Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions I**

Session Type: Oral-Invited
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 2A
Co-Chairs: Wolfgang-Martin Boerner and Jacob van Zyl

14:20
WE3.O1.1 **THREE-COMPONENT DECOMPOSITION FOR POLARIMETRIC SAR**
Wentao An, Yi Cui, Jian Yang, Tsinghua University, China

14:40
WE3.O1.2 **STATISTICAL CHARACTERIZATION OF THE SINCLAIR MATRIX: APPLICATION TO POLARIMETRIC IMAGE SEGMENTATION**
Gregoire Mercier, Institut Telecom; Telecom Bretagne, France; Pierre-Louis Frison, Universite Paris-Est Marne-la-Vallée, France

15:00
WE3.O1.3 **WETLAND CHARACTERIZATION USING POLARIMETRIC L AND C-BAND ALOS AND RADARSAT-2**
Ridha Touzi, A.M. Demers, G. Gosselin, Canada Centre for Remote Sensing, Canada

15:20
WE3.O1.4 **ANALYSIS OF ASAR/ENVISAT POLARIMETRIC BACKSCATTERING CHARACTERISTICS OF DOÑANA NATIONAL PARK WETLANDS**
Belen Marti-Cardona, Carlos López-Martínez, Josep Dolz-Ripolles, Technical University of Catalonia (UPC), Spain

15:40
WE3.O1.5 **ADAPTIVE DECOMPOSITION OF POLARIMETRIC SAR COVARIANCE MATRICES**
Motofumi Arii, California Institute of Technology, United States; Jakob van Zyl, Yunjin Kim, Jet Propulsion Laboratory, United States

WE3.O2: Wednesday, July 15, 14:20 - 16:00

WE3.O2 **SAR Missions and Calibration**

Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 2D
Co-Chairs: Rolf Scheiber and Jordi J. Mallorqui

14:20
WE3.O2.1 **TERRASAR-X DUAL RECEIVE ANTENNA MODE - CHANNEL RECONSTRUCTION AND IMPACT ON THE GMTI PERFORMANCE -**
Martina Gabele, Benjamin Bräutigam, Daniel Schulze, Ulrich Steinbrecher, Nuria Tous-Ramon, Marwan Younis, German Aerospace Center (DLR), Germany

14:40
WE3.O2.2 **MULTI-PATH CORRECTION MODEL FOR MULTI-CHANNEL AIRBORNE SAR**
Muriel Pinheiro, Pau Prats, Rolf Scheiber, Jens Fischer, German Aerospace Center (DLR), Germany

15:00
WE3.O2.3 **FIRST EXPERIMENTAL RESULTS OF BISTATIC SAR WITH SABRINA-X AND TERRASAR**
Paco López-Dekker, Antoni Broquetas, Jordi J. Mallorquí, Juan C. Merlano, Sergi Duque, Mario Fortes, Xavier Costa, Jose A. Garcia-Molina, Universitat Politecnica de Catalunya, Spain

15:20
WE3.O2.4 **KA-BAND SAR INTERFEROMETRY STUDIES FOR THE SWOT MISSION**
Daniel Esteban-Fernandez, Lee-Lueng Fu, Ernesto Rodriguez, Richard Hodges, Shannon Brown, Jet Propulsion Laboratory, United States

15:40
WE3.O2.5 **DIGITAL BEAM-FORMING FOR SPACEBORNE REFLECTOR- AND PLANAR-ANTENNA -A SAR SYSTEM PERFORMANCE COMPARISON-**
Marwan Younis, Siguard Huber, Anton Patyuchenko, Federica Bordoni, Gerhard Krieger, German Aerospace Centre (DLR), Germany

WE3.O3: Wednesday, July 15, 14:20 - 16:00

WE3.O3 **Surface Salinity and Surface Processes**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Menzies M9
Co-Chairs: Christine Gommenginger and Gary Lagerloef

14:20
WE3.O3.1 **SEA SURFACE SALINITY RETRIEVAL DEMONSTRATION USING DATASETS OF SYNTHETIC APERTURE RADIOMETER HUT-2D**
Juha Kainulainen, Kimmo Rautiainen, Juha Lemmetyinen, Martti Hallikainen, Helsinki University of Technology, Finland; Fernando Martin-Porqueras, Manuel Martín-Neira, European Space Agency, Netherlands

14:40
WE3.O3.2 **AQUARIUS SATELLITE MISSION TO MAP SEA SURFACE SALINITY FROM SPACE**
Gary Lagerloef, Earth and Space Research, United States; David Le Vine, Gene Feldman, Goddard Space Flight Center, United States; Yi Chao, Simon Yueh, Jet Propulsion Laboratory, California Institute of Technology, United States; Frank Wentz, Remote Sensing System, United States

15:00
WE3.O3.3 **TOWARDS THE VALIDATION OF OCEAN SURFACE SALINITY MEASUREMENTS FROM THE ESA SMOS MISSION**
Christine Gommenginger, Meric Srokosz, Helen Snaith, National Oceanography Centre, Southampton, United Kingdom

15:20
WE3.O3.4 **EXPERIMENTAL RELATIONSHIP BETWEEN THE SEA BRIGHTNESS TEMPERATURE CHANGES AND THE GNSS-R DELAY-DOPPLER MAPS: PRELIMINARY RESULTS OF THE ALBATROSS FIELD EXPERIMENTS**
Enric Valencia, Juan Fernando Marchan-Hernandez, Adriano Camps, Nereida Rodriguez-Alvarez, José Miguel Tarongí, Maria Piles, Isaac Ramos-Perez, Xavier Bosch-Lluis, Mercè Vall-Llossera, Pau Ferré, Universitat Politecnica de Catalunya, Spain

15:40
WE3.O3.5 **MODELING L-BAND EMISSIVITY OF A WIND-DRIVEN SEA SURFACE**
Victor Raizer, Zel Technology, LLC, United States

WE3.O4: Wednesday, July 15, 14:20 - 16:00

WE3.O4 **Coastal and Wetlands Applications I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Menzies M10
Co-Chairs: Darren Skene and J. Gonzalez

14:20
WE3.O4.1 **EFFECTS OF CLIMATE CHANGE OVER THE NW AFRICAN COAST**
Javier Marcello, Alonso Hernandez-Guerra, Francisco Eugenio, University of Las Palmas of Gran Canaria, Spain

14:40
WE3.O4.2 **A STUDY OF RIVERBED DYNAMICS USING REMOTE SENSING: A 3D CASE STUDY OF RIVIÈRE DES GALETS, LA RÉUNION ISLAND**
Jaco Kemp, University of Réunion Island, R+®union; Nicolas Villeneuve, Institut de Recherche pour la Developpement, R+®union; Luc Chevallier, Council for Geoscience, South Africa; Zarah Servadio, Fabrice Jacquard, University of Réunion Island, R+®union

15:00
WE3.O4.3 **OBSERVING LITTORAL WAVES BY DOPPLER RADAR**
Stylianos Flampouris, Joerg Seemann, Friedwart Ziemer, GKSS Research Center, Germany

15:20
WE3.O4.4 **THE APPLICATION OF EARTH OBSERVATION SYSTEMS AND REAL-TIME WATER MONITORING FOR ENVIRONMENTAL SECURITY AND WATER RESOURCES MANAGEMENT**
Amir Ali Khan, Government of Newfoundland & Labrador, Canada; Thomas Puestow, C-CORE, Canada; Haseen Khan, Government of Newfoundland & Labrador, Canada

15:40
WE3.O4.5 **USING HF SURFACE WAVE RADAR AND THE SHIP AUTOMATIC IDENTIFICATION SYSTEM (AIS) TO MONITOR COASTAL VESSELS**
John Vesecky, Kip Laws, University of California at Santa Cruz, United States; Jeffery Paduan, Naval Postgraduate School, United States

WE3.O5: Wednesday, July 15, 14:20 - 16:00

WE3.O5 **Monitoring a Changing Continent with ALOS Sensors I**

Session Type: Oral-Invited
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 2B
Chair: Don Atwood

14:20
WE3.O5.1 **GEODETICALLY ACCURATE IMAGING OF POORLY MAPPED REGIONS USING MOTION-COMPENSATED ALOS DATA AND PRECISE ORBITS**
Howard Zebker, Stanford University, United States; Scott Hensley, Paul Rosen, JPL, United States

14:40
WE3.O5.2 **PALSAR CALVAL UPDATED 2009 AND CHANGE DETECTIONS AT THE FOREST AND THE POLAR REGIONS**
Masanobu Shimada, Osamu Isoguchi, Takeo Tadono, JAXA, Japan

15:00
WE3.O5.3 **HIGH RESOLUTION DSM GENERATION FROM ALOS PRISM - STATUS UPDATES ON OVER THREE YEAR OPERATIONS -**
Junichi Takaku, Remote Sensing Technology Center of Japan, Japan; Takeo Tadono, Japan Aerospace Exploration Agency, Japan

15:20
WE3.O5.4 **IMAGE QUALITY EVALUATION ON ALOS/ PRISM AND AVNIR-2 - LATEST EVALUATION RESULTS-**
Akira Mukaida, Naritoshi Imoto, Sachi Kawamoto, Remote Sensing Technology Center of Japan, Japan; Takeo Tadono, Japan Aerospace Exploration Agency, Japan

15:40
WE3.O5.5 **TIME TREND EVALUATIONS OF ABSOLUTE ACCURACIES FOR ALOS OPTICAL INSTRUMENTS**
Takeo Tadono, Masanobu Shimada, Hiroshi Murakami, Japan Aerospace Exploration Agency, Japan; Junichi Takaku, Sachi Kawamoto, Remote Sensing Technology Center of Japan, Japan

WE3.O6: Wednesday, July 15, 14:20 - 16:00

WE3.O6 **Data Mining and Machine Learning for Remote Sensing**

Session Type: Oral-Invited
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 2C
Co-Chairs: Surya Durbha and Ranga Raju Vatsavai

14:20
WE3.O6.1 **SEMI-SUPERVISED LEARNING AND DISCOVERY OF UNKNOWN STRUCTURES AMONG DATA: APPLICATION TO SATELLITE IMAGE ANNOTATION.**
Pierre Blanchart, Mihai Datcu, Ecole Nationale Supérieure des Télécommunications, France

14:40
WE3.O6.2 **GLIDER: A COMPREHENSIVE SOFTWARE TOOL TO VISUALIZE, ANALYZE AND MINE SATELLITE IMAGERY**
Rahul Ramachandran, University of Alabama in Huntsville, United States; Todd Berendes, University of Alabama Huntsville, United States

15:00
WE3.O6.3 **SOURCE DETECTION OF ATMOSPHERIC RELEASES USING SYMBOLIC MACHINE LEARNING CLASSIFICATION AND REMOTE SENSING**
Mark Bowman, Northrop-Grumman Information Technology and George Mason University, United States; Guido Cervone, Pasquale Franzese, George Mason University, United States

15:20
WE3.O6.4 **SENSOR WEB AND DATA MINING APPROACHES FOR HARMFUL ALGAL BLOOM DETECTION AND MONITORING IN THE GULF OF MEXICO REGION**
Balakrishna Gokaraju, Surya Durbha, Roger King, Nicolas Younan, Mississippi State University, United States

15:40
WE3.O6.5 **COMPARATIVE ANALYSIS OF DATA MINING APPROACHES IN REMOTE SENSING**
Ranga Raju Vatsavai, Budhendra Bhaduri, Oak Ridge National Laboratory, United States

WE3.O7: Wednesday, July 15, 14:20 - 16:00

WE3.O7 **Modeling and Applications of Active and Passive Ocean Sensing**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 3A
Co-Chairs: Paul Chang and Zorana Jelenek

14:20
WE3.O7.1 **SIMULATION AND OPTIMIZATION OF THE PERFORMANCE OF SPACE-BORNE RADAR OCEAN WAVE SPECTROMETER**
Wenming Lin, Xiaolong Dong, Yuchi Zhou, Heguang Liu, Jingshan Jiang, Center for Space Science and Applied Research, Chinese Academy of Sciences, China

14:40
WE3.O7.2 **POLARIMETRIC ANALYSIS OF THE DEPENDENCY OF BACKSCATTERING FROM OCEAN SURFACE ON WIND DIRECTION**
Akitsugu Nadai, Toshihiko Umehara, Takeshi Matsuoka, Seiho Uratsuka, Tatsuharu Kobayashi, Makoto Satake, National Institute of Information and Communications Technology, Japan

15:00
WE3.O7.3 **THE DEVELOPMENT OF A C-BAND ADVANCED SCATTEROMETER (ASCAT) GEOPHYSICAL MODEL FUNCTION AT NOAA/NESDIS**
Seubson Soisuvarn, NOAA/NESDIS-UCAR, United States; Zorana Jelenak, Paul Chang, Qi Zhu, NOAA/NESDIS, United States

15:20
WE3.O7.4 **UNCERTAINTY IN SCATTEROMETER DERIVED VORTICITY**
Mark Bourassa, Florida State University, United States

15:40
WE3.O7.5 **VELOCITY ESTIMATION OF MOVING TARGETS ON THE SEA SURFACE BY AZIMUTH DIFFERENTIALS OF SIMULATED-SAR IMAGE**
Youn-Seop Kim, Chan-Su Yang, Korea Ocean Research & Development Institute, Republic of Korea; Kazuo Ouchi, National Defecse Academy, Japan

WE3.O8: Wednesday, July 15, 14:20 - 16:00

WE3.O8 **Classification of Hyperspectral Data**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 3B
Co-Chairs: Anita Simic and Jocelyn Chanussot

14:20
WE3.O8.1 **RESOLUTION ENHANCEMENT OF HYPERSPECTRAL IMAGES USING A LEARNING-BASED SUPERRESOLUTION MAPPING TECHNIQUE**
Fereidoun A. Mianji, Ye Zhang, Yanfeng Gu, Harbin Institute of Technology, China

14:40
WE3.O8.2 **SEMI-SUPERVISED HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON A MARKOV RANDOM FIELD AND SPARSE MULTINOMIAL LOGISTIC REGRESSION**
Jun Li, José Bioucas-Dias, Instituto Superior Técnico, Portugal; Antonio Plaza, University of Extremadura, Spain

15:00
WE3.O8.3 **MULTISPECTRAL DATA CLASSIFICATION BASED ON SPECTRAL INDICES AND CASCADED FUZZY C-MEAN CLASSIFIERS**
Mohamed Jabloun, Cosmin Mihai, Iris Vanhamel, Thomas Geerinck, Hichem Sahli, Vrije Universiteit Brussel, Belgium

15:20
WE3.O8.4 **UTILIZATION OF LOCAL AND GLOBAL HYPERSPECTRAL FEATURES VIA WAVELET PACKETS AND MULTICLASSIFIERS FOR ROBUST TARGET RECOGNITION**
Terrance West, Lori Bruce, Saurabh Prasad, Mississippi State University, United States

15:40
WE3.O8.5 **NONLINEAR MIXTURE ANALYSIS FOR HYPERSPECTRAL IMAGERY**
Nareenart Raksuntorn, Qian Du, Mississippi State University, United States

WE3.O9: Wednesday, July 15, 14:20 - 16:00

WE3.O9 **Clouds: Measurements, Analysis and Technology I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 1A
Co-Chairs: Mengitsu Wolde and Tetsuya Tagawa

14:20
WE3.O9.1 **WEATHER HAZARD INTERPRETATION AND NOWCAST BY RADAR**
Clementine Costes, Jean-Paul Artis, Thales Airborne Systems, France; Rene Garello, Gregoire Mercier, TELECOM Bretagne, France

14:40
WE3.O9.2 **SCALE DECOMPOSITION OF PRECIPITATION PATTERNS AND NOWCASTING IN A HIGH-RESOLUTION X-BAND RADAR NETWORK**
Evan Ruzanski, Yanting Wang, V. Chandrasekar, Colorado State University, United States

15:00
WE3.O9.3 **SALIENT FEATURES OF THE RADAR NODES IN THE PUERTO RICO TROPICAL WEATHER TESTBED**
Miguel B. Galvez, Colorado State University, United States; Jose G. Colom, University of Puerto Rico at Mayaguez, Puerto Rico; V. Chandrasekar, Francesc Junyent, Colorado State University, United States; Sandra Cruz-Pol, Rafael Rodriguez, University of Puerto Rico at Mayaguez, Puerto Rico

15:20
WE3.O9.4 **INFERENCE ON GIBBS OPTIC-FLOW PRIOR: APPLICATION TO ATMOSPHERIC TURBULENCE CHARACTERIZATION**
Patrick Heas, Etienne Mémin, INRIA, France

15:40
WE3.O9.5 **RETRIEVING CLOUD OPTICAL DEPTH AND ICE PARTICLE SIZE USING THERMAL AND FAR IR RADIOMETRY IN AN ARCTIC ENVIRONMENT**
Yann Blanchard, Alain Royer, Norm O'Neill, CARTEL, Canada; Jean-Pierre Blanchet, UQAM, Canada

WE3.O10: Wednesday, July 15, 14:20 - 16:00

WE3.O10 **Optical Sensors Technologies**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 1B
Co-Chairs: Haruhisa Shimoda and Christopher MacLellan

14:20
WE3.O10.1 **INNOVATIVE FOCAL PLANES IN SUBMILLIMETER WAVE RADIOMETERS FOR ATMOSPHERIC CHEMISTRY STUDY AND ICE CLOUDS OBSERVATION**
Carine Bredin, EADS ASTRIUM France, France; Thierry Amiot, CNES, France; Nardjisse Mohamed, Laurent Costes, Jean-Marc Goutoule, EADS ASTRIUM France, France

14:40
WE3.O10.2 **EXPOSURE ADJUSTMENT OF SATELLITE CAMERAS**
Qiong Ran, Yaobin Chi, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Zhiyong Wang, Beijing Landview Mapping Information Technology Co. Ltd., China; Lianru Gao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

15:00
WE3.O10.3 **COMPARISONS OF IN-ORBIT RADIOMETRIC CALIBRATION RESULTS BETWEEN THE FIELD MEASUREMENT AND THE ONBOARD BLACKBODY METHODS OF FY-3A VIRR SPLIT-WINDOW CHANNELS**
Yong Zhang, NSMC.CMA, China; Yuan Li, Liyang Zhang, Xiuqing Hu, Zhiguo Rong, NSMC,CMA, China

15:20
WE3.O10.4 **HIGH PERFORMANCE DUAL FIELD OF VIEW SPECTRORADIOMETER WITH NOVEL INPUT OPTICS FOR, AUTONOMOUS REFLECTANCE MEASUREMENTS OVER AN EXTENDED SPECTRAL RANGE**
Christopher J. MacLellan, Natural Environment Research Council Field Spectroscopy Facility, United Kingdom; Timothy J. Malthus, University of Edinburgh, United Kingdom

15:40
WE3.O10.5 **HJ-1A THERMAL INFRARED BAND CROSS-CALIBRATION AND VALIDATION**
Jiaguo Li, Graduate University of Chinese Academy of Sciences, China; Xingfa Gu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Li Zhu, China Environmental Monitoring Centre, China; Tao Yu, Xiaoying Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Yuxiang Zhang, Chinese National Satellite Meteorological Center, China; Hailiang Gao, Hui Gong, Graduate University of Chinese Academy of Sciences, China

WE3.O11: Wednesday, July 15, 14:20 - 16:00

WE3.O11 **Soil Moisture Active Passive (SMAP) Mission**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 1C
Co-Chairs: Jasmeet Judge and Alicia Joseph

14:20
WE3.O11.1 **HIGH RESOLUTION MAPPING OF SOIL MOISTURE WITH SMAP RADAR AND RADIOMETER IN SUPPORT OF NEW APPROACHES TO WATER CYCLE SCIENCE AND APPLICATIONS**
Dara Entekhabi, MIT, United States; Eni Njoku, NASA JPL, United States; Peggy O'Neill, NASA GSFC, United States; Wade Crow, USDA ARS, United States; Thomas Jackson, NASA GSFC, United States; Joel Johnson, Ohio State University, United States; John Kimball, University of Montana, United States; Randy Koster, NASA GSFC, United States; Kyle McDonald, NASA JPL, United States; Mahta Moghaddam, University of Michigan, United States; Susan Moran, USDA ARS, United States; Rolf Reichle, NASA GSFC, United States; Jiancheng Shi, University of California, Santa Barbara, United States; Leung Tsang, University of Washington, United States; Jakob van Zyl, NASA JPL, United States; Jared Entin, NASA Headquarters, United States; Kent Kellogg, NASA JPL, United States

14:40
WE3.O11.2 **ALGORITHM DEVELOPMENT USING THE SMAP ALGORITHM TESTBED**
Steven Chan, Scott Dunbar, Andreas Colliander, Eni Njoku, Jet Propulsion Laboratory, United States; Dara Entekhabi, Massachusetts Institute of Technologyy, United States

15:00
WE3.O11.3 **SMAPVEX08 : SOIL MOISTURE ACTIVE PASSIVE VALIDATION EXPERIMENT 2008**
Thomas Jackson, Michael Cosh, Rajat Bindlish, USDA Agricultural Research Service, United States; Simon Yueh, Steve Dinardo, Jet Propulsion Lab, United States; C. Laymon, NASA Marshall Space Flight Center, United States; Peggy O'Neill, Jeffrey Piepmeier, Rafael Rincon, NASA Goddard Space Flight Center, United States

15:20
WE3.O11.4 **HOW WILL DEW ON VEGETATION AFFECT SMAP? A CASE STUDY IN THE AGRICULTURAL MIDWEST OF THE UNITED STATES**
Brian Hornbuckle, Tracy Rowlandson, Iowa State University, United States; Anton Kruger, Bill Eichinger, University of Iowa, United States; Tom Sauer, USDA Agricultural Research Service, United States; Amy Kaleita, Iowa State University, United States; Sally Logsdon, USDA Agricultural Research Service, United States; Witold F. Krajewski, University of Iowa, United States; Simon Yueh, Steve Dinardo, NASA, United States

15:40
WE3.O11.5 **SOIL MOISTURE AND VEGETATION HEIGHT RETRIEVAL USING GNSS-R TECHNIQUES**
Nereida Rodriguez-Alvarez, Alessandra Monerris, Xavier Bosch-Lluis, Adriano Camps, Mercè Vall-Llossera, Juan Fernando Marchan-Hernandez, Isaac Ramos-Perez, Enric Valencia, Politechnical University of Catalonia (UPC), Spain; Jose Martínez-Fernández, Nilda Sanchez-Martin, Guido Baroncini-Turricchia, Carlos Perez-Gutierrez, CIALE, University of Salamanca, Spain

WE3.O12: Wednesday, July 15, 14:20 - 16:00

WE3.O12 **Urban Remote Sensing I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 1D
Chair: Florence Tupin

14:20
WE3.O12.1 **ESTIMATING URBAN IMPERVIOUS SURFACES BY LINEAR SPECTRAL MIXTURE ANALYSIS**
Jing Jin, Bin Wang, Liming Zhang, Fudan University, China

14:40
WE3.O12.2 **COMBINING SAR AND OPTICAL FEATURES IN A SVM CLASSIFIER FOR MAN-MADE STRUCTURES DETECTION**
Gabrielle Lehureau, Marine Campedel, Florence Tupin, Telecom-ParisTech, France; Céline Tison, CNES, France; Guillaume Oller, Magellium, France

15:00
WE3.O12.3 **URBAN MORPHOLOGY RETRIEVAL BY MEANS OF REMOTE SENSING FOR THE MODELLING OF ATMOSPHERIC DISPERSION AND MICRO-METEOROLOGY**
Pauli Sievinen, Jaan Praks, Helsinki University of Technology, Finland; Jarkko Koskinen, Finnish Meteorological Institute, Finland; Martti Hallikainen, Helsinki University of Technology, Finland; Jaakko Kukkonen, Antti Hellsten, Finnish Meteorological Institute, Finland

15:20
WE3.O12.4 **MODELING OF IMPERVIOUS SURFACE IN GEMRANY USING LANDSAT IMAGES AND TOPOGRAPHIC VECTOR DATA**
Thomas Esch, German Aerospace Center (DLR), Germany; Doris Klein, Vitus Himmler, University of Wuerzburg, Germany; Manfred Keil, Harald Mehl, Stefan Dech, German Aerospace Center (DLR), Germany

15:40
WE3.O12.5 **DATASET FUSION AND ALGORITHM INTEGRATION IN THE CHARACTERIZATION OF URBAN SPRAWL ALONG TRUNK TRANSPORT CORRIDORS IN THE GAUTENG GLOBAL CITY REGION**
Brian Mubiwa, Harold Annegarn, University of Johannesburg, South Africa; Philip Goyns, Institute of Energy Economics Rational Use of Energy (IER), University of Stuttgart, South Africa; Mathetha Mokonyama, CSIR, South Africa

WE3.O13: Wednesday, July 15, 14:20 - 16:00

WE3.O13 **The Contribution of Remote Sensing Towards Sustainable Mining Development Practices I**

Session Type: Oral-Invited
Time: Wednesday, July 15, 14:20 - 16:00
Place: Leslie 1E
Chair: Cindy Ong

14:20
WE3.O13.1 **EXPERIENCES OF COAL FIRE DETECTION AND QUANTIFICATION FOR RESOURCES MANAGEMENT**
Christian Fischer, German Aerospace Center, Germany; Stefan Schloemer, Federal Institute for Geosciences and Natural Resources, Germany; Andreas Hirner, German Aerospace Center, Germany; Manfred Teschner, Federal Institute for Geosciences and Natural Resources, Germany

14:40
WE3.O13.2 **THE CONTRIBUTION OF REMOTE SENSING TO SUSTAINABLE MINING DEVELOPMENT IN SOUTH AFRICA**
Fatima Ferraz, Anglo America, South Africa

15:00
WE3.O13.3 **VERY HIGH SPATIAL AND SPECTRAL RESOLUTION REMOTE SENSING IN MINING-RELATED ENVIRONMENTAL ASSESSMENT OF THE WITWATERSRAND GOLD FIELD**
Stephane Chevrel, BRGM, France; Henk Coetzee, Council for Geoscience, South Africa; Anne Bourguignon, Francis Cotterd, BRGM, France

15:20
WE3.O13.4 **FIELD SPECTRORADIOMETRY AND ASTER IMAGERY PROCESSING FOR DETECTION AND MAPPING OF AMD-GENERATING MATERIAL OVER THE LIGNITE OPENCAST MINE OF SOKOLOV, CZECH REPUBLIC**
Stephane Chevrel, Anne Bourguignon, BRGM, France; Veronika Kopackova, Czech Geological Survey, Czech Republic; Petr Rojik, Sokolovska Uhelna a. s., Czech Republic

15:40
WE3.O13.5 **CAN SPATIAL DISTRIBUTION AND CANOPY SPECTRAL REFLECTANCES OF A PHREATOPHYTE TREE (RHUS LANCEA) BE USED TO IDENTIFY DEVELOPING SINKHOLES AND ACID ROCK DRAINAGE IN A DOLOMITIC GRASSLAND?**
Joseph Chauke, Isabel Weiersbye, University of the Witwatersrand, Johannesburg, South Africa; Robi Stark, Nir Margalit, Elbit Systems Electro-Optics Elop, Israel; Henk Nel, AngloGold Ashanti Ltd, South Africa; Tal Feingersh, Gil Revivo, Yoav Zur, Ofer Braun, Elbit Systems Electro-Optics Elop, Israel

WE4.O1: Wednesday, July 15, 16:20 - 18:00

WE4.O1 **Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions II**

Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 2A
Co-Chairs: Jacob van Zyl and Wolfgang-Martin Boerner

16:20
WE4.O1.1 **POLARIMETRIC SCATTERING FEATURE ESTIMATION FOR ACCURATE VEGETATION AREA CLASSIFICATION**
Ryoichi Sato, Yoshio Yamaguchi, Hiroyoshi Yamada, Niigata University, Japan

16:40
WE4.O1.2 **CLASSIFICATION OF POLARIMETRIC SAR DATA OVER ARID AND WET REGIONS OF INDIA**
Subrahmanyeswara Rao Yalamanchili, Varsha Tukar, Gopalan Venkataraman, IIT Bombay, India

17:00
WE4.O1.3 **INVESTIGATION OF MULTIPLE FREQUENCY POLARIMETRIC SAR SIGNAL BACKSCATTERING FROM TIDAL FLATS**
Duk-Jin Kim, Seoul National University, Republic of Korea; Sang-Eun Park, University of Rennes1, France; Hyo-Sung Lee, Sunchon National University, Republic of Korea; Wooil M. Moon, University of Manitoba, Canada

17:20
WE4.O1.4 **MULTIBAND RADAR FOR MAPPING INUNDATION PATTERNS IN SEMI-ARID WETLAND ENVIRONMENTS;MACQUARIE MARSHES, NEW SOUTH WALES**
Anthony Milne, University of New South Wales, Australia; Ian Tapley, Horizon Geoscience Consulting, Australia; Anthea Mitchell, University of New South Wales, Australia

17:40
WE4.O1.5 **RECENT ADVANCES OF POL-SAR, POL-IN-SAR & RP-POL-IN-SAR IMAGERY FOR REMOTE SENSING OF WET AND ARID VEGETATED REGIONS**
Wolfgang-Martin Boerner, University of Illinois at Chicago, United States

WE4.O2: Wednesday, July 15, 16:20 - 18:00

WE4.O2 **High Resolution InSAR with Emphasis on Complex Scattering Scenarios**

Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 2D
Co-Chairs: Richard Bamler and Gianfranco Fornaro

16:20
WE4.O2.1 **EXPLOITATION OF DISTRIBUTED SCATTERERS IN INTERFEROMETRIC DATA-STACKS**
Alessandro Ferretti, Alfio Fumagalli, Fabrizio Novali, Tele-Rilevamento Europa - T.R.E., Italy; Claudio Prati, Fabio Rocca, Alessio Rucci, Politecnico di Milano, Italy

16:40
WE4.O2.2 **TECHNIQUES AND EXAMPLES FOR THE 3D RECONSTRUCTION OF COMPLEX SCATTERING SITUATIONS USING TERRASAR-X**
Nico Adam, DLR Oberpfaffenhofen, Germany; Xiaoxiang Zhu, Technische Universität München, Germany; Christian Minet, DLR Oberpfaffenhofen, Germany; Werner Liebhart, Technische Universität München, Germany; Michael Eineder, Richard Bamler, DLR Oberpfaffenhofen, Germany

17:00
WE4.O2.3 **SAR TOMOGRAPHY FOR IMAGING AND MONITORING COMPLEX TARGETS**
Gianfranco Fornaro, National Research Council (CNR), Italy; Diego Reale, University of Naples, Italy; Francesco Serafino, National Research Council (CNR), Italy

17:20
WE4.O2.4 **METHOD OF PERSISTENT SCATTERER PAIRS (PSP) AND HIGH RESOLUTION SAR INTERFEROMETRY**
Mario Costantini, Salvatore Falco, Fabio Malvarosa, Federico Minati, Francesco Trillo, Telespazio S.p.A., Italy

17:40
WE4.O2.5 **MULTIPLE SCATTERERS IDENTIFICATION IN COMPLEX SCENARIOS WITH ADAPTIVE DIFFERENTIAL TOMOGRAPHY**
Fabrizio Lombardini, Matteo Pardini, University of Pisa, Italy

WE4.O3: Wednesday, July 15, 16:20 - 18:00

WE4.O3 **Monitoring of Soil Moisture and Vegetation Biomass on a Global Scale by Using Microwave Sensors**

Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Menzies M9
Chair: Simonetta Paloscia

16:20
WE4.O3.1 **GLOBAL MONITORING OF HYDROLOGICAL PARAMETERS IN AFRICA BY USING BOTH ACTIVE AND PASSIVE MICROWAVE SENSORS**
Simonetta Paloscia, Paolo Pampaloni, Simone Pettinato, Emanuele Santi, Francesco Conti, Sara De Santis, CNR-IFAC, Italy

16:40
WE4.O3.2 **A METHOD FOR DERIVING LAND SURFACE MOISTURE, VEGETATION OPTICAL DEPTH, AND OPEN WATER FRACTION FROM AMSR-E**
Lucas Jones, John Kimball, University of Montana, United States; Kyle McDonald, Steven Chan, Eni Njoku, California Institute of Technology, United States

17:00
WE4.O3.3 **MONITORING RAIN AND FLOODING EVENTS IN DE LA PLATA BASIN USING AMSR-E SIGNATURES**
P. Ferrazzoli, Rahmoune R., Tor Vergata University, Italy; F. Grings, M. Salvia, M. Barber, H. Karszembaum, IAFE, Argentina; A. Soldano, D. Goniaski, Instituto Nacional del Agua, Argentina; G. Parmuchi, C. Montenegro, Secretaría de Ambiente y Desarrollo Sustentable, Argentina; P. Kandus, M. Borro, Universidad de Buenos Aires, Argentina

17:20
WE4.O3.4 **ON THE ABILITY OF THE ERS SCATTEROMETER TO DETECT VEGETATION PROPERTIES**
Marcela Doubkova, Vahid Naeimi, Wolfgang Wagner, Vienna University of Technology, Austria; Geoffrey Henebry, Geographic Information Science Center of Excellence (GIScCE), United States

17:40
WE4.O3.5 **A STUDY ON ESTIMATION OF ABOVEGROUND WET BIOMASS BASED ON THE MICROWAVE VEGETATION INDICES**
Linna Chai, Beijing Normal University, China; Jiancheng Shi, University of California, Santa Barbara, United States; Jinyang Du, Institute for Remote Sensing Applications, CAS, China; Jing Tao, Beijing Normal University, China; Thomas Jackson, USDA ARS Hydrology and Remote Sensing Lab, United States; Peggy O'Neill, NASA Goddard Space Flight Center, United States; Lixin Zhang, Ying Qu, J. D. Wang, Beijing Normal University, China

WE4.O4: Wednesday, July 15, 16:20 - 18:00

WE4.O4 **Remote Sensing Assessment of Vegetation State and Land Degradation**

Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Menzies M10
Co-Chairs: Susan Ringrose and Melanie Vogel

16:20
WE4.O4.1 **LANDCOVER CHANGES ALONG THE BOTETI RIVER, BOTSWANA**
Elmar Schuran, Cornelis Vanderpost, Ronald Motsholapheko, Susan Ringrose, Harry Oppenheimer Okavango Research Centre, Botswana

16:40
WE4.O4.2 **A SPATIAL TEMPORAL ANALYSIS OF WETLAND LOSSES IN THE LAGOS COASTAL REGION, SOUTHWESTERN NIGERIA, USING MULTI-DATE SATELLITE IMAGERY**
Olalekan John Taiwo, University of Ibadan, Nigeria; Olusegun Areola, University of Botswana, Botswana

17:00
WE4.O4.3 **MONITORING OF SAVANNA DEGRADATION IN NAMIBIA USING LANDSAT TM/ETM+ DATA**
Melanie Vogel, Council for Scientific and Industrial Research, South Africa; Marianne Strohbach, University of Pretoria, South Africa

17:20
WE4.O4.4 **FIRE, WEALTH AND ACCESS TO WETLAND RESOURCES IN THE PANHANDLE OF BOTSWANA'S OKAVANGO DELTA**
Lin Cassidy, Harry Oppenheimer Okavango Research Centre, Botswana

17:40
WE4.O4.5 **FOREST VEGETATION MONITORING AND RUNOFF IN WATER SUPPLY CATCHMENTS AFFECTED BY DRYING CLIMATE**
Jeremy Wallace, Ming Li, Anthony Traylen, CSIRO Mathematical and Information Sciences, Australia

WE4.O5: Wednesday, July 15, 16:20 - 18:00

WE4.O5 **Monitoring a Changing Continent with ALOS Sensors II**

Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 2B
Chair: Don Atwood

16:20
WE4.O5.1 **A PRELIMINARY STUDY ON DEFORESTATION MONITORING IN SUMATRA ISLAND BY PALSAR**
Osamu Isoguchi, Masanobu Shimada, Japan Aerospace Exploration Agency, Japan; Yumiko Uryu, WWF, Japan

16:40
WE4.O5.2 **MONITORING DECADAL LAND CHANGE BY COMPARING JERS-1 AND ALOS PALSAR L-BAND SAR**
Don Atwood, Rudi Gens, Geophysical Institute-University of Alaska Fairbanks, United States

17:00
WE4.O5.3 **AN ASSESSMENT OF ALOS L-BAND POLARIMETRY FOR LAND-USE MONITORING IN MALAWI**
Shane Cloude, Parivash Lumsdon, AEL Consultants, United Kingdom; Gemma F. Cassells, Iain Woodhouse, University of Edinburgh, United Kingdom; Mavuto Tembo, University of Mzuzu, Malawi

17:20
WE4.O5.4 **DECADAL CHANGE IN NORTHERN WETLANDS BASED ON DIFFERENTIAL ANALYSIS OF JERS AND PALSAR DATA**
Jane Whitcomb, Mahta Moghaddam, University of Michigan, United States; Kyle McDonald, Erika Podest, Bruce Chapman, Jet Propulsion Laboratory, United States

17:40
WE4.O5.5 **ALOS PALSAR IMAGE MOSAICS OF NORTH AND SOUTH AMERICA: AN IMAGE LAYER FOR WETLANDS MAPPING**
Bruce Chapman, Kyle McDonald, Jet Propulsion Laboratory, California Institute of Technology, United States; Laura Hess, UCSB, United States; Mahta Moghaddam, Jane Whitcomb, U. Michigan, United States

WE4.O6: Wednesday, July 15, 16:20 - 18:00

WE4.O6 **Advanced Methods for Polarimetric Signal Processing**
Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 2C
Co-Chairs: Laurent Ferro-Famil and Eric Pottier

16:20
WE4.O6.1 **MODEL-BASED STATISTICAL ANALYSIS OF POLSAR DATA**
Torbjørn Eltoft, Anthony Doulgeris, Stian Anfinsen, University of Tromsø, Norway

16:40
WE4.O6.2 **POLSAR AND POLINSAR MODEL BASED INFORMATION ESTIMATION**
Carlos López-Martínez, Xavier Fàbregas, Luca Pipia, Universitat Politècnica de Catalunya UPC, Spain

17:00
WE4.O6.3 **ESTIMATION AND SEGMENTATION IN NON-GAUSSIAN POLSAR CLUTTER BY SIRV STOCHASTIC PROCESSES**
Gabriel Vasile, Grenoble-Image-sPeech-Signal-Automatics Lab / CNRS, France; Jean-Philippe Ovarlez, French Aerospace Lab, France; Frédéric Pascal, SONDRA, France

17:20
WE4.O6.4 **AN ALGEBRAIC APPROACH TO GROUND-VOLUME DECOMPOSITION FROM MULTI-BASELINE POLINSAR DATA**
Stefano Tebaldini, Politecnico di Milano, Italy

17:40
WE4.O6.5 **MULTI-BASELINE POL-INSAR STATISTICAL TECHNIQUES FOR THE CHARACTERIZATION OF DISTRIBUTED MEDIA**
Laurent Ferro-Famil, Maxim Neumann, Yue Huang, University of Rennes 1, France

WE4.O7: Wednesday, July 15, 16:20 - 18:00

WE4.O7 **Image Classification**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 3A
Co-Chairs: Kun-Shan Chen and Gregoire Mercier

16:20
WE4.O7.1 **SEMI-AUTOMATIC CLASSIFICATION PROCEDURE FOR UPDATING LANDUSE MAPS WITH HIGH RESOLUTION OPTICAL IMAGES**
Claudia Notarnicola, EURAC, Italy; Annett Frick, LUP - LUFTBILD UMWELT PLANUNG, Germany; Steve Kass, Philipp Rastner, Giuseppe Pulighe, Marc Zebisch, EURAC, Italy

16:40
WE4.O7.2 **K-WAY TREE CLASSIFICATION BASED ON SEMI-GREEDY STRUCTURE APPLIED TO MULTISOURCE REMOTE SENSING IMAGES**
Yang-Lang Chang, National Taipei University of Technology, Taiwan; Zhi-Ming Chen, Hsuan Ren, National Central University, Taiwan; Jyh-Perng Fang, Wen-Yew Liang, Tung-Ju Hsieh, National Taipei University of Technology, Taiwan; Kun-Shan Chen, National Central University, Taiwan

17:00
WE4.O7.3 **WAVELET SHRINKAGE DENOISING OF INTRINSIC MODE FUNCTIONS OF HYPERSPECTRAL IMAGE BANDS FOR CLASSIFICATION WITH HIGH ACCURACY**
Begüm Demir, Sarp Ertürk, Kemal Güllü, Kocaeli University, Turkey

17:20
WE4.O7.4 **SEMI-SUPERVISED LEARNING FOR CLASSIFICATION OF POLARIMETRIC SAR-DATA**
Ronny Hänsch, Olaf Hellwich, Berlin University of Technology, Germany

17:40
WE4.O7.5 **AN END-TO-END ERROR MODEL FOR CLASSIFICATION METHODS BASED ON A SAR INTENSITY RATIO**
Alexandre Bouvet, Le Toan Thuy, CESBIO, France

WE4.O8: Wednesday, July 15, 16:20 - 18:00

WE4.O8 **Pansharpening and Resolution enhancement**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 3B
Co-Chairs: Luciano Alparone and Du Jenny

16:20
WE4.O8.1 **A COMBINED HYPERSPECTRAL IMAGE RESTORATION AND FUSION APPROACH**
Yifan Zhang, Arno Duijster, Paul Scheunders, University of Antwerp, Belgium

16:40
WE4.O8.2 **NON-HOMOGENEOUS AR MODEL BASED PRIOR FOR MULTIRESOLUTION FUSION**
Krishna Rudraraju, Manjunath Joshi, Dhirubhai Ambani Institute of Information & Communication Technology, India

17:00
WE4.O8.3 **SUPERRESOLUTION ENHANCEMENT FOR TEMPORAL HYPERSPECTRAL-ORIENTED DATA SETS**
Jonathan Cheung-Wai Chan, Jianglin Ma, Frank Canters, Vrije Universiteit Brussel, Belgium

17:20
WE4.O8.4 **A SUP-PIXEL MAPPING ALGORITHM BASED ON ARTIFICIAL IMMUNE SYSTEMS FOR REMOTE SENSING IMAGERY**
Yanfei Zhong, Liangpei Zhang, Pingxiang Li, Huanfeng Shen, Wuhan University, China

17:40
WE4.O8.5 **SPATIAL-SPECTRAL DATA FUSION FOR RESOLUTION ENHANCEMENT OF HYPERSPECTRAL IMAGERY**
Fereidoun A. Mianji, Ye Zhang, Yanfeng Gu, Harbin Institute of Technology, China; Asad Babakhani, Gamma Irradiation Research Center, Iran

WE4.O9: Wednesday, July 15, 16:20 - 18:00

WE4.O9 **Clouds: Measurements, Analysis and Technology II**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 1A
Co-Chairs: Mengitsu Wolde and Tetsuya Tagawa

16:20
WE4.O9.1 **INVESTIGATION OF SPATIAL WATER VAPOR AND LIQUID WATER INHOMOGENEITY WITH SCANNING MICROWAVE RADIOMETRY**
Stefan Kneifel, Susanne Crewell, Ulrich Loehnert, Jan Schween, University of Cologne, Germany

16:40
WE4.O9.2 **EVALUATION OF PASSIVE SATELLITE REMOTE SENSING OF CLOUD LIQUID WATER**
Akos Horvath, Seethala Chellappan, Max Planck Institute for Meteorology, Germany

17:00
WE4.O9.3 **CROSS-COMPARISON AND VALIDATION OF MODIS AQUA CLOUD MASK BY USING CLOUDSAT AND CALIPSO DATASETS**
Daniela Di Rosa, Dipartimento Interateneo di Fisica Bari, Italy; Claudia Notarnicola, Eurac, Italy; Francesco Posa, Dipartimento Interateneo di Fisica Bari, Italy

17:20
WE4.O9.4 **WHAT CAN AQUA AND TERRA DIRECT BROADCAST DO FOR YOU?**
Kathy Strabala, Liam Gumley, Hung-Lung Huang, Elisabeth Weisz, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin-Madison, United States

17:40
WE4.O9.5 **A SUB MILLIMETRE-WAVE AIRBORNE DEMONSTRATOR FOR THE OBSERVATION OF PRECIPITATION AND ICE CLOUDS**
Janet Charlton, Sula Systems, United Kingdom; Stefan Buehler, Lulea Technical University, Sweden; Eric Defer, Catherine Prigent, L'Observatoire de Paris, France; Brian Moyna, Rutherford Appleton Laboratories, United Kingdom; Clare Lee, The Met Office, United Kingdom; Peter de Maagt, Ville Kangas, European Space Agency, Netherlands

WE4.O10: Wednesday, July 15, 16:20 - 18:00

WE4.O10 **Calibration of Interferometric Microwave Radiometers**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 1B
Co-Chairs: Francesc Torres and Ji Wu

16:20
WE4.O10.1 **PHASE NOISE REQUIREMENTS IN INTERFEROMETRIC RADIOMETERS**
Francesc Torres, Ignasi Corbella, Universitat Politècnica de Catalunya, Spain; Eva Castro, Marc Segarra, Roger Vilaseca, Mier Comunicaciones, Spain

16:40
WE4.O10.2 **COMPARISON OF CENTRALISED AND DISTRIBUTED NOISE INJECTION CALIBRATION METHODS FOR SYNTHETIC APERTURE RADIOMETER**
Kimmo Rautiainen, Juha Kainulainen, Martti Hallikainen, Helsinki University of Technology, Finland; Juha Lemmetyinen, Finnish Meteorological Institute, Finland

17:00
WE4.O10.3 **CONICAL BEAM INTERFEROMETER: FPIR CONCEPT AND DEVELOPMENT**
Jingye Yan, Ji Wu, Hao Liu, Shengwei Zhang, Heguang Liu, Jingshan Jiang, Center for Space Science and Applied Research, Chinese Academy of Sciences, China

17:20
WE4.O10.4 **ONE POINT CALIBRATION IN INTERFEROMETRIC RADIOMETERS: ERROR ASSESSMENT**
Francesc Torres, Ignasi Corbella, Nuria Duffo, Verónica González-Gambau, Universitat Politècnica de Catalunya, Spain

17:40
WE4.O10.5 **CONCEPTUAL DESIGN AND BREADBOARDING ACTIVITIES OF GEOSTATIONARY INTERFEROMETRIC MICROWAVE SOUNDER (GIMS)**
Hao Liu, Ji Wu, Shengwei Zhang, Jingye Yan, Cheng Zhang, Weiying Sun, Lijie Niu, Center for Space Science and Applied Research, Chinese Academy of Sciences, China

WE4.O11: Wednesday, July 15, 16:20 - 18:00

WE4.O11 **Vegetation Structure and Biomass I**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 1C
Co-Chairs: Christiana Schmullius and Karin Viergever

16:20
WE4.O11.1 **RETRIEVING TREE HEIGHTS IN AFRICAN SAVANNA WOODLANDS USING THREE STAGE SINC INVERSION**
Charles Paradzayi, Harold Annegarn, University of Johannesburg, South Africa; Barend Erasmus, University of Witswatersrand, South Africa; Christiane Schmullius, Friedrich Schiller University, Germany

16:40
WE4.O11.2 **EVALUATING THE POTENTIAL OF ALOS/ PALSAR FOR MONITORING FOREST RESOURCES IN CENTRAL AFRICA**
Danae Maniatis, University of Oxford, United Kingdom; Sassan Saatchi, California Institute of Technology, United States; Lee White, Wildlife Conservation Society, Gabon; Laurent Tellier, SylvAfrica, Gabon; Rostand Aba'a, Malcolm Starkey, Wildlife Conservation Society, Gabon; Mathieu Schwartzenberg, Leroy Gabon, Gabon; Yadvinder Malhi, University of Oxford, United Kingdom

17:00
WE4.O11.3 **THE SARVANNA PROJECT: SAR MAPPING OF VEGETATION STRUCTURE IN THE AFRICAN SAVANNA.**
Christiane Schmullius, University Jena, Germany; Harold Annegarn, Charles Paradzayi, University of Johannesburg, South Africa; Izak Smit, DLR, Germany; Wolfgang Lück, CISR-SAC, South Africa; Barend Erasmus, University of Witwatersrand, South Africa; Irena Hajnsek, DLR, Germany; Renaud Mathieu, Melanie Vogel, CSIR-NRE, South Africa; Konrad Wessels, CSIR-Meraka, South Africa

17:20
WE4.O11.4 **EXAMINATION OF THE SRTM CORRELATION DATA FOR VEGETATION STRUCTURE ESTIMATION**
Bruce Chapman, Robert Treuhaft, Scott Hensley, Jet Propulsion Laboratory, California Institute of Technology, United States; Paul Siqueira, University of Massachusetts, United States

17:40
WE4.O11.5 **BACKSCATTER AND INTERFEROMETRY FOR ESTIMATING ABOVE-GROUND BIOMASS OF SPARSE WOODLAND: A CASE STUDY IN BELIZE**
Karin Viergever, Iain Woodhouse, The University of Edinburgh, United Kingdom

WE4.O12: Wednesday, July 15, 16:20 - 18:00

WE4.O12 **Urban Remote Sensing II**
Session Type: Oral-Contributed
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 1D
Co-Chairs: Peijun Du and Doris Klein

16:20
WE4.O12.1 **ASSESSMENT OF URBAN EXTEND AND IMPERVIOUSNESS OF CAPE TOWN USING TERRASAR X AND LANDSAT IMAGES**
Doris Klein, University of Würzburg, Germany; Thomas Esch, German Aerospace Center (DLR), Germany; Vitus Himmler, Michael Thiel, University of Würzburg, Germany; Stefan Dech, German Aerospace Center (DLR), Germany

16:40
WE4.O12.2 **URBAN THERMAL ENVIRONMENT SIMULATION AND PREDICTION BASED ON REMOTE SENSING AND GIS**
Peijun Du, Pei Liu, Yan Luo, Huapeng Zhang, China University of Mining and Technology, China

17:00
WE4.O12.3 **CURVELET-BASED CHANGE DETECTION FOR MAN-MADE OBJECTS FROM SAR IMAGES**
Andreas Schmitt, Birgit Wessel, Achim Roth, German Aerospcae Center, Germany

17:20
WE4.O12.4 **ANALYSIS OF NOCTURNAL COLD-AIR CURRENTS FORMED IN SATOYAMA (URBAN-NEIGHBORING HILLS AND FORESTS) USING AIRBORNE MSS DATA AND CFD SIMULATION**
Akira Hoyano, Jiang He, Tokyo Institute of Technology, Japan

17:40
WE4.O12.5 **STUDY ON THE SEASONAL CHANGE OF URBAN HEAT ISLAND PHENOMENON USING AIRBORNE THEMAL IMAGE**
Akinobu Murakami, University of Tsukuba, Japan; Akira Hoyano, Tokyo Institute of Technology, Japan

WE4.O13: Wednesday, July 15, 16:20 - 18:00

WE4.O13 **The Contribution of Remote Sensing Towards Sustainable Mining Development Practices II**
Session Type: Oral-Invited
Time: Wednesday, July 15, 16:20 - 18:00
Place: Leslie 1E
Chair: Cindy Ong

16:20
WE4.O13.1 **POLLUTION DETECTION IN MINING ENVIRONMENTS USING AIRBORNE GEOPHYSICAL AND OTHER REMOTELY SENSED DATA**
Henk Coetzee, Council for Geoscience, South Africa

16:40
WE4.O13.2 **ASSOCIATION OF MINERAL SPECTRAL SIGNATURES WITH GOLD AND URANIUM MINING AND OFF-SITE IMPACTS IN A SEASONAL SUMMER RAINFALL ENVIRONMENT - THE WITWATERSRAND BASIN, SOUTH AFRICA**
Malcolm Sutton, AngloGold Ashanti Limited / University of the Witwatersrand, South Africa; Isabel Weiersbye, University of the Witwatersrand, Johannesburg, South Africa; Nir Margalit, Robi Stark, Daniela Heller, Tal Feingersh, Gil Revivo, Yoav Zur, Ofer Braun, Elbit Systems Electro-Optics - Elop, South Africa; Jacky Galpin, Hlanganani Tutu, David Billing, University of the Witwatersrand, Johannesburg, South Africa

17:00
WE4.O13.3 **DERIVING INDICES OF LANDSCAPE FUNCTION FROM SPECTRAL REFLECTANCES OF GRASSLAND AND SAVANNA SURFACES ON GOLD MINES OF SOUTH AFRICA**
David Furniss, Isabel Weiersbye, University of the Witwatersrand, Johannesburg, South Africa; David Tongway, CSIRO Sustainable Ecosystems, Australia; Robi Stark, Nir Margalit, Elbit Systems Electro-Optics - Elop, Israel; Henk Nel, Etienne Grond, AngloGold Ashanti Ltd, South Africa; Edward Witkowski, University of the Witwatersrand, Johannesburg, South Africa

17:20
WE4.O13.4 **MONITORING OF SUPERFICIAL CONTAMINATION PRODUCED BY MASSIVE SULPHIDE MINE WASTE ALONG THE ODIEL RIVER (ANDALUSIA, SPAIN) USING HYPERSPECTRAL DATA**
Asuncion Riaza, IGME, Spain; Véronique Carrère, Université de Nantes, France

17:20
WE4.O13.4 **GROUND PENETRATING RADAR FOR DIAGNOSIS OF FAULTING ALONG PARTING PLANES IN SOUTH AFRICAN BUSHVELD MINES**
Declan Vogt, Michael Van Schoor, Council for Scientific and Industrial Research, South Africa

17:40
WE4.O13.5 **REMOTE SENSING: IT'S NOT ONLY ABOUT SATELLITES!!**
James Crotty, Gordon Chunnett, Anglo Platinum Limited, South Africa; Andreas Rompel, Engel Rutherford, Anglo American PLC, South Africa

TH1.O1: Thursday, July 16, 09:00 - 10:40

TH1.O1 **Ionosphere Effects in Polarimetric and Interferometric SAR Imagery I**

Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 2A
Co-Chairs: Franz Meyer and Tom Ainsworth

9:00
TH1.O1.1 **THE SPATIAL AND TEMPORAL MORPHOLOGY OF IONOSPHERIC IRREGULARITIES AND THEIR POSSIBLE INFLUENCE ON SAR APPLICATIONS FOR L-BAND AND LOWER FREQUENCIES.**
Brenton Watkins, University of Alaska Fairbanks, United States

9:20
TH1.O1.2 **MICRO AND MACRO STRUCTURE OF THE GEOMAGNETIC EQUATORIAL PLASMA BUBBLE OBSERVED BY THE PALSAR**
Masanobu Shimada, JAXA, Japan; Yasushi Muraki, Konan University, Japan; Yuichi Otsuka, Nagoya University, Japan

9:40
TH1.O1.3 **A STATISTICAL SURVEY OF IONOSPHERIC EFFECTS ON L-BAND SAR DATA**
Jeremy Nicoll, Franz Meyer, University of Alaska Fairbanks, United States

10:00
TH1.O1.4 **MAPPING AURORA ACTIVITY WITH SAR – A CASE STUDY**
Franz Meyer, Jeremy Nicoll, Bill Bristow, University of Alaska Fairbanks, United States

10:20
TH1.O1.5 **IONOSPHERIC IRREGULARITY EFFECTS ON P-BAND SAR IMAGERY AND THEIR POSSIBLE CORRECTION USING PGA**
Zheng-Wen Xu, China Research Institute of Radiowave Propagation, China; Shaun Quegan, University of Sheffield, United Kingdom; Jian Wu, China Research Institute of Radiowave Propagation, China; Jim J. Green, University of Sheffield, United Kingdom

TH1.O2: Thursday, July 16, 09:00 - 10:40

TH1.O2 **Low Frequency SAR Calibration, Processing, Modelling and Applications I**

Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 2D
Co-Chairs: Mark Williams and Tom Ainsworth

9:00
TH1.O2.1 **RETRIEVAL OF SUBSURFACE PARAMETERS FOR THREE-LAYER MEDIA**
Yuriy Goykhman, Mahta Moghaddam, University of Michigan, United States

9:20
TH1.O2.2 **DEPENDENCE OF P-BAND INTERFEROMETRIC HEIGHT ON FOREST PARAMETERS FROM SIMULATION AND OBSERVATION**
Marco Lavalle, Tor Vergata University, Italy; Mark Williams, Fugro-EarthData, United States; Scott Hensley, Jet Propulsion Laboratory, United States; Eric Pottier, University of Rennes 1, France; Domenico Solimini, Tor Vergata University, Italy

9:40
TH1.O2.3 **EVALUATING VHF-BAND SAR AUTOFOCUS ALGORITHMS USING A FOREST BACKSCATTER MODEL**
Annelie Wyholt, Chalmers University of Technology, Sweden; Lars M. H. Ulander, Swedish Defence Research Agency (FOI), Sweden

10:00
TH1.O2.4 **P-BAND TOMOGRAPHIC ANALYSIS OF THE REMNINGSTORP FOREST SITE**
Stefano Tebaldini, Fabio Rocca, Politecnico di Milano, Italy

10:20
TH1.O2.5 **POLARIMETRIC SAR INTERFEROMETRY FOR FOREST APPLICATIONS AT P-BAND: POTENTIALS AND CHALLENGES**
Seung-Kuk Lee, Florian Kugler, Konstantinos Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR), Germany

TH1.O3: Thursday, July 16, 09:00 - 10:40

TH1.O3 **Ten Years of MODIS Earth Observations I**
Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Menzies M9
Co-Chairs: Michael D. King and Allen Huang

9:00
TH1.O3.1 **TEN YEARS OF CLOUD MICROPHYSICS MEASUREMENTS FROM MODIS**
Michael King, University of Colorado, United States; Steven Platnick, NASA Goddard Space Flight Center, United States

9:20
TH1.O3.2 **10 YEARS OF CLOUD PROPERTIES AND AMOUNT FROM MODIS**
Steven Ackerman, W. Paul Menzel, University of Wisconsin-Madison, United States

9:40
TH1.O3.3 **AN OVERVIEW OF MODIS CALIBRATION AND CHARACTERIZATION AND LESSONS LEARNED**
Xiaoxiong (Jack) Xiong, NASA/GSFC, United States; Brian Wenny, SSAI, United States; William Barnes, UMBC, United States; Vince Salomonson, University of Utah, United States

10:00
TH1.O3.4 **10 YEARS OF MODIS: THE MODIS FIRE PRODUCTS WITH AN EMPHASIS ON SOUTHERN AFRICAN VALIDATION**
David Roy, South Dakota State University, United States; Louis Giglio, Science Systems and Applications, Inc., United States; Luigi Boschetti, Christopher O. Justice, University of Maryland, United States

10:20
TH1.O3.5 **TEN YEARS OF AEROSOL CLIMATE DATA RECORDS FROM MODIS OVER LAND AND OCEAN: SOURCE, PATHWAY, AND TREND**
N. Christina Hsu, Lorraine Remer, NASA, United States; Rob Levy, SSAI, United States; Si-Chee Tsay, NASA, United States; Michael King, University of Colorado, United States; Brent Holben, NASA, United States

TH1.O4: Thursday, July 16, 09:00 - 10:40

TH1.O4 **Coastal and Wetlands Applications I**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Menzies M10
Chair: Shahid Habib

9:00
TH1.O4.1 **APPLICATION OF SATELLITE OBSERVATIONS TO MANAGE NATURAL DISASTERS IN THE LAKE VICTORIA BASIN**
Shahid Habib, NASA - Goddard Space Flight Center, United States; Fritz Policelli, NASA Goddard Space Flight Center, United States; Dan Irwin, NASA Marshall Space Flight Center, United States; Tesfaye Korme, RCMRD, Kenya; Bob Adler, Univ of Maryland, United States; Yang Hong, Univ of Oklahoma, United States

9:20
TH1.O4.2 **REMOTE SENSING ASSESSMENT OF COASTAL EROSION IN AL BATINAH, SULTANATE OF OMAN**
Andy Kwarteng, Sultan Qaboos University, Oman

9:40
TH1.O4.3 **COASTAL MONITORING USING REMOTE SENSING AND GEOINFORMATION SYSTEMS: ESTIMATION OF EROSION AND ACCRETION RATES ALONG GAZA COASTLINE**
Khaldoun Abu Al Hin, Irmgard Niemeyer, Technische Universität Bergakademie Freiberg, Germany

10:00
TH1.O4.4 **PREDICTING FLOODPLAIN VEGETATION STATE FROM REMOTE SENSING-DERIVED HYDROLOGICAL HISTORY**
Michael Murray-Hudson, Piotr Wolski, University of Botswana, Botswana

10:20
TH1.O4.5 **MONITORING LAND SUBSIDENCE WITHIN THE VENICE LAGOON WITH SAR INTERFEROMETRY ON TRIHEDRAL CORNER REFLECTORS**
Tazio Strozzi, Gamma Remote Sensing, Switzerland; Luigi Tosi, National Research Council (CNR), Italy; Pietro Teatini, University of Padova, Italy; Charles Werner, Urs Wegmüller, Gamma Remote Sensing, Switzerland

TH1.O5: Thursday, July 16, 09:00 - 10:40

TH1.O5 **Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas I**

Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 2B
Co-Chairs: Eugenio Sansosti and Salvatore Stramondo

9:00

TH1.O5.1 **EXPERIENCES IN OPTICAL AND SAR IMAGERY ANALYSIS FOR DAMAGE ASSESSMENT IN THE WUHAN, MAY 2008 EARTHQUAKE**
Fabio Dell'Acqua, University of Pavia, Italy; Gianni Lisini, Institute for Advanced Studies (IUSS), Italy; Paolo Gamba, University of Pavia, Italy

9:20

TH1.O5.2 **SBAS-INSAR ANALYSIS OF SURFACE DEFORMATION AT MAUNA LOA AND KILAUEA VOLCANOES IN HAWAII**
Francesco Casu, Riccardo Lanari, IREA-CNR, Italy; Asta Miklius, Michael Poland, USGS, United States; Eugenio Sansosti, IREA-CNR, Italy; Giuseppe Solaro, Pietro Tizzani, Istituto Nazionale di Geofisica e Vulcanologia, Italy

9:40

TH1.O5.3 **THE 12 MAY 2008 SICHUAN (CHINA) EARTHQUAKE: NUMERICAL AND ANALYTICAL FAULT MODELS CONSTRAINED BY ALOS-PALSAR INTERFEROMETRY**
Elisa Trasatti, Christian Bignami, Simone Atzori, Marco Chini, Christos Kyriakopoulos, Salvatore Stramondo, Cristiano Tolomei, Istituto Nazionale di Geofisica e Vulcanologia, Italy

10:00

TH1.O5.4 **SEISMIC AND VOLCANIC ACTIVITY IN AFRICA MONITORED BY INSAR**
Nicolas d'Oreye, National Museum of Natural History, Luxembourg; Eric Calais, Purdue University, United States; Valérie Cayol, Univ. Blaise Pascal, France; José Fernández, Institute of Astronomy and Geodesy (CSIC-UCM), Spain; Corine Frischknecht, University of Geneva, Switzerland; Pablo Gonzalez, Institute of Astronomy and Geodesy (CSIC-UCM), Spain; Sandra I.N. Heleno, ICIST - Instituto Superior Técnico, Portugal; François Kervyn, Royal Museum of Central Africa, Belgium; Petar Marinkovic, Anneleen Oyen, Delft Inst. of Earth Obs. and Space Systems, Delft Univ. of Tech., Netherlands; Christelle Wauthier, Royal Museum of Central Africa, Belgium

10:20

TH1.O5.5 **SAR INTERFEROMETRY FOR MONITORING GROUND DEFORMATION IN NEW ZEALAND**
Sergey Samsonov, Karen Joyce, GNS Science, New Zealand; Kristy Tiampo, University of Western Ontario, Canada; Pablo Gonzalez, Instituto de Astronomia y Geodesia, Spain; Caitlin Latimer, University of Western Ontario, Canada; José Fernández, Instituto de Astronomia y Geodesia, Spain

TH1.O6: Thursday, July 16, 09:00 - 10:40

TH1.O6 **High Performance Geocomputation and Remote Sensing I**

Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 2C
Co-Chairs: Yong Xue and Dengsheng Liu

9:00

TH1.O6.1 **A HIGH PERFORMANCE REMOTE SENSING RETRIEVAL APPLICATION ON AN INSTITUTIONAL DESKTOP GRID**
Wei Wan, China Center for Resource Satellite Data and Application, China; Yong Xue, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jianning Guo, Shuning Lu, China Center for Resource Satellite Data and Application, China; Jie Guang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

9:20

TH1.O6.2 **A NEW FRAMEWORK OF CLUSTER-BASED PARALLEL PROCESSING SYSTEM FOR HIGH-PERFORMANCE GEO-COMPUTING**
Yan Ma, Dingsheng Liu, Jingshan Li, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

9:40

TH1.O6.3 **THE KAMAL EWIDA EARTH OBSERVATORY: A NATO SUPPORTED REAL-TIME REMOTE SENSING RECEIVING STATION BEING ESTABLISHED IN EGYPT WITH HPC-ENABLED NEAR-REAL-TIME DATA PRODUCTS FOR MITIGATION OF ENVIRONMENTAL & PUBLIC HEALTH DISASTERS**
Gilbert Rochon, Purdue University, United States; Magdy Abdel Wahab, Cairo Univeresity, Egypt; Gamal Salah El Afandi, Al Azhar University, Egypt; Gulay Altay, Bogazici University, Turkey; Okan K. Ersoy, Xiaohui Carol Song, Lan Zhao, Larry Biehl, Purdue University, United States; Belal Elleithy, National Authority for Remote Sensing and Space Sciences, Egypt; Mohammed Shokr, Environment Canada, Canada; Mohamed Mohamed, UNITED NATIONS DPKO, Chad; Tarek El Ghazawi, George Washington University, United States; Darion Grant, Dev Niyogi, Purdue University, United States

10:00

TH1.O6.4 **GPU-BASED FRAMEWORK FOR DISTRIBUTED INTERACTIVE 3D VISUALIZATION OF MULTIMODAL REMOTE SENSING DATA**
Martin Lambers, Andreas Kolb, University of Siegen, Germany

10:20

TH1.O6.5 **A DYNAMIC GRID WORKFLOW FOR REMOTE SENSING QUANTITATIVE RETRIEVAL SERVICE**
Jianwen Ai, Yong Xue, Yingjie Li, Jie Guang, Ying Wang, Linlu Mei, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TH1.O7: Thursday, July 16, 09:00 - 10:40

TH1.O7 **Inversion of Land Surface and Biophysical Properties I**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 3A
Co-Chairs: Andrea Massa and Mahta Moghaddam

9:00
TH1.O7.1 **ROBUST MULTIBAND DETECTION OF THERMAL ANOMALIES USING THE MINIMUM COVARIANCE DETERMINANT ESTIMATOR**
Tiziana Beltramonte, Carmine Clemente, Maurizio Di Bisceglie, Carmela Galdi, Università degli Studi del Sannio, Italy

9:20
TH1.O7.2 **BIOPHYSICAL PARAMETER ESTIMATION WITH ADAPTIVE GAUSSIAN PROCESSES**
Gustavo Camps-Valls, Luis Gómez-Chova, Jordi Muñoz-Marí, Joan Vila-Frances, Julia Amoros, Secundino del Valle-Tascon, Javier Calpe-Maravilla, Universitat de Valencia, Spain

9:40
TH1.O7.3 **USE OF AN ENSEMBLE KALMAN FILTER FOR REAL-TIME INVERSION OF LEAF AREA INDEX FROM MODIS TIME SERIES DATA**
Zhiqiang Xiao, Beijing Normal University, China; Shunlin Liang, University of Maryland, United States; Jindi Wang, Xiyan Wu, Beijing Normal University, China

10:00
TH1.O7.4 **POTENTIAL FIRE DETECTION BASED ON KALMAN-DRIVEN CHANGE DETECTION**
Frans van den Bergh, Gustave Udahemuka, Meraka Institute, South Africa; Barend J. van Wyk, French South African Technical Institute in Electronics, South Africa

10:20
TH1.O7.5 **PROBABILISTIC CALIBRATION OF A COUPLED VEGETATION AND FIRE MODEL USING SATELLITE DATA**
José Gómez-Dans, Martin Wooster, King's College London, United Kingdom; Philip Lewis, University College London, United Kingdom; Allan Spessa, University of Reading, United Kingdom

TH1.O8: Thursday, July 16, 09:00 - 10:40

TH1.O8 **Source Separation: From ICA to Unmixing**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 3B
Co-Chairs: Antonio Plaza and Jose Bioucas

9:00
TH1.O8.1 **UNMIXING OF SPARSE HYPERSPECTRAL MIXTURES**
Marian-Daniel Iordache, José Bioucas-Dias, Instituto Superior Tecnico, Portugal; Antonio Plaza, University of Extremadura/Escuela Politecnica de Caceres, Spain

9:20
TH1.O8.2 **ROBUST ENDMEMBER EXTRACTION IN THE PRESENCE OF ANOMALIES**
Olga Duran, Maria Petrou, Imperial College London, United Kingdom

9:40
TH1.O8.3 **INDEPENDENT COMPONENT ANALYSIS OF POLARIMETRIC SAR DATA FOR SEPARATING GROUND AND VEGETATION COMPONENTS**
Ola Tannous, Dayalan Kasilingam, University of Massachusetts Dartmouth, United States

10:00
TH1.O8.4 **ON THE USE OF ICA FOR HYPERSPECTRAL IMAGE ANALYSIS**
Alberto Villa, Jocelyn Chanussot, Christian Jutten, Grenoble Institut of technology (INPG), France; Jón Atli Benediktsson, University of Iceland, Iceland; Said Moussaoui, Institut de Recherche en Communications et Cybernétique de Nantes, France

10:20
TH1.O8.5 **AN APPROACH BASED ON SELF-ORGANIZING MAP AND FUZZY MEMBERSHIP FOR DECOMPOSITION OF MIXED PIXELS**
Lifan Liu, Bin Wang, Liming Zhang, Fudan University, China

TH1.O9: Thursday, July 16, 09:00 - 10:40

TH1.O9 **Segmentation-Based Image Analysis and Classification**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 1A
Chair: Mihai Datcu

9:00
TH1.O9.1 **TOOLS FOR VALUE ADDING BY SEMANTIC CODING: THE EARTH OBSERVATION IMAGE LIBRARIAN**
Mihai Datcu, German Aerospace Center DLR, Germany; Mihai Costache, ParisTech, France; Gottfried Schwarz, Amaia de Miguel, DLR, Germany

9:20
TH1.O9.2 **RECURSIVE TEXTURE FRAGMENTATION AND RECONSTRUCTION SEGMENTATION ALGORITHM APPLIED TO VHR IMAGES**
Raffaele Gaetano, Giuseppe Scarpa, Giovanni Poggi, University Federico II of Naples, Italy

9:40
TH1.O9.3 **ADVANCES IN TEXTURE-BASED SEGMENTATION OF HIGH RESOLUTION REMOTE SENSING IMAGERY**
Raffaele Gaetano, Giuseppe Scarpa, Giovanni Poggi, University Federico II of Naples, Italy

10:00
TH1.O9.4 **COMPLETELY AUTOMATIC CLASSIFICATION OF SATELLITE MULTI-SPECTRAL IMAGERY FOR THE PRODUCTION OF LAND COVER MAPS**
Giorgio Licciardi, Chiara Pratola, Fabio Del Frate, Università di tor Vergata Roma, Italy

10:20
TH1.O9.5 **A VARIATIONAL CO-TRAINING FRAMEWORK FOR REMOTE SENSING IMAGE SEGMENTATION**
Keming Chen, Zhenglong Li, Jian Cheng, Institute of Automation, Chinese Academy of Sciences, China; Zhixin Zhou, Beijing Institute of Remote Sensing, China; Hanqing Lu, Institute of Automation, Chinese Academy of Sciences, China

TH1.O10: Thursday, July 16, 09:00 - 10:40

TH1.O10 **Calibration of Microwave Radiometers**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 1B
Co-Chairs: Ville Kangas and Christopher Ruf

9:00
TH1.O10.1 **THE 183-GHZ HAMSTRAD-TROPO RADIOMETER: VALIDATION OVER THE PYRENEES MOUNTAINS (FRANCE) AND FIRST MEASUREMENTS AT DOME C (ANTARCTICA)**
Philippe Ricaud, Benjamin Gabard, Olivier Drasin, Solene Derrien, Jean-Pierre Chaboureau, Jean-Luc Attié, Laboratoire d'Aerologie, France; Thomas Rose, Andreas Mombauer, Harald Czekala, RPG, Germany

9:20
TH1.O10.2 **THE HURRICANE IMAGING RADIOMETER (HIRAD): INSTRUMENT STATUS AND PERFORMANCE PREDICTIONS**
Christopher Ruf, University of Michigan, United States; M.C. Bailey, University of Central Florida, United States; Steven Gross, University of Michigan, United States; Robbie Hood, National Oceanic and Atmospheric Administration, United States; Mark James, NASA Marshall Space Flight Center, United States; James Johnson, Linwood Jones, University of Central Florida, United States; Timothy Miller, NASA Marshall Space Flight Center, United States; Eric Uhlhorn, National Oceanic and Atmospheric Administration, United States

9:40
TH1.O10.3 **MICROWAVE RADIOMETER INTER-CALIBRATION USING THE VICARIOUS CALIBRATION METHOD**
Darren McKague, Christopher Ruf, John Puckett, Universtity of Michigan, United States

10:00
TH1.O10.4 **PRELIMINARY RESULTS OF THE PASSIVE ADVANCED UNIT SYNTHETIC APERTURE (PAU-SA)**
Isaac Ramos-Perez, Xavier Bosch-Lluis, Adriano Camps, Enric Valencia, Juan Fernando Marchan-Hernandez, Nereida Rodriguez-Alvarez, Francisco Canales-Contador, Politechnical University of Catalonia (UPC), Spain

10:20
TH1.O10.5 **RECEIVER AS A RADIOMETER CALIBRATION TARGET**
Ville Kangas, European Space Agency, Netherlands; Andreas Colliander, Jet Propulsion Laboratory, California Institute of Technology, United States

TH1.O11: Thursday, July 16, 09:00 - 10:40

TH1.O11 **Vegetation Structure and Biomass II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 1C
Co-Chairs: Guoqing Sun and Ludovic Villard, ONERA

9:00
TH1.O11.1 **DISCRIMINATING THE EARLY STAGES OF SIREX NOCTILIO INFESTATION USING RESAMPLED HYMAP DATA**
Riyad Ismail, University of KwaZulu-Natal, South Africa; Onisimo Mutanga, University of KwaZulu- Natal, South Africa; Lalit Kumar, University of New England, Australia

9:20
TH1.O11.2 **FOREST PARAMETERS INVERSION USING POLARIMETRIC AND INTERFEROMETRIC SAR DATA**
Marco Lavalle, Domenico Solimini, Tor Vergata University, Italy; Eric Pottier, University of Rennes 1, France; Yves-Louis Desnos, European Space Agency, Italy

9:40
TH1.O11.3 **QUANTITATIVE STUDY OF THE ECO-WATER INDICES BASED ON REMOTE SENSING**
Yuxia Li, Institute of Geo-Spatial Information Technology, University of Electronic Science and Technology of China, China; Wunian Yang, Chengdu University of Technology, China; Ling Tong, Institute of Geo-Spatial Information Technology, University of Electronic Science and Technology of China, China; Ji Jian, Chengdu University of Technology, China; Xingfa Gu, University of Electronic Science and Technology of China / Chinese Academy of Sciences, China

10:00
TH1.O11.4 **FOREST PARAMETER RETRIEVAL USING A GENERAL REPEAT-PASS POLARIMETRIC INTERFEROMETRIC VEGETATION MODEL**
Maxim Neumann, Laurent Ferro-Famil, University of Rennes 1, France; Andreas Reigber, German Aerospace Center (DLR), Germany

10:20
TH1.O11.5 **VARIABLE WIND INFLUENCE ON INSAR IMAGERY OF FORESTS**
Michael Benson, Leland Pierce, Kamal Sarabandi, University of Michgan, United States

TH1.O12: Thursday, July 16, 09:00 - 10:40

TH1.O12 **Active Remote Sensing and Land Characterization**
Session Type: Oral-Contributed
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 1D
Co-Chairs: Kyle McDonald and Robert Metzig

9:00
TH1.O12.1 **A POLARIMETRIC VEGETATION MODEL TO RETRIEVE PARTICLE AND ORIENTATION DISTRIBUTION CHARACTERISTICS**
Maxim Neumann, Laurent Ferro-Famil, University of Rennes 1, France; Marc Jaeger, Berlin University of Technology, Germany; Andreas Reigber, German Aerospace Center (DLR), Germany; Eric Pottier, University of Rennes 1, France

9:20
TH1.O12.2 **CHANGE DETECTION OVER A SEMI ARID AREA FROM A DATA FUSION APPROACH (OPTICAL, RADAR AND RAINFALL)**
Daouda Sylla, Ramata Magagi, Université de Sherbrooke, Canada; Samuel Corgne, Université de Rennes 2, France

9:40
TH1.O12.3 **C-BAND D-INSAR AND FIELD DATA FOR CALIBRATING A GROUNDWATER FLOW AND LAND SUBSIDENCE MODEL**
Angus Calderhead, Richard Martel, University of Quebec, Canada; Alfonso Rivera, Geological Survey of Canada, Canada; Jaime Garfias, Universidad Autonoma del Estado de Mexico, Mexico; Pierre-Jean Alasset, Canada Centre for Remote Sensing, Canada

10:00
TH1.O12.4 **CORRECTING ESTIMATES OF LAND COVER CHANGE AND CHANGE DETECTION ACCURACY FOR ERROR IN GROUND REFERENCE DATA**
Giles Foody, University of Nottingham, United Kingdom

10:20
TH1.O12.5 **DEM PRODUCTION UTILIZING STEREOTECHNOLOGY OF THE TERRASAR-X DATA**
Takashi Nonaka, Tomohiro Hayakawa, PASCO Corporation, Japan; Stephen Griffiths, Bryan Mercer, Intermap Technologies Ltd, Canada

TH1.O13: Thursday, July 16, 09:00 - 10:40

TH1.O13 **Lidar-Based Remote Sensing - the Next Wave I**

Session Type: Oral-Invited
Time: Thursday, July 16, 09:00 - 10:40
Place: Leslie 1E
Chair: John Degnan

9:00
TH1.O13.1 **THE INTERNATIONAL LASER RANGING SERVICE AND ITS IMPACT ON GEOSS**
Michael Pearlman, Harvard-Smithsonian Center for Astrophysics, United States

9:20
TH1.O13.2 **EARTH SCIENCE APPLICATIONS FOR SATELLITE LASER RANGING (SLR)**
Steven Klosko, SGT Inc., United States

9:40
TH1.O13.3 **THE MOBLAS-6 SATELLITE LASER RANGING STATION AT HARTEBEESTHOEK, SOUTH AFRICA; TECHNOLOGY AND DATA APPLICATIONS.**
Ludwig Combrinck, Hartebeesthoek Radio Astronomy Observatory, South Africa

10:00
TH1.O13.4 **LASER SENSING OF THE CRYOSPHERE: ICESAT-1 RESULTS AND FUTURE MISSIONS**
Jay Zwally, NASA Goddard Space Flight Center, United States

10:20
TH1.O13.5 **SCANNING, PHOTON COUNTINGLIDARS FOR LARGE SCALE, HIGH RESOLUTION, TOPOGRAPHIC MAPPING FROM HIGH ALTITUDES**
John Degnan, Sigma Space Corporation, United States

TH2.O1: Thursday, July 16, 11:00 - 12:40

TH2.O1 **Ionosphere Effects in Polarimetric and Interferometric SAR Imagery II**

Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 2A
Co-Chairs: Franz Meyer and Tom Ainsworth

11:00
TH2.O1.1 **ESTIMATION AND CORRECTION OF IONOSPHERIC AND ATMOSPHERIC INDUCED PHASE ERRORS IN SAR IMAGES USING COHERENT SCATTERERS**
Rafael Zandona-Schneider, German Aerospace Center (DLR), Germany

11:20
TH2.O1.2 **CHARACTERISATION AND CORRECTION OF IONOSPHARIC EFFECTS IN LOW FREQUENCY (L- AND P-BAND) SAR IMAGERY**
Konstantinos Papathanassiou, Koichi Iribe, Francesco de Zan, German Aerospace Center (DLR), Germany

11:40
TH2.O1.3 **IONOSPHERIC EFFECTS AND MITIGATION FOR DESDYNI**
Paul Rosen, Elaine Chapin, Curtis Chen, Scott Hensley, Xiaoqing Pi, Jet Propulsion Laboratory, United States

12:00
TH2.O1.4 **COMPENSATION OF IONOSPHERIC EFFECTS INHERENT IN ALOS / PALSAR L-BAND POLARIMETRIC SAR IMAGERY**
Thomas Ainsworth, Jong-Sen Lee, Naval Research Laboratory, United States

12:20
TH2.O1.5 **IONOSPHERIC PATH DELAY ESTIMATES FOR SPACEBORNE SAR DATA: PROSPECTS AND LIMITS**
Michael Jehle, David Small, Erich Meier, University of Zurich, Switzerland

TH2.O2: Thursday, July 16, 11:00 - 12:40

TH2.O2 **Low Frequency SAR Calibration, Processing, Modelling and Applications II**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 2D
Co-Chairs: Mark Williams and Tom Ainsworth

11:00
TH2.O2.1 **BIOMASS - A P-BAND SAR MISSION TO MAP FOREST BIOMASS AT GLOBAL SCALE**
Malcolm Davidson, ESA, Netherlands; Thuy Le Toan, CESBIO, France; Heiko Baltzer, University of Leicester, United Kingdom; Philippe Paillou, Universite de Bordeaux, France; Stephen Plummer, IGBP Joint Projects Office, Italy, Italy; Konstantinos Papathanassiou, DLR, Germany; Shaun Quegan, University of Sheffield, United Kingdom; Lars M. H. Ulander, Swedish Defence Research Agency, Sweden; Sassan Saatchi, JPL, United States; Herman H. Shugart, University of Virginia, United States

11:20
TH2.O2.2 **COMPARISON OF L- AND P-BAND BIOMASS RETRIEVALS BASED ON BACKSCATTER FROM THE BIOSAR CAMPAIGN**
Gustaf Sandberg, Chalmers University of Technology, Sweden; Lars M. H. Ulander, Swedish Defence Research Agency, Sweden; Johan E.S. Fransson, Johan Holmgren, Swedish University of Agricultural Sciences, Sweden; Thuy Le Toan, Centre d'Etudes Spatiales de la Biospère, France

11:40
TH2.O2.3 **TROPICAL FOREST BIOMASS RECOVERY USING GEOSAR OBSERVATIONS**
Mark Williams, Fugro-EarthData, United States; Tony Milne, University of New South Wales, Australia; Ian Tapley, Horizon Geoscience Consulting, Australia; Tom Carson, Jim Reis, Mark Sanford, Boris Kofman, Fugro-EarthData, United States; Scott Hensley, Jet Propulsion Laboratory, United States

12:00
TH2.O2.4 **SETHI, THE ONERA AIRBORNE SAR SENSOR, AND HIS LOW FREQUENCY CAPABILITY**
Sébastien Angélliaume, Pascale Dubois-Fernandez, Philippe Dreuillet, Hélène Oriot, ONERA, France

12:20
TH2.O2.5 **UHF FOLIAGE PENETRATION AND SCATTERING MODEL FOR POLARIMETRIC AND INTERFEROMETRIC SAR APPLICATIONS**
Sassan Saatchi, Jet Propulsion Laboratory, United States

TH2.O3: Thursday, July 16, 11:00 - 12:40

TH2.O3 **Ten Years of MODIS Earth Observations II**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Menzies M9
Co-Chairs: Allen Huang and Michael D. King

11:00
TH2.O3.1 **SEA-SURFACE TEMPERATURES FROM THE MODERATE-RESOLUTION IMAGING SPECTRORADIOMETER (MODIS)**
Peter Minnett, Robert Evans, Otis Brown, University of Miami, United States

11:20
TH2.O3.2 **MODIS ALBEDO AND REFLECTANCE ANISOTROPY PRODUCTS FOR CLIMATE AND VEGETATION STUDIES**
Crystal Schaaf, Alan Strahler, Zhuosen Wang, Miguel Román, Ziti Jiao, Yanmin Shuai, Qingling Zhang, Boston University, United States; Feng Gao, NASA/GSFC (ERT), United States; Jicheng Liu, Xiaoyang Zhang, NOAA/NESDIS, United States; Wolfgang Lucht, Potsdam Institute for Climate Impact Research, Germany; Shunlin Liang, University of Maryland, United States; Philip Lewis, Jan-Peter Muller, University College London, United Kingdom; Michael Barnsley, University of Wales, Swansea (posthumous), United Kingdom; Xiaowen Li, Beijing Normal University, China

11:40
TH2.O3.3 **ADVANCES IN OCEAN BIOGEOCHEMISTRY FROM MODIS**
Charles Mcclain, NASA Goddard Space Flight Center, United States; Zia Ahmad, Earth Resources Technology, United States; Sean Bailey, Future Tech, United States; Michael Behrenfeld, Oregon State University, United States; Gene Feldman, NASA Goddard Space Flight Center, United States; Bryan Franz, Science Applications International Corporation, United States; Gerhard Meister, Future Tech, United States; Fred Patt, Science Applications International Corporation, United States; Jeremy Werdell, Science Systems and Applications, Inc., United States

12:00
TH2.O3.4 **THE MODIS TIME SERIES OF SUSPENDED CALCIUM CARBONATE IN THE GLOBAL OCEAN**
William M. Balch, Bigelow Laboratory for Ocean Sciences, United States

12:20
TH2.O3.5 **TEN YEAR OF LAND REMOTE SENSING FROM MODIS**
Christopher O. Justice, University of Maryland, United States; David Roy, South Dakota State University, United States

TH2.O4: Thursday, July 16, 11:00 - 12:40

TH2.O4 **Coastal and Wetlands Applications II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 11:00 - 12:40
Place: Menzies M10
Co-Chairs: Ellsworth LeDrew and M. Faruolo

11:00
TH2.O4.1 **NEURAL NETWORK ALGORITHM AND BACKSCATTERING MODEL FOR BIOMASS ESTIMATION OF WETLAND VEGETATION IN POYANG LAKE AREA USING ENVISAT ASAR DATA**
Jingjuan Liao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Lei Dong, State Key Laboratory of Remote Sensing, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Guozhuang Shen, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

11:20
TH2.O4.2 **DISPERSAL OF SUSPENDED SEDIMENT IN THE SOUTHWEST INSHORE OFF THE MODERN HUANGHE (YELLOW) RIVER ESTUARY**
Yanxia Liu, Yantai Institute of Coastal Zone Research for Sustainable Development, China; Haijun Huang, Institute of Oceanology, China; Hui Fan, Institute for Development Strategy of Science and Technology, China

11:40
TH2.O4.3 **3-D VEGETATION MAPPING OF COASTAL FORESTS IN AFRICA**
Temilola E. Fatoyinbo, Marc Simard, Naiara Sardinha-Pinto, Nasa Jet Propulsion Laboratory, United States

12:00
TH2.O4.4 **CLASSIFICATION OF COASTAL ZONE BASED ON DECISION TREE AND PPI**
Shanshan Li, Bing Zhang, Lianru Gao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Liang Zhang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

12:20
TH2.O4.5 **REAL TIME MONITORING OF FLOODED AREAS BY A MULTI-TEMPORAL ANALYSIS OF OPTICAL SATELLITE DATA**
Mariapia Faruolo, Irina Coviello, Teodosio Lacava, Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA) - National Research Council (CNR), Italy; Valerio Tramutoli, Department of Engineering and Physics of the Environment (DIFA) - University of Basilicata, Italy

TH2.O5: Thursday, July 16, 11:00 - 12:40

TH2.O5 **Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas II**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 2B
Co-Chairs: Eugenio Sansosti and Salvatore Stramondo

11:00
TH2.O5.1 **NEAR REAL TIME FORECASTING OF LAVA FLOW PATHS USING MAGFLOW MODELDRIVEN BY THERMAL SATELLITE DATA**
Annamaria Vicari, Ciro Del Negro, Istituto Nazionale di Geofisica e Vulcanologia - Sezione di Catania, Italy; Gaetana Ganci, Università di Catania, Italy; Alexis Herault, Istituto Nazionale di Geofisica e Vulcanologia - Sezione di Catania, Italy

11:20
TH2.O5.2 **INSAR DATASTACKS FOR VOLCANO MONITORING: POTENTIAL AND DRAWBACKS**
Alessandro Ferretti, Marco Bianchi, Tele-Rilevamento Europa - T.R.E. s.r.l., Italy; Alessio Rucci, Politecnico di Milano, Italy; Raffaella Ratti, Maria Lucia Tampellini, Carlo Gavazzi Space S.p.a., Italy; Frank Martin Seifert, European Space Agency - ESRIN, Italy

11:40
TH2.O5.3 **GLOBVOLCANO: GLOBAL MONITORING OF VOLCANOES FROM SPACE**
Maria Lucia Tampellini, Raffaella Ratti, Carlo Gavazzi Space, Italy; Frank Martin Seifert, European Space Agency ESRIN, Italy; Sven Borgstrom, Istituto Nazionale di Geofisica e Vulcanologia- Osservatorio Vesuviano, Italy; Jean Christophe Komorowski, Edouard Kaminsky, Institut de Physique du Globe de Paris, France; Fabrizio Novali, Tele-Rilevamento Europa – T.R.E. S.r.l., Italy

12:00
TH2.O5.4 **VOLCANO MONITORING IN NEAR REAL-TIME USING ENVISTAT AATSR**
Miguel Angel Rubio, University of Granada, Spain; Olivier Colin, Emmanuel Mathot, Paula Landart, European Space Agency (ESA), Italy

12:20
TH2.O5.5 **MULTI SENSOR SATELLITE DATA TO MONITOR SEISMICALLY ACTIVE REGION**
Ramesh Singh, Waseem Mehdi, Anup Prasad, Menas Kafatos, Chapman University, United States

TH2.O6: Thursday, July 16, 11:00 - 12:40

TH2.O6 **High Performance Geocomputation and Remote Sensing II**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 2C
Co-Chairs: Yong Xue and Dengsheng Liu

11:00
TH2.O6.1 **IMPROVING THE SCALABILITY OF PARALLEL ALGORITHMS FOR HYPERSPECTRAL IMAGE ANALYSIS USING ADAPTIVE MESSAGE COMPRESSION**
Antonio Plaza, Javier Plaza, Abel Paz, University of Extremadura, Spain

11:20
TH2.O6.2 **RESEARCH ON PARALLEL BUFFER ANALYSIS WITH GRIDED BASED HPC TECHNOLOGY**
Lv Pang, Guoqing Li, Yunxuan Yan, CEODE,CAS, China; Yan Ma, CEODE, CAS, China

11:40
TH2.O6.3 **HARDWARE-ACCELERATED EDGE DETECTION FOR POLARIMETRIC SYNTHETIC APERTURE RADAR DATA**
Quang Huy Nguyen, Nanyang Technological University, Singapore; Myo Tun Aung, Ken Yoong Lee, EADS Innovation Works Singapore, Singapore; Ian McLoughlin, Nanyang Technological University, Singapore; Timo Bretschneider, EADS Innovation Works Singapore, Singapore

12:00
TH2.O6.4 **PARALLEL AND DISTRIBUTED SEISMIC WAVE FIELD MODELING WITH COMBINED LINUX CLUSTERS AND GRAPHICS PROCESSING UNITS**
Tomasz Danek, AGH - University of Science and Technology, Poland

12:20
TH2.O6.5 **A QUICK AND FEATURE BASED VISUALIZATION ALGORITHM FOR LARGE-SCALE FLOW DATA**
Liang Zhong, Tianhe Chi, Xin Zhang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TH2.O7: Thursday, July 16, 11:00 - 12:40

TH2.O7 **Inversion of Land Surface and Biophysical Properties II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 3A
Co-Chairs: Gustavo Camps-Valls and Frans van den Bergh

11:00
TH2.O7.1 **AN APPROACH TO SAR TOMOGRAPHY WITH LIMITED NUMBER OF TRACKS**
Vincenzo Severino, Universita' di Napoli Federico II, Italy; Matteo Nannini, Andreas Reigber, Rolf Scheiber, German Aerospace Center (DLR), Germany; Amedeo Capozzoli, Giuseppe D'Elia, Angelo Liseno, Pietro Vinetti, Universita' di Napoli Federico II, Italy

11:20
TH2.O7.2 **LEAF AREA INDEX INVERSION AND VALIDATION FOR COTTON IN XINJIANG BASED ON THE DMC REMOTELY SENSED MINI-SATELLITE DATA**
Yanjuan Yao, Wenjie Fan, Peking University, China; Qiang Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Daihui Wu, Binyan Yan, Peking University, China; Qinhuo Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

11:40
TH2.O7.3 **AN INSAR GROUND DEFORMATION INVERSION SCHEME USING A FEM-BASED FAULT SLIP MODEL: AN APPLICATION TO ETNA VOLCANO**
Gilda Currenti, Ciro Del Negro, Danila Scandura, Istituto Nazional di Geofisica e Vulcanologia, Italy; Charles Williams, GNS Science, New Zealand

12:00
TH2.O7.4 **A QUALITATIVE TWO-STEP INVERSION APPROACH FOR THE RECONSTRUCTION OF SUBSURFACE DEFECTS**
Massimo Donelli, Manuel Benedetti, ELEDIA Research Group - University of Trento, Italy; Dominique Lesselier, Laboratoire des Signaux et Systèmes (CNRS-SUPELEC-UPS11), France; Andrea Massa, ELEDIA Research Group - University of Trento, Italy

12:20
TH2.O7.5 **IMPROVING THE RECONSTRUCTION ACCURACY OF INVERSION STRATEGIES THROUGH ENERGETIC CONSTRAINTS**
Davide Franceschini, Manuel Benedetti, Federico Viani, Andrea Massa, ELEDIA Research Group - University of Trento, Italy

TH2.O8: Thursday, July 16, 11:00 - 12:40

TH2.O8 **Image Segmentation and Textures**
Session Type: Oral-Contributed
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 3B
Co-Chairs: Jesus Angulo and Emmanuel Christophe

11:00
TH2.O8.1 **SPECTRAL RULES AND GEOSTATISC FEATURES FOR CHARACTERIZING OLIVE GROVES IN QUIKBIRD IMAGES**
Nicola Amoruso, CNR, Italy; Andrea Baraldi, JRC, Italy; Palma Blonda, CNR, Italy

11:20
TH2.O8.2 **LOCATION-ADAPTIVE TEXTURE: AN EXPERIMENT USING QUICKBIRD, ASTER AND LANDSAT ETM+ IMAGERY**
Timothy Warner, West Virginia University, United States

11:40
TH2.O8.3 **HIERARCHICAL SEGMENTATION OF VEGETATION AREAS IN HIGH SPATIAL RESOLUTION IMAGES BY FUSION OF MULTISPECTRAL INFORMATION**
Felipe Calderero, Ferran Marques, Technical University of Catalonia (UPC), Spain; Javier Marcello, Francisco Eugenio, University of Las Palmas of Gran Canaria, Spain

12:00
TH2.O8.4 **THE SYNTHETIC IMAGE TESTING FRAMEWORK (SITEF) FOR THE EVALUATION OF MULTI-SPECTRAL IMAGE SEGMENTATION ALGORITHMS**
Andre Marcal, Arlete Rodrigues, Mario Cunha, Faculdade Ciencias, Univ. Porto, Portugal

12:20
TH2.O8.5 **IMAGE CLASSIFICATION WITH SPECTRAL AND TEXTURE FEATURES BASED ON SVM**
Fen Chen, Zhiru Zhang, University of Electronic Science and Technology of China, China; Dongmei Yan, CAS, China

TH2.O9: Thursday, July 16, 11:00 - 12:40

TH2.O9 **Time-series Analyses for Change Detection**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 1A
Co-Chairs: Konrad Wessels and Corne Olivier

11:00
TH2.O9.1 **AN A-CONTRARIO APPROACH FOR UNSUPERVISED CHANGE DETECTION IN RADAR IMAGES**
Amandine Robin, University of the Witwatersrand, South Africa; Gregoire Mercier, Institut Telecom; Telecom Bretagne, France; Gabriele Moser, Sebastiano B. Serpico, University of Genoa, Italy

11:20
TH2.O9.2 **THE QUEST FOR AUTOMATED LAND COVER CHANGE DETECTION USING SATELLITE TIME SERIES DATA**
Brian Salmon, Jan Olivier, Waldo Kleynhans, Konrad Wessels, Frans Van Den Bergh, Council for Scientific and Industrial Research, South Africa

11:40
TH2.O9.3 **MAPPING AND MONITORING LAND COVER IN ACRE STATE, BRAZILIAN AMAZÔNIA, USING MULTITEMPORAL REMOTE SENSING DATA**
Yosio Edemir Shimabukuro, Valdete Duarte, Egidio Arai, Ramon M. Freitas, Paulo R. Martini, André Lima, Instituto Nacional de Pesquisas Espaciais, Brazil

12:00
TH2.O9.4 **SPECTRAL-TEMPORAL SERIES OF EVI/MODIS TO IDENTIFY LAND USE COVER CHANGED TO SUGARCANE**
Bernardo Rudorff, Marcos Adami, Daniel Aguiar, Aníbal Gusso, Wagner Silva, Ramon M. Freitas, National Institute for Space Resarch, Brazil

12:20
TH2.O9.5 **IMPROVING NDVI TIME SERIES CLASS SEPARATION USING AN EXTENDED KALMAN FILTER.**
Waldo Kleynhans, University of Pretoria, South Africa; Corne Olivier, CSIR, South Africa; Brian Salmon, University of Preoria, South Africa; Konrad Wessels, Frans van den Bergh, CSIR, Meraka Insitute, South Africa

TH2.O10: Thursday, July 16, 11:00 - 12:40

TH2.O10 **Hyperspectral Remote Sensing in Africa I**
Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 1B
Co-Chairs: Mark van der Meijde and Harald van der Werff

11:00
TH2.O10.1 **FIELD SPECTROMETRY OF PAPYRUS VEGETATION (CYPERUS PAPYRUS L.) IN SWAMP WETLANDS OF ST LUCIA, SOUTH AFRICA**
Elhadi Adam, Onisimo Mutanga, Denis Rugege, Riyad Ismail, University of KwaZulu-Natal, South Africa

11:20
TH2.O10.2 **INTEGRATION OF REMOTE SENSING AND ANCILLARY DATA TO DESCRIBE THE PHYSIOLOGICAL STATE OF EUCALYPTUS GRANDIS PLANTATION**
Moses Azong Cho, Council for Scientific and Industrial Research (CSIR), South Africa; Jan van Aardt, Center for Imaging Science, United States; Bongani Majeke, Russell Main, Abel Ramoelo, Renaud Mathieu, Council for Scientific and Industrial Research, South Africa; Mark Norris-Rogers, Marius Du Plessis, Mondi SA, South Africa

11:40
TH2.O10.3 **HAND-HELD SPECTROMETRY FOR ESTIMATING THRIPS (FULMEKIOLA SERRATA) INCIDENCE IN SUGARCANE**
Elfatih Abdel-Rahman, University of KwaZulu-Natal, South Africa; Maurits van den Berg, Mike Way, South African Sugarcane Research Institute, South Africa; Fethi Ahmed, University of KwaZulu-Natal, South Africa

12:00
TH2.O10.4 **APPLICATIONS OF HYPERSPECTRAL REMOTE SENSING IN AFRICA**
Anna Gerber, Phil Harris, Anglo American, South Africa

12:20
TH2.O10.5 **WITHIN- AND BETWEEN-CLASS VARIABILITY OF SPECTRALLY SIMILAR TREE SPECIES**
Pravesh Debba, Moses Azong Cho, Renaud Mathieu, The Council for Scientific and Industrial Research (CSIR), South Africa

TH2.O11: Thursday, July 16, 11:00 - 12:40

TH2.O11 **Remote Sensing of Vegetation Processes I**
Session Type: Oral-Contributed
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 1C
Co-Chairs: Albert Olioso and Joshua Fisher

11:00
TH2.O11.1 **RECENT DEVELOPMENTS IN VEGETATION MONITORING PRODUCTS FROM AUSTRALIA'S NATIONAL CARBON ACCOUNTING SYSTEM**
Suzanne Furby, Peter Caccetta, Jeremy Wallace, Eric Lehmann, Katherine Zdunic, CSIRO Mathematical and Information Sciences, Australia

11:20
TH2.O11.2 **GIS INFORMATION LAYER SELECTION DIRECTED BY REMOTE SENSING FOR ECOLOGICAL UNIT DELINEATION**
Enguerran Grandchamp, UAG, France

11:40
TH2.O11.3 **A NARROW BAND COMBINATION MODEL TO DETERMINE LEAF NITROGEN AND WATER CONTENT IN RICE**
Shalei Song, Pingxiang Li, Wei Gong, Liangpei Zhang, Bo Zhu, Wuhan University, China

12:00
TH2.O11.4 **EVAPOTRANSPIRATION MONITORING OVER THE ALPILLES-CRAU-CAMARGUE AREA FROM REMOTE SENSING DATA**
Albert Olioso, Aline Bsaïbes, Emmanuel Kpemlie, Dominique Courault, Olivier Marloie, INRA, France; Dominique Chauvelon, Marc Pichaud, Tour du Valat, France; Jose Sobrino, Monica Gomez, Juan-Carlos Gimenez-Munoz, University of Valencia, Spain; Frederic Jacob, IRD, France

12:20
TH2.O11.5 **A STUDY ON GPP INVERSION OF DIFFERENT ECOSYSTEMS BY REMOTE SENSING AND IMPACT FACTORS COMPARISON**
Li Li, Liangfu Chen, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Yanhua Gao, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Qinhuo Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

TH2.O12: Thursday, July 16, 11:00 - 12:40

TH2.O12 **Geostationary Data Products; Land Surface Temperature**

Session Type: Oral-Contributed
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 1D
Co-Chairs: M. Paganini and Manuela Grippa

11:00
TH2.O12.1 **LAND SURFACE ALBEDO FROM MSG/SEVIRI: RETRIEVAL METHOD, VALIDATION, AND APPLICATION FOR WEATHER FORECAST**
Dominique Carrer, Météo-France, France; Bernhard Geiger, ESA/ESAC, Spain; Jean-Louis Roujean, Olivier Hautecoeur, Météo-France, France; Jure Cedilnik, Slovenian Meteorological Service, Slovenia; Jean-François Mahfouf, Catherine Meurey, Laurent Franchistéguy, Météo-France, France

11:20
TH2.O12.2 **DEVELOPING LAND PRODUCTS FOR THE U.S. GOES-R SATELLITE MISSION**
Yunyue Yu, Mitchell Goldberg, NOAA/NESDIS/STAR, United States; Dan Tarpley, Short & Associates, United States; Ivan Csiszar, NOAA/NESDIS/STAR, United States

11:40
TH2.O12.3 **PRE-LAUNCH ASSESSMENT OF NPOESS/NPP VIIRS LAND ALGORITHMS**
Alain Sei, Justin Ip, Sid Jackson, Alex Foo, Bruce Hauss, Merit Shoucri, Nancy Andreas, Northrop Grumman Space Technology, United States

12:00
TH2.O12.4 **MONTHLY LAND SURFACE TEMPERATURE MAPS OVER EUROPE USING ADVANCED ALONG TRACK SCANNING RADIOMETER DATA FOR 2007**
Joan Miquel Galve, César Coll, University of Valencia, Spain; Fred Prata, Norwegian Institute for Air Research, Norway

12:20
TH2.O12.5 **A SIMPLIFIED METHOD FOR MEASURING LAND SURFACE TEMPERATURE AND EMISSIVITY USING THERMAL INFRARED SPLIT-WINDOW CHANNELS**
Yunyue Yu, NOAA/NESDIS/STAR, United States; Hui Xu, IMSG, United States; Dan Tarpley, Short & Associates, United States; Mitchell Goldberg, NOAA/NESDIS/STAR, United States

TH2.O13: Thursday, July 16, 11:00 - 12:40

TH2.O13 **Lidar-Based Remote Sensing - the Next Wave II**

Session Type: Oral-Invited
Time: Thursday, July 16, 11:00 - 12:40
Place: Leslie 1E
Chair: John Degnan

11:00
TH2.O13.1 **USING BATHYMETRIC LIDAR TO MAP SHALLOW COASTAL AND INLAND WATERS**
David Millar, Jerry Wilson, Fugro Pelagos, Inc., United States

11:20
TH2.O13.2 **SMALL OBJECT DETECTION USING SHOALS BATHYMETRIC LIDAR**
Eric Yang, Paul LaRocque, Optech Inc., Canada; Gary Guenther, Optech International, United States; Karen Francis, David Reid, Wenbo Pan, Michael Sitar, Optech Inc., Canada

11:40
TH2.O13.3 **RECENT ADVANCES IN DOPPLER LIDAR INSTRUMENT TECHNOLOGY AT NASA'S GODDARD SPACE FLIGHT CENTER**
Bruce Gentry, Matthew McGill, NASA Goddard Space Flight Center, United States; Geary Schwemmer, Science Engineering Services Inc, United States; R. Michael Hardesty, Wm. Alan Brewer, NOAA ESRL, United States; Thomas Wilkerson, Utah State University Space Dynamics Laboratory, United States; Marcos Sirota, SigmaSpace Corp, United States; Scott Lindemann, Michigan Aerospace Corp, United States; Floyd Hovis, Fibertek, United States

12:00
TH2.O13.4 **DOPPLER LIDAR WIND MEASUREMENTS: RECENT PROGRESS AND CURRENT STATUS**
R. Michael Hardesty, Wm. Alan Brewer, NOAA Earth System Research Laboratory, United States; Sara C. Tucker, University of Colorado, United States; Robert M. Banta, NOAA Earth System Research Laboratory, United States; Yelena L. Pichugina, Brandi J. McCarty, Christoph J. Senff, University of Colorado, United States

12:20
TH2.O13.5 **LASER SOUNDER FOR GLOBAL MEASUREMENTS OF CO2 CONCENTRATION FROM AN ORBITING PLATFORM.**
Graham Allan, NASA-GSFC / Sigma Space Co., United States; William Hasselbrack, Sigma Space, United States; Haris Riris, James B. Abshire, NASA-GSFC, United States; Clark Weaver, UMCP, United States; Jianping Mao, Xiaoli Sum, NASA-GSFC, United States

THP.A: Thursday, July 16, 12:40 - 14:20

THP.A **Land Use and Land Cover**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area A
Co-Chairs: Peter Regner and M. Paganini

THP.A.1 **REMOTE SENSING BASED SEASON CALENDAR FOR INDIAN DISTRICTS USING MODIS DATA**
Sudhir Gupta, Vinay Pandit, Krishnan S Rajan, International Institute of Information Technology, India

THP.A.2 **SCALING UP EQUIVALENT WATER THICKNESS IN SAVANNA ENVIRONMENTS: FROM LOCAL TO BIOME SCALE, VIA GROUND, HYPERION, AND MODIS DATA**
Laerte Ferreira, Federal University of Goias, Brazil; Gregory Asner, Carnegie Institute, Stanford University, United States; David Knapp, Carnegie Institution, United States; Eric Davidson, The Woods Hole Research Center, United States; Mercedes Bustamante, University of Brasilia, Brazil

THP.A.3 **CHANGE DETECTION OF THE TANGJIASHAN BARRIER LAKE BASED ON MULTI-SOURCE REMOTE SENSING DATA**
Min Xu, Chunxiang Cao, Hao Zhang, Yong Xue, Yingjie Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Jianping Guo, China Meteorological Administration, China; Chaoyi Chang, Qisheng He, Mengxu Gao, Xiaowen Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.A.4 **SUBPIXEL MAPPING OF WATER COVER WITH MODIS IN TIBETAN PLATEAU**
Chenzhou Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Donghui Xie, State Key Laboratory of Remote Sensing Science, Jointly Sponsored by Beijing Normal University and the Institute of Remote Sensing Applications, CAS;Beijing Key Laboratory for Remote Sensing of Environment and Digital Cities, Beijing Normal University, China; Jiancheng Shi, Institute for Computational Earth System Science, University of California, Santa Barbara, United States; Shuai Gao, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.A.5 **LAND USE/COVER CHANGE DETECTION IN THE AMUR RIVER BASIN USING MODIS TIME SERIES DATA WITH HYBRID CLASSIFICATION METHOD**
Kaishan Song, Zongming Wang, Qingfeng Liu, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China; Dongmei Lu, Computer Science and Engineering College, Jilin Architectural and Civil Egineering Institute, China; Guang Yang, Aviation University of Air Force of Changchun, China; Lihong Zeng, Dianwei Liu, Bai Zhang, Jia Du, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, China

THP.A.6 **GEOGRAPHIC IMAGE COGNITION APPROACH APPLIED IN LAND TYPE CLASSIFICATION**
Jing Wang, China Institute of Land Surveying and Planning, Ministry of Land and Resources, China; He Ting, China Institute of Land Surveying and Planning, China; Chen Yongqi, Hong Kong Polytechnic University, China; Chunyan Lv, China Institute of Land Surveying and Planning, China; Liu Aixia, China Institute of Land Surveying and Planning, Ministry of Land and Resources, China; Xiao Cheng, Beijing Normal University, China

THP.A.7 **CLASSIFICATION OF VEGETATION TYPE USING SPECTRAL INVARIANT PARAMETERS**
Mitchell Schull, X. Lu, Boston University, United States; Pedro Latorre Carmona, Jaume I University, Spain; Arindam Samanta, Boston University, United States; Julian Jenkins, Lucie Plourde, University of New Hampshire, United States; Sangram Ganguly, Ranga Myneni, Yuri Knyazikhin, Boston University, United States

THP.A.8 **THE CHANGE OF LANDSCAPE PATTERN IN ARID MOUNTAIN OF THE UPPER REACHES OF SHULE RIVER BASIN IN NORTHWEST CHINA**
Guojing Yang, Baisheng Ye, Yongjian Ding, Lihua Zhou, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

THP.A.9 **DEVELOPING NEW SPECTRAL INDICES FOR KARST ROCKY DESERTIFICATION MONITORING IN SOUTHWEST CHINA**
Yuemin Yue, Kelin Wang, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China; Junsheng Li, Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Bo Liu, State Key Lab of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Quanjun Jiao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Xiaonan Zhang, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China

THP.A.10 **THE INFLUENCE OF RAINFALL, VEGETATION, ELEPHANTS AND PEOPLE ON FIRE FREQUENCY OF MIOMBO WOODLANDS, NORTHERN MOZAMBIQUE**
Natasha Ribeiro, Eduardo Mondlane University, Mozambique; Gregory S. Okin, University of California, United States; Herman H. Shugart, Robert J. Swap, University of Virginia, United States

THP.A.11 **VARIATION OF ALBEDO WITH THE INCREASED IMPERVIOUS SURFACE IN BEIJING-TIANJIN AREA OF CHINA**
Xiaoxue Zhou, Bing Zhang, Liping Lei, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Zhengchao Chen, Earth Obeserving and Digital Earth Chinese Academy of Sciences, China; Junchuan Fan, Haixia Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.A.12 **SPATIAL VARIATION OF WATER AND SOIL EROSION IN DONGHE BASIN BASED ON SWAT MODEL**
Aixia Liu, China Land Surveying and Planning Institute, China; Junfeng Chen, The Institute of Geographical Sciences and Natural Resources Research, China; Jing Wang, China Land Surveying and Planning Institute, China; Zhengjun Liu, Chinese Academy of Surveying and Mapping, China; Xiao Cheng, Beijing Normal University, China

THP.B: Thursday, July 16, 12:40 - 14:20

THP.B **Remote Sensing of Land Surface Properties and Wetlands**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area B
Co-Chairs: Kyle McDonald and Gabriela Bucini

THP.B.1 **ASSESSING THE QUALITY OF HEATHLAND VEGETATION BY CLASSIFICATION OF HYPERSPECTRAL DATA USING SPATIAL INFORMATION**
Guy Thoonen, University of Antwerp, Belgium; Jeroen Vanden Borre, Research Institute for Nature and Forest, Belgium; Steve De Backer, Paul Scheunders, University of Antwerp, Belgium

THP.B.2 **RECONSTRUCTION OF CLOUD-FREE VEGETATION DYNAMICS ON THE TIBETAN PLATEAU BY APPLYING HANTS ALGORITHM**
Lei Zhong, Yaoming Ma, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China; Suhyb Salama, Bob Su, International Institute for Geo-Information Science and Earth Observation, Netherlands

THP.B.3 **MONITORING NDVI WITH MSG SEVIRI**
Peter Romanov, University of Maryland, United States; Hui Xu, IMSG, United States

THP.B.4 **SCALING EFFECT ANALYSIS ON TIME SERIES OF NASA MODIS LAI PRODUCTS**
Wanchang Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences, China; Shan Zhong, Nanjing University, China; Qingguo Tai, Shandong Meteorological Bureau, China; Qinhua Wang, Linyi Meteorological Bureau, China

THP.B.5 **TOWARDS THE OPTIMAL MODIS-BASED PHOTOCHEMICAL REFLECTANCE INDEX FOR ARID AREAS**
Anna Goerner, Markus Reichstein, Max Planck Institute for Biogeochemistry, Jena, Germany; Serge Rambal, CEFE-CRNS, France

THP.B.6 **WOODY COVER AND HETEROGENEITY IN THE SAVANNAS OF THE KRUGER NATIONAL PARK, SOUTH AFRICA**
Gabriela Bucini, Colorado State University, United States; Sassan Saatchi, Jet Propulsion Laboratory, United States; Niall Hanan, Randall B. Boone, Colorado State University, United States; Izak Smit, South African National Parks, South Africa

THP.B.7 **USING MODIS-BASED VEGETATION AND MOISTURE INDICES FOR OASIS LANDSCAPE MONITORING IN AN ARID ENVIRONMENT**
Meng-Lung Lin, Aletheia University, Taiwan; Cheng-Wu Chen, Shu-Te University, Taiwan; Jyh-Yi Shih, Yung-Tan Lee, Aletheia University, Taiwan; Chung-Hung Tsai, Taiwan Hospitality & Tourism College, Taiwan; Yen-Tsui Hu, Sinotech Engineering Consultants Inc., Taiwan; Fujun Sun, Shenyang Agricultural University, China; Chun-Ying Wang, Tatung High School, Taiwan

THP.B.8 **ANALYSIS OF TEMPORAL AND SPATIAL CHANGE AND CORRIDOR EFFECT OF IN YELLOW RIVER HEADWATERS REGION**
Luo Guo, Central University for Nationalities, China; Shihong Du, Peking University, China; Dayuan Xue, Central University for Nationalities, China

THP.B.9 **MODELING SURFACE-FLOW CHARACTERISTICS IN GLACIATED LANDSCAPES**
Janet Gritzner, South Dakota State University, United States

THP.B.10 **PRAMETRIZATION OF INTEGRATED HYDROLOGICAL MODEL OF NAM CO LAKE CATCHMENT ON TIBETAN PLATEAU USING SYNERGY OF SAR AND OPTICAL DATA**
Jan Kropacek, Volker Hochschild, University of Tuebingen, Germany

THP.B.11 **REMOTE SENSING APPLICATIONS: ECOLOGICAL ENVIRONMENT EFFECT ANALYSIS OF WIDGEON LAKE WETLAND CHANGE IN BEIJING REGION**
Zhaoning Gong, Xiao-Juan Li, Wen-Ji Zhao, Capital Normal University, China

THP.C: Thursday, July 16, 12:40 - 14:20

THP.C **Forest and Vegetation Applications**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area C
Co-Chairs: Zhongxin Chen and Matthew voss

THP.C.1 **BIOMASS ESTIMATION OF PINUS RADIATA (D. DON) STANDS IN NORTHWESTERN SPAIN BY UNMIXING CCD CBERS DATA**
Eva Sevillano-Marco, Alfonso Fernández-Manso, University of León, Spain; Carmen Quintano, University of Valladolid, Spain; Yosio Edemir Shimabukuro, Instituto Nacional de Pesquisas Espaciais, Brazil

THP.C.2 **MEASUREMENT AND ANALYSIS OF PADDY FIELD BY POLARIMETRIC GB-SAR**
Naoki Hayashi, Graduate School of Environmental Studies, Tohoku University, Japan; Motoyuki Sato, Center for Northeast Asian Studies, Tohoku University, Japan

THP.C.3 **SPECTRAL CHARACTERISATION AND MAPPING OF WELWITSCHIA MIRABILIS IN NAMIBIA**
Roman Kellenberger, Mathias Kneubühler, Tobias Kellenberger, University of Zürich, Switzerland

THP.C.4 **MAPPING OF WELWITSCHIA MIRABILIS WITH HIGH RESOLUTION SATELLITE IMAGERY IN THE NAMIB DESERT**
Tobias W. Kellenberger, swisstopo, Switzerland; Mathias Kneubühler, Remote Sensing Laboratories (RSL), Switzerland

THP.C.5 **MODELING CANOPY INTERCEPTION OF PICEA CRASSIFOLIA FOREST IN QILIAN MOUNTAINS USING QUICKBIRD SATELLITE DATA**
Huanhua Peng, Chuanyan Zhao, Lanzhou University, China; Weihua Shen, Chinese Academy of Sciences, China; Zhonglin Xu, Zhaodong Feng, Lanzhou University, China

THP.C.6 **REGIONAL YIELD PREDICTION OF WINTER WHEAT BASED ON RETRIEVAL OF LEAF AREA INDEX BY REMOTE SENSING TECHNOLOGY**
Jianqiang Ren, Zhongxin Chen, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China; Xiaomei Yang, The State Key Laboratory of Resources and Environmental Information System, Institute of Geographic Science and Natural Resources Research, Chinese Academy of Sciences, China; Xingren Liu, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Qingbo Zhou, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China

THP.C.7 **INFORMATION EXTRACTION OF HARVEST INDEX FOR WINTER WHEAT BASED ON EOS-MODIS DATA IN HUANGHUAIHAI PLAIN IN CHINA**
Jianqiang Ren, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China; Xingren Liu, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Zhongxin Chen, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China; Yunyan Du, The State Key Laboratory of Resources and Environmental Information System, Institute of Geographic Science and Natural Resources Research, Chinese Academy of Sciences, China; Huajun Tang, Institute of Agricultural Resources & Regional Planning, Chinese Academy of Agricultural Sciences, China

THP.C.8 **YIELD ESTIMATION OF WINTER WHEAT IN NORTH CHINA PLAIN USING RS-P-YEC MODEL**
Peijuan Wang, Jiahua Zhang, Chinese Academy of Meteorological Sciences, China; Donghui Xie, Beijing Normal University, China; Yuyu Zhou, Purdue University, United States; Rui Sun, Beijing Normal University, China

THP.C.9 **INDIVIDUAL TREE HEIGHT AND DBH EXTRACTION USING MULT-SCAN GROUND-BASED LIDAR DATA**
Huabing Huang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Xiao Cheng, Beijing Normal University, China

THP.C.10 **STUDY ON THE INFLUENCE OF DROUGHT TO CROP GROWTH BASED ON SAR REMOTE SENSING**
Aimin Cai, Yun Shao, Fengli Zhang, Huaze Gong, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.C.11 **ANALYSIS OF THE EFFECT OF CROWN STRUCTURE CHANGES ON BACKSCATTERING COEFFICIENT USING MODELING AND SAR DATA**
Zhifeng Guo, Wenjian Ni, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Guoqing Sun, University of Maryland, United States

THP.D: Thursday, July 16, 12:40 - 14:20

THP.D **Buildings and Urban Areas**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area D
Co-Chairs: Paolo Gamba and Florence Tupin

THP.D.1 **A MODIFIED SFS ALGORITHM BASED ON STEREO IMAGES FOR THE-DIMENSION RECONSTRUCTION OF URBAN BUILDINGS**
Hongzhao Tang, Lei Yan, Pengqi Gao, Peking University, China

THP.D.2 **AUTOMATIC ROAD EXTRACTION FROM HIGH-RESOLUTION IMAGES APPLIED OVER URBAN AREAS**
Mohamed Naouai, URPAH/Image, Ville et Environnement, Tunisia; Atef Hamouda, Faculty of Sciences of Tunis, Unit of Research in Programming, Algorithmic and Heuristic, Tunisia; Christiane Weber, University of Strasbourg Laboratory « Image, Ville and Environnement », UMR7011-CNRS, France

THP.D.3 **INTEGRATING MULTISCALE INFORMATION FOR URBAN VHR IMAGERY: VECTOR STACKING AND FUZZY APPROACHES**
Xin Huang, Wuhan University, China

THP.D.4 **HIGH-ACCURACY OF ORTHORECTIFICATION MODEL WITH SELF-GEOMETRIC CONSTRAINT FOR HIGH BUILDINGS IN URBAN AREA**
Wenhan Xie, Chinese Academy of Surveying and Mapping, China; Guoqing Zhou, Old Dominion University, United States

THP.D.5 **FUNSION METHOD OF MULTI-SOURCE REMOTELY SENSED IMAGES FOR AVOIDING REGIONAL DIFFERENCES**
Xiaodong Hu, Zhanfeng Shen, Jiancheng Luo, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.D.6 **URBAN AREAS CHARACTERIZATION FROM POLARIMETRIC SAR IMAGES USING HIDDEN MARKOV MODEL**
Wenju He, Marc Jäger, Olaf Hellwich, Berlin University of Technology, Germany

THP.D.7 **BAYESIAN BUILDING EXTRACTION FROM HIGH RESOLUTION POLARIMETRIC SAR DATA**
Wenju He, Olaf Hellwich, Berlin University of Technology, Germany

THP.D.8 **ACCURATE POSE AND LOCATION ESTIMATION OF UNCALIBRATED CAMERA IN URBAN AREA**
Wenhan Xie, Li Zhang, Chinese Academy of Surveying and Mapping, China; Guoqing Zhou, Old Dominion University, United States; Yucai Xue, Chinese University of Hong Kong, China

THP.D.9 **AUTOMATED DETECTION AND CLASSIFICATION OF INTACT ROAD NETWORKS IN MULTI-SENSORIAL SPACEBORNE IMAGERY FOR NEAR-REALTIME DISASTER MANAGEMENT**
Daniel Frey, Matthias Butenuth, TU Muenchen, Germany; Stefan Hinz, Universitaet Karlsruhe, Germany

THP.D.10 **HYPERIMAGE CONCEPT: MULTIDIMENSIONAL TIME-FREQUENCY ANALYSIS APPLIED TO SAR IMAGING**
Mickaël Duquenoy, Jean-Philippe Ovarlez, ONERA, France; Laurent Ferro-Famil, Eric Pottier, IETR, France

THP.D.11 **ANALYSIS OF NARROW RIDGE ESTIMATION FOR LINEAR CCD RPC MODEL AND ITS APPLICATION**
Dongmei Yan, Tianyou Kou, Fenfei Wang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Feng Chen, College of Automation, University of Electronic Science and Technology of China, China

THP.D.12 **QUALITY ASSESSMENT OF DATA PRODUCTS FROM A NEW-GENERATION AIRBORNE IMAGING SPECTROMETER**
Luciano Alparone, University of Florence, Italy; Francesco Butera, Selex Galileo S.p.A., Italy; Luca Capobianco, University of Florence, Italy; Leandro Chiarantini, Selex Galileo S.p.A., Italy; Sandro Moretti, Massimo Selva, University of Florence, Italy

THP.E: Thursday, July 16, 12:40 - 14:20

THP.E **Data Processing I**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area E
Chair: Ridha Touzi

THP.E.1 **CHARACTERISTICS OF SHADOW AND REMOVAL OF ITS EFFECTS FOR REMOTE SENSING IMAGERY**
Fumio Yamazaki, Wen Liu, Makiko Takasaki, Chiba University, Japan

THP.E.2 **NATURAL-COLOR IMAGE SIMULATION BASE ON SPECTRUM ANALYSIS**
Jinxiang Shen, Liao Yang, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, China; Jiancheng Luo, Zhanfeng Shen, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

THP.E.3 **A PATTERN RECOGNITION SYSTEM FOR EXTRACTING BURIED OBJECT CHARACTERISTICS IN GPR IMAGES**
Edoardo Pasolli, Farid Melgani, Massimo Donelli, University of Trento, Italy

THP.E.4 **A TRACK-BEFORE-DETECT ALGORITHM USING KA-HT BASED ON TARGET DOPPLER PROPERTY**
Shaonan Guo, Xiaoling Zhang, Ling Fan, University of Electronic Science and Technology of China, China

THP.E.5 **SUPERVISED CLASSIFICATION BY NEURAL NETWORKS USING POLARIMETRIC TIME-FREQUENCY SIGNATURES**
Mickaël Duquenoy, Jean-Philippe Ovarlez, Christèle Morisseau, Gilles Vieillard, ONERA, France; Laurent Ferro-Famil, Eric Pottier, IETR, France

THP.E.6 **DIGITAL ELEVATION MODEL COMPUTATION WITH SPOT 5 PANCHROMATIC AND MULTISPECTRAL IMAGES USING LOW STEREOSCOPIC ANGLE AND GEOMETRIC MODEL REFINEMENT**
Stéphane May, Christophe Latry, CNES, France

THP.E.7 **RESOLUTION ENHANCEMENT OF SAR IMAGE USING A MULTIFRAME SUPER RESOLUTION TECHNIQUE**
Yosuke Ito, Naruto University of Education, Japan

THP.E.8 **AN IMPROVED FUSION METHOD FOR PAN-SHARPENING BEIJING-1 MICRO-SATELLITE IMAGES**
Haixia Liu, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Xia Zhang, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Junsheng Li, Zhengchao Chen, Xiaoxue Zhou, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

THP.E.9 **A COMPARISON OF TRACKING ALGORITHM STATISTICS IN MULTITEMPORAL SAR IMAGES**
Esra Erten, Andreas Reigber, German Aerospace Center, Germany; Olaf Hellwich, Technical University Berlin, Germany

THP.E.10 **SPECKLE REDUCTION OF TERRASAR-X IMAGERY USING TV SEGMENTATION**
Johannes R. Sveinsson, Björn Waske, Jón Atli Benediktsson, University of Iceland, Iceland

THP.E.11 **SPECKLE REDUCTION OF SAR IMAGES USING SURE-BASED ADAPTIVE SIGMOID THRESHOLDING IN THE WAVELET DOMAIN**
Johannes R. Sveinsson, Magnus Orn Ulfarsson, Jón Atli Benediktsson, University of Iceland, Iceland

THP.E.12 **ATMOSPHERIC CORRECTION OF SATELLITE IMAGES OVER RUGGED TERRAIN**
Yoshikazu Iikura, Hirosaki University, Japan

THP.F: Thursday, July 16, 12:40 - 14:20

THP.F **Data Processing and Data Compression**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area F
Chair: Jocelyn Chanussot

THP.F.1 **REGULARIZED INVERSION OF FULL-POLARIMETRIC DATA FOR THE SMOS SPACE MISSION**
Ali Khazaal, Eric Anterrieu, Université de Toulouse & CNRS, France

THP.F.2 **A PRELIMINARY STUDY OF TARGET CONTOUR EXTRACTION BASED ON SCATTERING MECHANISM USING POLARIMETRIC SAR IMAGES**
Lu Zhang, Huadong Guo, Xinwu Li, Qizhong Lin, Yubao Qiu, Laboratory of Digital Earth Sciences, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

THP.F.3 **OIL SLICK SPOT DETECTION USING K DISTRIBUTION MODEL OF THE SEA BACKGROUND**
Hong-Zhong Li, Chao Wang, Hong Zhang, Fan Wu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

THP.F.4 **EVALUATION OF JP3D FOR LOSSY AND LOSSLESS COMPRESSION OF HYPERSPECTRAL IMAGERY**
Jing Zhang, James Fowler, Nicolas Younan, Mississippi State University, United States; Guizhong Liu, Xi'an Jiaotong University, China

THP.F.5 **NEW THOUGHTS FOR ONBOARD COMPRESSION OF SATELLITE IMAGES**
Lianru Gao, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Qiong Ran, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Yaobin Chi, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Zhiyong Wang, Beijing Landview Mapping Information Technology Co. Ltd., China

THP.F.6 **MULTISPECTRAL IMAGE INDEXING BASED ON VECTOR LIFTING SCHEMES**
Sarra Sakji-Nsibi, SUP'COM, Tunisia; Amel Benazza-Benyahia, SUP'COM-Tunis, Tunisia

THP.F.7 **SEISMIC HYPERBOLIC PATTERN DETECTION AND VELOCITY ANALYSIS BY SIMULATED ANNEALING**
Kuo-Chen Huang, National Kaohsiung University of Applied Sciences, Taiwan; Kou-Yuan Huang, National Chiao Tung University, Taiwan; Luke K. Wang, National Kaohsiung University of Applied Sciences, Taiwan; Ying-Liang Chou, Yueh-Hsun Hsieh, National Chiao Tung University, Taiwan; Shan-Chih Hsieh, National Kaohsiung University of Applied Sciences, Taiwan

THP.F.8 **STUDY ON A PRACTICAL EARTHQUAKE DAMAGE ANALYSIS AND PROCESSING SYSTEM BASED ON RS AND GIS**
Xiang Ding, Xiaoqing Wang, Aixia Dou, Long Wang, Institute of Earthquake Science, China

THP.F.9 **AUTOMATIC BAND MATCHING FOR BEIJING1 MICROSATELLITE MULTISPECTRAL IMAGES**
Guangbin Ma, Wenyi Zhang, Fu Chen, Peng Huang, Lixia Guo, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

THP.F.10 **COMPARISON OF IMAGE-BASED FUNCTIONAL MONITORING THROUGH RESAMPLING AND COMPRESSION**
Steven Simske, Margaret Sturgill, Jason Aronoff, Hewlett-Packard Labs, United States

THP.F.11 **ADAPTIVE DATA COMPRESSION FOR EFFICIENT SEQUENTIAL TRANSMISSION AND CHANGE UPDATING OF REMOTE SENSING IMAGES.**
Md. Al Mamun, Xiuping Jia, Michael Ryan, UNSW@ADFA, Australia

THP.F.12 **PROGRESSIVE COMPRESSION OF DIGITAL ELEVATION DATA USING MESHES**
Kivanc Kose, Bilkent University, Turkey; Erdal Yilmaz, Middle East Technical University, Turkey; A. Enis Cetin, Bilkent University, Turkey

THP.G: Thursday, July 16, 12:40 - 14:20

THP.G **Classification Techniques and Applications**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area G
Co-Chairs: Mathieu Fauvel and Raju Vatsavai

THP.G.1 **MORPHOLOGICAL OPERATORS APPLIED TO X-BAND SAR FOR URBAN LAND USE CLASSIFICATION**
Marco Chini, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Fabio Pacifici, Tor Vergata University, Italy; William J. Emery, University of Colorado, United States

THP.G.2 **SWIMMING POOLS LOCALIZATION IN COLOUR HIGH-RESOLUTION SATELLITE IMAGES**
Cipriano Galindo, Pablo Moreno, Javier Gonzalez, Vicente Arevalo, University of Málaga, Spain

THP.G.3 **SHIP DETECTION AND RECOGNITION IN HIGH-RESOLUTION SATELLITE IMAGES**
Jose Antelo, Gregorio Ambrosio, Javier Gonzalez, Cipriano Galindo, University of Málaga, Spain

THP.G.4 **DETECTION AND RADIATION AREA ESTIMATION OF ANOMALOUS ENVIRONMENTAL ELECTROMAGNETIC WAVE RELATED TO EARTHQUAKE PRECURSOR**
Tokiyasu Sato, Ichi Takumi, Nagoya Institute of Technology, Japan; Masayasu Hata, Chubu University, Japan; Hiroshi Yasukawa, Aichi Prefectural University, Japan

THP.G.6 **VOLCANO-SEISMIC SIGNAL DETECTION AND CLASSIFICATION PROCESSING USING HIDDEN MARKOV MODELS. APPLICATION TO SAN CRISTÓBAL VOLCANO, NICARAGUA**
Ligdamis A. Gutiérrez, Universidad de Granada, Spain; Jesús Ibañéz, Instituto Andaluz de Geofísica, Spain; Guillermo Cortés, Javier Ramirez, Carmen Benítez, Universidad de Granada, Spain; Virginia Tenorio, Instituto Nicaragüense de Estudios Territoriales (INETER), Nicaragua; Isaac Álvarez, Universidad de Granada, Spain

THP.G.7 **IMPROVING FEATURE EXTRACTION IN THE AUTOMATIC CLASSIFICATION OF SEISMIC EVENTS. APPLICATION TO COLIMA AND ARENAL VOLCANOES**
Isaac Álvarez, Universidad de Granada, Spain; Guillermo Cortés, Angel De la Torre, Carmen Benítez, Luz García, University of Granada, Spain; Philippe Lesage, University of Savoie, France; Raúl Arámbula, Miguel González-Amezcua, University of Colima, Mexico

THP.G.8 **DETECTING SMALL AMPLITUDE SIGNAL AND TRANSIT TIMES IN HIGH NOISE: APPLICATION TO HYDRAULIC FRACTURE MONITORING**
Qiuhua Liu, Sandip Bose, Henri-Pierre Valero, Ram Shenoy, Abderrhamane Ounadjela, Schlumberger-Doll Research, United States

THP.G.10 **SPECTRAL IMAGE PROCESSING USING SPARSE LINEAR TRANSFORMS**
Stefan Robila, Montclair State University, United States

THP.G.11 **LOCALIZED SHRINKAGE COVARIANCE ESTIMATION OF HYPERSPECTRAL IMAGE CLASSIFICATION**
Hsiao-Yun Huang, Fu Jen Catholic University, Taiwan; Bor-Chen Kuo, National Taichung University, Taiwan; Jeng-Fu Liu, Nanping Yang, Fu Jen Catholic University, Taiwan

THP.H: Thursday, July 16, 12:40 - 14:20

THP.H **Interferometry**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area H
Co-Chairs: Gilda Schirinzi and Y.S. Rao

THP.H.1 **A COMBINATION OF PARTICLE FILTER, MATRIX PENCIL AND REGION GROWING TECHNIQUES FOR PHASE UNWRAPPING IN SAR INTERFEROMETRY**
Juan J Martinez-Espla, Tomas Martinez-Marin, Juan M. Lopez-Sanchez, J. David Ballester-Berman, University of Alicante, Spain

THP.H.2 **ENHANCING COMPLEX INTERFEROGRAMS BY ANISOTROPIC DIFFUSION**
Fernando Rodríguez González, Mihai Datcu, German Aerospace Center (DLR), Germany

THP.H.3 **SURFACE AND DOUBLE-BOUNCE DISCRIMINATION BY MEANS OF POLINSAR SINGLE- AND ALTERNATE- TRANSMIT MODES**
Maxim Neumann, Shaharyar Khwaja, Laurent Ferro-Famil, University of Rennes 1, France

THP.H.4 **SIMULATION OF DUAL-CHANNEL SAR-GMTI FOR VELOCITY ESTIMATION AND COMPENSATION**
Young K Kwag, Korea Aerospace University, Republic of Korea; Jae H Jung, LIG NEX1, Republic of Korea; Chul H Jung, Korea Aerospace University, Republic of Korea

THP.H.5 **OBTAIN LONGEST AXIS OF COHERENCE REGION AND ITS APPLICATIONS TO ESTIMATE TOPOGRAPHIC PHASE**
Lu Bai, Wen Hong, Fang Cao, Jin-Song Chong, Institute of Electronics, Chinese Academy of Sciences, China

THP.H.6 **POLARIMETRIC, X-BAND RADAR NETWORK: SIMULATION RESULTS AND EARLY DATA EVALUATION**
Piotr Domaszczynski, Anton Kruger, Witold F. Krajewski, The University of Iowa, United States

THP.H.7 **INTERFEROMETRIC SAR CALIBRATION WITH AREA CALIBRATION SITE OF SAME HEIGHT**
Wei Zhang, Maosheng Xiang, Yirong Wu, Institute of Electronics, Chinese Academy of Sciences, China

THP.H.8 **LARGE SCALE LAND SUBSIDENCE MONITORING WITH A REDUCED SET OF SAR IMAGES**
Daqing Ge, Yan Wang, Ling Zhang, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources (AGRS), China; Ye Xia, GeoForschungsZentrumPotsdam, Germany; Xiaofang Guo, China Aero Geophysical Survey & Remote Sensing Center for Land and Resources (AGRS), China

THP.H.9 **MONITORING LANDSLIDES IN THE THREE GORGES AREA USING TERRASAR-X DATA**
Xiaofan Li, Jan-Peter Muller, University College London, United Kingdom; Yonghong Zhao, Peking University, China

THP.H.10 **MOTION MEASUREMENT ERRORS ANALYSIS FOR THE "ONE-ACTIVE" LASAR**
Yinbo Wang, Xiaoling Zhang, Jun Shi, University of Electronic Science and Technology of China, China

THP.I: Thursday, July 16, 12:40 - 14:20

THP.I **SAR Instruments, Missions and Calibration**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area I
Chair: Tom Farr

THP.I.1 **LANDSCAPES OF TITAN**
Tom Farr, Jet Propulsion Laboratory, United States; Alexander Hayes, California Institute of Technology, United States; Randolph Kirk, US Geological Survey, United States; Karl Mitchell, Rosaly Lopes, Jet Propulsion Laboratory, United States; Ralph Lorenz, Johns Hopkins University, United States; Ellen Stofan, Proxemy Research, United States; Jani Radebaugh, Brigham Young University, United States; Steve Wall, Jet Propulsion Laboratory, United States; Chuck Wood, Wheeling Jesuit College, United States

THP.I.2 **A REVISED RADIOMETRIC NORMALISATION STANDARD FOR SAR**
David Small, University of Zurich, Switzerland; Nuno Miranda, European Space Agency, Italy; Erich Meier, University of Zurich, Switzerland

THP.I.4 **THE FEASIBILITY OF A COMPACT POLARIMETRIC SYNTHETIC APERTURE RADAR FOR POLSAR AND POLINSAR APPLICATIONS**
Marco Lavalle, Tor Vergata University, Italy; Eric Pottier, University of Rennes 1, France; Domenico Solimini, Tor Vergata University, Italy; Yves-Louis Desnos, European Space Agency, Italy

THP.I.5 **EFFECT OF LINEAR ARRAY ELEMENTS SPACING ON ANGLE IMAGING PERFORMANCE OF DOWNWARD-LOOKING 3D-SAR**
Yanping Wang, Lei Du, Wen Hong, Yirong Wu, Lideng Wei, Institute of Electronics, Chinese Academy of Sciences, China

THP.I.6 **RESEARCH ON THE RELATIONSHIP BETWEEN SATELLITE ATTITUDE STABILITY AND INTERFEROMETRIC PERFORMANCE**
Wei Li, Chunsheng Li, Jie Chen, Yujing Liu, Beijing University of Aeronautics and Astronautics, China

THP.I.7 **AN INTERNAL CALIBRATION SCHEME FOR POLARIMETRIC SYNTHETIC APERTURE RADAR SYSTEM**
Shuo Wang, Graduate University of Chinese Academy of Sciences, China; Weidong Yu, Haiming Qi, Institute of Electronics, Chinese Academy of Sciences, China

THP.I.8 **CALIBRATION OF THE HIGH PERFORMANCE AIRBORNE SAR SYSTEM (PI-SAR2)**
Takeshi Matsuoka, Toshihiko Umehara, Akitsugu Nadai, Tatsuharu Kobayashi, Makoto Satake, Seiho Uratsuka, National Institute of Information and Communications Technology (NICT), Japan

THP.I.9 **SCALED MODEL FOR SAND-COVERED BEDROCK MAPPING INTERFEROMETRIC SAR**
Adel Elsherbini, Kamal Sarabandi, University of Michigan, United States

THP.I.10 **TRANSPOLARIZING TRIHEDRAL MEASUREMENT USING UPC X-BAND GBSAR**
P.J. Ferrer, J. Romeu, J.M. González-Arbesú, Albert Aguasca, Luca Pipia, Carlos López-Martínez, Xavier Fàbregas, Universitat Politècnica de Catalunya (UPC), Spain

THP.I.11 **ACCURACY ASSESSMENT OF THE FIRST HIGH-RESOLUTION IFSAR CAMPAIGN OVER THE COORONG REGION OF SOUTH AUSTRALIA**
Carl Menges, Fabrice Marre, Tishampati Dhar, Apogee Imaging International, Australia

THP.J: Thursday, July 16, 12:40 - 14:20

THP.J **SAR Posters A**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area J
Co-Chairs: Mahta Moghaddam and Pierfrancesco Lombardo

THP.J.1 **CIRCULAR SAR IMAGING VIA COMPRESSED SENSING**
Yun Lin, Wei-Xian Tan, Wen Hong, Yanping Wang, Jin-Song Chong, Institute of Electronics, Chinese Academy of Sciences, China

THP.J.2 **KERNEL REGRESSION-BASED BACKGROUND PREDICTING METHOD FOR TARGET DETECTION IN SAR IMAGE**
Yanfeng Gu, Xing Liu, Harbin Institute of Technology, China; Jinglong Han, harbin institute of technology, China; Ye Zhang, Harbin Institute of Technology, China

THP.J.3 **PSLR ESTIMATION CONSIDERING CLUTTER BACKGROUND FROM SAR IMAGE DATA**
Chul H Jung, Young K Kwag, Korea Aerospace University, Republic of Korea

THP.J.4 **COMBINED METAL DETECTOR AND GROUND-PENETRATING RADAR SENSOR EXPERIMENTS IN A VARIETY OF SOIL CONDITIONS**
Dae Man Kim, Gwangju Institute of Science and Technology, Republic of Korea; SeokHwan Kim, Hyundai Rotem Company, Republic of Korea; Seokjae Lee, Agency for Defense Development, Republic of Korea; Kangwook Kim, Gwangju Institute of Science and Technology, Republic of Korea

THP.J.5 **ANTI-JAMMING TECHNIQUES FOR SYNTHETIC APERTURE RADAR**
Wei Li, Xing Liang Wang, AirForce Engineering University, China; Xian-Ming Wang, Nanjing 14th Institute, China

THP.J.6 **THE EFFECTS OF MULTI-PATH SCATTERING ON THE SAR IMAGE OF CYLINDER CAVITY**
Yueting Zhang, Chibiao Ding, Hongjian You, Xiaolan Qiu, Institute of Electronics Chinese Academy of Sciences, China

THP.J.7 **SAR RAW SINGAL SIMULATION ACCOUNTING FOR ANTENNA ATTITUDE VARIATIONS**
Xiao Qing Tang, Mao Sheng Xiang, Li Deng Wei, Yirong Wu, Institute of Electronics, Chinese Academy of Sciences, China

THP.J.8 **SAR RAW SIGNAL SIMULATION BASED ON GPU PARALLEL COMPUTATION**
Bing-Nan Wang, Fan Zhang, Maosheng Xiang, Institute of Electronics, Chinese Academy of Sciences, China

THP.J.10 **SAR TARGET RECOGNITION BASED ON SUB-BLOCK STATISTICAL FEATURES EXTRACTED FROM THE GABOR FILTERED IMAGE**
Fengming Hu, Institute of Electronics, Chinese Academy of Sciences, China; Xuehua Fan, Institute of Atmospheric Physics, Chinese Academy of Sciences, China; Ruliang Yang, Institute of Electronics, Chinese Academy of Sciences, China

THP.J.11 **AN IMAGING METHOD AND THE CORRECTION OF DISTORTION FOR SPACEBORNE-AIRBORNE BISTATIC SAR**
Yang Yue, Xiaoling Zhang, Zijin Zuo, Haiguang Yang, University of Electronic Science and Technology of China, China

THP.J.12 **DEVELOPEMENT OF AN EFFICIENT SCAN SAR PRCESSOR USING INTEGRATED SPECAN ALGORITHMS**
Wookyung Lee, Korea Aerospace University, Republic of Korea; Jung Hwan Song, Korea Aerospace Univ., Republic of Korea

THP.K: Thursday, July 16, 12:40 - 14:20

THP.K **SAR Posters B**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area K
Co-Chairs: Mahta Moghaddam and Pierfrancesco Lombardo

THP.K.1 **SPOTLIGHT SAR PROCESSOR BY USING EXTENDED FREQUENCY SCALING**
Dong Kim, Moon Kim, Satrec Initiative co., Republic of Korea; Jung Keum, Korea Aerospace Research Institute, Republic of Korea

THP.K.2 **DATA PROCESSING FRAME FOR AIRBORNE SAR PROTOTYPE DEVELOPMENT**
Beatriz Gómez, Maria González, Juan Manuel Cuerda Muñoz, Juan Cores, Nuria Casal, Nuria Gimeno, Patricia Cifuentes, Alvaro Arenas, Adolfo Lopez, INTA, Spain

THP.K.3 **ANTENNA POINTING MEASUREMENT FOR SPACEBORNE SAR BASED ON SIGN-MLCC ALGORITHM**
Yesheng Gao, Kaizhi Wang, Xingzhao Liu, Wenxian Yu, Shanghai Jiao Tong University, China

THP.K.6 **FLOOD DISASTER MONITORING WITH ALOS/PALSAR OBSERVATION**
Noriyuki Kawano, Masanobu Shimada, Earth Observation Research Center Japan Aerospace Exploration Agency, Japan

THP.K.7 **A WEB APPLICATION WITH VISUAL SAR PROCESSOR FOR EDUCATION**
Yosuke Ito, Naruto University of Education, Japan; Yuuhei Teramoto, Kenji Abe, Ateral, Inc., Japan

THP.L: Thursday, July 16, 12:40 - 14:20

THP.L **Microwave Radiometry: Instruments and Applications**
Session Type: Poster
Time: Thursday, July 16, All Day (Authors Present: 12:40 - 14:20)
Place: Poster Area L
Co-Chairs: Xavier Bosch-Lluis and Mehrez Zribi

THP.L.2 **NOISE WAVE ANALYSIS OF DICKE AND NOISE INJECTION RADIOMETERS: COMPLETE S-PARAMATER ANALYSIS AND EFFECT OF TEMPERATURE GRADIENTS**
Adriano Camps, Universitat Politecnica de Catalunya - IEEC/CRAE-UPC, Spain

THP.L.3 **MULTIFREQUENCY EXPERIMENTAL RADIOMETER WITH INTERFERENCE TRACKING FOR EXPERIMENTS OVER LAND AND LITTORAL: MERITXELL**
José Miguel Tarongi, Adriano Jose Camps, Universitat Politecnica de Catalunya, Spain

THP.L.4 **PERSONAL EXPERIENCE IN ELABORATION, TESTING AND PUTTING TO PRACTICAL APPLICATION OF AIRPLANE, UNMANNED AND MOBILE PLATFORMS WITH MICROWAVE RADIOMETERS ON BOARD AS PRINCIPAL INSTRUMENTS ALONG WITH INFRARED AND OPTICAL SENSORS WHERE APPROPRIATE**
Anatolij Shutko, Vladimir Abramov, Alexanser Haldin, Eugene Novichikhin, Vladimir Krapivin, Sergey Golovachev, Institute of Radioengineering and Electronics, Russian Academy of Sciences (IRE RAS), Russian Federation; Victor Pliushchev, Igor Sidorov, Radio Corporation VEGA, Russian Federation; Eugene Biriukov, Joint Stock Company (Radio Corporation VEGA), Russian Federation; Roland Haarbrink, Miramap, Netherlands, Netherlands; Frank Archer, Alabama A&M University, United States; P. Hristov, E. Gavrailov, Varna Free University, Bulgaria; Alexander Chukhlantsev, Institute of Radioengineering and Electronics, Russian Academy of Sciences (IRE RAS), Russian Federation

THP.L.5 **LINEARITY CHARACTERIZATION OF DETECTORS FOR INTERFEROMETRIC RADIOMETERS**
Cristina Gonzalez, Francesc Torres, Nuria Duffo, Ignasi Corbella, Universitat Politècnica de Catalunya, Spain; Roger Vilaseca, MIER SA, Spain; Pedro de Paco, Universitat Autònoma de Barcelona, Spain; Manuel Martín-Neira, European Space Agency, Netherlands

THP.L.10 **GNSS SCATTEROMETRY OF THE EARTH SURFACE: MODEL ANALYSIS OF GEOPHYSICAL PARAMETER SENSITIVITY AND INSTRUMENT REQUIREMENTS**
Leila Guerriero, Tor Vergata University of Rome, Italy; Stefano Landenna, Thales Alenia Space, Italy; Nazzareno Pierdicca, Ivano Ricciarelli, Sapienza University of Rome, Italy; Alberto Zin, Thales Alenia Space, Italy

THP.L.11 **GSOC'S SCATTEROMETRY GNSS RECEIVER FOR OCEAN REMOTE SENSING: DESIGN AND INITIAL RESULTS**
Rodrigo Rivas, Andreas Grillenberger, Markus Markgraf, German Aerospace Center(DLR), Space Flight Technology Department, Germany

THP.L.12 **RECENT AIRBORNE EXPERIMENTS IN MULTISTATIC GNSS SENSING OF OCEAN ROUGHNESS USING GISMOS**
James Garrison, Justin Voo, Tyler Lulich, Jennifer Haase, Purdue University, United States

TH3.O1: Thursday, July 16, 14:20 - 16:00

TH3.O1 **Remote Sensing for Sea Pollution**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 2A
Co-Chairs: Maurizio Migliaccio and Chan-Su Yang

14:20
TH3.O1.1 **MERIS–BASED AQUATIC PETROLEUM POLLUTION MONITORING MODE**
Miao-Fen Huang, Dalian Fisheries University, China; Xiang-Ping Zhang, Ke-Jie Lu, National Natural Sciences Foundation of Chain, China; Xu-Feng Xing, Dalian Fisheries University, China

14:40
TH3.O1.2 **ALOS-PALSAR POLARIMETRIC SAR DATA TO OBSERVE SEA OIL SLICKS**
Maurizio Migliaccio, Attilio Gambardella, Ferdinando Nunziata, Università degli Studi di Napoli Parthenope, Italy; Masanobu Shimada, Osamu Isoguchi, Japan Aerospace Exploration Agency, Japan

15:00
TH3.O1.3 **A STUDY ON OIL SPILL DETECTION WITH X-BAND MARINE RADAR**
Ying Li, Shuiming Yu, Duo Chen, Dalian Maritime University, China; Jijun Li, Maritime Safety Administration of Shandong China, China

15:20
TH3.O1.4 **COMPARISON WITH L-, C-, AND X-BAND REAL SAR IMAGES AND SIMULATION SPILLED OIL ON SEA SURFACE**
Chan-Su Yang, Youn-Seop Kim, Korea Ocean Research & Development Institute, Republic of Korea; Kazuo Ouchi, National Defense Academy, Japan; Jae-Ho Na, Korea Ocean Research & Development Institute, Republic of Korea

15:40
TH3.O1.5 **OIL SPILL DETECTION, MONITORING AND RESPONSE IN THE NIGERIAN COASTAL ENVIRONMENT USING GEOSPATIAL INFORMATION TECHNOLOGY (GIT)**
Mahmoud Ibrahim Mahmoud, National Oil Spill Detection and Response Agency (NOSDRA) / Federal University of Technology Minna, Nigeria

TH3.O2: Thursday, July 16, 14:20 - 16:00

TH3.O2 **High-Resolution SAR Image processing**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 2D
Co-Chairs: Mihai Datcu and Samuel Foucher

14:20
TH3.O2.1 **AUTOMATED INFORMATION EXTRACTION FROM HIGH RESOLUTION SAR IMAGES: TERRASAR-X IMAGE INTERPRETATION APPLICATIONS**
Gottfried Schwarz, German Aerospace Center DLR, Germany; Matteo Soccorsi, Houda Chaabouni, Daniela Espinoza, Daniele Cerra, Fernando Rodríguez González, Mihai Datcu, German Aerospace Center (DLR), Germany

14:40
TH3.O2.2 **GEOLOCATION ACCURACY OF TERRASAR-X HIGH-RESOLUTION PRODUCTS**
Adrian Schubert, David Small, Michael Jehle, Erich Meier, University of Zurich, Switzerland

15:00
TH3.O2.3 **SPECKLE REDUCTION AND EDGE DETECTION FOR TERRASAR-X SINGLE-LOOK DUAL-POLARIZATION IMAGERY**
Ken Yoong Lee, Timo Bretschneider, Choo Leng Koh, EADS Innovation Works Singapore, Singapore

15:20
TH3.O2.4 **AUTOMATIC TARGET RECOGNITION OF AIRCRAFT MODELS BASED ON ISAR IMAGES**
Mohamed Nabil Saidi, Laboratory E3I2-EA3876 ENSIETA, France; Khalid Daoudi, CNRS-IRIT, France; Ali Khenchaf, Brigitte Hoeltzener, Laboratory E3I2-EA3876 ENSIETA, France; Driss Aboutajdine, GSCM-LRIT, Morocco

15:40
TH3.O2.5 **FIRST VALIDATION EXPERIMENT FOR A MULTI-CHROMATIC ANALYSIS (MCA) OF SAR DATA STARTING FROM SLC IMAGES**
Fabio Bovenga, Vito Martino Giacovazzo, Alberto Refice, Nicola Veneziani, National Research Council, Italy; Raffaele Vitulli, European Space Agency, Netherlands

TH3.O3: Thursday, July 16, 14:20 - 16:00

TH3.O3 **Recent Advances in Hyperspectral Unmixing and Information Extraction I**
Session Type: Oral-Invited
Time: Thursday, July 16, 14:20 - 16:00
Place: Menzies M9
Co-Chairs: Steve Damelin and Michael Sears

14:20
TH3.O3.1 **A NEYMAN-PEARSON APPROACH TO ESTIMATING THE NUMBER OF ENDMEMBERS**
Joshua Broadwater, Amit Banerjee, The Johns Hopkins University, United States

14:40
TH3.O3.2 **A GENERALIZED LINEAR MIXING MODEL FOR HYPERSPECTRAL IMAGERY**
David Gillis, Jeffrey Bowles, Naval Research Laboratory, United States; Emmett Ientilucci, Rochester Institute of Technology, United States

15:00
TH3.O3.3 **ANALYSIS OF SUB-MANIFOLD STRUCTURE IN HYPERSPECTRAL IMAGERY**
Charles Bachmann, Thomas Ainsworth, Robert Fusina, Naval Research Laboratory, United States

15:20
TH3.O3.4 **FRAME BASED KERNEL METHODS FOR AUTOMATIC CLASSIFICATION IN HYPERSPECTRAL DATA**
John Benedetto, Wojciech Czaja, Justin Flake, Matthew Hirn, University of Maryland College Park, United States

15:40
TH3.O3.5 **ADVANCES IN HYPERSPECTRAL PROCESSING FOR PROVINCE AND CONTINENTAL- WIDE MINERAL MAPPING**
Robert Hewson, Thomas Cudahy, Michael Caccetta, Andrew Rodger, CSIRO, Australia; Mal Jones, Geological Survey of Queensland, Australia; Cindy Ong, CSIRO, Australia

TH3.O4: Thursday, July 16, 14:20 - 16:00

TH3.O4 **Coastal and Wetlands Applications III**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Menzies M10

14:20
TH3.O4.1 **STANDARDIZED SEA FLOOR AND WATER DEPTH MAPPING USING OPTICAL AIRBORNE AND SATELLITE DATA**
Thomas Heege, Jörg Heblinski, EOMAP GmbH & Co KG, Germany; Halina Kobryn, Kristin Wouters, Nicole Pinnel, Murdoch University, Australia; Peter Reinartz, German Aerospace Center, Germany

14:40
TH3.O4.2 **HIGH RESOLUTION DEM DERIVED FROM THERMAL INFRARED IMAGES : EXAMPLE OF ABER BENOIT (FRANCE)**
Damien Gaudin, Christophe Delacourt, Institut Universitaire Européen de la Mer - Université de Bretagne Occidentale, France; Pascal Allemand, Université Claude Bernard Lyon 1, France; Marion Jaud, Jérôme Ammann, Institut Universitaire Européen de la Mer - Université de Bretagne Occidentale, France; Chantal Tisseau, Institut Européen Universitaire de la Mer - Université de Bretagne Occidentale, France; Véronique Cuq, Institut Universitaire Européen de la Mer - Université de Bretagne Occidentale, France

15:00
TH3.O4.3 **INFRARED REMOTE SENSING OF COHERENT STRUCTURES IN AN ESTUARINE RIVER**
Andrew Jessup, Chris Chickadel, University of Washington, United States

15:20
TH3.O4.4 **NEAR REAL TIME OIL SPILL DETECTION AND MONITORING USING SATELLITE OPTICAL DATA**
Caterina Livia Sara Grimaldi, Department of Engineering and Physics of the Environment (DIFA) - University of Basilicata, Italy; Irina Coviello, Teodosio Lacava, Nicola Pergola, Institute of Methodologies for Environmental Analysis (IMAA) - National Research Council (CNR), Italy; Valerio Tramutoli, Department of Engineering and Physics of the Environment (DIFA) - University of Basilicata, Italy

15:40
TH3.O4.5 **SEA-CLUTTER ANALYSIS AT MULTIPLE WAVELENGTHS (L,C,X) FOR TARGET-CLUTTER CONTRAST ASSESSMENT IN LITTORAL WATERS**
Carl Menges, Fabrice Marre, Tishampati Dhar, Apogee Imaging International, Australia

TH3.O5: Thursday, July 16, 14:20 - 16:00

TH3.O5 **Measuring Earth Dynamics using L-Band Interferometry**
Session Type: Oral-Invited
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 2B
Chair: Paul Rosen

14:20
TH3.O5.1 **A STUDY OF FOREST VERTICAL STRUCTURE ESTIMATION USING COHERENCE TOMOGRAPHY COUPLED TO A MACRO-ECOLOGICAL SCATTERING MODEL**
Shane Cloude, AEL Consultants, United Kingdom; Matthew Brolly, Iain Woodhouse, University of Edinburgh, United Kingdom

14:40
TH3.O5.2 **ERRORS IN TROPICAL-FOREST STRUCTURE PARAMETERS ESTIMATED FROM REPEAT-TRACK POLARIMETRIC INSAR AT L-BAND**
Robert Treuhaft, Bruce Chapman, Scott Hensley, George Purcell, Jet Propulsion Laboratory, California Institute of Technology, United States; Fabio Goncalves, Oregon State University, United States; Joao Roberto dos Santos, Luciano Dutra, Instituto Nacional de Pesquisas Espaciais, Brazil

15:00
TH3.O5.3 **ESTIMATION OF FOREST VERTICAL SRUCTURE BY MEANS OF MULTI-BASELINE POL-INSAR AT L-BAND**
Konstantinos Papathanassiou, Seung-Kuk Lee, Florian Kugler, German Aerospace Center (DLR), Germany

15:20
TH3.O5.4 **PRELIMINARY RESULTS OF THE ADVANCED L-BAND TRANSMISSION AND REFLECTION OBSERVATION OF THE SEA SURFACE (ALBATROSS) CAMPAIGN: PREPARING THE SMOS CALIBRATION AND VALIDATION ACTIVITIES**
Marco Talone, Adriano Camps, Juan Fernando Marchan-Hernandez, José Miguel Tarongi, Maria Piles, Xavier Bosch-Lluis, Isaac Ramos-Perez, Enric Valencia, Nereida Rodriguez-Alvarez, Mercè Vall-Llossera, Pau Ferré, Remote Sensing LAB, Spain

15:40
TH3.O5.5 **ON THE USE OF COMPACT L-BAND DICKE RADIOMETER (ARIEL) AND UAV FOR SOIL MOISTURE AND SALINITY MAP RETRIEVAL: 2008/2009 FIELD EXPERIMENTS**
Rene Acevo-Herrera, Albert Aguasca, Xavier Bosch-Lluis, Adriano Camps, UPC, Spain

TH3.O6: Thursday, July 16, 14:20 - 16:00

TH3.O6 **Open Source Initiatives for Remote Sensing - Orfeo Toolbox I**
Session Type: Oral-Invited
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 2C
Co-Chairs: Jordi Inglada and Emmanuel Christophe

14:20
TH3.O6.1 **THE ORFEO TOOLBOX REMOTE SENSNIG IMAGE PROCESSING SOFTWARE**
Jordi Inglada, CNES, France; Emmanuel Christophe, CRISP, Singapore

14:40
TH3.O6.2 **OBJECT COUNTING IN HIGH RESOLUTION REMOTE SENSING IMAGES WITH OTB**
Emmanuel Christophe, CRISP, Singapore; Jordi Inglada, CNES, France

15:00
TH3.O6.3 **REFERENCE ALGORITHM IMPLEMENTATIONS IN OTB: TEXTBOOK CASES**
Julien Michel, Thomas Feuvrier, CS, France; Jordi Inglada, CNES, France

15:20
TH3.O6.4 **IMAGE SEMANTIC CODING USING OTB**
Marie Liénou, Marine Campedel, TELECOM ParisTech, France

15:40
TH3.O6.5 **ASSESSMENT OF INTEREST POINTS DETECTION ALGORITHMS IN OTB**
Otmane Lahlou, Julien Michel, Damien Pichard, CS, France; Jordi Inglada, CNES, France

TH3.O7: Thursday, July 16, 14:20 - 16:00

TH3.O7 **Data Fusion I**
Session Type: Oral-Invited
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 3A
Co-Chairs: Paolo Gamba and Jocelyn Chanussot

14:20
TH3.O7.1 **FUSION OF KALMAN FILTER AND ANOMALY DETECTION FOR MULTISPECTRAL AND HYPERSPECTRAL TARGET TRACKING**
Olga Duran, Efstathios Onasoglou, Maria Petrou, Imperial College London, United Kingdom

14:40
TH3.O7.2 **NOVEL METHODS FOR PANCHROMATIC SHARPENING OF MULTI/HYPER-SPECTRAL IMAGE DATA**
Christoph Borel, Clyde Spencer, Ball Aerospace, United States

15:00
TH3.O7.3 **CLOUD SCREENING WITH COMBINED MERIS AND AATSR IMAGES**
Luis Gómez-Chova, Jordi Muñoz-Marí, Emma Izquierdo-Verdiguier, Gustavo Camps-Valls, Javier Calpe-Maravilla, Jose Moreno, University of Valencia, Spain

15:20
TH3.O7.4 **EDGE-PRESERVING CLASSIFICATION OF HIGH-RESOLUTION REMOTE-SENSING IMAGES BY MARKOVIAN DATA FUSION**
Gabriele Moser, Sebastiano B. Serpico, University of Genoa, Italy

15:40
TH3.O7.5 **BUILDING DETECTION BY FUSION OF OPTICAL AND SAR FEATURES IN METRIC RESOLUTION DATA**
Helene Sportouche, Florence Tupin, Institut TELECOM; TELECOM ParisTech; CNRS LTCI, France; Leonard Denise, THALES Communications, France

TH3.O8: Thursday, July 16, 14:20 - 16:00

TH3.O8 **Advanced Concepts for Image Analysis II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 3B
Co-Chairs: Florence Tupin and Lori M Bruce

14:20
TH3.O8.1 **SEMANTIC OBJECT-BASED IMAGE DECOMPOSITION FOR AUTOMATED GIS DATABASE POPULATION**
Cosmin Mihai, Iris Vanhamel, Mohamed Jabloun, Thomas Geerinck, Hichem Sahli, Vrije Universiteit Brussel, Belgium

14:40
TH3.O8.2 **ICA BASED VISUAL WORDS FOR DESCRIBING UNDER METER HIGH RESOLUTION SATELITTE IMAGES**
Payam Birjandi, Mihai Datcu, Institute of Technology, Telecom Paris, France

15:00
TH3.O8.3 **FUZZY SPATIAL RELATIONS FOR HIGH RESOLUTION REMOTE SENSING IMAGE ANALYSIS: THE CASE OF "TO GO ACROSS"**
Maria Carolina Vanegas, Isabelle Bloch, TELECOM ParisTech, CNRS LTCI, UMR 5141, France; Jordi Inglada, Centre National d'Etudes Spatiales, France

15:20
TH3.O8.4 **AN ADAPTIVE MULTISCALE RANDOM FIELD TECHNIQUE FOR UNSUPERVISED CHANGE DETECTION IN VHR MULTITEMPORAL IMAGES**
Francesca Bovolo, Lorenzo Bruzzone, University of Trento, Italy

15:40
TH3.O8.5 **GENERAL FRAMEWORK ON CHANGE DETECTION IN A SPARSE DOMAIN**
Abdourrahmane Atto, Gregoire Mercier, Dominique Pastor, Institut Telecom; Telecom Bretagne, France

TH3.O9: Thursday, July 16, 14:20 - 16:00

TH3.O9 **Remote Sensing and Geospatial Information Technology for Agricultural Decision Support**
Session Type: Oral-Invited
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 1A
Co-Chairs: Zhengwei Yang and Julian Smit

14:20
TH3.O9.1 **PREPARATION FOR HYSPIRI SPACEBORNE IMAGING SPECTROMETER OBSERVATIONS FOR PRECISION VEGETATION MAPPING**
Saurabh Prasad, Lori Bruce, Hemanth Kalluri, Mississippi State University, United States

14:40
TH3.O9.2 **WEB SERVICE BASED ARCHITECTURE FOR US NATIONAL CROP PROGRESS MONITORING SYSTEM**
Genong Yu, George Mason University, United States; Zhengwei Yang, United States Department of Agriculture, United States; Liping Di, George Mason University, United States

15:00
TH3.O9.3 **INTEGRATION OF RADARSAT-2 SCANSAR AND AWIFS FOR OPERATIONAL AGRICULTURAL LAND USE MONITORING OVER THE CANADIAN PRAIRIES**
Jiali Shang, Heather McNairn, Catherine Champagne, Xianfeng Jiao, Ian Jarvis, Xiaoyuan Geng, Agriculture and Agri-Food Canada, Canada

15:20
TH3.O9.4 **LAI ESTIMATION OF AGRICULTURAL CROPS FROM OPTICAL DATA AT DIFFERENT SPATIAL RESOLUTION**
Giuseppe Satalino, Francesco Mattia, ISSIA-CNR, Italy; Sergio Ruggieri, Michele Rinaldi, CRA-SCA, Italy

15:40
TH3.O9.5 **A COMPARISON OF VEGETATION INDICES FOR CORN AND SOYBEAN VEGETATION CONDITION MONITORING**
Zhengwei Yang, United States Department of Agriculture, United States; Hu Zhao, George Mason University, Wuhan University, United States; Liping Di, Genong Yu, George Mason University, United States

TH3.O10: Thursday, July 16, 14:20 - 16:00

TH3.O10 **Optical Sensing Methods and Systems**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 1B
Chair: Paul Stephens

14:20
TH3.O10.1 **SUSTAINABLE GLOBAL MONITORING: TWO NEW 20-METRE SATELLITES JOIN THE DMC CONSTELLATION TO SIGNIFICANTLY EXPAND CAPACITY.**
J. Paul Stephens, Stephen Mackin, Gary Crowley, DMC International Imaging Ltd, United Kingdom

14:40
TH3.O10.2 **ASSESSMENT OF THE POTENTIAL FUTURE HIGH AND MEDIUM RESOLUTION SENSORS ON GEOSYNCHRONOUS ORBIT FOR COASTAL ZONE MONITORING**
Manchun Lei, Audrey Minghelli-Roman, University of Burgundy, France; Sandrine Mathieu, Thalès Alenia Space, France; Jean-Marie Froidefond, University of Bordeaux 1, France; Annick Bricaud, LOV/CNRS, France; Pierre Gouton, University of Burgundy, France

15:00
TH3.O10.3 **PERFORMANCE OF THE NPOESS CRIS SENSOR AND ENVIRONMENTAL DATA RECORDS**
Nancy Andreas, Phil Moffa, Farhang Sabet-Peyman, Tom Christensen, Degui Gu, Denise Hagan, Northrop Grumman Corporation, United States; Ronald Glumb, ITT Corporation, United States; Richard Slonaker, Integrated Program Office, United States; Gail Bingham, Space Dynamics Laboratory, United States

15:20
TH3.O10.4 **ASSESSMENT OF THE SHORT-TERM RADIOMETRIC STABILITY BETWEEN TERRA MODIS AND LANDSAT 7 ETM+ SENSORS**
Taeyoung (Jason) Choi, Science Systems & Applications, Inc., United States; Xiaoxiong (Jack) Xiong, National Aeronautics and Space Administration, United States; Gyanesh Chander, SGT/USGS/EROS, United States; Amit Angal, Science Systems & Applications, Inc., United States

15:40
TH3.O10.5 **RADIOMETRIC CALIBRATION AND VALIDATION PLAN OF GEOSTATIONARY OCEAN COLOR IMAGER (GOCI)**
Seongick Cho, Yu-Hwan Ahn, Hee-Jeong Han, Joo-Hyung Ryu, Chan-Su Yang, Korea Ocean Research & Development Institute (KORDI), Republic of Korea

TH3.O11: Thursday, July 16, 14:20 - 16:00

TH3.O11 **Remote Sensing of LAI**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 1C
Co-Chairs: Sylvain Leblanc and Jing Chen

14:20
TH3.O11.1 **MAPPING THE VEGETATION CLUMPING INDEX AND LAI USING MULTI-ANGLE AIRBORNE IMAGERY**
Anita Simic, Jing Chen, University of Toronto, Canada

14:40
TH3.O11.2 **MAPPING OF FOREST UNDERSTORY USING MULTI-ANGULAR MISR DATA FOR IMPROVEMENT OF GLOBAL LEAF AREA INDEX PRODUCTS**
Jan Pisek, Jing Chen, University of Toronto, Canada

15:00
TH3.O11.3 **LEAF AREA INDEX ESTIMATION FROM HYPERSPECTRAL DATA USING A GROUP DEVISION METHOD**
Taro Asano, Yukio Kosugi, Kuniaki Uto, Naoko Kosaka, Tokyo Institute of Technology, Japan; Shinya Odagawa, Earth Remote Sensing Data Analysis Center, Japan; Kunio Oda, Yamagata Prefectural College of Agriculture, Japan

15:20
TH3.O11.4 **THE OPTIMIZATION OF THE CROP CHLOROPHYLL CONTENT INDICES BASED ON A NEW LAI DETERMINATION INDEX**
Rongbo Cui, Qimin Qin, Nan Yang, Xin Tao, Shaohua Zhao, Peking University, China

15:40
TH3.O11.5 **THE METHOD ON GENERATING LAI PRODUCTION BY FUSING BJ-1 REMOTE SENSING DATA AND MODIS LAI PRODUCT**
Jinling Song, Beijing Normal University, China; Jindi Wang, Zhiqiang Xiao, Beijing Nornal University, China

TH3.O12: Thursday, July 16, 14:20 - 16:00

TH3.O12 **Land Use / Land Cover Classification - Africa Focus I**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 1D
Co-Chairs: Precious Wistebaar and Jean-Louis Roujean

14:20
TH3.O12.1 **EVALUATION OF REMOTE SENSING PRODUCTS OVER THE AMMA-CATCH OBSERVATORY IN WEST AFRICA.**
Manuela Grippa, Eric Mougin, Valérie Demarez, Laurent Kergoat, Claire Gruhier, Pierre Hiernaux, Fréderic Baup, CESBIO, France; Patricia De Rosnay, ECMWF, United Kingdom; Thierry Pellarin, Sylvie Galle, Thierry Lebel, LTHE, France; Christophe Peugeot, Bernard Cappelaere, Jerome Demarty, Nicolas Boulain, HSM, France; Luc Descroix, LTHE, France; Catherine Ottle, Stephane Saux-Picart, LSCE, France; Mehrez Zribi, CETP, France

14:40
TH3.O12.2 **MALARIA SURVEILLANCE WITH REMOTE SENSING AND GIS IN OWERRI, NIGERIA**
Faithful Ogadi Ugorji, Wisconsin International University, Nigeria; Abigail Lartey, Alabama A&M University, United States; Sam O. Nwaneri, Alcorn State University, United States

15:00
TH3.O12.3 **DOES CLIMATE CHANGE CONTROL LAND DEGRADATION IN THE SAHEL?**
Rasmus Fensholt, K. Rasmussen, University of Copenhagen, Denmark; Cheikh Mbow, Université Cheikh Anta Diop de Dakar-Sénégal, Senegal

15:20
TH3.O12.4 **ANALYSIS OF 1982-2006 SUDANO-SAHELIAN VEGETATION DYNAMICS USING NOAA-AVHRR NDVI DATA AND NORMALIZED RAIN-USE EFFICIENCY**
Elodie Vintrou, UMR TETIS - CIRAD, France; Maxime Claden, UMR TETIS - Cemagref, France; Agnes Begue, UMR TETIS - CIRAD, France; Denis Ruelland, UMR HSM - CNRS, France

15:40
TH3.O12.5 **FIRE DISTRIBUTION IN NORTHWESTERN BOTSWANA: CROSS-COMPARISON OF MODIS FIRE PRODUCTS, LANDSAT ETM, AND POPULATION DENSITY**
Kelley A. Crews, University of Texas, United States; Thoralf Meyer, Services for GeoInformation, Botswana

TH3.O13: Thursday, July 16, 14:20 - 16:00

TH3.O13 **Lidar Sensing**
Session Type: Oral-Contributed
Time: Thursday, July 16, 14:20 - 16:00
Place: Leslie 1E
Chair: Gary Gimmestad

14:20
TH3.O13.1 **CSIR-NLC MOBILE LIDAR – FIRST SCIENTIFIC RESULT**
Sivakumar Venkataraman, Melaku Tesfaye, Dineo Moema, Ameeth Sharma, Christoph Bollig, Council for Scientific and Industrial Research, South Africa

14:40
TH3.O13.2 **USING A MULTI-BEAM AUTONOMOUS PORTABLE LASER EQUIPEMENT TO STUDY OPTICAL BEHAVIORS IN SHALLOW WATERS**
Valérie Robitaille, Bernard Long, institut national de la recherche scientifique, Canada

15:00
TH3.O13.3 **COMPACT, 2 MICRON HIGH-ENERGY LASER TRANSMITTER FOR COHERENT WIND LIDAR**
Upendra Singh, Jirong Yu, Michael Kavaya, Grady Koch, NASA Langley Research Center, United States

15:20
TH3.O13.4 **THE INTEGRATED ATMOSPHERIC CHARACTERIZATION SYSTEM**
Gary Gimmestad, David Roberts, John Stewart, Georgia Tech Research Institute, United States; David Whiteman, NASA Goddard Space Flight Center, United States

15:40
TH3.O13.5 **FULLANALYZE: A RESEARCH TOOL FOR HANDLING, PROCESSING AND ANALYZING FULL-WAVEFORM LIDAR DATA**
Adrien Chauve, Frédéric Bretar, Institut Géographique National, France; Sylvie Durrieu, CEMAGREF, France; Marc Pierrot-Deseilligny, Insititut Géographique National, France; William Puech, LIRMM, France

TH4.O1: Thursday, July 16, 16:20 - 18:00

TH4.O1 **Advanced Methods for Polarimetric Information Extraction I**
Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 2A
Co-Chairs: Ridha Touzi and Jong-Sen Lee

16:20
TH4.O1.1 **AN EVALUATION OF POLSAR IMAGE SPECKLE FILTERS**
Samuel Foucher, Computer Research Institute of Montreal, Canada; Carlos López-Martínez, Universitat Politecnica de Catalunya, Spain

16:40
TH4.O1.2 **THE EFFECT OF ORIENTATION ANGLE COMPENSATION ON POLARIMETRIC TARGET DECOMPOSITIONS**
Jong-Sen Lee, Thomas Ainsworth, Naval Research Laboratory, United States; Kun-Shan Chen, National Central University, Taiwan

17:00
TH4.O1.3 **USE OF MULTI-TEMPORAL AND MULTI-POLARISATION RADAR DATA FOR EPIDEMIOLOGY: A CASE STUDY IN THE FERLO REGION, SENEGAL**
Céline Tison, Nadine Pourthié, Centre National d'Etudes Spatiales, France; Pierre-Louis Frison, Université Paris Est, France; Jean-Claude Souyris, CNES, France; Murielle Lafaye, Centre National d'Etudes Spatiales, France; Jean-Pierre Lacaux, Medias-France, France; Anne Urdiroz, Altamira Information, Spain

17:20
TH4.O1.4 **ANALYSIS AND OBSERVATION OF POLARIMETRIC SCATTERING BEHAVIOR IN WETLAND AREA**
Ryoichi Sato, Yoshio Yamaguchi, Hiroyoshi Yamada, Niigata University, Japan

17:40
TH4.O1.5 **URBAN FEATURE CHARACTERIZATION USING POLARIMETRIC AND POL-IN SAR DATA**
Ridha Touzi, Canada Centre for Remote Sensing, Canada; K. Mattar, Defence R&D Canada, Canada; A. Bhattacharya, Canada Centre for Remote Sensing, Canada

TH4.O2: Thursday, July 16, 16:20 - 18:00

TH4.O2 **Interferometry I**
Session Type: Oral-Contributed
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 2D
Co-Chairs: Gianfranco Fornaro and Valentin Poncos

16:20
TH4.O2.1 **AIRBORNE D-INSAR AT X-BAND: RESULTS WITH THE COMPLETE REPEAT-PASS PROCESSING METHODOLOGY**
Karlus Alexander Câmara de Macedo, Christian Wimmer, OrbiSat, Brazil; Silvio Barbin, University of São Paulo and CTI Renato Archer, Brazil; Stefano Perna, Università degli Studi di Napoli, Italy

16:40
TH4.O2.2 **PERSISTENT SCATTERER INTERFEROMETRY ON THE ENTIRE ERS/ENVISAT ARCHIVE OVER THE ITALIAN TERRITORY: THE PST-A/2 PROJECT**
Mario Costantini, Telespazio S.p.A., Italy; Alessandro Ferretti, Tele-Rilevamento Europa - T.R.E. S.r.l., Italy; Federico Minati, Telespazio S.p.A., Italy; Davide Colombo, Tele-Rilevamento Europa - T.R.E. S.r.l., Italy; Maria Grazia Ciminelli, Telespazio S.p.A., Italy; Salvatore Costabile, Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Italy

17:00
TH4.O2.3 **SAR TOMOGRAPHY FROM SPARSE SAMPLES**
Alessandra Budillon, Universita' di Napoli Parthenope, Italy; Annarita Evangelista, Universita' di Cassino, Italy; Gilda Schirinzi, Universita' di Napoli Parthenope, Italy

17:20
TH4.O2.4 **SPACE-BORNE HIGH RESOLUTION TOMOGRAPHIC INTERFEROMETRY**
Xiaoxiang Zhu, Technival University of Munich (TUM), Germany; Nico Adam, German Aerospace Center (DLR), Germany; Richard Bamler, Technival University of Munich (TUM), Germany

17:40
TH4.O2.5 **RADARSAT-1 DEFORMATION TIME SERIES ANALYSIS BASED ON THE SBAS-DINSAR ALGORITHM**
Manuela Bonano, Pepe Antonio, IREA-CNR, Italy; Leonardo Euillades, Universidad Nacional de Cuyo, Argentina; Eugenio Sansosti, Paolo Berardino, Riccardo Lanari, IREA-CNR, Italy

TH4.O3: Thursday, July 16, 16:20 - 18:00

TH4.O3 **Recent Advances in Hyperspectral Unmixing and Information Extraction II**

Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Menzies M9
Co-Chairs: Michael Sears and Steve Damelin

16:20
TH4.O3.1 **ANALYSIS OF DIFFERENT STRATEGIES FOR INCORPORATING SPATIAL INFORMATION IN THE DESIGN OF ENDMEMBER EXTRACTION ALGORITHMS FROM HYPERSPECTRAL DATA**
Gabriel Martin, Antonio Plaza, Maciel Zortea, University of Extremadura, Spain

16:40
TH4.O3.2 **TARGET DETECTION IN HYPERSPECTRAL MINERAL DATA USING WAVELET ANALYSIS**
Michael Mitchley, Michael Sears, University of the Witwatersrand, South Africa; Steven Damelin, Georgia Southern University, United States

17:00
TH4.O3.3 **REDUCING THE DIMENSIONALITY OF HYPERSPECTRAL DATA USING DIFFUSION MAPS**
Louis du Plessis, University of the Witwatersrand, South Africa; Steven Damelin, Georgia Southern University, United States; Michael Sears, University of the Witwatersrand, South Africa

17:20
TH4.O3.4 **PIPELINE PROCESSING OF LARGE VOLUMES OF HYPERSPECTRAL DRILL CORE IMAGERY**
Neil Pendock, University of the Witwatersrand, South Africa; Phil Harris, Anglo American, South Africa; Paul Linton, AngloGold Ashanti, South Africa

17:40
TH4.O3.5 **NEW HYPERSPECTRAL AND ASTER METHODS AND PRODUCTS FOR MINERAL EXPLORATION AND SURFACE MATERIALS MAPPING IN AUSTRALIA**
Matilda Thomas, Geoscience Australia, Australia; Thomas Cudahy, CSIRO, Australia; Mal Jones, Geological Survey of Queensland, Australia; Carsten Laukamp, James Cook University, Australia

TH4.O4: Thursday, July 16, 16:20 - 18:00

TH4.O4 **Remote Sensing for Land and Air Pollution Monitoring**

Session Type: Oral-Contributed
Time: Thursday, July 16, 16:20 - 18:00
Place: Menzies M10
Co-Chairs: Lori Mann Bruce and Giovanni Laneve

16:20
TH4.O4.1 **RAPID DETECTION OF AGRICULTURAL FOOD CROP CONTAMINATION VIA HYPERSPECTRAL REMOTE SENSING**
Terrance West, Lori Mann Bruce, Saurabh Prasad, Daniel Reynolds, Trent Irby, Mississippi State University, United States

16:40
TH4.O4.2 **RED MUD SOIL CONTAMINATION NEAR AN URBAN SETTLEMENT ANALYZED BY AIRBORNE HYPERSPECTRAL REMOTE SENSING**
Simone Pascucci, Claudia Belviso, Rosa Maria Cavalli, CNR, Italy; Giovanni Laneve, Università di Roma, Italy; Ana Misurovic, Ecotoxitological, Yugoslavia; Cinzia Perrino, Stefano Pignatti, CNR, Italy

17:00
TH4.O4.3 **OPTIMUM SAMPLING SCHEME FOR CHARACTERIZATION OF MINE TAILINGS**
Pravesh Debba, The Council for Scientific and Industrial Research (CSIR), South Africa; Emmanual John M Carranza, Alfred Stein, Freek D. van der Meer, International Institute for GeoInformation Sciences and Earth Observation (ITC), Netherlands

17:20
TH4.O4.4 **DETECTION OF SAHARAN DUST BY SPATIAL/SPECTRAL SIGNATURES IN VIS-TIR SATELLITE RADIANCES**
Valerio Tramutoli, University of Basilicata, Italy; Carolina Filizzola, Rossana Paciello, Nicola Pergola, Carla Pietrapertosa, National Research Council, Italy; Giuseppe Mazzeo, University of Basilicata, Italy

17:40
TH4.O4.5 **DEVELOPING A NEW AUTOMATED TOOL FOR DETECTING AND MONITORING DUST AND SAND STORMS IN SUB-AFRICA USING MODIS AND METEOSAT SEVIRI-MSG DATA**
Hosni Ghedira, American University in Dubai, United Arab Emirates; Adnan Al Rais, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates

TH4.O5: Thursday, July 16, 16:20 - 18:00

TH4.O5 **Tropospheric Propagation Effects in Radar Mesaurements**

Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 2B
Co-Chairs: Madhu Chandra and Andreas Danklmayer

16:20
TH4.O5.1 **COMPARISON OF PRECIPITATION EFFECTS IN SPACE-BORNE X- AND KA-BAND SAR IMAGING**
Andreas Danklmayer, German Aerospace Center, Germany; Madhu Chandra, Chemnitz University of Technology, Germany

16:40
TH4.O5.2 **MODELLING AND ANALYSIS OF RAIN EFFECT ON KA-BAND SINGLE PASS INSAR PERFORMANCE**
Salvatore D'Addio, Michael Ludwig, European Space Agency, ESTEC, Netherlands

17:00
TH4.O5.3 **USE OF RADAR IMAGES FOR THE DEVELOPMENT OF A PROPAGATION ORIENTED SPACE-TIME RAIN MODEL**
Carlo Capsoni, Lorenzo Luini, Politecnico di Milano, Italy

17:20
TH4.O5.4 **DROP SHAPE STUDIES IN RAIN USING 2D VIDEO DISDROMETER AND POLARIMETRIC, DUAL-WAVELENGTH RADAR**
Merhala Thurai, Viswanathan Bringi, Colorado State University, United States; Peter May, Centre for Australian Weather and Climate Research, Australia

17:40
TH4.O5.5 **INSAR TROPOSPHERIC ARTIFACTS FOR AFRICAN VOLCANOES CLOSE TO THE INTER TROPICAL CONVERGENCE ZONE (ITCZ)**
Sandra I.N. Heleno, Instituto de Engenharia de Estruturas, Território e Construção, Portugal; Corine Frischknecht, University of Geneva, Switzerland; Nicolas D'Oreye, National museum of natural history, Luxembourg; J. Nuno P. Lima, Laboratório Nacional de Engenharia Civil, Portugal; Bruno Faria, Instituto Nacional de Meteorologia e Geofísica, Cape Verde; Richard J. Wall, Durham University, United Kingdom; François Kervyn, Royal Museum for Central Africa, Belgium

TH4.O6: Thursday, July 16, 16:20 - 18:00

TH4.O6 **Open Source Initiatives for Remote Sensing - Orfeo Toolbox II**

Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 2C
Co-Chairs: Jordi Inglada and Emmanuel Christophe

16:20
TH4.O6.1 **THE USE OF ORFEO TOOLBOX IN THE CONTEXT OF MAP UPDATING**
Christophe Simler, Charles Beumier, Royal Military Academy, Belgium; Christine Leignel, Olivier Debeir, Eléonore Wolff, Université Libre de Bruxelles, Belgium

16:40
TH4.O6.2 **IMPLEMENTING KOHONEN'S SOM WITH MISSING DATA IN OTB**
Gregoire Mercier, Bassam Abdel Latif, Institut Telecom; Telecom Bretagne, France

17:00
TH4.O6.3 **URBAN AREA DETECTION AND SEGMENTATION USING OTB**
Stéphane May, Jordi Inglada, CNES, France

17:20
TH4.O6.4 **TOWARD A GUI REMOTE-SENSING ENVIRONMENT BUILT OVER OTB**
David Dubois, Richard Lepage, École de Technologie Superieure, Canada; Tullio Tanzi, Telecom ParisTech, France

17:40
TH4.O6.5 **OVERVIEW OF THE POLSARPRO V4.0 SOFTWARE. THE OPEN SOURCE TOOLBOX FOR POLARIMETRIC AND INTERFEROMETRIC POLARIMETRIC SAR DATA PROCESSING.**
Eric Pottier, IETR UMR CNRS 6164 - University of Rennes 1, France; Laurent Ferro-Famil, Sophie Allain, IETR UMR CNRS 6164, France; Shane Cloude, AELc, United Kingdom; Irena Hajnsek, Konstantinos Papathanassiou, Alberto Moreira, DLR-HR, Germany; Mark Williams, GeoSAR, United States; Andrea Minchella, Marco Lavalle, Yves-Louis Desnos, ESA-ESRIN, Italy

TH4.O7: Thursday, July 16, 16:20 - 18:00

TH4.O7 **Data Fusion II**
Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 3A
Co-Chairs: Paolo Gamba and Jocelyn Chanussot

16:20
TH4.O7.1 **HYPERSPECTRAL REMOTE SENSING IMAGE CLASSIFICATION BASED ON DECISION LEVEL FUSION**
Peijun Du, Wei Zhang, Shubi Zhang, Junshi Xia, China University of Mining and Technology, China

16:40
TH4.O7.2 **ENSEMBLE METHODS FOR SPECTRAL-SPATIAL CLASSIFICATION OF URBAN HYPERSPECTRAL DATA**
Xin-Lu Wang, Jilin University, China; Björn Waske, Jón Atli Benediktsson, University of Iceland, Iceland

17:00
TH4.O7.3 **DECISION FUSION FOR SUPERVISED AND UNSUPERVISED HYPERSPECTRAL IMAGE CLASSIFICATION**
He Yang, Ben Ma, Qian Du, Mississippi State University, United States

17:20
TH4.O7.4 **FUSION OF MULTISOURCE DATA SETS FROM AGRICULTURAL AREAS FOR IMPROVED LAND COVER CLASSIFICATION**
Björn Waske, Jón Atli Benediktsson, Johannes R. Sveinsson, University of Iceland, Iceland

17:40
TH4.O7.5 **FUSION OF HIGH RESOLUTION OPTICAL AND SAR IMAGES WITH VECTOR DATA BASES FOR CHANGE DETECTION**
Vincent Poulain, Jordi Inglada, Centre National d'Etudes Spatiales, France; Marc Spigai, Thales Alenia Space, France; Jean-Yves Tourneret, Philippe Marthon, IRIT, France

TH4.O8: Thursday, July 16, 16:20 - 18:00

TH4.O8 **Remote Sensing of Land Hydrological Parameters for Application to Floods and Landslides Management**
Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 3B
Co-Chairs: Paolo Pampaloni and Jiancheng Shi

16:20
TH4.O8.1 **SPACE-BORNE SOIL MOISTURE MEASUREMENTS IN SUPPORT OF FLOOD HYDROLOGY: THE NASA SMAP APPROACH**
Wade Crow, USDA ARS HRSL, United States; Dara Entekhabi, MIT, United States; Eni Njoku, Cal-Tech/NASA JPL, United States; Peggy O'Neill, NASA GSFC, United States; Thomas Jackson, USDA ARS HRSL, United States

16:40
TH4.O8.2 **HIGH RESOLUTION MAPPING OF SOIL MOISTURE BY SAR: DATA INTEGRATION AND EXPLOITATION OF PRIOR INFORMATION**
Nazzareno Pierdicca, Luca Pulvirenti, Sapienza University of Rome, Italy; Christian Bignami, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Francesca Ticconi, Marco Laurenti, Sapienza University of Rome, Italy

17:00
TH4.O8.3 **AN OPERATIONAL ALGORITHM FOR SNOW COVER MAPPING IN HYDROLOGICAL APPLICATIONS**
Simone Pettinato, Marco Brogioni, Emanuele Santi, Simonetta Paloscia, Paolo Pampaloni, National Research Council, Italy

17:20
TH4.O8.4 **MULTIFREQUENCY THEORETICAL SIMULATIONS OF BACKSCATTERING FROM FLOODED AREAS**
S. Caizzone, P. Ferrazzoli, Leila Guerriero, Tor Vergata University, Italy; N. Pierdicca, L. Pulvirenti, Sapienza University, Italy; M. Chini, Istituto Nazionale di Geofisica e Vulcanologia, Italy

17:40
TH4.O8.5 **IMPROVEMENT OF BARE SURFACE SOIL MOISTURE ESTIMATION WITH L-BAND MULTI-POLARIZATION RADAR**
Ruijing Sun, Institute for Remote Sensing Applications, Chinese Academy of Sciences, China; Jiancheng Shi, ICESS University of California, Santa Barbara, United States; Thomas Jackson, United States Department of Agriculture-Agriculture Research Service, Hydrology and Remote Sensing Laboratory, United States; Kun-Shan Chen, National Central University, Taiwan; Yisok Oh, Hongik University, Republic of Korea

TH4.O9: Thursday, July 16, 16:20 - 18:00

TH4.O9 **Ship Detection and Classification: Application of SAR techniques in the framework of High Resolution sensors**

Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 1A
Co-Chairs: Gerard Margarit and Jordi J. Mallorqui

16:20
TH4.O9.1 **OPERATIONAL APPROACH FOR SHIP DETECTION AND CLASSIFICATION**
Gerard Margarit, GMV A&D, Spain; Jordi J. Mallorquí, UPC, Spain

16:40
TH4.O9.2 **ADVANCES IN UNSUPERVISED SHIP DETECTION WITH MULTISCALE TECHNIQUES**
Marivi Tello, Carlos López-Martínez, Jordi J. Mallorquí, Universitat Politecnica de Catalunya, Spain; Teemu Tares, Harm Greidanus, Joint Research Centre, Italy

17:00
TH4.O9.3 **SHIP DETECTION IN THE BRAZILIAN COAST USING TERRASAR-X SAR IMAGES**
Rafael L. Paes, Advanced Research Institute (IEAv), Brazil; João Antonio Lorenzzetti, Douglas Francisco M. Gherardi, National Institute for Space Research (INPE), Brazil

17:20
TH4.O9.4 **SHIP DETECTION FROM POLARIMETRIC SAR IMAGES**
Mingsheng Liao, Changcheng Wang, Wuhan university, China; Yong Wang, East Carolina University, United States; Xiaogang Song, China earthquake administration, China

17:40
TH4.O9.5 **THE CIRCULAR TRAJECTORY OPTION FOR A FULL SEA CLUTTER AND SHIP SIGNATURE CHARACTERISATION AT L AND X BAND.**
Sébastien Angélliaume, Jean-François Nouvel, Hélène Oriot, Pascale Dubois-Fernandez, Olivier Ruault du Plessis, ONERA, France; Philippe Durand, Valerie Foix, CNES, France

TH4.O10: Thursday, July 16, 16:20 - 18:00

TH4.O10 **UAV Sensing**

Session Type: Oral-Contributed
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 1B
Chair: Kannappan Palaniappan

16:20
TH4.O10.1 **MOVING OBJECT DETECTION IN UAV-VIDEO USING FLUX TENSORS**
Kannappan Palaniappan, University of Missouri, United States; Adel Hafiane, ENSI-Bourges, France; Ilker Ersoy, University of Missouri, United States; Guna Seetharaman, Syracuse University, United States

16:40
TH4.O10.2 **AN AUTONOMOUS SENSOR PLATFORM VESSEL FOR MARINE PROTECTED AREA MONITORING**
Kenneth Laws, Cyrus Bezeghi, Stephen Petersen, John Vesecky, University of California, Santa Cruz, United States

17:00
TH4.O10.3 **AGGIEAIR - A LOW-COST AUTONOMOUS MULTISPECTRAL REMOTE SENSING PLATFORM: NEW DEVELOPMENTS AND APPLICATIONS**
Austin Jensen, Yangquan Chen, Mac Mckee, Thomas Hardy, Steven L. Barfuss, Utah State University, United States

17:20
TH4.O10.4 **INTA'S DEVELOPMENTS FOR UAS AND SMALL PLATFORMS: QUASAR**
Juan Manuel Cuerda Muñoz, María José González Bonilla, Beatriz Gómez Miguel, Juan Ramón Larrañaga Sudupe, Marcos García Rodríguez, RADAR Laboratory, Spanish National Institute for Aerospace Technology (INTA), Spain

17:40
TH4.O10.5 **INSTATANEOUS GEO-LOCATION OF MULTIPLE TARGETS FROM MONOCULAR AIRBORNE VIDEO**
Kyung Min Han, Guilherme DeSouza, University of Missouri, United States

TH4.O11: Thursday, July 16, 16:20 - 18:00

TH4.O11 **Remote Sensing of Vegetation Processes II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 1C
Co-Chairs: Laura Hess and Eric Mougin

16:20
TH4.O11.1 **USE OF MODIS ENHANCED VEGETATION INDEX TO DETECT SEASONAL PATTERNS OF LEAF PHENOLOGY IN CENTRAL AMAZON VARZEA FOREST**
Laura Hess, University of California, Santa Barbara, United States; Piyachat Ratana, Alfredo Huete, University of Arizona, United States; Chris Potter, NASA Ames, United States; John Melack, University of California, Santa Barbara, United States

16:40
TH4.O11.2 **COMPARISON OF THREE INDIRECT FIELD MEASURING METHODS FOR FOREST CANOPY LEAF AREA INDEX ESTIMATION**
Zhuo Fu, Jindi Wang, Jinling Song, Hongmin Zhou, Beijing Normal University, China; Huaguo Huang, Beijing Forestry University, China; Baisong Chen, Beijing Normal University, China

17:00
TH4.O11.3 **EVALUATION OF MODIS VEGETATION PRODUCTS FOR SAHELIAN LANDSCAPES (GOURMA, MALI)**
Eric Mougin, Valérie Demarez, Pierre Hiernaux, Manuela Grippa, Laurent Kergoat, Lionel Jarlan, CESBIO, France; Valerie Trichon, ECOLAB, France; Mamadou Diawara, CESBIO, France; Nogmana Soumaguel, IRD-Bamako, France

17:20
TH4.O11.4 **FRACTION IMAGES DERIVED FROM EO-1 HYPERION MULTITEMPORAL DATA FOR DRY SEASON GREEN UP ANALYSIS IN TAPAJOS NATIONAL FOREST, BRAZILIAN AMAZONIA**
Ramon Morais de Freitas, Yosio Edemir Shimabukuro, Reinaldo Roberto Rosa, Instituto Nacional de Pesquisas Espaciais, Brazil; Alfredo Huete, University of Arizona, United States

17:40
TH4.O11.5 **ANNUAL MAPPING OF DEFORESTATION IN MAJOR TROPICAL FORESTS USING THE MULTI-SATELLITE DMC CONSTELLATION - PROVIDING AN OBJECTIVE OPERATIONAL BASELINE FOR REDD.**
J. Paul Stephens, Stephen Mackin, Owen Hawkins, David Hodgson, DMC International Imaging, United Kingdom

TH4.O12: Thursday, July 16, 16:20 - 18:00

TH4.O12 **Land Use / Land Cover Classification - Africa Focus II**
Session Type: Oral-Contributed
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 1D
Co-Chairs: Tobias Landmann and David Roy

16:20
TH4.O12.1 **MODELLING THE IMPACT OF WILDFIRE ON SPECTRAL REFLECTANCE**
Philip Lewis, Tristan Quaife, University College London, United Kingdom; José Gómez-Dans, University College London/King's College London, United Kingdom; Mathias Disney, University College London, United Kingdom; Martin Wooster, King's College London, United Kingdom; David Roy, South Dakota State University, United States; Bernard Pinty, EC Joint Research Centre, Italy

16:40
TH4.O12.2 **EVIDENCE OF AN INCREASE IN POND SURFACE DURING THE MULTIDECENNIAL DROUGHT IN PASTORAL SAHEL.**
Julie Gardelle, Pierre Hiernaux, Laurent Kergoat, Manuela Grippa, Eric Mougin, CESBIO, France

17:00
TH4.O12.3 **THE ECOCLIMAP-II PROGRAMME: A NEW LAND COVER CLASSIFICATION AT 1 KM FROM MODIS AND VEGETATION DATA TIME SERIES OVER THE WESTERN AFRICA IN THE FRAME OF AMMA PROJECT**
Armel Kaptue, Jean-Louis Roujean, Stéphanie Faroux, Météo-France, France

17:20
TH4.O12.4 **STRATEGIES FOR MONITORING SAVANNAS USING MODERATED RESOLUTION IMAGERY**
Nilson Ferreira, Federal Center for Technologic Education, Brazil; Laerte Ferreira, Federal University of Goias, Brazil

17:40
TH4.O12.5 **THE EVOLUTION OF LAND COVER DATA, IN A SOUTH AFRICAN CONTEXT, IN LINE WITH EVER INCREASING USER DEMANDS**
Sharon Leigh Cundill, Pieter Sevenhuysen, Mark William Thompson, GeoTerraImage (Pty) Ltd, South Africa

TH4.O13: Thursday, July 16, 16:20 - 18:00

TH4.O13 **Phenology, Inter-annual Change and Modelling**

Session Type: Oral-Invited
Time: Thursday, July 16, 16:20 - 18:00
Place: Leslie 1E
Co-Chairs: Karen Steenkamp and Andrew Bradley

16:20

TH4.O13.1 **LARGE SCALE WETLAND MAPPING IN SEMI ARID AFRICA USING 250-METER MODIS PHENOLOGY METRICS AND TOPOGRAPHIC VARIABLES**
Tobi Landmann, Andreas Dietz, University of Wuerzburg, DLR, Germany; Stefan Dech, German Aerospace Centre, DLR, Germany

16:40

TH4.O13.2 **REMOTELY SENSED PHENOLOGY FOR MAPPING BIOMES AND VEGETATION FUNCTIONAL TYPES.**
Konrad Wessels, Karen Steenkamp, Graham Von Maltitz, Sally Archibald, Robert Scholes, Simeon Miteff, Asheer Bachoo, CSIR, South Africa

17:00

TH4.O13.3 **PHENOLOGY AND PHENOLOGICAL VARIABILITY OF MEXICAN ECOSYSTEMS**
René R. Colditz, Gerardo Lopez, Pedro Maeda, Isabel Cruz, Rainer Ressl, National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico

17:20

TH4.O13.4 **TEMPLATE PHENOLOGY FOR VEGETATION MODELS.**
Andrew Bradley, University of Leicester, United Kingdom; France Gerard, Centre for Ecology and Hydrology, United Kingdom; Nicolas Barbier, FNRS, Belgium; Graham Weedon, Met office, United Kingdom; Christopher Huntingford, Centre for Ecology and Hydrology, United Kingdom; Przemyslaw Zelazowski, Liana Anderson, Luiz Eduardo O C Aragão, University of Oxford, United Kingdom; Jörg Kaduk, University of Leicester, United Kingdom

17:40

TH4.O13.5 **CLIMATE CHANGE AND WATER MANAGEMENT PROBLEMS IN CENTRAL ASIA: ANALYSING THE PHENOLOGY OF CROPLANDS AND WETLANDS IN THE AMU DARYA DELTA USING MODIS DATA**
Christopher Conrad, University of Wuerzburg, Germany; René R. Colditz, CONABIO - Comision Nacional para el Conocimiento y Uso de la Biodiversidad, Mexico; Stefan Dech, German Aerospace Center, Germany; Doris Klein, University of Wuerzburg, Germany

FR1.O1: Friday, July 17, 09:00 - 10:40

FR1.O1 **SAR Polarimetry: Theory and Applications I**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 2A
Co-Chairs: Carlos López-Martínez and Eric Pottier

9:00
FR1.O1.1 **POLARIMETRIC APPLICATIONS OF THE UAVSAR INSTRUMENT**
Scott Hensley, Howard Zebker, Cathleen Jones, Thierry Michel, Alex Fore, Bruce Chapman, JPL, United States

9:20
FR1.O1.2 **POLARIMETRIC ANALYSIS FROM COMPACT-POL MEASUREMENTS: POTENTIAL AND LIMITATION**
My-Linh Truong-Loï, Pascale Dubois-Fernandez, ONERA, France; Eric Pottier, Université Rennes 1, France; Sébastien Angélliaume, ONERA, France; Jean-Claude Souyris, CNES, France

9:40
FR1.O1.3 **ANALYSIS AND APLICATION OF DUAL-POL SAR IMAGERY**
Thomas Ainsworth, Jong-Sen Lee, Naval Research Laboratory, United States

10:00
FR1.O1.4 **SOIL MOISTURE ESTIMATION USING A MULTI-ANGULAR MODIFIED THREE COMPONENT POLARIMETRIC DECOMPOSITION**
Thomas Jagdhuber, Irena Hajnsek, Konstantinos Papathanassiou, German Aerospace Center, Germany

10:20
FR1.O1.5 **RECENT ADVANCES IN MICROWAVE MULTI-MODAL (POLARIMETRIC AND INTERFEROMETRIC) SAR REMOTE SENSING OF THE TERRESTRIAL COVERS**
Wolfgang-Martin Boerner, University of Illinois at Chicago, United States

FR1.O2: Friday, July 17, 09:00 - 10:40

FR1.O2 **Interferometry II**
Session Type: Oral-Contributed
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 2D
Co-Chairs: David Small and Andreas Reigber

9:00
FR1.O2.1 **ONE-DIMENSIONAL RADAR INTERFEROMETRY FOR LINE-INFRASTRUCTURE**
Ramon Hanssen, Freek van Leijen, Delft University of Technology, Netherlands

9:20
FR1.O2.2 **INSAR PERMANENT SCATTERERS SELECTION USING SAR SVA FILTERING**
Ferdaous Chaabane, Mohamed Sellami, Ecole Supérieure des Communications de Tunis, Tunisia; Jean-Marie Nicolas, Florence Tupin, TELECOM ParisTech, France

9:40
FR1.O2.3 **BAYESIAN RESTORATION OF INTERFEROMETRIC PHASE THROUGH BIASED ANISOTROPIC DIFFUSION**
Fernando Rodríguez González, Mihai Datcu, German Aerospace Center (DLR), Germany

10:00
FR1.O2.4 **A NEW ALGORITHM FOR THE PHASE UNWRAPPING OF INTERFEROGRAM STACKS**
Gianfranco Fornaro, Antonio Pauciullo, Diego Reale, National Research Council (CNR), Italy

10:20
FR1.O2.5 **A GPU BASED TIME-DOMAIN RAW SIGNAL SIMULATOR FOR INTERFEROMETRIC SAR**
Zheng Xiang, Kaizhi Wang, Xingzhao Liu, Wenxian Yu, Shanghai Jiao Tong University, China

FR1.O3: Friday, July 17, 09:00 - 10:40

FR1.O3 **Imaging Spectroscopy Initiatives in Europe**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Menzies M9
Co-Chairs: David Goodenough, John Kerekes and Andreas Mueller

9:00
FR1.O3.1 **RECENT ACTIVITIES IN THE HYPERSPECTRAL IMAGING NETWORK (HYPER-I-NET): A EUROPEAN CONSORTIUM FOSTERING IMAGING SPECTROSCOPY RESEARCH**
Antonio Plaza, University of Extremadura, Spain; Paolo Gamba, University of Pavia, Italy; Mathias Kneubühler, University of Zurich, Switzerland; Andreas Mueller, German Remote Sensing Data Center (DLR), Germany; Michael Schaepman, Wageningen University, Netherlands

9:20
FR1.O3.2 **KERNEL METHODS IN ORTHOGONALIZATION OF HYPERSPECTRAL DATA**
Allan Aasbjerg Nielsen,Technical University of Denmark, Denmark

9:40
FR1.O3.3 **HYPERSPECTRAL (HSR) ACTIVITY IN ISRAEL: FROM POINT TO SPATIAL SPECTROSCOPY IN ALL DOMAINS**
Eyal Ben-Dor,Tel Aviv University, Israel

10:00
FR1.O3.4 **FLUORESCENCE EXPLORER (FLEX): A NEW TECHNIQUE FOR THE OBSERVATION OF GLOBAL VEGETATION PHOTOSYNTHESIS**
Jose Moreno, University of Valencia, Spain; Yves Goulas, Ecole Polytechnique, Paris, France; Elizabeth Middleton, NASA Goddard Space Flight Center, United States; Franco Miglietta, IBIMET-CNR, Italy; Peter North, University of Wales, Swansea, United Kingdom; Wout Verhoef, National Aerospace Laboratory, Netherlands; Uwe Rascher, Research Centre Julich, Germany; Sune Svanberg, Lund University, Sweden; Michael Berger, Matthias Drusch, Ferran Gascon, Bernardo Carnicero, Jean-Loup Bezy, European Space Agency, Italy; Luis Guanter, German Research Centre For Geosciences GFZ, Germany; Federico Magnani, University of Bologna, Italy

10:20
FR1.O3.5 **THE ENMAP HYPERSPECTRAL IMAGER – AN ADVANCED OPTICAL PAYLOAD FOR EARTH OBSERVATION**
Hermann Kaufmann, Luis Guanter, Karl Segl, GeoResearchCenter Potsdam, Germany; Stefan Hofer, Bernhard Sang, Kayser-Threde GmbH, Germany; Andreas Mueller, German Aerospace Establishment, Germany; Christian Chlebek, German Space Agency, Germany

FR1.O4: Friday, July 17, 09:00 - 10:40

FR1.O4 **Satellite Photo/Radargrammetry with the New Generation of High-resolution Sensors I**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Menzies M10
Co-Chairs: Peter Reinartz and Thierry Toutin

9:00
FR1.O4.1 **ORTHORECTIFICATION AND DSM GENERATION WITH ALOS-PRISM DATA IN URBAN AREAS**
Thomas Krauß, Mathias Schneider, Peter Reinartz, German Aerospace Center, DLR, Germany

9:20
FR1.O4.2 **MATCHING OF HIGH RESOLUTION OPTICAL DATA TO A SHADED DEM**
Mathias Schneider, Peter Reinartz, DLR - German Aerospace Center, Germany

9:40
FR1.O4.3 **3D RADARGRAMMETRIC MODELING AND CALIBRATION OF RADARSAT-2 STEREO DATA**
Thierry Toutin, René Chénier, Natural Resources Canada, Canada Centre for Remote Sensing, Canada

10:00
FR1.O4.4 **USING GEOMETRIC ACCURACY OF TERRASAR-X DATA FOR IMPROVEMENT OF DIRECT SENSOR ORIENTATION AND ORTHO-RECTIFICATION OF OPTICAL SENSOR DATA**
Peter Reinartz, Rupert Mueller, Sahil Suri, Mathias Schneider, Peter Schwind, Richard Bamler, DLR, Germany

10:20
FR1.O4.5 **INTERACTIVE OBJECT SEGMENTATION IN HIGH RESOLUTION SATELLITE IMAGES**
Julien Osman, Jordi Inglada, CNES, France; Emmanuel Christophe, CRISP, Singapore

FR1.O5: Friday, July 17, 09:00 - 10:40

FR1.O5 **Geospatial Based Analysis I**
Session Type: Oral-Contributed
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 2B
Chair: Abhinav Dayal

9:00
FR1.O5.1 **REVERSIBLE INTEGER WAVELET EVALUATION FOR DEM PROGRESSIVE COMPRESSION**
Jing-Jing Zheng, Jinyun Fang, Cheng-De Han, Institute of Computing Technology, Chinese Academy of Sciences, China

9:20
FR1.O5.2 **DYNAMIC TOLERANCE SETTING METHOD FOR PLANE SWEEP ALGORITHM**
Xiaomin Zhu, Hongchao Zhao, Jinyun Fang, Institute of Computing Technology, Chinese Academy of Science, China

9:40
FR1.O5.3 **3D RASTER TOPOLOGICAL RELATIONSHIP ANALYSIS FOR SPATIAL ENTITY WITH FUZZY BOUNDARY**
Jiateng Guo, Lixin Wu, Northeastern University, China

10:00
FR1.O5.4 **ADAPTIVE BOUNDS FOR QUADRIC BASED GENERALIZATION**
Abhinav Dayal, IDV Solutions Inc., United States

10:20
FR1.O5.5 **HIERARCHICAL GIS CLUSTERING USING PRINCIPAL COMPONENTS**
Abhinav Dayal, IDV Solutions Inc., United States

FR1.O6: Friday, July 17, 09:00 - 10:40

FR1.O6 **High Performance Computing for Hyperspectral Image Analysis I**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 2C
Co-Chairs: Antonio Plaza and Qian Du

9:00
FR1.O6.1 **HIGH PERFORMANCE COMPUTING FOR HYPERSPECTRAL IMAGE ANALYSIS: PERSPECTIVE AND STATE-OF-THE-ART**
Antonio Plaza, University of Extremadura, Spain; Qian Du, Mississippi State University, United States; Yang-Lang Chang, National Taipei University of Technology, Taiwan

9:20
FR1.O6.2 **CLASSIFICATION PERFORMANCE OF RANDOM-PROJECTION-BASED DIMENSIONALITY REDUCTION OF HYPERSPECTRAL IMAGERY**
James Fowler, Qian Du, Wei Zhu, Nicolas Younan, Mississippi State University, United States

9:40
FR1.O6.3 **UNSUPERVISED HYPERSPECTRAL BAND SELECTION USING PARALLEL PROCESSING**
He Yang, Qian Du, Mississippi State University, United States

10:00
FR1.O6.4 **BAND SELECTION FOR HYPERSPECTRAL IMAGES BASED ON PARALLEL PARTICLE SWARM OPTIMIZATION SCHEMES**
Yang-Lang Chang, National Taipei University of Technology, Taiwan; Hsuan Ren, National Central University, Taiwan; Lena Chang, National Taiwan Ocean University, Taiwan; Wei-Lieh Hsu, Lunghwa University of Science and Technology, Taiwan; Jyh-Perng Fang, National Taipei University of Technology, Taiwan; Kun-Shan Chen, National Central University, Taiwan

10:20
FR1.O6.5 **ENDMEMBER EXTRACTION FROM HYPERSPECTRAL IMAGERY USING A PARALLEL ENSEMBLE APPROACH WITH CONSENSUS ANALYSIS**
Fermin Ayuso, Javier Setoain, Manuel Prieto, Christian Tenllado, Francisco Tirado, Complutense University of Madrid, Spain; Javier Plaza, Antonio Plaza, University of Extremadura, Spain

FR1.O7: Friday, July 17, 09:00 - 10:40

FR1.O7 **A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors I**

Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 3A
Chair: Gyanesh Chander

9:00
FR1.O7.1 **QA4EO: MEETING THE NEEDS OF THE GEO BENEFITS THROUGH INTEROPERABILITY AND HARMONISATION**
David Llewellyn-Jones, University of Leicester, United Kingdom; Gyanesh Chander, SGT/ USGS/EROS, United States; Nigel Fox, National Physical Laboratory (NPL), United Kingdom; Pascal LeComte, European Space Agency - ESRIN, Italy; Gregory Stensaas, U.S. Geological Survey (USGS), United States

9:20
FR1.O7.2 **CLIMATE DATA RECORDS OF GEOPHYSICAL VARIABLES FROM SPACECRAFT RADIOMETRY**
Peter Minnett, University of Miami, United States

9:40
FR1.O7.3 **THE NEED FOR MISSION OVERLAP IN CREATING CLIMATE DATA RECORDS: LESSONS LEARNED FROM THE ATSR SERIES**
Gary Corlett, University of Leicester, United Kingdom

10:00
FR1.O7.4 **PRE-LAUNCH CALIBRATION PROCEDURES AND THE ASSOCIATED TRACEABILITY ISSUES FOR EXISTING AND FUTURE INFRARED RADIOMETERS IN SPACE**
Smith David, STFC, Rutherford Appleton Laboratory, United Kingdom

10:20
FR1.O7.5 **STANDARDS AND INTEROPERABILITY FOR GLOBAL DEMS**
Jan-Peter Muller, University College London, United Kingdom

FR1.O8: Friday, July 17, 09:00 - 10:40

FR1.O8 **Global DEM Interoperability: ASTER GDEM: Initial Assessment I**

Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 3B
Co-Chairs: Jan-Peter Muller and Dean Gesch

9:00
FR1.O8.1 **INITIAL ASSESSMENT OF ASTER DEMS OVER THE CEOS-WGCV-TMSG TEST SITES IN EUROPE AND CHINA**
Jan-Peter Muller, University College London, United Kingdom

9:20
FR1.O8.2 **VALIDATION OF THE ASTER GDEM OVER THE UNITED STATES: COMPARISON WITH SRTM, THE USGS NATIONAL ELEVATION DATASET, AND GPS BENCHMARKS**
Dean Gesch, Jeffrey Danielson, U.S. Geological Survey, United States; Norman Bliss, ASRC, United States; Bryan Bailey, U.S. Geological Survey, United States; Kenneth Duda, SGT, United States; Gayla Evans, U.S. Geological Survey, United States; Jane Zhang, ADNet, United States

9:40
FR1.O8.3 **ICESAT LASER ALTIMETER EVALUATION OF THE ASTER GLOBAL DIGITAL ELEVATION MODEL (GDEM)**
Claudia C. Carabajal, Sigma Space Corp.@ NASA/GSFC, United States; David J. Harding, NASA/GSFC, United States; Vijay P. Suchdeo, Sigma Space Corp. @NASA/GSFC, United States

10:00
FR1.O8.4 **EVALUATION OF SAMPLES OF THE ASTER GLOBAL DEM USING STAR-3I INTERFEROMETRIC SAR DATA**
Bryan Mercer, Qiaoping Zhang, Michael Denbina, Intermap Technologies Corp., Canada

10:20
FR1.O8.5 **ASSESSMENT OF ASTER GDEM AGAINST VARIOUS SOURCES, INCLUDING SPOT 5**
Laurent Cunin, Roland Gachet, IGN Espace, France; Marc Bernard, Spot Image, France

FR1.O9: Friday, July 17, 09:00 - 10:40

FR1.O9 **Spatiotemporal Data Mining and Pattern Discovery I**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 1A
Chair: Fenzhen Su

9:00
FR1.O9.1 **BASED ON MULTI-SCALE AND MULTI-FEATURE INFORMATION MINING TECHNIQUE FOR REMOTE SENSING IMAGE AND APPLICATION**
Xiaomei Yang, LREIS, Institute of Geographic Sciences and Natural Resources Research, CAS, China; Wei Cui, Beihang University, China; Jianming Gong, Tao Zhang, LREIS, Institute of Geographic Sciences and Natural Resources Research, CAS, China

9:20
FR1.O9.2 **KNOWLEDGE DISCOVERY FROM DATA MINING OF THE ASRIS POINT DATABASE: SOIL NUTRIENTS**
Elisabeth Bui, CSIRO Land and Water, Australia; Brent Henderson, CSIRO, Australia; Karin Viergever, Ecometrica, United Kingdom

9:40
FR1.O9.3 **AN AUTOMATED APPROACH TO DETECT PHENOMENA FROM NAM MODEL OUTPUTS**
Rahul Ramachandran, University of Alabama in Huntsville, United States

10:00
FR1.O9.4 **NEEDS AND APPLICATIONS FOR DATA MINING IN LARGE SERIES OF REMOTELY SENSED IMAGES**
Wietske Bijker, International Institute for Geo-information and Earth Observation, Netherlands

10:20
FR1.O9.5 **SWARM INTELLIGENCE FOR UNSUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGES**
Andrea Paoli, Farid Melgani, Edoardo Pasolli, University of Trento, Italy

FR1.O10: Friday, July 17, 09:00 - 10:40

FR1.O10 **Urban Applications I**
Session Type: Oral-Contributed
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 1B
Co-Chairs: Salvatore Stramondo and Daniele Riccio

9:00
FR1.O10.1 **REAL-TIME DISTRIBUTED MONITORING OF ELECTROMAGNETIC POLLUTION IN URBAN ENVIRONMENTS**
Luca Ioriatti, Mauro Martinelli, Federico Viani, Manuel Benedetti, Andrea Massa, ELEDIA Research Group - University of Trento, Italy

9:20
FR1.O10.2 **SAR MONITORING OF SUBURBAN AREAS BASED ON AN ELECTROMAGNETIC SCATTERING MODEL**
Raffaella Guida, Surrey Space Centre, University of Surrey, United Kingdom; Antonio Iodice, Daniele Riccio, Dipartimento di Ingegneria Biomedica, Elettronica e delle Telecomunicazioni, Universita di Napoli Federico II, Italy

9:40
FR1.O10.3 **DAMAGE ANALYSIS OF 2008 WENCHUAN EARTHQUAKE USING SAR IMAGES**
Kai Jiang, East China Research Institute of Electronic Engineering, China; Chao Wang, Hong Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Wei Chen, Southwest Petroleum University, China; Fan Wu, Bo Zhang, Yixian Tang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

10:00
FR1.O10.4 **URBAN BUILDING DAMAGE DETECTION FROM VERY HIGH RESOLUTION IMAGERY USING ONE-CLASS SVM AND SPATIAL RELATIONS**
Peijun Li, Haiqing Xu, Shuang Liu, Jiancong Guo, Peking University, China

10:20
FR1.O10.5 **VALIDATION OF AN EARTHQUAKE DAMAGE MAP FROM VHR OPTICAL IMAGES USING A GROUND SURVEY**
Marco Chini, Christian Bignami, Istituto Nazionale di Geofisica e Vulcanologia, Italy; Nazzareno Pierdicca, Sapienza, University of Rome, Italy; Salvatore Stramondo, Istituto Nazionale di Geofisica e Vulcanologia, Italy; William J. Emery, University of Colorado at Boulder, United States

FR1.O11: Friday, July 17, 09:00 - 10:40

FR1.O11 **Forest Mapping**
Session Type: Oral-Contributed
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 1C
Co-Chairs: Ake Rosenqvist and Erika Podest

9:00
FR1.O11.1 **THE ALOS PALSAR MOSAIC OVER THE AFRICAN CONTINENT – A REFERENCE BASELINE DATASET FOR FOREST- AND LAND COVER CHANGE MONITORING**
Ake Rosenqvist, Frank De Grandi, EC Joint Research Centre, Italy

9:20
FR1.O11.2 **FUSION OF MULTI-SENSOR DATA FOR FOREST STRUCTURAL PARAMETER RETRIEVAL USING 3D RADIATIVE TRANSFER MODELING**
Guoqing Sun, Jeremy Rubio, University of Maryland, United States; K. Jon Ranson, D. Kimes, NASA Goddard Space Flight Center, United States; Benjamin Koetz, University of Zurich, Switzerland; J. Gastellu-Etchegorry, Universite Paul Sabatier, France

9:40
FR1.O11.3 **POLARIMETRIC SIGNATURES AND CLASSIFICATION OF TROPICAL LAND COVERS**
Tatiana Kuplich, CRS/INPE, Brazil; Yosio Edemir Shimabukuro, Emerson Servello, DSR/INPE, Brazil; Edson Sano, EMBRAPA, Brazil

10:00
FR1.O11.4 **KARST COREST TYPE DISCRIMINATION IN SOUTHWEST CHINA USING SPACEBORNE POLARIMETRIC SAR DATA**
Zhongsheng Xia, Forest Resource Management and Conservation Station, China; Maosong Xu, State Forestry Administration, China; Chou Xie, Chinese Academy of Sciences, China; Ridha Touzi, Natural Resources Canada, Canada; Fengli Zhang, Huaze Gong, Wei Tian, Chinese Academy of Sciences, China

10:20
FR1.O11.5 **MULTISENSOR SAR ANALYSIS FOR FOREST MONITORING IN BOREAL AND TROPICAL FOREST ENVIRONMENTS**
Ralf Knuth, Carolin Thiel, Christian Thiel, Robert Eckardt, Nicole Richter, Christiane Schmullius, Friedrich-Schiller-Universität Jena, Germany

FR1.O12: Friday, July 17, 09:00 - 10:40

FR1.O12 **Atmospheric Sensing and Profiling**
Session Type: Oral-Contributed
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 1D
Chair: Mitchell Goldberg

9:00
FR1.O12.1 **GOES SOUNDING SYSTEM – THE CURRENT APPLICATIONS AND FUTURE NEEDS**
Jun Li, University of Wisconsin-Madison, United States; Timothy J. Schmit, James J. Gurka, Steven J. Goodman, Jaime Daniels, Mitchell Goldberg, NESDIS, United States

9:20
FR1.O12.2 **CORRELATION OF SEVERE STORMS IDENTIFIED WITH AIRS AND HEAVY PRECIPITATION MEASURED WITH AMSRE ON THE EOS AQUA.**
Hartmut Aumann, Jet Propulsion Laboratory, United States

9:40
FR1.O12.3 **REGULARIZED IMAGE RECONSTRUCTION FOR GEOSTATIONARY ATMOSPHERIC SOUNDERS**
Eric Anterrieu, Université de Toulouse & CNRS, France; Andreas Colliander, Jet Propulsion Laboratory, United States; Tapani Narhi, European Space Agency, Netherlands; Jacob Christensen, RUAG Aerospace AB, Sweden; Peter de Maagt, European Space Agency, Netherlands

10:00
FR1.O12.4 **SATELLITE MEASUREMENTS OF TRACE GASES USING BLIND SOURCE SEPARATION**
Pia Addabbo, Maurizio Di Bisceglie, Università degli Studi del Sannio, Italy

10:20
FR1.O12.5 **DELAY SUPER RESOLUTION FOR GNSS-R**
Maria Paola Clarizia, National Oceanography Centre, Southampton, United Kingdom; Maurizio Di Bisceglie, Carmela Galdi, Università degli Studi del Sannio, Italy; Christine Gommenginger, National Oceanography Centre, Southampton, United Kingdom; Luciano Landi, Università degli Studi del Sannio, Italy

FR1.O13: Friday, July 17, 09:00 - 10:40

FR1.O13 **Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass I**
Session Type: Oral-Invited
Time: Friday, July 17, 09:00 - 10:40
Place: Leslie 1E
Co-Chairs: Richard Lucas and Mahta Moghaddam

9:00
FR1.O13.1 **EXTRAPOLATION OF FOREST STRUCTURE ESTIMATES THAT USED SAR AND LIDAR TO AREAS WITH NO LIDAR**
Leland Pierce, Kamal Sarabandi, The University of Michigan, United States

9:20
FR1.O13.2 **SYNERGISTIC USE OF MULTI-SENSOR DATA FOR ESTIMATING THE ABOVE-GROUND BIOMASS OF AFRICA**
Scott Goetz, Alessandro Baccini, Nadine Laporte, Mindy Sun, Thomas Stone, Woods Hole Research Center, United States

9:40
FR1.O13.3 **DETERMINATION OF SCATTERING MECHANISMS INSIDE RICE PLANTS BY MEANS OF PCT AND HIGH RESOLUTION RADAR IMAGING**
J. David Ballester-Berman, Juan M. Lopez-Sanchez, University of Alacant, Spain; Maria-Jose Sanjuan, German Aerospace Center, Germany

10:00
FR1.O13.4 **USE OF LIDAR DATA TO SUPPORT RETRIEVAL OF SAVANNA BIOMASS AND STRUCTURE FROM SAR**
Daniel Clewley, Richard Lucas, Aberystwyth University, United Kingdom; John Armston, Department of Natural Resources and Water, Australia; Peter Bunting, Aberystwyth University, United Kingdom; Joao Carreiras, Tropical Research Institute, Portugal

10:20
FR1.O13.5 **MAPPING VEGETATION 3D STRUCTURE WITH LIDAR, RADAR AND ANCILLARY DATA.**
Marc Simard, Naiara Pinto, Lola Fatoyinbo, Caltech/Jet Propulsion Laboratory, United States

FR2.O1: Friday, July 17, 11:00 - 12:40

FR2.O1 **SAR Polarimetry: Theory and Applications II**
Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 2A
Co-Chairs: Carlos López-Martínez and Eric Pottier

11:00
FR2.O1.1 **DETECTION AND ANALYSIS OF URBAN AREAS USING ALOS PALSAR POLARIMETRIC DATA.**
Laurent Ferro-Famil, University of Rennes 1, France; Marco Lavalle, Tor Vergata University, Italy

11:20
FR2.O1.2 **POLARIMETRIC COHERENCE OPTIMIZATION FOR INTERFEROMETRIC DIFFERENTIAL APPLICATIONS**
Luca Pipia, Xavier Fàbregas, Albert Aguasca, Carlos López-Martínez, Jordi J. Mallorquí, Universitat Politècnica de Catalunya, Spain

11:40
FR2.O1.3 **POLARIZED POINT SCATTERERS: AN ALGORITHM FOR DETECTION USING ALOS-PALSAR DATA**
Shane Cloude, AEL Consultants, United Kingdom

12:00
FR2.O1.4 **SCATTERING COMPONENT DECOMPOSITION FOR POL-INSAR DATASET AND ITS APPLICATIONS**
Hiroyoshi Yamada, Ryutaro Komaya, Yoshio Yamaguchi, Ryoichi Sato, Niigata University, Japan

12:20
FR2.O1.5 **CALIBRATION OF SPACEBORNE POLARIMETRIC SAR DATA USING A GENETIC ALGORITHM**
Toshifumi Moriyama, Nagasaki University, Japan

FR2.O2: Friday, July 17, 11:00 - 12:40

FR2.O2 **Interferometry and SAR**
Session Type: Oral-Contributed
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 2D
Co-Chairs: Rolf Scheiber and Akira Hirose

11:00
FR2.O2.1 **A NEW APPROACH TO IMPROVE THE ACCURACY OF BASELINE ESTIMATION FOR SPACEBORNE RADAR INTERFEROMETRY**
Kui Zhang, Alex Hay-Man Ng, Xiaojing Li, Hsing-Chung Chang, Linlin Ge, Chris Rizos, The University of New South Wales, Australia

11:20
FR2.O2.2 **LOCAL, NONLINEAR ADAPTIVE COREGISTRATION OF MASTER AND SLAVE INTERFEROMETRIC SAR COMPLEX IMAGE DATA FOR HIGH QUALITY DIGITAL ELEVATION MAP GENERATION**
Ryo Natsuaki, Akira Hirose, The University of Tokyo, Japan

11:40
FR2.O2.3 **CAPON/APES BASED SAR PROCESSING: PRACTICAL CONSIDERATIONS**
Paco López-Dekker, Jordi J. Mallorquí, Universitat Politecnica de Catalunya, Spain

12:00
FR2.O2.4 **PROCESSING MULTIPLE SAR MODES WITH BASEBAND AZIMUTH SCALING**
Pau Prats, Rolf Scheiber, Josef Mittermayer, Alberto Moreira, German Aerospace Center (DLR), Germany

12:20
FR2.O2.5 **TERRASAR-X INTERFEROMETRY FOR LANDSLIDE MONITORING**
Ye Xia, Hermann Kaufmann, German Research Centre for Geosciences, Germany; Xiao Fang Guo, Remote Sensing Centre of the Ministry of Land & Resources China, China; Xu Dong Yang, Institute for Environment Monitoring of the Ministry of Land & Resources, China

FR2.O3: Friday, July 17, 11:00 - 12:40

FR2.O3 **Recent Advances in Microwave Radiometer Technology**
Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Menzies M9
Co-Chairs: Steven C. Reising and Ignasi Corbella

11:00
FR2.O3.1 **DIGITAL MICROWAVE RADIOMETERS: DIGITAL SIGNAL PROCESSING DEVICE CAPABILITIES VS. RADIOMETER SENSOR PERFORMANCE**
Christopher Ruf, Steven Gross, Jinzheng Peng, University of Michigan, United States

11:20
FR2.O3.2 **SATELLITE RADIOMETER PRE-LAUNCH SENSITIVITY ESTIMATION USING ANECHOIC CHAMBER AND CHANNEL INTER-COMPARISON**
Andreas Colliander, Jet Propulsion Laboratory, United States; Manuel Martín-Neira, European Space Agency, Netherlands; Josep Closa, Javier Benito, EADS-CASA Espacio, Spain

11:40
FR2.O3.3 **ON-FLIGHT CHARACTERIZATION OF THE SMOS PAYLOAD DURING THE COMMISSIONING PHASE**
Ignasi Corbella, Francesc Torres, Nuria Duffo, Veronica Gonzalez, Adriano Camps, Merce Vall.Llossera, UPC, Spain

12:00
FR2.O3.4 **DIGITAL BEAMFORMING ANALYSIS AND PERFORMANCE OF A DIGITAL L-BAND PSEUDO-CORRELATION RADIOMETER**
Xavier Bosch-Lluis, Isaac Ramos-Perez, Adriano Camps, Nereida Rodriguez-Alvarez, Juan Fernando Marchan-Hernandez, Enric Valencia, Juan Manuel Nieto, Politechnical University of Catalonia (UPC), Spain

12:20
FR2.O3.5 **ATMOSPHERIC WATER VAPOR MEASUREMENTS WITH FINE SPATIAL AND TEMPORAL RESOLUTION USING 3D TOMOGRAPHIC INVERSION OF PASSIVE MICROWAVE BRIGHTNESS TEMPERATURES FROM A GROUND-BASED RADIOMETER NETWORK**
Steven C. Reising, Colorado State University, United States; Sharmila Padmanabhan, Jet Propulsion Laboratory, United States; J Vivekanandan, National Center for Atmospheric Research, United States; Flavio Iturbide-Sanchez, National Oceanic and Atmospheric Administration, United States; Swaroop Sahoo, Colorado State University, United States

FR2.O4: Friday, July 17, 11:00 - 12:40

FR2.O4 **Satellite Photo/Radargrammetry with the New Generation of High-resolution Sensors II**

Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Menzies M10
Co-Chairs: Thierry Toutin and Peter Reinartz

11:00
FR2.O4.1 **ANALYSIS OF ALOS-PRISM IMAGE GEOMETRY FOR ADVANCED PHOTOGRAMMETRIC APPLICATIONS**
Laurent Falala, Pascal Favé, Patrick Gigord, Institut Géographique National - France, France

11:20
FR2.O4.2 **QUANTITATIVE GEOMETRIC CALIBRATION & VALIDATION OF THE RAPIDEYE CONSTELLATION**
Brian Robertson, Keith Beckett, Chris Rampersad, Rony Putih, MacDonald, Dettwiler and Associates, Canada

11:40
FR2.O4.3 **CALIBRATION OF FORMOSAT-2 STEREO DATA OVER A CANADIAN STUDY SITE**
Stéphane Huriez, Laurent Coeurdevey, Spot Image, France; Thierry Toutin, Natural Resources Canada, Canada

12:00
FR2.O4.4 **DUBAISAT-1: MISSION OVERVIEW, DEVELOPMENT STATUS AND FUTURE APPLICATIONS**
Adnan Al Rais, Ali Al Suwaidi, Emirates Institution for Advanced Science & Technology (EIAST), United Arab Emirates; Hosni Ghedira, American University in Dubai, United Arab Emirates

12:20
FR2.O4.5 **THE TIME DELAY BETWEEN PANCHROMATIC AND MULTISPECTRAL BANDS OF QUICKBIRD SENSORS**
Jianwei Tao, Qiming Qin, Peking University, China

FR2.O5: Friday, July 17, 11:00 - 12:40

FR2.O5 **Geospatial Based Analysis II**

Session Type: Oral-Contributed
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 2B
Chair: Abhinav Dayal

11:00
FR2.O5.1 **BYTE-MAP: A NOVEL MOBILE MAP FORMAT USING TWO-BYTE COORDINATES**
Yingwei Luo, Xiao Pang, Xiaolin Wang, Haibo Wang, Peking University, China

11:20
FR2.O5.2 **AGENT-BASED SIMULATION FOR URBAN EMERGENCY RESPONSE PLANNING**
Jinfeng Ma, Feng Mao, Wensheng Zhou, Tsinghua University, China

11:40
FR2.O5.3 **ENHANCED ONLINE GENERALIZATION ALGORITHM**
Ahmed Abdel-Hamid, Mahmoud Ahmed, Yehia Helmy, Faculty of Computers and Information, Helwan University, Egypt

12:00
FR2.O5.4 **BUFFER GENERATION USING SPHERICAL GEOMETRY**
Abhinav Dayal, IDV Solutions Inc., United States

12:20
FR2.O5.5 **A MULTISPECTRAL APPROACH FOR LIDAR SUPPORTED PREDEVELOPMENT MODELS**
Mary Beth Crile, ITT Corporation, United States

FR2.O6: Friday, July 17, 11:00 - 12:40

FR2.O6 **High Performance Computing for Hyperspectral Image Analysis II**

Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 2C
Co-Chairs: Antonio Plaza and Qian Du

11:00
FR2.O6.1 **PARALLEL IMPLEMENTATION OF ENDMEMBER EXTRACTION ALGORITHMS USING NVIDIA GRAPHICAL PROCESSING UNITS**
Antonio Plaza, Javier Plaza, Sergio Sánchez, University of Extremadura, Spain

11:20
FR2.O6.2 **FPGA-BASED ON-BOARD MULTI/ HYPERSPECTRAL IMAGE COMPRESSION SYSTEM**
Guoxia Yu, Tanya Vladimirova, Martin Sweeting, University of Surrey, United Kingdom

11:40
FR2.O6.3 **PARALLEL COMPUTING OF HIGH ORDER ANOMALY DETECTION IN HYPERSPECTRAL IMAGERY**
Hsuan Ren, National Central University, Taiwan; Yang-Lang Chang, National Taipei University of Technology, Taiwan

12:00
FR2.O6.4 **A PARALLEL DIFFERENTIAL BOX COUNTING ALGORITHM APPLIED TO HYPERSPECTRAL IMAGE CLASSIFICATIONS**
Yu-Chang Tzeng, K. T. Fan, Y. J. Su, National United University, Taiwan; Kun-Shan Chen, National Central University, Taiwan

12:20
FR2.O6.5 **REAL-TIME PROCESSING OF SIMPLEX GROWING ALGORITHM**
Chao-Cheng Wu, Chein-I Chang, University of Maryland, Baltimore County, United States; Hsuan Ren, National Central University, Taiwan; Yang-Lang Chang, National Taipei University of Technology, Taiwan

FR2.O7: Friday, July 17, 11:00 - 12:40

FR2.O7 **A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors II**

Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 3A
Chair: Gyanesh Chander

11:00
FR2.O7.1 **SOME NEEDED STANDARDS AND BEST PRACTICES FOR CALIBRATION AND VALIDATION OF REMOTE SENSING DATA**
Irwin Alber, IEEE/ICEO, United States; Siri Jodha Khalsa, NSIDC/ICEO, United States

11:20
FR2.O7.2 **GLOBAL CHANGE OBSERVATION MISSION**
Haruhisa Shimoda, Japan Aerospace Exploration Agency, Japan

11:40
FR2.O7.3 **RADIATION TRANSFER MODELS AND QA4EO: CURRENT AND FUTURE EFFORTS FOR TRACEABILITY AND VALIDATION**
Jean-Luc Widlowski, European Commission, Italy; Jean-Francois Cote, University of Sherbrooke, Canada; Yves Govaerts, EUMETSAT, Germany; Nigel Fox, National Physics Laboratory, United Kingdom; Pascal LeComte, Philippe Goryl, Giuseppe Ottavianelli, European Space Agency, Italy

12:00
FR2.O7.4 **THE MOON AS A RADIOMETRIC REFERENCE SOURCE FOR ON-ORBIT SENSOR STABILITY CALIBRATION**
Thomas Stone, United States Geological Survey, United States

12:20
FR2.O7.5 **AN ASSESSMENT OF AFRICAN TEST SITES IN THE CONTEXT OF A GLOBAL NETWORK OF QUALITY-ASSURED REFERENCE STANDARDS**
Gyanesh Chander, SGT/USGS/EROS, United States; Xiaoxiong (Jack) Xiong, NASA/GSFC, United States; Amit Angal, SSAI, United States; Taeyoung (Jason) Choi, Science Systems & Applications, Inc., United States

FR2.O8: Friday, July 17, 11:00 - 12:40

FR2.O8 **Global DEM Interoperability: ASTER GDEM: Initial Assessment II**

Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 3B
Co-Chairs: Dean Gesch and Jan-Peter Muller

11:00
FR2.O8.1 **COMPARISON OF ASTER GDEM AND A PHOTOGRAMMETRICALLY DERIVED SPOT-5 DEM FOR ALLUVIAL LANDFORM MODELING APPLICATIONS IN CENTRAL AND WESTERN AFRICA**
Peter Chirico, US Geological Survey, United States

11:20
FR2.O8.2 **ASTER GLOBAL DIGITAL ELEVATION MODEL EVALUATION USING PRISM ONBOARD ALOS**
Takeo Tadono, Masanobu Shimada, Japan Aerospace Exploration Agency, Japan; Junichi Takaku, Remote Sensing Technology Center of Japan, Japan

11:40
FR2.O8.3 **THE GLOBAL ELEVATION REPLACEMENT PROJECT: AFRICA HYDROLOGICAL COMPARISONS AND SOURCE EVALUATIONS BETWEEN THE 1 ARC-SECOND ASTER GDEM AND COMPARABLE HIGHER RESOLUTION DATA SOURCES**
Jeffrey Danielson, Dean Gesch, U.S. Geological Survey, United States; Norman Bliss, ASRC Research and Technology Solutions, United States

12:00
FR2.O8.4 **MERGING GDEM, SRTM AND OTHER DATA SETS TO OPTIMIZE GLOBAL COVERAGE**
Michael Kobrick, Robert Crippen, Thomas Farr, Jet Propulsion Laboratory, United States

12:20
FR2.O8.5 **EVALUATION OF ASTER GDEM WITH SPECIAL EMPHASIS ON VOID DETECTION AND FILLING**
Hannes Isaak Reuter, Andrew Nelson, Independent Spatial Consultant, Italy; Wolfgang Mehl, Peter Strobl, Andrew Jarvis, Joint Research Centre, Italy

FR2.O9: Friday, July 17, 11:00 - 12:40

FR2.O9 **Spatiotemporal Data Mining and Pattern Discovery II**

Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 1A
Chair: Fenzhen Su

11:00
FR2.O9.1 **A STUDY ON GEO-CBR AND ITS APPLICATION IN SPATIAL DATA MINING FRAMEWORK**
Yunyan Du, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China; Ce Li, ESRI China(Beijing) Limited, China; Fenzhen Su, Wei Wen, Feng Cao, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, China

11:20
FR2.O9.2 **SPATIO-TEMPORAL DATA MINING ON MCS OVER TIBETAN PLATEAU USING SATELLITE METEOROLOGICAL DATASETS**
Yubin Yang, Nanjing University, China; Hui Lin, The Chinese University of Hong Kong, China

11:40
FR2.O9.3 **FINDING COMPOUND STRUCTURES IN IMAGES USING IMAGE SEGMENTATION AND GRAPH-BASED KNOWLEDGE DISCOVERY**
Daniya Zamalieva, Selim Aksoy, Bilkent University, Turkey; James Tilton, NASA Goddard Space Flight Center, United States

12:00
FR2.O9.4 **ACTIVE LEARNING OF HYPERSPECTRAL DATA WITH SPATIALLY DEPENDENT LABEL ACQUISITION COSTS**
Alexander Liu, Goo Jun, Joydeep Ghosh, University of Texas at Austin, United States

12:20
FR2.O9.5 **SPECIES DISTRIBUTION AND FOREST TYPE MAPPING IN MEXICO**
Anna Cord, German Aerospace Center – German Remote Sensing Data Center, Germany; René R. Colditz, National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico; Michael Schmidt, Stefan Dech, German Aerospace Center – German Remote Sensing Data Center, Germany

FR2.O10: Friday, July 17, 11:00 - 12:40

FR2.O10 **Urban Applications II**
Session Type: Oral-Contributed
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 1B
Co-Chairs: Sudhir Gupta and Domenico Solimini

11:00
FR2.O10.1 **RESEARCH THE DYNAMICS OF LANDSCAPE SPATIAL PATTERNS OF URBAN-RURAL ECOTONE USING MULTI-TEMPORAL REMOTE SENSING IMAGE**
Ze Liu, Feng Mao, Wensheng Zhou, Qiang Li, Tsinghua University, China

11:20
FR2.O10.2 **RELATIONSHIP BETWEEN URBAN HEAT SINK AND HEAT ENERGY EXCHANGE IN BEIJING, CHINA**
Mingyi Du, Guoyin Cai, Dongwei Qiu, Beijing University of Civil Engineering and Architecture, China

11:40
FR2.O10.3 **AUTOMATIC ROAD NETWORK EXTRACTION USING HIGH RESOLUTION MULTI-TEMPORAL SATELLITE IMAGES**
Vinay Pandit, Sudhir Gupta, Krishnan S Rajan, International Institute of Information Technology, India

12:00
FR2.O10.4 **ROUGH THIN PAVEMENT THICKNESS ESTIMATION BY GPR**
Nicolas Pinel, Université de Nantes, France; Cédric Le Bastard, Laboratoires régionaux des Ponts et Chaussées d'Angers (LRPCA), France; Limei Liu, Guangdong University of Technology, China; Christophe Bourlier, Yide Wang, Université de Nantes, France

12:20
FR2.O10.5 **REMOTE SENSING ARCHAEOLOGY USING HISTORICAL AERIAL PHOTOGRAPHS**
Biao Deng, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Huadong Guo, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Yueping Nie, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Lin Yang, National Museum of China, China

FR2.O11: Friday, July 17, 11:00 - 12:40

FR2.O11 **Wetlands and Flooding**
Session Type: Oral-Contributed
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 1C
Co-Chairs: Duk-Jin Kim and Jasmeet Judge

11:00
FR2.O11.1 **FLOOD AND DISCHARGE MONITORING OVER UPPER MISSISSIPPI WATERSHEDS DURING THE 2008 IOWA FLOOD USING AMSR-E DATA**
Marouane Temimi, NOAA-CREST, United States; Hosni Ghedira, American University in Dubai, United Arab Emirates; Reza Khanbilvardi, NOAA-CREST, United States

11:20
FR2.O11.2 **AN IMPROVED METHOD OF CALCULATING AIR-WATER SURFACE REFLECTANCE OF SKYLIGHT FROM WATER SURFACE MEASURED SPECTRA**
Junsheng Li, Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Qian Shen, Hao Zhang, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Yuanfeng Wu, Di Wu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

11:40
FR2.O11.3 **AERIAL IMAGERY FOR MONITORING LAND USE IN EAST AFRICAN WETLAND ECOSYSTEMS**
Jonas Franke, University of Bonn, Center for Remote Sensing of Land Surfaces (ZFL), Germany; Mathias Becker, University of Bonn, Institute of Crop Science and Resource Conservation (INRES), Germany; Gunter Menz, University of Bonn, Department of Geography, Remote Sensing Research Group (RSRG), Germany; Salome Misana, Emiliana Mwita, Dar es salaam University College of Education, United Republic of Tanzania; Pamela Nienkemper, University of Bonn, Department of Geography, Remote Sensing Research Group (RSRG), Germany

12:00
FR2.O11.4 **REMOTE SENSING OF SMALL RESERVOIRS: REGIONAL INVENTORIES, ASSESSMENT OF STORAGE VOLUMES, AND CALIBRATION OF HYDROLOGICAL MODELS**
Jens R. Liebe, University of Bonn, Germany; Frank Annor, Kwame Nkrumah University of Science and Technology, Ghana; Marc Andreini, International Water Management Institute, United States; M. Todd Walter, Tammo S. Steenhuis, Cornell University, United States; Nick van de Giesen, Technical University of Delft, Netherlands

12:20
FR2.O11.5 **EARLY FLOOD WARNING FOR LINYI WATERSHED BY GRAPES/XXT MODEL USING TIGGE DATA**
Jingwen Xu, Wanchang Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences, China

FR2.O12: Friday, July 17, 11:00 - 12:40

FR2.O12 **Remote Sensing of the Upper Atmosphere**
Session Type: Oral-Contributed
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 1D
Chair: Nkanyiso Nmbatha

11:00
FR2.O12.1 **RETRIEVING ATMOSPHERIC PROFILES WITH HIGH RESOLUTION SPECTRAL INFRARED MEASUREMENTS**
Xuebao Wu, Peng Zhang, Hong Qiu, National Satellite Meteorological Center, China; Jun Li, University of Wisconsin, United States

11:20
FR2.O12.2 **EXAMINING THE INFLUENCE OF SUDDEN STRATOSPHERIC WARMING IN THE UPPER MESOSPHERE-LOWER THERMOSPHERE REGION USING SATELLITE AND HF RADAR DATA SETS**
Nkanyiso Mbatha, Hermanus Magnetic Observatory, South Africa; Venkataraman Sivakumar, Council for Scientific and Industrial Research, South Africa; Sandile Malinga, Hermanus Magnetic Observatory, South Africa; Hassan Bencherif, Université de La Réunion, France

11:40
FR2.O12.3 **HOW ATMOSPHERIC INSTABILITY INFLUENCES MODELS RESULTS OF SATELLITE OBSERVED UPPER TROPOSPHERIC WATER VAPOR PROPERTIES**
Jules Rostand Dim, Hiroshi Murakami, Japan Aerospace Exploration Agency (JAXA), Japan; Tamio Takamura, Chiba University, Japan; Masahiro Hori, Japan Aerospace Exploration Agency (JAXA), Japan; Takahashi Y. Nakajima, Tokai University, Japan

12:00
FR2.O12.4 **RIMT: A TOOL FOR REGIONAL IONOSPHERIC MAPPING AND TOMOGRAPHY USING GPS DATA**
Shuanggen Jin, University of Texas at Austin, United States; J. Cho, Korea Astronomy and Space Science Institute, Republic of Korea

12:20
FR2.O12.5 **NDSA MEASUREMENTS BETWEEN TWO LEO SATELLITES IN KU AND K BANDS FOR THE TROPOSPHERIC WATER VAPOR ESTIMATE: PERFORMANCE EVALUATION AT GLOBAL SCALE**
Fabrizio Cuccoli, Luca Facheris, CNIT, Italy

FR2.O13: Friday, July 17, 11:00 - 12:40

FR2.O13 **Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass II**
Session Type: Oral-Invited
Time: Friday, July 17, 11:00 - 12:40
Place: Leslie 1E
Co-Chairs: Richard Lucas and Mahta Moghaddam

11:00
FR2.O13.1 **BIOMASS AND VEGETATION STRUCTURE ESTIMATES FROM COMBINED LIDAR, SAR, AND INSAR OBSERVATIONS OVER THE HARVARD FOREST**
Paul Siqueira, Razi Ahmed, University of Massachusetts, United States; Kathleen Bergen, University of Michigan, United States; Bruce Chapman, Scott Hensley, Jet Propulsion Laboratory, United States

11:20
FR2.O13.2 **MODEL-BASED INTEGRATION OF INSAR AND LIDAR FOR CANOPY STRUCTURE**
Mariko Buergin, The University of Michigan, United States; Jinha Jung, Purdue University, United States; Mahta Moghaddam, The University of Michigan, United States; Melba Crawford, Purdue University, United States

11:40
FR2.O13.3 **FOREST BIOMASS RETRIEVAL FROM LIDAR AND RADAR**
Guoqing Sun, University of Maryland, United States; K. Jon Ranson, NASA Goddard Space Flight Center, United States

12:00
FR2.O13.4 **FOREST PARAMETER MAPPING BASED ON LIDAR AND SAR DATA**
Zhiyu Zhang, Lixin Zhang, Beijing Normal University, China; Wenjian Ni, Zhifeng Guo, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Guoqing Sun, University of Maryland, College Park, United States

12:20
FR2.O13.5 **BOREAL FOREST HEIGHT ESTIMATION WITH SAR INTERFEROMETRY AND LASER MEASUREMENTS**
Jaan Praks, Martti Hallikainen, Helsinki University of Technology, Finland; Juha Hyyppä, Finnish Geodetic Institute, Finland; Jaakko Seppänen, Helsinki University of technology, Finland

FR3.O1: Friday, July 17, 14:20 - 16:00

FR3.O1 **Active Microwave Sensors**
Session Type: Oral-Contributed
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 2A
Chair: Vivien Enjolras

14:20
FR3.O1.1 **DIRECTIONAL WAVE SPECTRUM ESTIMATION BY SWIM INSTRUMENT ON CFOSAT**
Céline Tison, Thierry Amiot, CNES, France; Danièle Hauser, CNRS / CETP, France; Vivien Enjolras, Laurent Rey, Thalès Alenia Space, France; Patrick Castillan, CNES, France

14:40
FR3.O1.2 **SWIM, A STATE OF THE ART MULTI-INCIDENCE BEAMS KU-BAND WAVES SCATTEROMETER TO GO BEYOND CURRENT RADAR SYSTEMS**
Vivien Enjolras, Laurent Rey, Lionel Cros, Stéphane Pouyez, Thales Alenia Space, France; Thierry Amiot, Céline Tison, Patrick Castillan, CNES, France

15:00
FR3.O1.3 **KASOARI : LOW RISK AND LOW COST SWATH ALTIMETER FOR OPEN OCEAN AND COASTAL AREAS TOPOGRAPHY MEASUREMENT**
Laurent Phalippou, Vivien Enjolras, Thales Alenia Space, France

15:20
FR3.O1.4 **DIGITAL BEAMFORMING SCATTEROMETER**
Rafael Rincon, Manuel Vega, NASA/GSFC, United States; Luko Krnan, Dynamic Systems Technology, United States; Manuel Buenfil, Alessandro Geist, Lawrance Hilliard, Paul Racette, NASA/GSFC, United States

15:40
FR3.O1.5 **ATMOSPHERIC WATER VAPOR EFFECTS ON SPACEBORNE INTERFEROMETRIC SAR IMAGING: COMPARISON WITH GROUND-BASED MEASUREMENTS AND METEOROLOGICAL MODEL SIMULATIONS AT DIFFERENT SCALES**
Nazzareno Pierdicca, Sapienza University of Rome, Italy; Fabio Rocca, Polytechnic of Milan, Italy; Bjorn Rommen, ESA-ESTEC, Netherlands; Patrizia Basili, Stefania Bonafoni, University of Perugia, Italy; Domenico Cimini, University of L'Aquila, Italy; Piero Ciotti, Università dell'Aquila, Italy; Fernando Consalvi, Fondazione U. Bordoni, Italy; Rossella Ferretti, University of L'Aquila, Italy; Willow Foster, Colorado State University, United States; Frank Silvio Marzano, Sapienza University of Rome, Italy; Vinia Mattioli, University of Perugia, Italy; Augusto Mazzoni, Sapienza University of Rome, Italy; Mario Montopoli, University of L'Aquila, Italy; Riccardo Notarpietro, Politechnic of Turin, Italy; Sharmila Padmanabhan, Colorado State University, United States; Daniele Perissin, Polytechnic of Milan, Italy; Emanuela Pichelli, University of L'Aquila, Italy; Steven C. Reising, Sahoo Swaroop, Colorado State University, United States; Giovanna Venuti, Polytechnic of Milan, Italy

FR3.O2: Friday, July 17, 14:20 - 16:00

FR3.O2 **Interferometry - Moving Targets**
Session Type: Oral-Contributed
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 2D
Co-Chairs: Alan Thompson and Franz Meyer

14:20
FR3.O2.1 **A LINEAR KALMAN FILTER APPROACH FOR ESTIMATION OF A VEHICLE'S MOTION PARAMETERS USING RANGE-DOPPLER TRACKING AND ROAD INFORMATION**
Ulrich Gebhardt, Patrick Berens, Jürgen Holzner, Forschungsgesellschaft für Angewandte Naturwissenschaften e.V. (FGAN), Germany

14:40
FR3.O2.2 **GRLT DETECTION OF MOVING TARGET BY ALONG TRACK SAR INTERFEROMETRIC SYSTEMS**
Alessandra Budillon, Universita' di Napoli Parthenope, Italy; Massimo Ciaramello, Annarita Evangelista, Universita' di Cassino, Italy; Vito Pascazio, Gilda Schirinzi, Universita' di Napoli Parthenope, Italy

15:00
FR3.O2.3 **SAR INTERFEROMETRY AND SPECKLE TRACKING APPROACH FOR GANGOTRI GLACIER VELOCITY ESTIMATION USING ERS-1/2 AND TERRASAR-X SPOTLIGHT HIGH RESOLUTION DATA**
Vijay Kumar, Gopalan Venkataraman, Y S Rao, IIT Bombay, India

15:20
FR3.O2.4 **A NOVEL STAP ALGORITHM USING SPARSE RECOVERY TECHNIQUE**
Ke Sun, Hao Zhang, Gang Li, Huadong Meng, Xiqin Wang, Tsinghua University, China

15:40
FR3.O2.5 **CHIRP SCALING BASED DETECTION OF MOVING TARGETS IN SAR IMAGES**
Diego Cristallini, Pierfrancesco Lombardo, Debora Pastina, Angela Mennella, University of Rome, Italy

FR3.O3: Friday, July 17, 14:20 - 16:00

FR3.O3 **Present and Future of Satellite Altimetry I**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Menzies M9
Co-Chairs: William Emery and Paolo Cipollini

14:20
FR3.O3.1 **DISCOVERING A CURRENT IN THE 21ST CENTURY WITH ALTIMETRY**
Mathieu Rouault, University of Cape Town, South Africa; Gerold Siedler, University of Kiel, Germany

14:40
FR3.O3.2 **A MULTI-SENSOR APPROACH TOWARDS COASTAL OCEAN PROCESSES MONITORING**
Jerome Bouffard, Ananda Pascual, Simón Ruiz, Guillermo Vizoso, Joaquim Tintoré, IMEDEA (CSIC-UIB), Spain

15:00
FR3.O3.3 **THE CONTRIBUTION OF IMPROVED ALTIMETRY TO A STUDY OF NW MEDITERRANEAN SEA COASTAL DYNAMICS**
Laurent Roblou, Laboratoire d'Etudes en Géophysique et Océanographie Spatiales, France; Paolo Cipollini, National Oceanography Centre, United Kingdom; Florence Birol, Stefano Vignudelli, Consiglio Nazionale delle Ricerche, Italy

15:20
FR3.O3.4 **CNES/PISTACH PROJECT APPROACH TO GET BETTER MEASUREMENTS OVER INLAND WATER BODIES: EARLY RESULTS**
Franck Mercier, CLS, France; Nicolas Picot, CNES, France; Pierre Thibaut, CLS, France; Anny Cazenave, CNES/LEGOS, France; Frederique Seyler, IRD/LMTG/HyBAM, Brazil; Pascal Kosuth, CEMAGREF/TETIS, France

15:40
FR3.O3.5 **CNES/PISTACH PROJECT APPROACH TO GET BETTER ALTIMETRIC MEASUREMENTS CLOSE TO THE COASTS : EARLY RESULTS**
Pierre Thibaut, Sylvie Labroue, Jean Christophe Poisson, Franck Mercier, Collecte Localisation Satellite, France

FR3.O4: Friday, July 17, 14:20 - 16:00

FR3.O4 **Remote Sensing Tools for Plant Production System Management**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Menzies M10
Chair: Guy Vandenbosch

14:20
FR3.O4.1 **INTEGRATING HYPERSPECTRAL AND IN SITU DATA FOR THE STEERING OF PLANT PRODUCTION SYSTEMS**
Guy A. E. Vandenbosch, Willem W. Verstraeten, Pol Coppin, Katholieke Universiteit Leuven, Belgium

14:40
FR3.O4.2 **ANTENNAS WITH ELECTRONIC BEAM STEERING IN EARTH OBSERVATION APPLICATIONS**
Vladimir Volskiy, Hadi Aliakbarian, Wim Aerts, Guy A. E. Vandenbosch, Katholieke Universiteit Leuven, Belgium

15:00
FR3.O4.3 **A SOLUTION FOR THE MIXTURE PROBLEM IN AGRICULTURAL REMOTE SENSING**
Ben Somers, Jan Stuckens, Laurent Tits, Katholieke Universiteit Leuven, Belgium; Stephan Verreynne, University of Stellenbosch, South Africa; Willem W. Verstraeten, Pol Coppin, Katholieke Universiteit Leuven, Belgium

15:20
FR3.O4.4 **DETECTING CITRUS TREE WATER STATUS BY INTEGRATING HYPERSPECTRAL REMOTE SENSING AND PHYSIOLOGICAL DATA IN A WATER FLOW–STORAGE MODEL**
Sebinasi Dzikiti, Stephan Verreynne, Albert Strever, University of Stellenbosch, South Africa; Jan Stuckens, Willem W. Verstraeten, Ronny Swennen, Katholieke University of Leuven, Belgium; Pol Coppin, Katholieke Universiteit Leuven, Belgium

15:40
FR3.O4.5 **IMPROVING SOIL ORGANIC CARBON (SOC) PREDICTION BY FIELD SPECTROMETRY IN BARE CROPLAND BY REDUCING THE DISTURBING EFFECT OF SOIL ROUGHNESS**
Antoine Denis, Bernard Tychon, University of Liège ULg, Belgium; Antoine Stevens, Bas van Wesemael, University Chatolic of Louvain UCL, Belgium

FR3.O5: Friday, July 17, 14:20 - 16:00

FR3.O5 **Geospatial Applications**
Session Type: Oral-Contributed
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 2B
Chair: Graeme McFerren

14:20
FR3.O5.1 **INTEGRATED WATER RESOURCES MANAGEMENT IN THE CONGO BASIN BASED ON EARTH OBSERVATION-BASED OPERATIONAL SERVICES BEING DEVELOPED IN THE FRAMEWORK OF THE AMESD PROGRAMME IN CENTRAL AFRICA**
Charles Tanania Kabobo, Julie Ladel, International Commission for Congo-Ubangui-Sangha Basin (CICOS), Australia; Marc Leroy, African Union-Addis Ababa, Ethiopia

14:40
FR3.O5.2 **EVALUATION OF SOUTH AFRICAN RADAR AND REMOTELY SENSED SURFACE PARAMETERS TO PREDICT FLOODING IN BOTSWANA**
Otukile Lekote, Tom Whitney, Stephen Katzberg, South Carolina State University, United States

15:00
FR3.O5.3 **THE ECORS SYSTEM: A MOBILITY DECISION-MAKING TOOL BASED ON EARTH OBSERVATION DATA**
Gilles Grandjean, BRGM, France; Sébastien Angélliaume, Jean-Francois Nouvel, ONERA, France

15:20
FR3.O5.4 **HIGH-RATE GNSS TECHNIQUES FOR THE DETECTION OF LARGE SEISMIC DISPLACEMENTS**
Tong Ning, Jan Johansson, Hans-Georg Scherneck, Chalmers University of Technology, Sweden; Per Jarlemark, SP Technical Research Institute of Sweden, Sweden

15:40
FR3.O5.5 **EVALUATING SENSOR OBSERVATION SERVICE IMPLEMENTATIONS**
Graeme McFerren, Derek Hohls, Meraka Institute, South Africa; Gavin Fleming, Mintek, South Africa

FR3.O7: Friday, July 17, 14:20 - 16:00

FR3.O7 **Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives I**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 3A
Co-Chairs: Liping Di and Manuel Benedetti

14:20
FR3.O7.1 **CEOS SENSOR WEB COLLABORATIONS SUPPORTING GEOSS**
Karen Moe, NASA Goddard Space Flight Center, United States; Terence L. van Zyl, University of Johannesburg, South Africa

14:40
FR3.O7.2 **CONNECTING SENSOR WEB AND EARTH SYSTEM MODELS**
Liping Di, Genong Yu, George Mason University, United States

15:00
FR3.O7.3 **AN ONTOLOGY-BASED APPROACH TO SIMULATION OF HYDROLOGICAL PROCESSES IN HEIHE RIVER BASIN, CHINA**
Song-Bing Zou, The Cold and Arid Region Environmental and Engineering Research Institute, CAS, China; Liang Chen, Lanzhou university, China; Chuanyan Zhao, Zhaodong Feng, Lanzhou University, China

15:20
FR3.O7.4 **AN ONTOLOGY MERGING TOOL TO FACILITATE INTEROPERABILITY BETWEEN COASTAL SENSOR NETWORKS**
Shruthi Bheemireddy, Surya Durbha, Roger King, Santhosh Amanchi, Nicolas Younan, Mississippi State University, United States

15:40
FR3.O7.5 **USING WEB MINING TO LOCATE UNREGISTERED TOPONYM IN WEB MAP SERVICES**
Yingwei Luo, Haibo Wang, Xiaolin Wang, Xiao Pang, Peking University, China

FR3.O9: Friday, July 17, 14:20 - 16:00

FR3.O9 **Advances in Data Systems for Future Missions and Earth Science Research I**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 1A
Co-Chairs: Kenneth McDonald and Hampapuram Ramapriyan

14:20
FR3.O9.1 **NOAA'S ARCHIVE PROCESSES FOR JASON-2/OSTM - A SUCCESS STORY IN THE ADOPTION OF STANDARDS**
Robert Rank, John Lillibridge, Jeremy Throwe, NOAA/NESDIS, United States; Kenneth Casey, Yongsheng Zhang, NOAA, United States

14:40
FR3.O9.2 **NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM'S KEY TO LOW DATA LATENCY: SAFETYNET(TM)**
David Lubar, Paul Koster, Raytheon Company, United States; Geoffrey Cook, Northrop Grumman Space Technology, United States; Michael Jamilkowski, Raytheon Company, United States

15:00
FR3.O9.3 **EVOLUTION OF WEB SERVICES IN EOSDIS - SEARCH AND ORDER METADATA REGISTRY (ECHO)**
Andrew Mitchell, Hampapuram Ramapriyan, Dawn Lowe, NASA, United States

15:20
FR3.O9.4 **USING SENSORML TO DESCRIBE SCIENTIFIC WORKFLOWS IN DISTRIBUTED WEB SERVICE ENVIRONMENTS**
Terence L. van Zyl, Anwar Vahed, Graeme Mcferren, Petrus Shabangu, Bheki Cwele, Meraka Institute, South Africa

15:40
FR3.O9.5 **TALKOOT: DISCOVER, TAG, SHARE, AND REUSE COLLABORATIVE SCIENCE WORKFLOWS**
Rahul Ramachandran, University of Alabama in Huntsville, United States; Sunil Movva, University of Alabama Huntsville, United States

FR3.O10: Friday, July 17, 14:20 - 16:00

FR3.O10 **Remote Sensing Education**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 1B
Co-Chairs: Andiswa Mlisa and Brigitte Leblon

14:20
FR3.O10.1 **E-LEARNING IN REMOTE SENSING: AVANTAGES AND ISSUES IN AFRICA**
Brigitte Leblon, Armand Larocque, University of New Brunswick, Canada; Maria Luz Gil, Universitad Santiago de Compostela, Spain

14:40
FR3.O10.2 **USING REMOTE SENSING FREE SOFTWARE IN SCIENTIFIC RESEARCH**
Talnan Jean Honore Coulibaly, university of abobo-Adjame, Cote d'Ivoire; Jean-Paul Deroin, University of Reims, France; Issiaka Savane, university of abobo-Adjame, Cote d'Ivoire

15:00
FR3.O10.3 **THE ITC GEONETCAST TOOLBOX: A GEO CAPACITY BUILDING COMPONENT FOR EDUCATION AND TRAINING IN GLOBAL EARTH OBSERVATION AND GEO-INFORMATION PROVISION TO SOCIETY**
Chris Mannaerts, Ben Maathuis, Martien Molenaar, Rob Lemmens, ITC (Int'l Inst. Geo-information Sciences & Earth Observation), Netherlands

15:20
FR3.O10.4 **TOWARDS BEST PRACTICE IN EARTH OBSERVATION RESEARCH IN DEVELOPING COUNTRIES**
Iain Woodhouse, Gemma F. Cassells, The University of Edinburgh, United Kingdom; Mavuto Tembo, The University of Mzuzu, Malawi

15:40
FR3.O10.5 **GEOINFORMATION TRAINING AND EDUCATION IN GUINEA CURRENT LARGE MARINE ECOSYSTEM REGION OF AFRICA**
Peter Chigozie Nwilo, University of Lagos, Nigeria; Jimmy Adegoke, University of Missuori, United States; Saba Ekechukwu, Map & Image Systems Ltd, Nigeria

FR3.O11: Friday, July 17, 14:20 - 16:00

FR3.O11 **Agroecosystems**
Session Type: Oral-Contributed
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 1C
Co-Chairs: Brilliant Petja and Elodie Vintrou

14:20
FR3.O11.1 **MAPPING CULTIVATED AREA IN WEST AFRICA USING MODIS IMAGERY AND AGROECOLOGICAL STRATIFICATION**
Elodie Vintrou, Marion Houles, Danny Lo Seen, UMR TETIS - CIRAD, France; Christian Baron, UPR AIVA, France; Christian Feau, UMR TETIS - CIRAD, France; Gérard Laine, UMR TETIS, CIRAD, France

14:40
FR3.O11.2 **USING REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEM FOR PRIORITIZATION OF AREAS FOR SITE SPECIFIC AGRICULTURAL DEVELOPMENT IN LIMPOPO PROVINCE, SOUTH AFRICA.**
Brilliant Mareme Petja, Richard Rendani Ramugondo, Azwihangwisi Edward Nesamvuni, Limpopo Department of Agriculture, South Africa

15:00
FR3.O11.3 **ROBUST ESTIMATION OF CROP RESIDUE COVER VIA MULTI/HYPERSPECTRAL SENSING**
James Monty, Melba Crawford, Purdue University, United States; Craig Daughtry, USDA-ARS, United States

15:20
FR3.O11.4 **DECISION TREE DATA MINING IN OBJECT ORIENTED CLASSIFICATION FOR SUGAR CANE HARVEST TYPES**
Elizabeth Goltz, Gustavo Arcoverde, Daniel Aguiar, Bernardo Rudorff, National Institute for Space Research, Brazil; Eduardo Maeda, University of Helsinki, Finland

15:40
FR3.O11.5 **TIME SERIES OF POLARIMETRIC AND INTERFEROMETRIC OBSERVATIONS OF TERRASAR-X DATA OVER RICE FIELDS IN SPAIN**
Juan M. Lopez-Sanchez, J. David Ballester-Berman, University of Alicante, Spain; Irena Hajnsek, German Aerospace Center DLR, Germany

FR3.O12: Friday, July 17, 14:20 - 16:00

FR3.O12 **Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition I**
Session Type: Oral-Contributed
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 1D
Chair: Bruce Guenther

14:20
FR3.O12.1 **RETRIEVAL OF AEROSOL OPTICAL THICKNESS FROM HJ-1A/B IMAGES USING STRUCTURE FUNCTION METHOD**
Chunyan Zhou, Qinhuo Liu, Bo Zhong, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China; Lin Sun, Shandong University of Science and Technology, China; Xiaozhou Xin, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

14:40
FR3.O12.2 **AERL – A SMALL SATELLITE FOR MEASUREMENT OF AEROSOL PROPERTIES OVER LAND SURFACES**
Helmut Rott, Thomas Nagler, ENVEO IT GmbH, Austria; Alice Robert, Astrium SAS, France; Tony Sephton, Alex Wishart, Astrium Ltd, United Kingdom; Karsten Strauch, Kristof Gantois, ESA-ESTEC, Netherlands

15:00
FR3.O12.3 **AEROSOL OPTICAL DEPTH RETRIEVAL OVER LAND USING MODIS DATA AND ITS APPLICATION IN MONITORING AIR QUALITY**
Linlu Mei, Yong Xue, Jie Guang, Yingjie Li, Ying Wang, Linyan Bai, Jianwen Ai, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

15:20
FR3.O12.4 **NPOESS PREPARATORY PROJECT OZONE MAPPER AND PROFILER SUITE SENSOR SUCCESSFUL COMPLETION AND DELIVERY – PERFORMANCE DESCRIPTION**
Maria Caponi, Integrated Program Office, NOAA / Aerospace, United States; Lawrence Flynn, Integrated Program Office, NOAA, United States; Bruce Guenther, Charles Hanks, John Hornstein, Integrated Program Office, United States; Scott Janz, Integrated Program Office and NASA, United States; Maria Larsen, Integrated Program Office, United States

15:40
FR3.O12.5 **INFLUENCE OF SUN PHOTOMETER FILTER FUNCTION ON RETRIEVING AEROSOL OPTICAL DEPTH**
Hao Zhang, Bing Zhang, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China; Dongchuan Yan, Capital Normal University, China; Junsheng Li, Qian Shen, Yuanfeng Wu, Di Wu, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, China

FR3.O13: Friday, July 17, 14:20 - 16:00

FR3.O13 **Water Monitoring with MERIS and AATSR in Africa**
Session Type: Oral-Invited
Time: Friday, July 17, 14:20 - 16:00
Place: Leslie 1E
Co-Chairs: Peter Regner and Carsten Brockmann

14:20
FR3.O13.1 **MERIS AND (A)ATSR DATA FOR AFRICAN USERS**
Peter Regner, Diego Fernandez, ESA/ESRIN, Italy

14:40
FR3.O13.2 **MULTI-SENSOR IMAGE ANALYSIS OF AFRICAN LAND AND WATER SURFACES USING THE BEAM TOOLBOX**
Carsten Brockmann, Norman Fomferra, Brockmann Consult GmbH, Germany; Peter Regner, ESA ESRIN, Italy; Kerstin Stelzer, Brockmann Consult GmbH, Germany

15:00
FR3.O13.3 **ATMOSPHERIC CORRECTION AND WATER CONSTITUENTS RETRIEVAL PROCEDURES FOR TURBID COASTAL AND LAKE WATER SCENES OF MERIS**
Roland Doerffer, GKSS Research Center, Germany

15:20
FR3.O13.4 **MERIS/AATSR SYNERGY ALGORITHMS FOR CLOUD SCREENING, AEROSOL RETRIEVAL AND ATMOSPHERIC CORRECTION OVER OCEANS**
Juergen Fischer, Free University Berlin, Germany; Carsten Brockmann, Brockmann Consult, Germany; Luis Gómez-Chova, Universitat de Valencia, Spain; Will Gray, Andreas Heckel, Swansea University, United Kingdom; Jose Moreno, Universitat de Valencia, Spain; Peter North, Swansea University, United Kingdom; Rene Preusker, Free University Berlin, Germany; Peter Regner, ESA/ESRIN, Italy

15:40
FR3.O13.5 **GLOBCOLOUR - THE EUROPEAN SERVICE FOR OCEAN COLOUR**
Odile Fanton d'Andon, Antoine Mangin, ACRI-ST, France; Samantha Lavender, ARGANS, United Kingdom; David Antoine, Laboratoire d'Océanographie de Villefranche, France; Stéphane Maritorena, Institute for Computational Earth System Science - University of Santa Barbara, United States; André Morel, Laboratoire d'Océanographie de Villefranche, France; Gilbert Barrot, Julien Demaria, ACRI-ST, France; Simon Pinnock, European Space Agency, Italy

FR4.O1: Friday, July 17, 16:20 - 18:00

FR4.O1 **Active Microwave Sensor Applications**
Session Type: Oral-Contributed
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 2A
Chair: Kei Suwa

16:20
FR4.O1.1 **A NEW CONCEPT OF SPACEBORNE MARITIME SURVEILLANCE RADAR**
Jacques Richard, Thales Alenia Space, France

16:40
FR4.O1.2 **ESTIMATION OF TARGET MOTION AND 3D TARGET GEOMETRY USING MULTISTATIC ISAR MOVIES**
Kei Suwa, Toshio Wakayama, Masafumi Iwamoto, Mitsubishi Electric Co., Japan

17:00
FR4.O1.3 **THE RELATIONSHIP BETWEEN RADAR BACKSCATTER CROSS SECTION AND OCEAN WAVE PARAMETERS AT LOW INCIDENCE ANGLES**
Xiaoqing Chu, Yijun He, Gengxin Chen, Institute of Oceanology, Chinese Academy of Sciences, China

17:20
FR4.O1.4 **MEASUREMENTS OF OCEAN WAVE SPECTRA WITH VERTICAL POLARIZATION X-BAND RADAR IMAGE SEQUENCES**
Limin Cui, Yijun He, Institute of Oceanology, Chinese Academy of Sciences, China

17:40
FR4.O1.5 **A RADAR SUITE FOR ICE SHEET ACCUMULATION MEASUREMENTS AND NEAR-SURFACE INTERNAL LAYER MAPPING**
Cameron Lewis, Aqsa Patel, Heather Owen, Fernando Rodriguez-Morales, Carl Leuschen, Sarah A. Seguin, John Ledford, Kevin Player, Sivaprasad Gogineni, University of Kansas, United States

FR4.O3: Friday, July 17, 16:20 - 18:00

FR4.O3 **Present and Future of Satellite Altimetry II**
Session Type: Oral-Invited
Time: Friday, July 17, 16:20 - 18:00
Place: Menzies M9
Co-Chairs: William Emery and Paolo Cipollini

16:20
FR4.O3.1 **ADVANCES IN COASTAL ALTIMETRY: THE COASTALT PROJECT OUTLOOK**
Paolo Cipollini, Christine Gommenginger, National Oceanography Centre, Southampton, United Kingdom; Henrique Coelho, Hidromod Modelação em Eng., Lda, Portugal; Joana Fernandes, Universidade do Porto, Portugal; Jesus Gomez-Enri, University of Cadiz, Spain; Cristina Martin-Puig, Starlab, Spain; Stefano Vignudelli, Consiglio Nazionale delle Ricerche, Italy; Philip Woodworth, Proudman Oceanographic Laboratory, United Kingdom; Salvatore Dinardo, SERCO, Italy; Jérôme Benveniste, European Space Agency, Italy

16:40
FR4.O3.2 **A RADIOMETER CONCEPT TO ENABLE HIGH-RESOLUTION WET PATH DELAY RETRIEVALS FOR THE SWOT MISSION**
Shannon Brown, Behrouz Khayatian, John Farrara, Jet Propulsion Laboratory, United States

17:00
FR4.O3.3 **SRAL, A RADAR ALTIMETER DESIGNED TO MEASURE A WIDE RANGE OF SURFACE TYPES**
Yves Le Roy, Marc Deschaux-Beaume, Thales Alenia Space, France; Constantin Mavrocordatos, Franck Borde, ESTEC, Netherlands

17:20
FR4.O3.4 **SAR ALTIMETER RETRACKER PERFORMANCE BOUND OVER WATER SURFACES**
Cristina Martin-Puig, Giulio Ruffini, Starlab Barcelona S.L., Spain

17:40
FR4.O3.5 **ASSESSING THE ALTIMETRIC PRECISION OF DELAY DOPPLER ALTIMETRY OVER THE OCEAN WITH NUMERICAL SIMULATIONS FROM THE CRYOSAT MISSION PERFORMANCE SIMULATOR**
Christine Gommenginger, National Oceanography Centre, Southampton, United Kingdom; Cristina Martin-Puig, Starlab, Spain; P. David Cotton, SatOC, United Kingdom; Keith Raney, Johns Hopkins University, United States; Jérôme Benveniste, ESA/ESRIN, Italy

FR4.O5: Friday, July 17, 16:20 - 18:00

FR4.O5 **Geodesy in Africa**
Session Type: Oral-Invited
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 2B
Co-Chairs: Chris Rizos and Richard Wonnacott

16:20
FR4.O5.1 **THE AFRICAN GEODETIC REFERENCE FRAME (AFREF) PROJECT: STATUS AND FUTURE**
Hussein Farah, Regional Centre for Mapping of Resources for Development(RCMRD), Kenya

16:40
FR4.O5.2 **AFRICA'S ROLE IN THE GLOBAL GEODETIC OBSERVING SYSTEM**
Ruth Neilan, Hans-Peter Plag, Markus Rothacher, Global Geodetic Observing System, United States

17:00
FR4.O5.3 **APPLICATIONS OF GNSS IN WEST AFRICA**
Alabo Dagogo M.J. Fubara, Rivers State University of Science & Technology, Nigeria

17:20
FR4.O5.4 **GPS METEOROLOGY IN AFRICA: HIGHLIGHTS FROM AMMA PROJECT**
Olivier Bock, Samuel Nahmani, IGN, France

17:40
FR4.O5.5 **AN EVALUATION OF THE EARTH GEOPOTENTIAL MODEL 2008 (EGM2008) IN SOUTHERN AFRICA**
Charles Merry, University of Cape Town, South Africa

FR4.O7: Friday, July 17, 16:20 - 18:00

FR4.O7 **Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives II**

Session Type: Oral-Invited
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 3A
Co-Chairs: Liping Di and Manuel Benedetti

16:20
FR4.O7.1 **SECURE SERVICE COMPOSITION IN SENSOR WEB**
Genong Yu, Liping Di, George Mason University, United States

16:40
FR4.O7.2 **SELF-ORGANISING SENSOR WEB USING CELL-FATE OPTIMISATION**
Terence L. van Zyl, Elizabeth M Ehlers, University of Johannesburg, South Africa

17:00
FR4.O7.3 **MOBILE COMPUTING AND SENSOR WEB SERVICES FOR COASTAL BUOYS**
Santhosh Amanchi, Surya Durbha, Roger King, Shruthi Bheemireddy, Nicolas Younan, Mississippi State University, United States

17:20
FR4.O7.4 **A WSN-BASED SOLUTION FOR PRECISION FARM PURPOSES**
Mauro Martinelli, Luca Ioriatti, Federico Viani, Manuel Benedetti, Andrea Massa, ELEDIA Research Group - University of Trento, Italy

17:40
FR4.O7.5 **DESIGN AND DEVELOPMENT OF NOVEL 3D ANTENNAS FOR WEATHER AND TORNADO SENSING APPLICATIONS**
Anya Traille, Manos M. Tentzeris, Georgia Institute of Technology, United States

FR4.O9: Friday, July 17, 16:20 - 18:00

FR4.O9 **Advances in Data Systems for Future Missions and Earth Science Research II**

Session Type: Oral-Invited
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 1A
Co-Chairs: Kenneth McDonald and Hampapuram Ramapriyan

16:20
FR4.O9.1 **THE IMPLEMENTATION OF GEOSPATIAL WEB SERVICES AND WORKFLOWS IN GEOBRAIN**
Liping Di, Peisheng Zhao, Weiguo Han, Xiaoyan Li, Meixia Deng, George Mason University, United States

16:40
FR4.O9.2 **THE GEOBRAIN DATA-INTENSIVE ON-LINE ENVIRONMENT FOR ENABLING EASY ACCESS AND INTEGRATION OF DISTRIBUTED GEOSPATIAL RESOURCES**
Meixia Deng, George Mason University, United States

17:00
FR4.O9.3 **NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM INTERFACE DATA PROCESSING SEGMENT ARCHITECTURE**
William Sullivan, Raytheon Company, United States; Joseph Mulligan, NOAA, United States; Kerry Grant, David Smith, Michael Jamilkowski, Raytheon Company, United States

17:20
FR4.O9.4 **MODIS SCIENCE ALGORITHMS AND DATA SYSTEMS LESSONS LEARNED**
Robert Wolfe, Bill Ridgway, Fred Patt, Edward Masuoka, NASA GSFC, United States

17:40
FR4.O9.5 **OBJECT MODEL AND KNOWLEDGE DATABASE FOR AUTOMATED OBJECT-BASED ANALYSIS OF REMOTE SENSING IMAGERY**
Markus Reinhold, Peter Selsam, Friedrich Schiller University of Jena, Germany

FR4.O11: Friday, July 17, 16:20 - 18:00

FR4.O11 **Challenges in Integrating Information From New Earth Science Missions for Societal Applications**

Session Type: Oral-Invited
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 1C
Chair: Greg Leptoukh

16:20
FR4.O11.1 **UTILIZING REMOTE SENSING DATA TO ASCERTAIN SOIL MOSITURE APPLICATIONS AND AIR QUALITY CONDITIONS**
Steven Kempler, Gregory Leptoukh, National Aeronautics and Space Administration/ Goddard Space Flight Center, United States; William Teng, National Aeronautics and Space Administration/Goddard Space Flight Center SESDA2, United States; Lawrence Friedl, National Aeronautics and Space Administration/Headquarters, United States; Christopher Lynnes, National Aeronautics and Space Administration/Goddard Space Flight Center, United States

16:40
FR4.O11.2 **USING EARTH OBSERVATIONS FOR ECOLOGICAL RESEARCH: EXPERIENCES, CHALLENGES, AND FUTURE DIRECTIONS FOR AGRICULTURAL APPLICATIONS**
Tristram West, Oak Ridge National Laboratory, United States

17:00
FR4.O11.3 **THE LONG, HARD JOURNEY: EXPANDING THE USE OF NASA DATA AND MODELS FOR SUSTAINABLE DEVELOPMENT PLANNING AROUND THE WORLD**
Maudood Khan, Ashutosh Limaye, William Crosson, Universities Space Research Association, United States; Alper Unal, Nancy Kete, EMBARQ, World Resources Institute (WRI) Center for Sustainable Transport, United States; Douglas Rickman, NASA Marshall Space Flight Center, United States

17:20
FR4.O11.4 **MONITORING LAND SURFACE SEASONAL FREEZE/THAW STATE FOR QUANTIFYING CONTROLS ON BOREAL ECOSYSTEM PRODUCTIVITY: LINKING TERRESTRIAL WATER AND CARBON CYCLES WITH NASA'S SOIL MOISTURE ACTIVE/PASSIVE (SMAP) MISSION**
Kyle McDonald, Jet Propulsion Lab, California Institute of Technology, United States; John Kimball, The University of Montana Flathead Lake Biological Station, United States

17:40
FR4.O11.5 **DEVELOPMENT OF THE DATA GENERATION, MANAGEMENT, AND DISTRIBUTION SYSTEM FOR GEOSTATIONARY OCEAN COLOR IMAGER IN KOREA OCEAN SATELLITE CENTER**
Hee-Jeong Han, Yu-Hwan Ahn, Joo-Hyung Ryu, Chan-Su Yang, Korea Ocean Research and Development Institute, Republic of Korea

FR4.O12: Friday, July 17, 16:20 - 18:00

FR4.O12 **Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition II**

Session Type: Oral-Contributed
Time: Friday, July 17, 16:20 - 18:00
Place: Leslie 1D
Chair: Gregory Leptoukh

16:20
FR4.O12.1 **UTILIZATION OF NASA'S GLORY AEROSOL POLARIMETRIC SENSOR PRODUCTS IN VISUAL AIR QUALITY IMAGE PROCESSING SYSTEM**
Yahya Golestani, The Aerospace Corporation, United States

16:40
FR4.O12.2 **GLOBAL ATMOSPHERIC AEROSOL OPTICAL DEPTH RETRIEVALS OVER LAND AND OCEAN FROM AATSR**
Suzanne Bevan, Peter North, Swansea University, United Kingdom; William Grey, Met Office, United Kingdom; Sietse Los, Swansea University, United Kingdom

17:00
FR4.O12.3 **SHORT-TERM AEROSOL TRENDS: REALITY OR MYTH**
Gregory Leptoukh, NASA, United States; Viktor Zubko, Wyle/ADNET, United States

17:20
FR4.O12.4 **METHODS FOR ANALYSIS OF ATMOSPHERIC AEROSOLS FROM FUTURE SPACEBORNE HIGH SPECTRAL RESOLUTION LIDAR DATA**
Christopher McPherson, John Reagan, University of Arizona, United States; Richard Ferrare, Chris Hostetler, Johnathan Hair, NASA Langley Research Center, United States

17:40
FR4.O12.5 **A RETRIEVAL ALGORITHM FOR AEROSOL OPTICAL DEPTH FROM MODIS MULTI-SPATIAL SCALE DATA BASED ON MUTUAL INFORMATION**
Yingjie Li, Yong Xue, Jie Guang, Ying Wang, Linlu Mei, Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

Paper Identifiers

Example:	TU	4	.	O4	.	4
Meaning:	**Day**	**Time Block**	**Separator**	**Room**	**Separator**	**Sequence**

Day

MO..... Monday, July 13
TU..... Tuesday, July 14
WE..... Wednesday, July 15
TH..... Thursday, July 16
FR..... Friday, July 17

Time Block

1..... First Morning Session ..... 09:00 - 10:40
2..... Second Morning Session..... 11:00 - 12:40
3..... First Afternoon Session..... 14:20 - 16:00
4..... Second Afternoon Session... 16:20 - 18:00
P ..... Poster Session..... 12:40 - 14:20
..... Note: Posters will be up all day; authors will be present 12:40 - 14:20.

Room

Oral..... Leslie Building and Menzies Building
O1: Leslie 2A
O2: Leslie 2D
O3: Menzies M9
O4: Menzies M10
O5: Leslie 2B
O6: Leslie 2C
O7: Leslie 3A
O8: Leslie 3B
O9: Leslie 1A
O10: Leslie 1B
O11: Leslie 1C
O12: Leslie 1D
O13: Leslie 1E
Poster .. Jameson Hall, Poster Areas A-O.

Sequence

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

Topical Session Index

A1 — Applications:Human Health and Landscape Epidemiology
Human Health and Landscape Epidemiology WE1.O12
Coastal and Wetlands Applications I WE3.O4

A2 — Applications:Urban and Built Environment
Urban and Built environment ..... WEP.A
Urban Remote Sensing I WE3.O12
Urban Remote Sensing II WE4.O12
Urban Applications I FR1.O10
Urban Applications II FR2.O10

A3 — Applications:Coastal and Wetlands
Coastal and Wetlands Applications Posters I ..... WEP.B
Coastal and Wetlands Applications I TH1.O4
Coastal and Wetlands Applications II TH2.O4
Coastal and Wetlands Applications III TH3.O4

A4 — Applications:Geology and Solid Earth
Geological Applications I MO3.O2
Geological Applications II MO4.O2
Sensors and Algorithms for Landmine Detection TU1.O8
Geological Applications I ..... TUP.A
Geological Applications II ..... TUP.B
Geological Applications III ..... TUP.C

A5 — Applications:Pollution and Contamination
Remote sensing for Pollution and Urban Area Monitoring ..... WEP.C
Remote Sensing for Sea Pollution TH3.O1
Remote Sensing for Land and Air Pollution Monitoring TH4.O4

C1 — Cryosphere:Land Ice and Snow
Land Surface Snow and Ice B ..... TUP.J
Land Surface Snow and Ice A ..... TUP.K
Land Surface Snow and Ice C ..... TUP.L
Microwave and Optical Remote Sensing of Snow TU3.O10
Remote Sensing of Land Ice and Glaciers TU4.O10

C2 — Cryosphere:Sea Ice
Sea Ice WE1.O10

E1 — Electromagnetics and Radiative Transfer:Microwave Scattering and Propagation
Ocean Surface Scattering MO4.O7
Rough Surface Scattering Techniques TU1.O7
Volume Scattering TU2.O7
Electromagnetics and Radiative Transfer ..... TUP.N
Microwave Scattering and Propagation ..... TUP.O
Special Techniques On Volume and Surface Scattering TU3.O7

E2 — Electromagnetics and Radiative Transfer:Optical and Infrared Modeling
Optical Modeling and Inversion MO3.O3
Optical Modeling MO4.O3

L1 — Land:Land Use and Land Cover Change
Desertification and Deforestation WE2.O12
Land Cover Characterization ..... WEP.E
Active Remote Sensing and Land Characterization TH1.O12
Geostationary Data Products; Land Surface Temperature TH2.O12
Land Use and Land Cover ..... THP.A
Land Use / Land Cover Classification - Africa Focus I TH3.O12
Land Use / Land Cover Classification - Africa Focus II TH4.O12

L2 — Land:Soils and Soil Moisture
Soil Moisture Retrievals and Applications in Africa TU4.O7
Soil Moisture Ocean Salinity (SMOS) Mission WE1.O7
Remote Sensing of Soil Properties WE1.O11
Soil Moisture Field Experiments and Modeling WE2.O11
Soil Moisture Remote Sensing - Passive ..... WEP.G
Soil Moisture Remote Sensing - Active ..... WEP.H
Soil Properties ..... WEP.I
Soil Moisture Active Passive (SMAP) Mission WE3.O11

L3 — Land:Forests and Vegetation
Vegetation Physiology and Biophysics ..... WEP.J
Fire and Disturbance ..... WEP.K
Vegetation Structure and Biomass I WE4.O11
Vegetation Structure and Biomass II TH1.O11
Remote Sensing of Vegetation Processes I TH2.O11
Remote Sensing of Land Surface Properties and Wetlands ..... THP.B
Forest and Vegetation Applications ..... THP.C
Remote Sensing of LAI TH3.O11
Remote Sensing of Vegetation Processes II TH4.O11
Forest Mapping FR1.O11

L4 — Land:Wetlands and Inland Waters
Wetlands and Flooding FR2.O11

L5 — Land:Agroecosystems
Agroecosystems II ..... WEP.F
Agroecosystems FR3.O11

M1 — Atmosphere:Precipitation and Clouds
Precipitation: Measurements, Analysis and Technology I WE1.O9
Precipitation: Measurements, Analysis and Technology II WE2.O9
Clouds and Precipitation ..... WEP.L
Clouds: Measurements, Analysis and Technology I WE3.O9
Clouds: Measurements, Analysis and Technology II WE4.O9

M2 — Atmosphere:Numerical Weather Prediction and Data Assimilation
Data Assimilation into Numerical Models TU3.O6

M3 — Atmosphere:Atmospheric Sounding
Atmospheric Sensing, Aerosols and Chemistry ..... TUP.H
Atmospheric Sensing and Profiling FR1.O12
Remote Sensing of the Upper Atmosphere FR2.O12

M4 — Atmosphere:Aerosols and Atmospheric Chemistry
Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition I FR3.O12
Sensors, Algorithm Techniques, and Cases Studies in Aerosols & Atmospheric Composition II FR4.O12

O1 — Oceans:Ocean Biology (Color) and Water Quality
Ocean Biology Posters ..... TUP.F
Coastal Ocean Biology and Water Quality TU3.O8
Ocean Biology from Space WE2.O7

O2 — Oceans:Ocean Surface Winds and Currents
Satellite Sensing of High Ocean Surface Winds MO3.O11
Ocean Remote Sensing: Measurements and Simulations ..... TUP.G
Active Sensing of Ocean Waves, Currents and Rain WE1.O3
High Resolution Satellite Sensing of Ocean Waves WE2.O3
Modeling and Applications of Active and Passive Ocean Sensing WE3.O7

O3 — Oceans:Ocean Temperature and Salinity
Satellite Sea Surface Temperature MO4.O11
Surface Salinity and Surface Processes WE3.O3

P1 — Education and Policy:Data Management and Systems
Data Processing and Management WE1.O6

P2 — Education and Policy:Remote Sensing Data and Policy Decisions
Remote Sensing Data Applications WE2.O6

S1 — Sensors and Platforms:SAR Instruments, Missions and Calibration
New SAR Systems TU4.O2
SAR Missions and Calibration WE3.O2
SAR Instruments, Missions and Calibration ..... THP.I

S2 — Sensors and Platforms:SAR Processing
SAR MO3.O5
BiStatic SAR TU1.O3
Polarimetry WE2.O1
Interferometry ..... THP.H
SAR Posters A ..... THP.J
SAR Posters B ..... THP.K
Interferometry I TH4.O2
Interferometry II FR1.O2
Interferometry and SAR FR2.O2
Interferometry - Moving Targets FR3.O2

S3 — Sensors and Platforms:Active Microwave
Active Microwave Sensors FR3.O1
Active Microwave Sensor Applications FR4.O1

S4 — Sensors and Platforms:Radiometer Instruments and Calibration
Optical Sensors Calibration WE2.O10
Optical Sensors Calibration II ..... WEP.D
Optical Sensors Technologies WE3.O10
Calibration of Interferometric Microwave Radiometers WE4.O10
Calibration of Microwave Radiometers TH1.O10
Microwave Radiometry: Instruments and Applications ..... THP.L

S5 — Sensors and Platforms:Lidar Sensors
Lidar Sensing ..... TUP.D
Lidar Sensing TH3.O13

S6 — Sensors and Platforms:Passive Optical and Hyperspectral Sensors
Hyperspectral Sensing I MO3.O6
Hyperspectral Sensing II MO4.O6
Hyperspectral and Optical Sensing ..... TUP.E
Optical Sensing Methods and Systems TH3.O10

S7 — Sensors and Platforms:UAV and Airborne Platforms
UAV and Airborne Sensing ..... TUP.I
UAV Sensing TH4.O10

T1 — Analysis Techniques:Image Processing Techniques
Change Detection TU4.O8
Advanced Methods for Polarimetric Information Extraction II WE1.O1
Mathematical Morphology in Remote Sensing WE1.O8
Advanced Concepts for Image Analysis I WE2.O4
Registration WE2.O8
Monitoring of the Environment ..... WEP.M
Classification of Hyperspectral Data WE3.O8
Pansharpening and Resolution enhancement WE4.O8
Source Separation: From ICA to Unmixing TH1.O8
Image Segmentation and Textures TH2.O8
Buildings and Urban Areas ..... THP.D
Data Processing I ..... THP.E
Data Processing and Data Compression ..... THP.F
High-Resolution SAR Image processing TH3.O2
Advanced Concepts for Image Analysis II TH3.O8

T2 — Analysis Techniques:Data Assimilation and Inverse Problems
Inverse Problems and Techniques ..... WEP.N
Inversion of Land Surface and Biophysical Properties I TH1.O7
Inversion of Land Surface and Biophysical Properties II TH2.O7

T3 — Analysis Techniques:Classification and Data Mining Techniques
Target and Object Detection TU1.O9
Hyperspectral Image Classification and Feature Extraction TU2.O9
Kernel-Based Feature Extraction and Classification TU3.O9
Estimation and Classification Techniques and Applications TU4.O9
Classification and Data Mining ..... WEP.O
Image Classification WE4.O7
Segmentation-Based Image Analysis and Classification TH1.O9
Classification Techniques and Applications ..... THP.G

T4 — Analysis Techniques:Geographic Information Science
Geospatial Analysis and Appplications ..... TUP.M
Geospatial Based Analysis I FR1.O5
Geospatial Based Analysis II FR2.O5
Geospatial Applications FR3.O5

X1 — Student Paper Contest:Student Paper Contest
Student Paper Contest I TU1.O5
Student Paper Contest II TU2.O5

Invited Sessions
18 years ESA ERS and ENVISAT Earth Observations TU3.O4
A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors I FR1.O7

A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors II FR2.O7
Active/Passive Microwave Remote Sensing of Terrestrial Snow I TU1.O10
Active/Passive Microwave Remote Sensing of Terrestrial Snow II TU2.O10
Mapping Innundated Wetlands with Spaceborne Remote Sensing I TU3.O11
Mapping Innundated Wetlands with Spaceborne Remote Sensing II TU4.O11
Advanced Methods for Polarimetric Information Extraction I TH4.O1
Advanced Methods for Polarimetric Signal Processing WE4.O6
Advances in Data Systems for Future Missions and Earth Science Research I FR3.O9
Advances in Data Systems for Future Missions and Earth Science Research II FR4.O9
ALOS and other ESA Third Party Missions - Applications for Africa I TU1.O1
ALOS and other ESA Third Party Missions - Applications for Africa II TU2.O1
Monitoring a Changing Continent with ALOS Sensors I WE3.O5
Monitoring a Changing Continent with ALOS Sensors II WE4.O5
Hyperspectral Imagers: Calibration, Modeling & Compensation I TU1.O6
Hyperspectral Imagers: Calibration, Modeling & Compensation II TU2.O6
Bistatic SAR: Instruments, Experiments and Applications TU2.O3
Challenges in Integrating Information From New Earth Science Missions for Societal Applications FR4.O11
Collaborative Adaptive Sensing of the Atmosphere TU4.O6
COSMO-SkyMed Mission: Status and Results I TU3.O3
COSMO-SkyMed Mission: Status and Results II TU4.O3
Data Fusion I TH3.O7
Data Fusion II TH4.O7
Remote Sensing Education FR3.O10
The Operational Sentinels: New Possibilities for Science I TU1.O4
The Operational Sentinels: New Possibilities for Science II TU2.O4
Forest Resources of Africa MO3.O7
Frequency Allocation for Remote Sensing and RFI mitigation for microwave radiometry TU1.O11
Global DEM Interoperability: ASTER GDEM: Initial Assessment I FR1.O8
Global DEM Interoperability: ASTER GDEM: Initial Assessment II FR2.O8
GNSS Remote Sensing of Atmosphere, Ocean and Land I TU1.O12
GNSS Remote Sensing of Atmosphere, Ocean and Land II TU2.O12
GNSS Remote Sensing of Atmosphere, Ocean and Land III TU3.O12
GOES-R, Status and Applications from the next Generation U.S. Geostationary Satellite System TU4.O12
High Performance Geocomputation and Remote Sensing I TH1.O6
High Performance Geocomputation and Remote Sensing II TH2.O6
High Resolution InSAR with Emphasis on Complex Scattering Scenarios WE4.O2
Hyperspectral Remote Sensing in Africa I TH2.O10
Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions I WE3.O1
Innovative Methods SAR Polarimetry and Applications to the Remote Sensing of Wet and Arid Regions II WE4.O1
Ionosphere Effects in Polarimetric and Interferometric SAR Imagery I TH1.O1
Ionosphere Effects in Polarimetric and Interferometric SAR Imagery II TH2.O1
Lidar-Based Remote Sensing - the Next Wave I TH1.O13
Lidar-Based Remote Sensing - the Next Wave II TH2.O13
Low Frequency SAR Calibration, Processing, Modelling and Applications I TH1.O2
Low Frequency SAR Calibration, Processing, Modelling and Applications II TH2.O2
Measuring Earth Dynamics using L-Band Interferometry TH3.O5
Monitoring of Soil Moisture and Vegetation Biomass on a Global Scale by Using Microwave Sensors ... WE4.O3
NPOESS Microwave Contributions to Weather Forecasting TU2.O11
NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation I MO3.O9
NPOESS Preparatory Project: Sensor Complement, Capabilities and Program Plans for Calibration and Validation II MO4.O9
Open Source Initiatives for Remote Sensing - Orfeo Toolbox I TH3.O6
Open Source Initiatives for Remote Sensing - Orfeo Toolbox II TH4.O6

Performance of Operational Surface Deformation Measurements from Radar Interferometry I TU3.O5
Performance of Operational Surface Deformation Measurements from Radar Interferometry II TU4.O5
Phenology, Inter-annual Change and Modelling TH4.O13
Present and Future of Satellite Altimetry I FR3.O3
Present and Future of Satellite Altimetry II FR4.O3
Quantitative Remote Sensing for Geomorphology and Active Tectonics I WE1.O5
Quantitative Remote Sensing for Geomorphology and Active Tectonics II WE2.O5
RADARSAT I TU3.O1
RADARSAT II TU4.O1
Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives I FR3.O7
Earth Observation Sensor Web: Technlogies, Solutions, and Perspectives II FR4.O7
Recent Advances in Microwave Radiometer Technology FR2.O3
Remote Sensing for a Better Understanding of Savanna Processes and Dynamics I TU1.O13
Remote Sensing for a Better Understanding of Savanna Processes and Dynamics II TU2.O13
Remote Sensing for Biodiversity in Africa - From Observations to Informed Actions for Biodiversity Assessments WE2.O13
Remote Sensing and Geospatial Information Technology for Agricultural Decision Support TH3.O9
Remote Sensing of Fire Occurrence and Characteristics in Africa: Operational and Science Applications WE1.O13
Remote Sensing of Land Hydrological Parameters for Application to Floods and Landslides Management TH4.O8
Remote Sensing Tools for Plant Production System Management FR3.O4
SAR Polarimetry: Theory and Applications I FR1.O1
SAR Polarimetry: Theory and Applications II FR2.O1
Satellite Photo/Radargrammetry with the New Generation of High-resolution Sensors I FR1.O4
Satellite Photo/Radargrammetry with the New Generation of High-resolution Sensors II FR2.O4
Sentinel-1, The European Radar Constellation I MO3.O4
Sentinel-1, The European Radar Constellation II MO4.O4
Ship Detection and Classification: Application of SAR techniques in the framework of High Resolution sensors TH4.O9
Imaging Spectroscopy Initiatives in Europe FR1.O3
Airborne and Ground Based Radar Measurements in Support of Space Based Instruments I TU4.O4
Airborne and Ground Based Radar Measurements in Support of Space Based Instruments II WE1.O4
Spatiotemporal Data Mining and Pattern Discovery I FR1.O9
Spatiotemporal Data Mining and Pattern Discovery II FR2.O9
Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass I FR1.O13
Synergy of SAR and LIDAR for Characterizing Vegetation 3D Structure and Biomass II FR2.O13
TanDEM-X: The Mission Status TU3.O2
Ten Years of MODIS Earth Observations I TH1.O3
Ten Years of MODIS Earth Observations II TH2.O3
TerraSAR-X: Scientific Results I TU1.O2
TerraSAR-X: Scientific Results II TU2.O2
The Contribution of Remote Sensing Towards Sustainable Mining Development Practices I WE3.O13
The Contribution of Remote Sensing Towards Sustainable Mining Development Practices II WE4.O13
The Southern African Regional Science Initiative - SAFARI 2000 I TU3.O13
The Southern African Regional Science Initiative - SAFARI 2000 II TU4.O13
The Maturing A-Train Constellation: Integrated Systems Earth Science and Applications MO3.O1
The TIGER Initiative: Supporting African Efforts Towards a Water Observation System I MO3.O13
The TIGER Initiative: Supporting African Efforts Towards a Water Observation System II MO4.O13
Three-dimensional SAR I WE1.O2
Three-dimensional SAR II WE2.O2
Time-series Analyses for Change Detection TH2.O9
Tropospheric Propagation Effects in Radar Mesaurements TH4.O5
Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas I TH1.O5
Use of Remote Sensing Techniques for Surface Deformation Monitoring and Damage Detection in Volcanic and Seismogenic Areas II TH2.O5
Water Monitoring with MERIS and AATSR in Africa FR3.O13

High Performance Computing for Hyperspectral Image Analysis I FR1.O6
High Performance Computing for Hyperspectral Image Analysis II FR2.O6
Data Mining and Machine Learning for Remote Sensing WE3.O6
Remote Sensing Assessment of Vegetation State and Land Degradation WE4.O4
Recent Advances in Hyperspectral Unmixing and Information Extraction I TH3.O3
Recent Advances in Hyperspectral Unmixing and Information Extraction II TH4.O3
Ground Penetrating Radar Algorithms and Applications: Hazard Detection and Subsurface Mapping ... MO4.O5
Geodesy in Africa FR4.O5
TRMM and GPM I MO3.O8
TRMM and GPM II MO4.O8
Satellite Sensor Synergy: Observing the African Large Marine Ecosystems I MO3.O10
Satellite Sensor Synergy: Observing the Global Marine Ecosystems II MO4.O10
The Use of Ocean Colour Data at Regional Scales: Methodological Considerations and Applications TU2.O8
Panel Session: Opportunities in Global Earth Observation MO3.O12
GEOSS Implementation-Uniting Perspectives MO4.O12
NASA's Earth Venture Initiative and the Venture Class Missions MO4.O1

Author Index

A

Aaltonen, Veijo 43
Aanaes, Henrik 74
Aba'a, Rostand 86
Ababio, Selorm 6
Abad, Francisco 2
Abdelfattah, Riadh 19
Abdel-Hamid, Ahmed 131
Abdel Latif, Bassam 118
Abdel-Rahman, Elfatih 99
Abdel Wahab, Magdy 90
Abe, Bolanle 42
Abe, Kenji 108
Abernethy, Katherine 4
Aboutajdine, Driss 110
Abramov, Vladimir 109
Abshire, James B. 100
Abu Al Hin, Khaldoun 89
Abusali, P.A.M. 27
Acevo-Herrera, Rene 33, 63, 111
Acharya, Prabhat 24
Ackerman, Steven 89
Adachi, Ahoro 4
Adam, Elhadi 99
Adami, Marcos 98
Adam, Nico 39, 82, 116
Addabbo, Pia 128
Adegoke, Jimmy 139
Adler, Bob 89
Aerts, Wim 137
Agnew, Tom 56
Agravante, Hiroshi 61
Aguasca, Albert 33, 63, 107, 111, 129
Aguiar, Daniel 98, 140
Agyekum, Kwame 5, 6
Ahmad, Khalil 6
Ahmad, Zia 95
Ahmed, Fethi 27, 73, 99
Ahmed, Mahmoud 131
Ahmed, Razi 135
Ahmed, Samir 42
Ahn, Yu-Hwan 114, 144
Ai, Jianwen 37, 90, 140
Ainsworth, Thomas 94, 110, 116, 123
Aixia, Liu 101
Akers, Eric 34
Akos, Dennis 20
Aksoy, Selim 133
Alasset, Pierre-Jean 93
Albahkali, Majid 3
Albergel, Clement 68
Alber, Irwin 132
Alberti, Edoardo 3
Albitar, Ahmad 68
Aliakbarian, Hadi 137
Aliano, Carolina 54
Allain, Sophie 15, 49, 118
Allan, Graham 100
Allemand, Pascal 111
Al Muhairi, Ammar 65
Alonso-Benito, Alfonso 13, 57
Alonso, Luis 21
Alparone, Luciano 104
Alpers, Werner 59
Alqudah, Amin 11
Al Rais, Adnan 31, 117, 131
Alsdorf, Doug 53
Al-Sharari, Hamed 19
Al Suwaidi, Ali 31, 33, 131
Altay, Gulay 90
Álvarez, Isaac 49, 106
Amanchi, Santhosh 138, 143
Ambrosio, Gregorio 106
A. Mianji, Fereidoun 78, 85
Amin, Ruhul 42
Amiot, Thierry 79, 136
Ammann, Jérôme 111
Amodio, Angelo 54
Amoros, Julia 91
Amoruso, Nicola 98
Anandakrishnan, Sridhar 34, 35
Anantharaj, Valentine 62
Andermann, Christoff 60
Anderson, Gail 17, 24
Anderson, Gail P. 24
Anderson, Liana 122
Andreadis, Konstantinos 19, 53
Andreas, Nancy 61, 100, 114
Andreini, Marc 134
Anfinsen, Stian 84
Anfinsen, Stian Normann 58
Angal, Amit 114, 132
Angélliaume, Sébastien 95, 120, 123, 138
Anguelova, Magdalena D. 24
Angulo, Jesus 55
Annegarn, Harold 44, 51, 80, 86
Annor, Frank 134
Antelo, Jose 106
Anterrieu, Eric 105, 128
Antoine, David 61, 141
Antonio, Pepe 116
Anuar, Mohd Izzudin 71
An, Wentao 75
Anyamba, Assaf 57
Aoki, Shigeru 56
Apaydin, Gokhan 2
Appeaning, Addo 6

Appel, Igor 43
April, Andre 45
Aragão, Luiz Eduardo O C 122
Arai, Egidio 98
Arakelyan, Arsen 35, 69
Arakelyan, Artashes 35, 69
Arámbula, Raúl 49, 106
Arbelo, Manuel 13, 57
Archer, Frank 109
Archibald, Sally 21, 58, 122
Arcoverde, Gustavo 140
Arenas, Alvaro 108
Areola, Olusegun 83
Arevalo, Vicente 62, 106
Ariaux, Béatrice 66
Arii, Motofumi 75
Arkett, Matt 45
Armston, John 129
Arnaud, Laurent 34, 35
Arnaud, Yves 43
Arnold, G. Thomas 51
Aronoff, Jason 105
Artis, Jean-Paul 79
Asano, Taro 114
Aschbacher, Josef 16
Ashton, Andrew 6
Asner, Gregory 21, 27, 101
Atkinson, Nigel 12
Attema, Evert 2, 9, 16, 40
Attié, Jean-Luc 92
Atto, Abdourrahmane 113
Atwood, Don 83
Atzeni, Carlo 8
Atzori, Simone 90
Auer, Stefan 52
Auger, Denis 38
Augusto, Vagney 8
Aulamo, Osmo 43
Aumann, Hartmut 1, 128
Aung, Myo Tun 97
Autieri, Roberta 60
Ayuso, Fermin 125
Azong Cho, Moses 99

B

Babakhani, Asad 85
Baccini, Alessandro 129
Baccouche, Moez 67
Bachmann, Charles 110
Bachoo, Asheer 122
Bagalwa, Louis 30
Bagalwa, Monfort 30
Bagan, Hasi 67
Baghdadi, Nicolas 15
Bailey, Bryan 126
Bailey, M.C. 92
Bailey, Sean 95
Bai, Linyan 37, 140
Baillarin, Florence 66
Baillarin, Simon 3
Bai, Lu 106
Bakhanov, Victor 59
Bakos, Karoly 49
Balch, William M. 95
Baldini, Luca 56
Ballester-Berman, J. David 106, 129, 140
Balsamo, Gianpaolo 41, 55, 63
Baltzer, Heiko 95
Bamler, Richard 40, 52, 82, 116, 124
Banerjee, Amit 110
Bannerman, Karen 66
Banta, Robert M. 100
Bao, Zheng 16
Baraldi, Andrea 98
Baranoski, Gladimir 9
Barber, Christopher P. 58
Barber, M. 82
Barbieri, Massimo 15
Barbier, Nicolas 122
Barbin, Silvio 116
Barbosa, Humberto 72
Barducci, Alessandro 17, 31
Baret, Frédéric 57
Barfuss, Steven L. 120
Barker, Kathryn 61
Barmettler, Arnold 22
Barnes, William 89
Barnet, Christopher D. 5
Barnsley, Michael 95
Baron, Christian 140
Baroncini-Turricchia, Guido 63, 67, 80
Barrena García, Manuel 32
Barreto, Africa 13, 57
Barrot, Gilbert 141
Barton, Jonathan 42
Bartsch, Annett 7
Baselice, Fabio 52
Basili, Patrizia 136
Battaglia, Alessandro 56
Battazza, Fabrizio 39
Baumgartner, Stefan 22
Baup, Fréderic 115
Bazi, Yakoub 19, 48
Beaudoin, Laurent 61
Beaulieu, Jean-Marie 52
Becker, Mathias 134
Beckett, Keith 131
Beer, Reinhard 1
Begue, Agnes 115

Behling, Hermann 50
Behrenfeld, Michael 95
Beisl, Carlos 50, 74
Bellens, Rik 55
Belli, Kimberly 10
Bell, William 12
Belmudez, Benjamin 48
Beltramonte, Tiziana 91
Belviso, Claudia 117
Belz, Eric 34
Benazza-Benyahia, Amel 105
Bencherif, Hassan 135
Ben-Dor, Eyal 124
Benedetti, Manuel 18, 38, 97, 127, 143
Benedetto, John 110
Benediktsson, Jón Atli 42, 55, 91, 105, 119
Benhadj, Iskander 68
Benhmammouch, Othmane 41
Benítez, Carmen 49, 106
Benito, Javier 130
Benson, Michael 93
Benveniste, Jérôme 142
Berardino, Paolo 116
Berendes, Todd 77
Berens, Patrick 136
Berg, Aaron 35, 69
Bergen, Kathleen 135
Berger, Michael 16, 23, 124
Berginc, Gerard 31
Berk, Alexander 24
Bernard, Marc 126
Bernard, Stewart 25
Bernier, Monique 15
Berruti, Bruno 16
Bertran, Ana 34
Beumier, Charles 118
Bevan, Suzanne 144
Bezeghi, Cyrus 120
Bezuidenhout, Dirk 63
Bezy, Jean-Loup 124
Bhaduri, Budhendra 77
Bharadwaj, Nitin 62, 72
Bhartia, Pawan 1
Bhattacharya, A. 116
Bheemireddy, Shruthi 138, 143
Biancamaria, Sylvain 53
Bianchi, Marco 96
Bianchi, Remo 34
Biehl, Larry 90
Bignami, Christian 90, 119, 127
Bi, Jiantao 36
Bijker, Wietske 127
Bilich, Andria 20
Billing, David 87
Bindlish, Rajat 46, 69, 80
Binet, Renaud 41
Bingham, Gail 5, 114
Bioucas-Dias, José 78, 91
Biriukov, Eugene 109
Birjandi, Payam 113
Birol, Florence 137
Bi, Yanmeng 69
Blackwell, William 5
Blake, William 35, 73
Blanc-Féraud, Laure 60
Blanchard, Yann 79
Blanchart, Pierre 77
Blanchet, Jean-Pierre 79
Bliss, Norman 126, 133
Bliven, Larry 41
Bloch, Isabelle 113
Blom, Ron 60
Blonda, Palma 98
Bloom, Hal 50
Bock, Olivier 142
Boehm, Hans-Dieter Viktor 17
Boerner, Annett 50
Boerner, Wolfgang-Martin 81, 123
Bogatov, Nikolai 59
Bollig, Christoph 30, 115
Bolten, John 48
Bombrun, Lionel 22, 52
Bonafoni, Stefania 136
Bonano, Manuela 116
Boni, Giorgio 46, 49
Bonnet, Stéphane 60
Boone, Randall B. 102
Borde, Franck 142
Borderies, Pierre 69
Bordoni, Federica 3, 75
Borel, Christoph 112
Borgioli, Giovanni 18
Borgstrom, Sven 96
Borro, M. 82
Borzì, Alfio 62
Boschetti, Luigi 89
Bosch-Lluis, Xavier 38, 67, 76, 80, 92, 111, 130
Bose, Sandip 106
Bosi, Vittorio 46
Botai, Joel 30
Bouaziz, Moncef 1
Boudala, Faisal 62
Bouffard, Jerome 137
Boulain, Nicolas 115
Bourassa, Mark 6, 78
Bourg, Ludovic 61
Bourguignon, Anne 81
Bourlier, Christophe 18, 134
Bouthemy, Patrick 48
Bouvet, Alexandre 84

Bouvet, Marc 61
Bouzinac, Catherine 55
Bovenga, Fabio 46, 110
Bovolo, Francesca 113
Bowles, Jeffrey 17, 110
Bowman, Kevin 1
Bowman, Mark 77
Bradley, Andrew 122
Branch, George 5
Branch, Ruth 5
Brann, Chris 26
Bratsolis, Emmanuel 66
Braun, Alexander 27
Braun, John 20
Braun, Matthias 22
Braun, Ofer 81, 87
Bräutigam, Benjamin 2, 75
Braverman, Amy 44
Brcic, Ramon 39
Bredin, Carine 79
Breit, Helko 15, 39
Brenner, Andreas R. 22
Bresciani, Mariano 50
Bretar, Frédéric 115
Bretschneider, Timo 58, 97, 110
Brewer, Wm. Alan 100
Brewster, Keith 47
Bricaud, Annick 114
Bringi, Viswanathan 118
Briole, Pierre 67
Briottet, Xavier 70
Bristow, Bill 88
Britch, Seth 57
Broadwater, Joshua 110
Broccardo, Stephen 51
Brockmann, Carsten 21, 141
Brogioni, Marco 26, 46, 49, 119
Brolly, Matthew 111
Broquetas, Antoni 75
Broquetas Ibars, Antoni 47
Brotzge, Jerry 47
Brown, Otis 95
Brown, Shannon 75, 142
Brown, Steven W. 17
Bruce, Lori 78, 113
Brucker, Ludovic 34, 35
Brule, Luc 38
Bruno, Claudio 2
Bruzzone, Lorenzo 17, 48, 49, 55, 71, 74, 113
Bsaïbes, Aline 99
Bucini, Gabriela 102
Buck, Christopher 27
Budillon, Alessandra 52, 116, 136
Budzynska, Maria 37, 68
Buehler, Stefan 85
Buenfil, Manuel 136
Buergin, Mariko 135
Buermann, Wolfgang 4
Bui, Elisabeth 127
Bujold, Daniel 38
Bulletti, Andrea 18
Bunting, Peter 129
Buongiorno, Maria Fabrizia 54
Burkett, Peter 35
Busche, Thomas 22, 39
Busch, Wolfgang 15
Bushahab, Abdulla 4, 33
Bustamante, Mercedes 101
Butcher, Steven 17
Butenuth, Matthias 104
Butera, Francesco 104
Butler, James 5, 63

C

Cabot, François 48, 55
Cabret, Eduardo 34
Caccetta, Michael 110
Caccetta, Peter 99
Cadau, Enrico 72
Cagnati, Anselmo 26
Cai, Aimin 70, 103
Cai, Guoyin 134
Cai, Heng 36
Caizzone, S. 119
Calais, Eric 90
Calderero, Felipe 98
Calderhead, Angus 93
Calice, Giovanni 69
Calpe-Maravilla, Javier 91, 112
Calvet, Jean-Christophe 68
Calzolai, Marco 18
Câmara de Macedo, Karlus Alexander 60, 116
Campbell, Carroll 56
Campedel, Marine 80, 112
Camps, Adriano 17, 32, 38, 63, 67, 76, 80, 92, 108, 111, 130
Camps, Adriano Jose 109
Camps-Valls, Gustavo 17, 91, 112
Canales-Contador, Francisco 92
Candela, Laura 46
Cano, Aurelio 68
Canters, Frank 85
Cantone, Alessio 15
Cao, Chunxiang 101
Cao, Fang 23, 36, 70, 106
Cao, Feng 133
Caorsi, Salvatore 10
Caouren, Natacha 41

Caparrini, Marco 20
Capineri, Lorenzo 18
Capobianco, Luca 19, 104
Caponi, Maria 140
Capozzoli, Amedeo 97
Cappelaere, Bernard 115
Cappelaere, Pat 13
Capsoni, Carlo 33, 118
Carabajal, Claudia C. 126
Cardellach, Estel 27
Carlavan, Mikael 60
Carlotti, Francois 31
Carnicero, Bernardo 124
Carranza, Emmanual John M 117
Carreiras, Joao 129
Carrer, Dominique 68, 100
Carrère, Véronique 87
Carson, Tom 95
Carstensen, Jens Michael 74
Carswell, James 6, 53
Cartus, Oliver 9, 64
Carvalho, Alexandre 74
Casal, Nuria 108
Casarano, Domenico 37
Caselles, Eduardo 2
Caselles, Vicente 2, 57
Case, Warren 1
Casey, Kenneth 139
Cassells, Gemma F. 21, 83, 139
Cassidy, Lin 83
Castagnoli, Francesco 31
Castellani, Chiara 39
Castelli, Fabio 46
Castellini, Guido 31
Castillan, Patrick 136
Castracane, Paolo 64
Castro, Eva 86
Casu, Francesco 47, 90
Cavalli, Rosa Maria 51, 117
Cayol, Valérie 21, 29, 30, 90
Cazenave, Anny 137
Cedilnik, Jure 100
Cerra, Daniele 68, 110
Cervone, Guido 77
Ceschia, Eric 68
Cetin, A. Enis 106
Chaabane, Ferdaous 67, 123
Chaabouni, Houda 110
Chabert, Marie 48
Chabot, Marielle 38
Chaboureau, Jean-Pierre 92
Chai, Linna 26, 82
Champagne, Catherine 45, 113
Champion, Isabelle 15
Chander, Gyanesh 114, 126, 132
Chandra, Chandrasekar 62
Chandra, Madhu 118
Chandrasekar, V 47
Chandrasekar, V. 11, 41, 47, 53, 72, 79
Chang, Chaoyi 101
Chang, Chein-I 132
Chang, Hsing-Chung 130
Chang, Lena 25, 125
Chang, Paul 6, 53, 78
Chang, Sheng 35
Chang, Tiejun 63
Chang, Yang-Lang 25, 84, 125, 132
Chan, Jonathan Cheung-Wai 35, 85
Chan, Steven 46, 80, 82
Chanussot, Jocelyn 42, 55, 91
Chao, Yi 76
Chapin, Elaine 94
Chapman, Bruce 1, 43, 83, 86, 111, 123, 135
Chapron, Bertrand 5, 40
Charlton, Janet 85
Chaudhuri, Amruta 68
Chauke, Joseph 81
Chauve, Adrien 115
Chauvelon, Dominique 99
Che, De-Fu 29, 66
Chehbouni, Abdelghani 68
Chellappan, Seethala 85
Chelle, Michaël 2
Chen, Baisong 121
Chen, Charlie 38
Chen, Cheng-Wu 102
Chen, Chuqun 31, 61, 65
Chen, Curtis 94
Chen, Davidson 17
Chen, Duo 109
Chen, Fen 98
Chen, Feng 104
Chen, Fu 105
Cheng, Angela 45
Cheng, Ching-Min 25
Chen, Gengxin 141
Cheng, Jian 48, 60, 92
Cheng, Xiao 30, 101, 102, 103
Chen, Hao 3, 34
Chénier, René 124
Chen, Jie 107
Chen, Jing 67, 114
Chen, Jinsong 65
Chen, Jiongfeng 28, 69
Chen, Junfeng 102
Chen, Keming 48, 60, 92
Chen, Kun-Shan 18, 84, 116, 119, 125, 132
Chen, Liang 55, 69, 138
Chen, Liangfu 32, 33, 99
Chen, Qianhu 65

Chen, Wei 127
Chen, Xiaoyan 32
Chen, Xingzhang 29
Chen, Xue 42
Chen, Yan 37
Chen, Yangquan 33, 120
Chen, Yinjun 67
Chen, Yu 28
Chen, Zhengchao 10, 63, 74, 102, 105
Chen, Zhi-Ming 84
Chen, Zhongxin 71, 103
Chevallier, Luc 76
Chevrel, Stephane 81
Chew, Boon N. 33
Chiaradia, Maria Teresa 32
Chiarantini, Leandro 104
Chickadel, Chris 111
Chi, Hong 67
Chini, M. 119
Chini, Marco 46, 90, 106, 127
Chirico, Peter 133
Chi, Tianhe 97
Chi, Yaobin 79, 105
Chlebek, Christian 124
Choi, Taeyoung (Jason) 114, 132
Cho, J. 135
Cho, Moses Azong 21, 99
Chong, Jin-Song 16, 106, 107
Chorowicz, Jean 15
Cho, Seongick 114
Chou, Ying-Liang 105
Chrétien, Ngouanet 7
Christensen, Jacob 128
Christensen, Tom 114
Christophe, Emmanuel 112, 124
Chu, Chien-Min 70
Chu, Hanfang 37
Chukhlantsev, Alexander 41, 109
Chunnett, Gordon 87
Chu, Tao 6
Chuvieco, Emilio 58
Chu, Xiaoqing 141
Ciappa, Achille 39
Ciaramello, Massimo 136
Cifuentes, Patricia 108
Cilliers, Pierre 44
Ciminelli, Maria Grazia 116
Cimini, Domenico 136
Ciolkosz, Andrzej 37
Ciotti, Piero 136
Cipollini, Paolo 40, 137, 142
Cladden, Maxime 115
Clarizia, Maria Paola 20, 128
Clark, Elizabeth 53
Claverie, Martin 68
Clemente, Carmine 91
Clewley, Daniel 129
Cliche, Patrick 35
Cline, Donald 19
Closa, Josep 130
Cloude, Shane 83, 111, 118, 129
Coatanhay, Arnaud 11
Cober, Stewart 62
Cochrane, Mark A. 58
Coelho, Henrique 142
Coetzee, Henk 81, 87
Coetzer, Kaera 68
Coeurdevey, Laurent 131
Colditz, René R. 122, 133
Coletta, Alessandro 39
Colin, Olivier 96
Collard, Fabrice 5, 12, 40
Coll, César 57, 100
Colliander, Andreas 80, 92, 128, 130
Colombo, Davide 116
Colom, Jose G. 79
Combrinck, Ludwig 94
Conrad, Christopher 122
Consalvi, Fernando 136
Conte, Domenico 46
Conti, Francesco 82
Contreras, Robert F. 47
Cook, Geoffrey 139
Cooley, Thomas W. 24
Coppin, Pol 63, 137
Corbella, Ignasi 86, 109, 130
Cord, Anna 133
Cores, Juan 108
Cores Muradas, Juan Francisco 45
Corgne, Samuel 93
Corlett, Gary 126
Corpetti, Thomas 41
Corradini, Stefano 54
Corrado, Rosita 54
Corson, Michael 17
Cortés, Guillermo 49, 106
Cosh, Michael 63, 69, 80
Cossu, Roberto 47
Costabile, Salvatore 116
Costache, Mihai 92
Costa, Maycira 43
Costantini, Mario 39, 82, 116
Costa, Xavier 75
Costes, Clementine 79
Costes, Laurent 79
Cote, Jean-Francois 132
Cote, Stephane 45
Cotterd, Francis 81
Cotton, P. David 142
Coulibaly, Talnan Jean Honore 139

Courault, Dominique 68, 99
Covello, Fabio 39
Coviello, Irina 69, 96, 111
Craeye, Christophe 41
Crawford, Melba 135, 140
Crepaz, Andrea 26, 49
Crevier, Yves 45
Crewell, Susanne 85
Crews, Kelley A. 115
Crile, Mary Beth 67, 131
Crippen, Robert 133
Cristallini, Diego 3, 136
Croci, Renato 2
Cros, Lionel 136
Crosson, William 144
Crotty, James 87
Crowley, Gary 114
Crow, Wade 48, 80, 119
Cruz, Isabel 122
Cruz-Pol, Sandra 79
Csiszar, Ivan 100
Cuccoli, Fabrizio 56, 135
Cudahy, Thomas 110, 117
Cuerda Muñoz, Juan Manuel 45, 108, 120
Cui, Lihua 30
Cui, Limin 53, 141
Cui, Peng 29
Cui, Rongbo 29, 114
Cui, Wei 127
Cui, Yaokui 68
Cui, Yi 75
Cumbane, Julião 44
Cundill, Sharon Leigh 121
Cunha, Mario 98
Cunin, Laurent 126
Cuq, Véronique 111
Cureton, Geoff 4
Currenti, Gilda 97
Cwele, Bheki 139
Czaja, Wojciech 110
Czekala, Harald 92

D

Daamouche, Abdelhamid 25
Dabrowska - Zielinska, Katarzyna 37, 68
D'Addio, Salvatore 20, 27, 118
Dagefu, Fikadu 23
Dahl-Jensen, Dorthe 35
Dalla Mura, Mauro 55
Dall, Jorgen 49
Dalponte, Michele 49, 71
Damelin, Steven 117
Danek, Tomasz 97
Daniels, Jaime 50, 128
Danielson, Jeffrey 126, 133
Danklmayer, Andreas 118
Daoudi, Khalid 110
Darbinyan, Sargis 69
Datcu, Mihai 52, 68, 77, 92, 106, 110, 113, 123
Daughtry, Craig 140
David, Smith 126
Davidson, Eric 101
Davidson, Malcolm 2, 9, 16, 34, 95
Davis, Curtiss 17
Dawood, Ali M. 4
Dayal, Abhinav 125, 131
De Abreu, Roger 45
De Backer, Steve 102
Debba, Pravesh 21, 25, 99, 117
Debeir, Olivier 118
de Carufel, Guy 27
Dech, Stefan 64, 80, 87, 122, 133
Dedieu, Gérard 68
Deeter, Merritt 1
Defer, Eric 85
Degnan, John 94
De Grandi, Frank 128
Dejoux, Jean-Francois 68
Delacourt, Christophe 111
Delaloye, Reynald 54
de la Riva, Juan 71
DeLaRocque, Stephan 57
Delas, Matthieu 20
De la Torre, Angel 106
Del Bello, Umberto 16
Del Frate, Fabio 10, 60, 66, 92
D'Elia, Giuseppe 97
De Lisle, Daniel 38
Dell'Acqua, Fabio 90
Della Vecchia, A. 24
Dell'Endice, Francesco 3, 17
Dellepiane, Silvana 46
Dellow, Grant 60
Del Negro, Ciro 96, 97
DeLuccia, Frank 12
del Valle-Tascon, Secundino 91
Delwart, Steven 55
de Maagt, Peter 85, 128
De Maio, Antonio 59
Demarez, Valérie 68, 115, 121
Demaria, Julien 141
DeMaria, Mark 50
Demarty, Jerome 115
Demers, A.M. 75
de Miguel, Amaia 92
Demir, Begüm 42, 84
Demontoux, François 69
Denbina, Michael 52, 126
Deng, Biao 134

Deng, Meixia 143
Deng, Mengzhi 36
Denis, Antoine 137
Denise, Leonard 112
de Paco, Pedro 109
De Pasquale, Vito 32
De Paulis, Riccardo 3
Derksen, Chris 35
Deroin, Jean-Paul 15, 139
de Rosnay, Patricia 41, 55, 63
De Rosnay, Patricia 48, 115
Derrien, Solene 92
De Santis, Sara 82
Deschamps, Pierre-Yves 61
Deschaux-Beaume, Marc 142
Descombes, Xavier 48
Descroix, Luc 115
Desmet, Phil 64
Desnos, Yves-Louis 40, 93, 107, 118
DeSouza, Guilherme 120
Dessailly, David 61
de Zan, Francesco 94
De Zan, Francesco 40
Dhar, Tishampati 67, 107, 111
Dhont, Damien 15
Diawara, Mamadou 121
Di Bisceglie, Maurizio 20, 62, 91, 128
Dierking, Wolfgang 9
Dietz, Andreas 122
Dietz, Johannes 50
Dikongo Ndjomba, Calvin 72
Di, Liping 113, 138, 143
Dim, Jules Rostand 135
Dinardo, Salvatore 142
Dinardo, Steve 46, 80
Ding, Chibiao 16, 22, 108
Ding, Kung-Hau 23
Ding, Xiang 47, 61, 105
Ding, Yongjian 71, 101
Dini, Luigi 46, 54
Dinku, Tufa 4
Diop, Mbaye 12
Di Rosa, Daniela 85
Disney, Mathias 71, 121
D'Odorico, Petra 3
Doerffer, Roland 61, 141
Doglioli, Andrea 31
Doi, Koichiro 56
Dolk, Shaun 5
Dolz-Ripolles, Josep 75
Domaszczynski, Piotr 106
Done, James 12
Donelli, Massimo 97, 104
Dong, Chaohua 41
Dong, Heng 34
Dong, Lei 96
Dong, Qing 61
Dong, Xiaolong 32, 33, 78
Dong, Yanfang 47
Donlon, Craig 13, 16
Donnellan, Andrea 40, 60
d'Oreye, Nicolas 21, 29, 30, 90
D'Oreye, Nicolas 118
Döring, Björn 2
dos Santos, Joao Roberto 111
Dou, Aixia 47, 61, 105
Doubkova, Marcela 7, 82
Doulgeris, Anthony 58, 84
Douterloigne, Koen 33
Dowell, Mark 25
Doxaran, David 61
Drake, Thomas 5, 6
Drapeau, Laurent 13
Drasin, Olivier 92
Dreuillet, Philippe 95
Driesen, Jef 74
Drinkwater, Mark 49, 68
Drusch, Matthias 41, 55, 124
Duarte, Valdete 98
Dube, Pauline 4
Dubina, Vyacheslav 59
Dubois, David 118
Dubois-Fernandez, Pascale 95, 120, 123
Duca, Riccardo 10
Duchemin, Benoît 2, 68
Duda, Kenneth 126
Duffo, Nuria 86, 109, 130
Duijster, Arno 85
Du, Jia 64, 70, 101
Du, Jinyang 19, 35, 69, 73, 82
Du, Lei 107
Du, Mingyi 36, 67, 134
Dunbar, Scott 53, 80
Dundar, Murat 19
Du, Peijun 87, 119
du Plessis, Louis 117
Du Plessis, Marius 99
Dupuy, Stéphane 66
Du, Qian 78, 119, 125
Duquenoy, Mickaël 104
Duque, Sergi 16, 22, 75
Durand, Michael 53
Durand, Philippe 15, 120
Duran, Olga 91, 112
Durbha, Surya 77, 138, 143
Durden, Stephen 53
Durieux, Jacques 30
Durrieu, Sylvie 115
D'Urso, Michele 60
Du, Shihong 102

Dutcher, Steve 4
Dutra, Luciano 111
Dutta, Amitava 74
Du, Yang 18
Du, Yunyan 71, 103, 133
Dyer, Rushane 42
Dyk, Andrew 3
Dzikiti, Sebinasi 137

E

Eckardt, Robert 9, 64, 128
Eck, Thomas 44
Edwards, David 1
Edwards, Matthew 3
Egido, Alejandro 20
Ehlers, Elizabeth M 143
Eichinger, Bill 80
Eineder, Michael 22, 39, 40, 49, 82
Ekechukwu, Saba 139
Ekström, Goran 30
El Afandi, Gamal Salah 90
Elagouni, Khaoula 67
Eldering, Annmarie 1
Elgamel, Sherif 74
Elganzori, Akram 14
El Ghazawi, Tarek 90
El Hadani, Driss 7
Elleithy, Belal 90
Elsherbini, Adel 23, 107
Eltoft, Torbjørn 58, 84
Emerson, Ruth 21, 27
Emery, William J. 106, 127
Ender, Joachim H. G. 22
Engelbrecht, Jeanine 21
English, Stephen 12
Enjolras, Vivien 136
Entekhabi, Dara 17, 80, 119
Entin, Jared 80
Erasmus, Barend 21, 27, 68, 86
Eriksson, Leif E.B. 71
Ermoshkin, Aleksei 59
Er-raji, Ahmed 7
Erricolo, Danilo 10
Ersbøll, Bjarne 74
Ersoy, Ilker 120
Ersoy, Okan K. 42, 90
Erten, Esra 105
Erturk, Aydin Gurol 34, 72
Ertürk, Sarp 42, 84
Esch, Thomas 80, 87
Eshet, Itay 31
Espeter, Thomas 22
Espinoza, Daniela 110
Esteban-Fernandez, Daniel 53, 75
Esterhuizen, Stephan 32
Eugenio, Francisco 73, 76, 98
Euillades, Leonardo 116
Evangelista, Annarita 116, 136
Evans, Diane 48
Evans, Gayla 126
Evans, Robert 95
Evsukoff, Alexandre 50, 74
Ewe, Hong Tat 38
Eylander, John 34

F

Fàbregas, Xavier 33, 84, 107, 129
Fabre, Sophie 70
Facheris, Luca 56, 135
Fahnestock, Mark 47
Faisal, Mona 14
Falala, Laurent 131
Falco, Salvatore 82
Fallourd, Renaud 22
Falorni, Pierluigi 10
Fang, Jinyun 125
Fang, Jyh-Perng 84, 125
Fang, Xiang 11
Fan, Hui 96
Fan, Junchuan 66, 102
Fan, K. T. 132
Fan, Ling 104
Fanton d'Andon, Odile 141
Fan, Wenjie 9, 36, 37, 68, 97
Fan, Xuehua 108
Farah, Hussein 142
Faran, Sagi 31
Faria, Bruno 118
Farness, Katy 22
Faroux, Stéphanie 121
Farrara, John 142
Farr, Thomas 133
Farr, Tom 48, 60, 107
Faruolo, Mariapia 96
Fatoyinbo, Lola 129
Fatoyinbo, Temilola E. 43, 96
Fauvel, Mathieu 42
Favé, Pascal 131
Fawcett, Alex 25
Fa, Wenzhe 24
Feau, Christian 140
Feingersh, Tal 81, 87
Felbier, Andreas 39
Felde, Gerald W. 24
Feldman, Gene 76, 95
Feltz, Wayne 50
Feng, Qiang 37
Feng, Zhaodong 36, 66, 103, 138

Fensholt, Rasmus 71, 115
Fernandes, David 38, 74
Fernandes, Joana 142
Fernandez, Diego 14, 141
Fernández, José 21, 90
Fernández-Manso, Alfonso 103
Fernández-Prieto, Diego 14, 64
Ferraioli, Giampaolo 52
Ferrare, Richard 144
Ferraz, Fatima 81
Ferrazzoli, P. 82, 119
Ferrazzoli, Paolo 24, 46
Ferreira, Laerte 101, 121
Ferreira, Nilson 121
Ferre-Lillo, Pau 38
Ferré, Pau 76, 111
Ferrer, P.J. 107
Ferretti, Alessandro 82, 96, 116
Ferretti, Rossella 136
Ferro-Famil, Laurent .. 15, 52, 69, 84, 93, 104, 106, 118, 129
Feuvrier, Thomas 112
Filizzola, Carolina 47, 54, 117
Fily, Michel 34, 35
Fischer, Christian 81
Fischer, Jens 45, 75
Fischer, Juergen 61, 141
Fish, Chad 5
Fisher, Jolene 21
Fitzharris, Blair 43
Flake, Justin 110
Flampouris, Stylianos 76
Fleming, Gavin 138
Flerit, Frederic 40
Flessa, Heiner 50
Flett, Dean 45
Floricioiu, Dana 22, 49
Floury, Nicolas 2, 9, 27, 46
Flynn, Lawrence 12, 140
Foix, Valerie 120
Fomferra, Norman 21, 141
Font, Jordi 32
Foo, Alex 100
Foody, Giles 93
Fore, Alex 1, 123
Formenty, Pierre 57
Fornaro, Gianfranco 59, 82, 123
Fortes, Mario 75
Foster, James 34
Foster, Willow 136
Fotopouloous, Georgia 27
Fotsing, Jean-Marie 66
Foucher, Samuel 116
Fowler, James 105, 125
Fox, Nigel 126, 132
Franceschetti, Giorgio 11
Franceschini, Davide 97
Franchistéguy, Laurent 100
Francis, Karen 100
Franke, Jonas 10, 68, 134
Frankford, Mark 20
Fransson, Johan E.S. 71, 95
Franz, Bryan 95
Franzese, Pasquale 77
Fraser, Alexander 73
Frasier, Stephen 6, 47
Freeborn, Patrick 58
Freitas, Ramon M. 12, 98
Freitas, Ramon Morais de 121
Frerick, Johannes 16
Frey, Daniel 104
Freymueller, Jeff 47
Frey, Othmar 59
Frick, Annett 84
Friedl, Lawrence 144
Friedrich, Anke 40
Frischknecht, Corine 90, 118
Frison, Pierre-Louis 72, 75, 116
Fritz, Jason 41
Fritz, Thomas 39
Froger, Jean-Luc 15
Froidefond, Jean-Marie 114
Fruneau, Bénédicte 15
Frye, Stuart 13
Fubara, Alabo Dagogo M.J. 142
Fujii, Hydeyuki 48
Fu, Lee-Lueng 75
Fumagalli, Alfio 82
Fu, Qiang 36
Furby, Suzanne 99
Furniss, David 87
Furuya, Masato 41
Fusco, Luigi 47
Fusilli, Lorenzo 51
Fusina, Robert 110
Fu, Yaowen 74
Fu, Zhuo 57, 121

G

Gabard, Benjamin 92
Gabele, Martina 75
Gachet, Roland 126
Gademer, Antoine 61
Gaetano, Raffaele 92
Gaeta, Salvador A. 25
Gaiser, Peter W. 24
Gajardo, John E. 64
Galdi, Carmela 20, 62, 91, 128
Galindo, Cipriano 62, 106

Galle, Sylvie 115
Galpin, Jacky 87
Galve, Joan Miquel 2, 57, 100
Galvez, Miguel B. 79
Gamba, Paolo 49, 65, 90, 124
Gambardella, Attilio 11, 24, 109
Ganci, Gaetana 96
Ganem, David 70
Ganguly, Sangram 71, 101
Gantois, Kristof 140
Ganzorig, Sumiya 70
Gao, Chao 66
Gao, Feng 95
Gao, Hailiang 66, 79
Gao, JiaoJiao 28
Gao, Lianru 10, 74, 79, 96, 105
Gao, Mengxu 101
Gao, Pengqi 33, 103
Gao, Shuai 101
Gao, Yanhua 99
Gao, Yesheng 108
Gao, Yunfei 57
Garay, Michael 44
García, Luz 49, 106
Garcia, Miquel 20
Garcia-Molina, Jose A. 75
García Rodríguez, Marcos 45, 120
García, Vicente 57
Gardelle, Julie 121
Garello, Rene 79
Garfias, Jaime 93
Garrigues, Sébastien 15
Garrison, James 27, 109
Garzelli, Andrea 19
Gascon, Ferran 16, 124
Gaspar, Philipe 64
Gastellu-Etchegorry, J. 128
Gaston, Robert 53
Gatebe, Charles 44
Gaudin, Damien 111
Gautama, Sidharta 33, 55
Gavrailov, E. 109
Gay, Michel 22, 52
Gebhardt, Ulrich 136
Ge, Daqing 28, 107
Geerinck, Thomas 78, 113
Geiger, Bernhard 100
Geist, Alessandro 136
Ge, Linlin 130
Geng, Xiaoyuan 113
Gens, Rudi 83
Gentry, Bruce 100
Genzano, Nicola 54
George, Charles 72
Georgiev, Georgi 63
Gerard, France 72, 122
Gerber, Anna 99
Gesch, Dean 126, 133
Ghedira, Hosni 31, 33, 65, 117, 131, 134
Gherboudj, Imen 69
Ghosh, Gautam 57
Ghosh, Joydeep 25, 133
Giacovazzo, Vito Martino 110
Giancaspro, Antonio 39
Gianelle, Damiano 49, 71
Giangregorio, Generoso 62
Giardino, Claudia 50
Gidudu, Anthony 42
Gierull, Christoph 22
Giglio, Louis 89
Gigord, Patrick 131
Gilerson, Alex 42
Gille, John 1
Gillis, David 110
Gil, Maria Luz 139
Gimenez-Munoz, Juan-Carlos 99
Gimeno, Nuria 108
Gimmestad, Gary 115
Gimpilevich, Yuri 38
Girard, Ralph 45
Gish, Timothy 53
Glassey, Phil 60
Gleason, James 5
Gloaguen, Richard 1, 14, 17, 28, 29, 54, 60, 71
Glumb, Ronald 114
Goerner, Anna 102
Goetz, Scott 61, 129
Gogineni, Sivaprasad 34, 73, 141
Goïta, Kalifa 34, 35
Gokaraju, Balakrishna 77
Goldberg, Mitchell 50, 100, 128
Golestani, Yahya 144
Golovachev, Sergey 41, 109
Goltz, Elizabeth 140
Gómez, Beatriz 108
Gómez-Chova, Luis 21, 91, 112, 141
Gómez-Dans, José 71, 91, 121
Gomez-Enri, Jesus 142
Gómez Miguel, Beatriz 45, 120
Gomez, Monica 99
Gomez, Ricardo 66
Gommenginger, Christine 20, 76, 128, 142
Goncalves, Fabio 111
Gong, Huaze 28, 70, 72, 103, 128
Gong, Hui 2, 66, 79
Gong, Huili 29, 57, 65
Gong, Jiandong 41
Gong, Jianming 127
Gong, Wei 31, 73, 99
Gong, Zhaoning 65, 102

Goniaski, D. 82
Gonsamo, Alemu 71
Gonzales, Ghislain 66
González-Amezcua, Miguel 106
González-Arbesú, J.M. 107
González Bonilla, María José 45, 120
Gonzalez-Calvo, Alejandro 57
Gonzalez, Cristina 109
González-Gambau, Verónica 86
Gonzalez, Javier 62, 106
González, Maria 108
Gonzalez, Pablo 21, 30, 90
Gonzalez, Veronica 130
Goodenough, David G. 3
Goodman, Steven J. 50, 128
Gordon, Piper 3
Gorgucci, Eugenio 47, 56
Gori, Stefano 56
Goryl, Philippe 61, 132
Gossage, Brett 24
Gosselin, G. 75
Goulas, Yves 124
Gouton, Pierre 57, 114
Goutoule, Jean-Marc 79
Govaerts, Yves 132
Govendor, Navashni 27
Goykhman, Yuriy 88
Goyns, Philip 80
Grace, John 4
Grandchamp, Enguerran 99
Grandjean, Gilles 138
Grankov, Alexander 41
Grant, Darion 90
Grant, Kerry 143
Gray, Doug 59, 67
Gray, Will 141
Green, Jim J. 88
Greidanus, Harm 120
Grey, William 144
Griffith, Derek 63
Griffiths, Stephen 93
Grigoryan, Melanya 35, 69
Grigsby, Ed 8
Grillenberger, Andreas 109
Grimaldi, Caterina Livia Sara 111
Grings, F. 82
Grippa, Manuela 115, 121
Gritzner, Janet 102
Grond, Etienne 87
Gross, Ashley 3
Gross, Barry 42
Gross, Dietmar 22
Gross, Steven 92, 130
Gruber, Astrid 39
Gruhier, Claire 48, 115
Guang, Jie 37, 90, 140, 144
Guanter, Luis 21, 24, 124
Guarino, Simone 47
Gu, Degui 114
Guenther, Bruce 12, 140
Guenther, Gary 100
Guerra, Alexandre 68
Guerriero, Leila 24, 46, 109, 119
Guerriero, Luciano 46
Guida, Raffaella 61, 127
Guinko, Sita 64
Gui, Zhiqian 18
Güllü, Kemal 84
Gumley, Liam 4, 12, 85
Guner, Baris 20
Gunter, Ashley William 66
Guo, Ding 32
Guo, Huadong 28, 35, 69, 105, 134
Guo, Jiancong 127
Guo, Jianning 90
Guo, Jianping 101
Guo, Jiateng 125
Guo, Limin 54
Guo, Lixia 105
Guo, Luo 102
Guo, Shaonan 104
Guo, Xiaofang 28, 107
Guo, Xiao Fang 130
Guo, Yan 62
Guo, Zhifeng 30, 103, 135
Gupta, Sudhir 101, 134
Gurka, James J. 50, 128
Gurvich, Irina 56
Gu, Songyan 41
Gusso, Aníbal 98
Gutiérrez, Ligdamis A. 49, 106
Gutmann, Ethan 20
Gu, Xingfa 32, 66, 79, 93
Gu, Yanfeng 62, 78, 85, 108
Guy Charly, Dzalla Ngangue 7
Guzzi, Donatella 10, 17, 31

H

Haagmans, Roger 68
Haarbrink, Roland 109
Haas, Christian 22
Haase, Jennifer 109
Haas, Susanne 14
Habarulema, John Bosco 44
Habermeyer, Martin 39
Habib, Shahid 89
Hadria, Rachid 68
Hafeez, Mohsin 64, 70
Hafiane, Adel 120

Hagan, Denise 5, 114
Hagen, Martin 56
Hager, Bradford 40
Hagolle, Olivier 68
Hahne, Achim 55
Hahn-Hadjali, Karen 64
Hair, Johnathan 144
Hajnsek, Irena 22, 39, 40, 46, 86, 88, 118, 123, 140
Hakala, Teemu 43
Hakobyan, Izabela 35, 69
Haldin, Alexanser 109
Hall, Dorothy 34
Hallikainen, Martti 19, 35, 43, 56, 63, 76, 80, 86, 135
Hamami, Latifa 25
Hamam, Yskandar 13
Hambaryan, Astghik 35, 69
Hamdan, Nasrulhapiza 71
Hamilton, Rebecca 26
Hamouda, Atef 104
Hanado, Hiroshi 11
Hanan, Niall 4, 102
Han, Cheng-De 125
Han, Dong 32, 33
Han, Hee-Jeong 114, 144
Han, Jinglong 108
Hanks, Charles 140
Han, Kyung Min 120
Hänsch, Ronny 84
Hanssen, Ramon 9, 21, 23, 38, 40, 123
Han, Tian 3
Han, Weiguo 143
Han, Xujun 69
Han, Yiding 33
Hapke, Cheryl 6
Harant, Olivier 22
Hara, Yoshihisa 46
Hardesty, R. Michael 100
Harding, David J. 126
Hardy, Thomas 120
Haren, Raymond 9
Harris, Joseph 62
Harris, Phil 99, 117
Hartnady, Chris 29
Harvey-Collard, Patrick 35
Hasegawa, Hideki 46
Hasselbrack, William 100
Hata, Masayasu 106
Hauser, Danièle 136
Hauss, Bruce 61, 100
Hautecoeur, Olivier 43, 100
Hawkins, Owen 121
Hawkins, Robert 45
Hayakawa, Tomohiro 93
Hayashi, Naoki 103
Hayden, Linda 34, 61
Hayes, Alexander 107
Heas, Patrick 79
Heblinski, Jörg 42, 111
Heckel, Andreas 141
Heckmann, Matthias 50
Heege, Thomas 24, 42, 50, 111
He, Haixia 74
Heidinger, Markus 19
He, Jiang 87
Heleno, Sandra I.N. 90, 118
Heller, Daniela 87
Hellsten, Antti 80
Hellwich, Olaf 52, 84, 104, 105
Helmy, Yehia 131
Henderson, Brent 127
Henebry, Geoffrey 82
Henke, Daniel 22
Hensley, Scott .. 1, 77, 86, 88, 94, 95, 111, 123, 135
He, Qisheng 101
Herault, Alexis 96
Hernandez-Guerra, Alonso 76
Hernandez-Leal, Pedro A. 13, 57
Herrera, Miguel 66
Hess, Laura 43, 83, 121
Heue, Klaus-Peter 51
He, Wenbin 36
He, Wenju 52, 104
Hewson, Robert 110
He, Yijun 6, 53, 58, 141
Hiernaux, Pierre 115, 121
Higashiuwatoko, Tomohiko 11
Hilliard, Lawrance 136
Hill, Joachim 64
Hillman, Anthony 38
Himmler, Vitus 80, 87
Hinz, Stefan 52, 104
Hirner, Andreas 81
Hirn, Matthew 110
Hirose, Akira 130
Hirsch, Lutz 56
Hobart, Geordie 3
Hobiger, Thomas 33, 41
Hoch, Anthony 73
Hochard, Guillaume 41
Hochschild, Volker 102
Hodges, Duncan 62
Hodges, Richard 75
Hodgson, David 121
Hoekman, Dirk 43
Hoelemann, Jens 22
Hoeltzener, Brigitte 110
Hoersch, Bianca 15
Hofer, Stefan 124

Hoffman, Prof Timm 64
Hohls, Derek 138
Ho, Ken-Chung 70
Holben, Brent 89
Holecz, Francesco 15
Holmgren, Johan 95
Holz, Bob 4
Holzner, Jürgen 136
Hong, Wen 23, 36, 70, 106, 107
Hong, Yang 89
Hong, Ye 26
Hood, Robbie 92
Hooper, Andy 23
Hopf, Anthony P. 47
Hori, Masahiro 135
Horna, Viviana 50
Hornbuckle, Brian 69, 80
Horn, Ralf 22, 45, 46
Hornstein, John 140
Horstmann, Jochen 6, 59
Horvath, Akos 85
Hoshino, Buho 70
Hosokawa, Masafumi 29, 30
Hostetler, Chris 144
Houghton, Bob 5
Houghton, Richard 61
Houles, Marion 140
Hovhannisyan, Gagik 35, 69
Hovis, Floyd 100
Hoyano, Akira 87
Hristova-Veleva, Svetla 53
Hristov, P. 109
Hsieh, Shan-Chih 105
Hsieh, Tung-Ju 84
Hsieh, Yueh-Hsun 105
Hsu, N. Christina 89
Hsu, Pai-Hui 65
Hsu, Wei-Lieh 125
Huang, Allen 51
Huang, Bin 34
Huang, Chih-Sheng 74
Huang, Chudong 65
Huang, Haijun 96
Huang, Hsiao-Yun 106
Huang, Huabing 103
Huang, Huaguo 121
Huang, Hung-Lung 85
Huang, Jian 36
Huang, Kou-Yuan 105
Huang, Kuo-Chen 105
Huang, Lei 34
Huang, Miao-Fen 31, 109
Huang, Peng 105
Huang, Weigen 32
Huang, Wenjiang 37
Huang, Xin 104
Huang, Yue 52, 69, 84
Hubanks, Paul 51
Huber, Martin 39
Huber, Siguard 75
Huber, Silvia 71
Huchler, Markus 2
Hudak, Dave 62
Hu, Deyong 65
Hu, Donghui 16, 22
Hueni, Andreas 3
Huete, Alfredo 121
Hu, Fengming 108
Hughes, Nick 56
Humbert, Angelika 22
Hung, Chih-Cheng 74
Huntingford, Christopher 122
Hunt, Linda 27
Huo, Chunlei 48
Huot, Jean-Paul 61
Huriez, Stéphane 131
Hu, Xiaodong 104
Hu, Xichi 73
Hu, Xiuqing 66, 79
Huybrecht, Philippe 35
Hu, Yen-Tsui 102
Hwang, Ji-Hwan 18
Hwang, Paul 53
Hwegy, Yousef 33
Hyun, Chang-Uk 28
Hyyppä, Juha 135

I

Iannetta, Massimo 64
Ibañéz, Jesús 49, 106
Ichikawa, Ryuichi 33, 41
Ientilucci, Emmett 110
Iguchi, Toshio 11, 53
Iida, Yasuhisa 11
Iikura, Yoshikazu 24, 105
Imaoka, K. 1
Imoto, Naritoshi 77
Inglada, Jordi 19, 48, 112, 113, 118, 119, 124
Iodice, Antonio 11, 127
Iordache, Marian-Daniel 91
Ioriatti, Luca 38, 127, 143
Ip, Justin 61, 100
Irby, Trent 117
Iribe, Koichi 94
Iris, Steve 14
Irwin, Dan 89
Isaac, George 62
Isernia, Tommaso 60
Ismail, Riyad 93, 99

Isoguchi, Osamu 77, 83, 109
Israel, Martin 68
Itakura, Ken-Ichi 28
Ito, Yosuke 105, 108
Itten, Klaus 50
Iturbide-Sanchez, Flavio 130
Iwamoto, Masafumi 46, 141
Izquierdo-Verdiguier, Emma 112

J

Jabbour, Majed 15
Jabloun, Mohamed 60, 78, 113
Jackson, Sid 61, 100
Jackson, Thomas 46, 48, 63, 69, 80, 82, 119
Jacob, Frederic 2, 99
Jacobson, James 21, 27
Jacquard, Fabrice 76
Jaeger, Marc 93
Jagdhuber, Thomas 123
Jäger, Marc 104
Jairam, Laura G. 5
James, Mark 92
Jamet, Cédric 61
Jamilkowski, Michael 139, 143
Jandieri, George 38
Janssen, Michael 37
Janz, Scott 12, 140
Jarlan, Lionel 121
Jarlemark, Per 138
Jaross, Glen 12
Järvinen, Heikki 19
Jarvis, Andrew 133
Jarvis, Ian 113
Jasinski, Michael 42
Jaud, Marion 111
Jayachandran, M. 33
Jehle, Michael 94, 110
Jelenak, Zorana 6, 53, 78
Jenkins, Julian 101
Jensen, Austin 33, 120
Jenzri, Hamdi 19
Jeong, Byeong-Pyo 29, 30
Jessup, Andrew 111
Jezek, Kenneth 22, 34
Jia, Mingming 64
Jia, Mingquan 37
Jiang, Hongbo 29, 34
Jiang, Jingshan 78, 86
Jiang, Kai 127
Jiang, Lili 36
Jiang, Lingmei 26, 35, 36, 37
Jiang, Xiaoguang 74
Jiang, Zhiguo 65
Jian, Ji 93
Jiao, Quanjun 74, 101
Jiao, Shixing 36
Jiao, Xianfeng 45, 113
Jiao, Ziti 95
Jia, Xiuping 105
Jing, Lingling 65
Jin, Guangyu 61
Jin, Jing 80
Jin, Lingling 29
Jin, Rui 69
Jin, Shuanggen 32, 135
Jin, Ya-Qiu 24, 34
J, Manikandan 33
Johannessen, Johnny A. 5, 12, 23, 40
Johansson, Jan 138
Johnsen, Harald 40
Johnson, James 92
Johnson, Joel 20, 46, 80
Jolly, Gill 1
Jonas, Zuziwe 21, 64
Jones, Cathleen 1, 123
Jones, Linwood 92
Jones, Lucas 82
Jones, Mal 110, 117
Josberger, Edward 19
Joseph, Alicia 53, 63
Joshi, Manjunath 85
Jouffroy, Michel 31
Joyce, Karen 1, 60, 90
Juglea, Silvia 68
Jung, Chul H 106, 108
Jung, Jae H 106
Jung, Jinha 135
Jun, Goo 25, 133
Junyent, Francesc 72, 79
Jupp, David 66
Justice, Christopher O. 89, 95
Justin, Randy 34
Jutten, Christian 91
Jylhä, Kirsti 19

K

Kaartinen, Harri 43
Kaasalainen, Sanna 43
Kabela, Erik 69
Kaduk, Jörg 122
Kaessner, Alexandra 28
Kafatos, Menas 96
Kainulainen, Juha 63, 76, 86
Kaleita, Amy 80
Kalluri, Hemanth 113
Kamasak, Mustafa E. 42
Kamel, Ahmed 62
Kaminsky, Edouard 96

Kampel, Milton 12, 25
Kanayama, Tomoaki 71
Kandasamy, Sivasathivel 57
Kandus, P. 82
Kaneko, Masami 70
Kanevski, Mikhail 17
Kangas, Ville 85, 92
Kang, Moon-Kyung 29, 58
Kanyanga, Joseph Katongo 44
Kaptue, Armel 121
Karhu, Juha 43
Karszembaum, H. 82
Karvonen, Juha 56
Karyan, Vanik 35, 69
Kasilingam, Dayalan 91
Kass, Steve 84
Katayama, Haruyoshi 72
Kato, Masatane 71
Katzberg, Stephen 138
Kaufmann, Hermann 24, 124, 130
Kavaya, Michael 115
Kavotha, Deogracias 30
Kawai, Yoshimi 42
Kawakami, Shuji 31
Kawamoto, Sachi 77
Kawamura, Seiji 53
Kawano, Noriyuki 108
Kazakov, Vasilii 59
Kazumori, Masahiro 41
Keil, Manfred 80
Kellenberger, Roman 103
Kellenberger, Tobias 103
Kellenberger, Tobias W. 103
Kellndorfer, Josef 61
Kellogg, Kent 80
Kelly, Angelita 1
Kemarskaya, Olga 59
Kemp, Jaco 76
Kempler, Steven 144
Kennedy-Bowdoin, Ty 21, 27
Keravec, Pascal 68
Kergoat, Laurent 115, 121
Kerr, Yann 48, 55, 68
Kervyn, François 21, 29, 30, 90, 118
Kete, Nancy 144
Keum, Jung 108
Khalsa, Siri Jodha 132
Khan, Amir Ali 76
Khanbilvardi, Reza 134
Khan, Haseen 76
Khan, Maudood 144
Kharrou, Mohamed Hakim 68
Khayatian, Behrouz 142
Khazaal, Ali 105
Khenchaf, Ali 11, 41, 110
Khwaja, Shaharyar 106
Kies, Antoine 30
Kimball, John 43, 80, 82, 144
Kim, Dae Man 108
Kim, Dong 108
Kim, Duk-Jin 81
Kimes, D. 128
Kim, Handol 62
Kim, Kangwook 108
Kim, Moon 108
Kim, SeokHwan 108
Kimura, Hiroshi 36
Kim, Youn-Seop 78, 109
Kim, Yunjin 75
King, Michael 44, 51, 89
King, Roger 54, 77, 138, 143
Kingsmill, David 56
Kinoshita, Youhei 41
Kirk, Randolph 107
Kirton, Alecia 21
Kiselev, Viacheslav 42, 50
Klare, Jens 22
Kleeschulte, Stefan 64
Klein, Doris 80, 87, 122
Klein, Ulf 16
Kleynhans, Waldo 98
Klosko, Steven 94
Knapp, David 21, 27, 101
Knapp, Eric J. 47
Kneifel, Stefan 56, 85
Kneubühler, Mathias 3, 50, 103, 124
Knospe, Steffen 15
Knox, Nichola 21
Knuth, Ralf 128
Knyazikhin, Yuri 101
Kobayashi, Fumitoshi 71
Kobayashi, Kazuki 71
Kobayashi, Takahisa 4
Kobayashi, Tatsuharu 45, 78, 107
Kobrick, Michael 133
Kobryn, Halina 111
Koch, Grady 115
Koch, Wolfgang 59
Koepke, Hoyt 73
Koetz, Benjamin 64, 128
Kofman, Boris 95
Koh, Choo Leng 110
Kohn, Jacqueline 35
Koike, Toshio 48, 73
Kolb, Andreas 90
Komar, George 8
Komaya, Ryutaro 129
Komorowski, Jean Christophe 96
Kondo, Tetsuro 33
Kontu, Anna 35, 43

Kopackova, Veronika 81
Korme, Tesfaye 89
Korwan, Daniel 17
Kosaka, Naoko 114
Kose, Kivanc 106
Koskinen, Jarkko 26, 34, 80
Kosmann, Detlev 39
Koster, Paul 139
Koster, Randy 80
Kosugi, Yukio 71, 114
Kosuth, Pascal 137
Kotenkov, Alexander 15
Kou, Tianyou 104
Kowalewski, Matthew 12
Kowalik, Wanda 37, 68
Koyama, Yasuhiro 33, 41
Kpemlie, Emmanuel 99
Krajewski, Witold F. 80, 106
Krantz, Anders H. 71
Krapivin, Vladimir 41, 109
Krauß, Thomas 124
Krieger, Gerhard 3, 22, 40, 75
Krnan, Luko 136
Kropacek, Jan 102
Kruger, Anton 80, 106
Krumpen, Thomas 22
Kubik, Philippe 3
Kubota, Takuji 11
Kudo, Gaku 70
Kudryavtsev, Vladimir 5, 40
Kugler, Florian 39, 88, 111
Kukkonen, Jaakko 80
Kuligowski, Robert 50
Kumar, Anil 74
Kumar, Lalit 93
Kumar, Suresh 57
Kumar, Vijay 136
Kunkee, David 12, 26
Kuo, Bor-Chen 74, 106
Kuo, Chungyen 27
Kuplich, Tatiana 128
Kurose, Jim 47
Kurum, Mehmet 63
Kuze, Akihiko 31
Kwag, Young K 106, 108
Kwarteng, Andy 89
Kwoh, Leong Keong 42
Kwon, Soon-Gu 18
Kyriakopoulos, Christos 90

L

Laaksonen, Ari 19
Laanemets, Jaan 12
Labbassi, Kamal 7
L'Abbate, Michelangelo 2
Labroue, Sylvie 137
Lacaux, Jean-Pierre 116
Lacava, José 38
Lacava, Teodosio 69, 96, 111
Lachaise, Marie 39
Ladel, Julie 138
Lafaye, Murielle 116
Lagerloef, Gary 76
Lagoudakis, Emmanouil 58
Lahlou, Otmane 112
Lahtinen, Panu 34, 43
Laine, Gérard 66, 140
Laird, Claude 35
Lakshmi, Venkat 48
Lambers, Martin 90
Lammoglia, Talita 3, 8
Lanari, Riccardo 47, 90, 116
Landart, Paula 96
Landenna, Stefano 109
Landi, Luciano 128
Landmann, Tobi 122
Laneve, Giovanni 51, 72, 117
Langlois, Alexandre 34, 35
Langlois, Gaetan 45
Lang, Roger 37, 53, 63
Lan, Guo-xin 65
Lanorte, Vito 54
Laporte, Nadine 129
Lardeux, Cedric 72
Laris, Paul 58
Larocque, Armand 139
LaRocque, Paul 100
Larrañaga Sudupe, Juan Ramón 45, 120
Larsen, Maria 140
Larsen, Rasmus 74
Larson, Kristine 20
Lartey, Abigail 73, 115
Latimer, Caitlin 90
Latorre Carmona, Pedro 24, 101
Latrech, Djamel 14
Latry, Christophe 104
Laukamp, Carsten 117
Laurenti, Marco 119
Lavalle, Marco 88, 93, 107, 118, 129
Lavender, Samantha 141
Lavrova, Olga 59
Lawrence, Heather 69
Laws, Kenneth 120
Laws, Kip 76
Laymon, C. 80
Le Bastard, Cédric 134
Lebegue, Laurent 3
Lebel, Thierry 115
Leblon, Brigitte 139

Le, Charles 1
LeComte, Pascal 126, 132
Leconte, Robert 35
Ledford, John 141
LeDrew, Ellsworth 54
Lee, Clare 85
Lee, Hyongki 27
Lee, Hyo-Sung 81
Lee, Jong-Sen 94, 116, 123
Lee, Ken Yoong 58, 97, 110
Lee, Paul 12
Lee, Seokjae 108
Lee, Seung-Kuk 39, 46, 88, 111
Lee, Wookyung 108
Lee, Yung-Tan 102
Lehmann, Eric 99
Lehsten, V. 58
Lehureau, Gabrielle 80
Leidig, Mathias 54
Leignel, Christine 118
Lei, Liping 102
Lei, Manchun 114
Lekote, Otukile 138
Le, Minda 11
Lemmens, Rob 139
Lemmetyinen, Juha 19, 35, 43, 63, 76, 86
Lengert, Wolfgang 40
Lepage, Richard 118
Leptoukh, Gregory 144
Leroy, Marc 138
Le Roy, Yves 142
Lesage, Philippe 49, 106
Lesaignoux, Audrey 70
Leslie, R. Vincent 5
Lesselier, Dominique 97
Le, Thanh Hai 58
Le Toan, Thuy 43, 95
Lettenmaier, Dennis 53
Leung, Tsang 19
Leuschen, Carl 35, 73, 141
Levelt, Pieternel 1
Levick, Shaun 27
Le Vine, David 76
Levrini, Guido 16
Levy, Rob 89
Lewis, Cameron 141
Lewis, Philip 71, 91, 95, 121
Liang, Ding 18, 19
Liang, Lijiao 36
Liang, Rui 33
Liang, Shunlin 2, 91, 95
Liang, Wen-Yew 84
Liang, Xingdong 22
Liao, Jingjuan 69, 96
Liao, Mingsheng 120
Li, Baishou 29
Licciardi, Giorgio 10, 66, 92
Li, Ce 133
Li, Chunsheng 107
Liebe, Jens R. 134
Liebhart, Werner 82
Liénou, Marie 112
Liesenberg, Veraldo 17
Liew, Soo Chin 33, 42, 64
Li, Fuxin 36
Li, Gang 136
Li, Guicai 69
Li, Guoqing 97
Li, Haiyan 53
Li, Hong-Zhong 105
Li, Hui 57
Li, Jiaguo 2, 66, 79
Li, Jianping 70
Li, Jijun 109
LI, Jijun 65
Li, Jilu 73
Li, Jing 36, 65, 67
Li, Jingshan 90
Li, Jun 78, 128, 135
Li, Junli 49, 50
Li, Junsheng 10, 12, 31, 63, 101, 105, 134, 140
Li, Kun 38, 72
Li, Le-Wei 74
Li, Li 36, 69, 99
Li, Lianghai 16
Li, Liying 73
Lillibridge, John 139
Lima, André 98
Lima, J. Nuno P. 118
Limaye, Ashutosh 144
Li, Ming 83
Lim, Samsung 27
Lim, Sanghun 11, 47
Lindemann, Scott 100
Lindquist, Erik 58
Ling, Feilong 67
Lingmei, Jiang 35
Lin, Hong 62
Lin, Hui 133
Lin, Jingjing 72
Lin, Meng-Lung 70, 102
Lin, Qizhong 28, 57, 105
Linthicum, Kenneth 57
Linton, Paul 117
Lin, Wenming 78
Lin, Yun 107
Li, Peijun 127
Li, Pingxiang 31, 73, 85, 99
Lipmann, Tom 6
Lipponen, Annukka 14

Li, Qi 29, 47
Li, Qiang 36, 134
Li, Qin 37
Li, Qing 2, 33
Li, Ru 74
Liseno, Angelo 97
Li, Shanshan 96
Li, Shenshen 32, 33
Lisini, Gianni 90
Liu, Aixia 102
Liu, Alexander 133
Liu, Bin 18
Liu, Bo 74, 101
Liu, Chenzhou 101
Liu, Dawei 38
Liu, Dianwei 64, 70, 101
Liu, Dingsheng 90
Liu, Fenfen 61, 65
Liu, Fuying 65
Liu, Guizhong 105
Liu, Guoqiang 53
Liu, Haixia 102, 105
Liu, Hao 86
Liu, Heguang 32, 33, 78, 86
Liu, Hsiang-Chuan 74
Liu, Jeng-Fu 106
Liu, Jicheng 95
Liu, Jinfeng 29
Liu, Jingjing 31
Liu, Lifan 91
Liu, Limei 134
Liu, Pei 87
Liu, Qiang 9, 37, 67, 97
Liu, Qingfeng 64, 101
Liu, Qinhuo 9, 37, 67, 70, 72, 73, 97, 99, 140
Liu, Qiuhua 106
Liu, Shanjun 28, 30, 67
Liu, Shizhuo 38
Liu, Shuang 127
Liu, Sihan 9
Liu, Suhong 67
Liu, Wen 104
Liu, W. Timothy 4
Liu, Xing 108
Liu, Xingren 103
Liu, Xingzhao 108, 123
Liu, Xudong 36
Liu, Yalan 36, 66
Liu, Yang 66
Liu, Yani 70, 73
Liu, Yanxia 96
Liu, Yu 36
LIU, Yu 66
Liu, Yujing 107
Liu, Ze 36, 134
Liu, Zengcan 37
Liu, Zhen 40
Liu, Zhengjun 65, 102
Liu, Zhiguo 34
Li, Wei 107, 108
Li, Xian 37
Li, Xiang 74
Li, Xiaofan 107
Li, Xiaofang 28, 38, 65, 72
Li, Xiaofeng 6
Li, Xiaojing 130
Li, Xiaojuan 29, 65
Li, Xiao-Juan 102
Li, Xiaowen 9, 37, 95, 101
Li, Xiaoyan 143
Li, Xiaoying 32, 66, 79
Li, Xin 69
Li, Xinwu 69, 105
Li, Yanan 74
Li, Yang 36
Li, Ying 65, 109
LI, Ying 66
Li, Yingjie 37, 90, 101, 140, 144
Li, Yuan 31, 79
Li, Yuxia 93
Li, Zhao-Liang 33, 37, 74
Li, Zhen 34
Li, Zhenglong 60, 92
Lizzi, Leonardo 18
Llewellyn-Jones, David 40, 126
Lobl, E. 1
Loehnert, Ulrich 85
Logsdon, Sally 80
Löhnert, Ulrich 56
Loisel, Hubert 61
Lombardini, Fabrizio 59, 82
Lombardo, Pierfrancesco 3, 136
Lombardo, Valerio 54
Lo Monte, Lorenzo 10
Long, Bernard 115
Long, David 3
Longépé, Nicolas 49
Lopes, Rosaly 107
Lopez, Adolfo 108
Lopez-Baeza, Ernesto 68
López-Dekker, Paco 16, 22, 75, 130
Lopez, Gerardo 122
López-Martínez, Carlos . 75, 84, 107, 116, 120, 129
Lopez, Oscar 66
Lopez-Sanchez, Juan M. 106, 129, 140
Lorenz, Ralph 107
Lorenzzetti, João Antonio 120
Lorè, Tina 46
Lo Seen, Danny 140
Los, Sietse 144

Lowe, Dawn 139
Lowe, Kenneth 50
Lowry, John 43
Lubar, David 139
Lu, Bu 67
Lucas, Richard 43, 129
Lucht, Wolfgang 95
Lucke, Robert 17
Lück, Wolfgang 66, 72, 86
Lu, Dongmei 64, 101
Ludwig, Michael 118
Lu, Feng 72
Lu, Hanqing 48, 60, 92
Lu, Hui 48, 69, 73
Luini, Lorenzo 33, 118
Lukaya, François 30
Lu, Ke-Jie 109
Lukowski, Tom 45
Lulich, Tyler 109
Lumsdon, Parivash 83
Lundgren, Paul 40
Luo, Jiancheng 49, 50, 104
Luojus, Kari 19, 26, 43
Luomaranta, Anna 19
Luo, O. 32
Luo, Yan 87
Luo, Yingwei 36, 131, 138
Lu, Qifeng 41, 69
Luscombe, Anthony 38
Lu, Shuning 90
Lu, Shuqiang 36, 67
Lutjeharms, Johann 5
Lu, Wen-Kai 28, 29
Lu, X. 101
Lv, Chunyan 101
Lv, Lilei 31
Lv, Xuemei 69
Lykke, Keith R. 17
Lynnes, Christopher 144
Lyons, Eric 47
Lysko, Meena D. 63

M

Maathuis, Ben 139
Ma, Baodong 67
Ma, Ben 119
Macaluso, Giovanni 8
Macchiavello, Giorgia 49
Macelloni, Giovanni 26, 49
Mackin, Stephen 114, 121
MacLellan, Christopher J. 79
Maeda, Eduardo 140
Maeda, Pedro 122
Maeda, Takashi 54
Magagi, Ramata 35, 69, 93
Ma, Gang 41
Magnani, Federico 124
Ma, Guangbin 105
Mahfouf, Jean-François 100
Mahmoodi, Ali 55
Mahmood, Syed Amer 1, 28
Mahmoud, Mahmoud Ibrahim 109
Mainfroy, Florent 61
Main, Russell 99
Majeke, Bongani 21, 99
Ma, Jianglin 85
Ma, Jianwen 42
Ma, Jinfeng 131
Majurec, Ninoslav 20
Makhoul Varona, Eduardo 3
Mäkynen, Marko 63
Maldonado, Francisco Dario 64
Malhi, Yadvinder 86
Malinga, Sandile 135
Ma, Lingling 74
Mallorquí, Jordi J. 16, 22, 33, 75, 120, 129, 130
Ma, Long 65, 66
Malthus, Timothy J. 79
Malvarosa, Fabio 39, 82
Mamun, Md. Al 105
Mandl, Dan 13
Mangin, Antoine 141
Maniatis, Danae 86
Mannaerts, Chris 139
Mann Bruce, Lori 117
Manninen, Terhikki 43
Manoni, Gemma 39
Manukyan, Mushegh 35, 69
Manunta, Michele 47
Mao, Feng 36, 131, 134
Mao, Jianping 100
Mao, Xi 29
Marcal, Andre 98
Marcello, Javier 73, 76, 98
Marchan-Hernandez, Juan Fernando 38, 67, 76, 80, 92, 111, 130
Marchese, Francesco 47
Marchesi, Silvia 48
Marciel, Bernard 68
Marcoionni, Paolo 17, 31
Margalit, Nir 81, 87
Margarit, Gerard 120
Marghany, Maged 32, 65
Margulis, Alex 3
Marinkovic, Petar 21, 90
Marino, Armando 52
Maritorena, Stéphane 141
Markgraf, Markus 109
Marloie, Olivier 99

Marques, Ferran 73, 98
Marre, Fabrice 107, 111
Martel, Richard 93
Martens, Nick 38
Marthon, Philippe 119
Marti-Cardona, Belen 75
Martimort, Philippe 16
Martinelli, Mauro 38, 127, 143
Martinez-Espla, Juan J 106
Martínez-Fernández, Jose 63, 67, 80
Martinez Lorenzo, Jose Angel 10
Martinez-Marin, Tomas 106
Martin, Gabriel 117
Martini, Paulo R. 98
Martín-Neira, Manuel 20, 27, 76, 109, 130
Martin-Porqueras, Fernando 24, 76
Martin-Puig, Cristina 142
Marucci, Franco 46
Marwala, Tshilidzi 42
Marzano, Frank Silvio 68, 136
Masini, Andrea 39
Massa, Andrea 18, 38, 97, 127, 143
Massom, Robert 73
Mastroddi, Vanessa 2
Masuoka, Edward 143
Matarrese, Raffaella 32
Matasci, Giona 17
Mathieu, Renaud 21, 27, 43, 86, 99
Mathieu, Sandrine 57, 114
Mathot, Emmanuel 96
Matrosov, Sergey 56
Matsuoka, Takeshi 45, 78, 107
Matsuyama, Masafumi 31
Mattar, K. 116
Matthews, Elaine 43
Matthews, Mark 25
Mattia, Francesco 113
Mattioli, Vinia 136
Mavrocordatos, Constantin 16, 142
Mavume, Alberto 5, 44
Máximo, Orlando Alves 74
Ma, Yan 90, 97
Ma, Yaoming 102
Maybin, Brittany 61
Ma, Yingying 73
May, Peter 118
May, Stéphane 15, 104, 118
Mazanek, Milos 38
Mazeran, Constant 61
Mazzarella, Giuseppe 47
Mazzeo, Giuseppe 47, 54, 69, 117
Mazzoni, Augusto 136
Mazzoni, Marina 10, 18
Mbatha, Nkanyiso 135
Mbow, Cheikh 71, 115
McCarty, Brandi J. 100
Mcclain, Charles 95
Mcclellan, James 18
McDonald, Kyle 43, 50, 70, 80, 82, 83, 144
McFadden, Michael 18
Mcferren, Graeme 139
McFerren, Graeme 138
McGill, Matthew 100
McGlothlin, Norman 17
McKague, Darren 92
Mckee, Mac 120
McKinnell, Lee-Anne 44
McLaughlin, David J. 47
McLoughlin, Ian 58, 97
McMullen, Robert W. 24
McNairn, Heather 45, 113
McPherson, Christopher 144
Mecatti, Daniele 8
Mecklenburg, Susanne 55
Medina, Rafael 47
Meehan, Tom 32
Mehdi, Waseem 96
Mehl, Harald 80
Mehl, Wolfgang 133
Meier, Erich 22, 59, 94, 107, 110
Meila, Marina 73
Mei, Linlu 37, 90, 140, 144
Meir, Patrick 4
Meister, Gerhard 95
Melack, John 121
Melgani, Farid 19, 25, 48, 104, 127
Mémin, Etienne 41, 79
Mena, Carlos A. 64
Meng, Dan 65
Menges, Carl 67, 107, 111
Meng, Huadong 136
Mennella, Angela 136
Mennell, Kathleen 21
Menzel, W. Paul 12, 72, 89
Menz, Gunter 10, 68, 134
Mercer, Bryan 52, 93, 126
Mercier, Franck 137
Mercier, Gregoire 75, 79, 98, 113, 118
Merlano, Juan C. 22, 75
Mermoz, Stephane 15
Merry, Charles 142
Merucci, Luca 54
Messan, Yao 61
Metsämäki, Sari 43
Meurey, Catherine 100
Mewes, Thorsten 10, 68
Meyer, Franz 47, 88
Meyer, Rory 44
Meyer, Thoralf 115
M. Gherardi, Douglas Francisco 120

Mialon, Arnaud 68
Miao, Jungang 37
Michael, Kelvin 73
Michel, Julien 19, 112
Michel, Thierry 1, 123
Middleton, Elizabeth 124
Miettinen, Jukka 64
Migliaccio, Maurizio 11, 24, 109
Miglietta, Franco 124
Mihai, Cosmin 60, 78, 113
Mika, Ágnes 38
Miklius, Asta 90
Milillo, Giovanni 46
Millar, David 100
Miller, Timothy 92
Milne, Anthony 43, 81
Milne, Tony 95
Mil'shin, Alexander 41
Minati, Federico 39, 82, 116
Minchella, Andrea 118
Mindock, Scott 4, 54
Minet, Christian 40, 82
Minghelli-Roman, Audrey 57, 114
Minnett, Peter 95, 126
Mira, Maria 57
Miranda, Nuno 107
Misana, Salome 134
Mishra, Kumar Vijay 62
Misman, Afizzul 71
Misra, Sidharth 17, 20
Misurovic, Ana 117
Mitangala, Prudence 30
Mitchard, Edward 4, 21
Mitchell, Andrew 139
Mitchell, Anthea 81
Mitchell, Jerome 35
Mitchell, Karl 107
Mitchley, Michael 117
Miteff, Simeon 122
Mitnik, Leonid 56, 59
Mitnik, Maia 56
Mittermayer, Josef 130
Mityagina, Marina 59
Miyagi, Yousuke 40
Mlisa, Andiswa 13, 29
Mobley, Curtis 61
Moe, Karen 13, 138
Moema, Dineo 30, 115
Moffa, Phil 114
Moghaddam, Mahta ..3, 43, 50, 73, 80, 83, 88, 135
Mognard, Nelly 53
Mohamed, Mohamed 90
Mohamed, Nardjisse 79
Mohd Shafri, Helmi Zulhaidi 71
Mohd Yusof, Mohd Rozni 71
Mokonyama, Mathetha 80
Molcho, Jonathan 31
Molenaar, Martien 139
Moller, Delwyn 53
Mombauer, Andreas 92
Monaco, Stefano 15
Monaldo, Frank M. 59
Monerris, Alessandra 63, 67, 80
Montenegro, C. 82
Monti Guarnieri, Andrea 2, 47
Montopoli, Mario 136
Montpetit, Benoît 34
Monty, James 140
Moon, Wooil M. 81
Moore, Phillip 61
Moorman, Brian 22
Morales, Yohana A. 64
Moran, Susan 80
Moreira, Alberto 22, 39, 46, 60, 118, 130
Morel, André 141
Moreno, Jose 21, 23, 24, 112, 124, 141
Moreno, Pablo 106
Moreno-Ruiz, Jose Andres 13
Moretti, Sandro 104
Morgenthaler, Ann 10
Morisseau, Christèle 104
Moriyama, Toshifumi 129
Moser, Gabriele 49, 98, 112
Moshary, Fred 42
Motsholapheko, Ronald 83
Mouche, Alexis 59
Mougenot, Bernard 68
Mougin, Eric 115, 121
Moussaoui, Said 91
Movva, Sunil 139
Moyna, Brian 85
Mubarak, Khaled 4, 33, 65
Mubiwa, Brian 80
Mueller, Andreas 24, 124
Mueller, Rupert 124
Muellerschoen, Ron 1
Muir, Stephanie 45
Mukaida, Akira 77
Muller, Jan-Peter 95, 107, 126
Müller, Ralf 22
Müller, Rupert 15
Mulligan, Joseph 143
Mumby, Peter 64
Muñoz-Marí, Jordi 91, 112
Muñoz Sabater, Joaquín 41, 55, 63
Munsami, V. 13
Muradyan, Hrant 35, 69
Murakami, Akinobu 87
Murakami, Hiroshi 77, 135
Muraki, Yasushi 88

Murray-Hudson, Michael 89
Musacchio, Massimo 54
Musa, Tajul 27
Mutanga, Onisimo 93, 99
Mwita, Emiliana 134
Myneni, Ranga 101

N

Nadai, Akitsugu 45, 78, 107
Naeimi, Vahid 82
Nagano, Koji 28
Nagler, Thomas 19, 49, 140
Nahmani, Samuel 142
Naitoh, Masataka 72
Na, Jae-Ho 109
Nakagawa, K. 1
Nakagawa, Katsuhiro 53
Nakajima, Takahashi Y. 135
Nakamura, Takehiro 31
Nakano, Yosuke 46
Nakau, Koji 72
Nannini, Matteo 52, 97
Naouai, Mohamed 104
Narhi, Tapani 128
Nashashibi, Adib Y. 16
Nasrabadi, Nasser 18
Natsuaki, Ryo 130
Nduna, Balakidzi B. 4
Neilan, Ruth 142
Nel, Henk 81, 87
Nelson, Andrew 133
Nencini, Filippo 19
Nesamvuni, Azwihangwisi Edward 140
Neteler, Markus 71
Neumann, Maxim 84, 93, 106
Ng, Alex Hay-Man 130
Nguyen, Quang Huy 97
Niamen, David 72
Niamsuwan, Noppasin 20
Nicholson, Natalya 44
Nicolas, Jean-Marie 22, 41, 123
Nicoll, Jeremy 47, 88
Nieke, Jens 16, 50
Nielsen, Allan Aasbjerg 74, 124
Niemann, K. Olaf 3
Niemeyer, Irmgard 4, 61, 89
Nienkemper, Pamela 134
Nienow, Peter 34
Nieto, Juan Manuel 67, 130
Nie, Yueping 134
Ning, Tong 138
Nirchio, Francesco 39
Nishii, Ryuei 25
Nitti, Davide Oscar 46
Niu, Lijie 86
Niu, Zheng 36
Ni, Wenjian 30, 103, 135
Niyogi, Dev 90
Njoku, Eni 46, 80, 82, 119
Noel, Guillaume 13
Noferini, Linhsia 8
Nonaka, Takashi 93
Nori, Wafa 4
Norris-Rogers, Mark 99
North, Peter 124, 141, 144
Notarnicola, Claudia 37, 84, 85
Notarpietro, Riccardo 136
Nottensteiner, Anton 22, 45
Nouvel, Jean-Francois 138
Nouvel, Jean-François 32, 120
Novali, Fabrizio 82, 96
Novichikhin, Eugene 109
Nuñez-Casillas, Laia 13, 57
Nunziata, Ferdinando 11, 24, 109
Nutricato, Raffaele 46
Nwaneri, Benjamin Uchenna 73
Nwaneri, Sam O. 73, 115
Nwilo, Peter Chigozie 139
Nyanganyura, Daniel 44

O

Odagawa, Shinya 71, 114
Oda, Kunio 114
Odermatt, Daniel 42, 50
Ohara, Sho 36
Ohta, Tetsu 48
Oh, Yisok 18, 119
Oishi, Noboru 46
Okada, Yu 46
Okamura, Yoshihiko 72
Okin, Gregory S. 102
Oki, Riko 11
Olioso, Albert 2, 70, 99
Oliveira, Wilson 8
Oliveri, Giacomo 18
Olivier, Corne 98
Olivier, Jan 98
Oller, Guillaume 80
Olsson, Håkan 71
Onasoglou, Efstathios 112
Ondrusek, Michael 61
O'Neill, Norm 79
O'Neill, Peggy 53, 63, 80, 82, 119
Ong, Cindy 110
Opperman, Ben 44
Oriot, Hélène 95, 120
Ormazábal, Yony M. 64
Ose, Kenji 66

Osman, Julien 124
Osodundu, Etoy 30
Oth, Adrien 30
Otsuka, Yuichi 88
Ottavianelli, Giuseppe 132
Ottle, Catherine 115
Ouchi, Kazuo 78, 109
Oudrari, Hassan 5
Ouédraogo, Oumarou 64
Ounadjela, Abderrhamane 106
Ouyang, Xiaoying 37, 74
Ovarlez, Jean-Philippe 52, 84, 104
Oveisgharan, Shadi 24
Owen, Heather 141
Oyen, Anneleen 21, 90
Ozaki, T. 25

P

Pace, Gaetano 64
Paciello, Rossana 47, 117
Pacifici, Fabio 66, 106
Padmanabhan, Sharmila 130, 136
Paduan, Jeffery 76
Paes, Rafael L. 120
Paganini, Marc 64
Paillou, Philippe 60, 69, 95
Pak, Edwin 57
Palandri, Monica 46
Palaniappan, Kannappan 120
Palazzo, Francesco 14
Palchetti, Enrico 26
Palmer, Steven 34
Paloscia, Simonetta 46, 82, 119
Pampaloni, Paolo 26, 46, 82, 119
Pan, Chunhui 5
Pandiscia, Gianfranco 39, 46
Pandit, Vinay 101, 134
Pang, Lv 97
Pang, Xiao 36, 131, 138
Pang, Yong 30
Pang, Zizhen 69
Pan, Huali 29
Pan, Jinmei 26, 36
Pantze, Andreas 71
Pan, Wenbo 100
Paoli, Andrea 127
Paoloscia, Simonetta 26
Papathanassiou, Konstantinos ..22, 39, 46, 88, 94, 95, 111, 118, 123
Paradise, Susan 44
Paradzayi, Charles 86
Parashar, Surendra 38
Pardini, Matteo 82
Parida, B. P. 4
Parker, Jay 60
Park, Hyeong-Dong 28
Park, James 20
Park, Sang-Eun 81
Parmuchi, G. 82
Pascal, Frédéric 52, 84
Pascazio, Vito 52, 60, 136
Pascual, Ananda 137
Pascucci, Simone 117
Pasolli, Edoardo 104, 127
Pasquali, Paolo 15
Pasquariello, Guido 32
Pastina, Debora 3, 136
Pastor, Dominique 113
Patel, Amit M. 16
Patel, Aqsa 141
Pathe, Carsten 7
Patt, Fred 95, 143
Patyuchenko, Anton 75
Pauciullo, Antonio 59, 123
Paules, Granville 13
Paz, Abel 97
Pazmany, Andrew 62
Pearlman, Michael 94
Pechac, Pavel 38
Pedroso, Enrico 66
Pellarin, Thierry 68, 115
Pellikka, Petri 71
Pellon de Miranda, Fernando 50, 66
Peltoniemi, Jouni 43
Pendock, Neil 117
Peng, Huanhua 66, 103
Peng, Jinzheng 130
Penland, Cecile 53
Percivall, George 13
Perez-Cabello, Fernando 71
Perez-Gutierrez, Carlos 63, 67, 80
Pergola, Nicola 47, 54, 69, 96, 111, 117
Periard, Rene 38
Perissin, Daniele 136
Perkovic, Dragana 53
Perna, Stefano 11, 116
Perrie, William 6, 58
Perrino, Cinzia 117
Persello, Claudio 17, 74
Persi, Davide 46
Petersen, Stephen 120
Petja, Brilliant Mareme 140
Petrou, Maria 91, 112
Pettersson, Lasse 64
Pettinato, Simone 26, 46, 82, 119
Peugeot, Christophe 115
Pezzi, Luciano P. 12
Pfaff, Maya 5
Phalippou, Laurent 136

Philips, Brenda 47
Philips, Wilfried 33
Picard, Ghislain 34, 35
Picchiani, Matteo 60
Pichard, Damien 112
Pichaud, Marc 99
Pichelli, Emanuela 136
Pichel, William G. 6
Pichugina, Yelena L. 100
Pichugin, Michael 56
Picot, Nicolas 137
Piepmeier, Jeffrey 46, 80
Pieraccini, Massimiliano 8
Pierce, Leland 93, 129
Pierdicca, N. 119
Pierdicca, Nazzareno 46, 68, 109, 119, 127, 136
Pierrot-Deseilligny, Marc 115
Pietranera, Luca 39
Pietrapertosa, Carla 117
Pietro-Cerdeira, Roberto 27
Pietropaolo, Andrea 2
Pignatti, Stefano 51, 117
Piketh, Stuart 44, 51
Piles, Maria 17, 63, 76, 111
Pinardi, Nadia 39
Pincus, Paul 59
Pinel, Nicolas 18, 134
Pinheiro, Muriel 52, 75
Pinnel, Nicole 111
Pinnock, Simon 141
Pinto, Naiara 129
Pinty, Bernard 121
Pipia, Luca 84, 107, 129
Pippi, Ivan 10, 17, 31
Pisek, Jan 114
Pi, Xiaoqing 94
Pla, Filiberto 24
Plag, Hans-Peter 142
Plant, William 53
Platnick, Steven 51, 89
Platt, Robert 26
Platt, Ulrich 51
Player, Kevin 141
Plaza, Antonio 78, 91, 97, 117, 124, 125, 132
Plaza, Javier 97, 125, 132
Pliushchev, Victor 109
Plourde, Lucie 101
Plummer, Stephen 95
Podest, Erika 43, 50, 70, 83
Poggi, Giovanni 92
Poisson, Jean Christophe 137
Poland, Michael 90
Policelli, Fritz 89
Poona, Nitesh 27
Posa, Francesco 37, 85
Potin, Pierre 16
Potter, Chris 121
Pottier, Eric ... 15, 49, 69, 72, 88, 93, 104, 107, 118, 123
Poulain, Vincent 48, 119
Pourthié, Nadine 15, 67, 116
Pouyez, Stéphane 136
Powell, Je'aime 34
Praks, Jaan 80, 135
Prasad, Anup 96
Prasad, Saurabh 78, 113, 117
Prata, Fred 100
Prati, Claudio 3, 82
Pratola, Chiara 66, 92
Prats, Pau 22, 40, 46, 52, 75, 130
Preiss, Mark 59
Preusker, Rene 141
Priestley, Kory 5
Prieto-Blanco, Ana 71
Prieto, Manuel 125
Prigent, Catherine 43, 85
Prinet, Veronique 48
Proud, Simon 71
Puckett, John 92
Puech, William 115
Puestow, Thomas 14, 76
Pugnaghi, Sergio 54
Puigdefabregas, Juan 64
Pulighe, Giuseppe 84
Pulliainen, Jouni 19, 26, 34, 35, 43
Pulvirenti, L. 119
Pulvirenti, Luca 46, 68, 119
Purcell, George 111
Putih, Rony 131

Q

Qiao, Cheng 50
Qi, Chenli 41
Qi, Haiming 107
Qin, Jun 71
Qin, Qimin 29, 114
Qin, Qiming 29, 34, 70, 131
Qin, Yi 66
Qi, Qingwen 36
Qiu, Dongwei 36, 67, 134
Qiu, Hong 11, 135
Qiu, Xiaolan 16, 22, 108
Qiu, Yubao 35, 43, 105
Qiu, Zhongfeng 6, 31
Qiu, Zhong Feng 53
Qi, Xiaoping 66
Quaife, Tristan 121
Quast, Ralf 21
Qu, Chunyan 54

Queface, Antonio 44
Quegan, Shaun 88, 95
Quinn, Geoff 3
Quintano, Carmen 103
Qu, Ying 67, 82

R

Rabaute, Thierry 15
Rabbani, Umair 70
Rabenstein, Lasse 22
Racette, Paul 136
Radebaugh, Jani 107
Radescu, Radu 54
Raetzo, Hugo 54
Rahmoune, R. 24
Raizer, Victor 24, 76
Rajan, Krishnan S 101, 134
Rakotondraompiana, Solofo 7
Raksuntorn, Nareenart 78
Ramachandran, Rahul 77, 127, 139
Ramapriyan, Hampapuram 139
Rambal, Serge 102
Ramirez, Javier 106
Ramoelo, Abel 99
Ramos-Perez, Isaac 38, 67, 76, 80, 92, 111, 130
Rampersad, Chris 131
Ramugondo, Richard Rendani 140
Rana, Fabio 46
Raney, Keith 142
Rank, Robert 139
Ran, Qiong 79, 105
Ranson, K. Jon 128, 135
Rao, Y S 136
Rappaport, Carey 10
Rascher, Uwe 124
Rasmussen, K. 115
Rastner, Philipp 84
Ratana, Piyachat 121
Ratti, Raffaella 96
Raudsepp, Urmas 31
Rautenbach, C. J . DeW. Hannes 30
Rautiainen, Kimmo 63, 76, 86
Razafindramasy, Fanja 7
Reagan, John 144
Reale, Diego 59, 82, 123
Rebelo, Lisa 43
Rebhan, Helge 16
Refice, Alberto 110
Regner, Peter 21, 141
Reichle, Rolf 80
Reichstein, Markus 102
Reid, David 100
Reidel, Tanja 9
Reigber, Andreas 45, 52, 93, 97, 105
Reimer, Derek 26
Reinartz, Peter 15, 111, 124
Reinhold, Markus 143
Reising, Steven C. 130, 136
Reis, Jim 95
Remer, Lorraine 89
Remund, Quinn 12
Ren, Hsuan 84, 125, 132
Ren, Jianqiang 71, 103
Ren, Xiaozhen 59
Ren, Yuhuan 36, 66
Repina, Irina 59
Ressl, Rainer 122
Reuter, Hannes Isaak 133
Revercomb, Hank 4
Revivo, Gil 81, 87
Rey, Laurent 136
Reynolds, Curt 48
Reynolds, Daniel 117
Rey, Stefan 3
Rhadadevi, Pullur Variem 15
Riaza, Asuncion 87
Ribeiro, Natasha 102
Ricaud, Philippe 92
Ricciarelli, Ivano 109
Riccio, Daniele 11, 127
Richard, Jacques 141
Richaume, Philippe 55
Richter, Nicole 9, 64, 128
Richter, Rudolf 24
Richtsmeier, Steven 9
Rickman, Douglas 144
Ridgway, Bill 143
Riegger, Sebastian 2
Riihelä, Aku 43
Rinaldi, Michele 113
Rincon, Rafael 80, 136
Ringrose, Susan 83
Ripepe, Maurizio 8
Riris, Haris 100
Rius, Antonio 27
Rivas, Rodrigo 109
Rivera, Alfonso 93
Rizos, Chris 27, 130
Robert, Alice 140
Roberts, Charles 67
Roberts, David 115
Roberts, Gareth 58
Robertson, Brian 131
Robertson, Lisl 25
Roberts, Wesley 73
Robila, Stefan 106
Robin, Amandine 98
Robinson, Ian 13
Robison, David 32

Robitaille, Valérie 115
Roblou, Laurent 137
Rocca, Fabio 2, 3, 9, 40, 47, 82, 88, 136
Rocca, Paolo 18
Rochon, Gilbert 90
Rodger, Andrew 110
Rodrigues, Arlete 98
Rodriguez-Alvarez, Nereida . 38, 63, 67, 76, 80, 92, 111, 130
Rodriguez-Cassola, Marc 22
Rodriguez, Ernesto 34, 53, 75
Rodríguez González, Fernando 106, 110, 123
Rodriguez, Juan 12
Rodriguez-Morales, Fernando 141
Rodriguez, Rafael 79
Rodríguez Rodríguez, Félix 32
Roelvink, Dano 6
Rojik, Petr 81
Rolland, Philippe 38
Román, Miguel 17, 95
Romanov, Peter 102
Romeiser, Roland 15
Romeu, J. 107
Rommen, Bjorn 2, 9, 136
Rompel, Andreas 87
Rong, Zhiguo 31, 79
Rosa, Reinaldo Roberto 121
Rosen, Paul 40, 48, 77, 94
Rosenqvist, Ake 43, 128
Rose, Thomas 92
Rostan, Friedhelm 2
Rothacher, Markus 142
Roth, Achim 39, 87
Rott, Helmut 19, 49, 140
Rouault, Marjolaine 5, 12
Rouault, Mathieu 5, 137
Rouget, Mathieu 21, 64
Roujean, Jean-Louis 43, 100, 121
Rousseau, Louis-Philippe 35
Rowlandson, Tracy 80
Roy, David 58, 89, 95, 121
Royer, Alain 34, 35, 79
R., Rahmoune 82
Ruault du Plessis, Olivier 120
Rubio, Jeremy 128
Rubio, Miguel Angel 96
Rucci, Alessio 82, 96
Rudant, Jean-Paul 61, 72
Rudari, Roberto 46
Ruddick, Kevin 61
Rüdiger, Christoph 68
Rudorff, Bernardo 98, 140
Rudraraju, Krishna 85
Ruelland, Denis 115
Ruf, Christopher 17, 20, 46, 92, 130
Ruffini, Giulio 142
Rugege, Denis 99
Ruggieri, Giovanni 39
Ruggieri, Sergio 113
Ruiz, Simón 137
Runge, Hartmut 15
Rutherford, Engel 87
Ruzanski, Evan 79
Ruzmaikin, Alexander 1
Ryan, Casey 4
Ryan, Michael 105
Rydberg, Lars 5
Ryu, Joo-Hyung 114, 144

S

Saatchi, Sassan 4, 24, 86, 95, 102
Sabel, Daniel 7
Sabet-Peyman, Farhang 114
Sabia, Roberto 32
Saengtuksin, Boredin 42
Saha, S. K. 57
Sahli, Hichem 60, 78, 113
Sahoo, Swaroop 130
Saidi, Mohamed Nabil 110
Saito, Genya 71
Saito, Yasunori 71
Sajjad, Naheed 11
Sakai, Shin'ichi 31
Sakji-Nsibi, Sarra 105
Sakuma, Fumihiro 31
Salama, Suhyb 102
Salas, William 43
Salazar, Jorge L. 47
Salinas, Santo V. 33
Salmon, Brian 98
Salomonson, Vince 89
Salooje, I. 13
Salvia, M. 82
Salvi, Stefano 46
Samanta, Arindam 101
Samimi, Cyrus 64
Samsonov, Sergey 1, 90
Sanchez-Martin, Nilda 63, 67, 80
Sánchez, Sergio 132
Sandberg, Gustaf 95
Sanford, Mark 95
Sang, Bernhard 124
Sanjuan, Maria-Jose 129
Sano, Edson 128
Sansosti, Eugenio 47, 54, 90, 116
Sant'Anna, Sidnei 38
Santer, Richard 61
Santi, Emanuele 26, 46, 82, 119
Santilli, Giancarlo 72

Santini, Federico 51
Santoleri, Rosalia 39
Santoro, Maurizio 8, 9, 71
Santos, João Roberto 64
Sarabandi, Kamal 23, 93, 107, 129
Sardinha-Pinto, Naiara 96
Sasaki, Jiro 71
Satake, Makoto 45, 53, 78, 107
Satalino, Giuseppe 113
Sathyendranath, Shubha 25
Sato, Motoyuki 8, 103
Sato, Ryoichi 81, 116, 129
Sato, Tokiyasu 106
Sauer, Tom 80
Saux-Picart, Stephane 115
Savane, Issiaka 139
Sawamura, Y. 25
Scandura, Danila 97
Scarpa, Giuseppe 92
Schaaf, Crystal 17, 24, 95
Schaepman, Michael 3, 124
Scharien, Randall 56
Scheiber, Rolf 45, 46, 52, 60, 75, 97, 130
Scherneck, Hans-Georg 138
Scheunders, Paul 74, 85, 102
Schiavon, Giovanni 60
Schirinzi, Gilda 116, 136
Schläpfer, Daniel 3
Schloemer, Stefan 81
Schmidt, Michael 64, 133
Schmieder, Klaus 42
Schmitt, Andreas 87
Schmit, Timothy J. 50, 128
Schmullius, Christiane 9, 64, 86, 128
Schneider, Mathias 15, 124
Schneider, Timothy 56
Scholes, Robert 7, 21, 27, 58, 122
Schopfer, Juerg 3
Schroeder, Ronny 43, 50
Schubert, Adrian 110
Schull, Mitchell 101
Schults, Christoph 64
Schultz, Christoph 21
Schulze, Daniel 75
Schuran, Elmar 83
Schwaebisch, Marcus 52
Schwaller, M. 53
Schwartzenberg, Mathieu 86
Schwarzbach, Marc 9
Schwarz, Gottfried 92, 110
Schween, Jan 85
Schweers, Wilko 67
Schwemmer, Geary 100
Schwerdt, Marco 2
Schwieger, Volker 39
Schwind, Peter 124
Schwonke, Friedhelm 15
Scipal, Klaus 41
Scirpoli, Silvia 3
Scott, Waymond 18
Sears, Michael 117
Sebitloane, T. 13
Seemann, Joerg 76
Seetharaman, Guna 120
Segarra, Marc 86
Segl, Karl 124
Séguin, Guy 45
Seguin, Sarah A. 141
Sei, Alain 100
Seifert, Frank Martin 96
Seitz, Bernd 16
Seker, S. Selim 2, 37
Sekhwela, Mogodisheng M. B. 4
Sellami, Mohamed 123
Selsam, Peter 143
Selva, Massimo 104
Senff, Christoph J. 100
Sephton, Tony 140
Seppänen, Jaakko 63, 135
Serafino, Francesco 82
Serdyuk, Igor 38
Serpico, Sebastiano B. 46, 49, 98, 112
Serra, Marco 46
Servadio, Zarah 76
Servello, Emerson 128
Ses, Shahrum 27
Setoain, Javier 125
Sevenhuysen, Pieter 121
Severino, Vincenzo 97
Sevillano-Marco, Eva 103
Seyler, Frederique 137
Shabangu, Petrus 139
Shahzad, Faisal 1, 28
Shang, Jiali 45, 113
Shan, Xinjian 54
Shao, Yun 28, 38, 65, 70, 103
Sharifuddin, Amir 27
Sharma, Ameeth 30, 115
Shen, Guozhuang 96
Sheng, Yongwei 49, 50
Sheng, Yu 36
Shen, Huanfeng 85
Shen, Hui 6, 53
Shen, Jinxiang 104
Shenoy, Ram 106
Shen, Qian 12, 31, 134, 140
Shen, Weihua 103
Shen, Xueshun 41
Shen, Zhanfeng 49, 50, 104
Shepherd, Andrew 34

Shezi, Innocent 27
Shibata, Akira 13
Shibuya, Kazuo 56
Shih, Jyh-Yi 102
Shi, Jiancheng ... 19, 26, 35, 36, 37, 55, 69, 73, 80, 82, 101, 119
Shi, Jun 107
Shimabukuro, Yosio Edemir 98, 103, 121, 128
Shimada, Masanobu ...40, 49, 77, 83, 88, 108, 109, 133
Shimizu, Shuji 11
Shimoda, Haruhisa 132
Shi, Ping 31
Shirokov, Igor 38
Shi, Ruoming 33, 36, 67
Shirzaei, Manoochehr 21
Shokr, Mohammed 56, 90
Shoucri, Merit 61, 100
Shuai, Yanmin 95
Shubair, Raed 4
Shugart, Herman H. 4, 95, 102
Shuler, Ashley 30
Shum, C.K. 27
Shusse, Yukari 53
Shutko, Anatolij 41, 109
Siccardi, Franco 46
Sidorov, Igor 109
Siedler, Gerold 137
Sienkiewicz, Joseph 6
Sievinen, Pauli 19, 80
Siljamo, Niilo 43
Silva, Wagner 98
Silvestri, Malvina 54
Simard, Marc 1, 43, 96, 129
Simic, Anita 114
Simler, Christophe 118
Simonis, Ingo 13
Simons, Mark 40
Simske, Steven 105
Singh, Gulab 36
Singh, Jagmal 52
Singh, Ramesh 96
Singhroy, Vern 1
Singh, Upendra 115
Sipelgas, Liis 31, 35
Siqueira, Paul 86, 135
Sirguey, Pascal 43
Sirota, Marcos 100
Sitar, Michael 100
Sivakumar, Venkataraman 135
Skidmore, Andrew 21
Skone, Susan 44
Slonaker, Richard 114
Small, David 94, 107, 110
Small, Eric 20
Small, Jennifer 57
Smets, Benoît 30
Smith, Allan W. 17
Smith, Craig K. 26
Smith, David 143
Smith, Logan 73
Smith, Nadia 51
Smit, Izak 21, 27, 86, 102
Smits, Paul 13
Snaith, Helen 76
Snoeij, Paul 2, 9, 16
Snyder, William 17
Sobieski, Piotr 41
Sobrino, Jose 2, 99
Soccorsi, Matteo 52, 110
Soisuvarn, Seubson 78
Solaro, Giuseppe 90
Soldano, A. 82
Soldatov, Vladimir 41
Soldovieri, Francesco 10
Solimini, Domenico 66, 88, 93, 107
Somers, Ben 63, 137
Song, Jinling 114, 121
Song, Jung Hwan 108
Song, Kaishan 64, 70, 101
Song, Qing-Jun 31
Song, Shalei 31, 99
Song, Xiaogang 54, 120
Song, Xiaohui Carol 90
Son, Young-Sun 29
Soraghan, John 74
Soria, Guilhem 2
Soumaguel, Nogmana 121
Souyris, Jean-Claude 32, 116, 123
Souza, Carlos M. Jr. 58
Souza Filho, Carlos 3, 8, 10
Spencer, Clyde 112
Spencer, R. 1
Spessa, Allan 91
Spigai, Marc 119
Spinetti, Claudia 54
Sportouche, Helene 112
Spoto, François 16
Srivastava, Satish 38, 45
Srokosz, Meric 20, 76
Staples, Gordon 45
Starkey, Malcolm 86
Stark, Robi 81, 87
Stasolla, Mattia 10, 65
Steenhuis, Tammo S. 134
Steenkamp, Karen 122
Stein, Alfred 117
Steinbrecher, Ulrich 15, 75
Stelzer, Kerstin 141
Stensaas, Gregory 126

Stephens, J. Paul 114, 121
Stephenson, Garth 27
Stevens, Antoine 137
Stewart, John 115
St.Germain, Karen 5
Stiles, Bryan 53
Stofan, Ellen 107
Stone, Thomas 61, 129, 132
Strabala, Kathy 12, 85
Strahler, Alan 95
Stramondo, Salvatore 60, 90, 127
Strauch, Karsten 140
Strever, Albert 137
Strobl, Peter 133
Stroede, Jürgen 16
Strohbach, Marianne 83
Strow, Larrabee 5
Strozzi, Tazio 8, 54, 89
Stuckens, Jan 63, 137
Sturgill, Margaret 105
Su, Bob 102
Suchandt, Steffen 15
Suchdeo, Vijay P. 126
Su, Fenzhen 133
Suganuma, Masahiro 72
Su, Gaoli 72
Suhama, Tomoyuki 71
Sukovich, Ellen 56
Sukuvaara, Timo 43
Sullivan, William 143
Sum, Xiaoli 100
Sun, Bo 32, 33
Sundal, Aud 34
Sundberg, Robert 9
Sun, Fujun 102
Sun, Guoqing 30, 67, 103, 128, 135
Sun, Huabo 33
Sun, Ke 136
Sun, Landong 72
Sun, Lin 140
Sun, Mindy 129
Sun, Rui 103
Sun, Ruijing 119
Sun, Weiying 86
Sun, Xiuhong 31
Sun, Xu 74
Suokanerva, Hanne 43
Suomalainen, Juha 43
Suri, Sahil 124
Sutton, Malcolm 87
Suwa, Kei 141
Su, Wen-Ray 65
Su, Yaoming 29, 65
Su, Y. J. 132
Svanberg, Sune 124
Sveinsson, Johannes R. 105, 119
Swanepoel, Robert 57
Swap, Robert J. 44, 102
Swaroop, Sahoo 136
Sweeting, Martin 132
Swennen, Ronny 137
Swennen, Rony 63
Sylla, Daouda 93
Szarzinski, Joerg 13

T

Tabatabaeenejad, Alireza 73
Tada, Akihide 31
Tadono, Takeo 49, 77, 133
Tai, Qingguo 28, 102
Taiwo, Olalekan John 83
Tajdi, Amina 7
Takaku, Junichi 77, 133
Takala, Matias 19
Takamura, Tamio 135
Takano, Tadashi 54
Takasaki, Makiko 104
Takayama, Takuya 8
Takizawa, Osamu 29, 30
Takumi, Ichi 106
Talone, Marco 32, 111
Tamagawa, Katsunori 48, 73
Tampellini, Maria Lucia 96
Tanaka, Hirokazu 71
Tanania Kabobo, Charles 138
Tanase, Mihai 71
Tan, Debao 70
Tang, Bo-Hui 33, 37
Tange, Yoshio 72
Tang, Hongzhao 33, 103
Tang, Huajun 103
Tang, Jun-Wu 31
Tang, Shilin 31, 61, 65
Tang, Tao 57
Tang, Xiao Qing 108
Tang, Yixian 127
Tang, Yong 67
Tanja, Kraus 64
Tan, Lulu 73
Tannous, Ola 91
Tan, Qulin 28, 38, 65
Tan, Wei-Xian 107
Tanzi, Tullio 118
Tao, Jianwei 131
Tao, Jing 82
Tao, Xin 9, 114
Tapley, Ian 81, 95
Tarabalka, Yuliya 55
Tares, Teemu 120

Tarongi, José Miguel 109, 111
Tarongí, José Miguel 76
Tarpley, Dan 100
Taskin Kaya, Gulsen 42
Tataranni, Francesco 39
Tavin, François 57
Team, GVO 29
Teatini, Pietro 89
Tebaldini, Stefano 3, 84, 88
Tedesco, Dario 30
Teggi, Sergio 54
Tellier, Laurent 86
Tello, Marivi 120
Telmer, Kevin 43
Tembo, Mavuto 21, 83, 139
Temimi, Marouane 31, 134
Temizel, Alptekin 62
Teng, William 144
Tenllado, Christian 125
Tenorio, Virginia 106
Tentzeris, Manos M. 143
Teramoto, Yuuhei 108
Teschner, Manfred 81
Tesfaye, Melaku 30, 115
Thibaut, Pierre 137
Thiel, Carolin 9, 64, 128
Thiel, Christian 9, 64, 128
Thiel, Michael 87
Thi Long, Trinh 42
Thiombiano, Adjima 64
Thölix, Laura 43
Thomas, Claire 41
Thomas, Geerinck 60
Thomas, Matilda 117
Thompson, David A. 26
Thompson, Donald R. 59
Thompson, Mark William 121
Thontteh, Olufunmilayo 54
Thoonen, Guy 74, 102
Throwe, Jeremy 139
Thurai, Merhala 118
Thuy, Le Toan 84
Tiafack, Ojuku 7
Tiampo, Kristy 90
Tian, Bangsen 34
Tian, Guoliang 66
Tian, Juhui 67
Tian, Wei 28, 29, 72, 128
Ticconi, Francesca 119
Tien, Jeff 32
Tilton, James 133
Ting, He 101
Tintoré, Joaquim 137
Tirado, Francisco 125
Tison, Céline 52, 67, 80, 116, 136
Tisseau, Chantal 111
Titov, Victor 59
Tits, Laurent 137
Tizzani, Pietro 90
Tjuatja, Saibun 26
Tobin, Dave 5
Tolomei, Cristiano 90
Tolpekin, Valentyn 74
Tong, Ling 37, 93
Tong, Qingxi 42
Tongway, David 87
Tong, Zhao-Yuan 70
Tonolli, Sergio 71
Torres, Francesc 86, 109, 130
Torres, Ramon 2
Tosi, Luigi 89
Toth, Brenda 35, 69
Tourneret, Jean-Yves 48, 119
Tous-Ramon, Nuria 75
Toutin, Thierry 124, 131
Touzi, Ridha 75, 116, 128
Trabal, Jorge 47
Traille, Anya 143
Tramutoli, Valerio 47, 54, 69, 96, 111, 117
Trasatti, Elisa 90
Traylen, Anthony 83
Treuhaft, Robert 86, 111
Trichon, Valerie 121
Trillo, Francesco 82
Trivero, Paolo 39
Troitskaya, Yulia 59
Trouve, Emmanuel 22
Truong-Loï, My-Linh 123
Tsai, Chung-Hung 102
Tsang, Leung 18, 23, 80
Tsay, Si-Chee 44, 89
Tsubono, Takaki 31
Tsuchida, Masayoshi 46
Tsutsui, Hiroyuki 48, 73
Tucker, Sara C. 100
Tuia, Devis 17
Tukar, Varsha 81
Tu, Ning 28
Tupin, Florence 80, 112, 123
Turlapaty, Anish 62
Tutu, Hlanganani 87
Tu, Yong 29
Tychon, Bernard 137
Tzeng, Yu-Chang 70, 132

U

Udahemuka, Gustave 91
Udall, Christopher 10
Ugorji, Faithful Ogadi 73, 115

Uhlhorn, Eric 92
Uiboupin, Rivo 12, 35
Ulander, Lars M. H. 71, 88, 95
Ulfarsson, Magnus Orn 105
Umehara, Toshihiko 45, 78, 107
Unal, Alper 144
Uratsuka, Seiho 45, 78, 107
Urdiroz, Anne 116
Uryu, Yumiko 83
Utku, Cuneyt 63
Uto, Kuniaki 71, 114

V

Vahed, Anwar 139
Valencia, Enric 38, 67, 76, 80, 92, 111, 130
Valentini, Giovanni 39
Valentini, Samuela 18
Valentino, Antonio 46
Valeriano, Marcio de Morrison 64
Valero, Henri-Pierre 106
Valladeau, Cyrille 19
Vall.Llossera, Merce 130
Vall-Llossera, Mercè 32, 63, 67, 76, 80, 111
Valor, Enric 2, 57
van Aardt, Basjan 27
van Aardt, Jan 21, 27, 73, 99
van de Giesen, Nick 134
van Delden, Hedwig 64
van den Berg, Hennie 57
van den Bergh, Frans 91, 98
Van Den Bergh, Frans 98
van den Berg, Maurits 99
Vanden Borre, Jeroen 102
Vandenbosch, Guy A. E. 137
van der Meer, Freek D. 8, 117
Vanderpost, Cornelis 83
van der Velde, Rogier 53
van der Werff, Harald 8
Vanegas, Maria Carolina 113
Vanhamel, Iris 60, 78, 113
Van Langenhove, Guido 13
van Leijen, Freek 123
van Lieshout, Arno M. 14
Van Niekerk, Adriaan 27, 68
van Oevelen, Peter 68
Van Ophem, Jeremy 35
van Overbeke, Anne-Catherine 30
van Ruitenbeek, Frank 8
Van Schoor, Michael 87
van Wesemael, Bas 137
van Wyk, Barend J. 91
van Zyl, Jakob 75, 80
van Zyl, Terence L. 138, 139, 143
Vasconcelos, Adriano 74
Vasile, Gabriel 22, 52, 84
Vasquez, Pedro 50
Vatsavai, Ranga Raju 77
Veeramachaneni, Chandini 34
Vega, Manuel 53, 136
Vekerdy, Zoltán 14
Velasco-Forero, Santiago 55
Velden, Christopher S. 72
Veneziani, Nicola 110
Venkataraman, Gopalan 36, 81, 136
Venkataraman, Sivakumar 30, 115
Venkatesh, Vijay 47
Ventura, Bartolomeo 37
Venuti, Giovanna 136
Verhoef, Wout 124
Verhoef, Wouter 10
Vermote, Eric 17
Verreynne, Stephan 137
Versace, Cosimo 46
Verstraete, Michel 21, 27
Verstraeten, Willem W. 63, 137
Vescovo, Loris 71
Vesecky, John 76, 120
Vho Khac, Tri 42
Viani, Federico 18, 38, 97, 127, 143
Vicari, Annamaria 96
Vieillard, Gilles 104
Viergever, Karin 86, 127
Vignoli, Stefano 46, 54
Vignudelli, Stefano 137, 142
Vila-Frances, Joan 91
Vilaseca, Roger 86, 109
Villa, Alberto 91
Villeneuve, Nicolas 76
Vinetti, Pietro 97
Vintrou, Elodie 115, 140
Vitulli, Raffaele 110
Vivekanandan, J 130
Vizoso, Guillermo 137
Vladimirova, Tanya 132
Vogel, Augustus 5, 6
Vogel, Melanie 66, 83, 86
Vogt, Declan 87
Volskiy, Vladimir 137
Volz, Stephen 1, 8
Von Maltitz, Graham 122
von Schoenermark, Maria 9
Voo, Justin 109
Voronovich, Alexander 11, 53
Vukovic, Zlatko 62
Vural, Mehmet Firat 62

W

Wada, Akiyoshi 42

Wadia-Fascetti, Sara 10
Wagner, Wolfgang 7, 82
Wainstein, Pablo 22
Wakayama, Toshio 141
Waldteufel, Philippe 55
Walker, Anne 35
Walker, Dan M. 26
Wallace, Jeremy 83, 99
Wall, Richard J. 118
Wall, Steve 107
Walsh, Edward 20
Walter, M. Todd 134
Walterscheid, Ingo 22
Walter, Thomas 21
Wang, Angsheng 37
Wang, Bin 80, 91
Wang, Bing-Nan 108
Wang, Changcheng 120
Wang, Chao 66, 105, 127
Wang, Chuanying 28
Wang, Chun-Ying 102
Wang, Dacheng 9
Wang, Fenfei 104
Wang, Haibo 36, 131, 138
Wang, Huanjiong 68
Wang, James R. 35
Wang, J. D. 82
Wang, Ji 29
Wang, Jindi 91, 114, 121
Wang, Jinfei 65
Wang, Jing 101, 102
Wang, Jinsong 34
Wang, Juan 32
Wang, Kaizhi 108, 123
Wang, Kelin 74, 101
Wang, Long 47, 61, 105
Wang, Lu 57
Wang, Luke K. 105
Wang, Ning 33
Wang, Peijuan 71, 103
Wang, Pengxiang 72
Wang, Qingpei 29
Wang, Qinhua 102
Wang, Qinjun 28
Wang, Qiongchen 65
Wang, Shiang 28
Wang, Shuguo 69
Wang, Shuo 107
Wang, Wei 37
Wang, Xian-Ming 108
Wang, Xiaolin 36, 131, 138
Wang, Xiaoqing 16, 47, 61, 105
Wang, Xin 11
Wang, Xingjuan 24
Wang, Xing Liang 108
Wang, Xingxing 36
Wang, Xinhong 37, 74
Wang, Xin-Lu 119
Wang, Xiqin 136
Wang, Xuelei 57
Wang, Yan 28, 47, 107
Wang, Yanping 107
Wang, Yanting 11, 47, 79
Wang, Yide 134
Wang, Yinbo 107
Wang, Ying 90, 140, 144
Wang, Yong 67, 120
Wang, Zhi 30, 31
Wang, Zhiyong 79, 105
Wang, Zhongting 33
Wang, Zhuosen 95
Wang, Zifeng 32, 33
Wang, Zongming 64, 70, 101
Wan, Wei 90
Wan, Ying 37
Wan, Zi 72
Warner, Timothy 98
Waske, Björn 55, 105, 119
Watkins, Brenton 88
Watson, Robert 62
Wauthier, Christelle 21, 29, 30, 90
Way, Mike 99
Weaver, Clark 100
Webb, Frank 40
Weber, Christiane 104
Webley, Peter 47
Weedon, Graham 122
Weepener, Harold 57
Wegmann, Martin 64
Wegmüller, Urs 8, 54, 89
Weidong, Liu 57
Weiersbye, Isabel 81, 87
Wei, Lideng 107
Wei, Li Deng 108
Wei, Mu-Hsin 18
Weise, Kathrin 57
Weissman, David 6
Weiss, Pierre 60
Weisz, Elisabeth 85
Wei, Yongming 28
Wells, James 8
Wendleder, Anna 39
Weng, Jing Nong 36
Wen, Jianguang 9
Wenny, Brian 89
Wentz, Frank 76
Wen, Wei 133
Werdell, Jeremy 61, 95
Werner, Charles 8, 54, 89
Wessel, Birgit 39, 87

Wessels, Konrad 21, 27, 86, 98, 122
Westbrook, David 47
West, Terrance 78, 117
West, Tristram 144
Whitcomb, Jane 50, 83
Whitehead, Ken 22
White, Lee 4, 86
Whiteman, David 115
Whitney, Tom 138
Whittle, Christo 5
Wiafe, George 5, 6
Wicks, Michael C. 10
Widlowski, Jean-Luc 132
Wiesmann, Andreas 8, 54
Wiesz, Elisabeth 51
Wigneron, Jean-Pierre 55, 68, 69
Wijaya, Arief 1, 71
Wilkerson, Thomas 100
Willemet, Jean-Marie 35
Williams, Charles 97
Williams, Mark 88, 95, 118
Williams, Mathew 4
Willie, Delbert 47
Willmes, Sascha 22
Wilson, Brian 44
Wilson, Jerry 100
Wimmer, Christian 116
Wimmer, Werenfrid 13
Wind, Galina 51
Winstead, Nathaniel S. 59
Winter, Kevin 25
Wishart, Alex 140
Wistebaar, Nokuthula 21, 64
Witkowski, Edward 21, 68, 87
Wolde, Mengistu 62
Wolfe, Robert 143
Wolff, Eléonore 118
Wolf, Walter 50
Wolski, Piotr 89
Wong, Choong Min 64
Woo, Chun-Long 70
Wood, Chuck 107
Wood, Daniel 17
Woodhouse, Iain 4, 21, 52, 83, 86, 111, 139
Woodward IV, John T. 17
Woodworth, Philip 142
Wooster, Martin 58, 91, 121
Worden, John 1
Wouters, Kristin 111
Wu, Chao-Cheng 132
Wu, Chuanqing 2
Wu, Daihui 9, 36, 68, 97
Wu, Di 12, 31, 134, 140
Wu, Fan 105, 127
Wu, Hao 67
Wu, Ji 86
Wu, Jian 88
Wu, Jiaying 27
Wu, Lingzhi 28
Wu, Lixin 28, 30, 31, 67, 125
Wu, Li-Xin 66
Wursteisen, Patrick 34
Wu, Shunjun 16
Wu, Weimin 33
Wu, Xiaoqing 34
Wu, Xiyan 73, 91
Wu, Xuebao 41, 135
Wu, Yirong 107, 108
Wu, Yuanfeng 31, 134, 140
Wu, Yuangfeng 12
Wyholt, Annelie 88

X

Xia, Chuanfu 67
Xia, Junshi 119
Xiang, Maosheng 107, 108
Xiang, Mao Sheng 108
Xiang, Zheng 123
Xiao, Bilin 67
Xiao, Qing 9
Xiao, Zhiqiang 73, 91, 114
Xia, Ye 107, 130
Xia, Zhongsheng 72, 128
Xie, Chou 70, 72, 128
Xie, Donghui 71, 101, 103
Xie, Wenhan 104
Xie, Xiaosu 4
Xie, Xinxin 37
Xie, Yaowen 36
Xing, Mengdao 16
Xing, Weipo 37
Xing, Xu-Feng 31, 109
Xing, Zhurong 37
Xin, Xiaozhou 9, 70, 72, 73, 140
Xiong, Xiaoxiong (Jack) 5, 63, 89, 114, 132
Xiu, Chun-Hua 29
Xu, Chunliang 37
Xue, Dayuan 102
Xue, Yong 37, 90, 101, 140, 144
Xue, Yucai 104
Xu, Haiqing 127
Xu, Hua 66
Xu, Hui 32, 100, 102
Xu, Jianmin 72
Xu, Jingwen 134
Xu, Maosong 38, 72, 128
Xu, Min 36, 101
Xu, Peng 18
Xu, Weidong 58

Xu, Xiaolan 19, 23
Xu, Xin 65
Xu, Xiru 9, 68
Xu, Yongming 57
Xu, Zheng-Wen 88
Xu, Zhonglin 66, 103

Y

Yabuki, Tetsuo 70
Yackel, John 56
Yague-Martinez, Nestor 22, 39, 49
Yalamanchili, Subrahmanyeswara Rao 68, 81
Yalire, Mathieu 30
Yamada, Hiroyoshi 81, 116, 129
Yamagata, Yoshiki 67
Yamaguchi, Yoshio 81, 116, 129
Yamanokuchi, Tsutomu 56
Yamazaki, Fumio 104
Yan, Binyan 9, 68, 97
Yan, Dongchuan 140
Yan, Dongmei 98, 104
Yang, Bingfeng 2
Yang, Chan-Su 78, 109, 114, 144
Yang, Du 38
Yang, Eric 100
Yang, Guang 101
Yang, Guijun 37
Yang, Guojing 36, 71, 101
Yang, Haiguang 108
Yang, He 119, 125
Yang, Hu 35, 69
Yang, Jian 75
Yang, Jingsong 32
Yang, Kun 73
Yang, Liao 104
Yang, Lin 134
Yang, Lina 74
Yang, Nan 70, 114
Yang, Nanping 106
Yang, Ruliang 59, 73, 108
Yang, Shengtian 57
Yang, Wunian 93
Yang, Xiaomei 103, 127
Yang, Xu Dong 130
Yang, Yubin 133
Yang, Zhengwei 113
Yang, Zhongdong 69
Yan, Jingye 86
Yan, Lei 33, 103
Yan, Wenzhe 38
Yan, Yunxuan 97
Yao, Jian-Feng 48
Yao, Yanjuan 9, 37, 67, 97
Yao, Yunjun 70
Yardimci, Yasemin 62
Yasukawa, Hiroshi 106
Yasuoka, Yoshifumi 67
Ye, Baisheng 101
Yehezkel, Nissim 31
Ye, Xia 29
Yi, Ling 66
Yilmaz, Erdal 106
Ying, Si'ai 65
Yin, Qiang 70
Yin, Xiaofei 59
Yin, Xiaojun 35
Yin, Zuo-Ru 29, 66
Yongqi, Chen 101
Yoon, Wang-Jung 29, 58
Yoshida, Naofumi 11
Yoshii, Takumi 31
You, Hongjian 108
You, Lin 34, 70
Younan, Nicolas 62, 77, 105, 125, 138, 143
Younis, Marwan 3, 75
You, Yong 29
Yuan, Chunxia 36
Yuan, Jinchun 61
Yueh, Simon 19, 46, 76, 80
Yue, Yang 108
Yue, Yuemin 74, 101
Yu, Fushui 71
Yu, Genong 113, 138, 143
Yu, Guoxia 132
Yuhas, Cheryl 1
Yu, Jie-Qing 28
Yu, Jirong 115
Yun, Sang-Ho 40
Yu, Shuiming 109
YU, Shuiming 66
Yu, Tao 32, 66, 79
Yu, Weidong 59, 73, 107
Yu, Wenbo 65
Yu, Wenxian 108, 123
Yu, Wuyi 66
Yu, Ying 16
Yu, Yizun 74
Yu, Yunyue 100

Z

Zabeline, Vladimir 45
Zabolotskikh, Elizaveta 56
Zaccaria, Jonathan 49
Zagolski, Francis 61
Zagon, Tom 45
Zagorin, Gennadij 41
Zamalieva, Daniya 133
Zama, Shisaku 29

Zandona-Schneider, Rafael 58, 94
Zaugg, Evan 3
Zavorotny, Valery 11, 20
Zavyalov, Vladimir V. 5
Zdunic, Katherine 99
Zebisch, Marc 84
Zebker, Howard 1, 77, 123
Zelazowski, Przemyslaw 122
Zeng, Hongjuan 57
Zeng, lihong 64
Zeng, Lihong 70, 101
Zerubia, Josiane 60
Zhang, An 36
Zhang, Bai 64, 101
Zhang, Baocheng 66
Zhang, Biao 58
Zhang, Bing .. 10, 12, 31, 63, 74, 96, 101, 102, 105, 134, 140
Zhang, Bo 127
Zhang, Cheng 86
Zhang, Daoxi 31
Zhang, Fan 108
Zhang, Fengli 28, 38, 72, 103, 128
Zhang, Guifang 54
Zhang, Guohong 54
Zhang, Hao 12, 31, 63, 101, 134, 136, 140
Zhang, Hong 105, 127
Zhang, Hongfen 34
Zhang, Huapeng 87
Zhang, Jane 126
Zhang, Jiahua 103
Zhang, Jing 105
Zhang, Kefei 27
Zhang, Kexin 69
Zhang, Kui 130
Zhang, Li 35, 104
Zhang, Liang 96
Zhang, Liangpei 31, 73, 85, 99
Zhang, Lijuan 33
Zhang, Lijun 31
Zhang, Liming 80, 91
Zhang, Ling 28, 107
Zhang, Lixin 26, 35, 36, 37, 82, 135
Zhang, Liyang 79
Zhang, Lu 105
Zhang, Ning 34
Zhang, Peng 41, 135
Zhang, Qiaoping 52, 126
Zhang, Qingchun 67
Zhang, Qingling 95
Zhang, Rong 32
Zhang, Rui 42
Zhang, Shengwei 33, 86
Zhang, Shiqiang 34, 73
Zhang, Shubi 119
Zhang, Shu Fang 53
Zhang, Sui 70
Zhang, Tao 127
Zhang, Wanchang 28, 69, 70, 102, 134
Zhang, Wei 107, 119
Zhang, Wenyi 105
Zhang, Wuming 33
Zhang, Xia 105
Zhang, Xiang-Ping 109
Zhang, Xiaoling 104, 107, 108
Zhang, Xiaonan 101
Zhang, Xiaowen 34, 73
Zhang, Xiaoyang 95
Zhang, Xiaoyong 63
Zhang, Xin 97
Zhang, Yanmei 30
Zhang, Ye 62, 78, 85, 108
Zhang, Yifan 85
Zhang, Yong 79
Zhang, Yongpan 26, 36, 37
Zhang, Yongsheng 139
Zhang, Yueting 108
Zhang, Yuxiang 79
Zhang, Zhenhua 16
Zhang, Zhiru 98
Zhang, Zhiyu 135
Zhan, Haigang 31
Zhan, Xiwu 48
Zhao, Chuanyan 36, 66, 103, 138
Zhao, Dengzhong 70
Zhao, Feng 65
Zhao, Hongchao 125
Zhao, Hu 113
Zhao, Junsan 36
Zhao, Lan 90
Zhao, Peisheng 143
Zhao, Shaohua 34, 70, 114
Zhao, Shaojie 26, 36, 37
Zhao, Tianjie 26, 37
Zhao, Wen-Hui 57
Zhao, Wenji 37, 65
Zhao, Wen-Ji 57, 102
Zhao, Yonghong 107
Zheng, Donghai 57
Zheng, Fengbin 32, 33
Zheng, Jing-Jing 125
Zheng, Jingjun 32
Zhen, Jie 16
Zhen, Zhaojun 69
Zhong, Bo 140
Zhong, Lei 102
Zhong, Liang 97
Zhong, Ruofei 37
Zhong, Shan 102
Zhong, Sheng 28

Zhong, Yanfei 85
Zhou, Binrong 72
Zhou, Chunyan 140
Zhou, Guoqing 104
Zhou, Hongmin 121
Zhou, Jianmin 34
Zhou, Jing 42
Zhou, Lei 68
Zhou, Liangjiang 22
Zhou, Lihang 50
Zhou, Lihua 71, 101
Zhou, Qingbo 103
Zhou, Wensheng 36, 131, 134
Zhou, Xiaoxue 102, 105
Zhou, Yong-Sheng 23
Zhou, Yuchi 33, 78
Zhou, Yunxuan 57
Zhou, Yuyu 103
Zhou, Zhixin 48, 60, 92
Zhu, Bo 31, 99
Zhu, Di 32
Zhu, Ji 37
Zhu, Li 2, 79
Zhu, Lin 29, 57, 65
Zhu, Ling 33, 36
Zhu, Minhui 16, 73
Zhu, Qi 78
Zhu, Qijiang 71
Zhu, Wei 125
Zhu, Xiaomin 125
Zhu, Xiaoxiang 52, 82, 116
Zhu, Yuanjing 11
Zhu, Zhongmin 73
Zibordi, Giuseppe 61
Ziemer, Friedwart 76
Zimmermann, Reiner 43, 50, 70
Zin, Alberto 109
Zink, Manfred 2
Zink, Michael 47
Zortea, Maciel 117
Zou, Song-Bing 138
Zribi, Mehrez 115
Zubko, Viktor 144
Zuo, Zijin 108
Zurita, Albert 68
Zur, Yoav 81, 87
Zuykova, Emma 59
Zvanovec, Stanislav 38
Zwally, Jay 94

Notes

Notes

Notes