

2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017)

**Fort Worth, Texas, USA
23-28 July 2017**

Pages 5602-6296



**IEEE Catalog Number: CFP17IGA-POD
ISBN: 978-1-5090-4952-3**

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP17IGA-POD
ISBN (Print-On-Demand):	978-1-5090-4952-3
ISBN (Online):	978-1-5090-4951-6
ISSN:	2153-6996

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

MO3-L1: BAND SELECTION

MO3-L1.1: HYPERSPECTRAL IMAGE BAND SELECTION VIA GLOBAL OPTIMAL CLUSTERING 1

Fahong Zhang, Qi Wang, Northwestern Polytechnical University; Xuelong Li, Xi'an Institute of Optics and Precision Mechanics of Chinese Academy of Sciences

MO3-L1.2: RANDOMIZED NONLINEAR COMPONENT ANALYSIS FOR DIMENSIONALITY REDUCTION OF HYPERSPECTRAL IMAGES 5

Bharath Bhushan Damodaran, Nicolas Courty, IRISA-Universite de Bretagne-Sud; Romain Tavenard, Universite Rennes 2

MO3-L1.3: COLORS IN MULTIMODAL DATA: DOMINANT LINE EXTRACTION INSPIRED BY COMPUTER VISION TECHNIQUES 9

Tomohiro Nishikawa, Yuichi Tanaka, Tokyo University of Agriculture and Technology

MO3-L1.4: SPARSE GRAPH EMBEDDING DIMENSION REDUCTION FOR HYPERSPECTRAL IMAGE WITH A NEW SPECTRAL SIMILARITY METRIC 13

Fubiao Feng, Wei Li, Beijing University of Chemical Technology; Qian Du, Mississippi State University; Qiong Ran, Beijing University of Chemical Technology

MO3-L1.5: SPATIAL NOISE-AWARE TEMPERATURE RETRIEVAL FROM INFRARED SOUNDER DATA 17

David Malmgren-Hansen, Technical University of Denmark; Valero Laparra, Universitat de València; Allan Aasbjerg Nielsen, Technical University of Denmark; Gustau Camps-Valls, Universitat de València

MO4-L1: NUMERICAL WEATHER MODELLING AND DATA ASSIMILIATION

MO4-L1.1: WRF SIMULATION FOR A HEAVY RAINFALL EVENT OVER THE HUAIHE RIVER BASIN, CHINA - AN EVALUATION USING REMOTE SENSING AND GROUND OBSERVATIONS 21

Lu Yi, Nanjing University; Wanchang Zhang, Chinese Academy of Sciences

MO4-L1.2: A COMPARISON OF THE CLOUD DETECTION RESULTS BETWEEN THE UDTCD A MASK AND MOD35 CLOUD PRODUCTS 25

Lin Sun, Xueying Zhou, Renli Wang, Jing Wei, Yikun Yang, Quan Wang, Shandong University of Science and Technology

MO4-L1.3: SENSITIVITY EXPERIMENTS OF WRF-ARW PBL SCHEMES OVER SINGAPORE REGION: IMPACT OF LAND USE, LAND COVER AND MODEL RESOLUTION 29

Srikanth Madala, Santo V Salinas, National University of Singapore; Jun Wang, University of Iowa; Soo Chin Liew, National University of Singapore

MO4-L1.4: USING AVERAGING KERNELS TO STUDY THE VERTICAL RESOLUTION OF NUCAPS TEMPERATURE AND WATER VAPOR 33

Flavio Iturbide-Sanchez, I.M. Systems Group at NOAA; Quanhua Liu, NOAA; Antonia Gambacorta, Christopher Barnet, Science and Technology Corporation; Nicholas Nalli, Changyi Tan, I.M. Systems Group at NOAA; Silvia Regina Santos Da Silva, University of Maryland

MO4-L1.5: SIMULATION AND PREDICTION OF HURRICANE LILI DURING LANDFALL OVER THE CENTRAL GULF STATES USING MM5 MODELING SYSTEM AND SATELLITE DATA 36

Remata Reddy, Duanjun Lu, Francis Tuhuri, Mehri Fadavi, Jackson State University

MO3-L2: LAND USE APPLICATIONS I

MO3-L2.1: MONITORING AND MODELING TAILINGS IMPOUNDMENT SETTLEMENT NEAR GREAT SALT LAKE (UTAH) USING MULTI-PLATFORM TIME-SERIES INSAR OBSERVATIONS 40

Xie Hu, Zhong Lu, Southern Methodist University; Thomas Oommen, Michigan Technological University; Teng Wang, Jin-Woo Kim, Southern Methodist University

MO3-L2.2: EVALUATION OF THE LAND SURFACE REFLECTANCE FUNDAMENTAL CLIMATE DATA RECORD 44

Jean-Claude Roger, University of Maryland; Eric Vermote, NASA Goddard Space Flight Center; Sergii Skakun, Emilie Murphy, University of Maryland; Brent Holben, NASA Goddard Space Flight Center; Christopher Justice, University of Maryland

MO3-L2.3: SYNTHESIZING REMOTE SENSING IMAGES BY CONDITIONAL ADVERSARIAL NETWORKS 48

Dao-Yu Lin, Yang Wang, Guang-Luan Xu, Kun Fu, Chinese Academy of Sciences

MO3-L2.4: VIIRS LAND SURFACE ALBEDO PRODUCT: ALGORITHM DEVELOPMENT AND VALIDATION 51

Yuan Zhou, Dongdong Wang, University of Maryland; Yunyue Yu, National Oceanic and Atmospheric Administration; Shunlin Liang, University of Maryland

MO3-L2.5: REMOTELY SENSED SURFACE CHARACTERISTICS OF THREE DESERTS IN THE ALXA PLATEAU, INNER MONGOLIA, CHINA 55

Qingsheng Liu, Gaohuan Liu, Chong Huang, Yunjie Zhang, Yushan Guo, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

MO4-L2: LAND USE APPLICATIONS II

MO4-L2.1: SPATIAL HETEROGENEITY AND SOCIOECONOMIC PATTERNS: IDENTIFYING THE IMPACT OF URBAN CENTER ON FOREST FRAGMENTATION 59

Junmei Tang, Liping Di, George Mason University; Jingfeng Xiao, University of New Hampshire

MO4-L2.2: OBJECT-BASED LAND COVER MAPPING USING ADAPTIVE SCALE SEGMENTATION FROM ZY-3 SATELLITE IMAGES 63

Ya 'Nan Zhou, Li Feng, Yuehong Chen, Hohai University; Jun Li, China University of Mining and Technology, Beijing

MO4-L2.3: TEMPORAL DEFORMATION OF WINK SINKHOLES IN WEST TEXAS OBSERVED BY SPACEBORNE SAR IMAGERY 67

Jin-Woo Kim, Zhong Lu, Southern Methodist University

MO4-L2.4: NEW FAULTS DETECTION BY MULTI-TEMPORAL INSAR OVER GREATER HOUSTON, TEXAS 71

Feifei Qu, Zhong Lu, Jin-Woo Kim, Southern Methodist University

MO4-L2.5: A MULTI-ANGLE ANALYSIS ON DEVELOPMENT OF MODERN PERI-URBAN AGRICULTURAL AREAS IN CHINA: A CASE STUDY OF BEIJING 75

Linjun Yu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Zhijun Song, Miyun Campus of Capital University of Economics and Business, Beijing 101500, China

MO3-L3: CROSS TRACK AND ALONG TRACK INSAR METHODS

MO3-L3.1: TERRAIN EFFECT CORRECTION METHOD FOR INSAR ILU IMAGE 79

Lei Zhao, Erxue Chen, Zengyuan Li, Institute of Forest Resources Information Technique, Chinese Academy of Forestry; Wangfei Zhang, Southwest Forestry University; Xinzhi Gu, Yaxiong Fan, Institute of Forest Resources Information Technique, Chinese Academy of Forestry

MO3-L3.2: PROPOSAL OF PIXEL-BY-PIXEL OPTIMIZATION OF SCATTERING MECHANISM	83
VECTORS IN POLINSAR TO GENERATE ACCURATE DIGITAL ELEVATION MODEL	
<i>Tomoharu Shimada, Akira Hirose, The University of Tokyo</i>	
MO3-L3.3: OPTIMUM SPLIT-BAND PARAMETERS FOR PHASE OFFSET RETRIEVAL	87
<i>Ludivine Libert, Dominique Derauw, Christian Barbier, Centre Spatial de Liège</i>	
MO3-L3.4: AN INTERFEROMETRIC APPROACH TO OCEAN SURFACE VELOCITY IMAGING	91
USING MULTI-CHANNEL SAR	
<i>Mark Sletten, Jakov Toporkov, US Naval Research Laboratory</i>	
MO3-L3.5: ANALYSIS OF VELOCITY AND ATTITUDE ERROR IN ALONG-TRACK	95
INTERFEROMETRIC FMCW SAR	
<i>Huazeng Deng, Gordon Farquharson, University of Washington; Mikhail Balaban, Aleksey Korovotniy, Yuriy Goncharenko, O.Ya. Usikov Institute for Radiophysics and Electronics of NASU</i>	
MO4-L3: MULTI-SATELLITE CROSS-TRACK INTERFEROMETRY	
MO4-L3.1: TANDEM-X FOREST HEIGHT IN MOUNTAINOUS TERRAIN OF BC, CANADA	99
<i>Hao Chen, Pacific Forestry Centre; Shane Cloude, AELc; David G. Goodenough, University of Victoria; David Hill, Andrea Nesdoly, Pacific Forestry Centre</i>	
MO4-L3.2: NONLOCAL INSAR FILTERING FOR HIGH RESOLUTION DEM GENERATION	103
FROM TANDEM-X INTERFEROGRAMS	
<i>Gerald Baier, Cristian Rossi, Marie Lachaise, Xiao Xiang Zhu, Richard Bamler, German Aerospace Center (DLR)</i>	
MO4-L3.3: SESAME: A SINGLE-PASS INTERFEROMETRIC SENTINEL-1 COMPANION SAR	107
MISSION FOR MONITORING GEO- AND BIOSPHERE DYNAMICS	
<i>Helmut Rott, ENVEO IT GmbH; Paco López-Dekker, Delft University of Technology; Svein Solberg, Norwegian National Forest Inventory, NIBIO; Lars Ulander, Chalmers University of Technology; Thomas Nagler, ENVEO IT GmbH; Gerhard Krieger, Pau Prats-Iraola, Marc Rodriguez, Mariantonietta Zonno, Alberto Moreira, German Aerospace Center (DLR)</i>	
MO4-L3.4: SAOCOM-CS BISTATIC PHASE CALIBRATION AND TOMOGRAPHIC	111
PERFORMANCE ANALYSIS	
<i>Mario Azcueta, Stefano Tebaldini, Politecnico di Milano</i>	
MO4-L3.5: EXPERIMENTAL DESIGN AND DATA PROCESSING OF TWIN GEO SAR	115
INTERFEROMETRY BASED ON BEIDOU IGSO SATELLITES	
<i>Cheng Hu, Bin Zhang, Xichao Dong, Chang Cui, Feifeng Liu, Beijing Institute of Technology</i>	
MO3-L4: COMPANION SAR MISSIONS I	
MO3-L4.1: COMPANION SAR CONSTELLATIONS FOR SINGLE-PASS INTERFEROMETRIC	119
APPLICATIONS: THE SESAME MISSION	
<i>Paco López-Dekker, Delft University of Technology; Helmut Rott, University of Innsbruck; Svein Solberg, Norwegian National Forest Inventory; Mariantonietta Zonno, Marc Rodriguez-Cassola, Pau Prats-Iraola, Alberto Moreira, German Aerospace Center (DLR)</i>	
MO3-L4.2: THE SAOCOM-CS MISSION: ESA'S FIRST BISTATIC AND TOMOGRAPHIC	123
L-BAND MISSION	
<i>Klaus Scipal, Malcolm W. J. Davidson, European Space Agency (ESA)</i>	
MO3-L4.3: BISTATIC RADAR WITH LARGE BASELINE FOR BIO-GEOPHYSICAL PARAMETER	125
RETRIEVAL	
<i>Nazzareno Pierdicca, Sapienza University of Rome; Leila Guerriero, Tor Vergata University of Rome; Davide Comite, Sapienza University of Rome; Marco Brogioni, Simonetta Paloscia, Consiglio Nazionale delle Ricerche (CNR)</i>	

MO3-L4.4: SPACEBORNE DEMONSTRATION OF COHERENT SAR TOMOGRAPHY FOR FUTURE COMPANION SATELLITE SAR MISSIONS	129
<i>Matteo Nannini, Michele Martone, Paola Rizzoli, Pau Prats-Iraola, Marc Rodriguez-Cassola, Alberto Moreira, German Aerospace Center (DLR)</i>	
MO3-L4.5: SAR TOMOGRAPHY FROM BISTATIC SINGLE-PASS INTERFEROMETERS	133
<i>Stefano Tebaldini, Politecnico di Milano; Laurent Ferro-Famil, Université de Rennes 1</i>	
MO4-L4: COMPANION SAR MISSIONS II	
MO4-L4.1: PASSIVE RECEIVE-ONLY SAR PAYLOAD FOR SAOCOM CS MISSION	137
<i>Andrés Solana, Albert Zurita, Fernando Monjas, Paula Saameño, Josep Closa, Isabel Martín, Airbus Defence and Space SAU</i>	
MO4-L4.2: COMPANION SAR MISSIONS: SCIENTIFIC RATIONALE AND TECHNICAL CHALLENGES	141
<i>Paco López-Dekker, Delft University of Technology; Pau Prats-Iraola, Marc Rodriguez-Cassola, German Aerospace Center (DLR); Bernardo Carnicero-Dominguez, European Space Agency (ESA)</i>	
MO4-L4.3: TECHNICAL ASPECTS IN SAR IMAGE FORMATION AND INTERFEROMETRIC PROCESSING OF COMPANION SATELLITE SAR MISSIONS	145
<i>Pau Prats-Iraola, Marc Rodriguez-Cassola, German Aerospace Center (DLR); Paco López-Dekker, Delft University of Technology; Mariantonietta Zonno, Nestor Yague-Martinez, Matteo Nannini, German Aerospace Center (DLR)</i>	
MO4-L4.4: MIRRORSAR: A FRACTIONATED SPACE RADAR FOR BISTATIC, MULTISTATIC AND HIGH-RESOLUTION WIDE-SWATH SAR IMAGING	149
<i>Gerhard Krieger, Mariantonietta Zonno, Marc Rodriguez-Cassola, Paco López-Dekker, Josef Mittermayer, Marwan Younis, Sigurd Huber, Michelangelo Villano, Felipe Queiroz de Almeida, Pau Prats-Iraola, Alberto Moreira, German Aerospace Center (DLR)</i>	
MO4-L4.5: END-TO-END PERFORMANCE ANALYSIS OF COMPANION SAR MISSIONS	153
<i>Marc Rodriguez-Cassola, Pau Prats-Iraola, Mariantonietta Zonno, Matteo Nannini, German Aerospace Center (DLR); Paco López-Dekker, TU Delft; Bernardo Carnicero-Dominguez, Bjoern Rommen, European Space Agency (ESA); Alberto Moreira, German Aerospace Center (DLR)</i>	
MO3-L5: CHANGE DETECTION IN HYPERSPECTRAL AND MULTISPECTRAL IMAGES I	
MO3-L5.1: CHANGE DETECTION IN HYPERSPECTRAL IMAGERY BASED ON SPECTRALLY-SPATIALLY REGULARIZED LOW-RANK MATRIX DECOMPOSITION	157
<i>Zhao Chen, Donghua University; Bin Yang, Bin Wang, Fudan University; Guohua Liu, Donghua University; Wei Xia, China Transport Telecommunications & Information Center</i>	
MO3-L5.2: A NOVEL CHANGE DETECTION METHOD FOR MULTITEMPORAL HYPERSPECTRAL IMAGES BASED ON A DISCRETE REPRESENTATION OF THE CHANGE INFORMATION	161
<i>Daniele Marinelli, University of Trento; Francesca Bovolo, Fondazione Bruno Kessler; Lorenzo Bruzzone, University of Trento</i>	
MO3-L5.3: MONITORING DEFORESTATION AND FOREST DEGRADATION USING MULTI-TEMPORAL FRACTION IMAGES DERIVED FROM LANDSAT SENSOR DATA IN THE BRAZILIAN AMAZON	165
<i>Yosio Edemir Shimabukuro, Egidio Arai, Erone Ghizoni dos Santos, Anderson Jorge, Instituto Nacional de Pesquisas Espaciais</i>	
MO3-L5.4: A SPECTRAL-SPATIAL MULTISCALE APPROACH FOR UNSUPERVISED MULTIPLE CHANGE DETECTION	169
<i>Sicong Liu, Tongji University; Qian Du, Mississippi State University; Xiaohua Tong, Tongji University; Alim Samat, Chinese Academy of Sciences; Lorenzo Bruzzone, University of Trento; Francesca Bovolo, Fondazione Bruno Kessler</i>	

MO3-L5.5: A NOVEL SEMISUPERVISED FRAMEWORK FOR MULTIPLE CHANGE DETECTION IN HYPERSPECTRAL IMAGES	173
<i>Sicong Liu, Xiaohua Tong, Tongji University; Lorenzo Bruzzone, University of Trento; Peijun Du, Nanjing University</i>	
MO4-L5: CHANGE DETECTION IN SAR IMAGES I	
MO4-L5.1: DETECTION OF AUFEIS-RELATED FLOOD AREAS IN A TIME SERIES OF HIGH RESOLUTION SAR IMAGES USING CURVELET TRANSFORM AND UNSUPERVISED CLASSIFICATION	177
<i>Olaniyi A Ajadi, Franz J Meyer, University of Alaska Fairbanks; Anna Liljedahl, Water and Environmental Research Center, University of Alaska Fairbanks</i>	
MO4-L5.2: STABLE FEATURE POINT EXTRACTION FOR ACCURATE MULTI-TEMPORAL SAR IMAGE REGISTRATION	181
<i>Huai Yu, Yan Liu, Li Li, Wen Yang, Mingsheng Liao, Wuhan University</i>	
MO4-L5.3: CHANGE DETECTION APPROACH ON MULTITEMPORAL RADARSAT-1 SAR IMAGERY FOR PORT SURVEILLANCE	185
<i>Na Li, TianHui Satellite Center of China; Fang Liu, National University of Defense Technology; Lei Qiu, Beijing Institute of tracking and Telecommunication Technology</i>	
MO4-L5.4: DAMAGE MAPPING BASED ON COHERENCE MODEL USING MULTI-TEMPORAL POLARIMETRIC-INTERFEROMETRIC UAVSAR DATA	189
<i>Jungkyo Jung, Duk-Jin Kim, Seoul National University; Sang-ho Yun, Marco Lavallo, Jet Propulsion Laboratory</i>	
MO4-L5.5: IMPROVING FLOOD MAPPING IN ARID AREAS USING SENTINEL-1 TIME SERIES DATA	193
<i>Sandro Martinis, German Aerospace Center (DLR)</i>	
MO3-L6: SPECTRAL UNMIXING TECHNIQUES I	
MO3-L6.1: ON THE DIRECT ASSESSMENT OF ENDMEMBER FRACTIONS IN HYPERSPECTRAL IMAGES	197
<i>Andrea Marinoni, Paolo Gamba, University of Pavia</i>	
MO3-L6.2: AN INTRODUCTION TO ABUNDANCE MAP REFERENCE DATA, WITH APPLICATIONS IN SPECTRAL UNMIXING	201
<i>Mckay Williams, Kelly Patterson, John Kerekes, Jan van Aardt, Rochester Institute of Technology</i>	
MO3-L6.3: NONNEGATIVE SPARSE AUTOENCODER FOR ROBUST ENDMEMBER EXTRACTION FROM REMOTELY SENSED HYPERSPECTRAL IMAGES	205
<i>Yuanchao Su, Sun Yat-sen University; Andrea Marinoni, Università degli Studi di Pavia; Jun Li, Sun Yat-sen University; Antonio Plaza, University of Extremadura; Paolo Gamba, Università degli Studi di Pavia</i>	
MO3-L6.4: SPECTRAL UNMIXING THROUGH PART-BASED NON-NEGATIVE CONSTRAINT DENOISING AUTOENCODER	209
<i>Ying Qu, Rui Guo, Hairong Qi, The University of Tennessee</i>	
MO3-L6.5: PIXEL PURITY VERTEX COMPONENT ANALYSIS	213
<i>Rob Heylen, University of Antwerp; Mario Parente, University of Massachusetts; Paul Scheunders, University of Antwerp</i>	
MO4-L6: SPECTRAL UNMIXING TECHNIQUES II	
MO4-L6.1: FAST MULTITEMPORAL HYPERSPECTRAL UNMIXING	217
<i>Jakob Sigurdsson, Magnús Úlfarsson, Jóhannes Sveinsson, University of Iceland</i>	

MO4-L6.2: KALMAN PARTICLE FILTERING ALGORITHM AND ITS COMPARISON TO KALMAN BASED LINEAR UNMIXING	221
<i>Sumit Chakravarty, Kennesaw state university; Madhushri Banerjee, Georgia Gwinnett College; Chih-Cheng Hung, Kennesaw state university</i>	
MO4-L6.3: SPATIAL WEIGHTED SPARSE REGRESSION FOR HYPERSPECTRAL IMAGE UNMIXING	225
<i>Shaoquan Zhang, Jun Li, Sun Yat-sen University; Javier Plaza, University of Extremadura; Heng-Chao Li, Southwest Jiaotong University; Antonio Plaza, University of Extremadura</i>	
MO4-L6.4: SPARSE AND LOW RANK HYPERSPECTRAL UNMIXING	229
<i>Jakob Sigurdsson, Magnús Úlfarsson, Jóhannes Sveinsson, University of Iceland</i>	
MO4-L6.5: USING TIME SERIES TO IMPROVE ENDMEMBERS ESTIMATION ON MULTISPECTRAL IMAGES FOR SNOW MONITORING	233
<i>Théo Masson, Mauro Dalla Mura, GIPSA-lab; Marie Dumont, Météo-France-CNRS; Jocelyn Chanussot, GIPSA-lab</i>	
 MO3-L7: MICROWAVE RADIOMETER CALIBRATION I	
MO3-L7.1: THE ULTRA-WIDEBAND SOFTWARE DEFINED MICROWAVE RADIOMETER (UWBRAD) FOR ICE SHEET SUBSURFACE TEMPERATURE SENSING: CALIBRATION AND CAMPAIGN RESULTS	237
<i>Mark Andrews, Hongkun Li, Joel Johnson, Kenneth Jezek, Alexandra Bringer, Caglar Yardim, Chi-Chih Chen, Domenic Belgiovane, The Ohio State University; Vladimir Leuski, Microwave Radiometers and Antennas; Michael Durand, Yuna Duan, The Ohio State University; Giovanni Macelloni, Marco Brogioni, National Research Council (CNR); Shurun Tan, Leung Tsang, University of Michigan</i>	
MO3-L7.2: POLARIMETRIC CALIBRATION OF THE SMAP L-BAND RADIOMETER USING COLD-SKY CALIBRATION MANEUVERS	241
<i>Sidharth Misra, Shannon T. Brown, Jet Propulsion Laboratory, California Institute of Technology</i>	
MO3-L7.3: VALIDATE AND IMPROVE ATMS GEOLOCATION ACCURACY BY USING LUNAR OBSERVATIONS	244
<i>Jun Zhou, Hu Yang, University of Maryland; Fuzhong Weng, National Oceanic and Atmospheric Administration</i>	
MO3-L7.4: TOWARDS DEVELOPING A LONG-TERM HIGH-QUALITY INTERCALIBRATED TRMM/GPM RADIOMETER DATASET	248
<i>Wesley Berg, Colorado State University</i>	
MO3-L7.5: CALIBRATION OF HURRICANE IMAGING RADIOMETER C-BAND RECEIVERS	251
<i>Sayak Biswas, USRA/NASA MSFC; Daniel Cecil, Mark James, NASA Marshall Space Flight Center</i>	
 MO4-L7: SYNTHETIC APERTURE MICROWAVE RADIOMETERS II	
MO4-L7.1: LESSONS LEARNT FROM SMOS AFTER 7 YEARS IN ORBIT	255
<i>Manuel Martín-Neira, Roger Oliva, European Space Agency (ESA); Ignasi Corbella, Francesc Torres, Nuria Duffo, Israel Durán, Universitat Politècnica de Catalunya; Juha Kainulainen, HarpTechnologies; Josep Closa, Alberto Zurita, EADS-CASA Espacio; François Cabot, Ali Khazaal, Center for the Study of the Biosphere from Space; Eric Anterrieu, IRAP; José Barbosa, RDA; Gonçalo Lopes, DEIMOS; Joseph Tenerelli, OceanDataLab; Raúl Díez-García, IDEAS; Jorge Fauste, European Space Agency (ESA); Verónica González-Gambau, Antonio Turiel, SMOS BEC & Institute of Marine Sciences; Steven Delwart, Raffaele Crapolicchio, Martin Suess, Susanne Mecklenburg, Matthias Drusch, Roberto Sabia, Elena Daganzo-Eusebio, European Space Agency (ESA); Yann Kerr, Center for the Study of the Biosphere from Space; Nicolas Reul, IFREMER</i>	
MO4-L7.2: GEOSTATIONARY ATMOSPHERIC SOUNDING BY FORMATION FLIGHT APERTURE SYNTHESIS	259
<i>Ahmed Kiyoshi Sugihara El Maghraby, Angelo Grubisic, University of Southampton; Camilla Colombo, Politecnico di Milano; Adrian Tatnall, University of Southampton</i>	

MO4-L7.3: FEASIBILITY OF RFI MITIGATION IN SYNTHETIC APERTURE RADIOMETRY 263 BASED ON SUBSPACE SPATIAL FILTERING <i>Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya; Verónica González-Gambau, Institute of Marine Science; Mercè Vall-Ilossera, Universitat Politècnica de Catalunya</i>	263
MO4-L7.4: RADIOMETER DEVELOPMENT FOR SMALL SATELLITE MICROWAVE 267 ATMOSPHERIC REMOTE SENSING <i>William Blackwell, Massachusetts Institute of Technology Lincoln Laboratory</i>	267
MO4-L7.5: STEPPED FREQUENCY MICROWAVE RADIOMETER RETRIEVAL ERROR 271 CHARACTERIZATION <i>Joseph Sapp, Suleiman Alsweiss, Zorana Jelenak, Paul Chang, National Oceanic and Atmospheric Administration</i>	271
 MO3-L8: NEW GEO/LEO MISSION ADVANCED IMAGERY PRODUCTS: OPTICAL SENSOR CALIBRATION AND APPLICATIONS I	
MO3-L8.1: GOES-R ABI ON-ORBIT PERFORMANCE 275 <i>Paul Griffith, John Van Naarden, Luke Roop, Daniel Gall, Harris Corporation</i>	275
MO3-L8.2: CHARACTERIZING THE GOES-R (GOES-16) GEOSTATIONARY LIGHTNING 279 MAPPER (GLM) ON-ORBIT PERFORMANCE <i>Scott Rudlosky, NOAA/NESDIS/STAR; Steven Goodman, NOAA/NESDIS/GOES-R; William Koshak, Richard Blakeslee, NASA Marshall Space Flight Center; Dennis Buechler, University of Alabama in Huntsville; Douglas Mach, Monte Bateman, United Space Research Alliance</i>	279
MO3-L8.3: LATEST ASSESSMENT OF GOES-R (16) ADVANCED BASELINE IMAGER (ABI) DATA 283 QUALITY FROM AN APPLICATION AND TRAINING PERSPECTIVE <i>Scott Lindstrom, CIMSS; Timothy J. Schmit, NOAA; Mathew M. Gunshor, CIMSS; Jaime Daniels, NOAA; Kaba Bah, CIMSS; Steven J. Goodman, GOES-R Program Office</i>	283
MO3-L8.4: STRAY LIGHT PERFORMANCE COMPARISON BETWEEN HIMAWARI-8 AHI AND 286 GOES-16 ABI <i>Xi Shao, ERT Inc.; Xiangqian Wu, NOAA/NESDIS/STAR; Fangfang Yu, ERT Inc.</i>	286
MO3-L8.5: DIRECT ASSIMILATION OF AHI AND ABI INFRARED RADIANCES IN NWP 290 MODELS <i>Xiaolei Zou, University of Maryland; Fuzhong Weng, NOAA; Zhengkun Qin, Nanjing University of Information Science and Technology</i>	290
 MO4-L8: NEW GEO/LEO MISSION ADVANCED IMAGERY PRODUCTS: OPTICAL SENSOR CALIBRATION AND APPLICATIONS II	
MO4-L8.1: REPROCESSING OF SUOMI NPP VIIRS SENSOR DATA RECORDS AND IMPACTS 293 ON ENVIRONMENTAL APPLICATIONS <i>Fuzhong Weng, Satellite Meteorology and Climatology Division; Taeyoung Choi, ERT Inc; Changyong Cao, Bin Zhang, NOAA</i>	293
MO4-L8.2: CLARREO PATHFINDER: ON-ORBIT DATA MATCHING AND SENSOR 297 INTER-CALIBRATION <i>Constantine Lukashin, NASA; Danie Goldin, SSAI; Craig Hutchinson, Carlos Roithmayr, NASA; Wenbo Sun, SSAI; Kurtis Thome, Bruce Wielicki, NASA; Aisheng Wu, Sigma Space Corporation; Xiaoxiong Xiong, NASA</i>	297
MO4-L8.3: GOES-R ADVANCED BASELINE IMAGER (ABI) AND GEOSTATIONARY 301 LIGHTNING MAPPER (GLM) CALIBRATION/VALIDATION FROM A FIELD CAMPAIGN PERSPECTIVE <i>Francis Padula, GeoThinkTank LLC; Steven J. Goodman, NOAA/NESDIS GOES-R Program Office; Aaron Pearlman, GeoThinkTank LLC; Changyong Cao, NOAA/NESDIS/STAR</i>	301

MO4-L8.4: EVALUATION OF GOES-16 ABI ON-ORBIT PERFORMANCE USING GSICS.....	305
<i>Xiangqian Wu, Fangfang Yu, Vladimir Kondratovich, Boryana Efremova, Xi Shao, Robert Iacovazzi, Changyong Cao, NOAA/STAR</i>	
MO4-L8.5: STATUS OF COPERNICUS SENTINEL-2A AND SENTINEL-3A OPTICAL CALIBRATION AND VALIDATION ACTIVITIES	308
<i>Philippe Goryl, Jens Nieke, Steffen Dransfeld, Susanne Mecklenburg, Bruno Berruti, Craig Donlon, Ferran Gascon, Bianca Hoersch, European Space Agency (ESA)</i>	
MO3-L9: ACTIVE/PASSIVE SNOW AND ICE	
MO3-L9.1: INTEGRATION OF SATELLITE-BASED PASSIVE MICROWAVE BRIGHTNESS TEMPERATURE OBSERVATIONS AND AN ENSEMBLE-BASED LAND DATA ASSIMILATION FRAMEWORK TO IMPROVE SNOW ESTIMATION IN FORESTED REGIONS	311
<i>Yuan Xue, Barton Forman, University of Maryland</i>	
MO3-L9.2: METEOROLOGICAL INVENTORY OF RAIN-ON-SNOW EVENTS AND DETECTION ASSESSMENT IN THE CANADIAN ARCTIC ARCHIPELAGO USING PASSIVE MICROWAVE RADIOMETRY	315
<i>Caroline Dolant, Alexandre Langlois, University of Sherbrooke; Ludovic Brucker, NASA Goddard Space Flight Center; Alain Royer, Alexandre Roy, Benoit Montpetit, University of Sherbrooke</i>	
MO3-L9.3: LONG TERM CHANGES IN NORTHERN HEMISPHERE SNOW COVER FROM SWE TIMESERIES CONSTRAINED WITH SE DATA	319
<i>Kari Luojus, Finnish Meteorological Institute; Elisabeth Ripper, ENVEO IT GmbH; Jouni Pulliainen, Juval Cohen, Jaakko Ikonen, Matias Takala, Juha Lemmetyinen, Finnish Meteorological Institute; Thomas Nagler, Gabriele Schwaizer, ENVEO IT GmbH; Chris Derksen, Environment Canada; Bojan Bojkov, EUMETSAT; Michael Kern, European Space Agency (ESA)</i>	
MO3-L9.4: VALIDATION OF PHYSICAL MODEL AND RADAR RETRIEVAL ALGORITHM OF SNOW WATER EQUIVALENT USING SNOWSAR DATA	322
<i>Jiyue Zhu, Shurun Tan, University of Michigan; Chuan Xiong, Chinese Academy of Sciences; Leung Tsang, University of Michigan; Juha Lemmetyinen, Finnish Meteorological Institute; Chris Derksen, Joshua King, Environment and Climate Change Canada</i>	
MO3-L9.5: MAPPING SNOW-DEPTH USING KA-BAND INSAR: CALIBRATION AND VALIDATION DURING SNOWEX	326
<i>Delwyn Moller, Remote Sensing Solutions; Scott Hensley, Kathryn Bormann, Jet Propulsion Laboratory, California Institute of Technology; Jeffrey S. Deems, National Snow and Ice Data Center; Konstantinos Andreadis, Thomas H. Painter, Jet Propulsion Laboratory, California Institute of Technology</i>	
MO4-L9: SEA ICE	
MO4-L9.1: FEATURE TRACKING FOR SEA ICE DRIFT RETRIEVAL FROM SAR IMAGES.....	330
<i>Denis Demchev, Vladimir Volkov, Eduard Kazakov, Nansen International Environmental and Remote Sensing Center; Stein Sandven, Nansen Environmental and Remote Sensing Center</i>	
MO4-L9.2: SEA ICE SEGMENTATION USING TANDEM-X PURSUIT MONOSTATIC AND ALTERNATIVE BISTATIC MODES	334
<i>Temesgen Gebrie Yitayew, Anthony Paul Doulgeris, Torbjorn Eltoft, UiT The Arctic University of Norway; Wolfgang Dierking, AWI, Alfred Wegener Institute, Germany; Camilla Brekke, UiT The Arctic University of Norway; Anja Rosel, NPI, Norwegian Polar Institute</i>	
MO4-L9.3: EVALUATION OF POLARIMETRIC FEATURES FOR SEA ICE CHARACTERIZATION AT X, C AND L- BAND SAR	338
<i>Suman Singha, German Aerospace Center (DLR)</i>	

MO4-L9.4: HIGH RESOLUTION SEA ICE DRIFT ESTIMATION USING COMBINED TERRASAR-X AND RADARSAT-2 DATA: FIRST TESTS	342
<i>Anja Frost, Sven Jacobsen, Suman Singha, German Aerospace Center (DLR)</i>	
MO4-L9.5: MULTI-FREQUENCY MICROWAVE BACKSCATTER INDICES FROM SALINE SNOW COVERS ON SMOOTH FIRST-YEAR SEA ICE	346
<i>Vishnu Nandan, Torsten Geldsetzer, Mallik Mahmud, John Yackel, Mark Fuller, Jagvijay Gill, Saroat Ramjan, University of Calgary</i>	
MO3-L10: SPECIAL THEME: EMERGING INDUSTRY REMOTE SENSING ACTIVITIES	
MO3-L10.1: THE PHENOMENOLOGY OF RADAR BACKSCATTERING RESPONSE OF VEHICLES AT 222 GHZ	350
<i>Abdulrahman Alaqeel, Amr Ibrahim, Adib Nashashibi, Kamal Sarabandi, The University of Michigan; Hussein Shaman, King Abdulaziz City for Science and Technology</i>	
MO3-L10.2: FABSPACE 2.0: THE OPEN-INNOVATION NETWORK FOR GEODATA-DRIVEN INNOVATION	353
<i>Fabio Del Frate, University of Rome Tor Vergata; Josiane Mothe, University of Toulouse; Christian Barbier, University of Liège; Matthias Becker, Darmstadt Technical University; Robert Olszewski, Warsaw University of Technology; Dimitrios Soudris, Institute of Communications and Computer Systems</i>	
MO3-L10.4: A NOVEL TELEMETRY TECHNIQUE FOR EMPOWERING SMART DIRECTIONAL BOREHOLE DRILLING SYSTEMS	361
<i>Sayed Mohammad Amjadi, Kamal Sarabandi, The University of Michigan</i>	
MO3-L10.5: DIELECTRIC CHARACTERIZATION OF GEOCHEMICAL PROPERTIES OF CRUDE OILS AND GAS CONDENSATE AT 25°C	365
<i>Jose Oliverio Alvarez, David Jacobi, Greg Bernero, Aramco Services Company: Aramco Research Center - Houston</i>	
MO4-L10: INTELLIGENCE FOR BIG GEOSPATIAL DATA	
MO4-L10.1: CUMULUS: NASA'S CLOUD BASED DISTRIBUTED ACTIVE ARCHIVE CENTER PROTOTYPE	369
<i>Rahul Ramachandran, NASA Marshall Space Flight Center; Katie Baynes, NASA Goddard Space Flight Center; Kevin Murphy, NASA Headquarters; Alireza Jazayeri, Development Seed; Ian Shuler, Development Seed; Dan Pilone, Element84</i>	
MO4-L10.2: A STREAM COMPUTING BASED APPROACH FOR UPDATING WATERLOGGING INFORMATION ON REMOTE SENSING IMAGES	373
<i>Boyi Shangguan, Peng Yue, Zhaoyan Wu, Wuhan University</i>	
MO4-L10.3: DEEP WEB CRAWLING FOR INSIGHTS FROM POLAR DATA	376
<i>SiriJodha Khalsa, University of Colorado; Chris Mattmann, NASA; Ruth Duerr, Ronin Institute for Independent Scholarship</i>	
MO4-L10.4: ADVANCES IN FUSION OF BIG GEOSPATIAL DATA	380
<i>George Percivall, Trevor Taylor, Open Geospatial Consortium</i>	
MO4-L10.5: LATENCY ANALYSIS OF LARGE VOLUME SATELLITE DATA TRANSMISSIONS	384
<i>Weiguo Han, University Corporation for Atmospheric Research; Matthew Jochum, National Oceanic and Atmospheric Administration</i>	
MO3-L11: OCEAN SURFACE WIND	
MO3-L11.2: ON THE USE OF SENTINEL-1 CROSS-POLARIZATION IMAGERY FOR WIND SPEED RETRIEVAL	392
<i>Frank Monaldo, Johns Hopkins University Applied Physics Laboratory; Christopher Jackson, Xiaofeng Li, GST</i>	

MO3-L11.3: ASYMMETRICAL WIND AND SURFACE MEAN SQUARE SLOPE CORRELATION OBSERVED IN HURRICANE IKE	396
<i>Scott Gleason, Southwest Research Institute; Valery Zavorotny, Edward J. Walsh, National Oceanic and Atmospheric Administration; Dennis Akos, Sara Hrbek, Dallas Masters, University of Colorado Boulder; Ivan PopStefanija, ProSensing Inc.; Michael Grant, NASA</i>	
MO3-L11.4: VALIDATION OF SMAP RADIOMETER EXTREME WIND SPEED DATA PRODUCT WITH RAPID SCATTEROMETER AND STEPPED FREQUENCY MICROWAVE RADIOMETER	398
<i>Alexander Fore, Simon Yueh, Wenqing Tang, Bryan Stiles, Akiko Hayashi, Jet Propulsion Laboratory</i>	
MO3-L11.5: ON THE IMPROVEMENT OF ASCAT WIND DATA ASSIMILATION IN GLOBAL NWP	402
<i>Wenming Lin, Marcos Portabella, Institute of Marine Sciences (ICM-CSIC); Ad Stoffelen, Royal Netherlands Meteorological Institute (KNMI); Giovanna De Chiara, European Center for Medium range Weather Forecasting (ECMWF); Justino Martínez, Institute of Marine Sciences (ICM-CSIC)</i>	
MO4-L11: OCEAN SURFACE CURRENT AND WAVE	
MO4-L11.1: LEARNING MULTI-TRACER CONVOLUTIONAL MODELS FOR THE RECONSTRUCTION OF HIGH-RESOLUTION SSH FIELDS	406
<i>Ronan Fablet, Manuel Lopez-Radcenno, IMT Atlantique; Jacques Verron, LGGE; Baptiste Mourre, SOCIB; Bertrand Chapron, Ifremer; LOPS; Ananda Pascual, IMEDEA</i>	
MO4-L11.2: NEARSHORE OCEAN SURFACE CURRENT ESTIMATION COMPARISON IN C-BAND AND KA-BAND	410
<i>Shadi Aslebagh, Gordon Farquharson, University of Washington; Ernesto Rodriguez, Dragana Perkovic-Martin, Jet Propulsion Laboratory</i>	
MO4-L11.4: PASSIVE REMOTE SENSING OF OCEANIC WHITECAPS: UPDATED GEOPHYSICAL MODEL FUNCTION	418
<i>Magdalena D. Anguelova, Michael H. Bettenhausen, Naval Research Laboratory; William F. Johnston, Computational Physics, Inc; Peter W. Gaiser, Naval Research Laboratory</i>	
MO3-L12: INTERNATIONAL SPACEBORNE IMAGING SPECTROSCOPY MISSIONS: UPDATES AND NEWS I	
MO3-L12.1: GLOBAL COVERAGE IMAGING SPECTROSCOPY	424
<i>Robert Green, Jet Propulsion Laboratory</i>	
MO3-L12.3: PERSPECTIVES ON CHINESE DEVELOPMENTS IN SPACEBORNE IMAGING SPECTROSCOPY: WHAT'S NEW IN 2016	427
<i>Lifu Zhang, Changping Huang, Xuejian Sun, Hang Yang, Xun Jian, RADI, CAS</i>	
MO3-L12.4: OVERVIEW OF THE PRISMA SPACE AND GROUND SEGMENT AND ITS HYPERSPECTRAL PRODUCTS	431
<i>Rocchina Guarini, Rosa Loizzo, Francesco Longo, Silvia Mari, Tiziana Scopa, Giancarlo Varacalli, Italian Space Agency</i>	
MO3-L12.5: QUANTITATIVE GLOBAL MAPPING OF TERRESTRIAL VEGETATION PHOTOSYNTHESIS: THE FLUORESCENCE EXPLORER (FLEX) MISSION	435
<i>Jose Moreno, University of Valencia; Roberto Colombo, University Milano Bicocca; Alexander Damm, University of Zurich; Yves Goulas, Centre National de la Recherche Scientifique (CNRS); Elizabeth M Middleton, NASA Goddard Space Flight Center; Franco Miglietta, National Research Council - CNR/IBIMET; Gina Mohammed, P & M Technologies; Matti Möttus, University of Helsinki; Peter North, University of Swansea; Uwe Rascher, Forschungszentrum Jülich; Christiaan van der Tol, University of Twente; Matthias Drusch, European Space Agency (ESA)</i>	

MO4-L12: INTERNATIONAL SPACEBORNE IMAGING SPECTROSCOPY MISSIONS: UPDATES AND NEWS II

MO4-L12.1: PREPARATORY ACTIVITIES FOR THE GERMAN SPACEBORNE IMAGING 439 SPECTROMETER MISSION ENMAP

Uta Heiden, Andreas Mueller, German Aerospace Center (DLR); Luis Guanter, Helmholtz Centre Potsdam - German Research Centre for Geosciences (GFZ); Tobias Storch, Sebastian Fischer, Godela Rossner, Martin Habermeyer, German Aerospace Center (DLR); Saskia Foerster, Karl Segl, Chlebek Christian, Hermann Kaufmann, Helmholtz Centre Potsdam - German Research Centre for Geosciences (GFZ)

MO4-L12.3: CURRENT STATUS OF HYPERSPECTRAL IMAGER SUITE (HISUI) ONBOARD 443 INTERNATIONAL SPACE STATION (ISS)

Tsuneo Matsunaga, National Institute for Environmental Studies; Akira Iwasaki, The University of Tokyo; Satoshi Tsuchida, Koki Iwao, National Institute of Advanced Industrial Science and Technology; Jun Tanii, Osamu Kashimura, Japan Space Systems; Ryosuke Nakamura, Hirokazu Yamamoto, Soushi Kato, Kenta Obata, National Institute of Advanced Industrial Science and Technology; Koichiro Mouri, Tetsushi Tachikawa, Japan Space Systems

MO4-L12.4: A SPACEBORNE COASTAL AND INLAND WATER COLOR HYPERSPECTRAL 447 IMAGER

Shen-En Qian, Martin Bergeron, Oleg Djazovski, Michael Maszkiewicz, Ralph Girard, Canadian Space Agency; Mary Kappus, Jeffrey Bowles, Naval Research Laboratory; Antonio Mannino, Adam Matuszeski, NASA Goddard Space Flight Center; Michael Furlong, Department of Fisheries and Oceans; Jean-Pierre Ardouin, Georges Fournier, Josee Levesque, Defence Research and Development Canada; Louis Moreau, Jean-Francois Lavigne, Julie Mandar, ABB Inc. Canada; Jennifer Busler, Gary Buttner, MacDonald, Dettwiler and Associates Ltd.

MO4-L12.5: THE NORTHSTAR SYSTEM – A NEW ERA IN EARTH OBSERVATION 451

Daniel O'Connell, NorStar Space Data, Inc. (NSDI); Derek Peddle, University of Lethbridge; Stewart Bain, Douglas Bancroft, NorStar Space Data, Inc. (NSDI); Kjell Stakkestad, KinetX, Inc.

MOP2-PA: SAR AND INSAR METHODS

MOP2-PA.2: INTERFEROMETRIC PROCESSING OF TERRASAR DATA FROM YUNNAN 459 MOUNTAINOUS AREA

Qingqing Feng, Huaping Xu, Zhefeng Wu, Yanan You, Beihang University

MOP2-PA.3: PRELIMINARY RESULT OF A NOVEL YAW AND PITCH ERROR ESTIMATION 463 METHOD FOR UAV-BASED FMCW INSAR

Xikai Fu, Maosheng Xiang, Bingnan Wang, Shuai Jiang, Jie Wang, Institute of Electronics, Chinese Academy of Sciences

MOP2-PA.5: FULLY THREE-DIMENSIONAL UAV SAR IMAGING WITH 470 MULTI-AZIMUTH-ANGLE OBSERVATION

Hui Kuang, Jie Chen, Wei Yang, Beihang University; Wei Liu, University of Sheffield; Xia Zhu, Institut of Beijing Remote Sensing Information

MOP2-PA.6: DIGITAL BEAM FORMING OF AZIMUTH DIRECTION FOR SAR IMAGE 474 PROCESSING

Yuya Yokota, Shohei Nakamura, Akira Karasawa, Masakazu Taniguchi, Shota Katayama, Yu Okada, Mitsubishi Electric Corporation

MOP2-PA.7: A HIGH-SPEED AND HIGH-PRECISION OPTICAL SYSTEM OF PHASED ARRAY 477 RADAR BEAMFORMING

Fang Wang, Lei Liu, Yesheng Gao, Xingzhao Liu, Shanghai Jiao Tong University

MOP2-PB: LIVING ENVIRONMENT: OBSERVATIONS AND ASSESSMENTS

MOP2-PB.1: HOW MANY PEOPLE DIED DUE TO PM2.5 AND WHERE THE MORTALITY RISKS INCREASED? A CASE STUDY IN BEIJING 485

Yuenan Li, Zhuo Chen, Jonathan Li, University of Waterloo

MOP2-PB.3: THE EFFECT OF SKEW UNDERWATER TOPOGRAPHY ON UNIDIRECTIONAL TIDAL CURRENT 489

Xiaozhen Wang, Zhejiang University; Huaguo Zhang, Weibing Guan, Bin Fu, Peng Chen, Second Institute of Oceanography, State Oceanic Administration

MOP2-PB.4: STUDY OF SPATIO-TEMPERAL REVOLUTION OF URBAN HEAT ISLAND AND ITS CLOUD EFFECT USING MODIS OBSERVATIONS 492

Ya Ma, Guihuan Liu, Chinese Academy for Environmental planning

MOP2-PC: CALIBRATION AND VALIDATION OF SPACE-BORNE IMAGING AND RADIOMETER SYSTEMS

MOP2-PC.1: DESTRIPIING PUSHBROOM SATELLITE IMAGING SYSTEMS WITH TOTAL VARIATION-L1/L2 METHOD 496

Konstantin Dragomiretskiy, University of California, Los Angeles; Igor Yanovsky, Jet Propulsion Laboratory

MOP2-PC.2: ANTENNA PATTERN ERROR CALIBRATION FOR L-BAND SYNTHETIC APERTURE RADIOMETER 500

Aili Zhang, Hao Liu, Ji Wu, Lin Wu, National Space Science Center; Chinese Academy of Sciences

MOP2-PC.3: RECALIBRATION OF HY-2A ATMOSPHERIC CORRECTION MICROWAVE RADIOMETER 504

Jin Zhao, Dehai Zhang, Zhenzhan Wang, Yun Li, Chinese Academy of Sciences

MOP2-PC.4: PLEIADES-HR IMAGE PRODUCTS 5 YEARS AFTER LAUNCH..... 508

Stéphanie Artigues, Danel Greslou, Simon Baillarin, CNES (Centre National d'Etudes Spatiales)

MOP2-PC.5: DEVELOPMENT OF LEVEL 2 CALIBRATION AND VALIDATION PLANS FOR GOES-R; WHAT IS A RIMP? 512

Thomas Kopp, Leslie Belsma, Andrew Mollner, Ziping Sun, Frank DeLuccia, The Aerospace Corporation

MOP2-PC.6: ASSESSING CALIBRATION STABILITY USING MOON OBSERVATIONS FROM MICROWAVE INSTRUMENTS 515

Hu Yang, University of Maryland; Fuzhong Weng, NOAA

MOP2-PC.8: ON-ORBIT PERFORMANCE OF HIGH TEMPERATURE NOISE SOURCE (HTS) FOR ADVANCED MICROWAVE SCANNING RADIOMETER 2 (AMSR2) ONBOARD THE GCOM-W SATELLITE 522

Takaaki Ishikawa, Tatsuhiko Noguchi, Shinichi Yokobori, Takeshi Ito, Masakazu Taniguchi, Yu Okada, Mitsubishi Electric Corporation; Marehito Kasahara, Japan Aerospace Exploration Agency

MOP2-PD: DEVELOPMENT OF ADVANCED REMOTE SENSING INSTRUMENTATION AND ITS APPLICATIONS

MOP2-PD.2: THE DEVELOPMENT AND DESIGN OF LAPAN'S IR CAMERA EQUIPPED WITH MICRO BOLOMETER SENSOR 530

Bustanul Arifin, Irwan Priyanto, Andi Mukhtar Tahir, Lembaga Penerbangan dan Antariksa Nasional

MOP2-PD.3: THE IMPROVED DESIGN FOR HY-2B RADAR ALTIMETER..... 534

Ke Xu, Peng Liu, CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center; Yueying Tang, CAS Key Laboratory of Microwave Remote Sensing; Xiufen Yu, CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center

MOP2-PD.4: STUDY ON LEO-LEO MICROWAVE OCCULTATION.....	538
<i>Congliang Liu, National Space Science Center; Gottfried Kirchengast, University of Graz; Yueqiang Sun, Qifei Du, Weihua Bai, National Space Science Center; Veronika Proschek, Wegener Center for Climate and Global Change; Xianyi Wang, Junming Xia, Xiangguang Meng, Dongwei Wang, Yuerong Cai, Danyang Zhao, Chunjun Wu, Wei Li, Cheng Liu, National Space Science Center</i>	
MOP2-PD.5: DEVELOPMENT AND INTEGRATION OF THE GROUND BASED MICAP SCATTEROMETER DEMONSTRATOR	542
<i>Caiyun Wang, Hao Liu, Xiangkun Zhang, Di Zhu, Chinese Academy of Sciences</i>	
MOP2-PD.6: AN AUTOMATIC ORTHORECTIFICATION APPROACH FOR THE TIME SERIES GF-4 GEOSTATIONARY SATELLITE IMAGES IN MOUNTAINOUS AREA	546
<i>Jinhu Bian, Ainong Li, Wei Zhao, Gaofei Yin, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences</i>	
MOP2-PD.7: RAINFALL RETRIEVAL OF TROPICAL CYCLONES USING FY-3B MICROWAVE RADIATION IMAGER (MWRI)	550
<i>Ruanyu Zhang, Zhenzhan Wang, Lanjie Zhang, Yun Li, Key Laboratory of Microwave Remote Sensing, National Space Science Center</i>	
MOP2-PE: CLASSIFICATION METHODS	
MOP2-PE.1: FUSION OF GENETIC-PROGRAMMING-BASED INDICES IN HYPERSPECTRAL IMAGE CLASSIFICATION TASKS	554
<i>Juan Hernández Albarraci'n, University of Campinas; Edemir Ferreira Jr, Jefersson Alex dos Santos, Universidade Federal de Minas Gerais; Ricardo Torres, University of Campinas</i>	
MOP2-PE.2: SHIP CLASSIFICATION WITH DEEP LEARNING USING COSMO-SKYMED SAR DATA	558
<i>Chao Wang, Hong Zhang, Fan Wu, Bo Zhang, Institute of Remote Remote Sensing and Digital Earth; Sirui Tian, Nanjing University of Science and Technology</i>	
MOP2-PE.3: EXTENDING OUT-OF-SAMPLE MANIFOLD LEARNING VIA META-MODELLING TECHNIQUES	562
<i>Gölsen Taskin, Istanbul Technical University; Melba Crawford, Purdue University</i>	
MOP2-PE.4: VISUAL DATA MINING APPLIED ON EARTH OBSERVATION DATASETS.....	566
<i>Andreea Griparis, Florin-Andrei Georgescu, Politehnica University of Bucharest; Mihai Datcu, German Aerospace Center (DLR)</i>	
MOP2-PE.5: A DYNAMIC HIERARCHICAL FEATURE SELECTION METHOD FOR OBJECT-BASED CLASSIFICATION OF WETLAND	570
<i>Sahel Mahdavi, Bahram Salehi, Meisam Amani, Jean Granger, C-CORE/ Memorial University of Newfoundland; Brian Brisco, Natural Resources Canada; Weimin Huang, Memorial University of Newfoundland</i>	
MOP2-PE.6: MULTIPLE SVMs BASED ON RANDOM SUBSPACES FROM KERNEL FEATURE IMPORTANCE FOR HYPERSPECTRAL IMAGE CLASSIFICATION	574
<i>Cheng-Hsuan Li, Pei-Jyun Hsieh, Bor-Chen Kuo, National Taichung University of Education</i>	
MOP2-PE.7: A NEW TEXTURE FEATURE SET FOR ULTRA-HIGH RESOLUTION SAR IMAGES	578
<i>Wenjin Wu, Xinwu Li, Huadong Guo, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Yue Fang, Beihang University</i>	
MOP2-PF: TARGET DETECTION AND UNMIXING OF HYPERSPECTRAL IMAGES II	
MOP2-PF.1: BILINEAR MIXTURE MODELS BASED UNSUPERVISED NONLINEAR UNMIXING USING CONSTRAINED NONNEGATIVE MATRIX FACTORIZATION	582
<i>Bin Yang, Bin Wang, Zongmin Wu, Qiyong Lu, Fudan University</i>	

MOP2-PF.2: ITERATIVE ANOMALY DETECTION	586
<i>Yulei Wang, Dalian Maritime University; Bai Xue, University of Maryland, Baltimore County; Lin Wang, Xidian University; Hsiao-Chi Li, Fu Jen Catholic University; Li-Chien Lee, University of Maryland, Baltimore County; Chunyan Yu, Meiping Song, Sen Li, Chein-I Chang, Dalian Maritime University</i>	
MOP2-PF.3: NONNEGATIVE MATRIX FACTORIZATION WITH DATA-GUIDED CONSTRAINTS	590
<i>Risheng Huang, Xiaorun Li, Zhejiang University; Liaoying Zhao, Hangzhou Dianzi University</i>	
MOP2-PF.4: A HIERARCHICAL SUPPORT TENSOR MACHINE STRUCTURE FOR TARGET	594
DETECTION ON HIGH-RESOLUTION REMOTE SENSING IMAGES	
<i>Hao Chen, Qinglong Ren, Ye Zhang, Harbin Institute of Technology</i>	
MOP2-PF.5: DIFFERENTIABLE SPARSE UNMIXING BASED ON BREGMAN DIVERGENCE	598
FOR HYPERSPECTRAL REMOTE SENSING IMAGERY	
<i>Ruyi Feng, Lizhe Wang, China University of Geosciences; Yanfei Zhong, Liangpei Zhang, Wuhan University</i>	
MOP2-PF.6: SUB-PIXEL INTELLIGENCE MAPPING CONSIDERING SPATIAL-TEMOPORAL	602
ATTRACTION FOR REMOTE SENSING IMAGERY	
<i>Da He, Yanfei Zhong, Ailong Ma, Liangpei Zhang, Wuhan University</i>	
MOP2-PF.7: A NOVEL APPROACH TO MOVING TARGETS SHADOW DETECTION IN	606
VIDEOSAR IMAGERY SEQUENCE	
<i>Ying Zhang, Xinhua Mao, He Yan, Daiyin Zhu, Xiaochen Hu, Nanjing University of Aeronautics and Astronautics</i>	
 MOP2-PG: CHANGE DETECTION APPLICATIONS	
MOP2-PG.1: LARGE FLOOD MAPPING USING SYNCRO WATER INDEX COUPLING WITH	610
HYDRO DATA AND TIME SERIES MODIS IMAGES	
<i>Young-joo Kwak, PWRI; Jonggeol Park, TUIS; Yoichi Iwami, PWRI</i>	
MOP2-PG.2: CHANGE DETECTION OF MARINE RECLAMATION USING MULTISPECTRAL	612
IMAGES VIA PATCH-BASED RECURRENT NEURAL NETWORK	
<i>Jie Geng, Dalian University of Technology; Jianchao Fan, National Marine Environmental Monitoring Center; Hongyu Wang, Xiaorui Ma, Dalian University of Technology</i>	
MOP2-PG.3: ASSESSING SNOW EXTENT VARIATIONS OF ILLIMANI MOUNTAIN WITH	616
LANDSAT NDSI	
<i>Jorge Antonio Silva Centeno, Edson Aparecido Mitishita, Regina Tiemy Kishi, Federal University of Paraná – UFPR</i>	
MOP2-PG.4: HIERARCHICAL CHANGE DETECTION FRAMEWORK FOR BIOMASS	620
MONITORING	
<i>Zexi Chen, Bharathkumar Ramachandra, Ranga Vatsavai, North Carolina State University</i>	
MOP2-PG.5: CHANGE DETECTION ASSESSMENT IN A TROPICAL FOREST USING	624
MULTISPECTRAL AND HYPERSPECTRAL IMAGES	
<i>Ernesto Reyes, Rita Jakelyn Abad, Julio Diaz, Vidya Manian, University of Puerto Rico</i>	
MOP2-PG.6: SEMI-ANALYTICAL APPROACH COMBINED& NEURAL NETWORK	628
TECHNOLOGY MODEL CHLOROPHYLL-A CONCENTRATION BY REMOTE SENSING	
<i>Dacheng Wang, Chinese Academy of Sciences; Xiaojing Yao, Chinese Academy of Sciences, Beijing; Shaolong Cui, Chi Tianhe, Lin Peng, Chinese Academy of Sciences</i>	
 MOP2-PH: TARGET DETECTION AND UNMIXING IN HYPERSPECTRAL IMAGES I	
MOP2-PH.1: SEGMENTATION-BASED CNMF FOR HYPERSPECTRAL UNMIXING	632
<i>Mohammed Alkhatib, Miguel Velez-Reyes, The University of Texas at El Paso</i>	

MOP2-PH.2: KERNEL AUTOMATIC TARGET GENERATION PROCESS.....	636
<i>Bai Xue, Dalian Maritime University; Shih-Yu Chen, National Yulin University of Science and Technology; Chunyuan Yu, Yulei Wang, Dalian Maritime University; Lin Wang, Xidian University; Meiping Song, Sen Li, Chein-I Chang, Dalian Maritime University</i>	
MOP2-PH.3: HYPERSPECTRAL TARGET DETECTION BASED ON KERNEL SPARSE AND SPATIAL CONSTRAINT	640
<i>Qiupeng Sun, Junping Zhang, Xiaochen Lu, Tianming Jin, Harbin Institute of Technology</i>	
MOP2-PH.4: ABUNDANCE ESTIMATION FOR HYPERSPECTRAL IMAGES BASED ON BILINEAR MIXTURE MODELS	644
<i>Bin Yang, Bin Wang, Zongmin Wu, Qiyong Lu, Fudan University</i>	
MOP2-PH.5: A SPARSE DICTIONARY LEARNING METHOD FOR HYPERSPECTRAL ANOMALY DETECTION WITH CAPPED NORM	648
<i>Dandan Ma, University of Chinese Academy of Sciences; Yuan Yuan, Xi'an Institute of Optics and Precision Mechanics of CAS; Qi Wang, Northwestern Polytechnical University</i>	
MOP2-PH.6: GEOMETRIC N-FINDER ALGORITHM FOR FINDING ENDMEMBERS IN HYPERSPECTRAL IMAGERY	652
<i>Hsiao-Chi Li, Fu Jen Catholic University</i>	
MOP2-PH.7: EVALUATION OF MULTI-SPECTRAL CUBE FROM MULTI-SENSOR IMAGERY CORRESPONDING TO HYPERSPECTRAL IMAGERY	656
<i>Divyesh Varade, Anudeep Sure, Onkar Dikshit, Indian Institute of Technology Kanpur</i>	
MOP2-PI: LAND USE AND LAND COVER MAPPING	
MOP2-PI.1: DEMARCATION OF PRIME FARMLAND PROTECTION AREAS FROM HIGH-RESOLUTION SATELLITE IMAGERY	660
<i>Nan Xia, Man Chun Li, Liang Cheng, Nanjing University</i>	
MOP2-PI.5: BALANCED DATA DRIVEN SPARSITY FOR UNSUPERVISED DEEP FEATURE LEARNING IN REMOTE SENSING IMAGES CLASSIFICATION	668
<i>Yang Yu, Ping Zhong, Zhiqiang Gong, National University of Defense Technology</i>	
MOP2-PJ: SNOW AND ICE I	
MOP2-PJ.1: IMPROVING SNOW AND CLOUD DISCRIMINATION IN MODIS SNOW COVER PRODUCTS	672
<i>Gongxue Wang, Lingmei Jiang, Shirui Hao, Xiaojing Liu, Huizhen Cui, Beijing Normal University</i>	
MOP2-PJ.2: SNOW EXTRACTION USING X-BAND MULTI-TEMPORAL COHERENCE BASED ON INSAR TECHNOLOGY	676
<i>Caizheng Guo, Ling Tong, Yan Chen, Xun Yang, University of Electronic Science and Technology of China</i>	
MOP2-PJ.3: FINE TEMPORAL RESOLUTION FREEZE AND THAW STATES USING COMBINATION OF MICROWAVE LAND SURFACE EMISSIVITY ESTIMATED	680
<i>Satya Prakash, Hamidreza Norouzi, New York City College of Technology, CUNY; Marzi Azarderakhsh, Fairleigh Dickinson University; Reginald Blake, New York City College of Technology, CUNY</i>	
MOP2-PJ.4: AN INVERSE MODEL FOR SEA ICE PHYSICAL PARAMETER RETRIEVAL USING SIMULATED ANNEALING	683
<i>Yu Jen Lee, Kee Choon Yeong, Hong Tat Ewe, Universiti Tunku Abdul Rahman</i>	

MOP2-PJ.7: DEVELOPMENT OF A MULTILAYER MODIS IST-ALBEDO PRODUCT OF 694
GREENLAND

Dorothy Hall, Michigan State University; Josefino Comiso, NASA; Richard Cullather, University of Maryland; Nicolo DiGirolamo, SSAI; Sophie Nowicki, Brooke Medley, NASA

MOP2-PK: SYNTHETIC APERTURE MICROWAVE RADIOMETERS I

MOP2-PK.1: DIRECT FARADAY ROTATION ANGLE RETRIEVAL IN SMOS FIELD OF VIEW 697

Roselena Rubino, Francesc Torres, Nuria Duffo, Universitat Politècnica de Catalunya; Verónica González-Gambau, Barcelona Expert Centre. Institute of Marine Sciences, CSIC.; Ignasi Corbella, Universitat Politècnica de Catalunya; Manuel Martín-Neira, European Space Agency (ESA)

MOP2-PK.2: THE OCEAN AS A CALIBRATION TARGET TO TRIM SMOS VISIBILITY 699
DENORMALIZATION ERRORS

Israel Durán, Marc Vizcarro, Francesc Torres, Nuria Duffo, Universitat Politècnica de Catalunya; Verónica González-Gambau, Institute of Marine Sciences, CSIC.; Ignasi Corbella, Universitat Politècnica de Catalunya; Roger Oliva, Manuel Martín-Neira, European Space Agency (ESA)

MOP2-PK.3: STUDY ON DATA PROCESSING METHOD OF SYNTHETIC APERTURE 703
MICROWAVE RADIOMETER

Rongchuan Lv, Pengfei Li, Guangnan Song, Yinan Li, Hailiang Lu, Xiaojiao Yang, Pengju Dang, Xian Institute of Space Radio Technology

MOP2-PK.4: DATA ANALYTICS TO IMPROVE SMOS CALIBRATION 707

Roger Oliva, Swedish Space Cooperation for the European Space Agency, ESA-ESAC; Joseph Tenerelli, Ocean DataLab; Manuel Martín-Neira, European Space Agency - ESRIN; Ignasi Corbella, Polytechnic University of Catalonia; Josep Closa, Airbus Defence and Space España; Juha Kainulainen, Harp Technologies

MOP2-PK.5: PRELIMINARY RESULTS OF GIMS-II (GEOSTATIONARY INTERFEROMETRIC 711
MICROWAVE SOUNDER-SECOND GENERATION) DEMONSTRATOR

Hao Liu, Lijie Niu, Cheng Zhang, Donghao Han, Hao Lu, Xin Zhao, Ji Wu, CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center

MOP2-PK.6: SYSTEM DESIGN AND PRELIMINARY TESTS OF AN L-BAND CLOCK SCAN 715
MICROWAVE INTERFEROMETRIC RADIOMETER

Cheng Zhang, Hao Liu, Lijie Niu, Ji Wu, Chinese Academy of Sciences

MOP2-PK.7: INTERCOMPARISON OF BRIGHTNESS TEMPERATURE MEASUREMENTS 719
FROM SMAP AND SMOS RADIOMETERS

Chun Sik Chae, Andreas Colliander, Mariko S. Burgin, NASA Jet Propulsion Laboratory; Emmanuel Dinnat, NASA Goddard Space Flight Center

MOP2-PL: OCEAN SURFACE WIND AND WAVE I

MOP2-PL.1: SEA SURFACE WAVES PARAMETERS RETRIEVAL METHOD BASED ON THE 721
MEASUREMENT OF THE DOPPLER SPECTRUM AT SMALL INCIDENT ANGLE

Yuriy Titchenko, Vladimir Karaev, Institute of Applied Physics, Russian Academy of Science

MOP2-PL.3: COMPARISON OF EMPIRICAL AND ELECTROMAGNETIC GEOPHYSICAL 728
MODEL FUNCTION FOR NEAR-SURFACE WIND SPEED RETRIEVAL

Tran Vu La, Ali Khenchaf, Fabrice Comblet, ENSTA Bretagne; Carole Nahum, Direction Générale de l'Armement

MOP2-PL.4: PARAMETERIZATION OF OCEANIC WHITECAP FRACTION BASED ON 732
SATELLITE OBSERVATIONS

Monique F. M. A. Albert, KWR; Magdalena D. Anguelova, Naval Research Laboratory; Astrid M. M. Manders, Martijn Schaap, TNO; Gerrit de Leeuw, Finnish Meteorological Institute

MOP2-PL.5: EVOLUTION OF TYPHOON SOUDELOR OBSERVED BY RADARSAT-2 SAR.....	735
<i>Qing Xu, Hohai University; Guosheng Zhang, Fisheries and Oceans Canada; Shuangshang Zhang, Hohai University; Yongcun Cheng, Old Dominion University; William Perrie, Fisheries and Oceans Canada</i>	
MOP2-PL.6: THE PRECIPITATION RADAR AS AN INSTRUMENT FOR MEASUREMENT OF SEA WAVES SLOPES	739
<i>Maria Panfilova, Vladimir Karaev, Institute of applied physics Russian academy of sciences</i>	
MOP2-PL.7: AN APPROACH TO AUTOMATED SPIRAL EDDY DETECTION IN SAR IMAGES.....	743
<i>Svetlana Karimova, University of Liège</i>	
 TU1-L1: HIGH RESOLUTION CLASSIFICATION METHODS	
TU1-L1.1: CLASSIFICATION OF VHR REMOTE SENSING IMAGES USING LOCAL FEATURE-BASED ATTRIBUTE PROFILES	747
<i>Minh-Tan Pham, Sébastien Lefèvre, Université Bretagne Sud; Erchan Aptoula, Gebze Technical University; Bharath Bhushan Damodaran, Université Bretagne Sud</i>	
TU1-L1.2: PRODUCTION OF A GLOBAL FOREST/NON-FOREST MAP UTILIZING TANDEM-X INTERFEROMETRIC SAR DATA	751
<i>Christopher Wecklich, Michele Martone, Paola Rizzoli, José-Luis Bueso-Bello, Carolina Gonzalez, Gerhard Krieger, German Aerospace Center (DLR)</i>	
TU1-L1.3: NEURAL NETWORK HYPERSPECTRAL UNMIXING WITH SPECTRAL INFORMATION DIVERGENCE OBJECTIVE	755
<i>Frosti Palsson, Jakob Sigurdsson, Jóhannes Sveinsson, Magnús Úlfarsson, University of Iceland</i>	
TU1-L1.4: FUSING DIFFERENT LEVELS OF DEEP FEATURES BY DEEP STACKED NEURAL NETWORK FOR HYPERSPECTRAL IMAGES	759
<i>Shaohui Mei, Yanfu Chen, Jingyu Ji, Northwestern Polytechnical University; Junhui Hou, City Univeristy of Hong Kong; Qian Du, Mississippi State University</i>	
TU1-L1.5: CAUSAL INFERENCE IN GEOSCIENCES WITH KERNEL SENSITIVITY MAPS.....	763
<i>Adrian Perez-Suay, Gustau Camps-Valls, Universitat de València</i>	
 TU2-L1: DATA REDUCTION METHODS	
TU2-L1.1: HASHED BINARY SEARCH SAMPLING FOR CONVOLUTIONAL NETWORK TRAINING WITH LARGE OVERHEAD IMAGE PATCHES	767
<i>Dalton Lunga, Lexie Yang, Jiangye Yuan, Budhendra Bhaduri, Oak Ridge National Laboratory</i>	
TU2-L1.2: TENSOR LOCALITY PRESERVING PROJECTION FOR HYPERSPECTRAL IMAGE CLASSIFICATION	771
<i>Yang-Jun Deng, Heng-Chao Li, Lei Pan, Southwest Jiaotong University; William J. Emery, University of Colorado Boulder</i>	
TU2-L1.3: TREE-BASED SUPERVISED FEATURE EXTRACTION METHOD BASED ON SELF-DUAL ATTRIBUTE PROFILES	775
<i>Gabriele Cavallaro, Forschungszentrum Juelich; Mauro Dalla Mura, Grenoble Institute of Technology; Morris Riedel, Forschungszentrum Juelich; Jón Atli Benediktsson, University of Iceland</i>	
TU2-L1.4: NON-NEGATIVE MATRIX FACTORIZATION WITH MIXTURE OF ITAKURA-SAITO DIVERGENCE FOR SAR IMAGES	779
<i>Chi Liu, Wenzhi Liao, Ghent University; Heng-Chao Li, Southwest Jiaotong University; Wilfried Philips, Ghent University</i>	
TU2-L1.5: ONBOARD PAYLOAD-DATA DIMENSIONALITY REDUCTION.....	783
<i>Miguel Penalver, Fabio Del Frate, University of Rome “Tor Vergata”; Mercedes Eugenia Paoletti, Juan Mario Haut, Javier Plaza, Antonio Plaza, University of Extremadura</i>	

TU3-L1: SAR IMAGE SEGMENTATION

TU3-L1.1: A VARIATIONAL METHOD USING RIEMANNIAN METRIC FOR SAR IMAGE SEGMENTATION 787

Na Li, TianHui Satellite Center of China; Fang Liu, National University of Defense Technology; Jing Li, Junfeng Yang, Tuanjie Zheng, TianHui Satellite Center of China

TU3-L1.2: SCATTERING MODEL BASED SEGMENTATION OF POLARIMETRIC SAR IMAGES 791

Huiguo Yi, Jie Yang, Pingxiang Li, Lei Shi, Weidong Sun, Wuhan University

TU3-L1.3: AN UNSUPERVISED SEGMENTATION METHOD BASED ON THE VARIATIONAL MODEL FOR FULLY POLARIMETRIC SAR IMAGES 795

Shiyu Luo, University of Electronic Science and Technology of China; Kamal Sarabandi, University of Michigan, Ann Arbor; Ling Tong, University of Electronic Science and Technology of China

TU3-L1.4: FAST GRAPH-BASED SAR IMAGE SEGMENTATION VIA SIMPLE SUPERPIXELS 799

Biao Hou, Xiaohua Zhang, Dezhao Gong, Shuang Wang, Xiangrong Zhang, Licheng Jiao, xidian university

TU3-L1.5: SUPERPIXEL GENERATION FOR SAR IMAGES BASED ON DBSCAN CLUSTERING AND PROBABILISTIC PATCH-BASED SIMILARITY 803

Hao Hu, Bin Liu, Weiwei Guo, Zenghui Zhang, Wenxian Yu, Shanghai Jiao Tong University

TU4-L1: MULTISOURCE DATA CLASSIFICATION

TU4-L1.1: MULTI-SUPERPIXELIZATION-BASED CONVEX FORMULATION FOR JOINT CLASSIFICATION OF HYPERSPECTRAL AND LIDAR DATA 807

Yi Liu, Escuela Politécnica de Cáceres, University of Extremadura; José Manuel Bioucas-Dias, Instituto de Telecomunicações, Universidade de Lisboa; Jun Li, Sun Yat-sen University; Antonio Plaza, Escuela Politécnica de Cáceres, University of Extremadura

TU4-L1.2: SAR AND OPTICAL TIME SERIES FOR CROP CLASSIFICATION 811

Dimo Dimov, University of Würzburg; Fabian Löw, MapTailor Geospatial Consulting; Mirzahayot Ibrakhimov, Khorezm Rural Advisory Support Service; Galina Stulina, Scientific Information Center of the Interstate Water Commission of Central Asia; Christopher Conrad, University of Würzburg

TU4-L1.3: URBAN FUNCTION ZONING USING GEOTAGGED PHOTOS AND OPENSTREETMAP 815

Lu Wang, Fang Fang, China University of Geosciences; Xiaohui Yuan, University of North Texas; Zhongwen Luo, Yuanyuan Liu, Bo Wan, Yishi Zhao, China University of Geosciences

TU4-L1.4: MULTI-TEMPORAL IMAGES CLASSIFICATION WITH EVIDENTIAL FUSION OF MANIFOLD ALIGNMENT 819

Meiling Zhang, Tianzhu Liu, Guoming Gao, Yanfeng Gu, Harbin Institute of Technology

TU4-L1.5: CLASSIFICATION OF FUSING SAR AND MULTISPECTRAL IMAGE VIA DEEP BIMODAL AUTOENCODERS 823

Jie Geng, Hongyu Wang, Dalian University of Technology; Jianchao Fan, National Marine Environmental Monitoring Center; Xiaorui Ma, Dalian University of Technology

TU1-L2: FOREST MONITORING APPLICATIONS

TU1-L2.1: INDIVIDUAL TREE-BASED SPECIES CLASSIFICATION FOR UNEVEN-AGED, MIXED-DECIDUOUS FORESTS USING MULTI-SEASONAL WORLDVIEW-3 IMAGES 827

Jian Yang, University of Toronto; Yuhong He, University of Toronto Mississauga; John Caspersen, University of Toronto

TU1-L2.2: DETECTION OF THERMAL ANOMALY USING SENTINEL-2A DATA 831

Soushi Kato, Ryosuke Nakamura, National Institute of Advanced Industrial Science and Technology

TU1-L2.3: MODELING AND VALIDATION OF THE ANGULAR CLUMPING INDEX OF FOREST CANOPY	834
<i>Jingjing Peng, University of Maryland; Wenjie Fan, Peking University; Lizhao Wang, Beijing Normal University; Jvcai Li, Dingfang Tian, Xiru Xu, Peking University</i>	
TU1-L2.4: PROJECTION PURSUIT LEARNING NETWORK ALGORITHM FOR PLANT CLASSIFICATION	838
<i>Hongga Li, Institute of Remote Sensing Applications, Chinese Academy of Sciences; Yarong Zou, National Satellite Ocean Application Service; Xiaoxia Huang, Institute of Remote Sensing Applications, Chinese Academy of Sciences; Renrong Jiang, Shenzhen Research Center of Digital City Engineering; Xia Li, Xin Du, Yilan Liu, Institute of Remote Sensing Applications, Chinese Academy of Sciences</i>	
TU1-L2.5: A REGION-BASED METHOD OF VEGETATION COVERAGE EXTRACTING IN COMPLEX TERRAIN AREAS USING POLARMETRIC SAR DATA	842
<i>Jianhao Du, Yan Chen, Ling Tong, Guang Li, Caizheng Guo, University of Electronic Science and Technology of China</i>	
TU2-L2: DEEP NETWORKS FOR DETECTION AND RECOGNITION I	
TU2-L2.1: DEEP CONVOLUTIONAL NEURAL NETWORK BASED LARGE-SCALE OIL PALM TREE DETECTION FOR HIGH-RESOLUTION REMOTE SENSING IMAGES	846
<i>Weijia Li, Haohuan Fu, Le Yu, Tsinghua University</i>	
TU2-L2.2: EVALUATION THE PERFORMANCE OF FULLY CONVOLUTIONAL NETWORKS FOR BUILDING EXTRACTION COMPARED WITH SHALLOW MODELS	850
<i>Youyou Li, Binbin He, Teng Long, Xiaojing Bai, University of Electronic Science and Technology of China</i>	
TU2-L2.3: HIERARCHICAL FEATURE EXTTRATCTION FOR OBJECT RECOGNITION IN COMPLEX SAR IMAGE USING MODIFIED CONVOLUTIONAL AUTO-ENCODER	854
<i>Sirui Tian, Nanjing University of Science and Technology; Chao Wang, Hong Zhang, Chinese Academy of Sciences</i>	
TU2-L2.4: FAST MULTICLASS OBJECT DETECTION IN OPTICAL REMOTE SENSING IMAGES USING REGION BASED CONVOLUTIONAL NEURAL NETWORKS	858
<i>Zipeng Deng, Hao Sun, Shilin Zhou, National University of Defense Technology; Juanping Zhao, Shanghai Jiao Tong University; Lin Lei, Huanxin Zou, National University of Defense Technology</i>	
TU2-L2.5: TRAINING DEEP CONVOLUTION NEURAL NETWORK WITH HARD EXAMPLE MINING FOR AIRPORT DETECTION	862
<i>Bowen Cai, Zhiguo Jiang, Haopeng Zhang, Yuan Yao, Jie Huang, Beihang University</i>	
TU3-L2: DEEP NETWORKS FOR DETECTION AND RECOGNITION II	
TU3-L2.1: FAST ANIMAL DETECTION IN UAV IMAGES USING CONVOLUTIONAL NEURAL NETWORKS	866
<i>Benjamin Kellenberger, Michele Volpi, Devis Tuia, University of Zurich</i>	
TU3-L2.2: TOWARD COUNTRY SCALE BUILDING DETECTION WITH CONVOLUTIONAL NEURAL NETWORK USING AERIAL IMAGES	870
<i>Hsiuhan Lexie Yang, Dalton Lunga, Jiangye Yuan, ORNL</i>	
TU3-L2.3: A DEEP CONVOLUTIONAL NEURAL NETWORK, WITH PRE-TRAINING, FOR SOLAR PHOTOVOLTAIC ARRAY DETECTION IN AERIAL IMAGERY	874
<i>Jordan Malof, Leslie Collins, Kyle Bradbury, Duke University</i>	
TU3-L2.4: DEEP SAR IMAGE GENERATIVE NEURAL NETWORK AND AUTO-CONSTRUCTION OF TARGET FEATURE SPACE	N/A
<i>Qian Song, Feng Xu, Ya-Qiu Jin, Fudan University</i>	

TU3-L2.5: DETECTION AND DISCRIMINATION OF ICEBERGS AND SHIPS USING 882
SATELLITE ALTIMETRY

Igor Zakharov, Thomas Puestow, C-CORE; Andrew Fleming, British Antarctic Survey; Janaka Deepakumara, Desmond Power, C-CORE

TU4-L2: SHIP AND ROAD DETECTION

TU4-L2.1: A FULLY CONVOLUTIONAL NEURAL NETWORK FOR LOW-COMPLEXITY 886
SINGLE-STAGE SHIP DETECTION IN SENTINEL-1 SAR IMAGES

Davide Cozzolino, Gerardo Di Martino, Giovanni Poggi, Luisa Verdoliva, University of Naples Federico II

TU4-L2.2: SHIP DETECTION USING WEIGHTED SVM AND M-CHI DECOMPOSITION IN 890
COMPACT POLARIMETRIC SAR IMAGERY

Kefeng Ji, Xiangguang Leng, Haibo Wang, Shilin Zhou, Huanxin Zou, National University of Defense Technology

TU4-L2.3: TRANSDUCTIVE ATTRIBUTES FOR SHIP CATEGORY RECOGNITION 894

Quentin Oliveau, Hichem Sahbi, Télécom Paristech

TU4-L2.4: COHERENCE ESTIMATION IN THE LOW-BACKSCATTERING AREA USING 898
MULTITEMPORAL TERRASAR-X IMAGES AND ITS APPLICATION ON ROAD DETECTION

Fanghong Xiao, Yan Chen, Ling Tong, Xun Yang, University of Electronic Science and Technology of China

TU4-L2.5: ROAD WIDTH MEASUREMENT FROM REMOTE SENSING IMAGES 902

Zhichao Xia, Yu Zang, Cheng Wang, Jonathan Li, Xiamen University

TU1-L3: TANDEM-X: THE EARTH IN 3D I

TU1-L3.1: THE GLOBAL TANDEM-X DEM - A UNIQUE DATA SET 906

Manfred Zink, Alberto Moreira, Markus Bachmann, Paola Rizzoli, Thomas Fritz, Irena Hajnsek, Gerhard Krieger, Birgit Wessel, German Aerospace Center (DLR)

TU1-L3.2: TANDEM-X: SCIENCE ACTIVITIES 910

Irena Hajnsek, German Aerospace Center (DLR); Thomas Busche, German Aerospace Center/ ETH Zurich

TU1-L3.3: FOREST STRUCTURE MODELING OF A CONIFEROUS FOREST USING 914
TANDEM-X INSAR AND SIMULATED GEDI LIDAR DATA

Wenlu Qi, Ralph Dubayah, University of Maryland College Park

TU1-L3.4: TROPICAL FOREST STRUCTURE OBSERVATION WITH TANDEM-X DATA 918

Andrea Pulella, University of Pisa; Polyanna da Conceicao Bispo, University of Leicester; Matteo Pardini, Florian Kugler, Victor Cazcarra Bes, Maria Tello Alonso, Konstantinos Papathanassiou, German Aerospace Center (DLR); Heiko Balzter, Igor Rizaev, University of Leicester; Maiza Nara Santos, Brazilian Agricultural Research Corporation (EMBRAPA); Joao Roberto dos Santos, National Institute of Space Research (INPE); Luciana Spinelli de Araujo, Brazilian Agricultural Research Corporation (EMBRAPA); Kevin Tansey, University of Leicester

TU1-L3.5: PHASE CALIBRATION OF TANDEM-X ATI-SAR DATA FOR SEA SURFACE VELOCITY 922
MEASUREMENTS

Anis Elyouncha, Leif Eriksson, Chalmers University of Technology; Roland Romeiser, University of Miami; Lars Ulander, Chalmers University of Technology

TU2-L3: TANDEM-X: THE EARTH IN 3D II

TU2-L3.1: INFLUENCE OF INCIDENCE ANGLE AND BASELINE ON THE RETRIEVAL OF 926
BIOPHYSICAL PARAMETERS OF RICE FIELDS BY MEANS OF POLARIMETRIC SAR
INTERFEROMETRY WITH TANDEM-X DATA

Juan Ma Lopez-Sanchez, University of Alicante; Esra Erten, Technical University of Istanbul; Fernando Vicente-Guijalba, DARES Technology; Alejandro Mestre-Quereda, Noelia Romero, University of Alicante

TU2-L3.2: RICE PADDY HEIGHT ESTIMATION FROM SINGLE-POLARIZATION TANDEM-X	930
SCIENCE PHASE DATA	
<i>Sun Yong Yoon, Yonsei University; Seung-Kuk Lee, NASA Goddard Space Flight Center; Joong-Sun Won, Yonsei University</i>	
TU2-L3.3: SINGLE PASS INSAR MISSIONS FOR MONITORING HAZARDOUS SURGING	934
GLACIERS	
<i>Silvan Leinss, Swiss Federal Institute of Technology in Zurich; Vanessa Round, Swiss Federal Institute for Forest, Snow and Landscape Research WSL; Irena Hajnsek, German Aerospace Center (DLR)</i>	
TU2-L3.4: 3D MAPPING OF ICEBERGS IN SEA ICE WITH TANDEM-X INTERFEROMETRY	938
<i>Igor Zakharov, Desmond Power, Thomas Puestow, Mark Howell, Sherry Warren, Michael Lynch, C-CORE</i>	
 TU3-L3: DIFFERENTIAL SAR INTERFEROMETRY APPLICATIONS	
TU3-L3.1: TIME SERIES OF P-BAND DINSAR AND DSM DIFFERENCES FOR MONITORING	941
RIVER BANK EROSIONS	
<i>Karlus Alexander Camara de Macedo, Thiago Barreto, Leandro Matos, Dieter Luebeck, Bradar Indústria S/A; Carlos Gamba, Daniel Albarelli, Pedro Crisma, Adalberto Azevedo, Inst. de Pesquisas Tecnológicas (IPT); João Bosco, Santo Antônio Energia; Rafael Antônio da Silva Rosa, Bradar Indústria S/A</i>	
TU3-L3.2: FUSION OF DIFFERENT FREQUENCY SAR IMAGES FOR DINSAR-BASED LAND	945
SUBSIDENCE MONITORING	
<i>Junichi Susaki, Masahiro Tsujino, Kyoto University; Takuma Anahara, Japan Aerospace Exploration Agency</i>	
TU3-L3.3: MEASUREMENT OF FAULT CREEP USING MULTI-ASPECT TERRESTRIAL RADAR	949
INTERFEROMETRY AT COYOTE DAM	
<i>Charles Werner, GAMMA Remote Sensing AG; Brett Baker, Santa Clara Valley Water District; Ryan Cassotto, University of New Hampshire; Christophe Magnard, Urs Wegmüller, GAMMA Remote Sensing AG; Mark Fahnstock, University of Alaska Fairbanks</i>	
TU3-L3.4: A NEW ERA OF INSAR APPLICATIONS WITH SENTINEL-1: A CASE STUDY OF	953
SEVERE GROUND SUBSIDENCE IN CALIFORNIA CENTRAL VALLEY	
<i>Yuxiao Qin, Daniele Perissin, Purdue University; Pietro Milillo, California Institute of Technology</i>	
TU3-L3.5: A STANDARDIZED APPROACH FOR THE INTEGRATION OF GEODETIC DATA FOR	957
DEFORMATION ANALYSIS	
<i>Freek van Leijen, Sami Samiei Esfahany, Hans van der Marel, Ramon Hanssen, Delft University of Technology</i>	
 TU4-L3: SAR DATA PROCESSING AND DEM	
TU4-L3.1: AUTOMATIC POSITIONING OF SAR GROUND CONTROL POINTS FROM	961
MULTI-ASPECT TERRASAR-X ACQUISITIONS	
<i>Sina Montazeri, German Aerospace Center (DLR); Christoph Gisinger, Technische Universität München; Xiao Xiang Zhu, Michael Eineder, Richard Bamler, German Aerospace Center (DLR) and Technical University of Munich (TUM)</i>	
TU4-L3.2: DEM EXTRACTION OF THE BASAL TOPOGRAPHY OF THE CANADIAN	965
ARCHIPELAGO ICE CAPS VIA 2D AUTOMATED LAYER-TRACKER	
<i>Mohanad Al-Ibadi, Jordan Sprick, Sravya Athinarapu, Theresa Stumpf, John Paden, Carl Leuschen, Fernando Rodriguez, University of Kansas; Mingze Xu, David Crandall, Geoffrey Fox, Indiana University; David Burgess, Geological Survey of Canada; Martin Sharp, University of Alberta; Luke Copland, Wesley Van Wychen, University of Ottawa</i>	
TU4-L3.3: DEM-BASED EPIPOLAR RECTIFICATION FOR OPTIMIZED RADARGRAMMETRY	969
<i>Roland Perko, Karlheinz Gutjahr, Maria Krüger, Hannes Raggam, Mathias Schardt, Joanneum Research</i>	
TU4-L3.4: APPLYING CHIRP-MODULATED BACK-PROJECTION TO VERY HIGH	973
RESOLUTION SPACEBORNE SLIDING SPOTLIGHT SAR DATA PROCESSING	
<i>Dadi Meng, Chibiao Ding, Donghui Hu, Ning Xu, Institute of Electronics, Chinese Academy of Sciences</i>	

TU4-L3.5: INITIAL RESULT OF SINGLE CHANNEL CSAR GMTI BASED ON BACKGROUND SUBTRACTION 976

Wenjie Shen, Yun Lin, Yue Zhao, Linjuan Yu, Wen Hong, Institute of Electronics, Chinese Academy of Sciences

TU1-L4: STUDENT PAPER CONTEST FINALISTS I

TU1-L4.1: SEQUENTIAL ESTIMATOR: A NOVEL APPROACH FOR EFFICIENT HIGH-PRECISION ANALYSIS OF INTERFEROMETRIC TIME SERIES 980

Homa Ansari, Francesco De Zan, Richard Bamler, German Aerospace Center (DLR)

TU1-L4.2: SALIENCY-BASED ENDMEMBER DETECTION FOR HYPERSPECTRAL IMAGERY 984

Xinyu Wang, Yanfei Zhong, Yao Xu, Liangpei Zhang, Yanyan Xu, Wuhan University

TU1-L4.3: MULTIPLE INSTANCE HYBRID ESTIMATOR FOR LEARNING TARGET SIGNATURES 988

Changzhe Jiao, University of Missouri; Alina Zare, University of Florida

TU1-L4.4: REMOTE SENSING IMAGE CLASSIFICATION BASED ON CONVOLUTIONAL NEURAL NETWORKS WITH TWO-FOLD SPARSE REGULARIZATION 992

Han Liu, Sun Yat-sen University; Lin He, South China University of Technology; Jun Li, Sun Yat-sen University

TU1-L4.5: RADAR SCATTERING OF OCEAN SURFACES AT L BAND BASED ON NUMERICAL SOLUTIONS OF MAXWELL EQUATIONS IN THREE-DIMENSIONS (NMM3D) 996

Tai Qiao, Leung Tsang, University of Michigan, Ann Arbor; Douglas Vandemark, University of New Hampshire; Simon Yueh, Jet Propulsion Laboratory

TU2-L4: STUDENT PAPER CONTEST FINALISTS II

TU2-L4.1: HYPERSPECTRAL CLOUD SHADOW REMOVAL BASED ON LINEAR UNMIXING 1000

Yi Liu, Escuela Politécnica de Cáceres, University of Extremadura; José Manuel Bioucas-Dias, Instituto de Telecomunicações, Universidade de Lisboa; Jun Li, School of Geography and Planning, Sun Yat-Sen University; Antonio Plaza, Escuela Politécnica de Cáceres, University of Extremadura

TU2-L4.2: SAMPLING REQUIREMENTS FOR WIDEBAND AUTOCORRELATION RADIOMETRIC (WIBAR) REMOTE SENSING OF DRY SNOWPACK AND LAKE ICEPACK 1004

Syedmohammad Mousavi, Roger De Roo, Kamal Sarabandi, University of Michigan; Anthony W. England, University of Michigan Dearborn

TU2-L4.3: DEVELOPMENT OF GPS CONSTELLATION POWER MONITOR SYSTEM FOR HIGH ACCURACY CALIBRATION/VALIDATION OF THE CYGNSS L1B DATA 1008

Tianlin Wang, Christopher Ruf, University of Michigan; Scott Gleason, Southwest Research Institute; Bruce Block, Darren McKague, Damen Provost, University of Michigan

TU2-L4.4: DESIGN OF A FORWARD LOOKING SYNTHETIC APERTURE RADAR FOR AN AUTONOMOUS CRYOBOT FOR SUBSURFACE EXPLORATION OF EUROPA 1012

Omkar Pradhan, Kumar Sandeep, Albin J. Gasiewski, William Stone, University of Colorado

TU2-L4.5: MODEL-BASED ESTIMATION OF LARGE AREA FOREST CANOPY HEIGHT AND BIOMASS USING RADAR AND OPTICAL REMOTE SENSING WITH LIMITED LIDAR DATA 1016

Michael Benson, Leland Pierce, Kamal Sarabandi, University of Michigan

TU3-L4: POLARIMETRIC TECHNIQUES II

TU3-L4.1: OIL SPILL DISPERSION IN FULL-POLARIMETRIC AND HYBRID-POLARITY SAR 1020

Camilla Brekke, Stine Skrunes, Martine Espeseth, UiT The Arctic University of Norway

TU3-L4.2: ASSESSMENT OF THE RISAT-1 FRS-2 MODE FOR OIL SPILL OBSERVATION	1024
<i>Stine Skrunes, Camilla Brekke, Martine Espeseth, UiT The Arctic University of Norway</i>	
TU3-L4.3: HYBRID AND DUAL LINEAR POLARIMETRIC RISAT-1 SAR DATA FOR CLASSIFICATION ASSESSMENT	1028
<i>Vineet Kumar, Dipankar Mandal, Subrahmanyeswara Rao Yalamanchili, Indian Institute of Technology Bombay; Peter Meadows, BAE Systems Applied Intelligence Laboratories</i>	
TU3-L4.4: A SIMPLE TARGET SCATTERING MODEL WITH GEOMETRIC FEATURES ON CROP CHARACTERIZATION USING POLSAR DATA	1032
<i>Xiaodong Huang, Jinfei Wang, Western University; Jiali Shang, Jiangui Liu, Agriculture and Agri-Food Canada</i>	
TU3-L4.5: BUILDING DAMAGE INFORMATION INVESTIGATION FROM A SINGLE POST-EARTHQUAKE POLSAR IMAGE BASED ON THE FUSION OF MULTIPLE TEXTURE FEATURES	1036
<i>Wei Zhai, Gansu Earthquake Administration; Chunlin Huang, Wansheng Pei, Yan Li, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences</i>	
TU4-L4: BISTATIC SAR	
TU4-L4.1: FIRST RESULTS OF THE BELSAR L BAND AIRBORNE BISTATIC FULLY POLARIMETRIC SYNTHETIC APERTURE RADAR CAMPAIGN	1040
<i>Adriano Meta, Christian Trampuz, Alex Coccia, Marco Ortolani, Rocco Turtolo, MetaSensing</i>	
TU4-L4.2: PASSIVE SAR WITH GNSS TRANSMITTERS: LATEST RESULTS AND RESEARCH PROGRESS	1043
<i>Xuezhen Fan, Feifeng Liu, Tian Zhang, Taoyu Lu, Cheng Hu, Weiming Tian, Beijing Institute of Technology</i>	
TU4-L4.3: EXTENDED NONLINEAR CHIRP SCALING ALGORITHM WITH TOPOGRAPHY COMPENSATION FOR MANEUVERING-PLATFORM BISTATIC FORWARD-LOOKING SAR	1047
<i>Qianghui Zhang, Junjie Wu, Jianyu Yang, Yulin Huang, Ke Du, Haiguang Yang, University of Electronic Science and Technology of China</i>	
TU4-L4.4: PHASE SENSITIVITY ANALYSIS OF SPACEBORNE TRANSMITTER - STATIONARY GROUND-BASED RECEIVER BISTATIC SAR INTERFEROMETRY WITH ONE IMAGING CHANNEL	1051
<i>Andrei Anghel, Remus Cacoveanu, University Politehnica of Bucharest; Mihai Datcu, University Politehnica of Bucharest/ German Aerospace Center (DLR)</i>	
TU4-L4.5: BISTATIC SEA CLUTTER RETURNS GENERATION WITH COMPUTATIONAL ELECTROMAGNETIC METHOD	1055
<i>Weibo Huo, Yulin Huang, Jifang Pei, Jianyu Yang, Yin Zhang, University of Electronic Science and Technology of China</i>	
TU1-L5: CHANGE DETECTION IN VHR IMAGES	
TU1-L5.1: CHANGE DETECTION BASED ON STRUCTURAL CONDITIONAL RANDOM FIELD FRAMEWORK FOR HIGH SPATIAL RESOLUTION REMOTE SENSING IMAGERY	1059
<i>Pengyuan Lv, Yanfei Zhong, Ji Zhao, Ailong Ma, Liangpei Zhang, Wuhan University</i>	
TU1-L5.2: SEMI-SUPERVISED DEEP GENERATIVE MODELS FOR CHANGE DETECTION IN VERY HIGH RESOLUTION IMAGERY	1063
<i>Clayton Connors, Ranga Vatsavai, North Carolina State University</i>	
TU1-L5.3: EFFECT OF THE DTM QUALITY ON THE BUNDLE BLOCK ADJUSTMENT AND ORTHORECTIFICATION PROCESS WITHOUT GCP: EXEMPLE ON A STEEP AREA	1067
<i>Cyrielle Guerin, CEA (Commissariat à l'énergie atomique et aux énergies renouvelables)</i>	

TU1-L5.4: A CFAR OPTIMIZATION FOR LOW FREQUENCY UWB SAR CHANGE DETECTION ALGORITHMS	1071
<i>Ana Carolina Fabrin, Ricardo Molin Jr., Federal University of Santa Maria; Dimas Irion Alves, Federal University of Paraná – UFPR; Renato Machado, Fábio Bayer, Federal University of Santa Maria; Mats I. Pettersson, Blekinge Institute of Technology</i>	
TU1-L5.5: A COMPARISON OF SEPARATE SEGMENTATION STRATEGIES TO REVEAL GEOMETRIC CHANGES OF BUILDINGS IN URBAN AREA	1075
<i>Xueliang Zhang, Pengfeng Xiao, Xuezhong Feng, Nanjing University</i>	
TU2-L5: CHANGE DETECTION AND ANALYSIS OF IMAGE TIME SERIES: TECHNIQUES	
TU2-L5.1: HYBRID ANALYSIS FOR SAR CHANGE DETECTION BASED ON TIME SERIES DATA	1079
<i>Keng-Fan Lin, Daniele Perissin, Purdue University</i>	
TU2-L5.2: SAR IMAGE TEXTURE TRACKING USING A POINTWISE GRAPH-BASED MODEL FOR GLACIER DISPLACEMENT MEASUREMENT	1083
<i>Minh-Tan Pham, Université Bretagne Sud; Grégoire Mercier, TELECOM Bretagne; Emmanuel Trouvé, Polytech'Annecy-Chambéry; Sébastien Lefèvre, Université Bretagne Sud</i>	
TU2-L5.3: A NOVEL FRAMEWORK FOR BI-TEMPORAL CHANGE DETECTION IN IMAGE TIME SERIES	1087
<i>Manuel Bertoluzza, Lorenzo Bruzzone, University of Trento; Francesca Bovolo, Fondazione Bruno Kessler</i>	
TU2-L5.4: ESTIMATION OF DYNAMIC PARAMETERS OF MODIS NDVI TIME SERIES NONLINEAR MODEL USING PARTICLE FILTERING	1091
<i>Srija Chakraborty, Ayan Banerjee, Sandeep Gupta, Antonia Papandreou-Suppappola, Philip Christensen, Arizona State University</i>	
TU2-L5.5: LANDSLIDE CHANGE DETECTION BASED ON SPATIO-TEMPORAL CONTEXT	1095
<i>Qingqing Huang, Yu Meng, Jingbo Chen, Anzhi Yue, Lei Lin, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
TU3-L5: CHANGE DETECTION AND ANALYSIS OF IMAGE TIME SERIES: APPLICATIONS	
TU3-L5.1: MAPPING BURN SCARS, FIRE SEVERITY AND SOIL EROSION SUSCEPTIBILITY IN SOUTHERN FRANCE USING MULTISENSORAL SATELLITE DATA	1099
<i>Sandro Martinis, German Aerospace Center (DLR); Mathilde Caspard, Service Régional de Traitement d'Image et de la Télédétection; Simon Plank, German Aerospace Center (DLR); Stephen Clandillon, Sadri Haouet, Service Régional de Traitement d'Image et de la Télédétection</i>	
TU3-L5.2: WIDE-AREA MAPPING OF INVASIVE SPECIES PROPAGATION AND CONTAINMENT ZONES IN SOMALILAND USING PHENOMETRIC TRENDS AND GENERALIZED LINEAR MODELLING	1103
<i>Tobias Landmann, International Centre of Insect Physiology and Ecology; Olena Dubovyk, Gohar Ghazaryan, University of Bonn; Jackson Kimani, Elfatih Abdel-Rahman, International Centre of Insect Physiology and Ecology</i>	
TU3-L5.3: PROFILE HUMAN-INDUCED VEGETATION CHANGE IN ARHORQIN BANNER OF CHINA USING TIME SERIES DATASETS	1107
<i>Lili Xu, Guangming Yu, Zhenfa Tu, College of Urban and Environmental Sciences, Central China Normal University, Wuhan 430079, China; Yuke Zhou, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences</i>	
TU3-L5.4: ESTIMATION OF FOREST DISTURBANCE INTENSITY FROM LANDSAT DATA IN NORTH CAROLINA AND SOUTH CAROLINA	1111
<i>Xin Tao, Chengquan Huang, Feng Zhao, University of Maryland</i>	

TU3-L5.5: MAPPING PROSOPIS JULIFLORA INVASION WITHIN RAINWATER HARVESTING STRUCTURES IN INDIA USING GOOGLE EARTH ENGINE	1115
<i>Vicky Vanthof, Richard Kelly, University of Waterloo</i>	
TU4-L5: RECENT ADVANCES IN WETLANDS REMOTE SENSING	
TU4-L5.1: WETLAND SCIENCE AND OBSERVATIONS	1119
<i>Son Nghiem, Jet Propulsion Laboratory</i>	
TU4-L5.3: WETLAND GNSS-R MEASUREMENTS FROM AIRCRAFT	1122
<i>Estel Cardellach, Fran Fabra, Weiqiang Li, Serni Ribó, Antonio Rius, Institut de Ciències de l'Espai (ICE/CSIC-IEEC); Rashmi Shah, Clara C. Chew, Son V. Nghiem, Jet Propulsion Laboratory, California Institute of Technology (NASA/JPL); Maximilian Semmling, Helmholtz-Centre Potsdam - German Research Centre for Geoscience (GFZ)</i>	
TU4-L5.4: GLOBAL NAVIGATION SATELLITE SYSTEM REFLECTOMETRY (GNSS-R) ALGORITHMS FOR WETLAND OBSERVATIONS	1126
<i>Cinzia Zuffada, Clara Chew, Son Nghiem, Jet Propulsion Laboratory</i>	
TU4-L5.5: APPLYING REMOTE SENSING TO URBAN ECOSYSTEM DYNAMICS: OPPORTUNITIES FOR UNDERSTANDING AND MANAGING THE BALLONA WETLAND SYSTEM IN LOS ANGELES	1130
<i>Eric Strauss, Loyola Marymount University; Menas Kafatos, Seung Hee Kim, Chapman University; Son Nghiem, Jet Propulsion Laboratory; Jeremy Pal, Loyola Marymount University</i>	
TU1-L6: TARGET DETECTION AND UNMIXING TECHNIQUES I	
TU1-L6.1: HYPERSPECTRAL UNMIXING VIA PROJECTED MINI-BATCH GRADIENT DESCENT	1133
<i>Jing Li, Xiaorun Li, Zhejiang University; Liaoying Zhao, Hangzhou Dianzi University</i>	
TU1-L6.2: A HYBRID SPARSITY AND CONSTRAINED ENERGY MINIMIZATION DETECTOR FOR HYPERSPECTRAL IMAGES	1137
<i>Yifan Zhang, Bobo Xie, Northwestern Polytechnical University; Jun Sun, Yang Peng, Shanghai Aerospace Control Technology Institute</i>	
TU1-L6.3: LOW-RANK AND SPARSE TENSOR RECOVERY FOR HYPERSPECTRAL ANOMALY DETECTION	1141
<i>Jiahui Dai, Chenwei Deng, Wenzheng Wang, Xun Liu, Beijing Institute of Technology</i>	
TU1-L6.4: NONLINEAR HYPERSPECTRAL UNMIXING BASED ON NORMALIZED P-LINEAR ALGORITHM	1145
<i>Maofeng Tang, Lianru Gao, Institute of Remote Sensing & Digital Earth Chinese Academy of Sciences; Andrea Marinoni, Dipartimento di Ingegneria Industriale e dell'Informazione Università degli Studi di Pavia; Bing Zhang, Institute of Remote Sensing & Digital Earth Chinese Academy of Sciences</i>	
TU1-L6.5: NONNEGATIVE MATRIX FACTORIZATION WITH CONSTRAINTS ON ENDMEMBER AND ABUNDANCE FOR HYPERSPECTRAL UNMIXING	1149
<i>Tongxiang Zhi, Bin Yang, Fudan University; Zhao Chen, Donghua University; Bin Wang, Fudan University</i>	
TU2-L6: TARGET DETECTION AND UNMIXING TECHNIQUES II	
TU2-L6.2: A MODEL BASED HIERARCHICAL METHOD FOR INSHORE SHIP DETECTION IN HIGH-RESOLUTION REMOTE SENSING IMAGES	1157
<i>Fukun Bi, Jing Chen, North China University of Technology; Yin Zhuang, Chonglei Wang, Beijing Institute of Technology</i>	
TU2-L6.3: MULTIOBJECTIVE ENDMEMBER EXTRACTION FOR HYPERSPECTRAL IMAGE	1161
<i>Rong Liu, Bo Du, Liangpei Zhang, Wuhan University</i>	

TU2-L6.4: EXPERIMENTAL STUDY ON POSSIBILITY OF EARTH SURFACE STRESS DETECTING USING SATELLITE REMOTE SENSING	1165
<i>Shanjun Liu, Jianwei Huang, Wenfei Mao, Qiang Ni, Northeastern University; Lixin Wu, Central South University; Linhui Fu, Wuhan University</i>	
TU2-L6.5: MOVING TARGET DETECTION IN HRWS MODE	1169
<i>Xiaojiang Guo, Yesheng Gao, Xingzhao Liu, Shanghai Jiao Tong University</i>	
TU3-L6: RECONFIGURABLE AND INNOVATIVE INSTRUMENTS AND SATELLITE MISSION CONCEPTS	
TU3-L6.1: ANALYSIS OF THE POTENTIAL OF SMALL SATELLITES TO COVER THE SEA ICE DATA PRODUCTS GAP	1173
<i>Estefany Lancheros, Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya, BarcelonaTech and IEEC/UPC; Alessio Di Simone, Università di Napoli Federico II; Hripsime Matevosyan, Ignasi Lluch, Skolkovo Institute of Science and Technology</i>	
TU3-L6.2: TELEDYNE'S MUSES MISSION ON THE ISS: ENABLING FLEXIBLE AND RECONFIGURABLE EARTH OBSERVATION FROM SPACE	1177
<i>Ray Perkins, Paul Galloway, Randy Miller, Teledyne Brown Engineering, Inc.; Lewis Graham, GeoCue Group</i>	
TU3-L6.3: TRADESPACE ANALYSIS TOOL FOR DESIGNING CONSTELLATIONS (TAT-C)	1181
<i>Jacqueline Le Moigne, Philip Dabney, NASA; Olivier de Weck, Veronica Foreman, Massachusetts Institute of Technology; Paul Grogan, Stevens Institute of Technology; Matthew Holland, Steven Hughes, NASA; Sreeja Nag, Bay Area Environmental Research Institute</i>	
TU3-L6.4: PRELIMINARY STUDY FOR A SPACEBORNE ULTRAWIDEBAND MICROWAVE RADIOMETER FOR THE MONITORING OF CRYOSPHERE ELEMENTS: THE CRYORAD PROJECT	1185
<i>Giovanni Macelloni, Marco Brogioni, Francesco Montomoli, Marion Leduc-Leballeur, IFAC-CNR; Giacomo De Carolis, IREA - CNR; Lars Kaleschke, Universität Hamburg; Joel Johnson, Kenneth Jezek, ElectroScience Laboratory, The Ohio State University, Columbus, OH</i>	
TU3-L6.5: GLOBAL NAVIGATION SATELLITE SYSTEM OCCULTATION SOUNDER II (GNOS II)	1189
<i>Yueqiang Sun, Congliang Liu, Qifei Du, Xianyi Wang, Weihua Bai, National Space Science Center; Gottfried Kirchengast, University of Graz; Junming Xia, Xiangguang Meng, Dongwei Wang, Yuerong Cai, Danyang Zhao, Chunjun Wu, Wei Li, Cheng Liu, National Space Science Center</i>	
TU4-L6: IEEE GRSS DATA FUSION CONTEST	
TU4-L6.1: THE DATA FUSION CONTEST 2017: OPEN DATA FOR GLOBAL MULTIMODAL LAND USE CLASSIFICATION	1193
<i>Devis Tuia, University of Zurich; Gabriele Moser, University of Genoa; Bertrand Le Saux, ONERA - The French Aerospace Lab; Linda See, International Institute for Applied Systems Analysis (IIASA); Benjamin Bechtel, University of Hamburg</i>	
TU4-L6.2: MULTIMODAL, MULTITEMPORAL, AND MULTISOURCE GLOBAL DATA FUSION FOR LOCAL CLIMATE ZONES CLASSIFICATION BASED ON ENSEMBLE LEARNING	1197
<i>Naoto Yokoya, The University of Tokyo; Pedram Ghamisi, German Aerospace Center (DLR); Junshi Xia, The University of Tokyo</i>	
TU4-L6.3: MULTILEVEL ENSEMBLING FOR LOCAL CLIMATE ZONES CLASSIFICATION	1201
<i>Sergey Sukhanov, Ivan Tankoyeu, Jérôme Louradour, Roel Heremans, Darya Trofimova, Christian Debes, AGT International</i>	
TU4-L6.4: CLASSIFICATION OF URBAN ENVIRONMENTS USING FEATURE EXTRACTION AND RANDOM FOREST	1205
<i>Camila Souza dos Anjos, Marielcio Goncalves Lacerda, Leidiane do Livramento Andrade, Roberto Neves Salles, Brazilian Air Force</i>	

TU4-L6.5: A CO-TRAINING APPROACH TO THE CLASSIFICATION OF LOCAL CLIMATE ZONES WITH MULTI-SOURCE DATA 1209

Yong Xu, The Chinese University of Hong Kong; Fan Ma, Deyu Meng, Xi'an Jiaotong University; Chao Ren, Yee Leung, The Chinese University of Hong Kong

TU1-L7: CURRENT AND FUTURE MICROWAVE RADIOMETER IMAGERS AND SOUNDERS

TU1-L7.1: RADIOMETER PAYLOAD FOR THE TEMPORAL EXPERIMENT FOR STORMS AND TROPICAL SYSTEMS TECHNOLOGY DEMONSTRATION MISSION 1213

Sharmila Padmanabhan, Todd C. Gaier, Jet Propulsion Laboratory; Steven C. Reising, Colorado State University; Boon H. Lim, Robert Stachnik, Robert Jarnot, Jet Propulsion Laboratory; Wesley Berg, Christian D. Kummerow, Venkatachalam Chandrasekar, Colorado State University

TU1-L7.2: TRMM MICROWAVE IMAGER (TMI) UPDATES FOR FINAL DATA VERSION RELEASE 1216

Rachael Kroodsmo, University of Maryland; Stephen Bilanow, Yimin Ji, KBRwyle; Darren McKague, University of Michigan

TU1-L7.3: ADVANCED MICROWAVE IMAGER/SOUNDER MTVZA-GY-MP FOR NEW RUSSIAN METEOROLOGICAL SATELLITE 1220

Igor Cherny, Grigory Cherniavsky, Scientific-Technological Center "Kosmonit", JSC "Russian Space Systems; Leonid Mitnik, Vladimir Kuleshov, Maia Mitnik, V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch, Russian Academy of Sciences

TU1-L7.4: AN UPDATED GEOPHYSICAL MODEL FOR WINDSAT OBSERVATIONS 1224

Michael Bettenhausen, Magdalena D. Anguelova, Naval Research Laboratory

TU1-L7.5: RADIOMETRIC VALIDATION OF THE TRMM MICROWAVE IMAGER 1B11 V8 BRIGHTNESS TEMPERATURE PRODUCT 1227

Ruiyao Chen, Faisal Alquaied, Hamideh Ebrahimi, W. Linwood Jones, University of Central Florida

TU2-L7: RADIO FREQUENCY INTERFERENCE AND CHALLENGES FOR MICROWAVE REMOTE SENSING I

TU2-L7.1: TUTORIAL: AN INTRODUCTION TO RF SPECTRUM MANAGEMENT AND ITS RELEVANCE FOR GEOSCIENCES AND REMOTE SENSING 1231

Sandra Cruz-Pol, UPR-Mayaguez

TU2-L7.3: POTENTIAL IMPACTS OF WRC-2019 AGENDA ITEMS ON SCIENTIFIC SERVICES 1234

Jasmeet Judge, University of Florida; Liese Vanzee, Indiana University; William Blackwell, Massachusetts Institute of Technology Lincoln Laboratory; Sandra Cruz-Pol, University of Puerto Rico at Mayaguez; Todd C. Gaier, NASA Jet Propulsion Laboratory; Namir Kassim, Naval Research Laboratory; David LeVine, NASA Goddard Space Flight Center; Amy Lovell, Agnes Scott College; James Moran, Harvard-Smithsonian Center for Astrophysics; Scott Ransom, National Radio Astronomy Observatory; Gabriel Rebeiz, University of California-San Diego; Paul Siqueira, University of Massachusetts Amherst

TU2-L7.4: DISTINGUISHING BETWEEN PULSARS AND TRANSIENT RFI IN THE TIME DOMAIN 1236

Daniel Czech, Amit Mishra, Michael Inggs, University of Cape Town

TU2-L7.5: SUBTRACTION OF RADIO FREQUENCY INTERFERENCE WITH DIGITAL BEAMFORMING IN ECOSAR FLIGHT DATA 1240

Tobias Bollian, USRA NASA Goddard Space Flight Center; Batuhan Osmanoglu, Rafael Rincon, NASA Goddard Space Flight Center; Seung-Kuk Lee, USRA NASA Goddard Space Flight Center; Temilola Fatoyinbo, NASA Goddard Space Flight Center

TU3-L7: RADIO FREQUENCY INTERFERENCE AND CHALLENGES FOR MICROWAVE REMOTE SENSING II

TU3-L7.1: PERFORMANCE OF SMAP RADIOMETER RFI DETECTION ALGORITHMS AND ANALYSIS OF RESIDUAL RFI SOURCES 1243

Alexandra Bringer, Joel Johnson, ElectroScience Laboratory; Priscilla Mohammed, Jeffrey R. Piepmeier, NASA Goddard Space Flight Center

TU3-L7.2: SIMULATED AND MEASURED PERFORMANCE OF A REAL-TIME PROCESSOR FOR RFI DETECTION AND MITIGATION ON-BOARD SPACEBORNE MICROWAVE RADIOMETERS 1247

Niels Skou, Steen Savstrup Kristensen, Sten S. Søbjerg, Technical University of Denmark; Arhippa Kovanen, Janne Lahtinen, Harp Technologies

TU3-L7.3: THE CUBESAT RADIOMETER RADIO FREQUENCY INTERFERENCE TECHNOLOGY (CUBERTT) VALIDATION MISSION: PERFORMANCE AND DEVELOPMENT OF THE DIGITAL BACKEND TECHNOLOGY 1251

Sidharth Misra, Jet Propulsion Laboratory, California Institute of Technology; Jonathon Kocz, Carl Felten, California Institute of Technology; Robert Jarnot, Rudi Bendig, Shannon T. Brown, Jet Propulsion Laboratory, California Institute of Technology; Joel Johnson, The Ohio State University

TU3-L7.4: RFI MITIGATING RECEIVER BACK-END FOR RADIOMETERS 1255

Phaneendra Bikkina, Alphacore, Inc.; Qingjun Fan, University of Houston; Wenlan Wu, Alphacore, Inc.; Jinghong Chen, University of Houston; Esko Mikkola, Alphacore, Inc.

TU3-L7.5: THE RADIO FREQUENCY ENVIRONMENT AT 240-270 MHZ WITH APPLICATION TO SIGNAL-OF-OPPORTUNITY REMOTE SENSING 1259

Jeffrey R. Piepmeier, Manuel A. Vega, NASA Goddard Space Flight Center; Matthew Fritts, Cornelis F. du Toit, AS&D, Inc.; Joseph Knuble, NASA Goddard Space Flight Center; Yao-Cheng Lin, Benjamin Nold, James Garrison, Purdue University

TU4-L7: MICROWAVE REMOTE SENSING AND THE CHALLENGES OF RADIO FREQUENCY INTERFERENCE

TU4-L7.1: THE ULTRA-WIDEBAND SOFTWARE DEFINED MICROWAVE RADIOMETER (UWBRAD) FOR ICE SHEET SUBSURFACE TEMPERATURE SENSING: RFI ALGORITHMS AND PERFORMANCE 1263

Mark Andrews, Hongkun Li, Joel Johnson, Alexandra Bringer, The Ohio State University

TU4-L7.2: A RADIO-FREQUENCY INTERFERENCE DETECTOR FOR GNSS NAVIGATION AND GNSS-REFLECTOMETRY APPLICATIONS 1266

Jorge Querol, Raul Onrubia, Daniel Pascual, Hyuk Park, Adriano Camps, UPC-BarcelonaTech

TU4-L7.3: RADIO FREQUENCY INTERFERENCE DETECTION FOR PASSIVE REMOTE SENSING USING EIGENVALUE ANALYSIS 1270

Adam Schoenwald, Seung-Jun Kim, University of Maryland, Baltimore County; Priscilla Mohammed, NASA Goddard Space Flight Center

TU4-L7.4: A METHOD TO DETECT AND MITIGATE RADIO FREQUENCY INTERFERENCE OF AQUARIUS DATA 1274

Zhongjun Zhang, Beijing Normal University; Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

TU4-L7.5: FAST RFI LOCALIZATION USING VIRTUAL ARRAY IN SYNTHETIC APERTURE INTERFEROMETRIC RADIOMETERS 1277

Hao Hu, Fei Hu, Feng He, Jun Li, Tao Zheng, Xiaohui Peng, Huazhong University of Science and Technology

TU1-L8: NEW GEO/LEO MISSION ADVANCED IMAGERY PRODUCTS: OPTICAL SENSOR CALIBRATION AND APPLICATIONS III

TU1-L8.1: OVERVIEW OF CAL VAL AND ENVIRONMENT DATA PRODUCT PERFORMANCE 1281 DERIVED FROM VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS)

Lihang Zhou, NOAA; Murty Divakarla, Xingpin Liu, MSG; Fuzhong Weng, Changyong Cao, Ivan Csiszar, Mitchell Goldberg, NOAA

TU1-L8.2: EXCEPTIONAL EVENTS MONITORING USING S-NPP VIIRS AEROSOL 1285 PRODUCTS

Shobha Kondragunta, Istvan Laszlo, Pubu Ciren, Hai Zhang, Hongqing Liu, Jingfeng Huang, National Oceanic and Atmospheric Administration; Amy Huff, Pennsylvania State University

TU1-L8.3: MONITORING SURFACE TYPE CHANGES WITH S-NPP/JPSS VIIRS 1288 OBSERVATIONS

Xiwu Zhan, NOAA/NESDIS; Rui Zhang, Panshi Wang, Chengquan Huang, University of Maryland College Park; Ivan Csiszar, Lihang Zhou, Fuzhong Weng, NOAA/NESDIS

TU1-L8.4: VIIRS MISSION-LONG OCEAN COLOR DATA REPROCESSING: EVALUATIONS 1292 OF DATA PRODUCT AND SENSOR PERFORMANCE

Menghua Wang, Lide Jiang, Xiaoming Liu, SeungHyun Son, Junqiang Sun, Wei Shi, Karlis Mikelsons, Liqin Tan, Xiaolong Wang, Mike Chu, Veronica Lance, NOAA

TU1-L8.5: THE IMPACT AND MITIGATION OF AIRGLOW ON VIIRS DNB CALIBRATION AND 1296 GEOPHYSICAL RETRIEVALS

Stephen Mills, Renaissance Man Engineering; Sirish Uprety, NOAA/NESDIS

TU2-L8: LIDAR PROCESSING

TU2-L8.2: RAPID CHANGE DETECTION IN A SINGLE PASS OF A MULTICHANNEL 1304 AIRBORNE LIDAR

Juan Carlos Fernandez-Diaz, Jennifer Telling, Craig Glennie, Ramesh Shrestha, William Carter, University of Houston

TU2-L8.3: A NEW APPROACH TO MINIMIZE BORDER EFFECT FOR TERRESTRIAL LASER 1308 SCANNING

Fabricao Galhardo Müller, Luiz Gonzaga Jr., Fabiane Bordin, Mauricio Roberto Veronez, UNISINOS; Fernando Pinho Marson, Unisinos University; Marco Scaioni, POLIMI

TU2-L8.4: STUDY OF THE HETEROGENEOUS MATCHING POTENTIAL BETWEEN 3D 1312 LIDAR POINT CLOUDS AND 2D SAL IMAGES

Parvin Kalantari, Sylvie Daniel, Laval University; Simon Turbide, Linda Marchese, Alain A Bergeron, Institut National d'Optique

TU2-L8.5: LIDAR FULL WAVEFORM INVERSION TO ESTIMATE MAIZE AND WHEAT 1316 CROPS BIOPHYSICAL PROPERTIES

Sahar Ben Hmida, Advanced Technologies for Medicine and Signals, Centre d'Etudes Spatiales de la Biosphère, Digital Research Center of Sfax; Abdelaziz Kallel, Advanced Technologies for Medicine and Signals, Digital Research Center of Sfax; Jean-Philippe Gastellu-Etchegorry, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Jean-louis Roujean, Centre National de Recherches Météorologiques; Mehrez Zribi, Centre d'Etudes Spatiales de la Biosphère (CESBIO)

TU3-L8: HYPERSPECTRAL TARGET DETECTION I

TU3-L8.1: SPECTRAL TARGET DETECTION CONSIDERATIONS FROM A PHYSICAL 1320 MODELING PERSPECTIVE

Emmett Lentilucci, Rochester Institute of Technology

TU3-L8.3: OBJECT CLASSIFICATION IN HYPERSPECTRAL IMAGERY BASED ON 1324 NORMALIZED, WHITENED REFLECTANCE

Steven Adler-Golden, Robert Sundberg, Benjamin St. Peter, Spectral Sciences, Inc.

TU3-L8.4: TARGET DETECTION EXPERIMENTS WITH A NON-PARAMETRIC DETECTOR	1328
ON A NEW HYPERSPECTRAL DATA SET	
<i>Stefania Matteoli, National Research Council (CNR); Marco Diani, Italian Naval Academy; Giovanni Corsini, University of Pisa</i>	
TU3-L8.5: PLUME DETECTION WITH EMPHASIS ON PHENOMENOLOGY, SIGNAL	1332
MODELS, AND EXPLOITATION ALGORITHMS	
<i>Eric Truslow, Dimitris Manolakis, Massachusetts Institute of Technology Lincoln Laboratory</i>	
 TU4-L8: HYPERSPECTRAL TARGET DETECTION II	
TU4-L8.1: GLOBAL AND ADAPTIVE K-NEAREST NEIGHBOR GRAPHS IN A SPECTRAL	1336
TARGET DETECTOR BASED ON SCHROEDINGER EIGENMAPS	
<i>Leidy Dorado-Munoz, David Messinger, Rochester Institute of Technology</i>	
TU4-L8.2: ENHANCED DETECTION OF SOLIDS FROM GAUSSIAN SPECTRAL FEATURES.....	1340
<i>Cory Lanker, Milton Smith, Lawrence Livermore National Laboratory</i>	
TU4-L8.3: BACKGROUND CHARACTERIZATION FOR SUBPIXEL TARGET DETECTION.....	1344
<i>Stanley R. Rotman, Sapir Ben-Yakar, Dan G. Blumberg, Ben-Gurion University of the Negev</i>	
TU4-L8.4: VARIABLE TARGET DETECTION USING SIMPLEX ACE.....	1347
<i>Amanda Ziemann, James Theiler, Los Alamos National Laboratory</i>	
 TU1-L9: ACTIVE/PASSIVE MICROWAVE REMOTE SENSING OF TERRESTRIAL SNOW I	
TU1-L9.1: SNOW WATER EQUIVALENT ESTIMATION USING HIGH RESOLUTION SAR	1351
DATA	
<i>Monique Bernier, Institut national de la recherche scientifique; Jean-Pierre Dedieu, University of Grenoble Alpes; Yannick Duguay, Institut national de la recherche scientifique; Guy Séguin, INSARSAT Inc.</i>	
TU1-L9.2: EXPLORING THE INFLUENCE OF SNOW MICROSTRUCTURE ON	1355
DUAL-FREQUENCY RADAR MEASUREMENTS	
<i>Joshua King, Chris Derksen, Peter Toose, Environment and Climate Change Canada</i>	
TU1-L9.3: SNOW WATER EQUIVALENT MONITORING FROM DUAL-FREQUENCY	1359
SCATTEROMETER ON WCOM	
<i>Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Xiaolong Dong, Di Zhu, National Space Science Center, Chinese Academy of Sciences; Chuan Xiong, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Gang Wang, Liling Liu, National Space Science Center, Chinese Academy of Sciences; Yurong Cui, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
TU1-L9.4: ESTIMATION OF SNOW WETNESS BY A DUAL-FREQUENCY RADAR	1363
<i>Yurong Cui, Chuan Xiong, Jiancheng Shi, Institute of Remote Sensing and Digital Earth</i>	
TU1-L9.5: REMOTE SENSING OF TERRESTRIAL SNOW USING SIGNALS OF	1366
OPPORTUNITY	
<i>Rashmi Shah, Simon Yueh, Xiaolan Xu, NASA Jet Propulsion Laboratory, California Institute of Technology; Kelly Elder, USDA Forest Service; Chad Baldi, NASA Jet Propulsion Laboratory, California Institute of Technology</i>	
 TU2-L9: ACTIVE/PASSIVE MICROWAVE REMOTE SENSING OF TERRESTRIAL SNOW II	
TU2-L9.1: FUTURE MISSION CONCEPTS FOR MEASURING SNOW MASS	1370
<i>Juha Lemmetyinen, Kimmo Rautiainen, Kari Luojus, Finnish Meteorological Institute; Helmut Rott, Thomas Nagler, ENVEO IT GmbH; Giuseppe Parrella, Irena Hajsek, German Aerospace Center (DLR); Chris Derksen, Environment and Climate Change Canada; Giovanni Macelloni, Marco Brogioni, Institute of Applied Physics; Andreas Wiesmann, Christian Mätzler, GAMMA Remote Sensing AG; Michael Kern, European Space Agency (ESA)</i>	

TU2-L9.2: MICROWAVE EMISSION FROM ALPINE SNOW: EXPERIMENTAL DATA AND ELECTROMAGNETIC MODELS	1372
<i>Emanuele Santi, Simone Pettinato, Simonetta Paloscia, Paolo Pampaloni, Enrico Palchetti, IFAC-CNR; Chuan Xiong, RADICAS; Andrea Crepez, Avalanche Center, Arabba, Italy</i>	
TU2-L9.3: MICROWAVE BRIGHTNESS TEMPERATURE OF SNOW ON TERRAIN AND LAKE ICE REVISITED: DATA AND SIMULATIONS	1376
<i>Martti Hallikainen, Aalto University</i>	
TU2-L9.4: FULL WAVE SIMULATION OF SNOWPACK APPLIED TO MICROWAVE REMOTE SENSING OF SEA ICE	1380
<i>Shurun Tan, Jiyue Zhu, Leung Tsang, University of Michigan; Son Nghiem, California Institute of Technology</i>	
TU2-L9.5: SNOWPACK TIME-SERIES GROUND TRUTH VIA A LOW-POWER DATALOGGER	1384
<i>Roger De Roo, Steve Rogacki, University of Michigan; Eric Haengel, Leidos, Inc.; Chandler Ekins, University of Michigan</i>	
TU3-L9: NASA'S SNOWEX CAMPAIGN: PRELIMINARY RESULTS I	
TU3-L9.1: NASA'S SNOWEX CAMPAIGN: OBSERVING SEASONAL SNOW IN A FORESTED ENVIRONMENT	1388
<i>Edward Kim, NASA; Charles Gatebe, NASA and USRA; Dorothy Hall, NASA and ATA Aerospace; Jerry Newlin, ATA Aerospace; Amy Misakonis, NASA and Aerospace Corp; Kelly Elder, US Forest Service; Hans-Peter Marshall, Boise State University; Christopher Hiemstra, US Army Corp of Engineers; Ludovic Brucker, NASA Goddard Space Flight Center / USRA GESTAR; Eugenia De Marco, NASA and ATA Aerospace; Chris Crawford, USGS; Do Hyuk Kang, NASA and Univ. of Maryland; Jared Entin, NASA</i>	
TU3-L9.3: A FIRST OVERVIEW OF SNOWEX GROUND-BASED REMOTE SENSING ACTIVITIES DURING THE WINTER 2016-2017	1391
<i>Ludovic Brucker, NASA Goddard Space Flight Center / USRA GESTAR; Christopher Hiemstra, CRREL; Hans-Peter Marshall, Boise State University; Kelly Elder, US Forest Service; Roger De Roo, Mohammad Mousavi, University of Michigan; Francis Bliven, NASA Wallops Flight Facility; Walt Peterson, NASA Marshall Space Flight Center; Jeffrey S. Deems, NSIDC; Peter Gadowski, Arthur Gelvin, CRREL; Lucas Spaete, Boise State University; Theodore Barnhart, University of Colorado; Ty Brandt, UCSB; John Burkhart, University of Oslo; Christopher Crawford, University of Maryland; Tri Datta, Columbia University; Havard Erikstrod, University of Oslo; Nancy Glenn, Boise State University; Katherine Hale, University of Colorado; Brent Holben, NASA Goddard Space Flight Center; Paul Houser, George Mason University; Keith Jennings, University of Colorado; Richard Kelly, University of Waterloo; Jason Kraft, NASA Goddard Space Flight Center; Alexandre Langlois, University of Sherbrooke; Daniel McGrath, Colorado State University; Chelsea Merriman, Boise State University; Noah Molotch, University of Colorado; Anne Nolin, Oregon State Uni.; Chris Polashenski, Dartmouth College; Mark Raleigh, Karl Rittger, University of Colorado; Chago Rodriguez, Boise State University; Alexandre Roy, University of Sherbrooke; McKenzie Skiles, Utah State University; Eric Small, University of Colorado; Marco Tedesco, Columbia University; Chris Tennant, Berkeley; Aaron Thompson, University of Waterloo; Liuxi Tian, The University of Texas; Zach Uhlmann, Boise State University; Ryan Webb, University of Colorado; Matt Wingo, NASA Marshall Space Flight Center</i>	
TU3-L9.4: SUPPORTING NASA SNOWEX REMOTE SENSING STRATEGIES AND REQUIREMENTS FOR L-BAND INTERFEROMETRIC SNOW DEPTH AND SNOW WATER EQUIVALENT ESTIMATION	1395
<i>Elias Deeb, Cold Regions Research and Engineering Laboratory; Hans-Peter Marshall, Boise State University; Richard Forster, University of Utah; Cathleen Jones, Jet Propulsion Laboratory; Christopher Hiemstra, Cold Regions Research and Engineering Laboratory; Paul Siqueira, University of Massachusetts Amherst</i>	
TU3-L9.5: IMPACT OF FORESTS ON SNOW ALBEDO: LESSONS FROM THE SNOWEX CAMPAIGN	1397
<i>Charles Gatebe, USRA; Rajesh Poudyal, SSAI</i>	

TU4-L9: NASA'S SNOWEX CAMPAIGN: PRELIMINARY RESULTS II

TU4-L9.1: THE AIRBORNE SNOW OBSERVATORY DURING NASA SNOW EXPERIMENT 1399 (SNOWEX) YEAR 1: MAPPING OF SNOW WATER EQUIVALENT AND SNOW ALBEDO AND CONSTRAINING UNDERSTANDING OF THE PHYSICAL ENVIRONMENT

Thomas H. Painter, Kathryn Bormann, NASA Jet Propulsion Laboratory; Jeffrey S. Deems, University of Colorado; Daniel F. Berisford, NASA Jet Propulsion Laboratory

TU4-L9.3: DEPLOYMENT OF THE SNOWSAR SENSOR IN THE SNOWEX CAMPAIGN BY 1403 NASA AND PRELIMINARY RESULTS

Alex Coccia, Christian Trampuz, Marco Ortolani, Rocco Turtolo, Tom Wieffering, Adriano Meta, MetaSensing BV

TU4-L9.4: THE INFRARED SENSOR SUITE FOR SNOWEX 2017 1406

Dorothy Hall, Michigan State University; Chris Chickadel, University of Washington; Christopher Crawford, University of Maryland; Eugenia DeMarco, ATA Aerospace; Donald Jennings, Murzy Jhabvala, Edward Kim, NASA; Jessica Lundquist, University of Washington; Allen Lunsford, Catholic University of America

TU1-L10: PHYSICAL MODELS FOR MICROWAVE REMOTE SENSING IN HONOR OF PROFESSOR ADRIAN K. FUNG I

TU1-L10.1: MICROWAVE REMOTE SENSING OF SOIL, OCEAN, SNOW AND VEGETATION 1413 BASED ON 3D NUMERICAL SOLUTIONS OF MAXWELL EQUATIONS (NMM3D)

Leung Tsang, Tien-Hao Liao, Shurun Tan, Huanting Huang, Tai Qiao, University of Michigan

TU1-L10.3: RETRIEVAL OF PERMAFROST ACTIVE LAYER PROPERTIES USING P-BAND 1415 AIRMOSSE AND L-BAND UAVSAR DATA

Richard H. Chen, Alireza Tabatabaenejad, Mahta Moghaddam, University of Southern California

TU1-L10.4: SCATTERING FROM A LAYER OF VEGETATION: ENHANCEMENT EFFECTS 1419

Roger Lang, George Washington University; Avinash Sharma, Johns Hopkins Applied Physics Laboratory; Michael H. Cosh, USDA-ARS

TU1-L10.5: A SCATTERING MODEL FOR INHOMOGENEOUS LAYER WITH VERTICAL 1422 PROFILE: APPLICATION TO SOIL SCATTERING

Saibun Tjuatja, The University of Texas at Arlington

TU2-L10: PHYSICAL MODELS FOR MICROWAVE REMOTE SENSING IN HONOR OF PROFESSOR ADRIAN K. FUNG II

TU2-L10.1: A STUDY OF WIND DIRECTION EFFECTS ON GNSS-R DELAY DOPPLER MAPS 1426 NEAR THE SPECULAR POINT

Jeonghwan Park, Joel Johnson, The Ohio State University

TU2-L10.2: NUMERICAL STUDY OF POLARIMETRIC BISTATIC SCATTERING 1430 DEPENDENCE ON SEA SPECTRUM AT LOW WIND SPEED AT L- AND C BANDS

Jingsong Yang, Second Institute of Oceanography; Yang Du, Zhejiang University; J.C. Shi, Institute of Remote Sensing Applications; Ruitao Gao, Zhejiang University

TU2-L10.3: AN ANALYSIS OF SCATTERING FROM SNOW WITH RELAXED HIERACHICAL 1434 EQUIVALENT SOURCE ALGORITHM

Chan Fai Lum, Hong Tat Ewe, Universiti Tunku Abdul Rahman; Xin Fu, Li Jun Jiang, University of Hong Kong; Hean Teik Chuah, Universiti Tunku Abdul Rahman

TU2-L10.4: REFLECTIVITY MODELING OF SIGNALS OF OPPORTUNITY FOR REMOTE 1438 SENSING OF SNOW AND SOIL MOISTURE

Xiaolan Xu, Rashmi Shah, Simon Yueh, Jet Propulsion Laboratory; Kelly Elder, United States Forest Service

TU2-L10.5: ROUGH SOIL SURFACE SCATTERING AND EMISSION MODELING: A	1441
COMPREHENSIVE REAPPRAISAL OF THE AIEM MODEL BY USING NUMERICAL AND EXPERIMENTAL DATA	
<i>Jiangyuan Zeng, Kun-Shan Chen, Peng Xu, Ming Jin, Yu Liu, Ying Yang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
 TU3-L10: OPTICAL MODELING IN REMOTE SENSING I	
TU3-L10.1: PLUGIN-DRIVEN SENSOR MODELING OF REMOTE SENSING IMAGING	1445
SYSTEMS	
<i>Scott Brown, Adam Goodenough, Rochester Institute of Technology</i>	
TU3-L10.3: LIMB-VIEWING HYPERSPECTRAL IMAGE SIMULATION BASED ON A	1449
POLYGONAL EARTH CROSS-SECTION (PEX) MODEL	
<i>Alexander Berk, Steven Richtsmeier, Robert Sundberg, Spectral Sciences, Inc.</i>	
TU3-L10.4: MODTRAN® SCATTERING: EXTRACTING SPHERICAL-REFRACTIVE PATH	1453
CONTRIBUTIONS FROM PLANE-PARALLEL DISORT	
<i>Alexander Berk, Spectral Sciences, Inc.; Knut Stamnes, Zhenyi Lin, Stevens Institute of Technology</i>	
TU3-L10.5: AUTOMATIC EMULATOR AND OPTIMIZED LOOK-UP TABLE GENERATION FOR	1457
RADIATIVE TRANSFER MODELS	
<i>Luca Martino, Jorge Vicent, Gustau Camps-Valls, University of Valencia</i>	
 TU4-L10: OPTICAL MODELING IN REMOTE SENSING II	
TU4-L10.1: RECENT ADVANCES OF MODELING LIDAR DATA USING DART AND	1461
RADIOMETRIC CALIBRATION COEFFICIENT FROM LVIS WAVEFORMS COMPARISON	
<i>Tiangang Yin, Singapore-MIT alliance for research and technology; Jean-Philippe Gastellu-Etchegorry, University of Toulouse; Leslie Norford, Massachusetts Institute of Technology</i>	
TU4-L10.2: A 3D JOINT SIMULATION PLATFORM FOR MULTIBAND REMOTE SENSING	1465
<i>Qinhuo Liu, Yang Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Wenhan Qin, Guoqing Sun, NASA Goddard Space Flight Center</i>	
TU4-L10.3: MODIFYING HYBRID GORT MODEL FOR HIGH-PRECISION FOREST LAI	1469
INVERSION	
<i>Jinling Song, Bo Yu, Jindi Wang, Qiaoli Wu, Beijing Normal University</i>	
TU4-L10.4: A NEW SNOW LIGHT SCATTERING MODEL AND ITS APPLICATION IN SNOW	1473
PARAMETER RETRIEVAL FROM SATELLITE REMOTE SENSING	
<i>Chuan Xiong, Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
TU4-L10.5: INVERTING A RADIATIVE TRANSFER MODEL FOR SEDIMENT DENSITY	1477
RETRIEVAL FROM HYPERSPECTRAL BRDF DATA	
<i>Charles Bachmann, Rehman Eon, Brittany Ambeau, Justin Harms, Gregory Badura, Carrie Griffo, Emily Myers, Rochester Institute of Technology</i>	
 TU1-L11: 40 YEARS OF OCEAN REMOTE SENSING - A SESSION TO HONOR W. ALPERS ON THE OCCASION OF HIS 80TH BIRTHDAY I	
TU1-L11.1: DETECTION OF MARINE SLICKS WITH SAR: SCIENTIFIC AND EXPERIMENTAL	1480
LEGACY OF WERNER ALPERS, HIS STUDENTS AND COLLEAGUES	
<i>Benjamin Holt, Cathleen Jones, Jet Propulsion Laboratory</i>	

TU1-L11.3: A JOINT ACTIVE/PASSIVE PHYSICAL MODEL OF SEA SURFACE MICROWAVE SIGNATURES	1484
<i>William Plant, University of Washington; Vladimir Irisov, ZelTech LLC</i>	
TU1-L11.4: FROM RESEARCH TO OPERATIONS BASED ON CONTRIBUTIONS FROM WERNER ALPERS	1487
<i>Frank Monaldo, Johns Hopkins University Applied Physics Laboratory; Christopher Jackson, Xiaofeng Li, GST</i>	
TU1-L11.5: STUDIES OF THE EFFECTS OF RAIN ON THE PERFORMANCE OF THE SMAP RADIOMETER SURFACE SALINITY ESTIMATES AND APPLICATIONS TO REMOTE SENSING OF RIVER PLUMES	1491
<i>David Weissman, Hofstra University; Steven Morey, Mark Bourassa, Florida State University</i>	
 TU2-L11: 40 YEARS OF OCEAN REMOTE SENSING - A SESSION TO HONOR W. ALPERS ON THE OCCASION OF HIS 80TH BIRTHDAY II	
TU2-L11.1: OCEAN SENSING WITH DECAMETER AND MICROWAVE RADAR: CORRESPONDENCE AND CONTRAST OVER 40 YEARS	1495
<i>John Vesecky, University of California Santa Cruz</i>	
TU2-L11.2: SAR IMAGING OF INTERNAL GRAVITY WAVES: FROM ATMOSPHERE TO OCEAN	1499
<i>Xiaofeng Li, GST at NOAA NESDIS</i>	
TU2-L11.3: INVESTIGATION OF BISTATIC RADAR SCATTERING FROM SEA SURFACES WITH BREAKING WAVES	1502
<i>Xiaofeng Yang, Yanlei Du, Ziwei Li, Kun-Shan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
TU2-L11.4: NUMERICAL SIMULATIONS OF RANGE-RESOLVED RADAR BACKSCATTER FROM AN EVOLVING SEA SURFACE WITH FLOATING TARGETS	1504
<i>Jakov Toporkov, Mark Sletten, US Naval Research Laboratory</i>	
TU2-L11.5: SURFACE CURRENTS RETRIEVED FROM AIRBORNE VIDEO	1508
<i>Jochen Horstmann, Michael Stresser, Ruben Carrasco, Helmholtz-Zentrum Geesthacht</i>	
 TU3-L11: RETRIEVALS OF COUPLED VARIABLES FROM SATELLITE REMOTELY SENSED IMAGERY I	
TU3-L11.2: X-BAND RADAR CROSS-SECTION AT GALE FORCE WINDS: TOWARDS CROSS-POLARIZATION GMF FOR RETRIEVAL OF HURRICANE WIND SPEED AND SURFACE STRESS	1515
<i>Yulia Troitskaya, Victor Abramov, Alexey Ermoshkin, Emma Zuikova, Vassilii Kazakov, Daniil Sergeev, Alexander Kandaurov, Olga Ermakova, Georgy Baidakov, Nikita Rusakov, Evgenii Poplavsky, Maxim Vdovin, Institute of Applied Physics Russian Academy of Sciences</i>	
TU3-L11.3: COUPLED NATURE OF HURRICANE WIND AND WAVE PROPERTIES DERIVED FROM SIMULTANEOUS MEASUREMENTS IN HURRICANE HUNTER MISSIONS	1519
<i>Paul Hwang, Yalin Fan, U.S. Naval Research Laboratory</i>	
TU3-L11.4: OIL SPILL DETECTION BY IMAGING RADARS: CHALLENGES AND PITFALLS	1522
<i>Werner Alpers, University of Hamburg; Benjamin Holt, Jet Propulsion Laboratory; Kan Zeng, Ocean University of China</i>	
TU3-L11.5: SURFACTANT-ASSOCIATED BACTERIA IN THE NEAR-SURFACE LAYER OF THE OCEAN FROM IN-SITU DNA SAMPLING AND SAR IMAGING	1526
<i>Alexander Soloviev, Kathryn Howe, Cayla Dean, Aurelien Tartar, Mahmood Shivji, Nova Southeastern University; Brian Haus, University of Miami; William Perrie, Bedford Institute of Oceanography; Susanne Lehner, German Aerospace Center (DLR)</i>	

TU4-L11: RETRIEVALS OF COUPLED VARIABLES FROM SATELLITE REMOTELY SENSED IMAGERY II

TU4-L11.1: AN EVALUATION OF THE HF/VHF SYNTHETIC APERTURE RADAR SYSTEM 1530 FOR OCEAN WAVE SPECTRA MEASUREMENT

Alexander Voronovich, Valery Zavorotny, NOAA Earth System Research Laboratory

TU4-L11.2: AN ASSESSMENT OF MARINE OIL POLLUTION IN INDONESIA BASED ON SAR 1534 IMAGERY

Martin Gade, Bernhard Mayer, Carolin Meier, Thomas Pohlmann, Universität Hamburg; Mutiara Putri, Institute Technology of Bandung; Agus Setiawan, Ministry of Marine Affairs and Fisheries

TU4-L11.3: EMPIRICAL APPROACH FOR C-BAND VV-POLARIZATION WIND VECTOR 1538 RETRIEVAL FROM SENTINEL-1 IMAGES

Tran Vu La, Ali Khenchaf, Fabrice Comblet, ENSTA Bretagne; Carole Nahum, Direction Générale de l'Armement

TU4-L11.4: SIGNIFICANT WAVEHEIGHT RETRIEVAL FROM SAR IMAGERY IN TYPHOON 1542 MEGI

Astrid Werkmeister, Roland Romeiser, Hans Graber, Rosenstiel School of Marine and Atmospheric Science - University of Miami

TU1-L12: RADAR AND THERMAL DATA FOR URBAN MONITORING

TU1-L12.1: BLOCK-BASED DAMAGE ASSESSMENT OF THE 2012 AHAR-VARZAGHAN, IRAN, 1546 EARTHQUAKE THROUGH SAR REMOTE SENSING DATA

Sadra Karimzadeh, Tokyo Institute of Technology; Sergey Samsonov, Canada Centre for Mapping and Earth Observation; Masashi Matsuoka, Tokyo Institute of Technology

TU1-L12.2: ESTIMATING THREE DIMENSIONAL POSITIONS OF PERSISTENT 1550 SCATTERERS AND DEVELOPING A PS-INSAR ANALYSIS SYSTEM

Hisatoshi Toriya, Kenta Senzaki, Masato Tsukada, Minoru Murata, NEC Corporation

TU1-L12.3: CHARACTERIZATION OF URBAN HEAT ISLAND (UHI) CHANGES FROM MODIS 1554 TIMES SERIES USING PRINCIPAL COMPONENT ANALYSIS (PCA): CASE OF DAR ES SALAAM CITY TANZANIA

Kamara Gombe, Ichio Asanuma, Jonggeol Park, Tokyo University of Information Sciences

TU1-L12.4: NETWORK-SCALE PAVEMENT ROUGHNESS MAPPING USING SPACEBORNE 1558 HIGH-RESOLUTION X-BAND SAR DATA

Franz J Meyer, Olaniyi A Ajadi, University of Alaska Fairbanks; Edward Hoppe, Virginia Transportation Research Council

TU1-L12.5: HOTEX: AN APPROACH FOR GLOBAL MAPPING OF HUMAN BUILT-UP AND 1562 SETTLEMENT EXTENT

Panshi Wang, Chengquan Huang, University of Maryland; James C. Tilton, NASA Goddard Space Flight Center; Bin Tan, Science Systems and Applications, Inc.; Eric C. Brown de Colstoun, NASA Goddard Space Flight Center

TU2-L12: SMOS SOIL MOISTURE II

TU2-L12.1: FIRST GLANCE ON A REVISED SMOS SOIL MOISTURE RETRIEVAL 1566 ALGORITHM: EVALUATION WITH RESPECT TO ECMWF SOIL MOISTURE SIMULATIONS

Amen Al-Yaari, Roberto Fernandez-Moran, Jean-Pierre Wigneron, INRA; Arnaud Mialon, Alireza Mahmoodi, Ahmad Al Bitar, Yann Kerr, Centre d'Etudes Spatiales de la Biosphère (CESBIO)

TU2-L12.2: SMOS-IC: A REVISED SMOS PRODUCT BASED ON A NEW EFFECTIVE 1570 SCATTERING ALBEDO AND SOIL ROUGHNESS PARAMETERIZATION

Roberto Fernandez-Moran, Jean-Pierre Wigneron, INRA; Gabrielle De Lannoy, KU Leuven; Ernesto Lopez-Baeza, University of Valencia; Marie Parrens, Arnaud Mialon, Alireza Mahmoodi, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Amen Al-Yaari, INRA; Simone Bircher, Ahmad Al Bitar, Philippe Richaume, Yann Kerr, Centre d'Etudes Spatiales de la Biosphère (CESBIO)

TU2-L12.3: SOIL MOISTURE RETRIEVAL USING SMOS BRIGHTNESS TEMPERATURES 1574
AND A NEURAL NETWORK TRAINED ON IN SITU MEASUREMENTS

Nemesio Rodriguez-Fernandez, Veronica de Souza, Yann Kerr, Philippe Richaume, Ahmad Al Bitar, Centre National de la Recherche Scientifique (CNRS)

TU2-L12.4: IMPACTS OF SOIL SURFACE ROUGHNESS CHANGES ON SMOS SOIL 1578
MOISTURE RETRIEVALS

Victoria Walker, Brian Hornbuckle, Iowa State University; Michael H. Cosh, USDA Agricultural Research Service

TU2-L12.5: GLOBAL RETRIEVAL OF SOIL MOISTURE USING NEURAL NETWORKS 1581
TRAINED WITH SYNTHETIC RADIOMETRIC DATA

Nemesio Rodriguez-Fernandez, Philippe Richaume, Centre National de la Recherche Scientifique (CNRS); Yann Kerr, Centre National d'Etudes Spatiales (CNES); Filipe Aires, Catherine Prigent, Centre National de la Recherche Scientifique (CNRS); Jean-Pierre Wigneron, Institut National de Recherches Agronomiques (INRA)

TU3-L12: HYDROLOGIC APPLICATIONS

TU3-L12.1: POTENTIAL OF WORLDVIEW-3 FOR SOIL SALINITY MODELING AND 1585
MAPPING IN AN ARID ENVIRONMENT

Abdou Bannari, Arabian Gulf University; Shabbir, A. Shahid, International Center for Biosaline Agriculture - ICBA; Ali El-Battay, Arabian Gulf University; Abdullah Alshankiti, International Center for Biosaline Agriculture - ICBA; Nadir Hameid, Fadia, M. Tashtoush, Arabian Gulf University

TU3-L12.2: ASSIMILATION OF SMAP BRIGHTNESS TEMPERATURES IN ENVIRONMENT 1589
AND CLIMATE CHANGE CANADA'S NEW LAND SURFACE PARAMETERIZATION SCHEME

Marco L. Carrera, Stephane Belair, Bernard Bilodeau, Maria Abrahamowicz, Nasim Alavi, Albert Russell, Xihong Wang, Environment and Climate Change Canada

TU3-L12.3: TEMPORAL UPSCALING OF REMOTE SENSING INSTANTANEOUS 1593
EVAPOTRANSPIRATION ESTIMATED AT TWO SATELLITE OVERPASS TIMES

Tong Wang, University of Chinese Academy of Sciences; Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Zhao-Liang Li, Chinese Academy of Agricultural Sciences; Bohui Tang, Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

TU3-L12.4: VALIDATION OF THE SMAP FREEZE/THAW PRODUCT USING CATEGORICAL 1596
TRIPLE COLLOCATION

Xinlu Li, Tsinghua University; Kaighin McColl, Harvard University; Haobo Lyu, Tsinghua University; Xiaolan Xu, California Institute of Technology; Chris Derksen, Environment Canada; Hui Lu, Tsinghua University; Dara Entekhabi, Massachusetts Institute of Technology

TU3-L12.5: IMPROVEMENT ON SOIL FREEZE/THAW DISCRIMINANT ALGORITHM 1599
UNDER COMPLEX SURFACE CONDITIONS IN COLD REGIONS

Wenxing Hu, Linna Chai, Shaojie Zhao, Beijing Normal University; Tianjie Zhao, Chinese Academy of Sciences; Zheng Lu, Beijing Normal University

TU4-L12: REMOTE SENSING FOR ENERGY APPLICATIONS

TU4-L12.1: ESTIMATING THE ELECTRICITY GENERATION CAPACITY OF SOLAR 1603
PHOTOVOLTAIC ARRAYS USING ONLY COLOR AERIAL IMAGERY

Brenda So, Cory Nezin, Vishnu Kaimal, Sam Keene, The Cooper Union; Leslie Collins, Kyle Bradbury, Jordan Malof, Duke University

TU4-L12.2: A WIND-LIDAR BUOY FOR OFFSHORE WIND MEASUREMENTS: FIRST 1607
COMMISSIONING TEST-PHASE RESULTS

Miguel Angel Gutiérrez-Antuñano, Jordi Tiana-Alsina, Francesc Rocadenbosch, Joaquim Sospedra, Universitat Politècnica de Catalunya; Rajai Aghabi, EOLOS Floating Lidar Solutionjs; Daniel Gonzalez-Marco, International Centre for Coastal Resources Research

TU4-L12.3: SAR-BASED WIND FIELDS OVER OFFSHORE WIND FARMS – A VALUABLE TOOL FOR PLANNING, MONITORING AND OPTIMIZATION	1611
<i>Sven Jacobsen, Andrey Pleskachevsky, Suman Singha, Anja Frost, Domenico Velotto, German Aerospace Center (DLR)</i>	
TU4-L12.4: VERTICAL AZIMUTH DISPLAY SIMULATOR FOR WIND-DOPPLER LIDAR ERROR ASSESSMENT	1614
<i>Jordi Tiana-Alsina, Francesc Rocadenbosch, Miguel Angel Gutiérrez-Antuñano, Universitat Politècnica de Catalunya</i>	
TU4-L12.5: ASSESSING THE POTENTIAL FOR GLOBAL SOLAR ENERGY UTILIZATION	1618
<i>Hongguo Zhang, Binbin He, Yuwei Guan, Minjie Ma, Youyou Li, University of Electronic Science and Technology of China; Shujun Song, Chengdu Engineering Corporation Limited</i>	
 TUP1-PA: SAR IMAGING ALGORITHMS I	
TUP1-PA.1: EFFICIENT MOTION COMPENSATION APPROACH WITH MODIFIED PHASE CORRECTION FOR AIRBORNE SAR	1622
<i>Mingdong Yang, Fanqiang Kong, Daiyin Zhu, Nanjing University of Aeronautics and Astronautics; Xiang Yu, Nanjing Institute of Technology</i>	
TUP1-PA.2: AN ALTERNATING DIRECTION METHOD FOR ANGULAR SUPER-RESOLUTION IN SCANNING RADAR	1626
<i>Yuebo Zha, Lu Liu, China Electronics Technology Group Corporation No.38 Research Institute; Jianyu Yang, Yulin Huang, School of Electronic Engineering</i>	
TUP1-PA.4: IMAGING ALGORITHM STUDY ON ARC ANTENNA ARRAY GROUND-BASED SAR	1634
<i>Zengshu Huang, Beihang University; Weixian Tan, Pingping Huang, Inner Mongolia University of Technology; Jinping Sun, Yaolong Qi, Beihang University; Yanping Wang, China Academy of Safety Science and Technology</i>	
TUP1-PA.5: A NOVEL SAR IMAGING METHOD BASED ON ELECTROMAGNETIC VORTEX WITH ORBITAL-ANGULAR-MOMENTUM	1638
<i>Yue Fang, Jie Chen, Pengbo Wang, Beihang University; Wei Li, Shanghai Institute of Satellite Engineering; Zhirong Men, Baobin Ma, Bing Han, Beihang University</i>	
TUP1-PA.6: OPTICAL COUNTERPART OF SAR SYSTEM AND ITS APPLICATIONS	1642
<i>Kaizhi Wang, Hui Chen, Xingzhao Liu, Shanghai Jiao Tong University</i>	
TUP1-PA.7: SLIDING SPOTLIGHT SAR DATA FOCUSING BASED ON SUBAPERTURE WITH LINE-OF-SIGHT MOTION COMPENSATION	1645
<i>Mingdong Yang, Fanqiang Kong, Daiyin Zhu, Nanjing University of Aeronautics and Astronautics; Xiang Yu, Nanjing Institute of Technology</i>	
 TUP2-PA: SAR DATA PROCESSING AND APPLICATIONS	
TUP2-PA.1: SNOW SURFACE SLOPE AND DIFFERENTIAL SNOW METAMORPHOSIS RATE IMPACT ON SAR SEA ICE IMAGES INTERPRETATION.	1649
<i>Eric Hudier, UQAR</i>	
TUP2-PA.4: USING SENTINEL-1 DATA FOR MONITORING OF SOIL MOISTURE	1656
<i>Igor Garkusha, Volodymyr Hnatushenko, Volodymyr Vasyliiev, EOS Data Analytics</i>	
TUP2-PA.5: KOLGOMOROV SMIRNOV TEST BASED APPROACH FOR SAR AUTOMATIC TARGET RECOGNITION	1660
<i>Michele Ambrosanio, University of Napoli Parthenope; Fabio Baselice, Giampaolo Ferraioli, Università' di Napoli Parthenope; Emanuele Ferrentino, University of Napoli Parthenope; Vito Pascasio, Università' di Napoli Parthenope</i>	
TUP2-PA.6: ROAD NETWORK EXTRACTION IN HIGH-RESOLUTION SAR IMAGES BASED CNN FEATURES	1664
<i>Yue Li, Rong Zhang, Yunfei Wu, University of Science and Technology of China</i>	

TUP2-PA.7: SAR IMAGES SUPER-RESOLUTION VIA CARTOON-TEXTURE IMAGE	1668
DECOMPOSITION AND JOINTLY OPTIMIZED REGRESSORS	
<i>Zhen Wang, Shuang Wang, Caijin Xu, Chengyuan Li, Bo Yue, Xidian University; Xuefeng Liang, Kyoto University</i>	
 TUP1-PB: URBAN AND PERI-URBAN AREA MAPPING	
TUP1-PB.1: BUILDING EXTRACTION FROM REMOTE SENSING IMAGES WITH DEEP	1672
LEARNING IN A SUPERVISED MANNER	
<i>Kaiqiang Chen, Kun Fu, Xin Gao, Menglong Yan, Xian Sun, Huan Zhang, Institute of Electronics, Chinese Academy of Sciences</i>	
TUP1-PB.2: DIVERSIFIED DEEP STRUCTURAL METRIC LEARNING FOR LAND USE	1676
CLASSIFICATION IN REMOTE SENSING IMAGES	
<i>Zhiqiang Gong, Ping Zhong, Yang Yu, Weidong Hu, National University of Defense Technology</i>	
 TUP2-PB: DIFFERENTIAL SAR INTERFEROMETRY I	
TUP2-PB.1: TOMOSAR PLATFORM SUPPORTS FOR SENTINEL-1 TOPS PERSISTENT	1680
SCATTERERS INTERFEROMETRY	
<i>Dinh Ho Tong Minh, Yen-Nhi Ngo, IRSTEA</i>	
TUP2-PB.2: EVALUATION OF AN AIRBORNE SAR SYSTEM FOR DEFORMATION MAPPING: A	1684
CASE STUDY OVER THE SLUMGULLION LANDSLIDE	
<i>Ning Cao, Hyongki Lee, University of Houston; Evan C. Zaugg, ARTEMIS, Inc.; Ramesh Shrestha, William Carter, Craig Glennie, Guoquan Wang, University of Houston; Zhong Lu, Southern Methodist University; Juan Carlos Fernandez-Diaz, University of Houston</i>	
TUP2-PB.3: USER DRIVEN PRODUCTS IN THE CONTEXT OF THE GROUND MOTION	1688
SERVICE GERMANY	
<i>Andre Cahyadi Kalia, Federal Institute for Geosciences and Natural Resources</i>	
TUP2-PB.4: THREE-DIMENSIONAL SURFACE DEFORMATION MAPPING FROM	1692
MULTI-DIRECTIONAL SAR INTERFEROGRAMS	
<i>Hiroshi Kimura, Gifu University</i>	
TUP2-PB.6: REPEAT PASS RADAR INTERFEROMETRY BY PI-SAR2 WITH RF-NAVI	1700
<i>Shoichiro Kojima, Takeshi Matsuoka, Tatsuharu Kobayashi, Junpei Uemoto, Akitsugu Nadai, Toshihiko Umehara, National Institute of Information and Communications Technology</i>	
 TUP1-PC: LIDAR DATA ANALYSIS	
TUP1-PC.2: STUDY ON THE METHOD OF HIGH-PRECISION VEHICLE-BORNE LIDAR	1704
POINT CLOUDS DATA ACQUISITION IN EXISTING RAILWAY SURVEY	
<i>Wei Li, Xiaochun Ren, China Railway First Survey and Design Institute Group Ltd.; Fei Li, Peking University; Wei Wang, China Railway First Survey and Design Institute Group Ltd.</i>	
TUP1-PC.3: A NEW APPROACH TO MINIMIZE WALK ERROR IN PULSED LASER	1708
RANGEFINDING	
<i>Guoqing Zhou, Wei Huang, Xiang Zhou, Lieping Zhang, Pengyun Chen, Guilin University of Technology; Jingjin Huang, Rongting Zhang, Tianjin University</i>	
TUP1-PC.4: QUANTITATIVE EXTRACTION OF WALL CRACKS INFORMATION OF	1712
EARTHQUAKE DAMAGED BUILDINGS BASED ON GROUND-BASED LIDAR	
<i>Hongbo Jiang, Qiang Li, Qisong Jiao, Tengfei Xue, Qingyun Zhang, The Institute of Crustal Dynamics, CEA</i>	

TUP1-PC.5: LASER SCANNER INTENSITY CALIBRATION BASED ON ARTIFICIAL NEURAL NETWORKS 1716

Rodrigo Marques de Figueiredo, Mauricio Roberto Veronez, Francisco Manoel Wohnrath Tognoli, Márcio Rosa da Silva, Fabiane Bordin, Luiz Gonzaga Jr., Ismael Koch, Fernando Pinho Marson, UNISINOS; Ana Paula Camargo Larocca, São Carlos Engineering School (USP)

TUP1-PC.6: TLS POINT CLOUD SEGMENTATION BASED ON POINTS FEATURES 1720

Hongbo Jiang, Qisong Jiao, The Institute of Crustal Dynamics, CEA

TUP2-PC: SAR IMAGING TECHNIQUES

TUP2-PC.1: A NOVEL STRATEGY OF 3D IMAGING ON GEO SAR BASED ON MULTI-BASELINE SYSTEM 1724

Lifang Zheng, Shunsheng Zhang, Xiangqian Zhang, University of Electronic Science and Technology of China

TUP2-PC.2: EFFICIENT STRIPMAP SAR RAW DATA GENERATION ACCOUNTING FOR TRAJECTORY DEVIATION AND ANTENNA POINTING ERRORS AT A NONZERO SQUINT ANGLE 1728

Yuhua Guo, Integrated Information Technology, Beijing Institute of Satellite Information Engineering; Xiaohan Liao, Huanyin Yue, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Yan Hao, Beijing Institute of Satellite Information Engineering; Yuhong Guo, Beijing University of Technology

TUP2-PC.3: AN IMAGING STRATEGY FOR HIGH-PRECISION AND WIDE-BEAM AIRBORNE SAR SYSTEM 1732

Xue Lin, University of Jinan; Yue-Ting Zhang, Chinese Academy of Sciences; Dong-Sheng Fang, University of Chinese Academy of Sciences; Ling-Yin Wang, University of Jinan; Fang-Fang Li, Chinese Academy of Sciences

TUP1-PD: CHANGE DETECTION TECHNIQUES

TUP1-PD.2: IMPROVING FEATURES USED FOR HYPER-TEMPORAL LAND COVER CHANGE DETECTION BY REDUCING THE UNCERTAINTY IN THE FEATURE EXTRACTION METHOD 1740

Brian Salmon, University of Tasmania; Waldo Kleynhans, Council for Scientific and Industrial Research; Jan Olivier, University of Tasmania; Colin Schwegmann, Council for Scientific and Industrial Research

TUP1-PD.3: A NOVEL SYSTEM FOR CONTENT BASED RETRIEVAL OF MULTI-LABEL REMOTE SENSING IMAGES 1744

Osman Emre Dai, Bogazici University; Begüm Demir, University of Trento; Bülent Sankur, Bogazici University; Lorenzo Bruzzone, University of Trento

TUP1-PD.4: DISCOVERING LATENT MANIFOLD FOR MULTI-ASPECT ANGLE SAR IMAGERY 1748

Jifang Pei, Yulin Huang, Weibo Huo, Yin Zhang, Junjie Wu, Jianyu Yang, University of Electronic Science and Technology of China

TUP1-PD.5: SEAM CARVING FOR HYPERSPECTRAL IMAGE SIZE REDUCTION AND UNMIXING 1752

Alp Ertürk, Sarp Ertürk, Kocaeli University

TUP1-PD.6: SAR SPECKLE DENOISING USING ITERATIVE FILTER..... 1756

Mohamed Yahia, SYSCOM Laboratory ENIT/Université Tunis El Manar, 1002 Tunis, Tunisia; Tej AlBaha Hamrouni, Riadh Abdelfattah, Université of Carthage: COSIM Lab, Higher School of Communications of Tunis (Tunisia)

TUP1-PD.7: SIMILARITY CRITERION FOR SAR TOMOGRAPHY OVER DENSE URBAN AREA..... 1760

Clément Rambour, Télécom ParisTech; Loïc Denis, Univ Lyon, UJM- Télécom Saint-Etienne, CNRS, Institut d'Optique Graduate School; Florence Tupin, Jean-Marie Nicolas, Télécom ParisTech; Hélène Oriot, ONERA, The French Aerospace Lab, F-91761; Laurent Ferro-Famil, IETR - University of Rennes 1; Charles Deledalle, IMB, CNRS, Université de Bordeaux

TUP2-PD: IMAGE SEGMENTATION

TUP2-PD.1: SAR IMAGE SEGMENTATION BASED ON BMFCM..... 1764

Hailun Xu, Bing Sun, Jie Chen, Wei Guo, Beihang University; Zhijun Qiao, University of Texas Rio Grande Valley

TUP2-PD.2: DISCRETIZATION OF OBJECT-BASED LIDAR FEATURES FOR LAND COVER CLASSIFICATION 1768

Yu-Ching Lin, Chung Cheng Institute of Technology, National Defense University; Chun-Lin Lin, National Chung-Shan Institute of Science & Technology; Ming-Da Tsai, Lin-Sun Chou, Chung Cheng Institute of Technology, National Defense University

TUP2-PD.3: LEVEL SETS WITH SELF-GUIDED FILTERING FOR MARINE OIL SPILL SEGMENTATION 1772

Fang Chen, Xingrui Yu, Xiangyuan Jiang, Peng Ren, China University of Petroleum

TUP2-PD.4: A NEW SEMANTIC SEGMENTATION MODEL FOR REMOTE SENSING IMAGES..... 1776

Xin Wei, Insititute of Electrics, Chinese Academy of Sciences; Yajing Guo, Beijing University of Posts and Telecommunications; Xin Gao, Institute of Electronics, Chinese Academy of Sciences; Menglong Yan, Xian Sun, Insititute of Electrics, Chinese Academy of Sciences

TUP2-PD.5: PREDICTING YEAR OF PLANTATION WITH HYPERSPECTRAL AND LIDAR DATA..... 1780

Adrià Descals, Luis Alonso, Gustau Camps-Valls, Universitat de València

TUP2-PD.6: ACCURATE OBJECT MATCHING FOR UAV IMAGERY USING MULTI-SCALE BEST-BUDDIES SIMILARITY 3341

Lei Xu, Jinwang Wang, Kaimin Fu, Huai Yu, Wen Yang, Wuhan University

TUP1-PE: TARGET IDENTIFICATION

TUP1-PE.1: TARGET ASPECT FEATURE EXTRACTION AND APPLICATION FROM MULTI-ASPECT HIGH RESOLUTION SAR 1784

Yue Zhao, University of Chinese Academy of Sciences; Yun Lin, Wen Hong, Institute of Electronics, Chinese Academy of Sciences; Wenjie Shen, Feiteng Xue, University of Chinese Academy of Sciences

TUP1-PE.2: IMPURITY FUNCTION BAND PRIORITIZATION BASED ON PARTICLE SWARM OPTIMIZATION AND GRAVITATIONAL SEARCH ALGORITHM FOR HYPERSPECTRAL IMAGES 1788

Yang-Lang Chang, National Taipei University of Technology; Lena Chang, National Taiwan Ocean University; Ming-Xiu Xu, Chihyuan Chu, National Taipei University of Technology

TUP1-PE.3: CHARATERIZATION OF DENSELY ARRAYED TARGETS PATTERNS IN HIGH RESOLUTION SAR IMAGES: A STUDY CASE IN THE DAVIS-MONTHAN AIR FORCE BASE 1792

Zeyu Liu, Bin Liu, Weiwei Guo, Zenghui Zhang, Wenxian Yu, Shanghai Jiao Tong University

TUP1-PE.4: FEATURE EXTRACTION FOR POLSAR IMAGE CLASSIFICATION USING MULTILINEAR SUBSPACE LEARNING 1796

Mingliang Tao, Northwestern Polytechnical University; Feng Zhou, Xidian University; Jia Su, Jian Xie, Northwestern Polytechnical University

TUP1-PE.5: PROBLEM-BASED BAND SELECTION OF HYPERSPECTRAL IMAGES 1800

Mateus Habermann, Vincent Frémont, Université de Technologie de Compiègne; Elcio Shiguemori, Instituto de Estudos Avançados

TUP1-PE.6: FEATURE EXTRACTION AND MACHINE LEARNING FOR THE CLASSIFICATION OF ACTIVE CROPLAND IN THE ARAL SEA BASIN 1804

Dimo Dimov, University of Würzburg; Fabian Löw, MapTailor Geospatial Consulting; Mirzahayot Ibrakhimov, Khorezm Rural Advisory Support Service; Sarah Schönbrodt-Stitt, Christopher Conrad, University of Würzburg

TUP2-PE: DEEP NETWORKS FOR CLASSIFICATION

TUP2-PE.1: GABOR FILTERING BASED DEEP NETWORK FOR HYPERSPECTRAL IMAGE CLASSIFICATION 1808

Chengchao Li, Shutao Li, Xudong Kang, Ting Lu, Hunan University

TUP2-PE.3: SUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGES VIA HETEROGENEOUS DEEP NEURAL NETWORKS 1812

Zhixin Li, Yu Shen, Nan Huang, Liang Xiao, Nanjing University of Science and Technology

TUP2-PE.5: LEARNING SENSOR-SPECIFIC FEATURES FOR HYPERSPECTRAL IMAGES VIA 3-DIMENSIONAL CONVOLUTIONAL AUTOENCODER 1820

Jingyu Ji, Shaohui Mei, Northwestern Polytechnical University; Junhui Hou, City University of Hong Kong; Xu Li, Northwestern Polytechnical University; Qian Du, Mississippi State University

TUP2-PE.6: DEEP RESIDUAL NETWORKS FOR HYPERSPECTRAL IMAGE CLASSIFICATION..... 1824

Zilong Zhong, Jonathan Li, Lingfei Ma, Han Jiang, He Zhao, University of Waterloo

TUP2-PE.7: CLASSIFICATION BASED ON DEEP CONVOLUTIONAL NEURAL NETWORKS WITH HYPERSPECTRAL IMAGE 1828

Ze Zhong Zheng, Yameng Zhang, Liutong Li, University of Electronic Science and Technology of China; Mingcang Zhu, Yong He, Land and Resources Department of Sichuan Province; Minqi Li, Zhengqiang Guo, Yue He, Zhenlu Yu, University of Electronic Science and Technology of China; Xiaocheng Yang, Sinohydro Bureau 5 CO.,LTD; Xin Liu, Jianhua Luo, Taoli Yang, University of Electronic Science and Technology of China; Yalan Liu, Chinese Academy of Sciences; Jiang Li, Old Dominion University

TUP1-PF: ROAD AND TRAFFIC DETECTION

TUP1-PF.2: AUTOMATED EXTRACTION OF URBAN ROADSIDE TREES FROM MOBILE LASER SCANNING POINT CLOUDS BASED ON A VOXEL GROWING METHOD 1832

Jianfeng Liu, Zhenlong Xiao, Yiping Chen, Pengdi Huang, Rongren Wu, Xiamen University; Jonathan Li, Xiamen University, University of Waterloo

TUP1-PF.3: EFFICIENT DETECTION OF VEHICLE ON THE ROAD FOR GF-2 SATELLITE IMAGE WITH 1-METER SPATIAL RESOLUTION 1836

Hao Chen, Ping Wang, Ye Zhang, Harbin Institute of Technology

TUP1-PF.4: MOVING TARGET DETECTION VIA HIERARCHICAL SPATIOTEMPORAL SALIENCY ANALYSIS 1840

Bin Du, Long Ma, Yin Zhuang, He Chen, Beijing Institute of Technology; Nouman Qadeer Soomro, Mehran University of Engineering & Technology, SZAB Campus

TUP1-PF.5: FAST MULTIDIRECTIONAL VEHICLE DETECTION ON AERIAL IMAGES USING REGION BASED CONVOLUTIONAL NEURAL NETWORKS 1844

Tianyu Tang, Shilin Zhou, Zhipeng Deng, Lin Lei, Huanxin Zou, National University of Defense Technology

TUP2-PF: SHIP, VESSEL AND SPILL DETECTION

TUP2-PF.1: PRELIMINARY EVALUATION OF VESSEL DETECTABILITY FOR SENTINEL-1 SAR DATA 1848

Lanqing Huang, Bin Liu, Weiwei Guo, Zenghui Zhang, Wenxian Yu, Shanghai Jiao Tong University

TUP2-PF.2: EXTRACTION OF INSHORE VESSELS IN VERY HIGH RESOLUTION SAR IMAGES 1852

Guangjiao Zhou, Ye Zhang, Qi Li, Harbin Institute of Technology

TUP2-PF.3: REGION PROPOSAL FOR SHIP DETECTION BASED ON STRUCTURED FORESTS EDGE METHOD 1856

Jie Huang, Zhiguo Jiang, Haopeng Zhang, Bowen Cai, Yuan Yao, Beihang University

TUP2-PF.4: SHIP DETECTION AND VELOCITY ESTIMATION IN QUAD POLARIMETRIC SAR	1860
IMAGES FROM PURSUIT MONOSTATIC MODE OF TERRASAR-X AND TANDEM-X	
<i>Bo Zhang, Chao Wang, Fan Wu, Hong Zhang, Lu Xu, Meng Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
TUP2-PF.5: A SHIP DETECTOR APPLYING PRINCIPAL COMPONENT ANALYSIS TO THE	1864
POLARIMETRIC NOTCH FILTER	
<i>Tao Zhang, Shanghai Jiao Tong University; Armando Marino, The Open University; Huilin Xiong, Shanghai Jiao Tong University</i>	
TUP2-PF.6: RESEARCH ON MARINE RADAR OIL SPILL NETWORK MONITORING	1868
TECHNOLOGY	
<i>Jin Xu, Dalian Maritime University; Xinxin Wang, National Marine Environmental Monitoring Center; Xueyuan Zhu, Can Cui, Peng Liu, Dalian Maritime University; Bo Li, Liaoning Reconnaissance Institute of Hydrogeology and Engineering Geology</i>	
TUP2-PF.7: MULTI-FREQUENCY POLARIMETRIC SAR SIGNATURES OF LEAD SEA ICE AND	1872
OIL SPILLS	
<i>Malin Johansson, Camilla Brekke, UiT The Arctic University of Norway; Gunnar Spreen, University of Bremen</i>	
TUP2-PF.8: NONCIRCULARITY PARAMETERS AND THEIR POTENTIAL IN SHIP	1876
DETECTION FROM HIGH RESOLUTION SAR IMAGERY	
<i>Xiangguang Leng, Kefeng Ji, Shilin Zhou, Huanxin Zou, National University of Defense Technology</i>	
 TUP1-PG: CHANGE DETECTION IN SAR IMAGES II	
TUP1-PG.1: A NEW APPROACH FOR RAPID URBAN FLOOD MAPPING USING	1880
ALOS-2/PALSAR-2 IN 2015 KINU RIVER FLOOD, JAPAN	
<i>Youngjoo Kwak, ICHARM-UNESCO-PWRI; Sang-ho Yun, Jet Propulsion Laboratory; Yoichi Iwami, ICHARM-UNESCO-PWRI</i>	
TUP1-PG.2: POLARIMETRIC SAR IMAGE CHANGE DETECTION BASED ON LOW RANK AND	1884
SPARSE REPRESENTATION WITH FREEMAN-DURDEN DECOMPOSITION	
<i>Yizhou Liu, Wei Liu, Shuiping Gou, Licheng Jiao, Xidian University</i>	
TUP1-PG.3: THE ANALYSIS OF RELIABLE ARC SOLUTION IN THE MULTI-TEMPORAL	1888
INSAR	
<i>Fengming Hu, Jicang Wu, Tongji University</i>	
TUP1-PG.4: INCOHERENT DETECTION OF MAN-MADE OBJECTS OBSCURED BY	1892
FOLIAGE IN FOREST AREA	
<i>Mats I. Pettersson, Viet Thuy Vu, Blekinge Institute of Technology; Natanael Gomes, Federal University of Santa Maria; Patrik Dammert, Hans Hellsten, Saab Electronic Defense Systems</i>	
TUP1-PG.5: CHANGE DETECTION BASED ON SIMILARITY MEASURE AND JOINT	1896
CLASSIFICATION FOR POLARIMETRIC SAR IMAGES	
<i>Jinqi Zhao, Jie Yang, Wuhan University; Zhong Lu, Southern Methodist University; Pingxiang Li, Wensong Liu, Wuhan University</i>	
TUP1-PG.6: FLOOD HAZARD MAPPING FROM SAR IMAGES USING TEXTURE ANALYSIS	1900
AND FUZZY LOGIC	
<i>Moslem Ouled Sghaier, École de technologie supérieure; Imen Hammami, Faculté des Sciences de Tunis; Samuel Foucher, Computer Research Institute of Montreal; Richard Lepage, École de technologie supérieure</i>	
TUP1-PG.7: A MOVING TARGET RECONSTRUCTION APPROACH FOR THE	1904
MULTICHANNEL IN AZIMUTH HRWS SAR SYSTEM	
<i>Yuying Wang, University of the Chinese Academy of Sciences; Zhimin Zhang, Wei Xu, Institute of Electronics, Chinese Academy of Sciences; Heng Zhang, University of the Chinese Academy of Sciences</i>	

TUP2-PG: CHANGE DETECTION AND MULTITEMPORAL ANALYSIS

TUP2-PG.1: A FRAMEWORK FOR RADIOMETRIC SENSITIVITY EVALUATION OF MEDIUM RESOLUTION REMOTE SENSING TIME SERIES DATA TO BUILT-UP LAND COVER CHANGE 1908

Johannes H. Uhl, Stefan Leyk, University of Colorado

TUP2-PG.2: COMBINING MULTI-TEMPORAL SATELLITE IMAGES AND A CLOUD PLATFORM TO DEVELOP NEW EVALUATING PROCEDURES FOR LANDSLIDE VULNERABILITY STUDY 1912

Kuan-Tsung Chang, Minghsin University of Science and Technology; Jin-King Liu, CEO/LiDAR Technology Co., Ltd.; Chih-Ping Kuo, Minghsin University of Science and Technology; Hern Wang, Yu-Sheng Chang, Graduate Student/Minghsin University of Science and Technology

TUP2-PG.4: CHANGE DETECTION FOR HIGH-RESOLUTION REMOTE SENSING IMAGERY BASED ON MULTI-SCALE SEGMENTATION AND FUSION 1919

Qingle Guo, Junping Zhang, Tong Li, Xiaochen Lu, Harbin Institute of Technology

TUP2-PG.5: A STUDY ON DERIVING DAILY EVAPOTRANSPIRATION FROM REMOTELY SENSED INSTANTANEOUS EVAPOTRANSPIRATION BASED ON THE GAUSSIAN FITTING METHOD 1923

Suhua Liu, Chinese Academy of Sciences; Hongbo Su, Florida Atlantic University; Renhua Zhang, Jing Tian, Shaohui Chen, Chinese Academy of Sciences; Weimin Wang, Lijun Yang, Hong Liang, Shenzhen Environmental Monitoring Center

TUP2-PG.6: A NEW METHOD OF MARS ICE FLOW DETECTION BASED ON ANISOTROPY CRYSTAL ORIENTATION FABRICS 1927

Chen Wang, Xiaojuan Zhang, Xiaojun Liu, Institute of Electronics, Chinese Academy of Sciences; Jiancheng Shi, Institute of Remote Sensing Applications, Chinese Academy of Sciences

TUP2-PG.7: SATELLITE OBSERVATION BASED THERMAL ANOMALIES DETECTION FOR 2016 MENYUAN MS6.4 EARTHQUAKE 1930

Yanmei Zhang, China Earthquake Administration; Xiao Cheng, Beijing Normal University

TUP1-PH: CHANGE DETECTION IN HYPERSPECTRAL AND MULTISPECTRAL IMAGES II

TUP1-PH.1: COMPARISON BETWEEN PIXEL AND REGION BASED SITS ANALYSIS APPROACHES 1934

Safa Réjichi, Ferdaous Chaabane, SUPCOM; Florence Tupin, Télécom ParisTech

TUP1-PH.2: LAND-COVER CHANGE DETECTION USING LOCAL FEATURE DESCRIPTORS EXTRACTED FROM SPECTRAL INDICES 1938

Daniela Espinoza-Molina, Reza Bahmanyar, German Aerospace Center (DLR); Ricardo Diaz-Delgado, Javier Bustamante, Remote Sensing and GIS Laboratory (LAST-EBD); Mihai Datcu, German Aerospace Center (DLR)

TUP1-PH.3: CLOUD DETECTION ON THE GOOGLE EARTH ENGINE PLATFORM 1942

Gonzalo Mateo-García, Jordi Muñoz-Marí, Luis Gómez-Chova, University of Valencia

TUP1-PH.4: EVALUATING HYPERSPECTRAL IMAGING CHANGE DETECTION METHODS 1946

Stanley R. Rotman, Hanoch Shalev, Ben-Gurion University of the Negev

TUP1-PH.5: ANALYSIS OF CHANGE DETECTION ALGORITHMS WITH LANDSAT-8 DATA ON LANDSLIDE MAPPING IN THE KAIKOURA EARTHQUAKE 1950

Liwei Li, Yixin Wu, Xianfeng Zhou, Linyi Liu, Yunxia Wei, Dailiang Peng, Liping Lei, Wenjiang Huang, Bing Zhang, Institute of Remote Sensing and Digital Earth

TUP1-PH.6: A CHANGE DETECTION METHOD BASED ON COSEGMENTATION 1954

Zhenlei Xie, Ruoming Shi, Ling Zhu, Beijing University of Civil Engineering and Architecture; Shu Peng, National Geomatics Center of China; Linyuan Li, Beijing Normal University

TUP1-PH.7: A DEEP INFORMATION BASED TRANSFER LEARNING METHOD TO DETECT 1958
ANNUAL URBAN DYNAMICS OF BEIJING AND NEWYORK FROM 1984-2016

Haobo Lyu, Hui Lu, Tsinghua University

TUP2-PH: OCEAN SURFACE REMOTE SENSING

TUP2-PH.1: THE OCEAN SURFACE CURRENT INVERSION MEHTOD OF DOPPLER 1962
SCATTEROMETER

Qingliu Bao, Mingsen Lin, Youguang Zhang, National Satellite Ocean Application Service; Xiaolong Dong, National Space Science Center, Chinese Academy of Sciences; Shuyan Lang, National Satellite Ocean Application Service; Peng Gong, Tsinghua University

TUP2-PH.2: ON CFOSAT SWIM WAVE SPECTROMETER RETRIEVAL OF OCEAN WAVES 1966

Lin Ren, Jingsong Yang, Qingmei Xiao, Gang Zheng, Juan Wang, Second Institute of Oceanography, State Oceanic Administration

TUP2-PH.3: THE ERROR TRANSFER OF DOPPLER SPECTRUM MODEL IN OCEAN 1970
SURFACE CURRENT DIRECT INVERSION

Mingsen Lin, Youguang Zhang, Qingliu Bao, National Satellite Ocean Application Service; Peng Gong, Tsinghua University

TUP2-PH.4: MARINE RECLAMATION FEATURE ANALYSIS BASED ON GF-3 SAR REMOTE 1974
SENSING IMAGERY

Jianchao Fan, Jianhua Zhao, Xinxin Wang, Xiang Wang, Jialan Chu, Bingnan Li, National Marine Environmental Monitoring Center

TUP2-PH.5: MARINE TARGETS DETECTION USING GF-3 SAR DATA..... 1978

Peng Chen, Jingsong Yang, Juan Wang, State Key Laboratory of Satellite Ocean Environment Dynamics

TUP2-PH.6: DATA QUALITY CONTROL OF SEA SURFACE TEMPERATURE RETRIEVED BY 1981
SPACEBORNE MICROWAVE RADIOMETER

Qimao Wang, National Satellite Ocean Application Service; Chen Chen, 27th Research institute of China Electronics Technology Group Corporation; Fei Liao, Guangzhou Meteorological Observatory, CHINA; Yuxin Liu, Zhaohui Wang, National Satellite Ocean Application Service

TUP1-PI: SMAP RETRIEVALS AND APPLICATIONS

TUP1-PI.1: CCI SOIL MOISTURE FOR LONG-TERM AGRICULTURAL DROUGHT 1985
MONITORING: A CASE STUDY IN SPAIN

José Martínez-Fernández, University of Salamanca; Ángel González-Zamora, University of Salamanca; Nilda Sánchez, Miriam Pablos, University of Salamanca

TUP1-PI.2: DECOMPOSITION OF THE SMAP RADAR CHANNELS AND RELATION TO 1989
SURFACE SOIL MOISTURE AND VEGETATION

Yishan Li, Tsinghua University; Ruzbeh Akbar, Massachusetts Institute of Technology; Fan Yang, Hui Lu, Tsinghua University; Kaighin McColl, Dara Entekhabi, Massachusetts Institute of Technology

TUP1-PI.3: PASSIVE/ACTIVE MICROWAVE SOIL MOISTURE DISAGGREGATION USING 1992
SMAP DATA

Bin Fang, Venkat Lakshmi, University of South Carolina; Rajat Bindlish, NASA Goddard Space Flight Center; Thomas J. Jackson, Michael H. Cosh, USDA-ARS Hydrology and Remote Sensing Laboratory; Andreas Colliander, Jet Propulsion Laboratory

TUP1-PI.4: SMAP DATA FOR CROPLAND SOIL MOISTURE ASSESSMENT – A CASE STUDY 1996

Zhengwei Yang, USDA / National Agricultural Statistics Service; Wade Crow, USDA-ARS; Lei Hu, Liping Di, George Mason University; Rick Mueller, USDA / National Agricultural Statistics Service

TUP1-PI.5: PRELIMINARY ASSESSMENT OF AN INTEGRATED SMOS AND MODIS APPLICATION FOR GLOBAL AGRICULTURAL DROUGHT MONITORING	2000
<i>Nilda Sánchez, Ángel González-Zamora, José Martínez-Fernández, University of Salamanca; María Piles, Universitat de València; Miriam Pablos, University of Salamanca; Brian Wardlow, Tsegaye Tadesse, Mark Svoboda, University of Nebraska-Lincoln</i>	
TUP1-PI.6: IMPROVING SATELLITE RAINFALL ESTIMATES OVER TIBETAN PLATEAU USING IN SITU SOIL MOISTURE OBSERVATION AND SMAP RETRIEVALS	2004
<i>Hui Lu, Wei Wang, Fuqiang Tian, Kun Yang, Tsinghua University</i>	
TUP1-PI.7: GENERATION OF SMAP 9 KM SOIL MOISTURE USING A SPATIO-TEMPORAL INFORMATION FUSION MODEL	2008
<i>Hongtao Jiang, Huanfeng Shen, Xinghua Li, Liangpei Zhang, Wuhan University</i>	
TUP2-PI: SOIL MOISTURE VALIDATION	
TUP2-PI.2: STRATEGIES FOR VALIDATING SATELLITE SOIL MOISTURE PRODUCTS USING IN SITU NETWORKS: LESSONS FROM THE USDA-ARS WATERSHEDS	2015
<i>Michael H. Cosh, Thomas J. Jackson, Patrick Starks, David Bosch, Chandra Holifield Collins, Mark Seyfried, John Prueger, Stan Livingston, Rajat Bindlish, USDA-ARS</i>	
TUP2-PI.3: SURFACE SOIL MOISTURE RELATIONSHIP MODEL CONSTRUCTION BASED ON RANDOM FOREST METHOD	2019
<i>Wei Zhao, Ainong Li, Pan Huang, Bo Kong, Juelin He, Xianming Ma, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences</i>	
TUP2-PI.5: SOIL SURFACE ROUGHNESS OBSERVED DURING SMAPVEX16-IA AND ITS POTENTIAL CONSEQUENCES FOR SMOS AND SMAP	2027
<i>Brian Hornbuckle, Iowa State University; Bill Eichinger, Vivian Wallace, University of Iowa; Victoria Walker, Iowa State University; Enes Yildirim, University of Iowa</i>	
TUP2-PI.6: L-BAND SOIL MOISTURE MAPPING USING A SMALL UNMANNED AERIAL SYSTEM	2031
<i>Eryan Dai, Albin J. Gasiewski, Aravind Venkitasubramony, University of Colorado Boulder; Maciej Stachura, Jack Elston, Black Swift Technologies LLC</i>	
TUP2-PI.7: ESTIMATION AND ANALYSIS SOIL MOISTURE OF HUNSHANDAKE SANDY LAND FROM POLARIMETRIC SAR DATA	2035
<i>Chi Wang, Pingping Huang, Ritu Su, Weixian Tan, Inner Mongolia University of Technology</i>	
TUP1-PJ: TARGET DETECTION AND APPLICATIONS	
TUP1-PJ.1: MULTI SCALE C-V MODEL LEVEL SET METHOD FOR FAST COASTLINE EXTRACTION WITH SAR IMAGERY	2042
<i>Jiaojing Hu, Shandong University of Science and Technology; Lijun Lu, Chinese Academy of Surveying and mapping; Junyi Xu, Shandong University of Science and Technology; Jixian Zhang, Chinese Academy of Surveying and mapping</i>	
TUP1-PJ.2: DETECTION OF TARGETS MOVING IN AZIMUTH BASED ON VARIABLE-BORESIGHT MULTICHANNEL SAR	2046
<i>Hongchao Zheng, Junfeng Wang, Xingzhao Liu, Yesheng Gao, Shanghai Jiao Tong University</i>	
TUP1-PJ.3: SHIP DETECTION IN SAR IMAGERY: A COMPARISON STUDY	2050
<i>Pasquale Iervolino, Raffaella Guida, University of Surrey; Parivash Lumsdon, Jürgen Janoth, Melanie Clift, Andrea Minchella, Paolo Bianco, Airbus Defence and Space GmbH</i>	
TUP1-PJ.4: VELOCITY ESTIMATION OF THE MOVING TARGET FOR HIGH-RESOLUTION WIDE-SWATH SAR SYSTEMS	2054
<i>Hongchao Zheng, Junfeng Wang, Xingzhao Liu, Yesheng Gao, Linjian Zhang, Shanghai Jiao Tong University</i>	

TUP1-PJ.5: EVALUATION OF THE BLACK OCEAN PIXEL ASSUMPTION FOR MODIS IMAGERY OVER THE ARABIAN GULF	2058
<i>Maryam Al Shehhi, Imen Gherboudj, Hosni Ghedira, Masdar Institute of Science and Technology</i>	
TUP1-PJ.6: ANALYSIS OF GPS SIGNALS BACKSCATTERED FROM A TARGET ON THE SEA SURFACE	2062
<i>Silvia Liberata Ullo, Generoso Giangregorio, Maurizio di Bisceglie, Carmela Galdi, Università degli Studi del Sannio; Maria Paola Clarizia, University of Michigan; Pia Addabbo, Università Telematica Giustino Fortunato</i>	
TUP1-PJ.7: IMPERVIOUS SURFACE AREA EXTRACTION USING SIMULATED ENMAP IMAGERY	2066
<i>Boyu Feng, Jinfei Wang, Western University</i>	
 TUP2-PJ: CALIBRATION AND VALIDATION OF SPACE-BORNE REMOTE SENSING INSTRUMENTS	
TUP2-PJ.1: EVALUATION OF XCO₂ FROM OCO-2 LITE FILE PRODUCT COMPARED WITH TCCON DATA	2070
<i>Ailin Liang, Ge Han, Hao Xu, Wei Gong, Tianhao Zhang, Wuhan University</i>	
TUP2-PJ.2: IMAGE NAVIGATION AND REGISTRATION PERFORMANCE ASSESSMENT EVALUATION TOOLS FOR GOES-R ABI AND GLM	2074
<i>Scott Houchin, Brian Porter, Justin Graybill, Philip Slingerland, The Aerospace Corporation</i>	
TUP2-PJ.3: EVALUATING SENTINEL-2A ATMOSPHERICALLY CORRECTED REFLECTANCE USING THE 6SV MODEL	2078
<i>Yingjie Li, Qingmiao Ma, Jiangsu Normal University</i>	
TUP2-PJ.4: CALIBRATION RESULTS OF MULTIPLE SATELLITE ALTIMETRY MISSIONS FROM QIANLIYAN PERMANENT CAL/VAL FACILITIES	2082
<i>Xinghua Zhou, Lei Yang, Ning Lei, Qihua Tang, First Institute of Oceanography, State Oceanic Administration; Lin Zhu, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Science; University of Science and Technology of China</i>	
TUP2-PJ.5: CROSS VALIDATION OF OBSERVATIONS FROM GPM DUAL-FREQUENCY PRECIPITATION RADAR WITH S-BAND GROUND RADAR MEASUREMENTS OVER THE DALLAS – FORT WORTH REGION	2085
<i>Sounak Biswas, Venkatachalam Chandrasekar, Colorado State University</i>	
TUP2-PJ.6: ASSESSMENT AND VALIDATION OF MICROWAVE HUMIDITY AND TEMPERATURE SOUNDER ONBOARD FY-3C	2089
<i>Jieying He, Shengwei Zhang, Zhenzhan Wang, Na Li, National Space Science Center, Chinese Academy of Sciences</i>	
TUP2-PJ.7: EMISSIVITY IMAGE SIMULATION FOR THERMAL INFRARED BANDS ON GAOFEN-5 USING AIRBORNE HYPERSPECTRAL DATA	2093
<i>Yao Liu, Na Li, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources; Huazhong Ren, Tianyuan Zhang, Peking University</i>	
TUP2-PJ.8: MULTIPLE MODE SAR RAW DATA SIMULATION FOR GAOFEN-3 MISSION EVALUATION	2097
<i>Fan Zhang, Hanyuan Tang, Qiang Yin, Beijing University of Chemical Technology; Jiayin Liu, Xiaolan Qiu, Yuxin Hu, Chinese Academy of Sciences</i>	
 TUP1-PK: MICROWAVE RADIOMETER CALIBRATION II	
TUP1-PK.1: RESEARCH OF COLD SKY CALIBRATION FOR CHINESE FUTURE SATELLITE-BASED L-BAND RADIOMETER	2101
<i>Yili Zhao, Chuntao Chen, National Ocean Technology Center; Wu Zhou, Chaofei Ma, National Satellite Ocean Application Service; Jianhua Zhu, Xiaoqi Huang, National Ocean Technology Center</i>	

TUP1-PK.2: AN EMISSIVE ANTENNA CORRECTION FOR THE TROPICAL RAINFALL MEASURING MISSION MICROWAVE IMAGER (TMI)	2104
<i>Faisal Alquaied, W. Linwood Jones, University of Central Florida</i>	
TUP1-PK.3: HOT LOAD TEMPERATURE CORRECTION FOR THE TROPICAL RAINFALL MEASURING MISSION MICROWAVE IMAGER (TMI)	2108
<i>Faisal Alquaied, Ruiyao Chen, W. Linwood Jones, University of Central Florida</i>	
TUP1-PK.4: PRE-LAUNCH RADIOMETRIC PERFORMANCE CHARACTERIZATION OF THE ADVANCED TECHNOLOGY MICROWAVE SOUNDER ON THE JOINT POLAR SATELLITE SYSTEM-1 SATELLITE	2112
<i>Craig Smith, Stinger Ghaffarian Technologies; Edward Kim, NASA Goddard Space Flight Center; R. Vincent Leslie, Massachusetts Institute of Technology Lincoln Laboratory; Joseph Lyu, I.M. Systems Group, Inc.; Lisa McCormick, Fibertek, Inc.; Kent Anderson, Northrop Grumman Aerospace Systems</i>	
TUP1-PK.5: INTERCALIBRATION OF JASON-3 ADVANCED MICROWAVE RADIOMETER THROUGH GPM CORE AND CONSTELLATION SATELLITE INSTRUMENTS	2116
<i>Tanvir Islam, Shannon T. Brown, Sidharth Misra, NASA Jet Propulsion Laboratory</i>	
TUP1-PK.6: TRACKING CALIBRATION STABILITY IN CLIMATE MONITORING MICROWAVE RADIOMETERS USING ONBOARD 3-POINT CALIBRATION	2118
<i>Mustafa Aksoy, University of Maryland, Baltimore County; Paul E. Racette, NASA Goddard Space Flight Center</i>	
TUP1-PK.7: SHOWMASK: A TOOL TO IDENTIFY HOMOGENEOUS DESERT SCENES FROM SPACEBORNE MICROWAVE RADIOMETER OBSERVATIONS	2121
<i>Saswati Datta, Data and Image Processing Consultants, LLC; W. Linwood Jones, University of Central Florida; Branislav Vlahovic, North Carolina Central University</i>	
TUP2-PK: ADVANCED MICROWAVE INSTRUMENTS	
TUP2-PK.1: HURRICANE IMAGING RADIOMETER (HIRAD) BRIGHTNESS TEMPERATURE VALIDATION	2125
<i>Saleem Sahawneh, W. Linwood Jones, University of Central Florida</i>	
TUP2-PK.2: SHAPED SPACE-BORNE WAVEGUIDE SLOTS ARRAY ANTENNA	2129
<i>Hongjian Wang, CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center</i>	
TUP2-PK.3: COMBINED RECEIVER FOR ACTIVE AND PASSIVE MICROWAVE REMOTE SENSING	2131
<i>Chun Sik Chae, Shannon T. Brown, Andy Fung, Lorene Samoska, Todd C. Gaier, Jason Matthews, NASA Jet Propulsion Laboratory</i>	
TUP2-PK.4: RIGOROUS RADIATIVE TRANSFER SIMULATION FOR ATMS 183 GHZ WITH ATMOSPHERIC WATER SIGNATURE FROM COMBINED RADAR AND RADIOMETER OF GPM	2133
<i>John Xun Yang, Hu Yang, University of Maryland; Fuzhong Weng, NOAA Center for Satellite Applications and Research</i>	
TUP2-PK.5: PRELAUNCH PERFORMANCE OF THE 118 GHZ POLARCUBE 3U TEMPERATURE SOUNDING RADIOMETER	2137
<i>Lavanya Periasamy, Albin J. Gasiewski, University of Colorado Boulder</i>	
TUP2-PK.6: CHARACTERISTIC OF A DIGITAL CORRELATION RADIOMETER BACK END WITH FINITE WORDLENGTH	2141
<i>Sayak Biswas, USRA/NASA MSFC; David Hyde, Mark James, Daniel Cecil, NASA Marshall Space Flight Center</i>	
TUP2-PK.7: PALS INSTRUMENT UPGRADE, A WIDE BAND RADIOMETER	2145
<i>Isaac Ramos Perez, Sidharth Misra, Jet Propulsion Laboratory</i>	

TUP1-PL: OCEAN SURFACE WIND AND WAVE II

TUP1-PL.1: HURRICANE IMAGING RADIOMETER (HIRAD) WIND SPEED RETRIEVAL 2148 USING RADAR RAIN RATE

Abdusalam Alasgah, Maria Jacob, W. Linwood Jones, University of Central Florida

TUP1-PL.2: IN-ORBIT ONBOARD WIND VECTOR RAPID RETERIVAL USING 2152 POLARIMETERIC MICROWAVE RADIOMETER

Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd; Chaofei Ma, National Ocean Satellite Application Center; Congcong Wang, Yinan Li, CAST-Xi'an Institute of Space Radio Technology; Tongkui Liao, Beijing Piesat Information Technology Co. Ltd

TUP1-PL.3: WIND/STRESS FEEDBACK TO MESOSCALE OCEAN EDDIES 2156

W Timothy Liu, Xiaosu Xie, Jet Propulsion Laboratory

TUP1-PL.4: ON THE DEVELOPMENT OF A SCATTEROMETER-BASED CORRECTION FOR 2160 NWP WIND FORCING SYSTEMATIC ERRORS: IMPACT OF SATELLITE SAMPLING

Ana Trindade, Marcos Portabella, Wenming Lin, Institut de Ciències del Mar - Consejo Superior de Investigaciones Científicas; Ad Stoffelen, Royal Netherlands Meteorological Institute

TUP1-PL.5: WIND SPEED RETRIEVING FOR COMBINED OBSERVATIONS OF 2164 SCATTEROMETER AND RADIOMETER ONBOARD HY-2A FOR TYPHOONS USING NEURAL NETWORK

Xingou Xu, Xiaolong Dong, The CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences; Lei Zhang, DFH Satellite co., Ltd; Di Zhu, The CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences; Shuyan Lang, National Satellite Ocean Application Service

TUP2-PL: OCEAN REMOTE SENSING: TECHNIQUES AND APPLICATIONS

TUP2-PL.1: QUANTIFYING SARGASSUM BOUNDARIES ON EASTERN AND WESTERN 2167 WALLS OF THE GULF STREAM PROTRUDING NEAR CAPE HATTERAS INTO SARGASSO SEA BERMUDA/AZORES

Hagen Hodgkins, Tatyana Matthews, Derek Morris, James Boswell, Andrew Brumfield, Robert George, Linda Hayden, Elizabeth City State University

TUP2-PL.2: THE IMPACT OF OCEANOGRAPHIC CONDITIONS ON FISHING GROUND 2171 DISTRIBUTION OF FLYING SQUID (OMMASTREPHEs BARTRAMI) IN THE WESTERN NORTH PACIFIC USING REMOTELY SENSED SATELLITE DATA

Yu Liu, Shanghai Ocean University; Quanan Zheng, University of Maryland; Xiaofeng Li, Shanghai Ocean University

TUP2-PL.3: A NONLINEAR OPTIMIZATION ALGORITHM FOR EVALUATING THE 2175 PERFORMANCE OF MICROWAVE IMAGER COMBINED ACTIVE/PASSIVE

Lanjie Zhang, Zhenzhan Wang, Ranyu Zhang, Key Laboratory of Microwave Remote Sensing, National Space Science Center; Xiaobin Yin, Beijing Aerospace Hongtu information technology incorporated company

TUP2-PL.4: SATELLITE BASED OBSERVATION OF ENHANCEMENT OF CHLOROPHYLL-A 2179 CONCENTRATION BY TYPHOON – NARI

Ankita Misra, Balaji Ramakrishnan, Indian Institute of Technology Bombay

TUP2-PL.5: SEA SURFACE SALINITY ESTIMATION IN THE CENTER OF SETO INLAND SEA 2183 USING IN SITU REFLECTANCE AND WATER QUALITY DATA FROM FY2015 TO FY2016

Zuomin Wang, Yuji Sakuno, Kazuhiko Koike, Shizuka Ohara, Hiroshima University

TUP2-PL.6: RETRIEVAL OF COLOURED DISSOLVED ORGANIC MATTER WITH MACHINE 2187 LEARNING METHODS

Ana Belen Ruescas, University of Valencia; Martin Hieronymi, Helmholtz-Zentrum Geesthacht; Sampsa Koponen, Kari Kallio, Finnish Environment Institute; Gustau Camps-Valls, University of Valencia

WE1-L1: CLUSTERING AND UNSUPERVISED METHODS

WE1-L1.1: FAULT TOLERANT UNSUPERVISED KERNEL-BASED INFORMATION CLUSTERING IN HYPERSPECTRAL IMAGES 2191

Akshay Malhotra, Kazi Shahid, Ioannis Schizas, Saibun Tjuatja, The University of Texas at Arlington

WE1-L1.2: POWER SPECTRAL CLUSTERING ON HYPERSPECTRAL DATA 2195

Aditya Challa, Sravan Danda, Daya Sagar B S, Indian Statistical Institute; Laurent Najman, University Paris-Est

WE1-L1.3: PRIMITIVE CLUSTER SENSITIVE HASHING FOR SCALABLE CONTENT-BASED IMAGE RETRIEVAL IN REMOTE SENSING ARCHIVES 2199

Thomas Reato, Begüm Demir, Lorenzo Bruzzone, University of Trento

WE1-L1.4: SPARSE REPRESENTATION-BASED ARCHETYPAL GRAPHS FOR SPECTRAL CLUSTERING 2203

Ribana Roscher, Lukas Drees, Susanne Wenzel, University of Bonn

WE1-L1.5: A NOVEL AUTOMATIC APPROACH TO THE UPDATE OF LAND-COVER MAPS BY UNSUPERVISED CLASSIFICATION OF REMOTE SENSING IMAGES 2207

Claudia Paris, Lorenzo Bruzzone, University of Trento; Diego Fernández-Prieto, European Space Agency (ESA)

WE2-L1: KERNEL-BASED CLASSIFICATION

WE2-L1.1: GABOR FEATURE BASED SUPPORT VECTOR GUIDED DICTIONARY LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION2211

Sen Jia, Huimin Xie, Lin Deng, Qiang Huang, College of Computer Science and Software Engineering, Shenzhen University; Jun Li, School of Geography and Planning, Sun Yat-sen University

WE2-L1.2: A DOMAIN-TRANSFER SUPPORT VECTOR MACHINE FOR MULTI-TEMPORAL REMOTE SENSING IMAGERY CLASSIFICATION 2215

Yiqing Guo, Xiuping Jia, David Paull, The University of New South Wales

WE2-L1.3: HYPERSPECTRAL IMAGE CLASSIFICATION VIA KERNEL FULLY CONSTRAINED LEAST SQUARES 2219

Jianjun Liu, Jiangnan University; Zebin Wu, Nanjing University of Science and Technology; Zhiyong Xiao, Jinlong Yang, Jiangnan University

WE2-L1.4: MULTIPLE COMPOSITE KERNEL LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION 2223

Peijun Du, Nanjing University; Junshi Xia, The University of Tokyo; Pedram Ghamisi, German Aerospace Center (DLR); Akira Iwasaki, The University of Tokyo; Jón Atli Benediktsson, University of Iceland

WE2-L1.5: EFFICIENT REMOTE SENSING IMAGE CLASSIFICATION WITH GAUSSIAN PROCESSES AND FOURIER FEATURES 2227

Pablo Morales, University of Granada; Adrian Perez-Suay, Universitat de València; Rafael Molina, University of Granada; Gustau Camps-Valls, Universitat de València

WE3-L1: DEEP AND CONVOLUTIONAL NEURAL NETWORKS

WE3-L1.1: CLASSIFICATION OF MULTITEMPORAL SAR IMAGES USING CONVOLUTIONAL NEURAL NETWORKS AND MARKOV RANDOM FIELDS 2231

Carolyne Danilla, Claudio Persello, Valentyn Tolpekin, John Ray Bergado, University of Twente

WE3-L1.2: HYPERSPECTRAL IMAGES CLASSIFICATION WITH HYBRID DEEP RESIDUAL NETWORK 2235

Weiwei Song, Shutao Li, Yi Li, Hunan University

WE3-L1.3: GOLOMB-RICE CODING PARAMETER LEARNING USING DEEP BELIEF NETWORK FOR HYPERSPECTRAL IMAGE COMPRESSION	2239
<i>Hongda Shen, David Pan, Yuhang Dong, Zhuocheng Jiang, University of Alabama in Huntsville</i>	
WE3-L1.4: REAL-TIME SCENE UNDERSTANDING FOR UAV IMAGERY BASED ON DEEP CONVOLUTIONAL NEURAL NETWORKS	2243
<i>Clay Sheppard, Maryam Rahnemoonfar, Texas A&M University-Corpus Christi</i>	
WE3-L1.5: MULTICORE IMPLEMENTATION OF THE MULTI-SCALE ADAPTIVE DEEP PYRAMID MATCHING MODEL FOR REMOTELY SENSED IMAGE CLASSIFICATION	2247
<i>Mercedes Eugenia Paoletti, Juan Mario Haut, Javier Plaza, Antonio Plaza, University of Extremadura; Qingshan Liu, Renlong Hang, Nanjing University of Information Science and Technology</i>	
 WE4-L1: SPATIAL FEATURE DETECTION AND EXTRACTION	
WE4-L1.1: CLOUD DETECTION MACHINE LEARNING ALGORITHMS FOR PROBA-V	2251
<i>Luis Gómez-Chova, Gonzalo Mateo-García, Jordi Muñoz-Marí, Gustau Camps-Valls, University of Valencia</i>	
WE4-L1.2: CONVOLUTIONAL NEURAL NETWORKS FOR MULTISPECTRAL IMAGE CLOUD MASKING	2255
<i>Gonzalo Mateo-García, Luis Gómez-Chova, Gustau Camps-Valls, University of Valencia</i>	
WE4-L1.3: AUTOMATED EXTRACTION OF INLAND SURFACE WATER EXTENT FROM SENTINEL-1 DATA	2259
<i>Wenli Huang, Ben DeVries, Chengquan Huang, University of Maryland; John Jones, U.S. Geological Survey; Megan Lang, United States Fish and Wildlife Survey; Irena Creed, University of Western Ontario</i>	
WE4-L1.4: SYNTHETIC APERTURE RADAR SHIP DISCRIMINATION, GENERATION AND LATENT VARIABLE EXTRACTION USING INFORMATION MAXIMIZING GENERATIVE ADVERSARIAL NETWORKS	2263
<i>Colin Schwegmann, Waldo Kleyhans, Council for Scientific and Industrial Research; Brian Salmon, University of Tasmania; Lizwe Mdakane, Rory Meyer, Council for Scientific and Industrial Research</i>	
WE4-L1.5: HYPERSPECTRAL IMAGES CLASSIFICATION BY FUSING EXTINCTION PROFILES FEATURE	2267
<i>Nanjun He, Leyuan Fang, Shutao Li, Hunan University; Pedram Ghamisi, German Aerospace Center (DLR) and Signal Processing in Earth Observation; Jón Atli Benediktsson, University of Iceland</i>	
 WE1-L2: SAR TARGET DETECTION AND RECOGNITION	
WE1-L2.1: AUTOMATIC RECOGNITION OF TARGETS ON VERY HIGH RESOLUTION SAR IMAGES	2271
<i>Corrado Avolio, e-GEOS - Italian Space Agency / Telespazio; Miguel Ángel Molero Armenta, Freelance; Antonio Jurado Lucena, INTA; María José Fuertes Suárez, INDRA; Patrick Vaughan Martín-Mateo, Francisco López González, Berta Lucas Verdoy, INTA; Mario Costantini, e-GEOS - Italian Space Agency / Telespazio</i>	
WE1-L2.2: AN EFFICIENT OBJECT-ORIENTED METHOD OF AZIMUTH AMBIGUITIES REMOVAL FOR SHIP DETECTION IN SAR IMAGES	2275
<i>Cheng Zhang, Chao Wang, Hong Zhang, Bo Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Sirui Tian, Nanjing University of Science and Technology</i>	
WE1-L2.3: AN ITERATIVE METHOD FOR SHADOW ENHANCEMENT IN HIGH RESOLUTION SAR IMAGES	2279
<i>Yueting Zhang, Institute of Electronics, Chinese Academy of Sciences; Qi Liu, Alibaba Group; Jiayi Guo, Lei Liu, Zongxu Pan, Fangfang Li, Chibiao Ding, Bin Lei, Institute of Electronics, Chinese Academy of Sciences</i>	

WE1-L2.4: DOUBLE MRF FOR WATER CLASSIFICATION IN SAR IMAGES BY JOINT DETECTION AND REFLECTIVITY ESTIMATION	2283
<i>Sylvain Lobry, Télécom ParisTech; Loïc Denis, Univ Lyon, UJM-Saint-Etienne, CNRS, Institut d'Optique Graduate School; Florence Tupin, Télécom ParisTech; Roger Fjortoft, CNES</i>	
WE1-L2.5: FLAT-ROOFED BUILDING RECONSTRUCTION BASED ON LAYOVER MODELLING AND MCMC METHOD	2287
<i>Yue Zhang, Xian Sun, Kun Fu, Kaiqiang Chen, Hongqi Wang, Institute of Electronics, Chinese Academy of Sciences</i>	
WE2-L2: RADAR TARGET DETECTION	
WE2-L2.1: IMPROVED MEAN CLUSTERING ALGORITHM OF TARGET DETECTION WITH GNSS FORWARD-SCATTERING RADAR	2291
<i>Chaoqun Gao, Dongkai Yang, Beihang University; Xuejing Qiu, China University of Geosciences; Lei Yang, Yao Xu, Yunlong Zhu, Beihang University</i>	
WE2-L2.2: IMPROVED DETECTION OF ICEBERGS IN SEA ICE WITH RADARSAT-2 POLARIMETRIC DATA	2294
<i>Igor Zakharov, Desmond Power, Mark Howell, Sherry Warren, C-CORE</i>	
WE2-L2.3: ICEBERG DETECTION IN OPEN WATER AND SEA ICE USING C-BAND RADAR POLARIMETRY	2298
<i>Vahid Akbari, Camilla Brekke, UiT The Arctic University of Norway</i>	
WE2-L2.4: A FRAMEWORK FOR PREDICTING UNDERWATER OBJECT RECOGNITION PERFORMANCE WITH FLUORESCENCE LIDAR	2302
<i>Stefania Matteoli, National Research Council (CNR); Laura Zotta, University of Pisa; Marco Diani, Italian Naval Academy; Giovanni Corsini, University of Pisa</i>	
WE2-L2.5: TARGET RECOGNITION ALGORITHM BASED ON MORPHOLOGICAL AND SPATIAL FEATURES FOR HIGH-SPEED FORWARD-LOOKING SCANNING RADAR	2306
<i>Pengfan Zhao, Yongchao Zhang, Yin Zhang, Junjie Wu, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China</i>	
WE3-L2: RADAR IMAGING	
WE3-L2.1: OPTIMAL COGNITIVE RADAR TRANSMIT-RECEIVER DESIGN FOR EXTENDED TARGET WITH UNKNOWN TARGET IMPULSE RESPONSE	2310
<i>Xiaowen Zhang, Kaizhi Wang, Xingzhao Liu, Lei Liu, Shanghai Jiao Tong University</i>	
WE3-L2.2: A REGULARIZATION IMAGING METHOD FOR FORWARD-LOOKING SCANNING RADAR VIA JOINT L1-L2 NORM CONSTRAINT	2314
<i>Ke Tan, Wenchao Li, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China</i>	
WE3-L2.3: CHARACTERIZATION AND IDENTIFICATION OF ACTIVE ELECTRONICALLY SCANNED ARRAY RADAR	2318
<i>Xiangqian Zhang, University of Electronic Science and Technology of China; Caiyong Hao, Shenzhen Station of State Radio Monitoring Center; Shunsheng Zhang, Lifang Zheng, University of Electronic Science and Technology of China</i>	
WE3-L2.4: NEAR-GRAZING RADAR BACKSCATTERING MEASUREMENTS OF ROAD SURFACES AT 222 GHZ	2322
<i>Abdulrahman Alaqeel, Amr Ibrahim, Adib Nashashibi, The university of Michigan, Ann Arbor; Hussein Shaman, King Abdulaziz City for Science and Technology; Kamal Sarabandi, The university of Michigan, Ann Arbor</i>	
WE3-L2.5: AN AZIMUTH AMBIGUITIES REMOVAL METHOD BASED ON POLARIMETRIC NOTCH FILTER	2325
<i>Tao Zhang, Shanghai Jiao Tong University; Armando Marino, The Open University; Weilin Zhong, Huilin Xiong, Shanghai Jiao Tong University</i>	

WE4-L2: OBJECT DETECTION AND RECOGNITION I

WE4-L2.1: PLANETARY CRATER DETECTION AND REGISTRATION USING MARKED POINT PROCESSES, GRAPH CUT ALGORITHMS, AND WAVELET TRANSFORMS 2329

Alberto Gotelli, University of Genoa; Jacqueline Le Moigne, NASA Goddard Space Flight Center; Gabriele Moser, Sebastiano Bruno Serpico, University of Genoa

WE4-L2.2: 3D LUNAR CRATERS DETECTION BASED ON STEREO MATCHING 2333

Hongmei Zhu, Jihao Yin, Ding Yuan, Beihang University

WE4-L2.3: PLANETARY CRATER DETECTION AND REGISTRATION USING MARKED POINT PROCESSES, MULTIPLE BIRTH AND DEATH ALGORITHMS, AND REGION-BASED ANALYSIS 2337

David Solarna, Gabriele Moser, University of Genoa; Jacqueline Le Moigne, NASA; Sebastiano Bruno Serpico, University of Genoa

WE4-L2.4: ACCURATE EXTRACTION OF CRACKS ON THE UNDERSIDE OF CONCRETE BRIDGES 2341

Heng Zhang, Huai Yu, Haijian Zhang, Wen Yang, Wuhan University

WE4-L2.5: MULTISCALE DIRECTIONAL BILATERAL FILTER BASED CLUTTER REMOVAL IN GPR IMAGE ANALYSIS 2345

Deniz Kumlu, Isin Erer, Istanbul Technical University

WE1-L3: SAR SPECKLE FILTERING

WE1-L3.1: A NEW SPECKLE REDUCTION ALGORITHM OF POLSAR IMAGES BASED ON A COMBINED GAUSSIAN RANDOM FIELD MODEL AND WAVELET EDGE DETECTION APPROACH 2349

Masoud Mahdianpari, Bahram Salehi, Fariba Mohammadimanesh, C-CORE and Department of Electrical Engineering, Memorial University of Newfoundland, Canada, A1B 3X5.

WE1-L3.2: SPECKLE REDUCING FOR SENTINEL-1 SAR DATA..... 2353

Sergey Abramov, Oleksii Rubel, Vladimir Lukin, Ruslan Kozhemiakin, National Aerospace University – KhAI; Nataliia Kussul, Andrii Shelestov, Mykola Lavreniuk, Space Research Institute

WE1-L3.3: BMINSAR: A NOVEL APPROACH FOR INSAR PHASE DENOISING BY CLUSTERING AND BLOCK MATCHING 2357

Thiago Luiz Moraes Barreto, UNIFESP; Rafael Antônio da Silva Rosa, Christian Wimmer, João Roberto Moreira Neto, Bradar Indústria S/A; Leonardo Sant’Anna Bins, INPE; Jurandy Almeida, Fábio Augusto Menocci Cappabianco, UNIFESP

WE1-L3.4: A NEW APPROACH FOR SUPPRESSING SIDELobe BY DECOMPOSING CHIRP SIGNAL IN CFM SPACE 2361

Mingxuan Mei, Ze Yu, Youming Wu, Su Yu, Beihang University

WE1-L3.5: A COMPARATIVE SENSITIVITY ANALYSIS OF SCATTERING-BASED DESPECKLING ALGORITHMS 2365

Gerardo Di Martino, Alessio Di Simone, Antonio Iodice, Daniele Riccio, Giuseppe Ruello, University of Naples Federico II

WE2-L3: SAR MOVING TARGET IMAGING

WE2-L3.1: AN ADAPTIVE NLCS TECHNIQUE FOR LARGE-SIZE MOVING TARGET IMAGING WITH BISTATIC FORWARD-LOOKING SAR 2369

Zhongyu Li, Junjie Wu, Zhichao Sun, Yulin Huang, Haiguang Yang, Jianyu Yang, University of Electronic Science and Technology of China

WE2-L3.2: SPARSE NON-AMBIGUOUS IMAGING OF SAR MOVING TARGETS..... 2373

Gang Xu, Wei Hong, Yingrui Yu, Southeast University

WE2-L3.3: EFFECTS OF SPEED DIFFERENCE ON ACCELERATING TARGET IMAGERY	2377
SIGNATURES FOR BROADSIDE SAR	
<i>David Garren, Naval Postgraduate School</i>	
WE2-L3.4: A NEW POLSAR DECOMPOSITION ALGORITHM TO DELINEATE URBAN TARGETS	2381
<i>Dingfeng Duan, Yong Wang, Haitao Lv, University of Electronic Science and Technology of China; Hong Li, East Carolina University; Yuanyuan Yang, University of Electronic Science and Technology of China</i>	
WE2-L3.5: THE BEST OF A BAD SITUATION: OPTIMISING AN ALGORITHM TO MATCH COURSE RESOLUTION SAR VESSEL DETECTIONS TO SPARSE AIS DATA	2385
<i>Rory Meyer, Colin Schwegmann, Waldo Kleynhans, Council for Scientific and Industrial Research</i>	
 WE3-L3: SAR IMAGE FORMATION AND COMPRESSIVE SENSING	
WE3-L3.1: SENTINEL-1 TOPS DATA FOCUSING BASED ON A MODIFIED TWO-STEP PROCESSING APPROACH	2389
<i>Adele Fusco, Antonio Pepe, Riccardo Lanari, National Research Council (CNR)</i>	
WE3-L3.2: 3D IMAGE RECONSTRUCTION ALGORITHM FOR A SPARSE ARRAY RADAR SYSTEM BASED ON COMPRESSIVE SENSING	2392
<i>Iakov Chernyak, Motoyuki Sato, Tohoku University</i>	
WE3-L3.3: WAVENUMBER DOMAIN IMAGING ALGORITHM FOR HYPERSONIC PLATFORM SAR WITH CURVED TRAJECTORY	2396
<i>Rui Zhou, Jinping Sun, Jinbin Fu, Jun Wang, Beihang University</i>	
WE3-L3.4: A SYNTHETIC BANDWIDTH METHOD BASED ON FREQUENCY-DOMAIN BACK PROJECTION FOR STEPPED-FREQUENCY SAR	2400
<i>Kebin Hu, Xiaoling Zhang, Jun Shi, Shunjun Wei, University of Electronic Science and Technology of China</i>	
WE3-L3.5: ISAR IMAGING USING FILTERED COMPRESSIVE SENSING	2404
<i>Jon Mitchell, Saibun Tjuatja, The University of Texas at Arlington</i>	
 WE4-L3: SAR IMAGING SYSTEMS	
WE4-L3.1: AIRBORNE PASSIVE SAR IMAGING BASED ON DVB-T SIGNALS	2408
<i>Lars Ulander, Per-Olov Frörlind, Anders Gustavsson, Rolf Ragnarsson, Gunnar Stenström, Swedish Defence Research Agency</i>	
WE4-L3.2: MULTISTATIC WAVENUMBER TESSELLATION: IDEAS FOR HIGH RESOLUTION P-BAND SAR MISSIONS	2412
<i>Stefano Tebaldini, Fabio Rocca, Politecnico di Milano</i>	
WE4-L3.3: ALL-DIRECTIONS THROUGH THE WALL IMAGING USING A SMALL NUMBER OF MOVING OMNIDIRECTIONAL TRANSCEIVERS	2416
<i>Behzad Yektakhah, Kamal Sarabandi, University of Michigan</i>	
WE4-L3.4: SIMULATION OF MULTI-STATION ISAR IMAGING FOR MONITORING A SPACE TARGET: A CASE OF ENVISAT	2420
<i>Feng Wang, Feng Xu, Ya-Qiu Jin, Fudan University</i>	
WE4-L3.5: AN NOVEL AIRBORNE MIMO-SAR SYSTEM BUILT IN IECAS	2423
<i>Chibiao Ding, Xingdong Liang, Jie Wang, Longyong Chen, Institute of Electronics, Chinese Academy of Sciences</i>	

WE1-L4: ALOS/ALOS-2/ALOS-2 FOLLOW-ON (SAR) MISSION I

WE1-L4.1: STATUS OF THE ADVANCED LAND OBSERVING SATELLITE-2 (ALOS-2) AND ITS FOLLOW-ON L-BAND SAR MISSION 2427

Takeshi Motohka, Yukihiro Kankaku, Shinichi Suzuki, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University

WE1-L4.3: POLARIMETRIC SYSTEM CALIBRATION IN THE PRESENCE OF FARADAY ROTATION 2430

Konstantinos Papathanassiou, Jun-Su Kim, German Aerospace Center (DLR)

WE1-L4.4: PERFORMANCE OF ALOS-2 PALSAR-2 FOR DISASTER RESPONSE 2434

Ryo Natsuaki, The University of Tokyo; Masato Ohki, Hiroto Nagai, Takeshi Motohka, Takeo Tadono, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University; Shinichi Suzuki, Japan Aerospace Exploration Agency

WE1-L4.5: INTER-SENSOR ANALYSIS OF PERSISTENT SCATTERER L-BAND SAR INTERFEROMETRY 2438

Takuma Anahara, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University

WE2-L4: ALOS/ALOS-2/ALOS-2 FOLLOW-ON (SAR) MISSION II

WE2-L4.1: RICE PADDY MONITORING BY L-BAND MIMP SAR APPROACH 2442

Motofumi Arii, Mitsubishi Electric Corporation; Hiroyoshi Yamada, Niigata University

WE2-L4.2: DEVELOPMENT OF EARLY-STAGE DEFORESTATION DETECTION ALGORITHM (ADVANCED) WITH PALSAR-2/SCANSAR FOR JICA-JAXA PROGRAM (JJ-FAST) 2446

Manabu Watanabe, Christian Koyama, Tokyo Denki University; Masato Hayashi, Yutaka Kaneko, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University

WE2-L4.3: THE EFFECT OF PRECIPITATION AND SOIL MOISTURE VARIATIONS ON (PARTIAL) POLARIMETRIC L-BAND SAR BACKSCATTER IN TROPICAL FOREST REGIONS 2450

Christian Koyama, Manabu Watanabe, Tokyo Denki University; Masato Hayashi, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University

WE2-L4.4: REGENERATED ALOS-2/PALSAR-2 GLOBAL MOSAICS 2016 AND 2014/2015 FOR FOREST OBSERVATIONS 2454

Masanobu Shimada, Tokyo Denki University & JAXA; Takuya Itoh, Remote sensing technology of Japan; Takeshi Motooka, Japan Aerospace Exploration Agency

WE2-L4.5: PALSAR-2 POLARIMETRIC IMAGE MOSAIC AND ITS APPLICATION TO LAND COVER MONITORING 2458

Masato Ohki, Japan Aerospace Exploration Agency; Masanobu Shimada, Tokyo Denki University

WE3-L4: 3-/4-D COMPUTATIONAL RADAR IMAGING ADVANCEMENTS, SYSTEM, AND USER APPLICATIONS I

WE3-L4.1: MULTIDIMENSIONAL SAR TOMOGRAPHY: METHODS AND APPLICATIONS 2460

Fabrizio Lombardini, University of Pisa; Stefano Tebaldini, Politecnico di Milano

WE3-L4.3: BEYOND TOMOSAR VERTICAL REFLECTIVITY PROFILES IN FOREST SCENARIOS: GROUND POLARIMETRIC COVARIANCE ESTIMATION AT MULTIPLE FREQUENCIES 2464

Matteo Pardini, Konstantinos Papathanassiou, German Aerospace Center (DLR)

WE3-L4.4: ASSESSMENT OF SAOCOM CS DATA PROCESSING FOR THE CHARACTERIZATION OF FORESTED AREAS USING POLARIMETRIC SAR TOMOGRAPHY 2468

Laurent Ferro-Famil, Yue Huang, University of Rennes 1; Stefano Tebaldini, Politecnico di Milano; Marc Azcueta, Conae

WE3-L4.5: INVERSION OF SNOW STRUCTURE PARAMETERS FROM TIME SERIES OF TOMOGRAPHIC MEASUREMENTS WITH SNOWSCAT	2472
<i>Othmar Frey, Gamma Remote Sensing / ETH Zurich; Charles Werner, Rafael Caduff, Andreas Wiesmann, GAMMA Remote Sensing AG</i>	
WE4-L4: 3-/4-D COMPUTATIONAL RADAR IMAGING ADVANCEMENTS, SYSTEM, AND USER APPLICATIONS II	
WE4-L4.1: IMPACT OF NON-LOCAL FILTERING ON 3D RECONSTRUCTION FROM TOMOGRAPHIC SAR DATA	2476
<i>Olivier D'Hondt, Technische Universität Berlin; Carlos López-Martínez, Universitat Politècnica de Catalunya; Stéphane Guillaso, Institut polytechnique de Grenoble; Olaf Hellwich, Technische Universität Berlin</i>	
WE4-L4.2: ANALYSIS OF BISTATIC TOMOGRAPHY FOR SAOCOM-CS AND SENTINEL-1 CS MISSIONS	2480
<i>Giosue Andrey Giardino, Paolo Pasquali, John Peter Merryman Boncori, Sarmap SA; Josep Rosello, Christopher Buck, European Space Agency (ESA)</i>	
WE4-L4.3: DETECTION OF HOMOGENEOUS OBJECTS IN MULTI-DIMENSIONAL SAR TOMOGRAPHY	2483
<i>Peifeng Ma, Guoqiang Shi, Hui Lin, Jili Wang, The Chinese University of Hong Kong; Weixi Wang, Shenzhen Research Center of Digital City Engineering</i>	
WE4-L4.4: TOMOGRAPHIC IMAGING WITH UAVSAR: CURRENT STATUS AND NEW RESULTS FROM THE 2016 AFRISAR CAMPAIGN	2485
<i>Marco Lavalle, Brian Hawkins, Scott Hensley, NASA Jet Propulsion Laboratory</i>	
WE4-L4.5: LRT DETECTION AND COMPRESSING SENSING IN SAR TOMOGRAPHY: APPLICATION TO IMAGING AND MONITORING OF BUILDINGS	2489
<i>Gianfranco Fornaro, Antonio Pauciuillo, Diego Reale, CNR; Matthias Weiss, Fraunhofer; Alessandra Budillon, Gilda Schirinzi, University Parthenope</i>	
WE1-L5: METHODOLOGIES FOR HIGH RESOLUTION SOIL MOISTURE FROM MICROWAVE OBSERVATIONS I	
WE1-L5.1: HIGH-RESOLUTION ENHANCED PRODUCT BASED ON SMAP ACTIVE-PASSIVE APPROACH USING SENTINEL 1 DATA AND ITS APPLICATIONS	2493
<i>Narendra N Das, Jet Propulsion Laboratory, NASA; Dara Entekhabi, Massachusetts Institute of Technology; Seungbum Kim, Jet Propulsion Laboratory, NASA; Thomas Jagdhuber, German Aerospace Center (DLR); Roy Scott Dunbar, Simon Yueh, Andreas Colliander, Jet Propulsion Laboratory, NASA</i>	
WE1-L5.2: A SPATIO-TEMPORAL DATA FUSION ALGORITHM FOR ESTIMATING HIGH-RESOLUTION SOIL MOISTURE IN AGRICULTURAL REGIONS	2495
<i>Subit Chakrabarti, Pang-Wei Liu, Jasmeet Judge, Anand Rangarajan, University of Florida; Roger De Roo, University of Michigan; Rajat Bindlish, USDA-ARS; Andreas Colliander, Sidharth Misra, Scott Tripp, Barron Latham, Ross Williamson, Isaac Ramos Perez, Jet Propulsion Laboratory; Thomas J. Jackson, USDA-ARS; Anthony W. England, University of Michigan; Sanjay Ranka, University of Florida; Simon Yueh, Jet Propulsion Laboratory</i>	
WE1-L5.3: ENHANCED-RESOLUTION SMAP SOIL MOISTURE USING IMAGE RECONSTRUCTION	2499
<i>David G. Long, Brigham Young University; Mary J. Brodzik, Molly A. Hardman, CIRES/University of Colorado, Boulder</i>	
WE1-L5.4: SOIL MOISTURE DOWNSCALING USING A SIMPLE THERMAL BASED PROXY	2503
<i>Jian Peng, Max Planck Institute for Meteorology; Alexander Loew, Ludwig-Maximilians-Universität München</i>	

WE1-L5.5: EVAPORATION-BASED DISAGGREGATION OF SURFACE SOIL MOISTURE DATA: 2507
THE DISPATCH METHOD, THE CATDS PRODUCT AND ON-GOING RESEARCH

Olivier Merlin, Luis Olivera-Guerra, Centre d'Etudes Spatiales de la Biosphère, Université de Toulouse, IRD/CNRS/UPS/CNES; Bouchra Aït Hssaine, Abdelhakim Amazirh, University of Cadi Ayyad, Marrakech; Yoann Malbêteau, Vivien Stefan, Beatriz Molero, Centre d'Etudes Spatiales de la Biosphère, Université de Toulouse, IRD/CNRS/UPS/CNES; Zoubair Rafi, University of Cadi Ayyad, Marrakech; Maria José Escorihuela, isardSAT; Jamal Ezzahar, Saïd Khabba, University of Cadi Ayyad, Marrakech; Jeffrey Walker, Monash University; Yann Kerr, Centre d'Etudes Spatiales de la Biosphère, Université de Toulouse, CNES/UPS/CNRS/IRD; Vincent Simonneaux, Centre d'Etudes Spatiales de la Biosphère, Université de Toulouse, IRD/CNES/CNRS/UPS; Salah Er-Raki, University of Cadi Ayyad, Marrakech

**WE2-L5: METHODOLOGIES FOR HIGH RESOLUTION SOIL MOISTURE FROM
MICROWAVE OBSERVATIONS II**

WE2-L5.1: STATISTICAL DOWNSCALING OF REMOTELY-SENSED SOIL MOISTURE2511

Sayed Hamed Alemohammad, Columbia University; Jana Kolassa, NASA Goddard Space Flight Center; Catherine Prigent, Filipe Aires, Observatoire de Paris; Pierre Gentine, Columbia University

WE2-L5.2: L-BAND BRIGHTNESS TEMPERATURE DISAGGREGATION BY USING S-BAND 2515
C-BAND RADIOMETER DATA

Jiancheng Shi, Panpan Yao, Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

WE2-L5.3: FUSING MICROWAVE AND OPTICAL SATELLITE OBSERVATIONS FOR HIGH 2519
RESOLUTION SOIL MOISTURE DATA PRODUCTS

Xiwu Zhan, Li Fang, Jicheng Liu, NOAA/NESDIS; Christopher Hain, NASA Marshall Space Flight Center; Jifu Yin, Mitch Schull, NOAA/NESDIS; Mike Cosh, USDA-ARS; Jun Wen, Chinese Academy of Sciences; Tarendra Lakhankar, NOAA-CREST City University of New York; Kun Yang, Chinese Academy of Sciences; Jeffrey Walker, Monash University

WE2-L5.4: COMPARISON OF DOWNSCALING TECHNIQUES FOR HIGH RESOLUTION 2523
SOIL MOISTURE MAPPING

Sabah Sabaghy, Jeffrey Walker, Monash University; Luigi Renzullo, Commonwealth Scientific and Industrial Research Organisation (CSIRO); Ruzbeh Akbar, University of Southern California; Steven Chan, Julian Chaubell, Narendra N Das, Roy Scott Dunbar, Jet Propulsion Laboratory; Dara Entekhabi, Massachusetts Institute of Technology; Anouk Gevaert, VU University Amsterdam; Thomas J. Jackson, U.S. Department of Agriculture, Agricultural Research Service (USDA ARS); Olivier Merlin, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Mahta Moghaddam, University of Southern California; Jinzheng Peng, Jeffrey R. Piepmeier, Goddard Space Flight Center; Maria Piles, Universitat de València; Gerard Portal, Universitat Politècnica de Catalunya; Christoph Rüdiger, Monash University; Vivien Stefan, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Xiaoling Wu, Nan Ye, Monash University; Simon Yueh, Jet Propulsion Laboratory

WE3-L5: OBSERVATIONS BY THE NASA SOIL MOISTURE ACTIVE PASSIVE MISSION I

WE3-L5.1: NASA SOIL MOISTURE ACTIVE PASSIVE MISSION STATUS AND SCIENCE 2527
HIGHLIGHTS

Simon Yueh, California Institute of Technology; Dara Entekhabi, Massachusetts Institute of Technology; Peggy E. O'Neill, Goddard Space Flight Center; Jared Entin, NASA Headquarters

WE3-L5.2: BACKUS-GILBERT OPTIMAL INTERPOLATION APPLIED TO ENHANCE SMAP 2531
DATA: IMPLEMENTATION AND ASSESSMENT

Julian Chaubell, Steven Chan, Roy Scott Dunbar, Jet Propulsion Laboratory; Dara Entekhabi, Massachusetts Institute of Technology; Jinzheng Peng, Jeffrey R. Piepmeier, Goddard Space Flight Center; Simon Yueh, Jet Propulsion Laboratory

WE3-L5.3: RECALIBRATION AND VALIDATION OF THE SMAP L-BAND RADIOMETER..... 2535

Jinzheng Peng, NASA Goddard Space Flight Center / Universities Space Research Association; Sidharth Misra, NASA Jet Propulsion Laboratory; Jeffrey R. Piepmeier, NASA Goddard Space Flight Center; Emmanuel Dinnat, NASA Goddard Space Flight Center / Chapman University; Thomas Meissner, Remote Sensing Systems; David Le Vine, NASA Goddard Space Flight Center; Rajat Bindlish, USDA ARS Hydrology and Remote Sensing Lab / Science Systems and Applications Inc; Giovanni De Amici, NASA Goddard Space Flight Center; Priscilla Mohammed, NASA Goddard Space Flight Center / Morgan State University; Simon Yueh, NASA Jet Propulsion Laboratory

WE3-L5.4: DEVELOPMENT AND VALIDATION OF THE SMAP ENHANCED PASSIVE SOIL MOISTURE PRODUCT 2539

Steven Chan, NASA Jet Propulsion Laboratory; Rajat Bindlish, Peggy E. O'Neill, NASA Goddard Space Flight Center; Thomas J. Jackson, USDA; Julian Chaubell, NASA Jet Propulsion Laboratory; Jeffrey R. Piepmeier, NASA Goddard Space Flight Center; Scott Dunbar, Andreas Colliander, NASA Jet Propulsion Laboratory; Fan Chen, USDA; Dara Entekhabi, Massachusetts Institute of Technology; Simon Yueh, NASA Jet Propulsion Laboratory; Michael H. Cosh, USDA; Todd Caldwell, The University of Texas; Jeffrey Walker, Xiaoling Wu, Monash University; Aaron Berg, Tracy Rowlandson, University of Guelph; Anna Pacheco, Heather McNairn, AAFC; Marc Thibeault, CONAE; José Martínez-Fernández, Ángel González-Zamora, CIALE; Ernesto Lopez-Baeza, University of Valencia; Frederik Uldall, Tech. U. Denmark; Mark Seyfried, David Bosch, Patrick Starks, Chandra Holifield Collins, John Prueger, USDA; Z. Su, R. van der Velde, University of Twente; Jun Asanuma, University of Tsukuba; Michael Palecki, NOAA; Eric Small, University of Colorado; Marek Zreda, University of Arizona; Jean-Christophe Calvet, CNRM-GAME; Wade Crow, USDA; Yann Kerr, Centre d'Etudes Spatiales de la Biosphère (CESBIO) - CNES

WE3-L5.5: HIGH-RESOLUTION ENHANCED PRODUCT BASED ON SMAP ACTIVE-PASSIVE APPROACH USING SENTINEL 1A AND 1B SAR DATA 2543

Narendra N Das, Jet Propulsion Laboratory, NASA; Dara Entekhabi, Massachusetts Institute of Technology; Seungbum Kim, Jet Propulsion Laboratory, NASA; Thomas Jagdhuber, German Aerospace Center (DLR); Roy Scott Dunbar, Simon Yueh, Andreas Colliander, Jet Propulsion Laboratory, NASA

WE4-L5: OBSERVATIONS BY THE NASA SOIL MOISTURE ACTIVE PASSIVE MISSION II

WE4-L5.1: INTEGRATION OF SMAP AND SMOS L-BAND OBSERVATIONS 2546

Rajat Bindlish, NASA Goddard Space Flight Center; Thomas J. Jackson, USDA-ARS HRSL; Steven Chan, Andreas Colliander, NASA Jet Propulsion Laboratory; Yann Kerr, Comisión Nacional de Actividades Espaciales

WE4-L5.2: LANDSCAPE FREEZE/THAW STANDERD AND ENHANCED PRODUCTS FROM SOIL MOISTURE ACTIVE/PASSIVE (SMAP) RADIOMETER DATA 2550

Xiaolan Xu, Jet Propulsion Laboratory; Chris Derksen, Environment Canada; Roy Scott Dunbar, Andreas Colliander, Jet Propulsion Laboratory; John S Kimball, Youngwook Kim, University of Montana

WE4-L5.3: SMAP-BASED RETRIEVAL OF VEGETATION OPACITY AND ALBEDO..... 2554

Dara Entekhabi, Massachusetts Institute of Technology; Alexandra G. Konings, Stanford University; María Piles, Universitat de València; Narendra N Das, Jet Propulsion Laboratory

WE4-L5.4: MONITORING ECOSYSTEM-ATMOSPHERE CO2 EXCHANGE RESPOSE TO RECENT (2015-2016) CLIMATE VARIABILITY USING THE SMAP L4 CARBON PRODUCT 2557

John S Kimball, Lucas Jones, Joe Glassy, Nima Madani, Numerical Terradynamic Simulation Group; Rolf H Reichle, Global Modeling and Assimilation Office

WE4-L5.5: VALIDATING SMAP SSS WITH IN SITU MEASUREMENTS 2561

Wenqing Tang, Alexander Fore, Simon Yueh, Tong Lee, Akiko Hayashi, Jet Propulsion Laboratory; Alejandra Sanchez-Franks, National Oceanography Centre; Dariusz Baranowski, Jet Propulsion Laboratory

WE1-L6: DATA FUSION I

WE1-L6.1: INTRODUCTION TO REMOTE SENSING IMAGE REGISTRATION..... 2565

Jacqueline Le Moigne, NASA

WE1-L6.3: DEEP LEARNING FOR SEMANTIC SEGMENTATION OF REMOTE SENSING IMAGES WITH RICH SPECTRAL CONTENT 2569

Amina Ben Hamida, Alexandre Benoit, Patrick Lambert, Louis Klein, Laboratoire d'Informatique, Systèmes, Traitement de l'Information et de la Connaissance (LISTIC), Université Savoie Mont Blanc; Chokri Ben Amar, Research Lab on intelligent machines (REGIM), Université de Sfax; Nicolas Audebert, ONERA; Sébastien Lefèvre, IRISA/UBS

WE1-L6.4: EMPLOYING SPACEBORNE MULTISPECTRAL STEREO PAIRS AND PEDESTRIAN FLOW MODELING TO SUPPORT DISASTER RESPONSE ACTIVITIES IN URBAN ENVIRONMENTS 2573

Dave Kelbe, Devin White, David Page, Kristin Safi, Andrew Hardin, Amy Rose, Oak Ridge National Laboratory

WE1-L6.5: CLOUD REMOVAL BY FUSING MULTI-SOURCE AND MULTI-TEMPORAL IMAGES 2577

Chengyue Zhang, Zhiwei Li, Qing Cheng, Xinghua Li, Huanfeng Shen, Wuhan University

WE2-L6: DATA FUSION II

WE2-L6.1: A SPACE-TIME DATA CUBE: MULTI-TEMPORAL FOREST STRUCTURE MAPS FROM LANDSAT AND LIDAR 2581

Giona Matasci, Txomin Hermosilla, Integrated Remote Sensing Studio, University of British Columbia; Michael A. Wulder, Joanne C. White, Geordie W. Hobart, Pacific Forestry Centre, Canadian Forest Service; Harold S. J. Zald, Department of Forestry and Wildland Resources, Humboldt State University; Nicholas C. Coops, Integrated Remote Sensing Studio, University of British Columbia

WE2-L6.2: REGISTRATION OF TEXTURED REMOTE SENSING IMAGES USING DIRECTIONAL GABOR FRAMES 2585

Hannah Olson, Wojciech Czaja, University of Maryland; Jacqueline Le Moigne, NASA Goddard Space Flight Center

WE2-L6.3: A HIERARCHICAL APPROACH TO SUPERRESOLUTION OF MULTISPECTRAL IMAGES WITH DIFFERENT SPATIAL RESOLUTIONS 2589

Claudia Paris, University of Trento; José Manuel Bioucas-Dias, Instituto Superior Técnico - Universidade de Lisboa; Lorenzo Bruzzone, University of Trento

WE2-L6.4: SPARSE UNMIXING WITH ADAPTIVE BACKGROUND..... 2593

Yuki Itoh, Mario Parente, University of Massachusetts Amherst

WE2-L6.5: COLLABORATIVE TOTAL VARIATION FOR HYPERSPECTRAL PANSHARPENING 2597

Paolo Addesso, University of Salerno; Mauro Dalla Mura, Laurent Condat, University of Grenoble Alpes; Rocco Restaino, Gemine Vivone, Daniele Picone, University of Salerno; Jocelyn Chanussot, University of Grenoble Alpes

WE3-L6: ACCURACY AND QUALITY ASSESSMENT OF DATA ANALYSIS ALGORITHMS

WE3-L6.1: THE IEEE GRSS DATA AND ALGORITHM STANDARD EVALUATION (DASE) WEBSITE: INCREMENTALLY BUILDING A STANDARDIZED ASSESSMENT FOR ALGORITHM PERFORMANCE 2601

Fabio Dell'Acqua, University of Pavia; Gianni Cristian Iannelli, Ticinum Aerospace srl; John Kerekes, Rochester Institute of Technology; Gabriele Moser, Università di Genova; Leland Pierce, University of Michigan; Emanuele Goldoni, Independent consultant

WE3-L6.3: A NOVEL TWO-STAGE GUIDED FILTERING BASED PANSHARPENING METHOD..... 2609

Yiming Zhang, Xu Li, Ang Gao, Lixin Li, Northwestern Polytechnical University; Shigang Yue, University of Lincoln

WE3-L6.4: PARALLEL GLOBAL ATMOSPHERIC CORRECTION FOR FY3/MERSI DATA OVER LAND ON MULTI-CORE AND MANY-CORE ARCHITECTURES 2613

Jia Liu, National University of Defense Technology; Jie Guang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Kaijun Ren, Heng Wang, Junqiang Song, National University of Defense Technology; Yong Xue, Cheng Fan, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Shuchang Wang, National University of Defense Technology

WE3-L6.5: COLOR-GUIDED ENHANCEMENT OF AIRBORNE LASER SCANNING DATA..... 2617

Göksu Keskin, Wolfgang Gross, Wolfgang Middelmann, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation

WE4-L6: IMAGE AND DATA FUSION II

WE4-L6.1: FEATURE FUSION OF HYPERSPECTRAL AND LIDAR DATA USING EXTINCTION PROFILES AND TOTAL VARIATION 2621

Pedram Ghamisi, German Aerospace Center (DLR) and Technical University of Munich (TUM); Behnood Rasti, University of Iceland; Xiao Xiang Zhu, German Aerospace Center (DLR) and Technical University of Munich (TUM)

WE4-L6.2: FUSION OF MICROWAVE AND INFRARED DATA FOR ENHANCING ITS SPATIAL RESOLUTION	2625
<i>Igor Yanovsky, Ali Behrangi, Mathias Schreier, Van Dang, Berry Wen, Bjorn Lambrigtsen, Jet Propulsion Laboratory</i>	
WE4-L6.3: VESSEL CLASSIFICATION FEATURES USING SPATIAL BAYESIAN INFERENCE FROM HISTORICAL AIS DATA	2629
<i>Rory Meyer, Colin Schwegmann, Waldo Kleynhans, Council for Scientific and Industrial Research</i>	
WE4-L6.4: ON THE POSSIBILITY OF CONDITIONAL ADVERSARIAL NETWORKS FOR MULTI-SENSOR IMAGE MATCHING	2633
<i>Nina Merkle, Peter Fischer, Stefan Auer, Rupert Müller, German Aerospace Center (DLR)</i>	
WE4-L6.5: A SAR KNOWLEDGE BASE SYSTEM INTEGRATED MODEL, MEASUREMENT AND IMAGERY FOR INTERPRETATION	2637
<i>Zhen Li, Quan Chen, Bangseng Tian, Ping Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
WE1-L7: GLOBAL NAVIGATION SATELLITE SYSTEM REFLECTOMETRY SPACEBORNE MISSIONS I	
WE1-L7.1: THE NASA CYGNSS MISSION: OVERVIEW AND STATUS UPDATE.....	2641
<i>Christopher Ruf, University of Michigan; Scott Gleason, Southwest Research Institute; Aaron Ridley, University of Michigan; Randall Rose, John Scherrer, Southwest Research Institute</i>	
WE1-L7.2: CALIBRATION AND VALIDATION OF THE CYGNSS LEVEL 1 DATA PRODUCTS.....	2644
<i>Scott Gleason, Southwest Research Institute; Christopher Ruf, Maria Paola Clarizia, University of Michigan; Joel Johnson, Andrew O'Brien, The Ohio State University; Paul Chang, Zorana Jelenek, National Oceanic and Atmospheric Administration; Faozi Said, National Oceanic and Atmospheric Administration, Global Science & Technology, Inc.; Seubson Soisuvarn, National Oceanic and Atmospheric Administration</i>	
WE1-L7.3: GENERATION OF CYGNSS LEVEL 2 WIND SPEED DATA PRODUCTS.....	2647
<i>Maria Paola Clarizia, Christopher Ruf, University of Michigan; Scott Gleason, Southwest Research Institute; Rajeswari Balasubramaniam, Darren McKague, University of Michigan</i>	
WE1-L7.4: EVALUATION OF CYGNSS GNSS-R SIGNAL SENSITIVITY TO OCEAN PARAMETERS AND WIND RETRIEVAL ASSESMENT	2650
<i>Paul Chang, NOAA/NESDIS; Seubson Soisuvarn, UCAR; Faozi Said, Global Science & Technology, Inc.; Zorana Jelenak, UCAR</i>	
WE1-L7.5: CYGNSS CONSTELLATION INTERCALIBRATION.....	2654
<i>Darren McKague, Christopher Ruf, University of Michigan</i>	
WE2-L7: GLOBAL NAVIGATION SATELLITE SYSTEM REFLECTOMETRY SPACEBORNE MISSIONS II	
WE2-L7.1: COMPARING THE CYGNSS SIMULATOR FORWARD SCATTERING MODEL WITH TDS-1 AND CYGNSS ON-ORBIT DDMS	2657
<i>Andrew O'Brien, Joel Johnson, The Ohio State University</i>	
WE2-L7.2: INVESTIGATING “RAPID REVISIT” OBSERVATIONS OF CYGNSS.....	2659
<i>Jeonghwan Park, Joel Johnson, Andrew O'Brien, Yuchan Yi, The Ohio State University</i>	
WE2-L7.3: THE SENSITIVITY OF GROUND-REFLECTED GNSS SIGNALS TO NEAR-SURFACE SOIL MOISTURE, AS RECORDED BY SPACEBORNE RECEIVERS	2661
<i>Clara Chew, Andreas Colliander, Rashmi Shah, Cinzia Zuffada, Mariko S. Burgin, Jet Propulsion Laboratory</i>	
WE2-L7.4: GNSS-R DELAY-DOPPLER MAPS OF OCEAN SURFACE AT WEAK WINDS	2664
<i>Valery Zavorotny, Alexander Voronovich, National Oceanic and Atmospheric Administration, Earth System Research Laboratory</i>	

WE2-L7.5: WIND RETRIEVAL FOR GNSS REFLECTOMETRY FROM TECHDEMOSAT-1	2667
<i>Giangregorio Generoso, Università del Sannio; Pia Addabbo, Università Giustino Fortunato; Carmela Galdi, Maurizio di Bisceglie, Università del Sannio</i>	
 WE3-L7: INSTRUMENTATION ADVANCES FOR REFLECTOMETRY WITH GNSS AND SIGNALS OF OPPORTUNITY (GNSS+R) I	
WE3-L7.1: INVERSE MODELING OF GROUND-BASED GNSS-R -- RESULTS AND NEW POSSIBILITIES	2671
<i>Thomas Hobiger, Joakim Strandberg, Rüdiger Haas, Chalmers University of Technology</i>	
WE3-L7.5: IMPROVED MODELLING OF IONOSPHERIC DISTURBANCES FOR REMOTE SENSING AND NAVIGATION	2682
<i>Adriano Camps, Universitat Politècnica de Catalunya; José Barbosa, RDA -Research and Development in Aerospace GmbH; Jose Miguel Juan, Universitat Politècnica de Catalunya; Estefania Blanch, David Altadill, Observatori de l'Ebre, CSIC - Universitat Ramon Llull; Guillermo Gonzalez, Gregori Vazquez, Jaume Riba, Universitat Politècnica de Catalunya; Raul Orus, European Space Agency - ESTEC</i>	
 WE4-L7: INSTRUMENTATION ADVANCES FOR REFLECTOMETRY WITH GNSS AND SIGNALS OF OPPORTUNITY (GNSS+R) II	
WE4-L7.1: HIGH-VALUE REMOTE SENSING FOR THE GEOSCIENCES: OPPORTUNISTIC USE OF NAVIGATION SATELLITE SIGNALS	2686
<i>Anthony Mannucci, Stephen Lowe, Jeffrey Dickson, Lawrence Young, Garth Franklin, Thomas Meehan, Stephan Esterhuizen, Chi Ao, Panagiotis Vergados, Clara Chew, Seungbum Kim, Son Nghiem, Joseph Turk, Cinzia Zuffada, Rashmi Shah, Attila Komjathy, Jet Propulsion Laboratory, California Institute of Technology</i>	
WE4-L7.2: OCEAN ALTIMETRY USING WIDEBAND SIGNALS OF OPPORTUNITY	2690
<i>Rashmi Shah, NASA Jet Propulsion Laboratory, California Institute of Technology; James Garrison, Soon Chye Ho, Purdue University; Priscilla Mohammed, Jeffrey R. Piepmeier, Adam Schoenwald, NASA Goddard Space Flight Center; Randeep Pannu, Morgan State University; Asmita Korde-Patel, Damon Bradley, NASA Goddard Space Flight Center</i>	
WE4-L7.3: PREDICTION OF GNSS-R ALTIMETRY PRECISION BASED ON WAVEFORM STATISTICS	2694
<i>Weiqliang Li, Antonio Rius, Fran Fabra, Estel Cardellach, Serni Ribó, Institute of Space Sciences (CSIC/IEEC); Manuel Martín-Neira, European Space Agency (ESA)</i>	
WE4-L7.4: CHALLENGES IN GRAZING ALTIMETRY USING REFLECTED GNSS SIGNALS	2698
<i>Maximilian Semmling, Jan Saynisch, Florian Zus, Luis Peraza, Jens Wickert, Helmholtz Centre Potsdam GFZ</i>	
WE4-L7.5: ADVANCES IN GNSS-R ALTIMETRY	2702
<i>Manuel Martín-Neira, Michael Kern, Salvatore D'addio, Jason Hatton, European Space Agency (ESA); Antonio Rius, Weiqliang Li, Serrni Ribo, Fran Fabra, Estel Cardellach, Institut de Ciències de l'Espai; Jens Wickert, Maximilian Semmling, GeoForschungZentrum</i>	
 WE1-L8: GLOBAL PRECIPITATION MEASUREMENT INSTRUMENTS AND ALGORITHMS I	
WE1-L8.1: THREE YEARS OF THE GLOBAL PRECIPITATION MEASUREMENT (GPM) MISSION	2704
<i>Gail Skofronick-Jackson, George Huffman, NASA Goddard Space Flight Center; Walter Petersen, NASA Marshall Space Flight Center</i>	
WE1-L8.3: PRIME MISSION RESULTS OF THE DUAL-FREQUENCY PRECIPITATION RADAR ON THE GLOBAL PRECIPITATION MEASUREMENT CORE SPACECRAFT	2708
<i>Kinji Furukawa, Tomomi Nio, Riko Oki, Takuji Kubota, Japan Aerospace Exploration Agency; Toshio Iguchi, National Institute of Information and Communications Technology</i>	

WE1-L8.4: RECENT PROGRESS IN GLOBAL SATELLITE MAPPING OF PRECIPITATION (GSMAP) PRODUCT	2712
<i>Takuji Kubota, Japan Aerospace Exploration Agency; Kazumasa Aonashi, Japan Meteorological Agency; Tomoo Ushio, Osaka University; Shoichi Shige, Kyoto University; Yukari Takayabu, University of Tokyo; Yoriko Arai, Tomoko Tashima, Remote Sensing Technology Center of Japan; Misako Kachi, Riko Oki, Japan Aerospace Exploration Agency</i>	
WE1-L8.5: REVIEW OF DUAL-FREQUENCY PROFILE CLASSIFICATION MODULE AND FURTHER IMPROVEMENTS	2716
<i>Venkatachalam Chandrasekar, Minda Le, Colorado State University</i>	
WE2-L8: GLOBAL PRECIPITATION MEASUREMENT INSTRUMENTS AND ALGORITHMS II	
WE2-L8.1: INTER-CALIBRATION OF MHS AND AMSU-B MICROWAVE RADIOMETERS FROM TRMM TO GPM ERA	2720
<i>Hamideh Ebrahimi, Ruiyao Chen, W. Linwood Jones, University of Central Florida</i>	
WE2-L8.2: FALLING SNOW ESTIMATES FROM THE GLOBAL PRECIPITATION MEASUREMENT (GPM) MISSION	2724
<i>Gail Skofronick-Jackson, Stephen (Joe) Munchak, Sarah Ringerud, NASA Goddard Space Flight Center; Walter Petersen, NASA Marshall Space Flight Center; Benjamin Lott, University of North Dakota</i>	
WE2-L8.3: IMPROVEMENT OF THE MINIMUM DETECTABLE PRECIPITATION ECHOES WITH THE TRMM PRECIPITATION RADAR AND THE GPM DUAL-FREQUENCY PRECIPITATION RADAR	2728
<i>Toshio Iguchi, National Institute of Information and Communications Technology</i>	
WE2-L8.4: A COMPARISON OF RADIO FREQUENCY INTERFERENCE WITHIN AND OUTSIDE OF ALLOCATED PASSIVE EARTH EXPLORATION BANDS AT 10.65 GHZ AND 18.7 GHZ USING THE GPM MICROWAVE IMAGER AND WINDSAT	2731
<i>David Draper, Ball Aerospace; Erich Stocker, NASA Goddard Space Flight Center</i>	
WE2-L8.5: METEOROLOGICAL OBSERVATIONS AND SYSTEM PERFORMANCE FROM THE NASA D3R'S FIRST 5 YEARS	2734
<i>Venkatachalam Chandrasekar, Robert M. Beauchamp, Manuel A. Vega, Haonan Chen, Mohit Kumar, Shashank S. Joshil, Colorado State University; Mathew Schwaller, NASA Goddard Space Flight Center; Walter Petersen, NASA Marshall Space Flight Center; David Wolff, NASA Wallops Flight Facility</i>	
WE3-L8: SMALL SATELLITE TECHNOLOGY I	
WE3-L8.1: TEMPORALLY RESOLVED OBSERVATIONS AND IMPLICATIONS FOR OBSERVING ARCHITECTURES: GEO VS LEO	2737
<i>Todd C. Gaier, Vritika Singh, Casey Heeg, Jet Propulsion Laboratory, California Institute of Technology</i>	
WE3-L8.2: MICRONIMBUS: A CUBESAT TEMPERATURE PROFILOMETER FOR THE EARTH'S ATMOSPHERE USING A SINGLE-CHIP 60 GHZ SIGE RADIOMETER	2740
<i>Wyman Williams, Georgia Tech Research Institute; Christopher Coen, Milad Frounchi, Georgia Institute of Technology; Nelson Lourenco, Georgia Tech Research Institute; John Cressler, Georgia Institute of Technology</i>	
WE3-L8.3: COMMAND AND DATA HANDLING (C&DH) SUBSYSTEM FOR THE TROPOSPHERIC WATER AND CLOUD ICE (TWICE) 6U-CLASS SATELLITE INSTRUMENT	2744
<i>Mehmet Ogut, Xavier Bosch-Lluis, Steven C. Reising, Yuriy Goncharenko, Colorado State University; Pekka Kangaslahti, Erich Schlecht, Richard Cofield, Nacer Chahat, Sharmila Padmanabhan, Jonathan Jiang, Shannon T. Brown, California Institute of Technology; William Deal, Alex Zamora, Kevin Leong, Sean Shih, Gerry Mei, Northrop Grumman Corporation</i>	

WE3-L8.4: TURNING A TWO-DIMENSIONAL IMAGE SENSOR TO AN ATTITUDE SENSOR:	2748
IMAGE MATCHING FOR DETERMINING SATELLITE ATTITUDES	
<i>Atsunori Kanemura, Toru Kouyama, Souchi Kato, Nevrez Imamoglu, National Institute of Advanced Industrial Science and Technology; Tetsuya Fukuhara, Rikkyo University; Ryosuke Nakamura, National Institute of Advanced Industrial Science and Technology</i>	
WE3-L8.5: 3CAT-3/MOTS, AN EXPERIMENTAL NANOSATELLITE FOR MULTISPECTRAL AND	2752
GNSS-R EARTH OBSERVATION: MISSION CONCEPT AND ANALYSIS	
<i>Jordi Castellví, Universitat Politècnica de Catalunya (UPC) and Institut Cartogràfic i Geològic de Catalunya (ICGC); Adriano Camps, Universitat Politècnica de Catalunya (UPC); Jordi Corbera, Ramon Alamús, Institut Cartogràfic i Geològic de Catalunya (ICGC)</i>	
 WE4-L8: ADVANCED METHODS FOR LIDAR DATA PROCESSING	
WE4-L8.1: CLASSIFICATION OF MULTISPECTRAL LIDAR POINT CLOUDS.....	2756
<i>Nima Ekhtari, Craig Glennie, Juan Carlos Fernandez-Diaz, University of Houston</i>	
WE4-L8.2: SUBDOMINANT TREE DETECTION IN MULTI-LAYERED FORESTS BY A LOCAL	2760
PROJECTION OF AIRBORNE LIDAR DATA	
<i>Aravind Harikumar, Francesca Bovolo, Fondazione Bruno Kessler; Lorenzo Bruzzone, University of Trento</i>	
WE4-L8.3: REGISTRATION OF MULTIPLE LOW RESOLUTION NASA AIRBORNE SNOW	2764
OBSERVATORY (ASO) LIDAR DATA FOR FOREST VEGETATION STRUCTURE CHARACTERIZATION	
<i>António Ferraz, Kathryn Bormann, Sassan Saatchi, Thomas H. Painter, NASA Jet Propulsion Laboratory</i>	
WE4-L8.4: COMPARISON OF BELIEF PROPAGATION AND GRAPH-CUT APPROACHES FOR	2768
CONTEXTUAL CLASSIFICATION OF 3D LIDAR POINT CLOUD DATA	
<i>Loïc Landrieu, Clément Mallet, Institut National de l'Information Géographique et Forestière; Martin Weinmann, Karlsruhe Institute of Technology</i>	
WE4-L8.5: HOW TO COMBINE LIDAR AND VERY HIGH RESOLUTION MULTISPECTRAL	2772
IMAGES FOR FOREST STAND SEGMENTATION?	
<i>Clément Dechesne, Clément Mallet, Arnaud Le-Bris, Valérie Gouet-Brunet, IGN</i>	
 WE1-L9: THE JOINT POLAR SATELLITE SYSTEM: NOAA'S NEW GLOBAL OPERATIONAL CAPABILITY TO MONITOR THE PLANET I	
WE1-L9.1: THE JOINT POLAR SATELLITE SYSTEM - OVERVIEW, INSTRUMENTS,	2776
PROVING GROUND AND RISK REDUCTION ACTIVITIES	
<i>Mitchell Goldberg, National Oceanic Atmospheric Administration; Lihang Zhou, Center for Satellite Applications and Research</i>	
WE1-L9.3: THE JOINT POLAR SYSTEM: TOWARDS THE SECOND GENERATION	2779
EUMETSAT POLAR SYSTEM	
<i>Kenneth Holmlund, Bojan Bojkov, Dieter Klaes, Peter Schlüssel, EUMETSAT</i>	
WE1-L9.4: JPSS SUPPORT TO THE NOAA ARCTIC INITIATIVE AND TESTBED.....	2783
<i>Arron Layns, NOAA JPSS; Eugene Petrescu, NWS</i>	
WE1-L9.5: VIIRS RSBAUTOCAL REFINEMENTS TO ALLOW DNB DARK SIGNALS & GAIN	2786
RATIOS TRANSITION TO AUTOMATED OPERATION MODE	
<i>Ziping Sun, Frank De Luccia, Gabriel Moy, The Aerospace Corporation</i>	

WE2-L9: THE JOINT POLAR SATELLITE SYSTEM: NOAA’S NEW GLOBAL OPERATIONAL CAPABILITY TO MONITOR THE PLANET II

WE2-L9.1: APPLICATION OF SUOMI-NPP/VIIRS DATA IN NEAR REAL TIME FLOOD 2790 DETECTION

Mike DeWeese, NOAA - National Weather Service; Sanmei Li, Donglian Sun, Mitchell Goldberg, Bill Sjoberg, George Mason University

WE2-L9.2: APPLICATIONS OF SATELLITE OCEAN COLOR PRODUCTS..... 2794

Menghua Wang, Cara Wilson, NOAA

WE2-L9.3: ADVANCES IN VOLCANO MONITORING: THE ROLE OF JPSS INSTRUMENTS 2798

David Schneider, USGS Alaska Volcano Observatory; Michael Pavolonis, NOAA Cooperative Institute for Meteorological Satellite Studies

WE2-L9.4: SUPPORTING INTERNATIONAL EFFORTS FOR DETECTING ILLEGAL FISHING 2802 AND GAS FLARING USING VIIRS

Christopher D Elvidge, NOAA; Kimberly Baugh, Mikhail Zhizhin, Feng-Chi Hsu, Tilottama Ghosh, University of Colorado

WE2-L9.5: USING VIIRS FIRE RADIATIVE POWER DATA TO SIMULATE BIOMASS BURNING 2806 EMISSIONS, PLUME RISE AND SMOKE TRANSPORT IN A REAL-TIME AIR QUALITY MODELING SYSTEM

Ravan Ahmadov, Georg Grell, Eric James, NOAA Earth System Research Laboratory; Ivan Csiszar, Marina Tsidulko, Brad Pierce, NOAA/NESDIS; Stuart McKeen, Stan Benjamin, Curtis Alexander, NOAA Earth System Research Laboratory; Gabriel Pereira, Saulo Freitas, NASA Goddard Space Flight Center; Mitchell Goldberg, NOAA/NESDIS

WE3-L9: ICE SHEETS AND GLACIERS II

WE3-L9.1: RETRIEVAL OF ICE SHEET TEMPERATURE PROFILE IN ANTARCTICA BY 2809 USING SMOS DATA: A COMBINATION OF GLACIOLOGICAL AND MICROWAVE EMISSION MODELS

Giovanni Macelloni, Francesco Montomoli, Marion Leduc-Leballeur, Marco Brogioni, IFAC-CNR; Catherine Ritz, Ghislain Picard, LGGE

WE3-L9.2: REMOTE SENSING OF THE CRYOSPHERE IN HIGH MOUNTAIN ASIA..... 2813

Batuhan Osmanoglu, NASA; Thomas H. Painter, Jet Propulsion Laboratory, NASA; David Shean, University of Washington; Anthony Arendt, Polar Science Center; Jeffrey Kargel, University of Arizona; Steven A. Margulis, University of California Los Angeles

WE3-L9.3: AUTOMATIC GLACIER CALVING FRONT DELINEATION ON TERRASAR-X AND 2817 SENTINEL-1 SAR IMAGERY

Lukas Krieger, Dana Floricioiu, German Aerospace Center (DLR)

WE3-L9.4: RECENT SURFACE ELEVATION CHANGES OF PATAGONIAN GLACIERS DERIVED 2821 WITH TANDEM-X

Wael Abdel Jaber, Dana Floricioiu, Erling Johnson, German Aerospace Center (DLR); Helmut Rott, ENVEO IT GmbH

WE3-L9.5: SMOS BRIGHTNESS DATA INDICATE ICE THICKNESS HENCE BEDROCK 2825 TOPOGRAPHY IN EAST ANTARCTICA

Niels Skou, Steen Savstrup Kristensen, Technical University of Denmark

WE4-L9: ICE SHEETS AND GLACIERS III

WE4-L9.1: SNOWMELT IN ANTARCTICA AS DERIVED FROM SMOS OBSERVATIONS 2829

Marion Leduc-Leballeur, IFAC-CNR; Ghislain Picard, University Grenoble Alpes; Giovanni Macelloni, Marco Brogioni, IFAC-CNR

WE4-L9.2: A PARTIAL COHERENT MODEL OF BRIGHTNESS TEMPERATURES OF POLAR ICE SHEETS AT L BAND INCORPORATING MULTI-LAYER ROUGHNESS EFFECTS BASED ON SPM2 THEORY	2832
<i>Mohammadreza Sanamzadeh, Leung Tsang, University of Michigan; Joel Johnson, The Ohio State University</i>	
WE4-L9.3: ESTIMATION OF ICE BASAL REFLECTIVITY OF BYRD GLACIER USING RES DATA	2836
<i>Santhosh Kumar Malyala, Jilu Li, Manjish Adhikari, Fernando Rodriguez Morales, University of Kansas</i>	
WE4-L9.4: AN INTEGRATED FIELD AND REMOTE SENSING BASED APPROACH FOR ESTIMATING INFLUENCE OF DEBRIS THICKNESS ON GLACIER SURFACE ELEVATION CHANGES	2840
<i>Purushottam Kumar Garg, Aparna Shukla, Wadia Institute of Himalayan Geology; Avtar Singh Jasrotia, University of Jammu</i>	
WE4-L9.5: INCREASING SPATIAL RESOLUTION OF SEA ICE MOTION ESTIMATION	2844
<i>Zisis Petrou, City College of New York, The City University of New York; Yang Xian, The Graduate Center, The City University of New York; Yingli Tian, City College of New York, The City University of New York</i>	
WE1-L10: FOREST MONITORING BY LIDAR	
WE1-L10.1: UNCERTAINTY IN LIDAR DERIVED CANOPY HEIGHT MODELS IN THREE UNIQUE FOREST ECOSYSTEMS	2848
<i>Tristan Goulden, Bridget Hass, Nathan Leisso, National Ecological Observatory Network</i>	
WE1-L10.2: DERIVING A DISTRIBUTION MODEL OF FOREST CANOPY HEIGHT AT STAND LEVEL USING ICESAT GLAS FULL-WAVEFORM DATA	2851
<i>Chinsu Lin, National Chiayi University</i>	
WE1-L10.3: FOREST CANOPY HEIGHT ESTIMATION AT FOOTPRINT SCALE BASED ON AIRBORNE LIDAR METRIC IN THE HETEROGENEOUS LANDSCAPE	2855
<i>Kailong Hu, China University of Mining and Technology, Beijing; Qingwang Liu, Chinese Academy of Forestry</i>	
WE1-L10.4: FOREST HEIGHT ESTIMATION BASED ON UAV LIDAR SIMULATED WAVEFORM	2859
<i>Bowei Chen, Zengyuan Li, Yong Pang, Qingwang Liu, Institute of Forest Resource Information Techniques, Chinese Academy of Forestry; Xianlian Gao, Jinping Gao, Anmin Fu, Academy of Forest Inventory and Planning, State Forestry Administration</i>	
WE1-L10.5: FOREST CANOPY COVER ANALYSIS USING UAS LIDAR	2863
<i>Qingwang Liu, Shiming Li, Kailong Hu, Yong Pang, Zengyuan Li, Research Institute of Forest Resource Information Techniques, Chinese Academy of Forestry</i>	
WE2-L10: FOREST MONITORING BY LIDAR AND OTHER MEASUREMENTS	
WE2-L10.1: UPDATING LIDAR-DERIVED CROWN COVER DENSITY PRODUCTS WITH SENTINEL-2	2867
<i>Janik Deutscher, Klaus Granica, Martin Steinegger, Manuela Hirschmugl, Roland Perko, Mathias Schardt, Joanneum Research Forschungsgesellschaft mbH</i>	
WE2-L10.3: LARGE-SCALE PRODUCT OF FOREST HEIGHT USING A NEW APPROACH FROM SPACBORNE REPEAT-PASS SAR INTERFEROMETRY AND LIDAR	2875
<i>Yang Lei, Jet Propulsion Laboratory; Paul Siqueira, University of Massachusetts Amherst; Nathan Torbick, Diya Chowdhury, William Salas, Applied GeoSolutions; Robert Treuhaft, Jet Propulsion Laboratory</i>	
WE2-L10.4: FUSION OF MULTI-SCALE HYPERSPECTRAL AND LIDAR FEATURES FOR TREE SPECIES MAPPING	2879
<i>Wenzhi Liao Liao, Frieke Coillie, Ghent University; Liwei Li, Bin Zhao, Lianru Gao, Chinese Academy of Sciences; Wilfried Philips, Ghent University; Bing Zhang, Chinese Academy of Sciences</i>	

WE2-L10.5: TROPICAL FOREST DISASTER MONITORING WITH MULTI-SCALE SENSORS	2883
FROM TERRESTRIAL LASER, UAV, TO SATELLITE RADAR	
<i>Akira Kato, Chiba University; Hiroyuki Wakabayashi, Nihon University; Yuichi Hayakawa, University of Tokyo; Matt Bradford, CSIRO, Land and Water; Manabu Watanabe, Tokyo Denki University; Yoshio Yamaguchi, Niigata University</i>	
 WE3-L10: MICROWAVE REMOTE SENSING OF DENSE VEGETATION	
WE3-L10.1: MAPPING AND MODELING OF BOREAL FOREST CHANGE IN TANDEM-X DATA	2887
WITH THE TWO-LEVEL MODEL	
<i>Maciej Soja, Chalmers University of Technology; Henrik Persson, Swedish University of Agricultural Sciences; Lars Ulander, Chalmers University of Technology</i>	
WE3-L10.2: ESTIMATION OF VEGETATION LOSS COEFFICIENTS AND CANOPY	2891
PENETRATION DEPTHS FROM SMAP RADIOMETER AND ICESAT LIDAR DATA	
<i>Martin Baur, University of Bayreuth; Thomas Jagdhuber, Moritz Link, German Aerospace Center (DLR); María Piles, Consejo Superior de Investigaciones Científicas; Dara Entekhabi, Massachusetts Institute of Technology; Anita Fink, University of Augsburg</i>	
WE3-L10.3: BRAZILIAN AMAZON LAND MAPPING PROJECT: STATUS AND PERSPECTIVES	2895
<i>Carlos Alberto Pires Castro-Filho, Brazilian Army; Rafael Antônio da Silva Rosa, Embraer Defesa & Segurança</i>	
WE3-L10.4: ESTIMATION OF VEGETATION DYNAMICS USING LOW-COST GPS RECEIVER.....	2899
<i>Mehrez Zribi, Erwan Motte, CNRS; Pascal Fanise, IRD; Walid Zouaoui, Sfax University; Nicolas Baghdadi, IRSTEA</i>	
WE3-L10.5: A NEW VEGETATION MODEL BASED ON NUMERICAL 3D SOLUTIONS OF	2903
MAXWELL EQUATIONS	
<i>Huanting Huang, Leung Tsang, University of Michigan; Eni Njoku, Andreas Colliander, Jet Propulsion Laboratory, California Institute of Technology</i>	
 WE4-L10: FOREST MONITORING BY OPTICAL RADIOMETRY I	
WE4-L10.1: SIMULATION OF FOREST CARBON FLUXES OVER GREATER KHINGAN.....	2907
<i>Min Yan, Chinese Academy of Sciences; Zengyuan Li, Chinese Academy of Forestry; Li Zhang, Chinese Academy of Sciences; Xin Tian, Chinese Academy of Forestry</i>	
WE4-L10.2: SPATIAL AND TEMPORAL VARIATIONS OF HABITAT IN TYPICAL NATURE	2911
RESERVES, CHINA	
<i>Ping Zhu, Lin Huang, Institute of Geographic Sciences and Natural resources Research; Tong Xiao, Ministry of Environmental Protection; Junbang Wang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences</i>	
WE4-L10.3: LEAF CHLOROPHYLL CONTENT ESTIMATION FROM SENTINEL-2 MSI DATA	2915
<i>Qingmiao Ma, Jiangsu Normal University; Jing M. Chen, University of Toronto; Yingjie Li, Jiangsu Normal University; Holly Croft, Xiangzhong Luo, Ting Zheng, Sophia Zamaria, University of Toronto</i>	
WE4-L10.4: APPLYING GEOGRAPHIC OBJECT-BASED IMAGE ANALYSIS (GEOBIA) AND DATA	2919
MINING TO IDENTIFY SECONDARY FORESTS SUCCESSION ON SANTAREM REGION, PARA, BRAZIL	
<i>Diego Pinheiro de Menezes, Waldir Mantovani, Homero Fonseca Filho, Luis Américo Conti, University of Sao Paulo; Clayton Bittencourt Jr, Independent Consultant</i>	
WE4-L10.5: OPTIMIZATION TECHNIQUE OF ASYMMETRIC-ORDER VEGETATION	2923
ISOLINE EQUATIONS	
<i>Munenori Miura, Aichi Prefectural University; Kenta Obata, National Institute of Advanced Industrial Science and Technology; Kenta Taniguchi, Hiroki Yoshioka, Aichi Prefectural University</i>	

WE1-L11: OCEAN SALINITY

WE1-L11.1: L-BAND MICROWARE SIGNATURE VARIATION WITH SEA SURFACE TEMPERATURE AND ITS IMPLICATION ON AQUARIUS SEA SURFACE SALINITY RETRIEVAL 2927

Wenqing Tang, Simon Yueh, Alexander Fore, Akiko Hayashi, Jet Propulsion Laboratory

WE1-L11.2: BLENDED SMOS-SMAP SSS PRODUCT IN MARGINAL SEAS 2931

Justino Martínez, Estrella Olmedo, Verónica González-Gambau, Antonio Turiel, Institute of Marine Sciences, Spanish National Research Council; Simon Yueh, California Institute of Technology

WE1-L11.3: A L-BAND PHASED ARRAY RADIOMETER FOR SEA SURFACE SALINITY 2935

Hailiang Lu, Yinan Li, Rui Yu, Anzhong Jin, Rongchuan Lv, Xian Institute of Space Radio Technology

WE1-L11.4: SALINITY RAIN IMPACT MODEL (RIM) OPTIMIZATION: PRELIMINARY RESULTS 2939

Maria Jacob, Facultad de Matematica, Astronomia y Fisica, Universidad Nacional de Cordoba; W. Linwood Jones, Central Florida Remote Sensing Lab, University of Central Florida; Kyla Drushka, Applied Physics Laboratory, University of Washington; Andrea Santos-Garcia, Central Florida Remote Sensing Lab, University of Central Florida; William Asher, Applied Physics Laboratory, University of Washington; Marcelo Carlos Scavuzzo, Facultad de Matematica, Astronomia y Fisica, Universidad Nacional de Cordoba

WE1-L11.5: SEA SURFACE SALINITY: INTER-COMPARISON OF SATELLITE PRODUCTS, IN SITU MEASUREMENTS, AND IMPACT OF DIFFERENCES IN RETRIEVAL ALGORITHM 2943

Emmanuel Dinnat, Chapman University; David Le Vine, NASA Goddard Space Flight Center; Jacqueline Boutin, LOCEAN/IPSL/UPMC; Thomas Meissner, Remote Sensing System (RSS)

WE2-L11: OCEAN TEMPERATURE

WE2-L11.1: INVESTIGATION OF UPPER OCEAN RESPONSE TO TYPHOON KALMAEGI (2014) USING MULTIPLE SATELLITES OBSERVATION AND NUMERICAL SIMULATION 2947

Xinxin Yue, Biao Zhang, Yijun He, Zhaohui Han, Nanjing University of Information Science and Technology

WE2-L11.2: MODELING THE HABITAT SUITABILITY INDEX OF SKIPJACK TUNA (KATSUWONUS PELAMIS) IN THE WESTERN AND CENTRAL PACIFIC OCEAN 2950

Tung-Yao Hsu, Yi Chang, National Cheng Kung University

WE2-L11.3: EVALUATION OF THE PRECISION IN LEVEL-2 AVHRR SEA SURFACE TEMPERATURE FIELDS 2954

Fan Wu, Ocean University of China; Peter Cornillon, University of Rhode Island; Lei Guan, Lele Li, Ocean University of China

WE2-L11.4: MONITORING THE THERMAL DISCHARGE OF HONGYANHE NUCLEAR POWER PLANT WITH AERIAL REMOTE SENSING TECHNOLOGY USING A UAV PLATFORM 2958

Xiang Wang, Xinxin Wang, Jianhua Zhao, Jianchao Fan, Xiu Su, National Marine Environmental Monitoring Center; Dejun Zou, Dalian Aerospace Beidou Technology Co., Ltd

WE2-L11.5: IMPROVED ICE FRACTION MODEL FOR L-BAND REMOTE SENSING 2962

Emmanuel Dinnat, Chapman University; Ludovic Brucker, Universities Space Research Association

WE3-L11: OCEAN WAVE AND SEA STATE: COASTAL IMACTS

WE3-L11.1: SEA STATE PARAMETERS IN HIGHLY VARIABLE ENVIRONMENT OF BALTIC SEA FROM SATELLITE RADAR IMAGES 2965

Sander Rikka, Tallinn University of Technology; Andrey Pleskachevsky, German Aerospace Center (DLR); Rivo Uiboupin, Tallinn University of Technology; Sven Jacobsen, German Aerospace Center (DLR)

WE3-L11.2: WAVE MONITORING BASED ON A DOPPLERIZED MARINE RADAR 2969

Jochen Horstmann, Ruben Carrasco, Joerg Seemann, Michael Stresser, Helmholtz-Zentrum Geesthacht; Jose Carlos Nieto Borge, Universidad de Alcala

WE3-L11.3: ESTIMATION OF THE LIKELIHOOD FUNCTION FOR NON-LINEAR OPTIMIZATION PROBLEMS: APPLICATIONS TO THE RADIATIVE TRANSFER MODEL IN SHALLOW WATER	2971
<i>Guillaume Sicot, Jordan Ninin, ENSTA Bretagne; Marc Lennon, Hytech-imaging; Audrey Minghelli, Université de Toulon; Adrien Deschamps, CNES</i>	
WE3-L11.4: STORM SURGE PREDICTION WITH CYGNSS WINDS	2975
<i>April Warnock, SRI International; Christopher Ruf, University of Michigan; Mary Morris, NASA Jet Propulsion Laboratory</i>	
WE3-L11.5: SPATIO-TEMPORAL INTERPOLATION OF ALTIMETER-DERIVED SSH FIELDS USING ANALOG DATA ASSIMILATION: A CASE-STUDY IN THE SOUTH CHINA SEA	2979
<i>Redouane Lguensat, IMT Atlantique; Miao Sun, Ge Chen, Fenglin Tian, Ocean University of China; Ronan Fablet, IMT Atlantique</i>	
 WE4-L11: OCEAN MONITORING WITH SATELLITE ALTIMETRY AND SAR	
WE4-L11.1: ISLAND-BUILDING ACTIVITIES DETECTED BY DNB ON SOUTH CHINA SEA	2983
<i>Kenneth J. Mackin, Ichio Asanuma, Takashi Yamaguchi, Jonggeol Park, Tokyo University of Information Sciences; John Mittleman, Naval Research Laboratory</i>	
WE4-L11.2: INTERTIDAL FLAT TOPOGRAPHIES MEASURED BY LONG-BASELINE AIRBORNE SAR AND TANDEM-X	2987
<i>Duk-Jin Kim, Changhyun Choi, Jungkyo Jung, Ki-mook Kang, Seung Hee Kim, Ji-Hwan Hwang, Seoul National University</i>	
WE4-L11.3: PERFORMANCE OF GRIDDED AND ALONG-TRACK ALTIMETRY PRODUCTS IN EDDY MANIFESTATION IN THE WESTERN MEDITERRANEAN	2991
<i>Svetlana Karimova, University of Liège</i>	
WE4-L11.5: FUSION OF UAS-BASED STRUCTURE-FROM-MOTION AND OPTICAL INVERSION FOR SEAMLESS TOPO-BATHYMETRIC MAPPING	2999
<i>Michael Starek, Justin Giessel, Texas A&M University-Corpus Christi</i>	
 WE1-L12: LATIN AMERICA ACTIVITIES IN REMOTE SENSING I	
WE1-L12.1: METHODS AND FRAMEWORKS FOR SAMPLING GIO DATA	3003
<i>Débora Chan, Profesor Titular; Andrea Rey, Profesor Adjunto; Juliana Gambini, Titular Professor; Julia Cassetti, Profesor Adjunto; Alejandro Cesar Frery, Profesor Titular</i>	
WE1-L12.3: SPATIAL-TEMPORAL CONDITIONAL RANDOM FIELD BASED MODEL FOR CROP RECOGNITION IN TROPICAL REGIONS	3007
<i>Pedro Achanccaray, Raul Feitosa, Pontifical Catholic University of Rio de Janeiro; Franz Rottensteiner, Leibniz Universität Hannover; Ieda Sanches, Brazilian National Institute for Space Research; Christian Heipke, Leibniz Universität Hannover</i>	
WE1-L12.4: POLARIMETRIC TECHNIQUES TO KNOW THE CHARACTERISTICS OF ANTARCTIC SEA ICE	3011
<i>Ismael Escobar, Armada de Chile; Carlos Cárdenas, Universidad de Magallanes. UMAG; Carlos López-Martínez, Universitat Politècnica de Catalunya; Dana Floriciou, IMF- DLR; Erling Johnson, IMF-DLR / Universidad de Magallanes</i>	
WE1-L12.5: DEFORESTATION DETECTION IN AMAZON RAINFOREST WITH MULTITEMPORAL X-BAND AND P-BAND SAR IMAGES USING CROSS-COHERENCES AND SUPERPIXELS	3015
<i>Rafael Antônio da Silva Rosa, Bradar Indústria S/A; David Fernandes, Instituto Tecnológico de Aeronáutica - ITA; Thiago Barreto, Christian Wimmer, Bradar Indústria S/A; João Nogueira Jr., Santo Antônio Energia S/A</i>	

WE2-L12: LATIN AMERICA ACTIVITIES IN REMOTE SENSING II

WE2-L12.1: IDENTIFICATION MODEL FOR LARGE REMOTE SENSING DATASETS APPLIED TO ENVIRONMENTAL ANALYSIS WITHIN MEXICO 3019

Ivan E. Villalon-Turrubiates, Instituto Tecnológico y de Estudios Superiores de Occidente (ITESO)

WE2-L12.2: IMPROVEMENTS IN THE INTEGRATION OF LIDAR AND PHOTOGRAMMETRIC DATASETS BY IN SITU CAMERA CALIBRATION 3023

Edson Aparecido Mitishita, Marlo Martins, Felipe Costa, Jorge Centeno, Federal University of Paraná – UFPR

WE2-L12.3: DEEP CONTEXTUAL DESCRIPTION OF SUPERPIXELS FOR AERIAL URBAN SCENES CLASSIFICATION 3027

Tiago Santana, Keiller Nogueira, Universidade Federal de Minas Gerais; Alexei Machado, PUC Minas; Jefersson Alex dos Santos, Universidade Federal de Minas Gerais

WE2-L12.4: CROP DISCRIMINATION USING REMOTE SENSING DATA IN A REGION OF HIGH MARGINALIZATION 3031

Jesus Soria-Ruiz, National Institute of Research for Forestry Agricultural and Livestock (INIFAP); Yolanda M. Fernandez-Ordoñez, Postgraduate College in Agricultural Sciences (COLPOS)

WE2-L12.5: MAIZE CROP YIELD ESTIMATION WITH REMOTE SENSING AND EMPIRICAL MODELS 3035

Yolanda M. Fernandez-Ordoñez, Colegio de Postgraduados; Jesus Soria-Ruiz, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias

WE3-L12: GLOBAL SCALE SPECTROSCOPY FROM SPACE FOR THE HEALTH OF PLANET EARTH I

WE3-L12.1: HYPERION: THE FIRST GLOBAL ORBITAL SPECTROMETER, EARTH OBSERVING-1 (EO-1) SATELLITE (2000-2017) 3039

Elizabeth M Middleton, NASA Goddard Space Flight Center; Petya K.E. Campbell, University of Maryland, Baltimore County; Lawrence Ong, Science Systems and Applications, Inc.; David Landis, Global Science & Technology, Inc.; Qingyuan Zhang, Universities Space Research Association; Christopher Neigh, NASA Goddard Space Flight Center; Karl Fred Huemmerich, University of Maryland, Baltimore County; Stephen Ungar, Universities Space Research Association; Daniel Mandl, NASA Goddard Space Flight Center; Stuart Frye, SGT Inc.; Vuong Ly, NASA Goddard Space Flight Center; Patrice Cappelaere, Arctic Slope Technical Services, Inc.; Steve Chien, NASA Jet Propulsion Laboratory; Shannon Franks, SGT Inc.; Nathan Pollack, Science Systems and Applications, Inc.

WE3-L12.3: REMOTE SENSING SPECTROSCOPY TO DISCRIMINATE PLANT FUNCTIONAL TYPES AND PHYSIOLOGICAL FUNCTION 3043

Philip Townsend, Adam Chlus, Zhihui Wang, University of Wisconsin-Madison; Aditya Singh, University of Florida

WE3-L12.4: TIME SERIES FROM HYPERION TO TRACK PRODUCTIVITY IN PIVOT AGRICULTURE IN SAUDI ARABIA 3047

Rasmus Houborg, Matthew F McCabe, Yoseline Angel, King Abdullah University of Science and Technology; Elizabeth M Middleton, NASA Goddard Space Flight Center

WE3-L12.5: SPECTROSCOPY FOR GLOBAL OBSERVATION OF COASTAL AND INLAND AQUATIC HABITATS 3051

Kevin Turpie, University of Maryland, Baltimore County; Steven Ackleson, Naval Research Laboratory; Thomas Bell, University of California, Santa Barbara; Heidi Dierssen, University of Connecticut; James Goodman, HySpeed Computing LLC; Robert Green, California Institute of Technology NASA Jet Propulsion Laboratory; Liane Guild, NASA Ames Research Center; Eric Hochberg, Bermuda Institute for Ocean Science; Victor Klemas, University of Delaware; Samantha Lavender, Pixalytics, Ltd.; Christine Lee, California Institute of Technology NASA Jet Propulsion Laboratory; Tiffany Moisan, NASA Wallops Flight Facility; Frank Muller-Karger, University of South Florida; Joseph Ortiz, Kent State University; Sherry Palacios, Bay Area Environmental Research Institute; David Thompson, California Institute of Technology NASA Jet Propulsion Laboratory; Richard Zimmerman, Old Dominion University

WE4-L12: GLOBAL SCALE SPECTROSCOPY FROM SPACE FOR THE HEALTH OF PLANET EARTH II

WE4-L12.1: IMPORTANCE OF CALIBRATION/VALIDATION TRACEABILITY FOR 3055 MULTI-SENSOR IMAGING SPECTROMETRY APPLICATIONS

Kurtis Thome, NASA Goddard Space Flight Center

WE4-L12.2: COMPOSITIONAL CHARACTERISATION OF THE PINNACLES VICARIOUS 3059 CALIBRATION SITE

Cindy Ong, Michael Caccetta, Ian Lau, CSIRO; Lawrence Ong, Elizabeth M Middleton, NASA

WE4-L12.3: ON OPTIMAL ESTIMATION THEORY FOR ATMOSPHERIC CORRECTION IN 3063 VSWIR IMAGING SPECTROSCOPY

David Thompson, Brian Bue, Robert Green, Vijay Natraj, Jet Propulsion Laboratory, California Institute of Technology

WE4-L12.4: NEW MEASUREMENTS OF THE EARTH'S SPECTROSCOPIC DIVERSITY 3066 ACQUIRED DURING THE AVIRIS-NG CAMPAIGN TO INDIA

Robert Green, Jet Propulsion Laboratory

WE4-L12.5: IMAGING SPECTROSCOPY TO UNDERSTAND THE CONTROLS ON 3070 CRYOSPHERIC MELTING IN A CHANGING WORLD

Thomas H. Painter, S. McKenzie Skiles, Robert Green, Felix Seidel, Jet Propulsion Laboratory; Anne Nolin, Oregon State University

WEP1-PA: SAR IMAGE PROCESSING

WEP1-PA.1: L1/2 REGULARIZATION BASED AZIMUTH RESOLUTION ENHANCEMENT FOR 3074 MULTI-CHANNEL RADAR FORWARD-LOOKING IMAGING

Jinping Sun, Xuwang Zhang, Rui Zhou, Jinbin Fu, Jun Wang, Beihang University

WEP1-PA.2: SAR IMAGE CHANGE DETECTION METHOD BASED ON VISUAL ATTENTION 3078

Yan Zhang, Jilin University; Chao Wang, University of Chinese Academy of Sciences; Shigang Wang, Jilin University; Hong Zhang, Meng Liu, University of Chinese Academy of Sciences

WEP1-PA.3: AN ADAPTIVE SAR IMAGE SPECKLE REDUCTION ALGORITHM BASED ON 3082 WAVELET TRANSFORM AND DIFFUSION EQUATIONS FOR MARINE SCENES

Yanjiao Yang, Zegang Ding, Jingyun Liu, Qiang Gao, Beijing Institute of Technology; Xinzhe Yuan, National Satellite Ocean Application Service; Xiaojun Lu, Beijing Institute of Technology

WEP1-PA.4: RPCA BASED TIME-FREQUENCY SIGNAL SEPARATION ALGORITHM FOR 3086 NARROW-BAND INTERFERENCE SUPPRESSION

Jia Su, Mingliang Tao, Ling Wang, Jian Xie, Xin Yang, Wei Zhang, Northwestern Polytechnical University

WEP1-PA.5: CHANGE DETECTION IN SYNTHETIC APERTURE RADAR IMAGES BASED ON 3090 LOG-MEAN OPERATOR AND STACKED AUTO-ENCODER

Yangyang Li, Linhao Zhou, Gao Lu, Biao Hou, Licheng Jiao, Xidian University

WEP1-PA.7: AN EFFICIENT TIME-SEQUENTIAL SAR IMAGE FORMATION ALGORITHM 3097 BASED ON SUBAPERTURE COMBINATION

Baobin Ma, Jie Chen, Pengbo Wang, Yue Fang, Bing Han, Beihang University

WEP2-PA: SAR IMAGE PROCESSING AND SEGMENTATION

WEP2-PA.1: A LOW-RANK FULLY CONVOLUTIONAL NETWORK FOR CLASSIFICATION 3101 BASED ON A MULTI-DIMENSIONAL DESCRIPTION PRIMITIVE OF TIME SERIES POLARIMETRIC SAR IMAGES

Chu He, Gong Han, Xinlong Liu, Huai Yu, Wuhan University

WEP2-PA.2: THE RELIABILITY INSPECTION OF WATER VAPOR FROM WRF UTILIZED FOR INSAR ATMOSPHERIC CORRECTION IN DIFFERENT AREAS	3105
<i>Xinyi Wang, Qiming Zeng, Peking University; Ye Yun, Chinese Academy of Sciences; Kaili Han, Jian Jiao, Peking University</i>	
WEP2-PA.3: INFLUENCE OF AZIMUTH ANGLE AND WATER SURFACE ROUGHNESS ON SAR IMAGERY OF A BRIDGE	3109
<i>Xiaojian Gan, Yong Wang, Taoli Yang, University of Electronic Science and Technology of China; Hong Li, East Carolina University</i>	
WEP2-PA.4: IMAGE SEGMENTATION-BASED OIL SLICK DETECTION USING SAR RADARSAT-2 OSVN MARITIME DATA	3113
<i>Lizwe Mdakane, Waldo Kleynhans, Colin Schwegmann, Rory Meyer, Council for Scientific and Industrial Research</i>	
WEP2-PA.5: MEASUREMENTS OF SIGNAL PENETRATION FOR P-BAND SAR SYSTEM THROUGH TREES USING TWO TRIHEDRAL CORNER REFLECTORS	3117
<i>Abdullah Algafsh, King Abdulaziz City for Science and Technology; Michael Inggs, Amit Mishra, University of Cape Town</i>	
WEP2-PA.6: RESEARCH ORIENTED FOSS SOLUTION FOR AUTOMATIC OIL SPILL DETECTION USING RISAT-1 SAR DATA	3121
<i>Pooja Shah, Tanish Zaveri, Institute of Technology, Nirma University; Raj Kumar Sharma, Space Applications Center, ISRO; Shubham Sharma, Darshan Patel, Institute of Technology, Nirma University</i>	
WEP2-PA.7: PERFORMANCE EVALUATION OF SAR TEXTURE ALGORITHMS FOR SURFACE WATER BODY EXTRACTION THROUGH AN OPEN SOURCE PYTHON-BASED ENGINE	3125
<i>Reihaneh Peiman, Husam Ali, University of Lethbridge; Brian Brisco, Canada Centre for Remote Sensing; Chris Hopkinson, University of Lethbridge</i>	
WEP2-PA.8: A NOVEL METHOD OF SPECKLE REDUCTION AND ENHANCEMENT FOR SAR IMAGE	3128
<i>Hao Shi, Tsinghua University; Liang Chen, Yin Zhuang, Beijing Institute of Technology; Jian Yang, Tsinghua University; Zhu Yang, Beijing Institute of Technology</i>	
WEP1-PB: REMOTE SENSING FOR ENERGY AND OTHER APPLICATIONS	
WEP1-PB.1: ESTIMATION OF AREA-AVERAGED EVAPOTRANSPIRATION IN EJINA OASIS BASE ON EC MATRIX FLUX MEASUREMENTS AND FOOTPRINT ANALYSIS	3132
<i>Feinan Xu, Weizhen Wang, Jiemin Wang, Yuan Qi, Yang Su, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences</i>	
WEP1-PB.2: REALTIME INFRARED SENSING WITH IOT AND UAS FOR SATELLITE VALIDATION AND ENVIRONMENTAL INTELLIGENCE	3136
<i>Changyong Cao, NOAA/Center for Satellite Applications and Research; Frank Padula, Aaron Pearlman, GTT LLC; Xi Shao, University of Maryland/CICS</i>	
WEP1-PB.4: USING A WIND TURBINE'S STATE TO SUPPRESS ITS SIGNATURE IN RADAR OBSERVATIONS	3140
<i>Robert M. Beauchamp, Venkatachalam Chandrasekar, Colorado State University</i>	
WEP1-PB.5: EFFECTS OF REFLECTANCE ANISOTROPY ON ALBEDO RETRIEVAL FROM SATELLITE OBSERVATIONS	3144
<i>Hu Zhang, Pengfei Liu, Long He, Yi Lian, Tiejun Cui, Tianjin Normal University</i>	
WEP2-PB: DIFFERENTIAL SAR INTERFEROMETRY II	
WEP2-PB.3: POLARIMETRIC CHARACTERISTICS OF TEMPORARILY COHERENT RFI IN ALOS-2 PALSAR-2	3155
<i>Ryo Natsuaki, The University of Tokyo; Takeshi Motohka, Takeo Tadono, Shinichi Suzuki, Japan Aerospace Exploration Agency</i>	

WEP2-PB.4: X-BAND INTERFEROMETRIC SAR OBSERVATIONS FOR WETLAND WATER LEVEL MONITORING IN NEWFOUNDLAND AND LABRADOR	3159
<i>Fariba Mohammadimanesh, Bahram Salehi, Masoud Mahdianpari, C-CORE and Memorial University of Newfoundland; Mahdi Motagh, Helmholtz Center Potsdam, GFZ German Research Center for Geosciences, Potsdam, Germany</i>	
WEP2-PB.5: PHYSICAL MODELS FOR EVALUATING THE INTERFEROMETRIC COHERENCE OF POTENTIAL PERSISTENT SCATTERERS	3163
<i>Gerardo Di Martino, Antonio Iodice, Davod Poreh, Daniele Riccio, Giuseppe Ruello, Università di Napoli Federico II</i>	
WEP2-PB.6: INSAR ATMOSPHERIC DELAYS COMPENSATION: CASE STUDY IN TENERIFE ISLAND	3167
<i>Zhongbo Hu, Jordi J. Mallorqui, Universitat Politècnica de Catalunya; Giuseppe Centolanza, Javier Duro, Dares Technology</i>	
WEP2-PB.7: A UNIVERSAL TOPS INSAR PROCESSING SCHEME FOR MAPPING LARGE SCALE GROUND DISPLACEMENT	3171
<i>Kui Zhang, Di Wu, Chongqing University; Guojie Meng, Ruiqing Song, China Earthquake Administration</i>	
WEP2-PB.8: LANDSLIDE MONITORING WITH STARING-SPOTLIGHT DATA: CANILLO CASE STUDY	3174
<i>Jordi J. Mallorqui, Zhongbo Hu, Jordi Corominas, Josep A. Gili, Universitat Politècnica de Catalunya</i>	
 WEP1-PC: CALIBRATION IN UAV AND SPACEBORNE PLATFORMS	
WEP1-PC.1: ESTIMATION OF FRACTIONAL VEGETATION COVER USING MEAN-BASED SPECTRAL UNMIXING METHOD	3178
<i>Linyuan Li, Guangjian Yan, Xihan Mu, Suhong Liu, Yiming Chen, Kai Yan, Jinghui Luo, Wanjuan Song, State Key Laboratory of Remote Sensing Science</i>	
WEP1-PC.2: DAMAGE ASSESSMENT AND 3D MODELING BY UAV FLIGHTS AFTER THE 2016 KUMAMOTO, JAPAN EARTHQUAKE	3182
<i>Fumio Yamazaki, Kasumi Kubo, Ryoto Tanabe, Wen Liu, Chiba University</i>	
WEP1-PC.3: VALIDATION OF LANDSAT-8 OLI IMAGE SIMULATION	3186
<i>Zhaoyu Cui, John Kerekes, John Schott, Rochester Institute of Technology</i>	
WEP1-PC.4: DEVELOPING A SMALL UAV PLATFORM TO DETECT SHEATH BLIGHT OF RICE	3190
<i>Dongyan Zhang, Anhui University; Xingen Zhou, Texas A&M AgriLife Research and Extension Center; Jian Zhang, Huazhong Agricultural University; Linsheng Huang, Jinling Zhao, Anhui University</i>	
 WEP1-PD: HYPERSPECTRAL IMAGE CLASSIFICATION I	
WEP1-PD.1: SMALL-SAMPLE CLASSIFICATION OF HYPERSPECTRAL DATA IN A GRAPH-BASED SEMI-SUPERVISION FRAMWORK	3194
<i>Chunmei Zhang, Junyan Wang, Beifang University of Nationalities; Yunbin Zhang, Chinasoft International co. ltd; Yaoyao Liu, Beifang University of Nationalities</i>	
WEP1-PD.2: DISTRIBUTED PARALLEL OPTIMIZATION OF HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON SPATIAL CORRELATION REGULARIZED SPARSE REPRESENTATION	3198
<i>Junling Shen, Zekun Kang, Zebin Wu, Zhihui Wei, Yaoqin Zhu, Nanjing University of Science and Technology</i>	
WEP1-PD.3: SPECTRAL-SPATIAL SUBSPACE CLUSTERING FOR HYPERSPECTRAL IMAGES VIA MODULATED LOW-RANK REPRESENTATION	3202
<i>Jinhuan Xu, Nan Huang, Liang Xiao, Nanjing University of Science and Technology</i>	

WEP1-PD.4: HYPERSPECTRAL CLASSIFICATION BASED ON KERNEL LOW-RANK MULTITASK LEARNING	3206
<i>Zhi He, Jun Li, Sun Yat-sen University; Lin Liu, Sun Yat-sen University; Department of Geography, University of Cincinnati (UC)</i>	
WEP1-PD.5: HYPERSPECTRAL IMAGE CLASSIFICATION USING ANT COLONY OPTIMIZATION ALGORITHM BASED ON JOINT SPECTRAL-SPATIAL PARAMETERS	3210
<i>Shakti Sharma, Krishna Mohan Buddhiraju, Gaurav Kumar Dashondhi, Indian Inst of Technology Bombay</i>	
WEP1-PD.6: CROSS-VALIDATING GAUSSIAN PROCESS METHODS FOR HYPERSPECTRAL DATA FROM TREE CROWNS	3214
<i>Leila Kalantari, Paul Gader, University of Florida</i>	
WEP1-PD.7: MULTIPLE FEATURES FUSION FOR HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON EXTREME LEARNING MACHINE	3218
<i>Wei Liu, Zebin Wu, Jie Wei, Weishi Deng, Yang Xu, Lu Du, Zhihui Wei, Nanjing University of Science and Technology</i>	
WEP2-PD: OPTICAL IMAGE CLASSIFICATION	
WEP2-PD.1: THE USE OF LAND COVER CHANGE LIKELIHOOD FOR IMPROVING LAND COVER CLASSIFICATION	3222
<i>Mariane S. Reis, Sidnei J. S. Sant'Anna, Luciano V. Dutra, Maria Isabel S. Escada, Brazilian National Institute for Space Research; Eliana Pantaleão, Federal University of Uberlândia</i>	
WEP2-PD.2: CAN SEMANTIC LABELING METHODS GENERALIZE TO ANY CITY? THE INRIA AERIAL IMAGE LABELING BENCHMARK	3226
<i>Emmanuel Maggiori, Yuliya Tarabalka, Inria Sophia Antipolis Mediterranee; Guillaume Charpiat, Inria Saclay; Pierre Alliez, Inria Sophia Antipolis Mediterranee</i>	
WEP2-PD.3: HIGHLY EFFICIENT PADDY CLASSIFICATION USING UAV-BASED ORTHORECTIFIED IMAGE	3230
<i>Hongli Liu, Zhoumiqi Yuan, Jinshui Zhang, Beijing Normal University; Guanyuan Shuai, Michigan State University</i>	
WEP2-PD.4: A GENETIC ALGORITHM APPROACH TO PURIFY THE CLASSIFIER TRAINING LABELS FOR THE ANALYSIS OF REMOTE SENSING IMAGERY	3234
<i>Victor-Emil Neagoe, Politehnica University of Bucharest; Catalina-Elena Neghina, "Lucian Blaga" University of Sibiu; Vlad Chirila-Berbentea, Politehnica University of Bucharest</i>	
WEP2-PD.5: A MODIFIED ADAPTABLE NEAREST FEATURE SPACE CLASSIFIER FOR REMOTE SENSING IMAGES	3238
<i>Yang-Lang Chang, National Taipei University of Technology; Lena Chang, National Taiwan Ocean University; Tzu-Wei Tseng, Chihyuan Chu, National Taipei University of Technology</i>	
WEP2-PD.6: FUSING TWO CONVOLUTIONAL NEURAL NETWORKS FOR HIGH-RESOLUTION SCENE CLASSIFICATION	3242
<i>Xiaoyong Bian, Wuhan University of Science and Technology and Hubei Province Key Laboratory of Intelligent Information Processing and Real-time Industrial System; Chen Chen, University of Central Florida; Yuxia Sheng, Wuhan University of Science and Technology; Yan Xu, Qian Du, Mississippi State University</i>	
WEP2-PD.7: ENSEMBLE CLASSIFIER BASED TRAINING DATA REFINEMENT TECHNIQUE FOR CLASSIFICATION OF REMOTELY SENSED OPTICAL IMAGES	3246
<i>Akash Ashapure, Texas A&M University-Corpus Christi; Anand Mehta, Onkar Dikshit, Indian Institute of Technology Kanpur; Jinha Jung, Texas A&M University-Corpus Christi</i>	
WEP1-PE: SAR CLASSIFICATION	
WEP1-PE.1: IMPROVING THE METRIC FOR EVALUATING CNNs IN SAR ATR APPLICATIONS BY SALIENCY MAPS	3250
<i>Jiayi Guo, Bin Lei, Chibiao Ding, Yueting Zhang, Institute of Electronics, Chinese Academy of Sciences</i>	

WEP1-PE.2: EVALUATION OF POLSAR SIMILARITY MEASURES WITH SPECTRAL CLUSTERING	3254
<i>Jingliang Hu, German Aerospace Center (DLR); Yuanyuan Wang, Technische Universität München; Pedram Ghamisi, Xiao Xiang Zhu, German Aerospace Center (DLR)</i>	
WEP1-PE.3: OPTIMIZED GLCM-BASED TEXTURE FEATURES FOR IMPROVED SAR-BASED FLOOD MAPPING	3258
<i>Antara Dasgupta, IITB Monash University Research Academy; Stefania Grimaldi, Monash University; Raaj Ramsankaran, Indian Institute of Technology Bombay; Jeffrey Walker, Monash University</i>	
WEP1-PE.4: SEA ICE AND OPEN WATER CLASSIFICATION OF SAR IMAGERY USING CNN-BASED TRANSFER LEARNING	3262
<i>Yan Xu, K. Andrea Scott, University of Waterloo</i>	
WEP1-PE.5: UNSUPERVISED CLASSIFICATION OF POLSAR IMAGERY BASED ON CONSENSUS SIMILARITY NETWORK FUSION	3266
<i>Yue Zhang, Huanxin Zou, Ningyuan Shao, Shilin Zhou, Kefeng Ji, National University of Defense Technology</i>	
WEP1-PE.6: POLSAR IMAGE CLASSIFICATION BASED ON POLARIMETRIC OBJECT-BASED MORPHOLOGICAL PROFILES	3270
<i>Xiaofang Xu, Bin Zou, Lamei Zhang, Harbin Institute of Technology</i>	
WEP1-PE.7: PRELIMINARY EXPLORATION OF SAR IMAGE LAND COVER CLASSIFICATION WITH NOISY LABELS	3274
<i>Juanping Zhao, Weiwei Guo, Bin Liu, Zenghui Zhang, Wenxian Yu, Shanghai Jiao Tong University; Shiyong Cui, German Aerospace Center (DLR)</i>	
WEP1-PE.8: DOMAIN ADAPTATION FOR POLSAR LAND CLASSIFICATION USING LINEAR DISCRIMINATIVE LAPLACIAN EIGENMAPS	3278
<i>Weidong Sun, Pingxiang Li, Jie Yang, Lei Shi, Lingli Zhao, Wuhan University</i>	
WEP2-PE: TARGET RECOGNITION: RADAR	
WEP2-PE.1: COMPENSATION OF THE POSITIONING SHIFT CAUSED BY INACCURATE GEODETIC TERRAIN HEIGHTS FOR RADARSAT-2 DATA	3282
<i>Wentao An, Mingsen Lin, Chunhua Xie, National Satellite Ocean Application Service</i>	
WEP2-PE.2: A FLEXIBLE WAVEFORM OPTIMIZATION METHOD FOR COGNITIVE RADAR	3286
<i>Xiaowen Zhang, Kaizhi Wang, Xingzhao Liu, Lei Liu, Shanghai Jiao Tong University</i>	
WEP2-PE.3: KERNEL MARGINAL SAMPLE DISCRIMINANT EMBEDDING FOR SAR AUTOMATIC TARGET RECOGNITION	3290
<i>Xian Liu, University of Electronic Science and Technology of China; Yulin Huang, Jifang Pei, Junjie Wu, Jianyu Yang, UESTC</i>	
WEP2-PE.4: ANALYSIS OF MULTI-ASPECT AND FULLY POLARIMETRIC L-BAND SAR DATA FROM UAVSAR OVER SPACEX ROCKET DEBRIS SITE	3294
<i>Bruce Chapman, Scott Hensley, Yunling Lou, Brian Hawkins, Ronald Muellerschoen, Thierry Michel, Jet Propulsion Laboratory, California Institute of Technology</i>	
WEP2-PE.5: TARGET RECOGNITION IN LARGE SCENE SAR IMAGES BASED ON REGION PROPOSAL REGRESSION	3297
<i>Sifei Wang, Zongyong Cui, Zongjie Cao*, University of Electronic Science and Technology of China</i>	
WEP2-PE.6: SAR TARGET CONFIGURATION RECOGNITION USING CLASS-DEPENDENT LOCALITY PRESERVING PROJECTIONS	3301
<i>Ming Liu, Shaanxi Normal University; Shichao Chen, Xi'an Modern Control Technology Research Institute; Jie Wu, Shaanxi Normal University; Fugang Lu, Jun Wang, Xi'an Modern Control Technology Research Institute; Taoli Yang, University of Electronic Science and Technology of China</i>	

WEP2-PF.7: A UAV-BASED CRACK INSPECTION SYSTEM FOR CONCRETE BRIDGE MONITORING 3305

Huai Yu, Wen Yang, Heng Zhang, Wanjun He, Wuhan University

WEP1-PF: URBAN, ARTIFICIAL TARGETS

WEP1-PF.1: INTEGRATING EDGE/ BOUNDARY PRIORS WITH CLASSIFICATION SCORES FOR BUILDING DETECTION IN VERY HIGH RESOLUTION DATA 3309

Maria Vakalopoulou, National Technical University of Athens; Norbert Bus, Télécom ParisTech; Konstantinos Karantzas, National Technical University of Athens; Nikos Paragios, CentraleSupélec

WEP1-PF.2: A DETERMINATION OF THE EARTHQUAKE DISASTER AREA BY OBJECT-BASED ANALYSIS USING A SINGLE SATELLITE IMAGE 3313

Jonggeol Park, Tokyo University of Information Sciences; Ippei Harada, Foundation of River & Basin Integrated Communications; Youngjoo Kwak, International Centre for Water Hazard and Risk Management

WEP1-PF.3: BUILDING EXTRACTION FROM UAV REMOTE SENSING DATA BASED ON PHOTOGRAMMETRY METHOD 3317

Xiwei Fan, Gaozhong Nie, Na Gao, Yan Deng, Jiwen An, Huayue Li, China Earthquake Administration

WEP1-PF.4: MEASUREMENT OF TRAFFIC FLOWS WITH SAR - FIELD TEST ON THE SWEDISH ROAD NETWORK 3321

Viet Thuy Vu, Blekinge Institute of Technology; Thomas Sjögren, Swedish Defence Research Agency; Mats I. Pettersson, Mattias Dahl, Blekinge Institute of Technology

WEP1-PF.5: BUILDING CLASSIFICATION FROM SINGLE TERRASAR-X ST IMAGE BY FUSING STRUCTURE FEATURES IN THE PYRAMID FRAMEWORK 3325

Jinxing Chen, Chao Wang, Fan Wu, Hong Zhang, Chinese Academy of Sciences

WEP1-PF.6: CHIMNEY AND CONDENSING TOWER DETECTION BASED ON FASTER R-CNN IN HIGH RESOLUTION REMOTE SENSING IMAGES 3329

Yuan Yao, Zhiguo Jiang, Haopeng Zhang, Bowen Cai, Beijing University of Aeronautics and Astronautics; Gang Meng, Deshan Zuo, Beijing Institute of Remote Sensing Information

WEP1-PF.7: AUTOMATIC EXTRACTION OF BUILT-UP AREA BASED ON DEEP CONVOLUTION NEURAL NETWORK 3333

Yihua Tan, Feifei Ren, Shengzhou Xiong, Huazhong University of Science and Technology

WEP2-PF: TARGET RECOGNITION: OPTICAL

WEP2-PF.1: EFFICIENT OBJECT PROPOSALS EXTRACTION FOR TARGET DETECTION IN VHR REMOTE SENSING IMAGES 3337

Adnan Farooq, Jiankun Hu, Xiuping Jia, University of New South Wales

WEP2-PF.3: AN OBJECT LINKED INTELLIGENT CLASSIFICATION METHOD FOR HYPERSPECTRAL IMAGES 3345

Ashutosh Mishra, N. S. Rajput, Keshav P Singh, Indian Institute of Technology (Banaras Hindu University) Varanasi; Dharmendra Singh, Indian Institute of Technology Roorkee

WEP2-PF.4: A MINI CONSUMER GRADE UNMANNED AERIAL VEHICLE (UAV) FOR SMALL SCALE TERRACE DETECTION 3349

Xiaoli Li, Zhiqiang Li, Bo Fu, Bing Wu, Yaohui Liu, Institute of Geology, China Earthquake Administration

WEP2-PF.5: ROBUST GEOSPATIAL OBJECT DETECTION BASED ON PRE-TRAINED FASTER R-CNN FRAMEWORK FOR HIGH SPATIAL RESOLUTION IMAGERY 3353

Xiaobing Han, Yanfei Zhong, Wuhan University; Ruyi Feng, China University of Geosciences; Liangpei Zhang, Wuhan University

**WEP2-PF.6: MULTI-CLASS CONSTRAINED BACKGROUND SUPPRESSION APPROACH TO 3357
HYPERSPECTRAL IMAGE CLASSIFICATION**

Chunyan Yu, Dalian Maritime University; Bai Xue, University of Maryland, Baltimore County; Yulei Wang, Meiping Song, Dalian Maritime University; Lin Wang, Xidian University; Sen Li, Dalian Maritime University; Shih-Yu Chen, National Yulin University of Science and Technology; Chein-I Chang, University of Maryland, Baltimore County

WEP2-PF.7: ADAPTIVE NOISE FILTERING FOR SINGLE PHOTON LIDAR OBSERVATIONS 3361

Xiao Wang, Craig Glennie, Zhigang Pan, University of Houston

WEP1-PG: IMAGE AND DATA FUSION I

**WEP1-PG.1: IMAGE FUSION OF MODIS AOD (COLLECTION 6) IN CHINA BASED ON 3365
UNCERTAINTY**

Yanqing Xie, University of Chinese Academy of Sciences; Yong Xue, Jie Guang, Linlu Mei, Cheng Fan, Yahui Che, Lu She, Chinese Academy of Sciences

**WEP1-PG.2: FUSION OF TANDEM-X AND CARTOSAT-1 DEMS USING TV-NORM 3369
REGULARIZATION AND ANN-PREDICTED WEIGHTS**

Hossein Bagheri, Michael Schmitt, Technische Universität München; Xiao Xiang Zhu, Technische Universität München / Germany Aerospace Center (DLR)

**WEP1-PG.3: HYPERSPECTRAL AND MULTISPECTRAL WASSERSTEIN BARYCENTER FOR 3373
IMAGE FUSION**

Jamila Mifdal, Université de Bretagne Sud; Bartomeu Coll, Universitat de Illes Balears; Nicolas Courty, Jacques Froment, Béatrice Vedel, Université de Bretagne Sud

**WEP1-PG.4: AN ENHANCED SPATIAL AND TEMPORAL ADAPTIVE REFLECTANCE FUSION 3377
MODEL BASED ON OPTIMAL WINDOW**

Bo Ping, Tianjin University; Yunshan Meng, National Marine Information Center; Fenzhen Su, LREIS, Institute of Geographic Sciences and Natural Resources Research

**WEP1-PG.5: FUSION OF THEMIS AND TES FOR ACCURATE MARS SURFACE 3381
CHARACTERIZATION**

Chiman Kwan, Bulent Ayhan, Bence Budavari, Signal Processing, Inc.

**WEP1-PG.6: VALIDATION OF THE WAVE MODEL SWAN AGAINST ALTIMETER DATA FROM 3385
JASON-2 SATELLITE**

Chuntao Chen, Yili Zhao, Jianyong Xing, Jianhua Zhu, Jiajia Liu, Xiaoqi Huang, Qinglong Yu, He Wang, State Oceanic Administration of China

**WEP1-PG.7: INVISIBLE WATERMARKING ALGORITHM FOR GIS DATA USING CURVELET 3389
TRANSFORM – COMPARITIVE STUDY WITH WAVELET**

Harshula Tulapurkar, Thakur College of Engineering and Technology,; Krishna Mohan Buddhiraju, Indian Institute of Technology Bombay; Vinayak Bharadi, Thakur College of Engineering and Technology,

**WEP1-PG.8: AN IMPROVED NON-SUBSAMPLED CONTOURLET TRANSFORM-BASED 3393
HYBRID PAN-SHARPENING ALGORITHM**

Xiaochen Lu, Junping Zhang, Ye Zhang, Harbin Institute of Technology

WEP2-PG: IMAGE AND DATA FUSION III

WEP2-PG.1: AN IMPROVED IDW METHOD FOR LINEAR ARRAY 3D IMAGING SENSOR 3397

Mei Zhou, Academy of Opto-Electronics, Chinese Academy of Sciences; Hongcan Guan, University of Chinese Academy of Sciences; Chuanrong Li, Geer Teng, Lian Ma, Academy of Opto-Electronics, Chinese Academy of Sciences

WEP2-PG.2: ANALYSIS OF THE SCALING EFFECT PRESENT IN THE RELATIVE DIFFERENCES BETWEEN NDVIS OBTAINED FROM MULTIPLE SENSORS, BASED ON THE SOIL ISOLINE EQUATION	3401
<i>Kenta Taniguchi, Munenori Miura, Aichi Prefectural University; Kenta Obata, National Institute of Advanced Industrial Science and Technology; Hiroki Yoshioka, Aichi Prefectural University</i>	
WEP2-PG.3: CLOUD IMPLEMENTATION OF HYPERSPECTRAL IMAGE RESTORATION WITH PCA AND TOTAL VARIATION BASED ON SPARK	3405
<i>Xianliang Yin, Zebin Wu, Nanjing University of Science and Technology; Wenzhi Liao, Ghent University; Zhihui Wei, Chao Tan, Nanjing University of Science and Technology</i>	
WEP2-PG.4: HYPERSPECTRAL IMAGE INPAINTING BASED ON LOW-RANK REPRESENTATION: A CASE STUDY ON TIANGONG-1 DATA	3409
<i>Dan Yao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Lina Zhuang, Instituto de Telecomunicações, Instituto Superior Técnico, Universidade de Lisboa; Lianru Gao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Bing Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; University of Chinese Academy of Sciences; José Manuel Bioucas-Dias, Instituto de Telecomunicações, Instituto Superior Técnico, Universidade de Lisboa</i>	
WEP2-PG.5: MULTI-SCALE-AND-DEPTH CONVOLUTIONAL NEURAL NETWORK FOR REMOTE SENSED IMAGERY PAN-SHARPENING	3413
<i>Yancong Wei, Qiangqiang Yuan, Xiangchao Meng, Huanfeng Shen, Liangpei Zhang, Michael Ng, Wuhan University</i>	
WEP1-PH: GROUND-BASED SENSING	
WEP1-PH.1: FULL POLARIMETRIC RADAR BACKSCATTERING MEASUREMENT OF OIL SPILLING INDOOR EXPERIMENT	3417
<i>Xun Yang, Yan Chen, Ling Tong, Fanghong Xiao, University of Electronic Science and Technology of China</i>	
WEP1-PH.2: A LOW-FREQUENCY GEOPHONE DESIGNED BY GENETIC ALGORITHMS	3421
<i>Kezhu Song, University of Science and Technology of China; Yang Yang, Hefei Guowei Electronics Co., Ltd.; Yonghong Guo, ShanXi Coal Geological Prospecting Institute of Hydrology; Shengqun Tong, Lei Dong, University of Science and Technology of China</i>	
WEP1-PH.3: JOINT LOCAL AND NON-LOCAL PRIORS FOR GROUND-BASED ASTRONOMICAL IMAGE DENOISING	3425
<i>Luxin Yan, Wenshan Liao, Yi Chang, Chunan Luo, Huazhong University of Science and Technology</i>	
WEP1-PH.4: A GROUND-BASED L-BAND SYNTHETIC APERTURE RADAR SYSTEM FOR FOREST TEMPORAL DYNAMICS MONITORING	3429
<i>Xingjian Chen, Paul Siqueira, University of Massachusetts</i>	
WEP1-PH.5: MOTION COMPENSATION OF L-BAND SAR USING GNSS-INS	3433
<i>Man Chung Chim, Daniele Perissin, Purdue University</i>	
WEP1-PH.6: MAXIMUM ENTROPY IMAGE RECONSTRUCTION APPLIED TO C-BAND GROUND BASED SYNTHETIC APERTURE RADAR	3437
<i>Adrian Focsa, Stefan-Adrian Toma, Military Technical Academy; Mihai Datcu, German Aerospace Center (DLR)</i>	
WEP1-PH.7: STUDY ON PARALLELIZATION OF COMPONENTS' PROPORTION CALCULATION FOR THREE DIMENSIONAL THERMAL ANISOTROPY MODEL OF URBAN TARGETS BASED ON LINUX CLUSTER	3441
<i>Li Li, Fang Huang, University of Electronic Science and Technology of China; Yinjie Chen, Xihua University; Jian Tao, Louisiana State University; Ji Zhou, Guangsong Fan, University of Electronic Science and Technology of China</i>	
WEP1-PH.8: OUTDOOR MEASUREMENTS WITH GROUND BASED C-BAND SYNTHETIC APERTURE RADAR	3445
<i>Adrian Moldovan, Stefan-Adrian Toma, Valentin Poncos, Delia Teleaga, Florin Serban, Terrasigna</i>	

WEP2-PH: MICROWAVE REMOTE SENSING AND THE CHALLENGES OF RADIO FREQUENCY INTERFERENCE

WEP2-PH.1: AN IMPROVED CLEAN ALGORITHM FOR RFI MITIGATION IN APERTURE SYNTHESIS RADIOMETERS 3448

Xiaohui Peng, Fei Hu, Feng He, Dong Zhu, Yayun Cheng, Hao Hu, Tao Zheng, HuaZhong University of Science and Technology

WEP2-PH.2: AN RFI DETECTION ALGORITHM FOR MICROWAVE RADIOMETERS USING SPARSE COMPONENT ANALYSIS 3452

Priscilla Mohammed, Asmita Korde-Patel, Armen Gholian, Jeffrey R. Piepmeier, Adam Schoenwald, Damon Bradley, NASA

WEP2-PH.3: A BROKER BASED SCHEME FOR SPECTRUM SHARING 3455

John Marino, Albin J. Gasiewski, University of Colorado Boulder

WEP2-PH.4: RFI STATISTICAL DISTRIBUTION AND MISSED DETECTION IN AQUARIUS RADIOMETER MEASUREMENTS 3459

Paolo de Matthaëis, David Le Vine, NASA Goddard Space Flight Center

WEP1-PI: SOIL PROPERTIES

WEP1-PI.1: SIMULATION OF RUNOFF AND SEDIMENT YIELD IN ZHUXI WATERSHED IN CHANGTING COUNTY OF CHINA BASED ON SWAT MODEL 3461

Xiongbín Zhu, Xiaoqin Wang, Shujiao Zeng, Weidong Zhou, Fuzhou University

WEP1-PI.2: SOIL EROSION ANALYSIS OF FUJIAN PROVINCE, CHINA IN 2015 3464

Shujiao Zeng, Xiaoqin Wang, Xiongbín Zhu, Zhenping Wang, Zuocheng Wu, Fuzhou University

WEP1-PI.4: COMPARISON AND ANALYSIS OF DIELECTRIC MODELS TOWARDS SOIL MOISTURE AND SALINITY ESTIMATIONS 3471

Long Wei, Weizhen Wang, Chunfeng Ma, Yueru Wu, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences

WEP2-PI: FOREST MONITORING

WEP2-PI.1: REMOTELY SENSED MONITORING FOREST CHANGES-A CASE STUDY IN THE JINHE TOWN OF INNER MONGOLIA 3475

Hong Sun, Xin Tian, Zengyuan Li, Erxue Chen, Chinese Academy of Forestry; Wei Wang, State Forestry Bureau

WEP2-PI.2: A METHOD FOR EXTRACTING VEGETATION INFORMATION OF URBAN UNDERLAYING SURFACE ORIENTED TO ECO-ENVIRONMENTAL QUALITY ASSESSMENT 3479

Xiaoyuan Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Yulun Song, Jusfoun Big Data Corp; Shudong Wang, Lifu Zhang, Xia Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

WEP2-PI.4: PREDICTION AND ANALYSIS OF SUDDEN OAK DEATH (SOD) RISK IN THE WEST COAST OF AMERICA BASED ON MAXENT MODEL 3487

Houzhi Jiang, Chunxiang Cao, Wei Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Yuxing Zhang, Yongfeng Dang, Xuejun Wang, Wei Wang, State Forestry Administration; Shengrui Zhang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

WEP2-PI.5: ESTIMATION OF GRASSLAND BIOPHYSICAL VARIABLES FOR LAKE QINGHAI WATERSHED: MOVING TOWARDS REMOTE SENSING PRODUCTS 3491

Changming Yin, Binbin He, Xingwen Quan, Xueting Zhang, University of Electronic Science and Technology of China; Jinsong Ge, Zhijun Zhang, Qinghai Ecosystem Remote Sensing Monitoring Center

WEP2-PI.6: THE ESTIMATION AND VALIDATION OF FRACTIONAL VEGETATION COVER BASED ON GAOFEN-4 SATELLITE IMAGERY 3495

Yuanheng Sun, Huazhong Ren, Gongqi Zhou, Tianyuan Zhang, Chengye Zhang, Qiming Qin, Peking University

WEP2-PI.7: POST-TYPHOON ASSESSMENT OF SURFACE GREENNESS DISTURBANCE USING LANDSAT SERIES OBSERVATIONS	3499
<i>Feng Chen, Jonathan Li, Cheng Wang, Xiamen University</i>	
WEP1-PJ: FOREST MONITORING BY OPTICAL RRADIOMETRY III	
WEP1-PJ.1: SIMULATING THE EFFECTS OF TYPHOON-INDUCED DEFOLIATION ON FOREST DYNAMICS USING A PROCESS-BASED MODEL IN A SUBTROPICAL FOREST	3503
<i>Hsueh-Ching Wang, Central Police University; Andrew Friend, University of Cambridge; Cho-ying Huang, Nation Taiwan University</i>	
WEP1-PJ.2: SENSITIVITY OF NEON'S AIRBORNE REMOTE SENSING INSTRUMENTATION TO CLOUD AND ILLUMINATION CONDITIONS	3507
<i>Nathan Leisso, Tristan Goulden, National Ecological Observatory Network/Battelle</i>	
WEP1-PJ.3: ASSESSING 2016 DROUGHT PROGRESSION OVER INDIA USING REMOTE SENSING DATA FOR THE PERIOD 2006-2015	3510
<i>Samara Azevedo, Unesp; Ramesh Singh, Chapman University; Erivaldo Silva, Unesp</i>	
WEP1-PJ.4: ESTIMATING FOREST STANDS VIGOR FROM AIRBORNE IMAGES AND NEURAL NETWORKS	3514
<i>Lacina Coulibaly, Ognel Pierre Louis, Eric Hervet, Université de Moncton</i>	
WEP1-PJ.5: CALIBRATION FOR FISS IMAGE DATA BASED ON PROSAIL MODEL	3517
<i>Lei Chen, Hongxin Zhang, Hu Zhang, Long He, Yi Lian, Tiejun Cui, Tianjin Normal University</i>	
WEP1-PJ.6: IDENTIFY THE RISK OF ENVIRONMENTAL DEGRADATION WITH ECOLOGICAL MODEL AND REMOTE SENSING: A CASE STUDY OF NATURAL FOREST IN XISHUANGBANNA	3521
<i>Jianbo Tan, Institute of Mountain Hazards and Environment; University of Chinese Academy of Sciences; Ainong Li, Guangbin Lei, Huaan Jin, Wei Zhao, Gaofer Yin, Jinhu Bian, Institute of Mountain Hazards and Environment</i>	
WEP1-PJ.7: TEMPORAL AND SPATIAL DISTRIBUTION AND VARIATION OF GPP IN MOHE□CHINA	3525
<i>Ling Hu, Wenjie Fan, Peking University; Suhong Liu, Beijing Normal university; Peng Zhao, Huazhong Ren, Peking University</i>	
WEP2-PJ: SMALL SATELLITE TECHNOLOGY II	
WEP2-PJ.1: MOON OBSERVATIONS FOR SMALL SATELLITE RADIOMETRIC CALIBRATION	3529
<i>Toru Kouyama, Ryosuke Nakamura, Soushi Kato, National Institute of Advanced Industrial Science and Technology; Motoki Kimura, Axelspace Corporation</i>	
WEP2-PJ.2: ON-BOARD DETECTION AND MATCHING OF REMOTELY SENSING IMAGERY	3533
<i>Jingjin Huang, Guoqing Zhou, Tianjin University; Rongting Zhang, School of Precision Instrument and Opto-Electronics Engineering</i>	
WEP2-PJ.3: EVALUATION OF THE USE OF CUBESATS IN ATMOSPHERIC PROFILING	3537
<i>Jonathan P. Olson, Sounak Biswas, Venkatachalam Chandrasekar, Steven C. Reising, Colorado State University</i>	
WEP2-PJ.4: ANALYSIS OF THE IMAGERIES FROM A CHINESE CUBE SATELLITE FOR POLAR OBSERVATIONS	3541
<i>Yanmei Zhang, China Earthquake Administration; Xiao Cheng, Beijing Normal University</i>	

WEP1-PK: OCEAN TEMPERATURE AND SALINITY

WEP1-PK.1: END TO END STUDY OF THE CHINESE SALINITY MISSION	3544
<i>Xiaobin Yin, Beijing Piesat Information Technology Co. Ltd; Wu Zhou, Mingsen Lin, Ting Liu, National Ocean Satellite Application Center; Yuxiang Zhu, Yanwei He, Tongkui Liao, Beijing Piesat Information Technology Co. Ltd</i>	
WEP1-PK.2: SALINITY MAPPING FOR FLORIDA BAY USING LANDSAT TM IMAGES AND IN-SITU OBSERVATIONS	3548
<i>Fahad Khadim, Hongbo Su, Jason Blankenship, Frederick Bloetscher, Florida Atlantic University; Weimin Wang, Shenzhen Environmental Monitoring Center</i>	
WEP1-PK.3: GEOSTATIONARY SATELLITE OBSERVATIONS AND NUMERICAL SIMULATION OF TYPHOON-INDUCED UPWELLING TO THE NORTHEAST OF TAIWAN	3552
<i>Dongliang Shen, Shanghai Ocean University; Xiaofeng Li, National Oceanic and Atmospheric Administration; Len Pietrafesa, Shaowu Bao, Coastal Carolina University</i>	
WEP1-PK.4: BAYESIAN STATISTICAL MODELS OF SEA SURFACE SALINITY BASED ON SMOS SATELLITE DATA	3556
<i>Hong Zhao, Changjun Li, Hongping Li, Xiao Han, Ocean University of China</i>	
WEP1-PK.5: FPASMR: A NEW INSTRUMENT FOR FUTURE SEA SURFACE SALINITY MEASUREMENT	3560
<i>Yinan Li, Rongchuan Lv, Guangnan Song, Xiaojiao Yang, Hailiang Lu, Pengfei Li, Qinggui Tan, Xian Institute of Space Radio Technology</i>	
WEP1-PK.6: A NEW SMOS SEA SURFACE SALINITY RETRIEVAL METHOD	3564
<i>Hongping Li, Xiao Han, Changjun Li, Hong Zhao, Ocean University of China</i>	
WEP1-PK.7: THE STABILITY TEST OF RADIOMETER	3568
<i>Guangnan Song, Xiaojiao Yang, Yinan Li, Pengfei Li, Hailiang Lu, Xian Institute of Space Radio Technology</i>	
WEP1-PK.8: THE DIELECTRIC CONSTANT MODEL FUNCTION AND IMPLICATIONS FOR REMOTE SENSING OF SALINITY	3572
<i>Roger Lang, Yiwen Zhou, The George Washington University; Emmanuel Dinnat, CEESMO Chapman University; David Le Vine, Goddard Space Flight Center</i>	

WEP2-PK: ICE SHEETS AND GLACIERS I

WEP2-PK.1: ANTARCTIC ICE SHEET GROUNDING LINE MIGRATION MONITORING USING COSMO-SKYMED VERY SHORT REPEAT-TIME SAR INTERFEROMETRY	3575
<i>Pietro Milillo, Eric Rignot, California Institute of Technology; Jeremie Mouginot, Bernd Scheuchl, Xin Li, University of California Irvine; Jacqueline Salzer, GFZ German Research Centre for Geosciences</i>	
WEP2-PK.2: TIDAL DEFLECTION OF ROSS ICE SHELF, ANTARCTICA, OBSERVED BY SENTINEL-1A DOUBLE-DIFFERENTIAL INTERFEROMETRIC SAR	3578
<i>Hoonyol Lee, Soojeong Han, Hyorim Jin, Kangwon National University; Hyangsun Han, Korea Polar Research Institute</i>	
WEP2-PK.4: ESTIMATING SIZES AND ROTATION ANGLES OF ANTARCTIC ICEBERGS UTILIZING SCATTEROMETER DATA	3585
<i>Jeffrey Budge, David G. Long, Brigham Young University</i>	
WEP2-PK.5: COMBINING OPTIAL-THERMAL REMOTE SENSING DATA AND TOPOGRAPHIC SLOPE FOR THE IDENTIFICATION OF DEBRIS-COVERED GLACIERS	3589
<i>Cheng Kou, Chunyang Zhao, Fan Yang, Xi'an Surveying and Mapping Technological Center; Jonathan Li, University of Waterloo; Yikun Liu, Fei Zeng, Xi'an Surveying and Mapping Technological Center</i>	

WEP1-PL: OCEAN MONITORING APPLICATIONS I

WEP1-PL.1: STORM SURGE MODELING OF SACO-CASCO BAYS: A FVCOM BASED STUDY 3595 ON WINTER STORM JUNO

Saswati Deb, National Taiwan University; Huijie Xue, University of Maine

WEP1-PL.3: NUMERICAL SIMULATION OF SEDIMENT DYNAMICS IN THE HOOGLY 3603 ESTUARY

Supratik Deb, ABV-Indian Institute of Information Technology and Management, Gwalior; Saswati Deb, National Taiwan University; Bhaskar Das, National Tsing Hua University

WEP1-PL.4: STUDY ON ENVIRONMENTAL CHANGE MONITORING BETWEEN 3607 SHORELINE CHANGE AND SUSPENDED SEDIMENT CONCENTRATION USING LANDSAT IMAGES IN NAKDONG RIVER, KOREA

Jinah Eom, Korea Institute of Ocean Science & Technology; Changwook Lee, Jiwon Jang, Kangwon National University; Jong-Kuk Choi, Korean Institute of Ocean Science and Technology; Sungjae Park, Kangwon National University

WEP1-PL.5: FEASIBILITY STUDY OF RFID-MOUNTED DRONE APPLICATION IN 3610 MANAGEMENT OF OYSTER FARMS

Jen-Han Yang, Yi Chang, National Cheng Kung University

WEP2-PL: OCEAN MONITORING APPLICATIONS II

WEP2-PL.1: COASTAL OBSERVATION USING NEW HYPERSPECTRAL IMAGER FOR UAVS 3614

Kuniaki Uto, Haruyuki Seki, Genya Saito, Yukio Kosugi, Tokyo Institute of Technology; Teruhisa Komatsu, The University of Tokyo

WEP2-PL.2: SATELLITE OBSERVATION ON COASTAL CHANGE IN THE WESTERN 3618 HUNCHING PENINSULA, SOUTHERN TAIWAN

Yi Chang, Ming-Chee Wu, National Cheng Kung University

WEP2-PL.3: SHALLOW WATER TOPOGRAPHY OF SUBEI BANK IMAGED BY SAR 3621

Shuangshang Zhang, Qing Xu, Hohai University; Yongcun Cheng, Old Dominion University; Jie Yang, Wenhao Zhang, Hohai University

WEP2-PL.4: STUDY ON THE INFLUENTCE OF DONGJIAKOU HARBOR CONSTRUCTION 3625 ON SUSPENDED SEDIMENT CONCENTRATION

Jie Yu, Honghui Huang, Pimao Chen, Guobao Chen, South China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences

WEP2-PL.5: COASTAL SURFACE WIND MEASUREMENTS DERIVED FROM SAR 3629

Samantha Ballard, Hans Graber, Michael Caruso, Rosenstiel School of Marine and Atmospheric Science - University of Miami

TH1-L1: HYPERSPECTRAL IMAGE CLASSIFICATION II

TH1-L1.1: BENCHMARK ANALYSIS FOR HYPERSPECTRAL IMAGE CLASSIFICATION 3632

Xudong Kang, Shutao Li, Hunan University; Jón Atli Benediktsson, University of Iceland

TH1-L1.3: TRANSFORMATION LEARNING BASED DOMAIN ADAPTATION FOR ROBUST 3640 CLASSIFICATION OF DISPARATE HYPERSPECTRAL DATA

Xiong Zhou, Saurabh Prasad, University of Houston

TH1-L1.4: A NEW CLASSIFICATION-ORIENTED ENDMEMBER EXTRACTION AND SPARSE 3644 UNMIXING APPROACH FOR HYPERSPECTRAL DATA

Yanli Sun, University of Chinese Academy of Sciences; José Manuel Bioucas-Dias, University of Lisbon; Xia Zhang, Chinese Academy of Sciences; Yi Liu, Antonio Plaza, University of Extremadura

TH1-L1.5: COMBINATION TECHNIQUES FOR HYPERSPECTRAL IMAGE INTERPRETATION.....	3648
<i>Andrey Santos, Arnaldo de A. Araújo, Jefersson A. dos Santos, William Schwartz, Federal University of Minas Gerais; David Menotti, Federal University of Paraná – UFPR</i>	
TH2-L1: HYPERSPECTRAL IMAGE CLASSIFICATION III	
TH2-L1.1: HYPERSPECTRAL IMAGE CLASSIFICATION WITH PARTIAL LEAST SQUARE FOREST	3652
<i>Junshi Xia, Naoto Yokoya, Akira Iwasaki, The University of Tokyo</i>	
TH2-L1.2: TENSOR-BASED OFFSET-SPARSITY DECOMPOSITION FOR HYPERSPECTRAL IMAGE CLASSIFICATION	3656
<i>Long Tian, Qian Du, Nicolas Younan, Mississippi State University; Ivica Kopriva, Ruder Boškovic Institute</i>	
TH2-L1.3: A NEW HYPERSPECTRAL BAND SELECTION APPROACH BASED ON CONVOLUTIONAL NEURAL NETWORK	3660
<i>Ying Zhan, Haifeng Tian, Wei Liu, Zhaoying Yang, Kang Wu, Guian Wang, Ping Chen, Xianchuan Yu, Beijing Normal University</i>	
TH2-L1.4: ITERATIVE CLUSTERING BASED ACTIVE LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION	3664
<i>Ting Lu, Shutao Li, Hunan University; Jón Atli Benediktsson, University of Iceland</i>	
TH2-L1.5: HYPERSPECTRAL IMAGE CLASSIFICATION BASED ON STACKED MARGINAL DISCRIMINATIVE AUTOENCODER	3668
<i>Jie Feng, Liguang Liu, Xiangrong Zhang, Rongfang Wang, Hongying Liu, Xidian University</i>	
TH3-L1: IMAGE CLASSIFICATION I	
TH3-L1.1: CORRECT AND STILL WRONG: THE RELATIONSHIP BETWEEN SAMPLING STRATEGIES AND THE ESTIMATION OF THE GENERALIZATION ERROR	3672
<i>Ronny Hänsch, Andreas Ley, Olaf Hellwich, Technische Universität Berlin</i>	
TH3-L1.2: NEW ITERATIVE LEARNING STRATEGY TO IMPROVE CLASSIFICATION SYSTEMS BY USING OUTLIER DETECTION TECHNIQUES	3676
<i>Charlotte Pelletier, Silvia Valero, Jordi Inglada, Gérard Dedieu, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Nicolas Champion, IGN Espace - Matis</i>	
TH3-L1.3: FACILITATING EFFICIENT DATA ANALYSIS OF REMOTELY SENSED IMAGES USING STANDARDS-BASED PARAMETER SWEEP MODELS	3680
<i>Shahbaz Memon, Gabriele Cavallaro, Morris Riedel, Forschungszentrum Jülich; Helmut Neukirchen, University of Iceland</i>	
TH3-L1.4: COMPARISON OF ADABOOST.M2 AND PERSPECTIVE BASED MODEL ENSEMBLE IN MULTISPECTRAL IMAGE CLASSIFICATION	3684
<i>Laxmi Eeti, Krishna Mohan Buddhiraju, Indian Institute of Technology Bombay</i>	
TH3-L1.5: POST CLASSIFICATION SMOOTHING IN SUB-DECIMETER RESOLUTION IMAGES WITH SEMI-SUPERVISED LABEL PROPAGATION	3688
<i>John Edgar Vargas Muñoz, University of Campinas; Devis Tuia, University of Zurich; Jefersson Alex dos Santos, Universidade Federal de Minas Gerais; Alexandre Xavier Falcão, University of Campinas</i>	
TH4-L1: IMAGE CLASSIFICATION II	
TH4-L1.1: USING BAYESIAN OPTIMIZATION TO JOINTLY TUNE THE CLASSIFIER AND THE RANDOM FIELD FOR SPATIAL-SPECTRAL HYPERSPECTRAL CLASSIFICATION	3692
<i>Utsav Gewali, Sildomar Monteiro, Rochester Institute of Technology</i>	

**TH4-L1.2: LARGE SCALE CROP CLASSIFICATION USING GOOGLE EARTH ENGINE 3696
PLATFORM**

Andrii Shelestov, Mykola Lavreniuk, Nataliia Kussul, Space Research Institute; Alexei Novikov, National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute"; Sergii Skakun, University of Maryland

**TH4-L1.3: SUPERPIXEL-BASED CLASSIFICATION USING SEMANTIC INFORMATION FOR 3700
POLARIMETRIC SAR IMAGERY**

Shuai Yang, China University of Geosciences, Wuhan; Qianqian Zhang, State Bureau of Surveying and Mapping of China; Xiaohui Yuan, University of North Texas; Qihao Chen, Xiuguo Liu, China University of Geosciences, Wuhan

**TH4-L1.4: MAXIMUM VARIANCE UNFOLDING BASED CO-LOCATION DECISION TREE FOR 3704
REMOTE SENSING IMAGE CLASSIFICATION**

Rongting Zhang, Tianjin University; Guoqing Zhou, Guilin University of Technology; Jingjin Huang, Xiang Zhou, Tianjin University

**TH4-L1.5: DYNAMIC GRANULAR NEURAL NETWORKS FOR REMOTE SENSING IMAGE 3708
CLASSIFICATION**

Arun Kumar Dasari, Padma Kumari K, Jawaharlal Nehru Technological University, Kakinada; Saroj Kumar Meher, INDIAN STATISTICAL INSTITUTE BANGALORE CENTER

TH1-L2: OBJECT DETECTION AND RECOGNITION II

TH1-L2.1: SEISMIC PATTERN RECOGNITION USING CELLULAR NEURAL NETWORK..... 3712

Kou-Yuan Huang, Wen-Hsuan Hsieh, National Chiao Tung University

**TH1-L2.2: TRADING SPATIAL RESOLUTION FOR IMPROVED ACCURACY WHEN USING 3716
DETECTION ALGORITHMS ON REMOTE SENSING IMAGERY**

Shengxin Qian, Sravya Chelikani, Duke University; Patrick Wang, CoVar Applied Technologies; Leslie Collins, Kyle Bradbury, Jordan Malof, Duke University

**TH1-L2.3: UNSUPERVISED DETECTION OF THIN WATER SURFACES IN SWOT IMAGES 3720
BASED ON SEGMENT DETECTION AND CONNECTION**

Sylvain Lobry, Florence Tupin, Télécom ParisTech; Roger Fjortoft, CNES

**TH1-L2.4: SPECTRAL-SPATIAL ONLINE DICTIONARY LEARNING FOR HYPERSPECTRAL 3724
IMAGE CLASSIFICATION**

Wei Fu, Shutao Li, Leyuan Fang, Hunan University; Jón Atli Benediktsson, University of Iceland

**TH1-L2.5: A SEMI AUTOMATIC OFF-ROADS AND TRAILS EXTRACTION METHOD FROM 3728
SENTINEL-1 DATA**

Riadh Abdelfattah, University of Carthage, Higher School of Communications of Tunis; Karem Chokmani, National Institute for Scientific Research,

TH2-L2: GPR SYSTEM AND DATA PROCESSING I

**TH2-L2.1: ANALYSIS OF DOUBLE-D INDUCTION COIL PERFORMANCE IN MAGNETIC 3732
SOILS USING NEW COIL METRICS**

Mark Reed, Waymond Scott, Georgia Institute of Technology

**TH2-L2.2: A METHOD FOR OBTAINING FULLY POLARIMETRIC SCATTERING DATA FROM 3736
SINGLE-POLARIZATION GROUND PENETRATING RADARS (GPR)**

Yue Yu, Chi-Chih Chen, The Ohio State University

**TH2-L2.3: A TECHNIQUE BASED ON ADAPTIVE WINDOWS FOR THE CLASSIFICATION OF 3739
RADAR SOUNDER DATA**

Mahdi Khodadadzadeh, Ana-Maria Ilisei, Lorenzo Bruzzone, University of Trento

TH2-L2.4: AUTOMATIC ICE THICKNESS ESTIMATION IN RADAR IMAGERY BASED ON CHARGED PARTICLES CONCEPT	3743
<i>Maryam Rahnemoonfar, Texas A&M University-Corpus Christi; Amin Abbasi Habashi, University of Isfahan; John Paden, University of Kansas; Geoffrey Fox, Indiana University</i>	
TH2-L2.5: A MIXED L2 - L1 NORM MINIMIZATION PROCEDURE FOR THE DATA PROCESSING OF GROUND PENETRATING RADAR	3747
<i>Michele Ambrosanio, Gilda Schirinzi, Vito Pascasio, University of Napoli Parthenope</i>	
TH3-L2: MULTISPECTRAL/HYPERSPECTRAL IMAGE SEGMENTATION	
TH3-L2.1: MAP-GUIDED HYPERSPECTRAL IMAGE SUPERPIXEL SEGMENTATION USING PROPORTION MAPS	3751
<i>Hao Sun, University of Missouri; Alina Zare, University of Florida</i>	
TH3-L2.2: TOTAL VARIATION REGULARIZED COLLABORATIVE REPRESENTATION CLUSTERING WITH A LOCALLY ADAPTIVE DICTIONARY FOR HYPERSPECTRAL REMOTE SENSING IMAGERY	3755
<i>Han Zhai, Hongyan Zhang, Liangpei Zhang, Pingxiang Li, Wuhan University</i>	
TH3-L2.3: A CLASS-WISE SPATIAL-CONTEXTUAL APPROACH BASED ON A FREE DISCONTINUITY MODEL FOR CHANGE DETECTION IN MULTISPECTRAL IMAGES	3759
<i>Massimo Zanetti, Lorenzo Bruzzone, University of Trento</i>	
TH3-L2.4: PYRAMID INTEGRAL IMAGE RECONSTRUCTION ALGORITHM FOR INFRARED REMOTE SENSING SEA-LAND SEGMENTATION	3763
<i>Penglin Wang, Yin Zhuang, He Chen, Liang Chen, Beijing Institute of Technology; Hao Shi, Department of Electronic Engineering; Fukun Bi, North China University of Technology</i>	
TH3-L2.5: A HIERARCHICAL SUPERPIXEL AGGREGATION MODEL FOR HYPERSPECTRAL IMAGE	3767
<i>Bingnan Han, Jihao Yin, Xiaoyan Luo, Hui Qv, Beihang University</i>	
TH4-L2: IMAGE SEGMENTATION AND DETECTION	
TH4-L2.1: GRADUALLY EVOLVED FUZZY ACTIVE CONTOUR MODEL FOR AURORAL OVAL SEGMENTATION	3771
<i>Jiao Shi, Yu Lei, Northwestern Polytechnical University; Jing Bai, Jiaji Wu, Xidian University</i>	
TH4-L2.2: SHADOW DETECTION IN VERY HIGH-RESOLUTION SATELLITE IMAGES BY EXTENDED RANDOM WALKER	3775
<i>Yufan Huang, Xudong Kang, Shutao Li, Ting Lu, Hui Lin, Hunan University</i>	
TH4-L2.3: EXPLOITING CONVOLUTIONAL REPRESENTATIONS FOR MULTISCALE HUMAN SETTLEMENT DETECTION: PRELIMINARY RESULTS	3779
<i>Dalton Lunga, Dilip Patlolla, Lexie Yang, Jeanette Weaver, Budhendra Bhaduri, Oak Ridge National Laboratory</i>	
TH4-L2.4: SEGMENTATION BASED BUILDING DETECTION IN HIGH RESOLUTION SATELLITE IMAGES	3783
<i>Prajowal Manandhar, Dr. Zeyar Aung, Dr. Prashanth Marpu, Masdar Institute, A Part of Khalifa University of Science and Technology</i>	
TH4-L2.5: SEMANTIC SEGMENTATION OF VEGETATION IMAGES ACQUIRED BY UNMANNED AERIAL VEHICLES USING AN ENSEMBLE OF CONVNETS	3787
<i>Keiller Nogueira, Jefersson Alex dos Santos, Universidade Federal de Minas Gerais; Leonardo Cancian, Bruno Borges, Thiago Silva, Leonor Patricia Morellato, Universidade Estadual Paulista; Ricardo Torres, University of Campinas</i>	

TH1-L3: DIFFERENTIAL SAR INTERFEROMETRY TECHNIQUES I

TH1-L3.1: ON THE USE OF DIRECTIONAL STATISTICS FOR THE ADAPTIVE SPATIAL MULTI-LOOKING OF SEQUENCES OF DIFFERENTIAL SAR INTERFEROGRAMS 3791

Antonio Pepe, National Council Research of Italy (CNR); Pietro Mastro, Università degli Studi della Basilicata

TH1-L3.2: SIMPLIFIED COHERENCE NETWORK PHASE RECONSTRUCTION METHOD AND ITS APPLICATIONS ON SENTINEL-1 DATA 3795

Kui Zhang, Di Wu, Hui Wang, Chongqing University; Ruiqing Song, Guojie Meng, China Earthquake Administration

TH1-L3.3: DEM CORRECTION AND MEAN SURFACE DISPLACEMENT RATE RETRIEVAL FROM A STACK OF WRAPPED MULTI-TEMPORAL DINSAR INTERFEROGRAMS 3798

Antonio Pepe, Riccardo Lanari, National Council Research of Italy (CNR)

TH1-L3.4: AN ANALYTIC EXPRESSION FOR THE PHASE NOISE PROPERTIES OF THE GOLDSTEIN-WERNER POWER SPECTRAL FILTER 3802

Scott Hensley, Jet Propulsion Laboratory, California Institute of Technology

TH1-L3.5: MODELING IONOSPHERIC PHASE NOISE FOR NISAR MISSION DATA..... 3806

Franz J Meyer, University of Alaska Fairbanks; Piyush Agram, Jet Propulsion Laboratory

TH2-L3: DIFFERENTIAL SAR INTERFEROMETRY TECHNIQUES II

TH2-L3.1: ROBUST BLIND SCATTERER SEPARATION IN MULTIBASELINE INSAR 3810

Yuanyuan Wang, Technische Universität München; Xiao Xiang Zhu, German Aerospace Center & Technical University of Munich

TH2-L3.2: INVESTIGATION OF DISPLACEMENT MEASUREMENTS PERFORMED WITH A GROUND-BASED FIXED RECEIVER BISTATIC SAR SIMULATOR 3814

Ovidiu Moaca, Andrei Anghel, UPB; Mihai Datcu, UPB/DLR

TH2-L3.3: EVALUATION OF DETECTION CAPABILITY OF CRUSTAL MOVEMENT BY AIRBORNE SAR (PI-SAR-L2) REPEAT-PASS INTERFEROMETRY 3818

Masanori Miyawaki, Tomoko Ishii, NEC Aerospace Systems, Ltd; Shouhei Ohno, Takashi Fujimura, Tsunekazu Kimura, NEC Corporation; Kenya Harada, Masato Ohki, Japan Aerospace Exploration Agency

TH2-L3.4: PRECISE THREE-DIMENSIONAL MAPPING OF THE 2016 KUMAMOTO EARTHQUAKE THROUGH THE INTEGRATION OF SAR INTERFEROMETRY AND OFFSET TRACKING 3822

Won-Kyung Baek, Hyung-Sup Jung, Sung-Ho Chae, University Of Seoul

TH2-L3.5: A CONVEX HULL ALGORITHM BASED FAST LARGE-SCALE TWO-DIMENSIONAL PHASE UNWRAPPING METHOD 3824

Hanwen Yu, Hyongki Lee, University of Houston

TH3-L3: EMERGING SPACEBORNE SAR INSTRUMENTS AND MISSIONS I

TH3-L3.1: MULTI-CHANNEL SYNTHETIC APERTURE RADAR IN EUROPE 3828

Michael Ludwig, Jean-Christophe Angevain, Christopher Buck, Daniele Petrolati, European Space Agency - ESTEC

TH3-L3.2: THE NASA-ISRO SAR (NISAR) MISSION DUAL-BAND RADAR INSTRUMENT PRELIMINARY DESIGN 3832

Paul Rosen, Scott Hensley, Scott Shaffer, Wendy Edelstein, Yunjin Kim, Jet Propulsion Laboratory; Raj Kumar, Tapan Misra, Rakesh Bhan, Raju Sagi, Indian Space Research Organisation

TH3-L3.3: THE BIOMASS MISSION - ESA'S P-BAND POLARIMETRIC, INTERFEROMETRIC SAR MISSION 3836

Klaus Scipal, European Space Agency (ESA)

TH3-L3.4: NEXT GENERATION P-BAND PLANETARY SYNTHETIC APERTURE RADAR	3838
<i>Rafael Rincon, NASA Goddard Space Flight Center; Lynn Carter, University of Arizona; Daniel Lu, NASA</i>	
TH3-L3.5: AIRBORNE X-BAND SAR FOR DEMONSTRATING TWO-DIMENSIONAL DIGITAL BEAMFORMING	3841
<i>Robert Wang, Yunkai Deng, Pei Wang, Nan Wang, Institute of Electronics, Chinese Academy of Sciences</i>	
TH4-L3: EMERGING SPACEBORNE SAR INSTRUMENTS AND MISSIONS II	
TH4-L3.1: INTRODUCTION TO A NEW WIDE AREA SAR MODE USING THE F-SCAN PRINCIPLE	3844
<i>Christian Roemer, Airbus Defence and Space</i>	
TH4-L3.2: NEXT GENERATION LOW COST SAR PAYLOADS: NOVASAR-S AND BEYOND.....	3848
<i>Jose Marquez-Martinez, Martin Cohen, Sam Doody, Pedro Lau Semedo, Andrew Larkins, Airbus Defence and Space</i>	
TH4-L3.3: ANTENNA TECHNOLOGY DEVELOPMENTS FOR A BI-STATIC PASSIVE RECEIVE-ONLY SYNTHETIC APERTURE RADAR COMPANION SATELLITE	3852
<i>Paula Saameño, Fernando Monjas, Josep Closa, Andrés Solana, Albert Zurita, Isabel Martín, Airbus Defence and Space; Bernardo Carnicero-Dominguez, European Space Agency (ESA)</i>	
TH4-L3.4: TESTING C-BAND CONVOY MISSION FOR FOREST MONITORING	3856
<i>Svein Solberg, Norwegian institute of bioeconomy research; Lars Ulander, Johan Fransson, Chalmers University of Technology</i>	
TH4-L3.5: INNOVATIVE TECHNOLOGICAL ADVANCEMENTS IN THE DEVELOPMENT AND EXPLOITATION OF A DUAL-BAND SPACEBORNE SAR-XL SYSTEM	3858
<i>Keith Beckett, George Tyc, Peter Fox, UrtheCast Corporation</i>	
TH1-L4: FOREST MONITORING BY OPTICAL RADIOMETRY II	
TH1-L4.1: GROUND-BASED LONG-TERM REMOTE SENSING OF SOLAR-INDUCED CHLOROPHYLL FLUORESCENCE: METHODS, CHALLENGES AND OPPORTUNITIES	3862
<i>Siheng Wang, The State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Lifu Zhang, Changping Huang, The State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Na Qiao, The State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; University of Chinese Academy of Sciences</i>	
TH1-L4.2: PLC-P: A CANOPY REFLECTANCE MODEL FOR SLOPING TERRAIN BASED ON PATH LENGTH CORRECTION AND P-THEORY	3866
<i>Gaofei Yin, Ainong Li, Institute of Mountain Hazards and Environment, Chinese Academy of Sciences</i>	
TH1-L4.3: APPLYING A LOGISTIC-GAUSSIAN COMPLEX SIGNAL MODEL TO RESTORE SURFACE HYPERSPECTRAL REFLECTANCE OF AN OLD-GROWTH TREE SPECIES IN COOL TEMPERATE FOREST	3870
<i>Chinsu Lin, National Chiayi University</i>	
TH1-L4.4: MODELING ANISOTROPIC BIDIRECTIONAL REFLECTANCE OF SLOPING FOREST	3874
<i>Shengbiao Wu, Jianguang Wen, Yong Tang, Donqin You, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Jun Zhao, Qingdao Geotechnical Investigation and Surveying Research Institute</i>	
TH1-L4.5: A GENERALIZED FPAR RETRIEVAL METHOD FROM DIFFERENT SATELLITE SENSORS	3878
<i>Rongyuan Liu, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources; Huazhong Ren, Peking University; Suhong Liu, Beijing Normal University; Bokun Yan, Fuping Gan, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources</i>	

TH2-L4: POLARIMETRIC SAR INTERFEROMETRY

TH2-L4.1: SINGLE-BASELINE POLARIMETRIC SAR INTERFEROMETRY FOR 3882 CHARACTERIZING THE BIOPHYSICAL PROPERTIES OF AGRICULTURAL CROPS

Manuele Pichierri, Bernhard Rabus, Simon Fraser University; Irena Hajnsek, ETH Zurich

TH2-L4.2: SENSITIVITY OF POLARIMETRIC SAR INTERFEROMETRY DATA TO 3581 DIFFERENT VERTICAL SUBSURFACE STRUCTURES OF THE GREENLAND ICE SHEET

Georg Fischer, Giuseppe Parrella, Konstantinos Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR)

TH2-L4.3: BACKSCATTERING ANALYSIS OF OFFSHORE PLATFORMS IN GULF OF 3890 MEXICO VIA MULTI-POLARIZATION TERRASAR-X/TANDEM-X DATA

Domenico Velotto, German Aerospace Center (DLR); Armando Marino, The Open University; Ferdinando Nunziata, Università Parthenope

TH2-L4.4: STRUCTURE PARAMETER ESTIMATION OF NATURAL SCATTERERS BY MEANS OF 3894 MULTI-BASELINE POL-INSAR TECHNIQUES: STATUS AND CHALLENGES

Konstantinos Papathanassiou, German Aerospace Center (DLR)

TH2-L4.5: SHIP DETECTION WITH COSMO-SKYMED PINGPONG DATA USING THE 3897 DUAL-POL RATIO ANOMALY DETECTOR

Armando Marino, The Open University; Pasquale Iervolino, The University of Surrey

TH3-L4: POLARIMETRIC CLASSIFICATION

TH3-L4.1: CHANGE DETECTION IN MULTI-TEMPORAL DUAL POLARIZATION SENTINEL-1 3901 DATA

Allan Nielsen, Technical University of Denmark; Mort Canty, Jülich Research Center; Henning Skriver, Knut Conradsen, Technical University of Denmark

TH3-L4.3: TEMPORAL ANALYSIS OF TOUZI PARAMETERS FOR WHEAT CROP 3909 CHARACTERIZATION USING L-BAND AGRISAR 2006 DATA

Soumyashree Kar, Dipankar Mandal, Avik Bhattacharya, J. Adinarayana, Indian Institute of Technology Bombay

TH3-L4.4: COMBINATION USE OF MULTIPLE WINDOW SIZES FOR STOKES VECTOR 3913 BASED POLSAR DATA INTERPRETATION

Fang Shang, University of Electro-Communications; Akira Hirose, The University of Tokyo

TH3-L4.5: A FULLY POLARIMETRIC SAR RAW SIGNAL SIMULATOR 3917

Gerardo Di Martino, Antonio Iodice, Davod Poreh, Daniele Riccio, Università di Napoli Federico II

TH4-L4: POLARIMETRIC TECHNIQUES I

TH4-L4.1: POLSAR IMAGE CLASSIFICATION BASED ON THREE-DIMENSIONAL WAVELET 3921 TEXTURE FEATURES AND MARKOV RANDOM FIELD

Haixia Bi, Xi'an Jiaotong University; Lin Xu, New York University, Abu Dhabi; Xiangyong Cao, Zongben Xu, Xi'an Jiaotong University

TH4-L4.3: COMPARATIVE ANALYSIS OF CLASSIFICATION RESULTS BETWEEN COMPACT 3929 AND FULLY POLARIMETRIC SAR IMAGES IN RANDOM FOREST CLASSIFIER

Lu Xu, Hong Zhang, Chao Wang, Institute of Remote Remote Sensing and Digital Earth

TH4-L4.4: QUAD-POL RECONSTRUCTION WITH WISHART-BAYESIAN REGULARIZATION 3933

Dong-Xiao Yue, Feng Xu, Zhi-Mian Zhang, Ya-Qiu Jin, Fudan University

TH4-L4.5: SEMI-SUPERVISED POLSAR CLASSIFICATION BASED ON IMPROVED TRI-TRAINING 3937

Wenqiang Hua, Shuang Wang, Xidian University; Yang Zhao, Institute of Tacking and Telecommunications Technology; Bo Yue, Yanhe Guo, Xidian University

TH1-L5: SMAP SOIL MOISTURE I

TH1-L5.1: ASSESSMENT OF VERSION 4 OF THE SMAP PASSIVE SOIL MOISTURE STANDARD PRODUCT 3941

Peggy E. O'Neill, NASA Goddard Space Flight Center; Steven Chan, Jet Propulsion Laboratory; Rajat Bindlish, NASA Goddard Space Flight Center; Thomas J. Jackson, USDA-ARS; Andreas Colliander, Roy Scott Dunbar, Jet Propulsion Laboratory; Fan Chen, USDA-ARS; Jeffrey R. Piepmeier, NASA Goddard Space Flight Center; Simon Yueh, Jet Propulsion Laboratory; Dara Entekhabi, Massachusetts Institute of Technology; Michael H. Cosh, USDA-ARS; Todd Caldwell, The University of Texas; Jeffrey Walker, X. Wu, Monash University; Aaron Berg, Tracy Rowlandson, University of Guelph; Anna Pacheco, Heather McNairn, AAFC; Marc Thibeault, CONAE; José Martínez-Fernández, Ángel Gonzalez-Zamora, CIALE; Ernesto Lopez-Baeza, University of Valencia; F. Udall, Technical University of Denmark; Mark Seyfried, David Bosch, Patrick Starks, C. Holifield, John Prueger, USDA-ARS; Z. Su, R. van der Velde, University of Twente; Jun Asanuma, University of Tsukuba; Michael Palecki, NOAA; Eric Small, University of Colorado; Marek Zreda, University of Arizona; Jean-Christophe Calvet, CNRM-GAME; W. Crow, USDA-ARS; Yann Kerr, Centre d'Etudes Spatiales de la Biosphère (CESBIO) - CNES

TH1-L5.2: MULTI-FREQUENCY RADIOMETER-BASED SOIL MOISTURE RETRIEVAL ALGORITHM PARAMETRIZATION USING IN SITU VALIDATION SITES 3945

Ying Gao, Monash University; Andreas Colliander, Mariko S. Burgin, NASA; Jeffrey Walker, Monash University; Chun Sik Chae, Emmanuel Dinnat, NASA; Michael H. Cosh, USDA

TH1-L5.3: SOIL MOISTURE RETRIEVAL WITH AIRBORNE PALS INSTRUMENT OVER AGRICULTURAL AREAS IN SMAPVEX16 3949

Andreas Colliander, Jet Propulsion Laboratory, California Institute of Technology; Thomas J. Jackson, Michael H. Cosh, United States Department of Agriculture, Agriculture Research Service; Sidharth Misra, Jet Propulsion Laboratory, California Institute of Technology; Rajat Bindlish, United States Department of Agriculture, Agriculture Research Service; Jarrett Powers, Heather McNairn, Agriculture and Agri-Food Canada; Paul Bullock, University of Manitoba; Aaron Berg, University of Guelph; Ramata Magagi, University of Sherbrooke; Peggy E. O'Neill, NASA Goddard Space Flight Center; Simon Yueh, Jet Propulsion Laboratory, California Institute of Technology

TH1-L5.4: SPATIAL VARIABILITY IN MICROWAVE RADIOMETRIC SIGNATURES OF GROWING CORN AND SOYBEAN DURING SMAPVEX16-MICROWEX 3953

Pang-Wei Liu, Jasmeet Judge, Subit Chakrabarti, University of Florida; Roger DeRoo, University of Michigan, Ann Arbor; Susan Steele-Dunne, Delft University of Technology; Brian Hornbuckle, Iowa State University; Andreas Colliander, Sidharth Misra, Scott Tripp, Barron Latham, Ross Williamson, Isaac Ramos Perez, Simon Yueh, NASA; Anthony W. England, University of Michigan Dearborn

TH1-L5.5: COSMIC-RAY NEUTRON PROBES FOR SATELLITE SOIL MOISTURE VALIDATION 3957

Carsten Montzka, Heye Bogena, Forschungszentrum Jülich; Marek Zreda, University of Arizona; Alessandra Monerris, Formerly at Monash University; Ross Morrison, Centre for Ecology & Hydrology; Sekhar Muddu, Indian Institute of Science; Harry Vereecken, Forschungszentrum Jülich

TH2-L5: LAND SURFACE TEMPERATURE

TH2-L5.1: CONSISTENT ESTIMATIONS OF LAND SURFACE TEMPERATURE, EMISSIVITY AND UPWELLING LONGWAVE RADIATION FROM SUOMI NPP VIIRS DATA 3961

Han Ma, Shunlin Liang, Beijing Normal University

TH2-L5.2: COMPLEMENT ANALYSIS FOR THE WAVELET TRANSFORM METHOD FOR SEPARATING TEMPERATURE AND EMISSIVITY 3965

Yu-Ze Zhang, University of Chinese Academy of Sciences; Si-Bo Duan, Chinese Academy of Agricultural Sciences; Xiao-Guang Jiang, University of Chinese Academy of Sciences; Hua Wu, Chinese Academy of Sciences; Ya-Zhen Jiang, University of Chinese Academy of Sciences; Zhao-Xia Liu, Chinese Academy of Sciences; Cheng Huang, University of Chinese Academy of Sciences

TH2-L5.3: LAND SURFACE TEMPERATURE RETRIEVED FROM COMBINED MID-INFRARED AND THERMAL INFRARED DATA	3969
<i>Yonggang Qian, Kun Li, Ning Wang, Lingling Ma, Yaokai Liu, Wei Li, Lu Ren, Shi Qiu, Chuanrong Li, Lingli Tang, Academy of Opto-Electronics, Chinese Academy of Sciences</i>	
TH2-L5.4: A DATA ASSIMILATION APPROACH FOR SIMULTANEOUSLY ESTIMATING A SUITE OF LAND SURFACE VARIABLES FROM SATELLITE DATA	3973
<i>Shunlin Liang, University of Maryland; Zhiqiang Xiao, Hanyu Shi, Han Ma, Beijing Normal University</i>	
TH2-L5.5: AN ALGORITHM FOR RETRIEVING LAND SURFACE TEMPERATURE FROM AMSR-E DATA OVER THE DESERT REGIONS	3976
<i>Fang-Cheng Zhou, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Zhao-Liang Li, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Hua Wu, Bo-Hui Tang, Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Xiaoning Song, University of Chinese Academy of Sciences; Guangjian Yan, School of Geography, Beijing Normal University; Si-Bo Duan, Key Laboratory of Agri-informatics, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences</i>	
TH3-L5: ESTIMATION AND REGRESSION TECHNIQUES I	
TH3-L5.1: JOINT GAUSSIAN PROCESSES FOR INVERSE MODELING	3980
<i>Daniel Heestermans Svendsen, Luca Martino, Manuel Campos-Taberner, Gustau Camps-Valls, University of Valencia</i>	
TH3-L5.2: SEGMENTED REGRESSION FOR SPATIO-SPECTRAL BACKGROUND ESTIMATION	3984
<i>James Theiler, Amanda Ziemann, Los Alamos National Laboratory</i>	
TH3-L5.3: SPATIAL-SPECTRAL HYPERSPECTRAL IMAGE COMPRESSIVE SENSING	3988
<i>Gabriel Martín, José Manuel Bioucas-Dias, Instituto de Telecomunicações</i>	
TH3-L5.4: MULTIPLE OUTPUT GAUSSIAN PROCESS REGRESSION ALGORITHM FOR MULTI-FREQUENCY SCATTERED DATA INTERPOLATION	3992
<i>Weitong Ruan, Tufts University; Adam Milstein, William Blackwell, Massachusetts Institute of Technology Lincoln Laboratory; Eric Miller, Tufts University</i>	
TH3-L5.5: MICROWAVE COVARIATION MODELING AND RETRIEVAL FOR THE DUAL-FREQUENCY ACTIVE-PASSIVE COMBINATION OF SENTINEL-1 AND SMAP	3996
<i>Thomas Jagdhuber, German Aerospace Center (DLR); Dara Entekhabi, Massachusetts Institute of Technology; Narendra N Das, Jet Propulsion Laboratory; Moritz Link, German Aerospace Center (DLR); Carsten Montzka, Research Centre Jülich; Seunghum Kim, Simon Yueh, Jet Propulsion Laboratory</i>	
TH4-L5: ESTIMATION AND REGRESSION APPLICATIONS	
TH4-L5.1: WATER STRESS DETECTION AS AN INDICATOR OF RED PALM WEEVIL ATTACK USING WORLDVIEW-3 DATA	4000
<i>Abdou Bannari, Abdulaziz, M.A. Mohamed, Ali El-Battay, Arabian Gulf University</i>	
TH4-L5.2: ESTIMATION OF DAILY EVAPOTRANSPIRATION USING MODIS DATA TO CALCULATE INSTANTANEOUS DECOUPLING COEFFICIENT AND RESISTANCES	4004
<i>Yazhen Jiang, University of Chinese Academy of Sciences; Xiaoguang Jiang, University of Chinese Academy of Sciences; Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Academy of Opto-Electronics, Chinese Academy of Sciences; Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Zhao-Liang Li, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Yuze Zhang, Cheng Huang, Chen Ru, University of Chinese Academy of Sciences</i>	
TH4-L5.3: DETECTION OF ALGAL BLOOMS IN A EUTROPHIC RESERVOIR BASED ON CHLOROPHYLL-A TIME SERIES DATA FROM MODIS.	4008
<i>Alba German, Carolina Tauro, Marcelo Carlos Scavuzzo, Anabella Ferral, Mario Gulich Institute. CONAE. UNC</i>	

TH4-L5.4: ESTIMATION OF THE ANTHROPOGENIC HEAT FLUX DISTRIBUTION IN BEIJING-TIANJIN-HEBEI REGION BASED ON SUOMI-NPP/VIIRS NIGHTTIME LIGHT IMAGE	4012
<i>Deyong Hu, Shanshan Chen, Fuzhou Duan, Capital Normal University</i>	
TH4-L5.5: ESTIMATION OF LEAF WATER CONTENT USING NEW VEGETATION INDICES COMBINED BY NEAR- AND MIDDLE INFRARED SPECTRAL REFLECTANCES	4016
<i>Ziyang Zhang, Bo-Hui Tang, Zhao-Liang Li, Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Ruofei Zhong, Capital Normal University</i>	
TH1-L6: IMAGE AND DATA FUSION IV	
TH1-L6.1: IMAGE-BASED 3D MODEL AND HYPERSPECTRAL DATA FUSION FOR IMPROVED SCENE UNDERSTANDING	4020
<i>Anthony Ortiz, The University of Texas at El Paso; Dalton Rosario, U.S. Army Research Laboratory; Olac Fuentes, The University of Texas at El Paso; Blair Simon, Headwall Photonics</i>	
TH1-L6.2: TOWARDS A GLOBAL FLOOD FREQUENCY MAP FROM SAR DATA	4024
<i>Ramona Pelich, Marco Chini, Renaud Hostache, Patrick Matgen, Luxembourg Institute of Science and Technology; Jose Manuel Delgado, Giovanni Sabatino, European Space Agency (ESA)</i>	
TH1-L6.3: OBJECT BASED FUSION OF MULTI-SENSOR IMAGERY WHILE PRESERVING SPECTRALLY SIGNIFICANT INFORMATION	4028
<i>Mayank Goyal, K S Rajan, International Institute of Information Technology, Hyderabad</i>	
TH1-L6.4: CORRELATED PROBABILITIES BASED DECISION FUSION METHOD FOR MULTI-SENSOR DATA	4032
<i>Abeer Mazher, Peijun Li, Peking University</i>	
TH1-L6.5: MISS DATA RECONSTRUCTION IN REMOTE SENSING IMAGES WITH A DOUBLE WEIGHTED TENSOR LOW RANK MODEL	4036
<i>Qiangqiang Yuan, Wuhan University; Michael Ng, HKBU; Huanfeng Shen, Liangpei Zhang, Jie Li, Wuhan University</i>	
TH2-L6: OCEAN SURFACE REMOTE SENSING MISSIONS	
TH2-L6.1: PRELIMINARY RETRIEVAL OF OCEAN WINDS AND WAVES FROM CHINESE NEWLY LAUNCHED SPACEBORNE MICROWAVE SENSORS	4040
<i>Jingsong Yang, Lin Ren, Juan Wang, Gang Zheng, Xiaohui Li, Second Institute of Oceanography, State Oceanic Administration</i>	
TH2-L6.3: SENTINEL-3: MISSION STATUS AND PERFORMANCE AFTER ONE YEAR IN ORBIT	4046
<i>Susanne Mecklenburg, Jens Nieke, Philippe Goryl, Bruno Berruti, European Space Agency (ESA)</i>	
TH2-L6.5: ARCTIC MARITIME SURVEILLANCE WITH SENTINEL-1 DATA USING A NORWEGIAN COLLABORATIVE GROUND SEGMENT	4052
<i>Tonje Nanette Arnesen Hannevik, Kjell O. Viken, Richard B. Olsen, Øyvind K. Lensjø, Norwegian Defence Research Establishment</i>	
TH3-L6: CALIBRATION AND VALIDATION OF S-NPP AND GOES-R INSTRUMENTS	
TH3-L6.1: ON-ORBIT MEASUREMENT OF THE FOCAL LENGTH OF THE SNPP VIIRS INSTRUMENT	4056
<i>James Tilton, Robert Wolfe, NASA Goddard Space Flight Center; Guoqing (Gary) Lin, Zhangshi (Albert) Yin, Science Systems and Applications, Inc.</i>	
TH3-L6.2: S-NPP VIIRS THERMAL EMISSIVE BAND THERMAL CALIBRATION ERRORS AND THEIR IMPACT ON BLACKBODY WARM UP AND COOL DOWN FACTORS	4060
<i>David Moyer, Frank De Luccia, Gabriel Moy, The Aerospace Corporation</i>	

TH3-L6.3: DEVELOPMENT OF LEVEL 1B CALIBRATION AND VALIDATION READINESS,	4064
IMPLEMENTATION AND MANAGEMENT PLANS FOR GOES-R	
<i>David Kunkee, Robert Farley, Betty Kwan, James Hecht, Richard Walterscheid, Seth Claudepierre, Rebecca Bishop, Lynette Gelinas, Tamitha Skov, Frank De Luccia, The Aerospace Corporation</i>	
TH3-L6.4: IMPROVEMENTS IN VIIRS REFLECTIVE BAND CALIBRATION ACCURACY AND	4068
STABILITY PROVIDED BY RSBAUTOCAL	
<i>Evan Haas, Frank De Luccia, The Aerospace Corporation</i>	
TH3-L6.5: S-NPP VIIRS DAY-NIGHT BAND CALIBRATION AND STATUS UPDATE	4072
<i>Spencer Farrar, Tim Wilkinson, Frank De Luccia, The Aerospace Corporation</i>	
 TH4-L6: TECHNIQUES AND APPLICATIONS OF ACTIVE MICROWAVE REMOTE SENSING INSTRUMENTS	
TH4-L6.1: NEW APPLICATIONS OF SPACEBORNE IMAGING RADAR-C (SIR-C) DATA.....	4076
<i>Valeria Gracheva, Franz J Meyer, Scott Arko, University of Alaska; Paul Rosen, California Institute of Technology</i>	
TH4-L6.2: PHASE AMBIGUITY RESOLUTION FOR ORBIT DETERMINATION	4080
INTERFEROMETRY	
<i>Marc Fernández Usón, Roger Martin Fuster, Antoni Broquetas Ibars, Universitat Politècnica de Catalunya</i>	
TH4-L6.3: EXPERIMENTAL PERFORMANCE ANALYSIS OF THE DBF TECHNIQUE ON	4084
MICAP SCATTEROMETER DEMONSTRATOR	
<i>Caiyun Wang, Hao Liu, Xiangkun Zhang, Di Zhu, Xin Zhao, Chinese Academy of Sciences</i>	
TH4-L6.4: TANDEM-X HEIGHT PERFORMANCE AND DATA COVERAGE	4088
<i>Christopher Wecklich, Carolina Gonzalez, Paola Rizzoli, German Aerospace Center (DLR)</i>	
TH4-L6.5: PRECIPITATION VARIABILITY ACROSS SATELLITE FIELD-OF-VIEWS DERIVED	4092
FROM GROUND-BASED RADAR OBSERVATIONS	
<i>Christopher Williams, University of Colorado Boulder</i>	
 TH1-L7: GLOBAL NAVIGATION SATELLITE SYSTEMS REFLECTOMETRY / GNSS-R SENSORS II	
TH1-L7.1: SPACEBORNE GNSS-R FROM THE SMAP MISSION: FIRST ASSESSMENT OF	4095
POLARIMETRIC SCATTEROMETRY	
<i>Hugo Carreno-Luengo, Stephen Lowe, Cinzia Zuffada, Stephan Esterhuizen, Shadi Oveisgharan, NASA Jet Propulsion Laboratory</i>	
TH1-L7.2: INVESTIGATION OF SPACEBORNE POLARIMETRIC GNSS-R USING THE SMAP	4099
RADAR INSTRUMENT	
<i>Matthew Buchanan, Andrew O'Brien, The Ohio State University</i>	
TH1-L7.3: OCEAN TARGET MONITORING WITH IMPROVED REVISIT TIME USING	4102
CONSTELLATIONS OF GNSS-R INSTRUMENTS	
<i>Alessio Di Simone, University of Naples Federico II; Hyuk Park, Polytechnic University of Catalonia; Daniele Riccio, University of Naples Federico II; Adriano Camps, Polytechnic University of Catalonia</i>	
TH1-L7.4: RESULTS FROM THE GLORIE GNSS-R AIRBORNE CAMPAIGN: AGRICULTURAL	4106
AREAS	
<i>Erwan Motte, Mehrez Zribi, CNRS; Pascal Fanise, IRD; Nicolas Baghdadi, IRSTEA; Frederic Baup, Sahar Ben Hmida, Toulouse University; Sylvia Dayau, INRA; Remy Fieuzal, Toulouse University; Dominique Guyon, Jean-Pierre Wigneron, INRA</i>	

TH1-L7.5: SEA ICE DETECTION USING GNSS-R DELAY-DOPPLER MAPS FROM UK4110
TECHDEMOSAT-1

Yongchao Zhu, Kegen Yu, Jingui Zou, School of Geodesy and Geomatics, Wuhan University; Jens Wickert, GFZ German Research Centre for Geosciences

TH2-L7: GLOBAL NAVIGATION SATELLITE SYSTEMS REFLECTOMETRY / GNSS-R SENSORS III

TH2-L7.1: CALIBRATION ASPECTS OF THE SOFTWARE PARIS INTERFEROMETRIC RECEIVER4114

Serni Ribó, Fran Fabra, Estel Cardellach, Weiqiang Li, Antonio Rius, Institute of Space Sciences (CSIC/IEEC)

TH2-L7.2: CALIBRATION AND VALIDATION PROCESSING FOR THE CYGNSS WIND SPEED RETRIEVAL ALGORITHM4117

Rajeswari Balasubramaniam, Christopher Ruf, Darren McKague, Maria Paola Clarizia, University of Michigan, Ann Arbor; Scott Gleason, Southwest Research Institute

TH2-L7.3: STATISTICAL MODELING AND SIMULATION OF DELAY-DOPPLER MAPS IN THE TIME-VARYING REGIME 4121

Stefano Principe, Tiziana Beltramonte, Maurizio Di Bisceglie, Carmela Galdi, Università degli Studi del Sannio

TH2-L7.4: WAVPY: A GNSS-R OPEN SOURCE SOFTWARE LIBRARY FOR DATA ANALYSIS AND SIMULATION 4125

Fran Fabra, Estel Cardellach, Weiqiang Li, Antonio Rius, Institute of Space Sciences (CSIC/IEEC)

TH2-L7.5: A MODIFIED IMAGING FORMATION ALGORITHM FOR BISTATIC SAR BASED ON GPS-L5 SIGNAL 4129

Hong-cheng Zeng, Jie Chen, Beihang University; Hao-jie Zhang, Beijing Institute of Electronic System Engineering; Wei Yang, Peng-bo Wang, Beihang University

TH3-L7: SOIL MOISTURE FROM ACTIVE AND ACTIVE/PASSIVE SENSORS

TH3-L7.1: DECOMPOSITION OF SMAP POLARIZATION RATIO INTO SURFACE SOIL MOISTURE AND VEGETATION DYNAMICS 4133

Shangnan Li, Jilin University; Ruzbeh Akbar, Parsons Laboratory for Environmental Science and Engineering, Massachusetts Institute of Technology ; Tianjie Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Hui Lu, Tsinghua University; Somayyeh Talebi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Haiteng Weng, Beijing Normal University; Zengyan Wang, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences; Kaighin Mccoll, Parsons Laboratory for Environmental Science and Engineering, Massachusetts Institute of Technology ; Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Dara Entekhabi, Parsons Laboratory for Environmental Science and Engineering, Massachusetts Institute of Technology

TH3-L7.2: REGRESSION-BASED SOIL MOISTURE ESTIMATION FROM SMAP POLARIMETRIC RADAR DATA WITH AQUARIUS DERIVED COEFFICIENTS 4136

Mariko S. Burgin, Jakob J. Van Zyl, NASA Jet Propulsion Laboratory

TH3-L7.3: NEW EMPIRICAL MODEL FOR RADAR SCATTERING FROM BARE SOILS..... 4139

Nicolas Baghdadi, Mohammad Choker, IRSTEA; Mehrez Zribi, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Mohammad El Hajj, IRSTEA; Simonetta Paloscia, CNR-IFAC; Niko Verhoest, Hans Lievens, Laboratory of Hydrology and Water Management, Ghent University, Ghent B-9000, Belgium; Frédéric Baup, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Francesco Mattia, CNR-ISSIA

TH3-L7.4: SIMULATING L/L-BAND AND C/L-BAND ACTIVE-PASSIVE MICROWAVE COVARIATION OF CROPS WITH THE TOR VERGATA SCATTERING AND EMISSION MODEL FOR A SMAP-SENTINEL 1 COMBINATION 4143

Moritz Link, Ludwig-Maximilian University of Munich (LMU); Dara Entekhabi, Massachusetts Institute of Technology; Thomas Jagdhuber, German Aerospace Center (DLR); Paolo Ferrazzoli, Leila Guerriero, Tor Vergata University of Rome; Martin Baur, University of Bayreuth; Ralf Ludwig, Ludwig-Maximilian University of Munich (LMU)

TH3-L7.5: COMPARISON OF TWO METHODS FOR SOIL MOISTURE MAPPING AT 1KM 4147 RESOLUTION FROM SENTINEL-1 AND MODIS SYNERGY <i>Qi Gao, isardSAT; Mehrez Zribi, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Maria José Escorihuela, isardSAT; Nicolas Baghdadi, IRSTEA, UMR TETIS</i>	
TH4-L7: SOIL MOISTURE REMOTE SENSING	
TH4-L7.1: A SPATIALLY CONSISTENT DOWNSCALING APPROACH FOR SMOS USING AN 4151 ADAPTIVE MOVING WINDOW <i>Gerard Portal, Mercè Vall-llossera, Universitat Politècnica de Catalunya, IEEC/UPC and Barcelona Expert Centre; Piles Maria, Universitat de València; Camps Adriano, David Chaparro, Universitat Politècnica de Catalunya, IEEC/UPC and Barcelona Expert Centre; Miriam Pablos, Instituto Hispano-Luso de Investigaciones Agrarias and University of Salamanca; Rossato Luciana, Universitat Politècnica de Catalunya, IEEC/UPC and Barcelona Expert Centre</i>	
TH4-L7.2: ERROR CHARACTERIZATION OF SMOS, ASCAT, SMAP, ERA AND ISMN SOIL 4154 MOISTURE PRODUCTS: AUTOMATIC DETECTION OF CROSS-CORRELATION ERROR THROUGH EXTENDED QUADRUPLE COLLOCATION <i>Fabio Fascetti, Nazzareno Pierdicca, Sapienza; Luca Pulvirenti, CIMA Research Foundation; Raffaele Crapolicchio, Serco SpA</i>	
TH4-L7.3: REMOTE SENSING OF SOIL MOISTURE USING P-BAND SIGNALS OF 4158 OPPORTUNITY (SOOP): INITIAL RESULTS <i>James Garrison, Yao-Cheng Lin, Benjamin Nold, Purdue University; Jeffrey R. Piepmeier, Manuel A. Vega, Matthew Fritts, Cornelis F. du Toit, Joseph Knuble, NASA Goddard Space Flight Center</i>	
TH4-L7.4: EVALUATE SENTINEL-1A SOIL MOISTURE FROM GLOBAL PRODUCTS AND 4162 GROUND MEASUREMENTS AT SITE DAHRA IN SENEGAL <i>Zhiqu Liu, Pingxiang Li, Jie Yang, Wuhan University; Minyi Li, Deqing iSpatial Co., Ltd</i>	
TH4-L7.5: COVARIATION OF SMAP ACTIVE AND PASSIVE MEASUREMENTS WITH 4166 RESPECT TO VEGETATION AND SURFACE ROUGHNESS <i>Jiangyuan Zeng, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Ruzbeh Akbar, Massachusetts Institute of Technology; Kun-Shan Chen, Tianjie Zhao, Panpan Yao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Huizhen Cui, Beijing Normal University; Hui Lu, Tsinghua University; Dara Entekhabi, Massachusetts Institute of Technology</i>	
TH1-L8: CALIBRATION AND REGISTRATION FOR OPTICAL SENSORS II	
TH1-L8.1: CONSISTENT RADIOMETRIC SCALING OF THE MULTI-TEMPORAL AVHRR 4170 SATELLITE RECORD <i>Rajendra Bhatt, Science Systems and Applications, Inc.; David Doelling, NASA Langley Research Center; Benjamin Scarino, Arun Gopalan, Science Systems and Applications, Inc.; Patrick Minnis, Kristopher Bedka, NASA Langley Research Center; Conor Haney, Science Systems and Applications, Inc.</i>	
TH1-L8.2: AQUA MODIS ELECTRONIC CROSSTALK ON SMWIR BANDS 20 TO 26..... 4174 <i>Graziela Keller, Zhipeng Wang, Aisheng Wu, Science Systems and Applications, Inc.; Xiaoxiong Xiong, NASA Goddard Space Flight Center</i>	
TH1-L8.3: REPROCESSING OF SUOMI NPP CRIS SENSOR DATA RECORDS AND IMPACTS 4178 ON RADIOMETRIC AND SPECTRAL LONG-TERM ACCURACY AND STABILITY <i>Yong Chen, University of Maryland; Yong Han, Fuzhong Weng, NOAA Center for Satellite Application and Research</i>	
TH1-L8.4: AN UPDATE ON NAST-I RESULTS FROM SNPP AIRBORNE CAMPAIGN 4182 UNDERFLIGHTS <i>Allen Larar, Daniel Zhou, Xu Liu, J. Tian, NASA Langley Research Center; William Smith, SSAI / UW</i>	
TH1-L8.5: SIMULTANEOUS EMPIRICAL LINE CALIBRATION OF MULTIPLE SPECTRAL 4185 IMAGES <i>Fadi Kizel, University of Iceland; Lorenzo Bruzzone, University of Trento; Jón Atli Benediktsson, University of Iceland</i>	

TH2-L8: CALIBRATION AND REGISTRATION FOR OPTICAL SENSORS I

TH2-L8.1: FINE GEOMETRIC ALIGNMENT OF VERY HIGH RESOLUTION OPTICAL IMAGES USING REGISTRATION NOISE AND QUADTREE STRUCTURE 4189

Youkyung Han, Kyungpook National University, Korea

TH2-L8.2: HYPERSPECTRAL IMAGE DENOISING VIA SPECTRAL AND SPATIAL LOW-RANK APPROXIMATION 4193

Yi Chang, Luxin Yan, Sheng Zhong, Huazhong University of Science and Technology

TH2-L8.3: VIIRS THERMAL EMISSIVE BANDS L1B CALIBRATION UNCERTAINTY 4197

Kwofu Chiang, Jeffrey McIntire, Science Systems and Applications, Inc.; Xiaoxiong Xiong, NASA

TH2-L8.4: INTERCALIBRATION OF ADVANCED HIMAWARI-8 IMAGER'S INFRARED CHANNELS WITH IASI/METOP-B 1C DATA 4201

Geng-Ming Jiang, Fudan University; Guicai Li, National Satellite Meteorological Center; Wen-Xia Li, Fudan University

TH2-L8.5: LANDSAT-8 OPERATIONAL LAND IMAGER ON-ORBIT RADIOMETRIC CALIBRATION 4205

Brian Markham, NASA Goddard Space Flight Center; Julia Barsi, SSAI/GSFC

TH3-L8: SPACE LIDAR: MISSIONS, TECHNOLOGIES AND OBSERVATIONS I

TH3-L8.1: TECHNOLOGY ADVANCEMENT AND CHALLENGES IN SPACEBORNE LIDAR FOR EARTH SCIENCE 4208

George Komar, NASA

TH3-L8.2: TRIPLE-PULSE INTEGRATED PATH DIFFERENTIAL ABSORPTION LIDAR FOR CARBON DIOXIDE MEASUREMENT– NOVEL LIDAR TECHNOLOGIES AND TECHNIQUES WITH PATH TO SPACE 4212

Upendra Singh, Tamer Refaat, Mulugeta Petros, NASA Langley Research Center

TH3-L8.3: RECENT PROGRESS ON UV LASERS FOR AIRBORNE AND SPACE-BASED APPLICATIONS 4216

Floyd Hovis, Michael Albert, Fran Fitzpatrick, Kent Puffenburger, Tom Schum, Darrell Jones, Joe Rudd, Slava Litvinovitch, Fibertek, Inc.

TH3-L8.4: INTEGRATING A DOPPLER WIND LIDAR INTO A NETWORK OF WIND OBSERVING SYSTEMS: CAPITALIZING ON SYNERGISMS WITH A HIGH PRECISION, CLOUD SCENE PENETRATING LIDAR 4220

David Emmitt, Simpson Weather Associates; Michael Kavaya, Upendra Singh, NASA Langley Research Center

TH3-L8.5: A SPACEBORNE ADAPTIVE LIDAR FOR EARTH IMAGING 4224

Carl Weimer, Mike Lieber, Reuben Rohrschneider, Lyle Ruppert, Ball Aerospace & Technologies Corporation

TH4-L8: SPACE LIDAR: MISSIONS, TECHNOLOGIES AND OBSERVATIONS II

TH4-L8.1: THE OVERVIEW AND STATUS OF VEGETATION LIDAR MISSION, MOLI 4228

Toshiyoshi Kimura, Tadashi Imai, Daisuke Sakaizawa, Jumpei Murooka, Rei Mitsuhashi, Japan Aerospace Exploration Agency

TH4-L8.2: ESA SPACE WIND LIDAR MISSION: APPROACHING LAUNCH 4231

Linda Mondin, Denny Wernham, Anders Elfving, Anne-Grete Straume, Alain Culoma, Thomas Kanitz, European Space Agency (ESA); Olivier LeCrenier, Jean-Claude Barthes, Dominique Thibault, Phil McGoldrick, Airbus Defence and Space

TH4-L8.3: THE ESA EARTHCARE MISSION DEVELOPMENT STATUS 4234

Alain Lefebvre, Arnaud Hélière, Kotska Wallace, European Space Agency (ESA); Hirotaka Nakatsuka, Eiichi Tomita, Japan Aerospace Exploration Agency

TH4-L8.4: STUDY ON MEASUREMENT PERFORMANCE OF FUTURE SPACE-BASED 4238
DOPPLER WIND LIDAR IN JAPAN

Shoken Ishii, National Institute of Information and Communications Technology; Kozo Okamoto, Meteorological Research Institute; Philippe Baron, National Institute of Information and Communications Technology; Toshiyuki Ishibashi, Taichu Tanaka, Tsuyoshi Sekiyama, Takashi Maki, Meteorological Research Institute; Takuji Kubota, Yohei Satoh, Daisuke Sakaizawa, Japan Aerospace Exploration Agency; Koji Yamashita, Japan Meteorological Agency; Kyoka Gamo, Fujitsu FIP Corporation; Satoshi Ochiai, Motoaki Yasui, National Institute of Information and Communications Technology; Riko Oki, Japan Aerospace Exploration Agency; Masaki Satoh, The University of Tokyo; Toshiki Iwasaki, Tohoku University

TH1-L9: SNOW AND FREEZE/THAW

TH1-L9.1: EVALUATION OF NORTHERN HEMISPHERE AND REGIONAL SNOW EXTENT 4246
PRODUCTS WITHIN ESA SNOWPEX-PROJECT

Sari Metsämäki, Finnish Environment Institute; Elisabeth Ripper, ENVEO IT GmbH; Olli-Pekka Mattila, Finnish Environment Institute; Richard Fernandes, Canada Centre for Remote sensing; Gabriele Schwaizer, ENVEO IT GmbH; Kari Luojus, Finnish Meteorological Institute; Thomas Nagler, ENVEO IT GmbH; Bojan Bojkov, EUMETSAT; Michael Kern, European Space Agency - ESTEC

TH1-L9.2: THE EFFECT OF SCALE AND SNOW FRAGMENTATION ON THE ACCURACY OF 4250
FRACTIONAL SNOW COVER DATA OVER THE TIBETAN PLATEAU

Shirui Hao, Lingmei Jiang, Gongxue Wang, Xiaojing Liu, Beijing Normal University

TH1-L9.3: INVESTIGATION OF ALPINE SNOW FEATURES USING COSMO-SKYMED 4254
IMAGES

Simone Pettinato, Emanuele Santi, Simonetta Paloscia, IFAC-CNR; Mauro Valt, ARPAV

TH1-L9.4: MULTI-FREQUENCY MICROWAVE RADIOMETRIC MEASUREMENTS OF SOIL 4258
FREEZE-THAW PROCESS OVER SEASONALLY FROZEN GROUND

Tianjie Zhao, Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Shaojie Zhao, Beijing Normal University; Pingkai Wang, Shangnan Li, Chuan Xiong, Qing Xiao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

TH1-L9.5: QUANTIFYING C-BAND SCATTERING MECHANISMS FROM SNOW-COVERED 4262
FIRST-YEAR SEA ICE AT THE WINTER-SPRING TRANSITION

Alexander Komarov, Environment and Climate Change Canada; Jack Landy, Sergey Komarov, David Barber, University of Manitoba

TH2-L9: LAND COVER DYNAMICS III

TH2-L9.1: EVALUATION OF DAMAGE AND VOLCANIC HAZARD IN KUCHINOERABU ISLAND, 4266
JAPAN, BY USING HIGH-RESOLUTION SATELLITE IMAGES

Masashi Sonobe, Hideki Hashiba, Nihon University

TH2-L9.2: BUSH ENCROACHMENT DETECTION IN AFRICA – A MULTI-SCALE APPROACH 4270

Valerie Graw, Carsten Oldenburg, Olena Dubovyk, Ruben Piroška, University of Bonn

TH2-L9.3: A NORMALISED DIFFERENCE ALPHA-ANGLE APPROACH TO BURN SCAR 4274
EXTRACTION ON MULTIPLE-POLARISATION SAR DATA

Jeanine Engelbrecht, Andre Theron, Lufuno Vhengani, Council for Scientific and Industrial Research

TH2-L9.4: PHENOLOGICAL NDVI TIME SERIES FOR THE DYNAMIC DERIVATION OF 4278
SOIL COVERAGE INFORMATION

Markus Möller, Henning Gerstmann, Martin Luther University Halle-Wittenberg; Thorsten Christian Dahms, Julius Maximilians University Würzburg

TH2-L9.5: AUTOMATIC LAND COVER MAPPING FOR LANDSAT DATA BASED ON THE 4282
TIME-SERIES SPECTRAL IMAGE DATABASE

Liangyun Liu, Xiao Zhang, Yong Hu, Yingjie Wang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

TH3-L9: ACTIVE AIRBORNE REMOTE SENSING OF FOREST ECOSYSTEMS I

TH3-L9.1: THE 2016 NASA AFRISAR CAMPAIGN: AIRBORNE SAR AND LIDAR MEASUREMENTS OF TROPICAL FOREST STRUCTURE AND BIOMASS IN SUPPORT OF FUTURE SATELLITE MISSIONS 4286

Lola Fatoyinbo, Naiara Pinto, NASA; Michelle Hofton, University of Maryland; Marc Simard, Bryan Blair, Sassan Saatchi, Yunling Lou, NASA; Ralph Dubayah, University of Maryland; Scott Hensley, NASA; John Armston, University of Maryland; Laura Duncanson, USRA/NASA; Marco Lavalley, NASA

TH3-L9.2: 3-D STRUCTURE OBSERVATION OF AFRICAN TROPICAL FORESTS WITH MULTI-BASELINE SAR: RESULTS FROM THE AFRISAR CAMPAIGN 4288

Matteo Pardini, Jun Su Kim, Konstantinos Papathanassiou, Irena Hajnsek, German Aerospace Center (DLR)

TH3-L9.3: 3D FOREST STRUCTURE PARAMETER RETRIEVAL: POLARIMETRIC SAR INTERFEROMETRY AND WAVEFORM LIDAR AIRBORNE DATA 4292

Seung-Kuk Lee, Temilola Fatoyinbo, Batuhan Osmanoglu, David Lagomasino, Emanuelle Feliciano, NASA Goddard Space Flight Center

TH3-L9.4: CANOPY HEIGHT AND STRUCTURE MEASUREMENTS OF GABON FROM MEDIUM-FOOTPRINT WAVEFORM LIDAR 4294

Michelle Hofton, University of Maryland; James Blair, David Rabine, NASA; Colleen Brooks, SSAI Inc.; Helen Cornejo, SGT Inc.

TH3-L9.5: FOREST STRUCTURE RETRIEVAL FROM ECOSAR P-BAND SINGLE-PASS INTERFEROMETRY 4296

Batuhan Osmanoglu, Rafael Rincon, Seung-Kuk Lee, NASA Goddard Space Flight Center; Tobias Bollian, Temilola Fatoyinbo Agueh, USRA NASA Goddard Space Flight Center

TH4-L9: ACTIVE AIRBORNE REMOTE SENSING OF FOREST ECOSYSTEMS II

TH4-L9.3: PREDICTION OF FOREST CANOPY STRUCTURE FROM POLINSAR DATASET 4306

Guillaume Brigot, ONERA; Marc Simard, Jet Propulsion Laboratory; Elise Koeniguer, ONERA; Cédric Taillandier, TOTAL

TH4-L9.4: TIME SERIES OF P- AND L-BAND FOREST BACKSCATTER FROM BOREALSCAT 4310

Lars Ulander, Albert Monteith, Chalmers University of Technology

TH4-L9.5: KAPOK: AN OPEN SOURCE PYTHON LIBRARY FOR POLINSAR FOREST HEIGHT ESTIMATION USING UAVSAR DATA 4314

Michael Denbina, Marc Simard, NASA Jet Propulsion Laboratory, California Institute of Technology

TH1-L10: LAND COVER DYNAMICS I

TH1-L10.1: LARGE-SCALE FINE-RESOLUTION PRODUCTS OF FOREST DISTURBANCE USING NEW APPROACHES FROM SPACBORNE SAR INTERFEROMETRY 4318

Yang Lei, Robert Treuhaft, Jet Propulsion Laboratory; Richard Lucas, University of New South Wales; Paul Siqueira, University of Massachusetts Amherst; Michael Keller, Jet Propulsion Laboratory; Michael Schmidt, Queensland Department of Science, Information Technology and Innovation

TH1-L10.2: PHYSICS-BASED RETRIEVAL OF SCATTERING ALBEDO AND VEGETATION OPTICAL DEPTH USING MULTI-SENSOR DATA INTEGRATION 4322

Thomas Jagdhuber, German Aerospace Center (DLR); Martin Baur, University of Bayreuth; Moritz Link, German Aerospace Center (DLR); María Piles, Universitat de València; Dara Entekhabi, Massachusetts Institute of Technology; Carsten Montzka, Research Centre Jülich; Jaakko Seppänen, Oleg Antropov, Jaan Praks, Aalto University; Alexander Löw, Ludwig-Maximilians-Universität

TH1-L10.3: RECENT TRENDS IN THE LAND SURFACE PHENOLOGY OF AFRICA OBSERVED AT A FINE SPATIAL SCALE 4326

Tracy Adole, Jadunandan Dash, University of Southampton; Peter M. Atkinson, Lancaster University

TH1-L10.4: INTEGRATION OF SAR AND OPTICAL DENSE TIME SERIES FOR LAND COVER 4330
MONITORING

Ramses Molijn, Lorenzo Iannini, Ramon Hanssen, Freek van Leijen, Delft University of Technology; Rubens Lamparelli, UniCamp; Alexandre Coutinho, Embrapa

TH1-L10.5: ESTIMATION OF UNDERLYING SUBMERGE BASED ON MICROWAVE MODEL 4334
AND DYNAMIC PROGRAMMING ALGORITHM

Longfei Tan, Ling Tong, Yan Chen, University of Electronic Science and Technology of China; Yalin Zhu, Chongdi Duan, Xi'an Institute of Space Radio Technology, China Aerospace Science and Technology Corporation

TH2-L10: AGRICULTURE APPLICATIONS III

TH2-L10.1: MULTI-PLATFORM UAS IMAGING FOR CROP HEIGHT ESTIMATION: 4338
PERFORMANCE ANALYSIS OVER AN EXPERIMENTAL MAIZE FIELD

Tianxing Chu, Michael Starek, Texas A&M University-Corpus Christi; Michael Brewer, Texas A&M AgriLife Research and Extension Center; Seth Murray, Texas A&M University

TH2-L10.2: A NEW METHOD OF LEAF AREA INDEX MEASUREMENT BASED ON THE 4342
DIGITAL IMAGES

Chuanqi Zhong, Yunping Chen, Ling Tong, Jia Huang, Jiaming Liang, University of Electronic Science and Technology of China

TH2-L10.3: REMOTE SENSING OF VEGETATION DYNAMICS IN AGRO-ECOSYSTEMS 4346
USING SMAP VEGETATION OPTICAL DEPTH AND OPTICAL VEGETATION INDICES

Maria Piles, Universitat de València; David Chaparro, Universitat Politècnica de Catalunya; Dara Entekhabi, Massachusetts Institute of Technology; Alexandra G. Konings, Stanford University; Thomas Jagdhuber, German Aerospace Center (DLR); Gustau Camps-Valls, Universitat de València

TH2-L10.4: SORGHUM PANICLE EXTRACTION FROM UNMANNED AERIAL SYSTEM DATA 4350

Anjin Chang, Jinha Jung, Junho Yeom, Texas A&M University-Corpus Christi; Murilo Maeda, Juan Landivar, Texas A&M AgriLife Research and Extension Center at Corpus christi

TH3-L10: AGRICULTURE APPLICATIONS II

TH3-L10.1: COMPACT POLARIMETRIC SYNTHETIC APERTURE RADAR FOR MONITORING 4358
CROP CONDITION

Heather McNairn, Agriculture and Agri-Food Canada; Saeid Homayouni, University of Ottawa; Mehdi Hosseini, Natural Resources Canada; Jarrett Powers, Agriculture and Agri-Food Canada; Keith Beckett, William Parkinson, UrtheCast

TH3-L10.2: SMAP MULTI-TEMPORAL VEGETATION OPTICAL DEPTH RETRIEVAL AS AN 4362
INDICATOR OF CROP YIELD TRENDS AND CROP COMPOSITION

David Chaparro, Universitat Politècnica de Catalunya; Maria Piles, Universitat de València; Mercè Vall-llossera, Adriano Camps, Universitat Politècnica de Catalunya; Alexandra G. Konings, Dara Entekhabi, Massachusetts Institute of Technology

TH3-L10.3: DETECTION OF THE LODGED AREA OF WHEAT BY THE USE OF RADARSAT-2 4366
POLARIMETRIC SAR IMAGERY

Lingli Zhao, Jie Yang, Pingxiang Li, Jinqi Zhao, Lei Shi, Wuhan University; Zhaoxiang Yuan, State Power Economic Research Institute

TH3-L10.4: AGRICULTURAL BIOMASS MAPS BASED ON POLARIMETRIC DIFFERENTIAL SAR 4370
INTERFEROMETRY

Virginia Brancato, Irena Hajnsek, ETH Zurich

TH3-L10.5: DERIVATION OF BIOPHYSICAL PARAMETERS FROM FUSED REMOTE 4374
SENSING DATA

Thorsten Christian Dahms, Julius-Maximilians-Universität-Wuerzburg; Dinesh Kumar Babu, University Bochum; Erik Borg, DLR Neustrelitz; Marco Schmidt, University Bochum; Christopher Conrad, Julius-Maximilians-Universität-Wuerzburg

TH4-L10: AGRICULTURE APPLICATIONS VII

TH4-L10.1: EVALUATING THE IMPACT OF TRAINING DATA PIXEL LEVEL BUFFERING ON AREA SAMPLING FRAME STRATIFICATION RESULTS AND CROP ESTIMATES 4378

Claire Boryan, Zhengwei Yang, Robert Seffrin, Patrick Willis, USDA National Agricultural Statistics Service

TH4-L10.2: PREDICTING MODIS EVI FROM SAR PARAMETERS USING RANDOM FORESTS ALGORITHMS 4382

Shelley Haupt, Council for Scientific and Industrial Research/University of Stellenbosch; Jeanine Engelbrecht, Council for Scientific and Industrial Research; Jaco Kemp, University of Stellenbosch

TH4-L10.3: IMAPCTS OF LEAF SURFACES ON THE ESTIMATION OF LEAF CHLOROPHYLL CONTENT USING SPECTRAL INDICES 4386

Shan Lu, Northeast Normal University

TH4-L10.4: CROP SPECIES CLASSIFICATION: A PHENOLOGY BASED APPROACH 4390

Roberto Luciani, Giovanni Laneve, Sapienza University of Rome; Munzer Jahjah, ASI, Italian Space Agency; Mito Collins, University of Nairobi

TH4-L10.5: MAPPING DAILY EVAPOTRANSPIRATION USING ASTER AND MODIS IMAGES BASED ON DATA FUSION OVER IRRIGATED AGRICULTURAL AREAS 4394

Yan Li, Chunlin Huang, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences; Juan Gu, Lanzhou University

TH1-L11: WIND AND PRECIPITATION RADAR

TH1-L11.1: METOP-SG SCA WIND SCATTEROMETER: DEVELOPMENT STATUS AND RESULTS 4398

Friedhelm Rostan, Dieter Ulrich, Sebastian Riegger, Airbus Defence and Space GmbH; Allan Østergaard, European Space Agency - ESRIN

TH1-L11.3: WIVERN: STATUS OF THE DOPPLER WIND AND PRECIPITATION CONCEPT 4406

Christopher Buck, Rolv Midthassel, Damiano Trenta, European Space Agency (ESA)

TH1-L11.4: HIGH RESOLUTION ROTATING FAN-BEAM SCATTEROMETER IMAGING BASED ON SPARSE RECOVERY 4409

Taoli Yang, Yong Wang, University of Electronic Science and Technology of China; Haitao Wang, Yan Jiang, Shanghai Institute of Satellite Engineering

TH1-L11.5: RECENT ADVANCEMENTS ON RANGE AMBIGUITY CHARACTERIZATION AND MITIGATION FOR THE NASA D3R 4413

Shashank S. Joshil, Robert M. Beauchamp, Venkatachalam Chandrasekar, Colorado State University

TH2-L11: ATMOSPHERIC SOUNDING AND IONOSPHERIC EFFECTS

TH2-L11.1: ASSESSMENT OF HIGH-ORDER IONOSPHERIC EFFECTS ON GPS-ESTIMATED PRECIPITABLE WATER VAPOR 4417

Volkan Akgul, Shuanggen Jin, Gokhan Gurbuz, Bulent Ecevit University

TH2-L11.2: IMPACT OF VERTICAL ELECTRON DENSITY DISTRIBUTION ON IONOSPHERIC TOTAL ELECTRON CONTENT MEASUREMENTS BASED ON SPACEBORNE LOW-FREQUENCY SAR 4421

Wei Guo, Jie Chen, Beihang University; Shaun Quegan, University of Sheffield; Wei Yang, Beihang University

TH2-L11.3: STATISTICAL ANALYSIS OF THE OCCURRENCES OF MSTIDS OBSERVED BY ALL-SKY IMAGER IN LOW MAGNETIC LATITUDE 4425

Ednofri Ednofri, Falin Wu, Beihang University; Otsuka Yuichi, Nagoya University; Ishii Mamoru, National Institute of Information and Communications Technology; Dessi Marlia, Zhao Yan, Beihang University

TH2-L11.4: RETRIEVAL OF SEA SURFACE BAROMETRIC PRESSURE UNDER CLEAR SKY 4429
BY PASSIVE MICROWAVE MEASUREMENTS

Zijin Zhang, Xiaolong Dong, The CAS Key Laboratory of Microwave Remote Sensing, National Space Science Center, Chinese Academy of Sciences

TH2-L11.5: DETERMINING THE REFRACTIVITY AT THE BOTTOM OF THE ATMOSPHERE 4433
USING RADIO OCCULTATION

Thomas Sievert, Blekinge Institute of Technology; Joel Rasch, Molflow; Anders Carlström, RUAG Space AB; Mats I. Pettersson, Viet Thuy Vu, Blekinge Institute of Technology

TH3-L11: MICROWAVE MODELS FOR OCEAN

TH3-L11.1: INTRODUCTION TO OIL QUANTIFICATION ON SEA SURFACE FROM 4437
MICROWAVES POLARIMETRIC SAR MEASUREMENTS

Olivier Boisot, Sébastien Angelliaume, ONERA - Office National d'Etudes en Aérospatiales; Charles-Antoine Guérin, Université de Toulon; Véronique Miegbielle, TOTAL E&P

TH3-L11.3: DIFFUSE BISTATIC SCATTERING IN THE CASE OF SMALL-TO-MODERATE 4445
OCEAN SURFACE ROUGHNESS

Alexander Voronovich, Valery Zavorotny, NOAA Earth System Research Laboratory

TH3-L11.5: MULTIFREQUENCY ANALYSIS OF RADAR SEA CLUTTER DIRECTIONAL 4453
ASYMMETRIES

Zaynab Guerraou, Sébastien Angelliaume, ONERA; Charles-Antoine Guérin, MIO (UM 110, UTLN/AMU/CNRS/IRD)

TH4-L11: MODELS FOR RADAR APPLICATIONS

TH4-L11.1: ELECTROMAGNETIC SCATTERING FULL-WAVE SOLVER FOR SNOWPACKS 4456

Mostafa Zaky, Kamal Sarabandi, University of Michigan

TH4-L11.2: AN UPDATE OF AIEM MODEL WITH MULTIPLE SCATTERING OF ROUGH 4459
SURFACE

Ying Yang, Kun-Shan Chen, Peng Xu, Yu Liu, Chinese Academy of Sciences

TH4-L11.3: APPLICATION OF DISCRETE SCATTERER TECHNIQUE FOR SCENE RESPONSE 4463
ESTIMATION IN FOPEN RADAR SIMULATIONS

DaHan Liao, U.S. Army Research Laboratory

TH4-L11.4: THE REGULARIZATION METHOD BASED ON TSVD FOR FORWARD-LOOKING 4467
RADAR ANGULAR SUPERRESOLUTION

Yang Wu, Yin Zhang, Yongchao Zhang, Deqing Mao, Yulin Huang, University of Electronic Science and Technology of China; Yuebo Zha, China Electronics Technology Group Corporation No.38 Research Institute

TH4-L11.5: EFFICIENT CALCULATION OF ORIENTATIONALLY AVERAGED SCATTERING 4471
FROM COMPLEX-GEOMETRY ICE PARTICLES

Ines Fenni, Ziad S. Haddad, Jet Propulsion Laboratory; Hélène Roussel, Université Pierre et Marie Curie (UPMC); Raj Mittra, University of Central Florida

TH1-L12: GEOSCIENCE REMOTE SENSING IN SUPPORT OF THE NEW GEO ENERGY AND MINERALS SOCIETAL BENEFIT AREA I

TH1-L12.1: THE GEO COMMUNITY ACTIVITY “EARTH OBSERVATIONS FOR MANAGING 4475
MINERAL AND NON-RENEWABLE ENERGY RESOURCES”: HISTORY, PRESENT AND FUTURE ACTIVITIES

Stéphane Chevreil, MinPol GmbH; Michael Abrams, Jet Propulsion Laboratory; Cindy Ong, CSIRO

TH1-L12.3: GLOBAL GEOSCIENCE MAPS FROM ASTER DATA.....	4477
<i>Michael Abrams, Jet Propulsion Laboratory</i>	
TH1-L12.4: DIRECT IMAGING OF SHALE GAS LEAKS USING PASSIVE THERMAL INFRARED HYPERSPECTRAL IMAGING	4479
<i>Marc-André Gagnon, Pierre Tremblay, Simon Savary, Vince Morton, Vincent Farley, Martin Chamberland, Telops</i>	
TH1-L12.5: THE ACQUISITION AND PROCESSING OF VOLUMINOUS SPECTRAL REFLECTANCE MEASUREMENTS OF SOILS AND POWDERS FOR NATIONAL DATASETS	4482
<i>Ian Lau, Cindy Ong, Carsten Laukamp, CSIRO; Patrice de Caritat, Matilda Thomas, Geoscience Australia</i>	
 TH2-L12: GEOSCIENCE REMOTE SENSING IN SUPPORT OF THE NEW GEO ENERGY AND MINERALS SOCIETAL BENEFIT AREA II	
TH2-L12.1: DETERMINATION OF SPECTRA CHARACTERISTICS OF LATERITE DRILL-CORE FOR “ON LINE-ON SITE” REAL-TIME AUTOMATED MINERALOGY DETECTION	4485
<i>Laure Capar, Anne Bourguignon, Cédric Duee, Xavier Bourrat, Stéphane Chevreil, Valérie Laperche, Nicolas Maubec, Sébastien Montech, BRGM; Beate Orberger, GEOPS/Université Paris Sud/ERAMET GROUP; Anne Salaiin, Céline Rodriguez, ERAMET GROUP</i>	
TH2-L12.2: HYPERSPECTRAL AND GEOPHYSICAL SURVEY FOR THE DEVELOPMENT OF NEW EXPLORATION APPROACHES IN THE IBERIAN PYRITE BELT/SPAIN	4489
<i>Anne Papenfuß, Michaela Frei, Uwe Meyer, Malte Ibs-von Seht, Bundesanstalt für Geowissenschaften und Rohstoffe</i>	
TH2-L12.3: NEW METHOD TO INTEGRATE REMOTELY SENSED HYDROTHERMAL ALTERATION MAPPING INTO QUANTITATIVE MINERAL RESOURCE ASSESSMENTS	4493
<i>John Mars, Jane Hammarstrom, Gilpin Robinson, Steve Ludington, Lukas Zurcher, Helen Folger, Mark Gettings, Federico Solano, Tom Kress, U.S. Geological Survey</i>	
TH2-L12.4: THE LANDSAT SOIL COMPOSITE MAPPING PROCESSOR (SCMAP): AN OPUS PRODUCT	4497
<i>Derek Rogge, Julian Zeidler, Agnes Bauer, Andreas Müller, Thomas Esch, Uta Heiden, German Remote Sensing Data Center</i>	
TH2-L12.5: DESERTIFICATION MONITORING USING THE ASTER GLOBAL EMISSIVITY DATASET	4501
<i>Pilong Shi, Bihong Fu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Thomas Cudahy, CSIRO Mineral Resources; Qiang Guo, Huan Xu, Xiuyan Chen, Yuanxu Ma, Guoliang Xue, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
 TH3-L12: CLOUDS AND PRECIPITATION I	
TH3-L12.1: RAINFALL RETRIEVALS USING 118GHZ AND 183GHZ CHANNELS OF MWHS-II ON FY-3C METEOROLOGICAL SATELLITE	4505
<i>Na Li, Jieying He, Shengwei Zhang, National Space Science Centre; Naimeng Lu, National Satellite Meteorological Center</i>	
TH3-L12.2: THE FEASIBILITY OF DETECTING SUPERCOOLED LIQUID WITH A FORWARD-LOOKING RADIOMETER	4509
<i>Ian Adams, NASA Goddard Space Flight Center; Justin Bobak, U.S. Naval Research Laboratory</i>	
TH3-L12.3: SYMMETRY ANALYSIS OF DDSCAT-BASED PHASE MATRIX FOR 3-D MICROWAVE RT MODEL DEVELOPMENT	4512
<i>Kun Zhang, Albin J. Gasiewski, University of Colorado Boulder</i>	
TH3-L12.4: STUDY ON THE CLOUD MASKING METHOD OF GEOSTATIONARY OCEAN COLOR IMAGER UTILIZING A MODEL-BASED SURFACE REFLECTANCE OVER LAND SURFACE	4516
<i>Hye-Won Kim, Jong-Min Yeom, Sun-Hee Woo, Korea Aerospace Research Institute (KARI)</i>	

TH3-L12.5: INTEGRATION OF REAL-TIME WEATHER RADAR DATA AND INTERNET OF THINGS WITH CLOUD-HOSTED REAL-TIME DATA SERVICES FOR THE GEOSCIENCES (CHORDS)	4519
<i>Ryan Gooch, Venkatachalam Chandrasekar, Colorado State University</i>	
TH4-L12: CLOUDS AND PRECIPITATION II	
TH4-L12.1: SUB-DAILY RAINFALL VARIABILITY ON THE WEST OF PUERTO RICO USING TRMM AND GOES SATELLITE AND TROPINET GROUND-BASED RADAR DATA	4522
<i>Abel Morales-Fernandez, Sandra Cruz-Pol, University of Puerto Rico at Mayaguez</i>	
TH4-L12.2: S-BAND FMCW BOUNDARY LAYER PROFILER: SYSTEM UPGRADES AND RESULTS	4526
<i>Joseph Waldinger, Thomas Hartley, William Heberling, Stephen Frasier, University of Massachusetts; Robin Tanamachi, Purdue University</i>	
TH4-L12.3: THE MICROWAVE TEMPERATURE AND HUMIDITY PROFILER INSTRUMENT AIRBORNE SHAKEOUT PERFORMANCE	4530
<i>Boon H. Lim, Rudi Bendig, Richard Denning, Prashanth Pandian, William Read, Alan Tanner, Jet Propulsion Laboratory</i>	
TH4-L12.4: COMPARISON OF EXTREME PRECIPITATION ESTIMATION FROM GPM DUAL-FREQUENCY RADAR AND GROUND-BASED RADAR NETWORK IN SOUTHERN CHINA	4534
<i>Asi Zhang, Sheng Chen, Shaojia Fan, Sun Yat-sen University</i>	
TH4-L12.5: CHARACTERIZATION AND ESTIMATION OF PRECIPITATION OVER THE OLYMPIC MOUNTAINS EXPERIMENT (OLYMPEX) REGION	4538
<i>Haonan Chen, Venkatachalam Chandrasekar, Colorado State University</i>	
THP1-PA: POLSAR CLASSIFICATION: TECHNIQUES & ASSESSMENTS	
THP1-PA.1: LAND COVER CLASSIFICATION FOR VARIOUS FEATURES USING OPTIMUM TOUZI DECOMPOSITION PARAMETERS	4542
<i>Varsha Turkar, Vidyalakar Institute of Technology; Y.S. Rao, Indian Institute of Technology Bombay; Anup Das, Space Applications Center, ISRO</i>	
THP1-PA.2: A CASE STUDY OF SCATTERING CHARACTERISTICS DETECTION USING POLSAR DATA IN NORTHWEST ARID CHINA	4546
<i>Liping Yang, Xiaohui Sun, Xiaodong Feng, Fei Liu, School of Earth Science and Resources, Chang'an University</i>	
THP1-PA.3: AN IMPROVED HYBRID INVERSION METHOD FOR POLARIMETRIC SAR INTERFEROMETRY	4550
<i>Lamei Zhang, Baolong Duan, Harbin Institute of Technology; Yan Cheng, Product Quality Supervision and Inspection Institute of Harbin</i>	
THP1-PA.4: UNSUPERVISED CHANGE DETECTION IN BUILT-UP AREAS BY MULTI-TEMPORAL POLARIMETRIC SAR IMAGES	4554
<i>Davide Pirrone, Fondazione Bruno Kessler; Shaunak De, Avik Bhattacharya, Indian Institute of Technology; Lorenzo Bruzzone, University of Trento; Francesca Bovolo, Fondazione Bruno Kessler</i>	
THP1-PA.5: OPTIMAL USE OF POLARIMETRIC SIGNATURE ON PALSAR-2 DATA FOR LAND COVER CLASSIFICATION	4558
<i>Gopal Singh Phartiyal, Kundan Kumar, Dharmendra Singh, Indian Institute of Technology Roorkee; Keshav P Singh, Indian Institute of Technology (Banaras Hindu University) Varanasi</i>	
THP1-PA.6: COASTLINE DETECTION BASED ON POLARIMETRIC CHARACTERISTICS AND MATHEMATICAL MORPHOLOGY USING POLSAR IMAGES	4562
<i>Bin Zou, Chenyi Wang, Harbin Institute of Technology; Chengyi Wang, Forestry Research Institute; Lamei Zhang, Harbin Institute of Technology</i>	

THP1-PA.7: FULL POLARIZATION SAR IMAGE CLASSIFICATION USING DEEP LEARNING 4566
WITH SHALLOW FEATURE

Debo Li, Yu Gu, Shuiping Gou, Licheng Jiao, Xidian University

THP2-PA: POLSAR APPLICATIONS

THP2-PA.1: POLSAR IMAGE SEGMENTATION BASED ON HIERARCHICAL REGION 4574
MERGING AND SEGMENT REFINEMENT WITH WMRF MODEL

Wei Wang, KTH Royal Institute of Technology; Qinglin Zhai, National University of Defense Technology; Yifang Ban, KTH Royal Institute of Technology; Jun Zhang, Jianwei Wan, National University of Defense Technology

THP2-PA.2: IMPROVED SLIC SUPERPIXEL GENERATION ALGORITHM AND ITS 4578
APPLICATION IN POLARIMETRIC SAR IMAGES CLASSIFICATION

Lamei Zhang, Cuijuan Han, Harbin Institute of Technology; Yan Cheng, Product Quality Supervision and Inspection Institute of Harbin

THP2-PA.3: OIL SPILL DETECTION USING SIMULATED RADARSAT CONSTELLATION 4582
MISSION COMPACT POLARIMETRIC SAR DATA

Mohammed Dabboor, Environment and Climate Change Canada; Suman Singha, German Aerospace Center (DLR); Konstantinos Topouzelis, University of the Aegean; Dean Flett, Environment and Climate Change Canada

THP2-PA.4: MULTITEMPORAL MONITORING OF WETLANDS USING SIMULATED 4586
RADARSAT CONSTELLATION MISSION COMPACT POLARIMETRIC SAR DATA

Mohammed Dabboor, Environment and Climate Change Canada; Brian Brisco, Natural Resources Canada, Government of Canada; Sarah Banks, Environment and Climate Change Canada; Kevin Murnaghan, Natural Resources Canada, Government of Canada; Lori White, Environment and Climate Change Canada

THP2-PA.5: A NEW APPROACH TO USE DUAL-POLARIZED SAR IMAGERY FOR THE 4590
DETECTION OF BIVALVE BEDS ON EXPOSED INTERTIDAL FLATS

Wensheng Wang, Martin Gade, Universität Hamburg; Xiaofeng Yang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

THP2-PA.6: UNSUPERVISED CLASSIFICATION OF POLSAR DATA BASED ON A NOVEL 4594
POLARIZATION FEATURE

Xiaofeng Zhou, Shuang Wang, Wenqiang Hua, Xidian University; Yang Zhao, Institute of tracking and telecommunications technology; Chuang Liu, xi'an electronic engineering institute

THP2-PA.7: THE DUAL-ASPECT RADIOMETRIC TERRAIN CORRECTION WITH POLSAR 4598
IMAGES

Lijun Lu, Guoman Huang, Chinese Academy of Surveying and Mapping; Wenxiang Liu, Xuzhou Academy of Reconnaissance and Survey; Qianxiang Xu, Dalian Jiucheng Surveying and Mapping Information Co., Ltd

THP1-PB: DIFFERENTIAL SAR INTERFEROMETRY III

THP1-PB.1: COMPLEMENTARITY OF HIGH-RESOLUTION COSMO-SKYMED AND 4602
MEDIUM-RESOLUTION SENTINEL-1 SAR INTERFEROMETRY: QUANTITATIVE ANALYSIS
OF REAL TARGET DISPLACEMENT AND 3D POSITIONING MEASUREMENT PRECISION, AND
POTENTIAL OPERATIONAL SCENARIOS

Mario Costantini, Fabio Malvarosa, Federico Minati, Francesco Trillo, Francesco Vecchioli, e-GEOS - Italian Space Agency / Telespazio

THP1-PB.2: LEVERAGING GPUS FOR HANDLING LARGE SAR DATA VOLUMES FOR THE 4606
NISAR MISSION

Joshua Cohen, Piyush Agram, Sean Buckley, Paul Rosen, Eric Gurrola, Jet Propulsion Laboratory

THP1-PB.3: AN INNOVATIVE DISTRIBUTED SCATTERER BASED TIME-SERIES INSAR METHOD OVER UNDERGROUND MINING REGION	4610
<i>Zheyuan Du, Linlin Ge, The University of New South Wales; Alex Hay-Man Ng, Guangdong University of Technology; Xiaojing Li, The University of New South Wales</i>	
THP1-PB.4: GROUND DEFORMATION MONITORING IN BEIJING USING BOTH SENTINEL AND ALOS	4614
<i>Zheyuan Du, Linlin Ge, The University of New South Wales; Alex Hay-Man Ng, Guangdong University of Technology; Xiaojing Li, The University of New South Wales</i>	
THP1-PB.5: PERSISTENT SCATTERER CLUSTERING FOR STRUCTURE DISPLACEMENT ANALYSIS BASED ON PHASE CORRELATION NETWORK	4618
<i>Taichi Tanaka, Osamu Hoshuyama, NEC Corporation</i>	
THP1-PB.7: SUBSIDENCE FEATURE DISCRIMINATION USING DEEP CONVOLUTIONAL NEURAL NETWORKS IN SYNTHETIC APERTURE RADAR IMAGERY	4626
<i>Colin Schwegmann, Waldo Kleyhans, Jeanine Engelbrecht, Lizwe Mdakane, Rory Meyer, Council for Scientific and Industrial Research</i>	
THP1-PB.8: POLARIMETRIC SAR IMAGES CLASSIFICATION VIA FCM-BASED SELECTIVE ENSEMBLE LEARNING	4630
<i>Lamei Zhang, Harbin Institute of Technology; Ligang Zou, Harbin Institute of Technology/Northeast Forestry University</i>	
THP2-PB: CLOUDS AND PRECIPITATION III	
THP2-PB.1: COMPARISON OF REGRESSION MODELS FOR SPATIAL DOWNSCALING OF COARSE SCALE SATELLITE-BASED PRECIPITATION PRODUCTS	4634
<i>Yeseul Kim, No-Wook Park, Inha University</i>	
THP2-PB.2: SUB-PIXEL PRECIPITATION NOWCASTING OVER GUANGDONG PROVINCE USING OPTICAL FLOW ALGORITHM	4638
<i>Ling Li, Chengdu University of Technology; Sheng Chen, Sun Yat-sen University; Xiong-Fa Mai, Guangxi Teachers Education University; Asi Zhang, no</i>	
THP2-PB.3: ASSESSMENT OF QUANTITATIVE PRECIPITATION ESTIMATION OVER THE FOUR CORNERS REGION	4642
<i>Delbert Willie, Northern Arizona University</i>	
THP2-PB.4: X-BAND MP RADAR DATA IN ANALYSIS OF HEAVY RAIN DISASTER DUE TO TYPHOON NUMBER 18	4644
<i>Masahiro Nishio, Kurume Institute of Technology; Masatoshi Mori, Kindai University</i>	
THP2-PB.5: A DECADE OF DAILY TOTAL PRECIPITABLE WATER DATASET IN ALL-WEATHER CONDITION	4648
<i>Dabin Ji, Jiancheng Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
THP2-PB.6: SIMULATION ANALYSIS OF GEOSTIONARY PASSIVE MICROWAVE OBSERVATION FOR TROPICAL CYCLONE	4651
<i>Ke Chen, Huazhong University of Science and Technology; Albin J. Gasiewski, Kun Zhang, University of Colorado Boulder; Gongwei Li, Wei Guo, Liang Lang, Huazhong University of Science and Technology; Anjie Cao, Shanghai Institute of Satellite Engineering</i>	
THP1-PC: ATMOSPHERIC SOUNDING I	
THP1-PC.1: ANALYSIS OF TOTAL PRECIPITABLE WATER AND CLOUD LIQUID WATER FROM MWHTS AND ACMR OBSERVATIONS	4655
<i>Jieying He, Shengwei Zhang, Chinese Academy of Sciences; Jin Zhao, National Space Science Center; Chinese Academy of Sciences</i>	

THP1-PC.2: ANALYSIS OF METHANE EMISSION USING SCIAMACHY DATA COUPLED WITH TEMPERATURE, PRECIPITATION, AND SOIL MOISTURE IN ALPINE WETLAND OF ZOIGE, CHINA	4659
<i>Yuanyuan Yang, Yong Wang, University of Electronic Science and Technology of China; Hong Li, East Carolina University</i>	
THP1-PC.3: MOON-BASED OCCULTATION OBSERVATION FOR ATMOSPHERIC PHENOMENA	4663
<i>Cheng Fan, Yong Xue, Jie Guang, Lu She, Ying Li, Yahui Che, Institute of Remote Sensing and Digital Earth</i>	
THP1-PC.4: MEASURING THE OPTICAL SCATTERING CHARACTERISTICS OF LARGE PARTICLES IN VISIBLE REMOTE SENSING	4666
<i>Jie Zhan, Yesheng Gao, Xingzhao Liu, Shanghai Jiao Tong University</i>	
THP1-PC.5: SCATTERING PROPERTY MEASUREMENTS WITH ADAPTIVE ALGORITHM	4670
<i>Hui Chen, Yesheng Gao, Xingzhao Liu, Shanghai Jiao Tong University</i>	
THP1-PC.6: A STUDY ON DETECTING WATER VAPOR PROFILE USING GROUND BASED MICROWAVE RADIOMETER AND CLOUD RADAR	4673
<i>Yili Zhao, National Ocean Technology Center; Yubao Chen, Bai Li, Meteorological Observation Centre of China Meteorological Administration; Chuntao Chen, Jianhua Zhu, Xiaoqi Huang, National Ocean Technology Center</i>	
THP2-PC: CLOUDS AND PRECIPITATION IV	
THP2-PC.1: THIN CLOUD DETECTION USING SPECTRAL SIMILARITY IN COASTAL AND BLUE BANDS OF LANDSAT-8 DATA	4677
<i>Haitao Lv, Yong Wang, Yuanyuan Yang, University of Electronic Science and Technology of China</i>	
THP2-PC.2: NEW PROGRESS IN DERIVING CLOUDY-SKY LAND SURFACE LONGWAVE RADIATION BASED ON MULTIPLE REMOTELY SENSED DATA	4681
<i>Tianxing Wang, Jiancheng Shi, Letu Husi, Tianjie Zhao, Dabin Ji, Chuan Xiong, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Ya Ma, Chinese Academy for Environmental Planning; Wang Zhou, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Yuechi Yu, Institute of Remote sensing and Digital Earth, Chinese Academy of Sciences; Rui Zhao, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
THP2-PC.4: ERROR ANALYSIS OF ENSEMBLE MULTI-SATELLITE PRECIPITATION DATASETS OVER THE TIBETAN PLATEAU	4684
<i>Ronghua Liu, China Institute of Water Resources and Hydropower Research; Yingzhao Ma, Yuan Yang, Zhongying Han, Guoqiang Tang, Tsinghua University; Qi Liu, China Institute of Water Resources and Hydropower Research; Yang Hong, Tsinghua University</i>	
THP2-PC.5: STUDY ON DEW CHARACTERISTICS IN LOESS PLATEAU, CHINA	4688
<i>Sheng Wang, Qiang Zhang, Yaohui Li, Lijuan Wang, Jianhua Zhao, Ping Yue, Institute of Arid Meteorology, China Meteorological Administration; Xing Wang, Xiaocui Hao, Northwestern Regional Climatic Center</i>	
THP1-PD: PASSIVE OPTICAL SENSORS AND CALIBRATION	
THP1-PD.1: POST-LAUNCH RADIOMETRIC CALIBRATION OF TELEOS-1 SATELLITE IMAGING SENSOR	4692
<i>Soo Chin Liew, Wee Juan Tan, Leong Keong Kwoh, National University of Singapore</i>	
THP1-PD.2: 15 YEARS OF AQUA MODIS ON-ORBIT OPERATION, CALIBRATION, AND PERFORMANCE	4695
<i>Xiaoxiong Xiong, NASA Goddard Space Flight Center; Amit Angal, Aisheng Wu, Zhipeng Wang, SSAI; William Barnes, University of Maryland, Baltimore County; Vincent Salomonson, University of Utah</i>	

THP1-PD.3: AN AUTOMATIC REFLECTANCE-BASED APPROACH TO VICARIOUS RADIOMETRIC CALIBRATE THE LANDSAT8 OPERATIONAL LAND IMAGER	4699
<i>Yaokai Liu, Chuanrong Li, Lingling Ma, Ning Wang, Yonggang Qian, Lingli Tang, Academy of Opto-Electronics, Chinese Academy of Sciences</i>	
THP1-PD.5: DEVELOPING HOURLY SURFACE ALBEDO PRODUCT FOR GOES-R ABI	4703
<i>Tao He, Wuhan University; Yi Zhang, Shunlin Liang, University of Maryland; Yunyue Yu, National Oceanic and Atmospheric Administration</i>	
THP2-PD: ATMOSPHERIC SOUNDING II	
THP2-PD.1: GOPA: A RADIATION HARDENED GNSS BASEBAND ASIC FOR GNOS SERIES	4707
<i>Yuerong Cai, Xianyi Wang, Yueqiang Sun, Qifei Du, National Space Science Center, Chinese Academy of Sciences; Lipeng Yue, Jianjun Zhang, The 772 Institute of China Academy of Aerospace Electronics Technology; Weihua Bai, Dongwei Wang, Chunjun Wu, Yusen Tian, Xiangguang Meng, Junming Xia, Congliang Liu, Danyang Zhao, Cheng Liu, Wei Li, National Space Science Center, Chinese Academy of Sciences</i>	
THP2-PD.2: A NEW VISIOMETER SYSTEM VIA AUTOMATIC OBSERVATION	4710
<i>Jingli Wang, Institute of Urban Meteorology, China Meteorological Administration, Beijing, China; Xulin Liu, Beijing Meteorological Observation Center, Beijing, 100089, China</i>	
THP2-PD.4: GPS OBSERVATIONS OF TROPOSPHERIC DISTURBANCES FOLLOWING THE 2010 MW=8.8 CHILE EARTHQUAKE	4718
<i>Gokhan Gurbuz, Shuanggen Jin, Bulent Ecevit University</i>	
THP2-PD.5: IONOSPHERIC SCINTILLATION MAPPING AT LOW LATITUDE: OVER INDONESIA	4722
<i>Dessi Marlia, Falin Wu, Beihang University; Sri Ekawati, Sefria Anggarani, National Institute of Aeronautics and Space (LAPAN); Wasiu Akande Ahmed, Ed Nofri, Gantumur Byambakhuu, Beihang University</i>	
THP2-PD.6: IMPROVING THE LOW LIGHT RADIANCE CALIBRATION OF S-NPP VIIRS DAY/NIGHT BAND IN THE NOAA OPERATIONS	4726
<i>Sirish Uprety, CIRA, Colorado State University; Changyong Cao, NOAA/NESDIS/STAR; Yalong Gu, Earth Resources Tech. Inc.; Xi Shao, University of Maryland</i>	
THP1-PE: MULTISPECTRAL/HYPERSPECTRAL IMAGE CLASSIFICATION	
THP1-PE.1: A NOVEL APPROACH FOR SEMI-SUPERVISED CLASSIFICATION OF REMOTE SENSING IMAGES USING CLUSTERING-BASED SELECTION OF TRAINING DATA ACCORDING TO THEIR GMM RESPONSIBILITIES	4730
<i>Victor-Emil Neagoe, Vlad Chirila-Berbentea, Politehnica University of Bucharest</i>	
THP1-PE.2: HYPERSPECTRAL IMAGE SUBPIXEL MAPPING BASED ON SPATIAL-SPECTRAL ENDMEMBER DICTIONARY WITH COLLABORATIVE REPRESENTATION	4734
<i>Yifan Zhang, Duanguang Zhang, Northwestern Polytechnical University; Jun Sun, Yang Peng, Shanghai Aerospace Control Technology Institute</i>	
THP1-PE.3: NONLINEAR CLASSIFICATION OF MULTISPECTRAL IMAGERY USING REPRESENTATION-BASED CLASSIFIERS	4738
<i>Yan Xu, Qian Du, Mississippi State University; Wei Li, Beijing University of Chemical Technology; Chen Chen, University of Central Florida; Nicolas Younan, Mississippi State University</i>	
THP1-PE.4: DATA QUALITY SCREENING FOR HIGH-RESOLUTION SATELLITE IMAGERY VIA SPECTRAL CLUSTERING	4742
<i>Qi Liu, Yawen Zhang, Qin Lv, Li Shang, University of Colorado Boulder</i>	

THP1-PE.5: DECISION TREE COUPLED WITH FEATURE OPTIMIZATION FOR OBJECT-BASED CLASSIFICATION OF ZY-1-02C SATELLITE IMAGES	4746
<i>Anzhi Yue, Yu Meng, Jiansheng Chen, Qingqing Huang, Chengyi Wang, Jingbo Chen, Dongxu He, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
THP1-PE.6: A REFLECTANCE IMAGE SIMULATION METHOD FOR ATMOSPHERIC ABSORPTION BANDS CENTERED AT 2.7 MICRON	4750
<i>Yao Liu, China Aero Geophysical Survey and Remote Sensing Center for Land and Resources; Wenjuan Zhang, Bing Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Yingzhao Ma, Tsinghua University</i>	
THP2-PE: ADVANCED TECHNIQUES FOR OPTICAL IMAGES	
THP2-PE.1: SCENE SEMANTIC CLASSIFICATION BASED ON SCALE INVARIANCE CONVOLUTIONAL NEURAL NETWORKS	4754
<i>Yanfei Liu, Yanfei Zhong, Wuhan University; Ji Zhao, China University of Geosciences; Ailong Ma, Qianqing Qin, Wuhan University</i>	
THP2-PE.2: HOMOGENEOUS REGION BASED LOW RANK REPRESENTATION IN HIDDEN FIELD FOR HYPERSPECTRAL CLASSIFICATION	4758
<i>Le Sun, Nanjing University of Information Science and Technology; Byeungwoo Jeon, Sungkyunkwan University; Yuhui Zheng, Nanjing University of Information Science and Technology; Yang Xu, Zebin Wu, Nanjing University of Science and Technology</i>	
THP2-PE.3: ENSEMBLE OF TRANSFER COMPONENT ANALYSIS FOR DOMAIN ADAPTATION IN HYPERSPECTRAL REMOTE SENSING IMAGE CLASSIFICATION	4762
<i>Junshi Xia, Naoto Yokoya, Akira Iwasaki, The University of Tokyo</i>	
THP2-PE.4: AN OPTIMIZED K-MEANS CLUSTERING ALGORITHM BASED ON BC-QPSO FOR REMOTE SENSING IMAGE	4766
<i>Wu Tao, Chengdu University of Information Technology; Xi Chen, Southwest University for Nationalities; Lei Xie, Chengdu University of Information Technology; Zhongquan Qiu, Southwest Jiaotong University</i>	
THP2-PE.5: EXTRACTION OF THEMES FROM AERIAL IMAGERY USING LATENT DIRICHLET ALLOCATION	4770
<i>Shailesh Deshpande, Shamsuddin Ladha, Tata Research Development and Design Centre; Hemant Aggarwal, Indraprastha Institute of Information Technology; Piyush Yadav, Tata Research Development and Design Centre</i>	
THP2-PE.6: SUPPORT VECTOR DOMAIN DESCRIPTION MODEL TO MAP SPECIFIC LAND COVER WITH OPTIMAL PARAMETERS DETERMINED FROM WINDOW-BASED VALIDATION SET	4774
<i>Shuang Zhu, Beijing Polytechnic College; Jinshui Zhang, College of Resources Science and Technology/State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University; Guanyuan Shuai, Earth and Environmental Sciences, Michigan State University; Zhoumiqi Yuan, College of Resources Science and Technology/State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University</i>	
THP2-PE.7: PRODUCING FINE RESOLUTION THEMATIC MAP USING INTERPOLATION THEN CLASSIFICATION	4778
<i>Peng Wang, Liguang Wang, Harbin Engineering University</i>	
THP2-PE.8: AN OBJECT-BASED IMAGE ANALYSIS SYSTEM BASED ON REGION-LINE PRIMITIVE ASSOCIATION FRAMEWORK	4782
<i>Min Wang, Jiru Huang, Qi Cui, Jie Wang, Nanjing Normal University</i>	
THP1-PF: LAND AND ENVIRONMENTAL APPLICATIONS OF TARGET DETECTION	
THP1-PF.1: WEAKLY SUPERVISED LANDSLIDE DETECTION USING MEDLDA REGRESSION MODEL	4786
<i>Shi He, Henan Polytechnic University; Hong Tang, Beijing Normal University; Haitao Jing, Henan Polytechnic University; Tianjie Lei, China Institute of Water Resources and Hydropower Research; Jiehai Cheng, Henan Polytechnic University</i>	

THP1-PF.2: MONITORING OF DISTURBED LAND BASED ON CONVOLUTION NEURAL NETWORK	4790
<i>Tao Sun, China Institute of Water Resources and Hydropower Research; Yu Zhao, Beijing Soil and Water Conservation Center; Changjun Liu, China Institute of Water Resources and Hydropower Research; Gang Fu, Tsinghua University; Rong Zhou, Fangxiao Chen, Daming Lu, Yaguang Gong, Beijing Soil and Water Conservation Center; Wenbo Fu, Lei Wang, Huazhong University of Science and Technology</i>	
THP1-PF.3: STUDY ON VARIATIONS OF GROWING SEASON FOR DIFFERENT VEGETATION TYPES IN XILINGOL LEAGUE, CHINA	4794
<i>Dengkai Chi, Hong Wang, Beijing Normal University</i>	
THP1-PF.4: NATURAL LANGUAGE DESCRIPTION OF REMOTE SENSING IMAGES BASED ON DEEP LEARNING	4798
<i>Xiangrong Zhang, Xiang Li, Jinliang An, Xidian University; Gao Li, Xi'an research institute of surveying and mapping; Biao Hou, Xidian University; Chen Li, Xi'an Jiaotong University</i>	
THP1-PF.5: IMPROVING PESTICIDE RESIDUES DETECTION USING BAND PRIORITIZATION AND CONSTRAINED ENERGY MINIMIZATION	4802
<i>Kenneth-Yeonkong Ma, Yi-Mei Kuo, Yen-Chieh Ouyang, National Chung Hsing University, Taichung, Taiwan; Horng-Yuh Guo, Taiwan Agriculture Research Institute; Hsian-Min Chen, Taichung Veterans General Hospital; Chao-Cheng Wu, National Taipei University of Technology; Chgein-I Chang, University of Maryland, Baltimore County</i>	
THP1-PF.6: MAPPING ASH TREES FROM WORLDVIEW-2 AND 3 DATA	4806
<i>Abdelmounaime Safia, Kalifa Goïta, Université de Sherbrooke</i>	
THP1-PF.7: DETECTION AND VALIDATION OF DUST STORM FROM NPP VIIRS	4810
<i>Yikun Yang, Lin Sun, Jinshan Zhu, Renli Wang, Qinghua Su, Jing Wei, Fangwei Liu, Chen Jia, Shandong University of Science and Technology</i>	
THP2-PF: GPR SYSTEM AND DATA PROCESSING I	
THP2-PF.1: ONLINE DICTIONARY LEARNING AIDED TARGET RECOGNITION IN COGNITIVE GPR	4813
<i>Fabio Giovanneschi, Fraunhofer institute for High Frequency Physics and Radar Techniques (FHR); Kumar Vijay Mishra, Andrew and Erna Viterbi Faculty of Electrical Engineering, Technion - Israel Institute of Technology; Maria Antonia Gonzalez-Huici, Fraunhofer institute for High Frequency Physics and Radar Techniques (FHR); Yonina Eldar, Andrew and Erna Viterbi Faculty of Electrical Engineering, Technion - Israel Institute of Technology; Joachim H.G. Ender, University Of Siegen</i>	
THP2-PF.2: MARKS OF PAST STORMINESS ON BALTIC UPLIFTING COASTS AND THE PERSPECTIVE OF FUTURE CLIMATE CHANGE	4817
<i>Ülo Suursaar, University of Tartu; Kadri Vilumaa, Hannes Tõnisson, Are Kont, Tallinn University</i>	
THP2-PF.4: USE OF GROUND PENETRATING RADAR FOR DETECTING UNDERGROUND HOLES IN URBAN AREAS, XMU'S EXPERIENCE	4821
<i>Zhiyou Hong, Zhipeng Luo, Xiamen University; Jonathan Li, University of Waterloo; Zhenmiao Deng, Yiping Chen, Yu zhang, Xiamen University</i>	
THP2-PF.5: SOFTWARE DEFINED RADIO FOR STEPPED-FREQUENCY, GROUND-PENETRATING RADAR	4825
<i>Samuel Carey, Waymond Scott, Georgia Institute of Technology</i>	
THP2-PF.6: THE EIGENDECOMPOSITION OF THE EDDY CURRENT PROBLEM IN THIN CONDUCTING SHELLS	4829
<i>Jonathan Gabbay, Waymond Scott, Georgia Institute of Technology</i>	
THP2-PF.7: A LEAST MEAN SQUARE APPROACH TO BURIED OBJECT DETECTION IN GROUND PENETRATING RADAR	4833
<i>Eyyup Temlioglu, Isin Erer, Deniz Kumlu, Istanbul Technical University</i>	

THP1-PG: ESTIMATION AND REGRESSION I

THP1-PG.1: LAND SURFACE TEMPERATURE RETRIEVAL FROM LANDSAT-8 DATA..... 4837

Shanshan Li, Geng-Ming Jiang, Fudan University

THP1-PG.2: EXTENSION OF THE GENERALIZED SPLIT-WINDOW ALGORITHM FOR 4841 LAND SURFACE TEMPERATURE RETRIEVAL TO ATMOSPHERES WITH AIR TEMPERATURE INVERSION

Chuan Zhan, Bohui Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Ruofei Zhong, Capital Normal University

THP1-PG.3: DIRECT ESTIMATION OF 1-KM LAND SURFACE TEMPERATURE FROM AMSR2 4845 BRIGHTNESS TEMPERATURE

Xiaodong Zhang, Ji Zhou, Changming Yin, University of Electronic Science and Technology of China

THP1-PG.4: AUTOENCODING APPROACH TO THE CLOUD REMOVAL PROBLEM..... 4848

Salim Malek, Farid Melgani, University of Trento

THP1-PG.5: GLOBAL LAND SURFACE EVAPOTRANSPIRATION ESTIMATION FROM MERRA 4851 DATASET AND MODIS PRODUCT USING THE SUPPORT VECTOR MACHINE

Meng Liu, Rong-Lin Tang, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Yunjun Yao, Guangjian Yan, Beijing Normal University

THP1-PG.6: ESTIMATION OF DOWNWELLING SURFACE LONGWAVE RADIATION UNDER 4855 THIN CIRRUS CLOUD SKY WITH ARTIFICIAL NEURAL NETWORK METHOD

Chunlei Wang, Bo-Hui Tang, Hua Wu, Ronglin Tang, Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences

THP2-PG: ESTIMATION AND REGRESSION II

THP2-PG.1: AN ENHANCED SEMI-EMPIRICAL METHOD TO ESTIMATE LAND SURFACE 4859 TEMPERATURE FROM AMSR2 OBSERVATION

Ji Zhou, Xiaodong Zhang, Fengnan Dai, Changming Yin, University of Electronic Science and Technology of China

THP2-PG.2: A DROUGHT ANALYSIS METHOD BASED ON MODIS SATELLITE IMAGERY 4862 AND AWS DATA

Yongmin Kim, Soo Bong Lee, Hyewon Yun, Jinyoung Kim, Youngjin Park, National Disaster Management Research Institute

THP2-PG.3: GEOGRAPHICALLY WEIGHTED REGRESSION MODEL FOR URBAN TRAFFIC 4866 BLACK-SPOT ANALYSIS

Yaqin Ye, Zejun Zuo, China University of Geosciences; Xiaohui Yuan, University of North Texas; Siyu Zhang, Xiu Zeng, Ying An, China University of Geosciences; Bo Chen, Wuhan ZondyCyber Technology Co., Ltd.

THP2-PG.4: ESTIMATING GROUND-LEVEL PM2.5 CONCENTRATION IN BEIJING USING 4870 BP ANN MODEL FROM SATELLITE DATA

Ying Li, Yong Xue, Jie Guang, Linlu Mei, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Lu She, Cheng Fan, Chinese Academy of Sciences; Guili Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

THP2-PG.5: IMPROVEMENT ON IMAGE SIMULATION FROM MULTITEMPORAL LANDSAT 4874 IMAGES

Soo Bong Lee, National Disaster Management Research Institute; Hien Phu La, Hanoi University of Mining and Geology; Yongmin Kim, National Disaster Management Research Institute; Dalgeun Lee, NDMI; Jinyoung Kim, Youngjin Park, National Disaster Management Research Institute

THP2-PG.6: ASSESSING RELATIONSHIP OF AIR QUALITY INDEX AND VEGETATION TYPE 4878
USING HYPERSPECTRAL REMOTE SENSING

Hanning Chen, Yong Wang, Shuxu Gao, University of Electronic Science and Technology of China

THP2-PG.7: IDENTIFICATION AND QUANTIFICATION OF KAOLINITE IN MIXTURES WITH 4882
GOETHITE USING SHORT-WAVE INFRARED (SWIR) REFLECTANCE SPECTROSCOPY

Marcelo Kehl de Souza, Mauricio Roberto Veronez, Francisco Manoel Wohnrath Tognoli, Luiz Gonzaga Jr., Lais Vieira de Souza, Marcus Vinicius Lermen Kochhann, Nadine Goulart da Silva, Fernando Pinho Marson, Joice Cagliari, UNISINOS

THP2-PG.8: FEASIBILITY OF ESTIMATING HEAVY METAL CONCENTRATIONS IN 4886
WETLAND SOIL USING HYPERSPECTRAL TECHNOLOGY

Yin Gao, National Geomatics Center of China; Guofeng Wu, Shenzhen University; Faliang Wang, National Geomatics Center of China; Wei Li, Yinru Lei, Baodi Sun, Lijuan Cui, Chinese Academy of Forestry

THP1-PH: MICROWAVE MODELS FOR LAND

THP1-PH.1: MODELING MICROWAVE BISTATIC SCATTERING FROM RICE CANOPY 4890
BASED ON RADIATIVE TRANSFER EQUATION AND ANTENNA ARRAY THEORY

Yu Liu, Kun-Shan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Zhao-Liang Li, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences

THP1-PH.2: DEVELOPMENT OF A COHERENT BISTATIC VEGETATION MODEL FOR 4894
SIGNAL OF OPPORTUNITY APPLICATIONS AT VHF/UHF-BANDS

Mehmet Kurum, Mississippi State University; Manohar Deshpande, Alicia Joseph, Peggy E. O'Neill, NASA Goddard Space Flight Center; Roger Lang, George Washington University; Orhan Eroglu, Mississippi State University

THP1-PH.3: SEMI-ANALYTICAL SOIL MOISTURE RETRIEVAL USING POLSAR IMAGERY 4897

Esmail Khedri, Mahdi Hasanlou, College of Engineering, University of Tehran; Alireza Tabatabaeenejad, University of Southern California

THP1-PH.4: SCATTERING MODELING OF DYNAMIC SOYBEAN DURING 4901
SMAPVEX16-MICROWEX

Alejandro Monsivais-Huertero, Instituto Politecnico Nacional; Pang-Wei Liu, Jasmeet Judge, Subit Chakrabarti, University of Florida

THP1-PH.5: AN ULTRA-WIDEBAND MEASUREMENT METHOD OF ROCK PERMITTIVITY 4904

Chen Guo, Hang Dong, Chang'an University; Gary Mavko, Stanford University; Richard Liu, Chang'an University

THP1-PH.6: BACKSCATTERING MODEL FOR DYNAMIC CORN DURING 4908
SMAPVEX16-MICROWEX

Alejandro Monsivais-Huertero, Instituto Politecnico Nacional; Pang-Wei Liu, Jasmeet Judge, Subit Chakrabarti, University of Florida

THP2-PH: MICROWAVE MODELS FOR NATURAL MEDIA

THP2-PH.1: STATISTICAL STUDY OF RADAR BACKSCATTERING FROM SEA SURFACES 4912
WITH OIL SLICKS

Aymeric Mainvis, Vincent Fabbro, Henri-Jose Mametsa, ONERA; Christophe Bourlier, IETR; Philippe Lattes, Véronique Miegbielle, TOTAL SA

THP2-PH.2: A L-BAND SEMI-EMPIRICAL OCEAN BACKSCATTERING MODEL 4915

Yanlei Du, Xiaofeng Yang, Kun-Shan Chen, Ziwei Li, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

THP2-PH.4: ELECTROMAGNETIC SCATTERING FROM 2-D SEA SURFACE WITH 3-D 4922
ELECTRICALLY LARGE SHIP BY PARALLEL MLFMA

Jinshen Wang, Fugen Zhou, Beihang University

THP2-PH.5: INVERSION OF DIELECTRIC PROPERTIES OF LUNAR PSR REGIONS USING UHF RADAR RANGE POL-ECHOES	4926
<i>Ya-Qiu Jin, Niutao Liu, Fudan University</i>	
THP2-PH.6: CIRCULARLY POLARIZED BISTATIC SCATTERING FROM SASTRUGI SURFACES	4928
<i>Peng Xu, Kun-Shan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
THP1-PI: SOIL MOISTURE RETRIEVAL AND APPLICATIONS I	
THP1-PI.1: COMPARISON OF THE SOIL MOISTURE PRODUCTS FROM FY-3B/MWRI AND CLDAS-V1.0 OVER CHINA	4932
<i>Ruijing Sun, Xiuzhen Han, Yeping Zhang, National Satellite Meteorological Center, China Meteorological Administration</i>	
THP1-PI.2: COMPONENT SOIL MOISTURE RETRIEVAL USING OBSERVATIONS OF DIFFERENT WHEAT ROW-STRUCTURES FROM A TRUCK-MOUNTED MICROWAVE RADIOMETER	4935
<i>Tao Zhang, Satellite Surveying and Mapping Application Center,NASG; Yuning Li, Beijing City University; Shaojie Zhao, Beijing Normal University; Bing Lei, Satellite Surveying and Mapping Application Center,NASG; Shirui Hao, State Key Laboratory of Remote Sensing Science and Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University and Joint Center for Global Change Studies (JCGCS)</i>	
THP1-PI.3: EXPLOITING SENTINEL 1 DATA FOR IMPROVING (FLASH) FLOOD MODELLING VIA DATA ASSIMILATION TECHNIQUES	4939
<i>Luca Cenci, Luca Pulvirenti, Giorgio Boni, CIMA Research Foundation; Marco Chini, Patrick Matgen, Luxembourg Institute of Science and Technology; Simone Gabellani, Giuseppe Squicciarino, Valerio Basso, Flavio Pignone, CIMA Research Foundation; Nazzareno Pierdicca, Sapienza University of Rome</i>	
THP1-PI.4: STATISTICAL RETRIEVAL OF SURFACE AND ROOT ZONE SOIL MOISTURE USING SYNERGY OF MULTI-FREQUENCY REMOTELY-SENSED OBSERVATIONS	4943
<i>Seyed Hamed Alemohammad, Columbia University; Jana Kolassa, NASA Goddard Space Flight Center; Catherine Prigent, Filipe Aires, Observatoire de Paris; Pierre Gentine, Columbia University</i>	
THP1-PI.5: POLARIMETRIC DECOMPOSITION OF MULTI-ANGULAR SAR DATA FOR SOIL MOISTURE RETRIEVAL OVER AGRICULTURAL FIELDS	4947
<i>Hongquan Wang, Ramata Magagi, Kalifa Goïta, University of Sherbrooke</i>	
THP1-PI.6: IMPROVEMENT AND VALIDATION OF QP MODEL WITH DUAL-CHANNEL SOIL MOISTURE RETRIEVAL ALGORITHM IN GENHE, CHINA	4951
<i>Huizhen Cui, Lingmei Jiang, Zheng Lu, Gongxue Wang, Jian Wang, Beijing Normal University</i>	
THP2-PI: SOIL MOISTURE RETRIEVAL AND APPLICATIONS III	
THP2-PI.1: RETRIEVAL OF AIRMOSS ROOT-ZONE SOIL MOISTURE PROFILE WITH A RICHARDS' EQUATION-BASED APPROACH	4955
<i>Alireza Tabatabaeenejad, University of Southern California; Morteza Sadeghi, Utah State University; Mahta Moghaddam, University of Southern California; Markus Tuller, University of Arizona; Scott Jones, Utah State University</i>	
THP2-PI.3: MULTI-SCALE SURFACE ROUGHNESS MODEL FOR SOIL MOISTURE RETRIEVAL	4963
<i>Maheshwari Neelam, Texas A&M University; Andreas Colliander, Jet Propulsion Laboratory; Binayak Mohanty, Texas A&M University; Thomas J. Jackson, Michael H. Cosh, USDA-Agriculture Research Service; Sidharth Misra, Jet Propulsion Laboratory</i>	

THP2-PI.5: EXPERIMENT AND ANALYSIS OF RETRIEVING LAND SURFACE PARAMETERS	4968
USING POLARIZATION RADAR IMAGES IN GENHE AREA OF CHINA	
<i>Quan Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Haoran Tao, Xi'an University of Science and Technology; Wei Zhang, National Disaster Reduction Center of China, MCA; Zhen Li, Ping Zhang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
THP2-PI.6: SOIL MOISTURE CONTENT MEASUREMENT USING GPR DATA INVERSION.....	4972
<i>Chen Guo, Yan Chen, Hang Dong, Wei Li, Lidong Liu, Richard Liu, Chang'an University</i>	
 THP1-PJ: SNOW AND ICE II	
THP1-PJ.1: RETRIEVAL OF SNOW DEPTH ON SEA ICE IN THE ARCTIC FROM	4976
FY3B/MWRI	
<i>Lele Li, Haihua Chen, Lei Guan, Ocean University of China</i>	
THP1-PJ.2: POLARIMETRIC CHARACTERISTICS OF ICE ON LAKE SAROMA OBSERVED BY	4980
PI-SAR-L2	
<i>Hiroyuki Wakabayashi, Nihon University; Kohei Cho, Tokai University</i>	
THP1-PJ.3: A NOVEL APPROACH TO RETRIEVE ARCTIC SEA ICE THICKNESS FOR	4984
PREDICTION AND ANALYSIS	
<i>Ludovic Brucker, NASA Goddard Space Flight Center / USRA GESTAR; Guillaume Vernieres, NASA Goddard Space Flight Center GMAO</i>	
THP1-PJ.4: USE OF SEQUENTIAL SAR IMAGES FOR DETECTING ICE AND WATER IN	4987
VIEW OF DATA ASSIMILATION	
<i>Alexander Komarov, Mark Buehner, Environment and Climate Change Canada</i>	
THP1-PJ.5: ICE CONCENTRATION ESTIMATION IN THE GULF OF ST. LAWRENCE USING	4991
FULLY CONVOLUTIONAL NEURAL NETWORK	
<i>Lei Wang, K. Andrea Scott, David A. Clausi, Yan Xu, University of Waterloo</i>	
 THP2-PJ: AGRICULTURE APPLICATIONS IV	
THP2-PJ.1: MULTISCALE RETRIEVAL OF WINTER WHEAT WATER CONTENT.....	4999
<i>Zhizhong Chen, Linna Chai, Wenxing Hu, Xiaojing Liu, Beijing Normal University</i>	
THP2-PJ.2: REMOTE ESTIMATION OF MAIZE CARBON SEQUESTRATION CAPACITY BASED	5003
ON EDDY COVARIANCE FLUX MEASUREMENTS	
<i>Huiling Long, Beijing Research Center for Information Technology in Agriculture; Chunjiang Zhao, Beijing Academy of Agriculture and Forestry Sciences; Guijun Yang, Beijing Research Center for Information Technology in Agriculture; Haikuan Feng, Yanan Wang, NERCITA</i>	
THP2-PJ.3: CROPLAND PRODUCTIVITY ASSESSMENT FOR UKRAINE BASED ON TIME	5007
SERIES OF OPTICAL SATELLITE IMAGES	
<i>Nataliia Kussul, Mykola Lavreniuk, Space Research Institute; Sergii Skakun, University of Maryland; Andrii Shelestov, Space Research Institute</i>	
THP2-PJ.4: USE OF MODIS PRODUCTS TO ASSESS THE IMPACTS OF THE 2012 DROUGHT	5011
ON ET AND GPP IN A PERENNIAL AGRICULTURE SYSTEM IN KANSAS	
<i>Gabriel de Oliveira, Nathaniel A. Brunsell, University of Kansas</i>	
THP2-PJ.5: DROUGHT DISTRIBUTION AND ITS EFFECTS ON WHEAT YIELDS IN CHINA	5015
USING MODIS DATA	
<i>Shuhe Zhao, Qiangfei Fang, Kexun He, Nanjing University; Zhihao Qin, Chinese Academy of Agricultural Sciences</i>	

THP1-PK: GLOBAL NAVIGATION SATELLITE SYSTEMS REFLECTOMETRY / GNSS-R SENSORS I

THP1-PK.1: GNSS-R FROM THE SMAP AND CYGNSS MISSIONS: APPLICATION TO POLARIMETRIC SCATTEROMETRY AND OCEAN ALTIMETRY 5019

Hugo Carreno-Luengo, Stephen Lowe, Cinzia Zuffada, Stephan Esterhuizen, Shadi Oveisgharan, NASA Jet Propulsion Laboratory

THP1-PK.2: CALIBRATION OF GNSS-R RECEIVERS WITH PRN SIGNAL INJECTION: METHODOLOGY AND VALIDATION WITH THE MICROWAVE INTERFEROMETRIC REFLECTOMETER (MIR) 5022

Daniel Pascual, Raul Onrubia, Jorge Querol, Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya

THP1-PK.3: BEAMFORMER CHARACTERIZATION OF THE MIR INSTRUMENT: THE MICROWAVE INTERFEROMETRIC REFLECTOMETER 5026

Raul Onrubia, Daniel Pascual, Jorge Querol, Hyuk Park, Adriano Camps, Universitat Politècnica de Catalunya

THP1-PK.4: FIRST EXPERIMENT ABOUT TRAFFIC FLOW DETECTION BY USING GNSS-R..... 5030

Chaoqun Gao, Dongkai Yang, Beihang University; Xuejing Qiu, China University of Geosciences; Lei Yang, Yao Xu, Yunlong Zhu, Beihang University

THP1-PK.5: CLOUD-COVER ASSESSMENT: FROM SPECTRAL PROPERTIES TO SPATIAL DOMAIN NATURAL SCENE STATISTIC 5034

Shuigen Wang, Chenwei Deng, Xun Liu, Zhenzhen Li, Fan Feng, Baojun Zhao, Beijing Institute of Technology

THP1-PK.6: ANALYSIS OF BACKUS-GILBERT APPROACH ON RESOLUTION ENHANCEMENT OF DUAL-FREQUENCY POLARIZED SCATTEROMETER 5038

Liling Liu, Xiaolong Dong, National Space Science Center, Chinese Academy of Sciences; Wenming Lin, The Institute of Marine Sciences (ICM); Jintai Zhu, DFH Satellite co., Ltd; Di Zhu, National Space Science Center, Chinese Academy of Sciences

THP1-PK.7: A MILLIMETER WAVE SEEKER PERFORMANCE EVALUATION METHOD BASED ON DIFFERENTIAL GLOBAL POSITION SYSTEM 5042

Fugang Lu, Shichao Chen, Jun Wang, Xi'an Modern Control Technology Research Institute; Ming Liu, Shaanxi Normal University; Taoli Yang, University of Electronic Science and Technology of China

THP2-PK: AGRICULTURE APPLICATIONS V

THP2-PK.1: DELINEATION OF SITE-SPECIFIC MANAGEMENT ZONE BASED ON SPOT6/7 REMOTE SENSING IMAGE IN BLACK SOIL AREA, NORTHEAST CHINA 5046

Huanjun Liu, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences; Zhengchao Qiu, Linghua Meng, Mengyuan Xu, Yue Pan, Xinle Zhang, Northeast Agricultural University

THP2-PK.2: COTTON GROWTH MODELING USING UNMANNED AERIAL VEHICLE VEGETATION INDICES 5050

Junho Yeom, Jinha Jung, Anjin Chang, Texas A&M University-Corpus Christi; Murilo Maeda, Juan Landivar, Texas A&M AgriLife Research Extension Service Corpus Christi

THP2-PK.3: MULTI-TEMPORAL MOD09A1-BASED DETECTING OF MAJOR GROWTH STAGES OF PADDY RICE ON A PROVINCIAL SCALE 5053

Linsheng Huang, Shasha Zhang, Jinling Zhao, Wenjiang Huang, Jinyang Huang, Xiaobo Qi, Anhui University

THP2-PK.4: ESTIMATION OF LEAF NITROGEN CONTENT OF MAIZE BASED ON AKAIKE'S INFORMATION CRITERION IN BEIJING 5057

Haikuan Feng, Haojie Pei, Fuqin Yang, Guijun Yang, Zhenhai Li, Xiaodong Yang, Huiling Long, Beijing Research Center for Information Technology In Agriculture; Xiuliang Jin, UMR EMMAH, INRA, UAPV, 84914, Avignon, France

THP2-PK.6: CROPLAND PRODUCTION POTENTIAL MONITORING USING LONG-TERM CROP DYNAMICS 5065

Huiling Long, Chunjiang Zhao, Guijun Yang, Haikuan Feng, Qingyun Xu, Beijing Academy of Agriculture and Forestry Sciences

THP1-PL: AGRICULTURE APPLICATIONS I

THP1-PL.1: DETECTION OF CROP HERBICIDE INJURY THROUGH PLANT 5069 HYPERSPSCTRAL REMOTE SENSING OF CHLOROPHYLL FLUORESCENCE

Yanbo Huang, USDA-ARS; Haibo Yao, Mississippi State University; Feng Zhao, Beihang University; Krishna Reddy, USDA-ARS

THP1-PL.2: AIRBORNE L-BAND SAR OBSERVATION FOR PADDY RICE FIELDS IN 5073 SEMI-MOUNTAINOUS REGION

Chinatsu Yonezawa, Tohoku Univ.; Manabu Watanabe, Tokyo Denki University

THP1-PL.3: AGRICULTURAL MONITORING USING MULTI-SATELLITE DATA..... 5077

Dorj Ichikawa, Koji Wakamori, Naohiro Oguri, Japan Manned Space Systems Corporation

THP1-PL.4: MISSING DATA RECONSTRUCTION AND ANOMALY DETECTION IN CROP 5081 DEVELOPMENT USING AGRONOMIC INDICATORS DERIVED FROM MULTISPECTRAL SATELLITE IMAGES

Mohanad Albughdadi, Denis Kouamé, University of Toulouse; Guillaume Rieu, TerraNIS; Jean-Yves Tournet, University of Toulouse

THP1-PL.5: MONITORING OF POWDERY MILDEW ON WINTER WHEAT USING 5085 MULTI-TEMPORAL HJ-CCD IMAGERY ON A REGIONAL SCALE

Jinling Zhao, Junjie Guo, Chuang Liu, Dongyan Zhang, Linsheng Huang, Anhui University

THP1-PL.6: ESTIMATION OF RICE GROWTH STATUS, PROTEIN CONTENT AND YIELD 5089 PREDICTION USING MULTI-SATELLITE DATA

Koji Wakamori, Dorj Ichikawa, Naohiro Oguri, JAMSS

THP2-PL: LAND COVER DYNAMICS II

THP2-PL.2: TIME-SERIES INSAR ANALYSIS OF CASCADE LANDSLIDE COMPLEX, 5093 WASHINGTON, USA

Xie Hu, Zhong Lu, Teng Wang, Southern Methodist University; Thomas Pierson, U.S. Geological Survey; Jin-Woo Kim, Southern Methodist University; Thomas Cecere, U.S. Geological Survey

THP2-PL.3: DYNAMIC MONITORING OF DROUGHT CONDITONS IN HENAN PROVINCE 5097 BASED ON LAI-TS SPACE

Ying Liu, Hui Yue, Xi'an University of Science and Technology

THP2-PL.4: ANALYSIS ON DIFFERENCE OF PHENOLOGY EXTRACTED FROM EVI AND 5101 LAI

Cong Wang, Jing Li, Qinhua Liu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

THP2-PL.5: EVALUATION OF SMALL WATERSHED MANAGEMENT EFFORTS USING ZY-3 5105 SATELLITE IMAGES —A CASE STDUY IN THE WATER SOURCE AREA OF MIDDLE ROUTE OF SOUTH TO NORTH WATER DIVERSION PROJECT

Tao Zhang, Bing Lei, Yuhang Gan, Ke Liu, Satellite Surveying and Mapping Application Center,NASG; Jianhua Guo, Xiaohong Liu, Liaoning Technical University; Shirui Hao, State Key Laboratory of Remote Sensing Science and Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University and Joint Center for Global Change Studies (JCGCS)

THP2-PL.6: ANALYSIS OF URBAN LAND EXPANSION AND SIMULATION OF URBAN LAND 5109 USE IN LOUKOU CITY

Qixia Man, Quanyuan Wu, Shandong Normal University; Pinliang Dong, University of North Texas; Xinming Yang, Jinan Environmental Research Institute

THP2-PL.7: REMOTE SENSING METHODOLOGY FOR DETECTION OF5113 ENVIRONMENTAL REGIME SHIFTS IN SEMI-ARID REGION

Yuki Sofue, Chiba University; Buho Hoshino, Rakuno Gakuen University; Eunice Nduati, Akihiko Kondoh, Chiba University; Kenji Kai, Nagoya University; Purevsuren Tsedendamba, Kenji Baba, Rakuno Gakuen University

FR1-L1: PANSHARPENING TECHNIQUES

FR1-L1.1: PANSHARPENING OF MASTCAM IMAGES.....	5117
<i>Chiman Kwan, Bence Budavari, Minh Dao, Bulent Ayhan, Applied Research LLC; James Bell, Arizona State University</i>	
FR1-L1.2: A SCALE-AWARE PANSHARPENING METHOD WITH ROLLING GUIDANCE FILTER.....	5121
<i>Yanan Gao, Xu Li, Ang Gao, Lixin Li, Northwestern Polytechnical University; Shigang Yue, University of Lincoln</i>	
FR1-L1.3: A NEW HYPERSPECTRAL PANSHARPENING METHOD BASED ON GUIDED FLITER	5125
<i>Jiahui Qu, Yunsong Li, Wenqian Dong, Xidian University</i>	
FR1-L1.4: A SPATIAL CONSTRAINT AND DEEP LEARNING BASED HYPERSPECTRAL IMAGE SUPER-RESOLUTION METHOD	5129
<i>Jing Hu, Yunsong Li, Xi Zhao, Weiying Xie, State Key Laboratory of Integrated Service Network</i>	
FR1-L1.5: PAN-SHARPENING VIA RESIDUAL DEEP LEARNING	5133
<i>Nie Li, Nan Huang, Liang Xiao, Nanjing University of Science and Technology</i>	

FR2-L1: IMAGE REGISTRATION AND MATCHING TECHNIQUES

FR2-L1.1: AUTOMATED FEATURE-BASED REGISTRATION TECHNIQUES FOR SATELLITE IMAGERY	5137
<i>Azubuike Okorie, Sokratis Makrogiannis, Delaware State University</i>	
FR2-L1.2: FAST AND ROBUST STRUCTURE-BASED MULTIMODAL GEOSPATIAL IMAGE MATCHING	5141
<i>Yuanxin Ye, Southwest Jiaotong University; Lorenzo Bruzzone, University of Trento; Jie Shan, Purdue University; Li Shen, Southwest Jiaotong University</i>	
FR2-L1.4: FAST MUTUAL INFORMATION-BASED MAP MODEL MATCHING	5149
<i>Pierre Minvielle, CEA</i>	
FR2-L1.5: A NOVEL LOCAL PATTERN BASED SELF-SIMILARITY DESCRIPTOR FOR MULTISOURCE REMOTE SENSING IMAGE REGISTRATION	5153
<i>Shuhan Chen, Xiaorun Li, Zhejiang University; Liaoying Zhao, HangZhou Dianzi University</i>	

FR3-L1: DEEP LEARNING USING HIGH RESOLUTION OPTICAL IMAGERY

FR3-L1.1: HIGH-RESOLUTION IMAGE CLASSIFICATION WITH CONVOLUTIONAL NETWORKS	5157
<i>Emmanuel Maggiori, Yuliya Tarabalka, Inria Sophia Antipolis Mediterranee; Guillaume Charpiat, Inria Saclay; Pierre Alliez, Inria Sophia Antipolis Mediterranee</i>	
FR3-L1.2: URBAN LAND COVER CLASSIFICATION WITH MISSING DATA USING DEEP CONVOLUTIONAL NEURAL NETWORKS	5161
<i>Michael Kampffmeyer, UiT The Arctic University of Norway; Arnt-Børre Salberg, Norwegian Computing Center; Robert Jenssen, UiT The Arctic University of Norway</i>	
FR3-L1.3: SEMANTIC SEGMENTATION OF AERIAL IMAGES WITH EXPLICIT CLASS-BOUNDARY MODELING	5165
<i>Dimitrios Marmanis, German Aerospace Center (DLR); Konrad Schindler, Jan Dirk Wegner, ETH Zurich; Mihai Datcu, German Aerospace Center (DLR); Uwe Stilla, TU Munich</i>	
FR3-L1.4: DETECTION OF INFORMAL SETTLEMENTS FROM VHR SATELLITE IMAGES USING CONVOLUTIONAL NEURAL NETWORKS	5169
<i>Nicholus Mboga, Claudio Persello, John Ray Bergado, Alfred Stein, University of Twente</i>	

FR3-L1.5: JOINT HEIGHT ESTIMATION AND SEMANTIC LABELING OF MONOCULAR AERIAL IMAGES WITH CNNs	5173
<i>Shivangi Srivastava, Michele Volpi, Devis Tuia, University of Zurich</i>	
FR4-L1: DEEP LEARNING USING HYPERSPECTRAL AND SAR IMAGERY	
FR4-L1.1: TRANSFERRED DEEP LEARNING FOR HYPERSPECTRAL TARGET DETECTION	5177
<i>Wei Li, Guodong Wu, Beijing University of Chemical Technology; Qian Du, Mississippi State University</i>	
FR4-L1.2: FULLY CONV-DECONV NETWORK FOR UNSUPERVISED SPECTRAL-SPATIAL FEATURE EXTRACTION OF HYPERSPECTRAL IMAGERY VIA RESIDUAL LEARNING	5181
<i>Lichao Mou, Pedram Ghamisi, Xiao Xiang Zhu, German Aerospace Center; Technical University of Munich</i>	
FR4-L1.4: UNMIXING IN THE PRESENCE OF NUISANCES WITH DEEP GENERATIVE MODELS	5189
<i>Mario Parente, Ian Gemp, Ishan Durugkar, University of Massachusetts Amherst</i>	
FR4-L1.5: A NOVEL CHANGE DETECTION FRAMEWORK BASED ON DEEP LEARNING FOR THE ANALYSIS OF MULTI-TEMPORAL POLARIMETRIC SAR IMAGES	5193
<i>Shaunak De, Indian Institute of Technology Bombay; Davide Pirrone, Francesca Bovolo, Fondazione Bruno Kessler; Lorenzo Bruzzone, University of Trento; Avik Bhattacharya, Indian Institute of Technology Bombay</i>	
FR1-L2: DATA MANAGEMENT AND SYSTEMS I	
FR1-L2.1: LEVERAGING METADATA CONVENTIONS TO IMPROVE USABILITY OF AN EASE-GRID 2.0 PASSIVE MICROWAVE DATA PRODUCT	5197
<i>Mary J. Brodzik, Molly A. Hardman, University of Colorado; David G. Long, Brigham Young University</i>	
FR1-L2.2: NASA WRANGLER: AUTOMATED CLOUD-BASED DATA ASSEMBLY IN THE RECOVER WILDFIRE DECISION SUPPORT SYSTEM	5201
<i>John Schnase, Mark Carroll, Roger Gill, Margaret Wooten, NASA; Keith Weber, Kindra Blair, Jeffrey May, William Toombs, Idaho State University</i>	
FR1-L2.3: A DEEP LEARNING BASED APPROACH WITH ADVERSARIAL REGULARIZATION FOR DOPPLER WEATHER RADAR ECHO PREDICTION	5205
<i>Sonam Singh, Sudeshna Sarkar, Pabitra Mitra, Indian Institute of Technology Kharagpur</i>	
FR1-L2.4: MOSIS – MULTI-OUTCROP SHARING & INTERPRETATION SYSTEM	5209
<i>Luiz Gonzaga Jr., Mauricio Roberto Veronez, Demetrius Alves, Fabiane Bordin, Gabriel Lanzer, UNISINOS; Fernando Pinho Marson, Unisinos University; Francisco Tognoli, Leonardo Inocencio, UNISINOS</i>	
FR1-L2.5: A SPATIO-TEMPORAL ONTOLOGICAL MODEL FOR FLOOD DISASTER MONITORING	5213
<i>Kuldeep Kurte, Surya Durbha, Indian Institute of Technology Bombay; Roger King, Nicolas Younan, Mississippi State University; Abhishek Potnis, Indian Institute of Technology Bombay</i>	
FR2-L2: DATA MANAGEMENT AND SYSTEMS III	
FR2-L2.1: SPATIAL DATA MANAGEMENT METHOD WITH GEOSOT GRID	5217
<i>Weixin Zhai, Chengyu Qi, Chengqi Cheng, Shuang Li, Peking University</i>	
FR2-L2.2: AN INTEGRATED DISASTER RAPID CLOUD SERVICE PLATFORM USING REMOTE SENSING DATA	5221
<i>Quan Zou, Southwest University; Guoqing Li, Wenyang Yu, Chinese Academy of Sciences</i>	

FR2-L2.3: COMPARISON OF DISTRIBUTED GPU COMPUTING FRAMEWORKS FOR SAR RAW DATA SIMULATION	5225
<i>Xiaojie Yao, Fan Zhang, Xiong Sun, Qiang Yin, Wei Li, Beijing University of Chemical Technology</i>	
FR2-L2.4: PREPARATION OF ANALYSIS READY POLSAR DATA FOR THE AUSTRALIAN GEOSCIENCE DATA CUBE	5229
<i>Zheng-Shu Zhou, Peter Caccetta, Drew Devereux, Michael Caccetta, Robert Woodcock, Matt Paget, Alex Held, CSIRO</i>	
FR2-L2.5: RESEARCH ON THE IMPLEMENTATION OF MULTI - SOURCE REMOTE SENSING IMAGE MANAGEMENT SYSTEM BASED ON B/S ARCHITECTURE	5233
<i>Qiang Zhu, Fang Huang, Jun Lu, University of Electronic Science and Technology of China; Jian Tao, Texas A&M University; Jinjun Zheng, Li Li, Bo Lan, University of Electronic Science and Technology of China</i>	
 FR3-L2: UNDERSTANDING THE SYNERGISTIC USE OF COSMO-SKYMED AND RADARSAT-2	
FR3-L2.1: COSMO-SKYMED AND RADARSAT IMAGE INTEGRATION FOR SOIL MOISTURE AND VEGETATION BIOMASS MONITORING	5237
<i>Simonetta Paloscia, Simone Pettinato, Emanuele Santi, IFAC-CNR; Claudia Notarnicola, Felix Greifeneder, Giovanni Cuzzo, EURAC</i>	
FR3-L2.2: A MULTIFREQUENCY SAR STUDY OF THE HAUGHTON IMPACT STRUCTURE, ARCTIC CANADA	5241
<i>Byung-Hun Choe, Gordon Osinski, Catherine Neish, Michael Zanetti, Livio Tornabene, Jinfei Wang, University of Western Ontario</i>	
FR3-L2.3: RADAR MULTISPECTRAL AND POLARIMETRIC SIGNATURE OF RICE FIELDS: AN INVESTIGATION ON THE DOUBLE BOUNCE MECHANISM IN FLOODED VEGETATION	5245
<i>Nazzareno Pierdicca, Sapienza University of Rome; Luca Pulvirenti, Giorgio Boni, Giuseppe Squicciarino, CIMA Research Foundation; Marco Chini, Luxembourg Institute of Science and Technology</i>	
FR3-L2.4: ON NEURAL NETWORKS ALGORITHMS FOR OIL SPILL DETECTION WHEN APPLIED TO C- AND X-BAND SAR	5249
<i>Fabio Del Frate, Daniele Latini, Valentina Scappiti, Tor Vergata University of Rome</i>	
FR3-L2.5: ROBUST CHANGE DETECTION FROM COSMO-SKYMED AND RADARSAT-2 MULTITEMPORAL IMAGES	5252
<i>Andrea Garzelli, University of Siena; Gabriele Moser, Sebastiano Bruno Serpico, University of Genoa</i>	
 FR4-L2: GROUND-BASED RADAR, LIDAR, AND OPTICAL SYSTEMS	
FR4-L2.1: ANALYSIS OF SPATIALLY AND TEMPORALLY DISJOINT PRECIPITATION DATASETS TO ESTIMATE THE 3D DISTRIBUTION OF RAIN	5256
<i>Larry Schneider, W. Linwood Jones, University of Central Florida</i>	
FR4-L2.2: PERFORMANCE TRADE-OFFS AND UPGRADE OF NASA D3R WEATHER RADAR	5260
<i>Mohit Kumar, Shashank S. Joshil, Venkatachalam Chandrasekar, Colorado State University; Manuel A. Vega, John Zebley, NASA Goddard Space Flight Center; Robert M. Beauchamp, Colorado State University</i>	
FR4-L2.3: COMBINED APPLICATION OF 3D SPECTRAL FEATURES FROM MULTISPECTRAL LIDAR FOR CLASSIFICATION	5264
<i>Jia Sun, Shuo Shi, Biwu Chen, Lin Du, Jian Yang, Wei Gong, Wuhan University</i>	
FR4-L2.4: DEVELOPMENT OF DIFFERENTIAL ABSORPTION LIDAR SYSTEM AT 1.57 MM FOR SENSING CARBON DIOXIDE IN CHINA	5268
<i>Ailin Liang, Ge Han, Xin Ma, Chengzhi Xiang, Yuxin Zheng, Teng Zhang, Hao Xu, Wei Gong, Wuhan University</i>	

FR4-L2.5: AUTOMATIC CO-REGISTRATION OF MULTI-TEMPORAL LANDSAT-8/OLI AND SENTINEL-2A/MSI IMAGES 5272

Sergii Skakun, Jean-Claude Roger, University of Maryland; Eric Vermote, NASA; Christopher Justice, University of Maryland; Jeffrey Masek, NASA

FR1-L3: SAR POLARIMETRY: THEORY AND APPLICATIONS I

FR1-L3.1: FIRST DEMONSTRATION OF SPACE-BORNE TOMOSAR USING TERRASAR-X/TANDEM-X FULL-POLARIMETRIC ACQUISITIONS 5275

Unmesh Khati, Indian Institute of Technology Bombay; Laurent Ferro-Famil, University of Rennes I; Gulab Singh, Indian Institute of Technology Bombay

FR1-L3.2: APPLICATION OF POLARIMETRIC SAR TO MONITORING PERMAFROST ECOSYSTEM IN CENTRAL YAKUTIA, EASTERN SIBERIA 5277

Sang-Eun Park, Sejong University

FR1-L3.3: POLSAR IMAGE FACTORIZATION AND ITS EXTENDED APPLICATIONS 5280

Feng Xu, Fudan University

FR1-L3.4: TARGET DECOMPOSITION IN POLARIMETRIC INTERFEROMETRIC SAR..... 5282

Yi Cui, Stanford University; Yoshio Yamaguchi, Hiroyoshi Yamada, Niigata University; Jian Yang, Tsinghua University

FR1-L3.5: ROBUSTNESS OF MODEL-BASED POLSAR DECOMPOSITION TECHNIQUES..... 5284

Thomas Ainsworth, Naval Research Laboratory; Jong-Sen Lee, Naval Research Laboratory / Computational Physics, Inc.; Yanting Wang, Naval Research Laboratory

FR2-L3: SAR POLARIMETRY: THEORY AND APPLICATIONS II

FR2-L3.1: MRF MODELING OF TEXTURED SPECKLE FOR POLARIMETRIC SAR IMAGE CLASSIFICATION 5287

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

FR2-L3.2: SPEEDING UP NON-GAUSSIAN POLSAR IMAGE ANALYSIS..... 5291

Anthony Paul Doulgeris, UiT The Arctic University of Norway; Dingsheng Hu, Chinese Academy of Sciences

FR2-L3.3: DECISION HIERARCHICAL CLASSIFICATION BY FLD FOR VEGETATION APPLICATION USING POLSAR FEATURES 5295

Wen Hong, Luyi Shao, Institute of Electronics, Chinese Academy of Sciences; Qiang Yin, Beijing University of Chemical Technology

FR2-L3.4: A NEW AUTOMATED ALGORITHM FOR DETECTING FOREST DISTURBANCES WITH THE DUAL-POLARIMETRIC SAR ALPHA ANGLE 5299

Marco Lavallo, NASA Jet Propulsion Laboratory

FR3-L3: ADVANCED METHODS FOR POLARIMETRIC SAR INFORMATION EXTRACTION I

FR3-L3.1: A REVIEW OF POLARIMETRIC SAR SPECKLE FILTERING..... 5303

Jong-Sen Lee, Thomas Ainsworth, Yanting Wang, Naval Research Laboratory

FR3-L3.3: INFORMATION CONTENT IN SAR IMAGES: A CLASSIFICATION ACCURACY VIEWPOINT 5307

Maria Gabriela Palacio, Susana Beatriz Ferrero, Universidad Nacional de Rio Cuarto; Alejandro Cesar Frery, Universidad Federal de Alagoas

FR3-L3.4: DEEP SPECKLE NOISE FILTERING 5311

Samuel Foucher, Mario Beaulieu, Mohamed Dahmane, Computer Research Institute of Montreal; François Cavayas, Université de Montréal

FR3-L3.5: AN OPTIMIZATION OF THE DIFFERENCE OF COVARIANCE MATRICES FOR 5315
POLSAR CHANGE DETECTION

Armando Marino, The Open University; Alberto Alonso-González, German Aerospace Center (DLR)

FR4-L3: ADVANCED METHODS FOR POLARIMETRIC SAR INFORMATION EXTRACTION II

FR4-L3.1: MODEL-BASED AND SIX COMPONENT SCATTERING POWER DECOMPOSITION 5319
Gulab Singh, Indian Institute of Technology Bombay; Yoshio Yamaguchi, Niigata University

FR4-L3.2: MODEL-BASED POLARIMETRIC SCATTERING DECOMPOSITION FOR TOMOSAR 5323
Hiroyoshi Yamada, Masanori Gocho, Niigata University; Motofumi Arie, Mitsubishi Electric Co., Ltd.; Shoichiro Kojima, National Institute of Information and Communications Technology; Ryoichi Sato, Yoshio Yamaguchi, Niigata University

FR4-L3.3: INFORMATION EXTRACTION BY BLIND SOURCE SEPARATION FROM 5326
POLARIMETRIC SAR DATA
Leandro Pralon, Brazilian Army Technological Center; Gabriel Vasile, CNRS; Mauro Dalla Mura, Jocelyn Chanussot, Grenoble INP

FR4-L3.4: POLARIMETRIC CHARACTERISTICS OF L-BAND SAR IMAGES OF EARLY-STAGE 5330
DEFORESTATION AREAS
Manabu Watanabe, Christian Koyama, Masanobu Shimada, Tokyo Denki University

FR4-L3.5: A CHANGE DETECTOR BASED ON THE OPTIMIZATION OF POLARIMETRIC 5334
CONTRAST
Junjun Yin, University Science & Technology Beijing; Jian Yang, Tsinghua University

FR1-L4: SAR IMAGE PROCESSING AND ANALYSIS

FR1-L4.1: DIRECT EVIDENCE AND IMPLICATIONS OF BREWSTER'S ANGLE DAMPING 5338
OBSERVED BY SYNTHETIC APERTURE RADAR IMAGES
Kazuo Ouchi, IHI Corporation; Chan-Su Yang, Korea Institute of Ocean Science & Technology

FR1-L4.2: TIME SERIES ANALYSIS OF L-BAND SAR FOR AGRICULTURAL LANDCOVER 5342
CLASSIFICATION
Tracy Whelen, Paul Siqueira, University of Massachusetts Amherst

FR1-L4.4: IMPROVED LLM METHODS USING LINEAR REGRESSION 5350
Zihang Zhao, Wenhui Lang, Hefei University of Technology; Anthony Paul Doulgeris, University of Tromsø-The Arctic University of Norway; Lu Chen, Hefei University of Technology

FR1-L4.5: CHANGE DETECTION USING POLARIMETRIC L BAND SYNTHETIC APERTURE 5354
RADAR DATA
Mariane S. Reis, Sidnei J. S. Sant'Anna, Brazilian National Institute for Space Research; Eliana Pantaleão, Federal University of Uberlândia

FR2-L4: SAR IMAGING ALGORITHMS I

FR2-L4.1: A COMPLEX SPECTRUM BASED SAR IMAGE RESAMPLING METHOD WITH 5358
RESTRICTED TARGET SIDELOBES AND STATISTICS PRESERVATION
Rémy Abergel, Saïd Ladjal, Florence Tupin, Jean-Marie Nicolas, Télécom ParisTech, Université Paris Saclay

FR2-L4.2: NEAR RANGE RADAR IMAGING BY SFCW LINEAR SPARSE ARRAY BASED ON 5362
BLOCK SPARSITY
Weike Feng, Li Yi, Motoyuki Sato, Tohoku University

FR2-L4.3: EXPERIMENTAL STUDIES OF COMPRESSIVE SENSING FOR SAR WITH KA-BAND CHAMBER ROOM AND KU-BAND AIRPLANE SAR DATA	5366
<i>Takehiro Hoshino, Teruyuki Hara, Yuya Yokota, Hideki Hasegawa, Yu Okada, Mitsubishi Electric Corporation</i>	
FR2-L4.4: SAR 3-D IMAGING ALGORITHM VIA THRESHOLD GRADIENT PURSUIT	5370
<i>Lindian Zuo, Xiaoling Zhang, Shunjun Wei, Liwei Dang, University of Electronic Science and Technology of China</i>	
FR2-L4.5: A NEW METHOD OF HIGH RESOLUTION SAR IMAGE SYNTHESIS REDUCING SPECKLE NOISE	5374
<i>Evgeny Shiro, Edge Consulting</i>	
 FR3-L4: ADVANCES IN SAR INSTRUMENTATION AND CALIBRATION I	
FR3-L4.1: INSTRUMENT PRE-DEVELOPMENT ACTIVITIES FOR L-BAND SAR	5378
<i>Nicolas Gebert, Dennis Schobert, Bernardo Carnicero-Dominguez, European Space Agency (ESA); Mike Gibbons, Airbus Defence and Space Ltd.; Elia Di Salvo, Thales Alenia Space Italia S.p.A.; Fernando Monjas, Airbus Defence and Space SAU</i>	
FR3-L4.2: L BAND CIRCULARLY POLARIZED SAR ONBOARD MICROSATELLITE	5382
<i>Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, Chiba University; Shunsuke Onishi, Tetsuo Yasaka, Institute for Q-shu Pioneers of Space; Robertus Heru Triharjanto, Indonesian National Institute of Aeronautics and Space; Koichi Ito, Chiba University; Steven Gao, University of Kent; Kazuteru Namba, Katsumi Hattori, Fumio Yamazaki, Chiharu Hongo, Akira Kato, Chiba University; Daniele Perissin, Purdue University</i>	
FR3-L4.3: INVESTIGATIONS ON THE INTERNAL CALIBRATION OF MULTI-CHANNEL SAR	5386
<i>Marwan Younis, Tobias Rommel, Felipe Queiroz de Almeida, Sigurd Huber, Michele Martone, Michelangelo Villano, Gerhard Krieger, German Aerospace Center (DLR)</i>	
FR3-L4.4: IONOSPHERIC EFFECTS ON THE LUNAR-BASED RADAR IMAGING	5390
<i>Zhen Xu, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Kun-Shan Chen, Peng Xu, Huadong Guo, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
FR3-L4.5: N-SAR: A NEW MULTI-CHANNEL MULTI-MODE POLARIMETRIC AIRBORNE SAR	5394
<i>Aifang Liu, Fan Wang, Hui Xu, Nanjing Research Institute of Electronic Technology</i>	
 FR4-L4: ADVANCES IN SAR INSTRUMENTATION AND CALIBRATION II	
FR4-L4.1: CALIBRATION UNCERTAINTY OF RETRIEVED TOA RADIANCE FOR SUOMI-NPP VIIRS DAY-NIGHT BAND	5398
<i>Hongda Chen, Ning Lei, Science Systems and Applications, Inc; Chengbo Sun, Global Science Technology, Inc; Xiaoxiong Xiong, Sciences and Exploration Directorate</i>	
FR4-L4.2: APPLYING THE POINT TARGET-BASED CALIBRATION APPROACH TO GROUND-BASED CIRCULARLY POLARIZED SYNTHETIC APERTURE RADAR	5402
<i>Yuta Izumi, Chiba university; Sevket Demirci, Mersin University; Mohd Zafri bin Baharuddin, Universiti Tenaga Nasional; Josaphat Tetuko Sri Sumantyo, Chiba university</i>	
FR4-L4.3: ASSESSMENT OF SENTINEL-1 RADIOMETRIC STABILITY AND QUALITY	5406
<i>Mohammad El Hajj, Nicolas Baghdadi, IRSTEA; Mehrez Zribi, CNRS, CESBIO; Sébastien Angelliaume, ONERA</i>	
FR4-L4.4: PRECISE AMBIGUITY ANALYSIS METHOD FOR SPACEBORNE SAR	5410
<i>Xiaolei Han, Qingjun Zhang, Jie Liu, Beijing Institute of Spacecraft System Engineering</i>	
FR4-L4.5: ESTIMATION OF PHASE NOISE BY TIME SERIES ANALYSIS OF ALOS-2 PALSAR-2 DATA	5414
<i>Takashi Nonaka, Tomohito Asaka, Keishi Iwashita, Nihon University; Fumitaka Ogushi, EXELIS VIS KK.</i>	

FR1-L5: ESTIMATION AND REGRESSION TECHNIQUES II

FR1-L5.1: A UNIFIED METHOD OF CLOUD DETECTION AND REMOVAL ROBUST TO 5418 SPECTRAL VARIABILITY

Madhuri Nagare, Hirofumi Aoki, Eiji Kaneko, NEC Corporation

FR1-L5.2: PREDICTION OF SEA ICE MOTION WITH RECURRENT NEURAL NETWORKS 5422

Zisis Petrou, Yingli Tian, City College of New York, The City University of New York

FR1-L5.3: A NOVEL METHOD FOR ESTIMATING THE BASEBAND DOPPLER CENTROID 5426 OF CONVENTIONAL SYNTHETIC APERTURE RADAR

Linjian Zhang, Yesheng Gao, Xingzhao Liu, Lei Liu, Shanghai Jiao Tong University

FR1-L5.4: A NOVEL LAI RETRIEVAL METHOD BASED ON THE COMBINATION OF 2 5430 VEGETATION INDEXES

Yuanheng Sun, Huazhong Ren, Tianyuan Zhang, Juan Sui, Zihao Wang, Qiming Qin, Peking University

FR1-L5.5: A NOVEL BAYESIAN LASSO MODEL BASED ON SPATIAL-CORRELATED SPARSITY 5434 FOR SEMISUPERVISED HYPERSPECTRAL UNMIXING

Huiyun Jiao, Risheng Huang, Xiaorun Li, Zhejiang University; Liaoying Zhao, Hangzhou Dianzi University

FR2-L5: DENOISING AND ESTIMATION

FR2-L5.1: SAR IMAGE DESPECKLING THROUGH CONVOLUTIONAL NEURAL NETWORKS..... 5438

Giovanni Chierchia, Université Paris Est; Davide Cozzolino, Giovanni Poggi, Luisa Verdoliva, University Federico II of Naples

FR2-L5.2: HYPERSPECTRAL IMAGE DENOISING WITH MULTISCALE LOW-RANK MATRIX 5442 RECOVERY

Zhihong Huang, Shutao Li, Fang Hu, Hunan University

FR2-L5.3: SIMULTANEOUS RETRIEVAL OF LEAF AREA INDEX AND FRACTIONAL CANOPY 5446 COVER USING SAIL MODEL AND PSO ALGORITHM

Tianyuan Zhang, Huazhong Ren, Yuanheng Sun, Chengye Zhang, Qiming Qin, Peking University

FR2-L5.4: NONLINEAR STATISTICAL RETRIEVAL OF SURFACE EMISSIVITY FROM IASI 5450 DATA

Valero Laparra, Jordi Muñoz-Marí, Luis Gómez-Chova, Universitat de València; Xavier Calbet, AEMET; Gustau Camps-Valls, Universitat de València

FR2-L5.5: SEMANTIC SEGMENTATION OF REMOTE SENSING DATA USING GAUSSIAN 5454 PROCESSES AND HIGHER ORDER CRFS

Yansong Liu, Sankaranarayanan Piramanayagam, Sildomar Monteiro, Eli Saber, Rochester Institute of Technology

FR3-L5: FUSION OF SAR AND OPTICAL REMOTE SENSING DATA I

FR3-L5.1: FUSION OF SAR AND OPTICAL REMOTE SENSING DATA - CHALLENGES AND 5458 RECENT TRENDS

Michael Schmitt, Technische Universität München; Florence Tupin, Université Paris Saclay; Xiao Xiang Zhu, German Aerospace Center (DLR)

FR3-L5.3: COMPARATIVE EVALUATION OF SIGNAL-BASED AND DESCRIPTOR-BASED 5462 SIMILARITY MEASURES FOR SAR-OPTICAL IMAGE MATCHING

Chunping Qiu, Michael Schmitt, Technische Universität München; Xiao Xiang Zhu, Technische Universität München / Germany Aerospace Center (DLR)

FR3-L5.4: AUTOMATIC ALIGNMENT OF HIGH RESOLUTION OPTICAL AND SAR IMAGES 5466 FOR URBAN AREAS	5466
<i>Stefan Auer, German Aerospace Center (DLR); Michael Schmitt, Technische Universität München; Peter Reinartz, German Aerospace Center (DLR)</i>	
FR3-L5.5: FUSION OF SAR-OPTICAL DATA FOR LAND COVER MONITORING..... 5470	5470
<i>Raffaele Gaetano, Center of Agricultural Research for Development; Davide Cozzolino, Luca D'Amiano, Luisa Verdoliva, Giovanni Poggi, University Federico II of Naples</i>	
FR4-L5: FUSION OF SAR AND OPTICAL REMOTE SENSING DATA II	
FR4-L5.1: IMPROVING THE HBDT FRAMEWORK FUSING HR AND VHR SAR AND OPTICAL 5474 DATA FOR IMAGE CLASSIFICATION	5474
<i>Gianni Cristian Iannelli, Paolo Gamba, University of Pavia</i>	
FR4-L5.2: IMPROVE MULTI-BASELINE INSAR PARAMETER RETRIEVAL BY SEMANTIC 5478 INFORMATION FROM OPTICAL IMAGES	5478
<i>Jian Kang, Yuanyuan Wang, Marco Körner, Technische Universität München; Xiao Xiang Zhu, Technische Universität München / Germany Aerospace Center (DLR)</i>	
FR4-L5.3: IDENTIFYING CORRESPONDING PATCHES IN SAR AND OPTICAL IMAGERY 5482 WITH A CONVOLUTIONAL NEURAL NETWORK	5482
<i>Lichao Mou, Michael Schmitt, Yuanyuan Wang, Technische Universität München; Xiao Xiang Zhu, German Aerospace Center; Technical University of Munich</i>	
FR4-L5.4: SYNERGETIC POTENTIALS OF C-BAND SAR AND MULTI-SPECTRAL IMAGERY 5486 FOR TROPICAL CLASSIFICATIONS IN NORTHERN MATO GROSSO (BR)	5486
<i>Ron Hagensieker, Björn Waske, Freie Universität Berlin</i>	
FR4-L5.5: FUSION OF STATISTICAL AND LEARNED FEATURES FOR SAR IMAGES 5490 CLASSIFICATION	5490
<i>Chu He, Xinlong Liu, Gong Han, Chenyao Kang, Yu Chen, Wuhan University</i>	
FR1-L6: ADVANCES IN REMOTE SENSING AND GEOSPATIAL TECHNOLOGY FOR SUSTAINABLE WATER RESOURCE MANAGEMENT I	
FR1-L6.1: ECOSTRESS, A NASA EARTH-VENTURES INSTRUMENT FOR STUDYING LINKS 5494 BETWEEN THE WATER CYCLE AND PLANT HEALTH OVER THE DIURNAL CYCLE	5494
<i>Glynn Hulley, Simon Hook, Joshua Fisher, Christine Lee, Jet Propulsion Laboratory</i>	
FR1-L6.4: REMOTE SENSING RETRIEVAL OF SUSPENDED SOLIDS IN LONGQUAN LAKE 5501 BASED ON GA-SVM MODEL	5501
<i>Xuehui Ye, Yuxia Li, Ling Tong, Ling He, University of Electronic Science and Technology of China</i>	
FR1-L6.5: APPLICATION OF SPI, EDI AND PNPI USING MSWEP PRECIPITATION DATA 5505 OVER MARATHWADA, INDIA	5505
<i>Sabyasachi Swain, Pratiman Patel, Saswata Nandi, Indian Institute of Technology Bombay</i>	
FR2-L6: ADVANCES IN REMOTE SENSING AND GEOSPATIAL TECHNOLOGY FOR SUSTAINABLE WATER RESOURCE MANAGEMENT II	
FR2-L6.1: COMPARING METHODS TO ESTIMATE CONSUMPTIVE USE WITH REMOTE 5508 SENSING IN CALIFORNIA'S SACRAMENTO-SAN JOAQUIN DELTA	5508
<i>Josue Medellin-Azuara, Kyaw Tha Paw U, Yufang Jin, Eric Kent, Jenae Clay, Andy Wong, University of California Davis; Michelle Leinfelder-Miles, University of California Cooperative Extension; Jay Lund, University of California Davis</i>	

FR2-L6.3: UNMANNED AIRBORNE THERMAL AND MULTISPECTRAL IMAGERY FOR 5510
ESTIMATING EVAPOTRANSPIRATION IN IRRIGATED VINEYARDS

Hector Nieto, Joaquim Bellvert, IRTA, Research & Technology Food & Agriculture; William P. Kustas, Joseph G. Alfieri, Feng Gao, John Prueger, US Department of Agriculture, Agricultural Research Service; Alfonso Torres-Rua, Lawrence E. Hipps, Utah State University; Manal Elarab, Micasense; Lisheng Song, Southwest University

FR2-L6.4: TEMPORAL UPSCALING OF REMOTE SENSING INSTANTANEOUS 5514
EVAPOTRANSPIRATION USING AN IMPROVED CONSTANT EVAPORATIVE FRACTION
METHOD

Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Zhao-Liang Li, Ministry of Agriculture/Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Bohui Tang, Hua Wu, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

FR3-L6: COPERNICUS SENTINEL-1 MISSION: OPERATIONAL STATUS, SCIENTIFIC RESULTS AND FUTURE EVOLUTION I

FR3-L6.1: SENTINEL-1 MISSION STATUS 5525

Pierre Potin, Betlem Rosich, Nuno Miranda, Patrick Grimont, Pier Bargellini, Eric Monjoux, Jolyon Martin, Yves-Louis Desnos, Johannes Roeder, Ian Shurmer, Alistair O'Connell, Ramon Torres, Mike Krassenburg, Jean-Baptiste Gratadour, European Space Agency (ESA)

FR3-L6.2: SENTINEL-1 MISSION SCIENTIFIC EXPLOITATION ACTIVITIES 5521

Yves-Louis Desnos, European Space Agency - ESRIN; Michael Fomelis, RSAC c/o European Space Agency (ESA-ESRIN); Marcus Engdahl, Pierre-Philippe Mathieu, European Space Agency - ESRIN; Francesco Palazzo, Fabrizio Ramoino, Serco S.p.A. c/o European Space Agency (ESA-ESRIN)

FR3-L6.3: SENTINEL-1 DATA EXPLOITATION FOR AUTOMATIC SURFACE DEFORMATION 5529
TIME-SERIES GENERATION THROUGH THE SBAS-DINSAR PARALLEL PROCESSING CHAIN

Ivana Zinno, Manuela Bonano, Sabatino Buonanno, Francesco Casu, Claudio De Luca, Adele Fusco, Riccardo Lanari, Michele Manunta, Mariarosaria Manzo, Antonio Pepe, CNR

FR3-L6.4: SENTINEL-1 HIGH RESOLUTION SOIL MOISTURE 5533

Francesco Mattia, Anna Balenzano, Giuseppe Satalino, Francesco Lovergine, Consiglio Nazionale delle Ricerche (CNR); Alexander Loew, Ludwig-Maximilians Universität München (LMU); Jian Peng, Ludwig-Maximilians Universität München (LMU) & Max Planck Institute for Meteorology; Urs Wegmüller, Maurizio Santoro, Oliver Cartus, GAMMA Remote Sensing AG; Katarzyna Dabrowska-Zielinska, Jan Musial, Institute of Geodesy and Cartography; Malcolm W. J. Davidson, European Space Agency (ESA)/Agence Spatiale Européenne; Simon Yueh, Seunghum Kim, Narendra N Das, Andreas Colliander, Jet Propulsion Laboratory; Joel Johnson, The Ohio State University; Jeff Ouellette, Naval Research Laboratory; Jeffrey Walker, Xiaoling Wu, Monash University; Heather McNairn, Amine Merzouki, Jarrett Powers, Agriculture and Agri-Food Canada / Agriculture et Agroalimentaire Canada; Todd Caldwell, The University of Texas at Austin; Dara Entekhabi, Massachusetts Institute of Technology; Michael H. Cosh, Thomas J. Jackson, United States Department of Agriculture (USDA)

FR4-L6: COPERNICUS SENTINEL-1 MISSION: OPERATIONAL STATUS, SCIENTIFIC RESULTS AND FUTURE EVOLUTION II

FR4-L6.1: INTERFEROMETRIC INVESTIGATIONS WITH THE SENTINEL-1 5537
CONSTELLATION

Pau Prats-Iraola, Matteo Nannini, Nestor Yague-Martinez, Muriel Pinheiro, Jun-Su Kim, German Aerospace Center (DLR); Francesco Vecchioli, Federico Minati, Mario Costantini, e-GEOS SpA; Sven Borgstrom, Prospero De Martino, Valeria Siniscalchi, National Institute of Geophysics and Volcanology (INGV); Michael Fomelis, French Geological Survey (BRGM); Yves-Louis Desnos, European Space Agency - ESRIN

FR4-L6.3: SENTINEL-1 CONSTELLATION MISSION PERFORMANCE 5541

Nuno Miranda, European Space Agency (ESA); Peter Meadows, BAE Systems Applied Intelligence Limited; Riccardo Piantanida, Andrea Recchia, Aresys Srl; David Small, Adrian Schubert, University of Zurich; Pauline Vincent, CLS Brest; Dirk Geudtner, Ignacio Navas-Traver, Francisco Ceba Vega, European Space Agency (ESA)

FR4-L6.4: THE SENTINEL-1 CONSTELLATION FOR INSAR APPLICATIONS: EXPERIENCES 5545
FROM THE INSARAP PROJECT

Yngvar Larsen, Norut; Petar Marinkovic, PPO.labs; John F. Dehls, Geological Survey of Norway; Zbigniew Perski, Polish Geological Institute; Andy J. Hooper, Tim J. Wright, University of Leeds

FR4-L6.5: SENTINEL 1 EVOLUTION: SENTINEL-1C AND -1D MODELS..... 5549

Ramon Torres, Svein Lokas, Gianluigi Di Cosimo, Dirk Geudtner, David Bibby, European Space Agency (ESA)

FR1-L7: GEOGRAPHIC INFORMATION SCIENCE I

FR1-L7.1: AN ADAPTIVE MAXIMAL CO-LOCATION MINING ALGORITHM 5551

Xiaojing Yao, Dacheng Wang, Ling Peng, Tianhe Chi, Chinese Academy of Sciences, Beijing

FR1-L7.2: GEPATAR: A GEOTECHNICAL BASED PS-INSAR TOOLBOX FOR ARCHITECTURAL 5555
CONSERVATION IN BELGIUM

Michal Shimoni, Juanfran Lopez, RMA; Jan Walstra, Pierre Yves Declercq, Geological Survey of Belgium; Leidy Bejarano-Urrego, Els Verstrynghe, Building Materials and Building Technology Division; Dominique Derauw, Central Spatial of Liege (CSL); Roald Hayen, Royal Institute for Cultural Heritage (KIK-IRPA); Koen Van Balen, Building Materials and Building Technology Division

FR1-L7.4: AN VISUAL ANALYTICS APPROACH TO EXPLORE CRIMINAL PATTERNS BASED 5563
ON MULTIDIMENSIONAL DATA

Daichao Li, Yingjie Wang, University of Chinese Academy of Sciences; Sheng Wu, Fuzhou University; Junhui Qi, Tingting Wang, University of Chinese Academy of Sciences

FR1-L7.5: CATEGORIZATION OF HIERARCHICALLY PARTITIONED WATERBODY-SPREAD 5567
VIA MORAN'S INDEX

H. M. Rajashekara, Indian Statistical Institute; K. Nagajothi, Indian Space Research Organisation; Ashok Vardhan Sanda, Novo Nordisk Service Centre (India) Pvt. Ltd.; B. S. Daya Sagar, Indian Statistical Institute

FR2-L7: REMOTE SENSING BIG DATA AND THE INTERNET OF THINGS

FR2-L7.1: BIG DATA MEETS INTERNET OF THINGS: A STANDARDS-BASED PERSPECTIVE..... 5571

Peter Baumann, Jacobs University

FR2-L7.3: AN OPEN STANDARDS BASED METHOD FOR INTEGRATED ENVIRONMENTAL 5574
MODELLING

Lianlian He, Hubei University of Education; Peng Yue, Mingda Zhang, Wuhan University

FR2-L7.4: CONNECTING THE INTERNET OF THINGS TO THE EO COMMUNITY AND 5577
THE GEOSPATIALLY ENABLED WEB USING OGC STANDARDS

George Percivall, Trevor Taylor, Open Geospatial Consortium

FR2-L7.5: APPLYING DISCRETE GLOBAL GRID SYSTEMS TO SENSOR NETWORKS AND 5581
THE INTERNET OF THINGS

Matthew Purss, Geoscience Australia; Steve Liang, Sensor Up; University of Calgary; Robert Gibb, Land Care Research, New Zealand; Faramarz Samavati, University of Calgary; Perry Peterson, PYXIS Inc.; Clinton Dow, ESRI Inc.; Ben Jin, Zhengzhou Institute of Surveying & Mapping; Sara Saeedi, University of Calgary

FR3-L7: REMOTE SENSING FOR WATER MANAGEMENT I

FR3-L7.1: SMOS AND APPLICATIONS: FIRST GLANCE AT SYNERGISTIC AND NEW 5584
RESULTS

Yann Kerr, CNES; Jean-Pierre Wigneron, INRA; Alireza Mahmoodi, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Ahmad Al Bitar, Arnaud Mialon, CNRS; Simone Bircher, Beatriz Molero, Philippe Richaume, Centre d'Etudes Spatiales de la Biosphère (CESBIO); François Cabot, CNES; Nemesio Rodriguez-Fernandez, Marie Parrens, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Amen Al-Yaari, INRA; Roberto Fernandez-Moran, University of Valencia

FR3-L7.2: HYDROLOGIC APPLICATIONS FOR SMAP AND SMOS SURFACE SOIL MOISTURE RETRIEVAL PRODUCTS	5588
<i>Wade Crow, USDA-ARS</i>	
FR3-L7.3: UNDERSTANDING OF CYPRUS TOTAL WATER STORAGE UNDER CLIMATE CHANGE	5591
<i>Gokhan Kayan, Esra Erten, Huseyin Mercan, Orkan Özcan, Istanbul Technical University</i>	
FR3-L7.4: IMPROVING FLOOD RESILIENCE THROUGH EFFECTIVE INTEGRATION OF EARTH OBSERVATION DATA AND MODELING OVER LARGE SCALES	5595
<i>Guy Schumann, Remote Sensing Solutions Inc./University of Bristol</i>	
FR3-L7.5: ASSESSMENT OF POST-IMPOUNDMENT GEOMORPHIC VARIATIONS ALONG BRAHMANI RIVER USING REMOTE SENSING	5598
<i>Chandan Pradhan, Rishikesh Bharti, Subashisa Dutta, Indian Institute of Technology Guwahati</i>	
 FR4-L7: REMOTE SENSING FOR WATER MANAGEMENT II	
FR4-L7.1: GROUNDWATER ARSENIC CONTAMINATION AND LAND SUBSIDENCE IN HANOI CITY, VIETNAM	5602
<i>Anh Kim Nguyen, PhD student at National Central University of Taiwan and Researcher at Institute of Geography, Vietnam Academy of Science and Technology, Vietnam; Yuei-An Liou, Distinguished Professor at National Central University; Minh-Hsu Li, Professor at National Central University; Anh Van Tran, Binh Van Do, Lecturer at Hanoi University of Mining and Geology, Vietnam</i>	
FR4-L7.2: COMPARISON OF PRECIPITATION FORECASTS FROM NOAA'S HIGH RESOLUTION RAPID REFRESH (HRRR) MODEL WITH POLARIMETRIC RADAR OBSERVATIONS IN THE SAN FRANCISCO BAY AREA	5606
<i>Robert Cifelli, Haonan Chen, National Oceanic and Atmospheric Administration; Venkatachalam Chandrasekar, Colorado State University</i>	
FR4-L7.3: SURFACE WATER QUALITY ASSESSMENT OF GANGA RIVER BASIN, INDIA USING INDEX MAPPING	5609
<i>Anoop Kumar Shukla, C.S.P. Ojha, R.D. Garg, INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE</i>	
FR4-L7.4: A RESERVOIR STORAGE ESTIMATION ALGORITHM USING DIGITAL ELEVATION DATA AND IMAGE CLASSIFICATIONS	5613
<i>Huilin Gao, Shuai Zhang, Texas A&M University</i>	
FR4-L7.5: MONITORING RESERVOIRS' WATER LEVEL FROM SPACE FOR FLOOD CONTROL APPLICATIONS. A CASE STUDY IN THE ITALIAN ALPINE REGION	5617
<i>Luca Cenci, Giorgio Boni, Luca Pulvirenti, Giuseppe Squicciarino, Simone Gabellani, CIMA Research Foundation; Fabio Gardella, Agenzia Regionale per la Protezione dell'Ambiente Ligure; Nazzareno Pierdicca, Sapienza University of Rome; Marco Chini, Luxembourg Institute of Science and Technology</i>	
 FR1-L8: GCOM STATUS I	
FR1-L8.1: GCOM SCIENCE OVERVIEW.....	5621
<i>Haruhisa Shimoda, Tokai University</i>	
FR1-L8.2: AN OVERVIEW OF NOAA'S GCOM-W1/AMSR-2 PRODUCT PROCESSING AND UTILIZATION	5625
<i>Paul Chang, Zorana Jelenak, Suleiman Alsweiss, Seubson Soisuvarn, Patrick Meyers, Ralph Ferraro, NOAA/NESDIS</i>	
FR1-L8.3: AMSR-E AND UNIFIED AMSR (AMSR-U) PRODUCTS.....	5629
<i>Elena Lobl, Dawn Conway, University of Alabama in Huntsville</i>	

FR1-L8.4: EVALUATION OF IMPROVED MARINE SURFACE WIND PRODUCTS FROM AMSR2 ON GCOM-W	5633
<i>Naoto Ebuchi, Hokkaido University</i>	
FR1-L8.5: AMSR2 SOIL MOISTURE PRODUCT VALIDATION	5637
<i>Rajat Bindlish, NASA Goddard Space Flight Center; Thomas J. Jackson, Michael H. Cosh, USDA; T. Koike, University of Tokyo; H. Fujii, Remote Sensing Technology Center of Japan; R. de Jeu, Vandersat; Steven Chan, Jet Propulsion Laboratory; Jun Asanuma, University of Tsukuba; Aaron Berg, University of Guelph; David Bosch, USDA; Todd Caldwell, The University of Texas at Austin; C. Holyfield Collins, USDA; Heather McNairn, Agriculture and Agri-Food Canada; José Martínez-Fernández, University of Salamanca; John Prueger, Mark Seyfried, Patrick Starks, USDA; Z. Su, University of Twente; Marc Thibault, Comisión Nacional de Actividades Espaciales; Jeffrey Walker, Monash University</i>	
FR2-L8: GCOM STATUS II	
FR2-L8.1: FIVE YEARS OBSERVATIONS OF GLOBAL WATER CYCLE BY GCOM-W/AMSR2	5641
<i>Misako Kachi, Takashi Maeda, Hiroyuki Tsutsui, Nodoka Ono, Marehito Kasahara, Masaaki Mokuno, Japan Aerospace Exploration Agency</i>	
FR2-L8.2: OVERVIEW OF GCOM-C1/ SGLI ILAND TEAM ACTIVITES	5644
<i>Yoshiaki Honda, Koji Kajiwara, Chiba University</i>	
FR2-L8.3: GCOM-C/SGLI LEVEL-2 OCEAN COLOR PRODUCTS GENERATION	5648
<i>Kauznori Ogata, Japan Aerospace Exploration Agency; Mitsuhiro Toratani, Tokai University; Hiroshi Murakami, Japan Aerospace Exploration Agency</i>	
FR2-L8.4: DEVELOPMENT AND APPLICATION OF GCOM-C LAI AND GPP/NPP RESEARCH PRODUCTS	5650
<i>Kazuhiro Ichii, Japan Agency for Marine-Earth Science and Technology (JAMSTEC); Wei Yang, Chiba University; Hideki Kobayashi, Yuji Yanagi, Hiroaki Takayama, Tomohiro Hajima, Manabu Abe, Kaoru Tachiiri, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)</i>	
FR2-L8.5: A MICRO-TOPOGRAPHY CONSIDERED MONTE CARLO RAY-TRACING SOLUTION FOR OPEN FOREST BRF ESTIMATION	5652
<i>Shengye Jin, Junichi Susaki, Kyoto University</i>	
FR3-L8: TOPOGRAPHY	
FR3-L8.1: UPDATES OF ‘AW3D30’ 30 M-MESH GLOBAL DIGITAL SURFACE MODEL DATASET	5656
<i>Takeo Tadono, Japan Aerospace Exploration Agency; Junichi Takaku, Fumi Ohgushi, Masanori Doutsu, Ken-ichiro Kobayashi, Remote Sensing Technology Center of Japan</i>	
FR3-L8.2: TOPOGRAPHIC CORRECTION USING BRIGHTNESS NORMALIZATION APPROACH FROM HYPERSPECTRAL REMOTE SENSING IMAGES	5658
<i>Mahendra Pal, Alok Porwal, Indian Institute of Technology Bombay</i>	
FR3-L8.3: ELEVATION MEASUREMENT FROM SINGLE-PASS SAR IMAGES	5662
<i>Shota Hishinuma, Koichi Ito, Takafumi Aoki, Tohoku University; Jyunpei Uemoto, Seiho Uratsuka, National Institute of Information and Communications Technology</i>	
FR3-L8.4: QUALITY UPDATES OF ‘AW3D’ GLOBAL DSM GENERATED FROM ALOS PRISM	5666
<i>Junichi Takaku, Remote Sensing Technology Center of Japan; Takeo Tadono, Japan Aerospace Exploration Agency</i>	
FR3-L8.5: ACCURACY ASSESSMENT OF DIFFERENT DIGITAL ELEVATION MODELS AVAILABLE FOR FILDES PENINSULA	5670
<i>Guido Staub, Carlos Vargas, University of Concepción</i>	

FR4-L8: TOPOGRAPHY, GEOLOGY AND GEOMORPHOLOGY I

FR4-L8.1: DIGITAL FIELD BOOK FOR GEOSCIENCES 5674

Jóice Cagliari, Mauricio R. Veronez, Farlei Heinen, Luiz Gonzaga Jr., Francisco M. W. Tognoli, Débora P. Gallon, Fernando P. Marson, Vale do Rio dos Sinos University

FR4-L8.2: CARBON SINK ESTIMATION OF SURFACE CARBONATE KARSTIFICATION IN 5678 GLOBAL KARST AREA

Guoqing Zhou, Bin Jia, Guoqing Gao, Zhiliang Wu, Yajun Fan, Pengyun Chen, Wei Huang, Guilin University of Technology; Jingjin Huang, Rongting Zhang, Tianjin University

FR4-L8.3: EVIDENCE OF ROOF COLLAPSE DETECTED ON SOUTH AFRICAN COAL MINES 5682 USING SENTINEL-1 INTERFEROMETRY

Jeanine Engelbrecht, Andre Theron, Shelley Haupt, Council for Scientific and Industrial Research

FR4-L8.4: RESEARCH ON FUSION STRATEGY OF ASCENDING AND DESCENDING 5685 MULTI-BASELINE MULTI-FREQUENCY INSAR RESULTS TO GENERATE HIGH QUALITY DEM

Qiming Zeng, Xiaojie Zhang, Jian Jiao, Peking University

FR4-L8.5: TOPOGRAPHICAL CHANGES CAUSED BY THE 2016 CENTRAL ITALY EARTHQUAKE 5689 SERIES

Cristian Rossi, Gerald Baier, Paola Rizzoli, José-Luis Bueso-Bello, German Aerospace Center (DLR)

FR1-L9: FLOODING

FR1-L9.1: INUNDATION EXTENT MONITORING WITH SMAP DATA FOR CARBON STUDIES 5693

Seungbum Kim, Jet Propulsion Laboratory; Brian Brisco, CCRS; Valentin Poncos, Kepler

FR1-L9.2: AUTOMATIC SAR-BASED FLOOD DETECTION USING HIERARCHICAL 5697 TILE-RANKING THRESHOLDING AND FUZZY LOGIC

Wenxi Cao, Sandro Martinis, Simon Plank, German Aerospace Center (DLR)

FR1-L9.3: DETECTION OF FLOODED URBAN AREAS USING SAR: AN APPROACH BASED ON 5701 THE COHERENCE OF STABLE SCATTERERS

Luca Pulvirenti, CIMA Research Foundation; Marco Chini, Luxembourg Institute of Science and Technology; Nazzareno Pierdicca, Sapienza University of Rome; Giorgio Boni, CIMA Research Foundation

FR1-L9.4: COMBINING POLARIMETRIC SENTINEL-1 AND ALOS-2/PALSAR-2 IMAGERY FOR 5705 MAPPING OF FLOODED VEGETATION

Simon Plank, Martin Jüssi, Sandro Martinis, André Twele, German Aerospace Center (DLR)

FR1-L9.5: MANGROVE FOREST MAPPING USING SHORTWAVE INFRARED REFLECTANCE 5709 AND IMAGE SUBSET TECHNIQUES USING PROXIMITY MEASURE

Mehwish Ghulam Zuhra, Junichi Susaki, Masayuki Tamura, Kyoto University

FR2-L9: INLAND WATERS AND VEGETATION

FR2-L9.1: CLASSIFICATION OF PEATLAND VEGETATION TYPES USING IN SITU 5713 HYPERSPECTRAL MEASUREMENTS

Thierry Erudel, Sophie Fabre, Xavier Briottet, Thomas Houet, ONERA

FR2-L9.2: MANGROVE MAPPING AND CHANGE DETECTION USING SATELLITE IMAGERY 5717

Ping Chen, Soo Chin Liew, Leong Keong Kwoh, National University of Singapore

FR2-L9.3: STUDY ON THE RELATIONSHIP BETWEEN POLARIMETRIC PARAMETERS AND 5721 VEGETATION BIOMASS AND ITS USE IN WETLAND VEGETATION BIOMASS INVERSION

Guozhuang Shen, Jingjuan Liao, Tao Xu, Zhongchang Sun, RADI, CAS

FR2-L9.4: RAINFALL-RUNOFF SIMULATION USING GEOSTATIONARY SATELLITE RAIN RATE IN A SMALL MOUNTAINOUS WATERSHED	5725
<i>Jongpil Kim, Hyewon Yun, Dalgeun Lee, Jinyoung Kim, Youngjin Park, National Disaster Management Research Institute</i>	
FR2-L9.5: INLAND WATER LEVEL RETRIEVAL OVER WESTERN AFRICA WITH RADAR ALTIMETERS	5729
<i>Qi Gao, Maria José Escorihuela, Albert Garcia-Mondejar, Bernat Martinez Val, isardSAT; Mehrez Zribi, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Pere Quintana-Segui, Observatori de l'Ebre</i>	
FR3-L9: LIVING ENVIRONMENT I	
FR3-L9.1: QUANTIFYING THE CONTRIBUTIONS OF ENVIRONMENTAL PARAMETERS TO SATELLITE-RETRIEVED SURFACE NET LONGWAVE RADIATION ERROR: AN EXAMINATION ON CERES DATASET IN CHINA	5732
<i>Xin Pan, Hohai University; Yuanbo Liu, Xingwang Fan, Guojing Gan, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences; Yingbao Yang, Yuehong Chen, Hohai University</i>	
FR3-L9.3: DESERTIFICATION ASSESSMENT AND TREND ANALYSIS USING MODIS DATA.....	5739
<i>Yuwei Guan, Binbin He, Xing Li, Changming Yin, Shi Qiu, University of Electronic Science and Technology of China</i>	
FR3-L9.4: URBAN VEGETATION PHENOLOGY ANALYSIS AND THE RESPONSE TO THE TEMPERATURE CHANGE	5743
<i>Li Feng, Song Guo, Hohai University; Liujuan Zhu, Monash University; Xiuqin Fang, Yanan Zhou, Hohai University</i>	
FR3-L9.5: POTENTIAL AND PROSPECTIVE SEASONAL DISTRIBUTION OF HOTSPOT HABITAT OF ALBACORE TUNA (THUNNUS ALALUNGA) IN THE SOUTH INDIAN OCEAN USING THE SATELLITE DATA	5747
<i>Ming An Lee, National Taiwan Ocean University; Ali Haghi Vayghan, Gorgan University of Agricultural Science and Natural Resources, Gorgan, Iran; De-Cheng Liu, Wan-Chen Yang, National Taiwan Ocean University</i>	
FR4-L9: LIVING ENVIRONMENT II	
FR4-L9.1: MULTIFREQUENCY RADAR IMAGERY AND CHARACTERIZATION OF HAZARDOUS AND NOXIOUS SUBSTANCES AT SEA	5751
<i>Sébastien Angelliaume, ONERA; Brent Minchew, British Antarctic Survey; Sophie Chataing, CEDRE; Philippe Martineau, Olivier Boisot, ONERA; Véronique Miegbielle, TOTAL</i>	
FR4-L9.2: OBSERVATION PARAMETERS DESIGN OF MOON-BASED EARTH OBSERVATION SENSORS FOR MONITORING THREE-POLAR REGIONS	5755
<i>Hanlin Ye, Huadong Guo, Guang Liu, Chinese Academy of Sciences</i>	
FR4-L9.3: SPATIAL-TEMPORAL PATTERNS OF VEGETATION DAMAGE AND RECOVERY AFTER THE WENCHUAN EARTHQUAKE	5759
<i>Bingwei Tian, Sichuan University; Ling Wang, Sichuan Normal University</i>	
FR4-L9.4: IMPLEMENTATION OF VALID AND STABLE ALGORITHM OF QL1-NMF FOR ANALYZING ENVIRONMENTAL ELF MAGNETIC SIGNALS	5763
<i>Motoaki Mouri, Aichi University; Ichi Takumi, Nagoya Institute of Technology; Hiroshi Yasukawa, Aichi Prefectural University</i>	
FR4-L9.5: BUILDING HEIGHT EXTRACTION FROM OVERLAPPING AIRBORNE IMAGES IN URBAN ENVIRONMENT USING COMPUTER VISION APPROACH	5767
<i>Shiming Li, Qingwang Liu, Zengyuan Li, Erxue Chen, Chinese Academy of Forestry; Jianbing Zhang, China University of Petroleum - Beijing</i>	

FR1-L10: BIOMASS AND MONITORING

FR1-L10.1: MODELING OF FOREST ABOVE-GROUND BIOMASS DYNAMICS USING 5770 MULTI-SOURCE DATA AND INCORPORATED MODELS: A CASE STUDY OVER THE QILIAN MOUNTAINS

Xin Tian, Zengyuan Li, Erxue Chen, Min Yan, Zongtao Han, Qingwang Liu, Chinese Academy of Forestry

FR1-L10.2: COMPARISON OF THREE MODELING METHODS FOR ESTIMATING FOREST 5774 BIOMASS USING TM, GLAS AND FIELD MEASUREMENT DATA

Kaili Liu, State Key Laboratory of Remote Sensing Science, Research Center for Remote Sensing and GIS, and Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University.; Jindi Wang, State Key Laboratory of Remote Sensing Science, Research Center for Remote Sensing and GIS, and Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University.; Weisheng Zeng, Academy of Forest Inventory and Planning, State Forestry Administration; Jinling Song, State Key Laboratory of Remote Sensing Science, Research Center for Remote Sensing and GIS, and Institute of Remote Sensing Science and Engineering, Faculty of Geographical Science, Beijing Normal University

FR1-L10.3: GNSSBIO: FOREST BIOMASS RETRIEVAL BASED ON GNSS GROUND 5778 RECEIVER

Antonio Mollfulleda, Francisco Martín, Starlab Limited; Simonetta Paloscia, Emanuele Santi, IFAC; Leila Guerriero, Tor Vergatta University of Rome; Nazzareno Pierdicca, La Sapienza University of Rome; Nicolas Floury, European Space Agency (ESA)

FR1-L10.4: IMPORTANCE OF GRASSLANDS MONITORING APPLYING OPTICAL AND RADAR 5782 SATELLITE DATA IN PERSPECTIVE OF CHANGING CLIMATE

Katarzyna Dabrowska-Zielinska, Maria Budzinska, Martyna Gatkowska, Wanda Kowalik, Maciej Bartold, Wojciech Kiryla, Institute of Geodesy and Cartography

FR1-L10.5: INTEGRATION OF SPACEBORNE LIDAR DATA TO IMPROVE THE FOREST 5786 BIOMASS MAP IN MADAGASCAR

Mohammad El Hajj, Nicolas Baghdadi, Ibrahim Fayad, IRSTEA; Ghislain Vieilledent, CIRAD, JRC; Jean-Stéphane Bailly, AgroParisTech; Dinh Ho Tong Minh, IRSTEA

FR2-L10: REMOTE SENSING OF FORESTS

FR2-L10.1: ESTIMATING CLUMPING INDEX OF WOODY CANOPY WITH TERRESTRIAL 5790 LIDAR DATA

Shihua Li, Zuqin Liang, Sen Lin, University of Electronic Science and Technology of China; Adu Gong, Jianwei Yue, Beijing Normal University

FR2-L10.2: CONSTRUCTION OF TREE GROWTH MODEL BASED CUSP CATASTROPHE 5794 THEORY MODEL

Wei Li, China Railway First Survey and Design Institute Group Ltd.; Kaixin Yang, Peking University; Haiying Mao, Specialized Forces College of CAPF; Fei Li, Peking University; Ruohan Yang, China Railway First Survey and Design Institute Group Ltd.

FR2-L10.3: DETECTION AND VALIDATION OF FOREST DISTURBANCES USING RADARSAT 2 5798 DATA

Gordon Staples, Graham Green, Ji Chen, Shane Gravelle, MDA; David G. Goodenough, University of Victoria

FR2-L10.4: LEAST SQUARE FITTING OF POLLOCK MODEL FOR TREE DETECTION AND 5802 CROWN DELINEATION

Chao-Cheng Wu, Hsuan-Tsung Chang, Shao-An Tsai, Taipei Tech; Chinsu Lin, National Chiayi University

FR2-L10.5: A GRADIENT VECTOR FLOW SNAKE BASED MULTI-LEVEL MORPHOLOGICAL 5806 ACTIVE CONTOUR ALGORITHM

Chao-Cheng Wu, You-Lun Wu, Chung-Yu Wu, Taipei Tech; Chinsu Lin, National Chiayi University

FR3-L10: MONITORING FORESTS II

FR3-L10.1: A FAST ITERATIVE FEATURES SELECTION FOR THE K-NEAREST NEIGHBOR..... 5810

Zongtao Han, Chinese Academy of Forestry; Wei Wang, State Forestry Administration of the Peoples's Republic of China; Zengyuan Li, Erxue Chen, Chinese Academy of Forestry; Qiuping Wang, Weihai's Marine Environmental Monitoring Center; Hong Jiang, Fuzhou University; Xin Tian, Chinese Academy of Forestry

FR3-L10.2: ESTIMATING THE THREE DIMENSIONAL STRUCTURE OF THE HARVARD FOREST USING A DATABASE DRIVEN MULTI-MODAL REMOTE SENSING TECHNIQUE 5814

Michael Benson, Leland Pierce, Kamal Sarabandi, University of Michigan

FR3-L10.3: MEASUREMENTS OF FOREST BIOMASS CHANGE USING L- AND P-BAND SAR BACKSCATTER 5818

Ivan Huuva, Johan Fransson, Henrik Persson, Jörgen Wallerman, Swedish University of Agricultural Sciences; Lars Ulander, Erik Blomberg, Maciej Soja, Chalmers University of Technology

FR3-L10.4: GROSS PRIMARY PRODUCTIVITY IN THE NORTHERN REGION OF PARA STATE, BRAZILIAN AMAZON, FROM MOD17 DATA 5822

Gabriel de Oliveira, Nathaniel A. Brunsell, University of Kansas; Elisabete C. Moares, Yosio E. Shimabukuro, Gabriel Bertani, National Institute for Space Research; Thiago V. dos Santos, University of Minnesota; Luiz E. O. C. Aragao, National Institute for Space Research

FR3-L10.5: OXYGEN TRANSMITTANCE CORRECTION FOR SOLAR-INDUCED CHLOROPHYLL FLUORESCENCE MEASURED ON PROXIMAL SENSING: APPLICATION TO THE NASA-GSFC FUSION TOWER 5826

Neus Sabater, University of Valencia; Elizabeth M. Middleton, NASA Goddard Space Flight Center (GSFC); Zbynek Malenovsky, Universities Space Research Association- GESTAR, NASA-GSFC; Luis Alonso, Jochem Verrelst, University of Valencia; Karl Fred Huemmrich, Petya K.E. Campbell, University of Maryland, Baltimore County; William P. Kustas, USDA-ARS Agriculture Research Service; Jorge Vicent, Shari Van Wittenberghe, Jose Moreno, University of Valencia

FR4-L10: AGRICULTURE APPLICATIONS VI

FR4-L10.1: ANALYSIS OF METHANE EMISSIONS FROM PADDY RICE USING BAYESIAN ASSIMILATION 5830

Longfei Tan, Ling Tong, Yan Chen, University of Electronic Science and Technology of China; Yalin Zhu, Chongdi Duan, Xi'an Institute of Space Radio Technology, China Aerospace Science and Technology Corporation

FR4-L10.2: SUGARCANE BIOMASS ESTIMATE BASED ON SAR IMAGERY: A RADAR SYSTEMS COMPARISON 5834

Giovanni Laneve, Pablo Marzialetti, Roberto Luciani, Lorenzo Fusilli, University of Rome 'La Sapienza'; Betty Mulianga, Kenya Agricultural and Livestock Research Organization

FR4-L10.3: LEAF DEVELOPMENT INDEX ESTIMATION USING UAV IMAGERY FOR FIGHTING APPLE SCAB 5838

Abdallah Zeggada, University of Trento; Alessandro Stella, Gennaro Caliendo, Metacortex; Farid Melgani, University of Trento; Maurizio Barazzuol, Metacortex; Nicola La Porta, Fondazione Edmund Mach; Rino Goller, Metacortex

FR4-L10.4: SENTINEL-2 FOR AGRICULTURE NATIONAL DEMONSTRATION IN UKRAINE: RESULTS AND FURTHER STEPS 5842

Nataliia Kussul, Andrii Kolotii, Space Research Institute NASU-SSAU; Andrii Shelestov, Mykola Lavreniuk, National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute"; Nicolas Bellemans, Sophie Bontemps, Pierre Defourny, Université catholique de Louvain; Benjamin Koetz, European Space Agency (ESA)

FR4-L10.5: USING COMPACT POLARIMETRIC PARAMETERS FOR RAPE (BRASSICA NAPUS L.) LAI INVERSION 5846

Wangfei Zhang, Southwest Forestry University; Erxue Chen, Zengyuan Li, Lei Zhao, Chinese Academy of Forestry; Yongjie Ji, Yahong Zhang, Southwest Forestry University

FR1-L11: TOMOGRAPHY AND 3D MAPPING I

FR1-L11.1: A CASE STUDY ON THE USE OF DIFFERENTIAL SAR TOMOGRAPHY FOR MEASURING DEFORMATION IN LAYOVER AREAS IN RUGGED ALPINE TERRAIN 5850

Muhammad Adnan Siddique, Swiss Federal Institute of Technology, ETH Zurich; Irena Hajnsek, Swiss Federal Institute of Technology, ETH Zurich / German Aerospace Center - DLR; Othmar Frey, Swiss Federal Institute of Technology, ETH Zurich / Gamma Remote Sensing AG

FR1-L11.2: REGULARIZATION AND COMPLETION OF TOMOSAR POINT CLOUDS IN A PROJECTED HEIGHT MAP DOMAIN 5854

Andreas Ley, Olivier D'Hondt, Olaf Hellwich, Technische Universität Berlin

FR1-L11.3: HIGH LATITUDE MULTI-TEMPORAL DIGITAL SURFACE MODELS FROM SENTINEL-2 DATA: A PROOF OF CONCEPT 5858

Julien Michel, Myriam Cournet, Jean-Marc Delvit, Florie Languille, Angélique Gaudel-Vacaresse, CNES; David Youssefi, Christophe Palmann, CS-SI; Vincent Poulain, Thales Services

FR1-L11.4: P-BAND SAR TOMOGRAPHY FOR THE CHARACTERIZATION OF TROPICAL FORESTS 5862

Dinh Ho Tong Minh, IRSTEA; Ludovic Villard, Centre d'Etudes Spatiales de la Biosphère (CESBIO); Laurent Ferro-Famil, University of Rennes 1; Stefano Tebaldini, POLIMI; Thuy Le Toan, Centre d'Etudes Spatiales de la Biosphère (CESBIO)

FR1-L11.5: IONOSPHERE VERTICAL PROFILING FROM BIOMASS MULTI-SQUINT INSAR 5866

Stefano Tebaldini, Mauro Mariotti d'Alessandro, Politecnico di Milano; Jun Su Kim, Konstantinos Papathanassiou, German Aerospace Center (DLR)

FR2-L11: OPTICAL AND LIDAR DATA FOR URBAN APPLICATIONS

FR2-L11.1: COMPARISONS OF IMPERVIOUS SURFACE MAPPING USING MULTIPLE INDICES FROM TM, ETM+ AND OLI-TIRS 5870

Ranran Shang, Shandong University of Science and Technology; Zhongchang Sun, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Junyi Xu, Shandong University of Science and Technology; Guozhuang Shen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

FR2-L11.2: ANALYZING THE URBAN HEAT ISLAND USING TIME SERIES LAND SURFACE TEMPERATURE (LST) DATA 5874

Weimin Wang, Hong Liang, Lijun Yang, Shenzhen Environmental Monitoring Center; Kai Liu, Institute of Geographical Sciences and Natural Resource Research, Chinese Academy of Sciences; Hongbo Su, Florida Atlantic University; Xueke Li, University of Connecticut

FR2-L11.3: EXTRACTION OF BUILT-UP AREAS IN CHINESE SILK ROAD ECONOMIC BELT BASED ON DMSP-OLS DATA 5877

Xiaolong Ma, Chinese Academy of Surveying and Mapping; Xiaohua Tong, Sicong Liu, Tongji University; Zhaoting Ma, Chinese Academy of Surveying and Mapping

FR2-L11.4: USING GRADIENTS AND TENSOR VOTING IN 3D LOCAL GEOMETRIC DESCRIPTORS FOR FEATURE DETECTION IN AIRBORNE LIDAR POINT CLOUDS IN URBAN REGIONS 5881

Jaya Sreevalsan-Nair, Akshay Jindal, International Institute of Information Technology Bangalore

FR2-L11.5: ATMOSPHERIC CORRECTION OF GROUND-BASED THERMAL INFRARED CAMERA THROUGH DART MODEL 5885

Tiangang Yin, Singapore-MIT alliance for research and technology; Simone Kotthaus, University of Reading; Jean-Philippe Gastellu-Etchegorry, University of Toulouse; William Morrison, University of Reading; Leslie Norford, Massachusetts Institute of Technology; Sue Grimmond, University of Reading; Nicolas Lauret, University of Toulouse; Nektarios Chrysoulakis, Foundation for Research and Technology; Ahmad Al Bitar, Lucas Landier, University of Toulouse

FR3-L11: UAV AND AIRBORNE PLATFORMS I

FR3-L11.1: FROM FLOOD TO DROUGHT: UTILIZING SAR TO ASSESS THE STATUS OF 5889 LEVEES AND AQUEDUCTS

Cathleen Jones, David Bekaert, Jet Propulsion Laboratory, California Institute of Technology; Karen An, University of California, Los Angeles

FR3-L11.2: UAVSAR PROGRAM: RECENT UPGRADES TO SUPPORT VEGETATION 5893 STRUCTURE STUDIES AND LAND ICE TOPOGRAPHY MAPPING

Yunling Lou, Scott Hensley, Brian Hawkins, Cathleen Jones, Marco Lavallo, Thierry Michel, Jet Propulsion Laboratory; Delwyn Moller, Remote Sensing Solutions; Ronald Muellerschoen, Naiara Pinto, Xiaoqing Wu, Yang Zheng, Jet Propulsion Laboratory

FR3-L11.3: PROGRESSING THE SOUTH AFRICAN SAR TECHNOLOGY BASE THROUGH 5896 THE DEVELOPMENT OF A DUAL-BAND, FULLY POLARISED, AIRBORNE SAR SENSOR

Josias Jacobus de Witt, Kevin Hugh Kloke, Willem Andries Jacobus Nel, Johanna Mathilde Steyn, Council for Scientific and Industrial Research

FR3-L11.4: RADAR ECHO SOUNDING OF RUSSELL GLACIER AT 35 MHZ USING COMPACT 5900 RADAR SYSTEMS ON SMALL UNMANNED AERIAL VEHICLES

Shawn Keshmiri, Emily Arnold, Aaron Blevins, Mark Ewing, Richard Hale, Carl Leuschen, Jonathan Lyle, Mahmood Ali, John Paden, Fernando Rodriguez, University of Kansas; Stephen Yan, University of Alabama

FR3-L11.5: ACCURACY ANALYSIS OF UAV REMOTE SENSING IMAGERY MOSAICKING 5904 BASED ON STRUCTURE-FROM-MOTION

Haojie Pei, Peng Wan, School of Surveying and Land Information Engineering, Henan Polytechnic University; Changchun Li, Henan Polytechnic University; Haikuan Feng, Guijun Yang, Bo Xu, Beijing Research Center for Information Technology In Agriculture; Qinglin Niu, School of Surveying and Land Information Engineering, Henan Polytechnic University

FR4-L11: UAV AND AIRBORNE PLATFORMS II

FR4-L11.1: MINI-UAV BORNE HYPERSPECTRAL REMOTE SENSING: A REVIEW 5908

Yanfei Zhong, Xinyu Wang, Yao Xu, Tianyi Jia, Song Cui, Wuhan University; Lifei Wei, Hubei University; Ailong Ma, Liangpei Zhang, Wuhan University

FR4-L11.3: SNPP VIIRS RSB EARTH VIEW REFLECTANCE UNCERTAINTY 5916

Ning Lei, Kevin Twedt, Jeffrey McIntire, Science Systems and Applications, Inc; Xiaoxiong Xiong, NASA Goddard Space Flight Center

FR4-L11.4: TIME SERIES ANALYSIS OF VEGETATION PHENOLOGY AND CLOUD COVER 5920 CONDITIONS AFFECTING AIRBORNE REMOTE SENSING OPERATIONS AND DATA PRODUCTS FROM THE NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON)

John Musinsky, Mitch Haynes, Tristan Goulden, Battelle Ecology, Inc.

FR4-L11.5: CLASSIFYING COMMON WETLAND PLANTS USING HYPERSPECTRAL DATA TO 5924 IDENTIFY OPTIMAL SPECTRAL BANDS FOR SPECIES MAPPING USING A SMALL UNMANNED AERIAL SYSTEMS– A CASE STUDY

Sathishkumar Samiappan, Gray Turnage, Lee Hathcock, Haibo Yao, Russel Kincaid, Robert Moorhead, Steve Ashby, Mississippi State University

FR1-L12: EARTH REMOTE SENSING WITH SMALL SATELLITES: ENABLING TIME RESOLVED OBSERVATIONS OF EARTH’S ATMOSPHERE FROM SPACE

FR1-L12.1: ALL-WEATHER TROPOSPHERIC 3D WIND FROM MICROWAVE SOUNDERS 5928

Bjorn Lambrigtsen, Joseph Turk, Hui Su, Jet Propulsion Laboratory, California Institute of Technology

FR1-L12.2: GLOBAL MEASUREMENT OF TEMPORAL SIGNATURES OF PRECIPITATION: 5931	
DEVELOPMENT OF THE TEMPORAL EXPERIMENT FOR STORMS AND TROPICAL SYSTEMS TECHNOLOGY DEMONSTRATION MISSION	
<i>Steven C. Reising, Colorado State University; Todd C. Gaier, NASA Jet Propulsion Laboratory; Christian D. Kummerow, Colorado State University; Sharmila Padmanabhan, Boon H. Lim, Cate Heneghan, NASA Jet Propulsion Laboratory; Wesley Berg, Venkatachalam Chandrasekar, Jonathan P. Olson, Colorado State University; Shannon T. Brown, NASA Jet Propulsion Laboratory; John Carvo, Matthew Pallas, Blue Canyon Technologies</i>	
FR1-L12.3: AN OVERVIEW OF THE NASA TROPICS EARTH VENTURE MISSION..... 5934	
<i>William Blackwell, Massachusetts Institute of Technology Lincoln Laboratory</i>	
FR1-L12.4: DEMONSTRATING THE IMPACT OF RAPID REPEAT PASSIVE MICROWAVE 5938	
OBSERVATIONS FROM THE GLOBAL HAWK: IMPLICATIONS FOR FUTURE SMALL-SAT OR GEO MISSIONS	
<i>Shannon T. Brown, Bjorn Lambrigtsen, Boon H. Lim, Todd C. Gaier, Jet Propulsion Laboratory</i>	
FR1-L12.5: DEVELOPMENT OF THE CUBESAT RADIOMETER RADIO FREQUENCY 5942	
INTERFERENCE TECHNOLOGY VALIDATION (CUBERRT) SYSTEM	
<i>Christopher Ball, Chi-Chih Chen, Andrew O'Brien, Graeme Smith, Christa McKelvey, Mark Andrews, J. Landon Garry, Joel Johnson, The Ohio State University; Sidharth Misra, Shannon T. Brown, Robert Jarnot, Jet Propulsion Laboratory; Jonathon Kocz, California Institute of Technology; Damon Bradley, Priscilla Mohammed, Jared Lucey, Kevin Horgan, Quenton Bonds, Carlos Duran-Aviles, Michael Solly, Jeffrey R. Piepmeier, Goddard Space Flight Center; Matthew Pallas, Ervin Krauss, Blue Canyon Technologies</i>	
FR2-L12: AEROSOLS AND ATMOSPHERIC CHEMISTRY I	
FR2-L12.1: RESPONSE OF THE CLIMATE SYSTEM TO ANTHROPOGENIC AEROSOLS..... 5946	
<i>Makiko Nakata, Itaru Sano, Kindai University; Sonoyo Mukai, Kyoto College of Graduate Studies for Informatics</i>	
FR2-L12.2: METHANE AND CARBON MONOXIDE EMISSIONS ASSOCIATED WITH ALISO 5950	
CANYON GROUND STORAGE BLOWOUT	
<i>Ramesh Singh, Chapman University; Sudipta Sarkar, NASA Goddard Space Flight Center</i>	
FR2-L12.3: DESIGN OF A SMART GAS DETECTION SYSTEM IN AREAS OF NATURAL GAS 5954	
STORAGE	
<i>Ana Maria Carmen Ilie, Carmela Vaccaro, University of Ferrara</i>	
FR2-L12.4: REGIONAL AND SEASONAL EFFECTS ON BIOMASS BURNING AEROSOLS..... 5958	
<i>Sonoyo Mukai, The Kyoto College of Graduate Studies for Informatics; Makiko Nakata, Itaru Sano, Masayoshi Yasumoto, Kindai University; Toshiyuki Fujito, The Kyoto College of Graduate Studies for Informatics</i>	
FR2-L12.5: AEROSOL OPTICAL AND PHYSICAL PROPERTIES OVER BEIJING 5962	
<i>Lu She, Yong Xue, Jie Guang, Linlu Mei, Yahui Che, Ying Li, Chen Fan, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</i>	
FR3-L12: DFW AND OTHER SMALL WEATHER RADAR NETWORKS I	
FR3-L12.1: OSAKA URBAN PHASED ARRAY RADAR NETWORK EXPERIMENT 5966	
<i>Tomoo Ushio, Shigeharu Shimamura, Hiroshi Kikuchi, Osaka University; Fumihiko Mizutani, Kenichi Naito, Takahiro Watanabe, Masakazu Wada, Toshiba; Nobuhiro Takahashi, NICT</i>	
FR3-L12.2: EVALUATION OF THE RAINFALL NOWCASTING SYSTEM FOR A DENSE RADAR 5969	
NETWORK OVER DALLAS-FORT WORTH (DFW)	
<i>Haonan Chen, Venkatachalam Chandrasekar, Colorado State University</i>	

FR3-L12.3: TRACKING TORNADOS DOWN STREETS: USING CASA RADARS IN REAL TIME	5973
SEVERE WEATHER WARNING OPERATIONS IN NORTH CENTRAL TEXAS	
<i>Brenda Philips, University of Massachusetts Amherst; Ted Ryan, National Weather Service Forecast Office Fort Worth/Dallas; Venkatachalam Chandrasekar, Colorado State University; Eric Lyons, University of Massachusetts Amherst; Tom Bradshaw, Mark Fox, National Weather Service Forecast Office Fort Worth/Dallas; Francesc Junyent, Colorado State University; Apoorva Bajaj, University of Massachusetts Amherst</i>	
FR3-L12.4: EFFICIENT DATA PROCESSING WITH EXOGENI FOR THE CASA DFW URBAN	5977
TESTBED	
<i>Eric Lyons, Michael Zink, Brenda Philips, University of Massachusetts Amherst</i>	
FR3-L12.5: MULTI-DOPPLER PROCESSING FOR ACCURATE ESTIMATION OF UPDRAFT AT	5981
LOW ALTITUDES	
<i>Eiichi Yoshikawa, Japan Aerospace Exploration Agency; Tomoo Ushio, Osaka University; Venkatachalam Chandrasekar, Colorado State University</i>	
 FR4-L12: DFW AND OTHER SMALL WEATHER RADAR NETWORKS II	
FR4-L12.1: POLARIMETRIC OBSERVATIONS BY A PHASE-TILT WEATHER RADAR IN THE	5983
DFW NETWORK	
<i>Krzysztof Orzel, Stephen Frasier, University of Massachusetts</i>	
FR4-L12.2: EXAMPLES OF GROUND-BASED HAIL, RAIN, AND WIND SENSOR NETWORKS	5987
OPERATING IN REAL-TIME	
<i>Elena Willmot, Shane Bussmann, Nicole Homeier, Alex Kubicek, Understory, Inc.</i>	
FR4-L12.3: HIGH RESOLUTION QUANTITATIVE PRECIPITATION ESTIMATION DERIVED	5990
FROM MEASUREMENT OF S-BAND DUAL-POLARIZATION RADAR NETWORK OVER SOUTHERN CHINA	
<i>Sheng Chen, Sun Yat-sen University; Haonan Chen, Venkatachalam Chandrasekar, Colorado State University; Junjun Hu, NOAA/ National Severe Storms Laboratory; Asi Zhang, Wenping Yuan, Sun Yat-sen University</i>	
FR4-L12.4: PERFORMANCE ANALYSES OF XY-A SOLID-STATE WEATHER RADAR	5994
<i>Rui Li, Jianxin He, Zhao Shi, Chengdu University of Information Technology; Xingang Fan, Western Kentucky University; Shunxian Tang, Xuehua Li, Chengdu University of Information Technology</i>	
FR4-L12.5: OPERATIONAL AND RESEARCH RADAR NETWORKS IN KOREA.....	5998
<i>Sanghun Lim, Korea Institute of Civil Engineering and Building Technology; Venkatachalam Chandrasekar, Colorado State University; Bong-Joo Jang, Hyunjung Kim, Korea Institute of Civil Engineering and Building Technology; Gyuwon Lee, Kyungpook National University</i>	
 FRP1-PA: SYNTHETIC APERTURE RADAR INSTRUMENTATION AND CALIBRATION	
FRP1-PA.1: INTERPRETATION OF RELATIVE SEA LEVEL VARIATIONS AT TIDE GAUGES	6000
USING RESULTS FROM FOUR ESTONIAN PRECISE LEVELLINGS AND LAND UPLIFT MODELS	
<i>Ülo Suursaar, University of Tartu; Tarmo Kall, Estonian University of Life Sciences</i>	
FRP1-PA.2: DATA ACQUISITION FOR A NOVEL SPACEBORNE AZIMUTH-RANGE SWEEP	6004
SYNTHETIC APERTURE RADAR	
<i>Yan Wang, Jian Yang, Tsinghua University; Jing-wen Li, Beihang University</i>	
FRP1-PA.5: NOVEL CHIRP PHASE ERROR COMPENSATION ALGORITHM USING	6012
POLYNOMIAL CHIRP MODELING FOR HIGH RESOLUTION SYNTHETIC APERTURE RADAR	
<i>Heein Yang, Yuta Izumi, Agus Hendra, Josaphat Tetuko Sri Sumantyo, Chiba University</i>	

FRP1-PB: TOMOGRAPHY AND 3D MAPPING II

- FRP1-PB.1: ONBOARD ORTHO-RECTIFICATION FOR REMOTELY SENSED IMAGES 6016**
Guoqing Zhou, Yajun Fan, Guilin University of Technology; Rongting Zhang, Tianjin University; Na Liu, Guilin University of Technology; Jingjin Huang, Tianjin University; Xiang Zhou, Guilin University of Technology
- FRP1-PB.2: NON-LINEAR LEAST SQUARES ALGORITHM FOR DETECTION OF SIMPLE AND 6020**
DOUBLE PERSISTENT SCATTERERS
Cosmin Danisor, University Politehnica of Bucharest; Gianfranco Fornaro, National Research Council (CNR); Mihai Datcu, German Aerospace Center (DLR)
- FRP1-PB.3: SCATTERER DETECTION IN URBAN ENVIRONMENT USING PERSISTENT 6024**
SCATTERER INTERFEROMETRY AND SAR TOMOGRAPHY
Alessandra Budillon, University of Naples Parthenope; Michele Crosetto, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Giampaolo Ferraioli, University of Naples Parthenope; Angel Caroline Johnsy, University of Naples Parthenope; Oriol Monserrat, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Gilda Schirinzi, University of Naples Parthenope
- FRP1-PB.4: CROSS-TRACK STEREOVISION USING ASTER..... 6028**
Akira Iwasaki, Mario Rodriguez, The University of Tokyo
- FRP1-PB.5: ON THE ROLE OF NON-LOCAL FILTERING IN FOREST VERTICAL 6032**
STRUCTURE CHARACTERIZATION USING SAR TOMOGRAPHY
Hossein Aghababae, K.N. Toosi University of Technology; Alessandra Budillon, Giampaolo Ferraioli, Vito Pascazio, Gilda Schirinzi, Università 'di Napoli Parthenope
- FRP1-PB.6: AN EFFICIENTLY VOLUMETRIC FUSING METHOD FOR 6036**
STRUCTURE-FROM-MOTION AND TERRESTRIAL POINT CLOUD
Wei Li, Cheng Wang, Dawei Zai, Pengdi Huang, Weiquan Liu, Jonathan Li, Xiamen University
- FRP1-PB.7: QUALITY EVALUATION OF POINT CLOUD MODEL FOR INTERIOR 6040**
STRUCTURE OF A COMMON BUILDING
Gen Li, Yiping Chen, Chenglu Wen, Cheng Wang, Xiamen University; Jonathan Li, Xiamen University, University of Waterloo; Jinyong Chen, CETC

FRP1-PC: AEROSOLS AND ATMOSPHERIC CHEMISTRY II

- FRP1-PC.1: TEMPORAL AND SPATIAL VARIATIONS IN OZONE OVER ASIAN FREE 6044**
TROPOSPHERE
Yingjie Li, Jiangsu Normal University; Jane Liu, University of Toronto; Qingmiao Ma, Jiangsu Normal University; David Tarasick, Environment Canada; Mohammed Osman, Cooperative Institute for Mesoscale Meteorological Studies
- FRP1-PC.2: POOR AIR QUALITY AND DENSE HAZE/SMOG DURING 2016 IN THE 6048**
INDO-GANGETIC PLAINS ASSOCIATED WITH THE CROP RESIDUE BURNING AND DIWALI FESTIVAL
Akshansa Chauhan, Vidya College of Engineering; Ramesh Singh, School of Life and Environmental Sciences, Schmid College of Science and Technology, Chapman University
- FRP1-PC.3: A NEW ALGORITHM FOR HIGH TEMPORAL AND SPATIAL RESOLUTION 6052**
AEROSOL RETRIEVAL USING GAOFEN-4 AND LANDSAT-8 DATA
Weihong Han, Ling Tong, Yunping Chen, University of Electronic Science and Technology of China
- FRP1-PC.5: RETRIEVAL OF PM_{2.5} USING GROUND-BASED DATA IN BEIJING AREA..... 6059**
Guili Chen, Jie Guang, Yong Xue, Ying Li, Yahui Che, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Shaoqi Gong, Nanjing University of Information Science and Technology
- FRP1-PC.6: MONITORING AND VISUALIZING THE TRANSPORT OF ATMOSPHERIC 6063**
AEROSOLS USING SATELLITE AND GROUND BASED OBSERVATIONS
Kwon-Ho Lee, Gangneung-Wonju National University; Sang-Woo Kim, Seoul National University

FRP1-PD: GEOGRAPHIC INFORMATION SCIENCE II

FRP1-PD.1: AN IMPROVED METHOD FOR THE UNIQUE CODE OF SPATIAL ENTITY 6067 BASED ON GLOBAL SUBDIVISION GRID

Kun Qi, Yina Hu, Shuang Li, Weixin Zhai, Chengqi Cheng, Peking University

FRP1-PD.2: FILLING DEPRESSIONS BASED ON SUB-WATERSHEDS IN RASTER DIGITAL 6071 ELEVATION MODELS

Guiyun Zhou, Junjie Zhou, Youyou Li, University of Electronic Science and Technology of China

FRP1-PD.3: THE SHARING SERVICES OF MAP LOCATION BASED ON NETWORK API..... 6075

Pengfei Liu, Wei Zhang, Qian Wang, Jiaying Yang, Tianjin Normal University

FRP1-PD.4: INDOOR PEDESTRIAN TRAJECTORY TRACKING BASED ON ACTIVITY 6079 RECOGNITION

Sheng Guo, Hanjiang Xiong, Xianwei Zheng, Yan Zhou, Wuhan University

FRP1-PD.5: HIGH ACCURACY SURFACE MODELING METHOD COMBINED WITH 6083 AUXILIARY VARIABLES FOR SOIL MAPPING

Wenjiao Shi, Tianxiang Yue, Zong Wang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

FRP1-PD.6: THE PRELIMINARY RESULTS ABOUT POSITIONING ACCURACY OF GF-3 SAR 6087 SATELLITE SYSTEM

Jiayin Liu, Bing Han, Chibiao Ding, Dadi Meng, Fangfang Li, Institute of Electronics, Chinese Academy of Sciences

FRP1-PE: GEOGRAPHIC INFORMATION SCIENCE III

FRP1-PE.1: RESEARCH AND IMPLEMENTATION ON THE WEB3D VISUALIZATION OF 6094 DIGITAL MOON BASED ON WEBGL

Yi Lian, Long He, Tianjin Normal University; Jinsong Ping, The National Astronomical Observatories of the Chinese Academy of Sciences; Hu Zhang, Xiaoming Zeng, Chenglei Wang, Lei Chen, Tianjin Normal University

FRP1-PE.2: A VECTOR MAP OVERLAY ALGORITHM BASED ON DISTRIBUTED QUEUE..... 6098

Zhuojian Xiao, University of Chinese Academy of Sciences; Qiang Qiu, Jinyun Fang, Chinese Academy of Sciences; Shaolong Cui, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

FRP1-PE.3: A MEMORY COMPUTING BASED METHOD FOR VECTOR SPATIAL ANALYSIS 6102

Qiang Qiu, Institute of Computing Technology, Chinese Academy of Sciences; Zhuojian Xiao, Institute of Electronics, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Jinyun Fang, Institute of Computing Technology, Chinese Academy of Sciences

FRP1-PE.4: GEO-VISUAL ANALYTICS FOR HEALTHCARE CRITICAL INFRASTRUCTURE 6106 SIMULATION MODEL

Nivedita Nukavarapu, Surya Durbha, Indian Institute of Technology Bombay

FRP1-PE.5: COPYRIGHT PROTECTION OF VECTOR DATA USING VECTOR WATERMARK.....6110

Sangita Zope-Chaudhari, ACPCE; Parvatham Venkatachalam, Krishnamohan Buddhiraju, Indian Institute of Technology Bombay

FRP1-PE.6: RESEARCH ON THE STORAGE AND MANAGEMENT SYSTEM FOR LARGE6114 AMOUNT OF MULTI-SOURCES RASTER IMAGES BASED ON GIS

Lichun Yang, Yingyan Gu, Dan Yang, Jiangsu Automation Research Institute; Jinjun Zheng, University of Electronic Science and Technology of China

FRP1-PE.7: VALIDATION METHOD OF MODERATE RESOLUTION REMOTELY SENSED6118 LAND SURFACE TEMPERATURE USING LANDSAT-8 AND IN SITU MEASURED DATA ON HETEROGENEOUS SURFACE

Mingsong Li, Ji Zhou, Yong Wang, Yuanyuan Yang, University of Electronic Science and Technology of China

FRP1-PF: IMAGE AND DATA FUSION V

FRP1-PF.1: INTEGRATING MODIS AND MTSAT-2 TO GENERATE HIGH SPATIAL-TEMPORAL-SPECTRAL RESOLUTION IMAGERY FOR REAL-TIME AIR QUALITY MONITORING 6122

Yongquan Zhao, Bo Huang, The Chinese University of Hong Kong

FRP1-PF.2: FPGA-BASED N×N ADAPTIVE CHANNEL FOR ARRAY LIDAR IMAGER..... 6126

Guoqing Zhou, Pengyun Chen, Xiang Zhou, Lieping Zhang, Bin Jia, Guoqing Gao, Yajun Fan, Zhiliang Wu, Wei Huang, Guilin University of Technology; Jingjin Huang, Rongting Zhang, Tianjin University

FRP1-PF.3: DOES MULTISPECTRAL / HYPERSPECTRAL PANSHARPENING IMPROVE THE PERFORMANCE OF ANOMALY DETECTION ? 6130

Ying Qu, Hairong Qi, The University of Tennessee; Bulent Ayhan, Chiman Kwan, Applied Research LLC; Richard Kidd, Jet Propulsion Laboratory

FRP1-PF.4: A SPATIAL - SPECTRAL ADAPTIVE HAZE REMOVAL METHOD FOR REMOTE SENSING IMAGES 6134

Chi Zhang, Huiyang Li, Huanfeng Shen, Jie Li, Wuhan University

FRP1-PF.6: MULTI-BEAM DOPPLER BEAM SHARPENING APPROACH FOR AIRBORNE FORWARD-LOOKING RADAR IMAGING 6142

Yin Zhang, Deqing Mao, Yongchao Zhang, Yulin Huang, Jianyu Yang, University of Electronic Science and Technology of China

FRP1-PF.7: A WEIGHTED JOINT SPARSE OF THREE CHANNELS METHOD FOR FULL POL- SAR DATA CLASSIFICATION 6146

Peng Wang, Wenshuai Chen, Shuiping Gou, Xiangrong Zhang, Xidian University; Xiaofeng Li, GST at National Oceanic and Atmospheric Administration; Licheng Jiao, Xidian University

FRP1-PG: ESTIMATION AND REGRESSION III

FRP1-PG.1: CROP YIELD VARIATION TREND AND DISTRIBUTION PATTERN IN RECENT TEN YEARS 6150

Shanning Bao, Chunxiang Cao, Xiliang Ni, Min Xu, Hongrun Ju, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Qisheng He, Si Zhou, Hohai University

FRP1-PG.2: PREDICTION OF SORGHUM BIOMASS BASED ON IMAGE BASED FEATURES DERIVED FROM TIME SERIES OF UAV IMAGES 6154

Zhou Zhang, Ali Masjedi, Jieqiong Zhao, Melba Crawford, Purdue University

FRP1-PG.3: ESTIMATION OF PARAMETERS OF THE MOVING TARGET WITH MICRO MOTION IN GEOSAR 6158

Jindong Yu, Ze Yu, Chunsheng Li, Jingwen Li, Mingxuan Mei, Beihang University

FRP1-PG.4: SPECTRAL RESPONSE OF ROMAINE LETTUCE BY UPTAKE OF ZN 6162

Haein Shin, Jaehyung Yu, Ji Hye Shin, Yongsik Jeong, Seyoung Kim, Chungnam National University; Gilljae Lee, Korea Institute of Geoscience and Mineral Resources

FRP1-PG.5: RELATIONSHIP BETWEEN SPECTRAL REFLECTANCE AND METAL CONTENT OF KOREAN PINE NEEDLES AS A METAL CONTAMINATION INDICATOR 6166

Ji Hye Shin, Jaehyung Yu, Seyoung Kim, Haein Shin, Chungnam National University; Sang-Mo Koh, Convergence Research Center for Development of Mineral Resources

FRP1-PG.6: A MODIFIED METHOD TO PREVENT FALSE MINIMUMS OCCURRING IN ITERATIVE SPECTRALLY SMOOTH TEMPERATURE EMISSIVITY SEPARATION 6170

Zihua Wu, Huazhong Ren, Tianyuan Zhang, Qiming Qin, Jiaji Dong, Xin Ye, Peking University

FRP1-PG.7: EVALUATION OF TWO KERNEL-DRIVEN MODELS FOR ESTIMATING 6174
DIRECTIONAL BRIGHTNESS TEMPERATURE IN THE THERMAL INFRARED

Xiangyang Liu, Bo-Hui Tang, Hua Wu, Ronglin Tang, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Zhao-Liang Li, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Guangjian Yan, Beijing Normal University

FRP1-PG.8: ASSESSMENT OF HEAVY METAL STRESS USING HYPERSPECTRAL DATA..... 6178

Ping Wang, Fang Huang, Northeast Normal University; Xiangnan Liu, China University of Geosciences

FRP1-PH: DATA MANAGEMENT AND SYSTEMS II

FRP1-PH.1: REMOTE SENSING AND GIS BASED WATERSHED PRIORITIZATION 6182

Manish Pandey, P. K. Sharma, Indian Institute of Technology Roorkee

FRP1-PH.2: EFFICIENTLY DEALING WITH THE VARIETY OF SAR DATA FORMATS 6186

Leland Pierce, The University of Michigan

FRP1-PH.3: A SPATIAL GRID INDEX BASED ON INVERTED INDEX AND ITS QUERY 6189
METHOD

JieXiong Duan, Weixin Zhai, Chengqi Cheng, Peking University

FRP1-PH: DATA MANAGEMENT, POLICY DECISIONS AND EDUCATION

FRP1-PH.5: MERKLE QUAD-TREE BASED REMOTE SENSING IMAGE ANALYSIS 6193

Weixin Zhai, Kun Qi, Jiexiong Duan, Chengqi Cheng, Peking University

FRP1-PH.6: THE ASSESSMENT OF ECOLOGICAL EFFECTIVENESS IN THE REGION 6197
IMPLEMENTED GRAIN FOR GREEN PROGRAMME IN CHINA IN 1990-2010

Yuzhi Tang, Quanqin Shao, Jiyuan Liu, Jiangwen Fan, Wei Cao, Huang Lin, Fan Yang, Xingjian Guo, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

FRP1-PH.7: SOURCE LOCALIZATION VIA AERMOD-BASED SIMULATION UNDER MEAN 6201
SQUARED ERROR CRITERION: DEMONSTRATION USING FIELD DATA

Anand Kakarla, Asif Qureshi, Shashidhar Thatikonda, Indian Institute of Technology Hyderabad; Swades De, Indian Institute of Technology Delhi; Shiv Govind Singh, Soumya Jana, Indian Institute of Technology Hyderabad

FRP1-PH.8: THE ROLE OF MENTORSHIP IN A REMOTE SENSING RESEARCH PROGRAM 6205
FOR UNDERGRADUATE MINORITY STUDENTS

Reginald Blake, Janet Liou-Mark, Hamidreza Norouzi, Laura Yuen-Lau, Satya Prakash, New York City College of Technology, CUNY

FRP1-PI: MONITORING FORESTS I

FRP1-PI.1: ABOVE-GROUND BIOMASS ESTIMATION OF LARCH BASED ON TERRESTRIAL 6209
LASER SCANNING DATA

Junjie Zhou, Guiyun Zhou, Youyou Li, University of Electronic Science and Technology of China

FRP1-PI.2: ESTIMATION OF NET PRIMARY PRODUCTIVITY BY BEPS MODEL-A CASE 6213
STUDY IN FUJIAN PROVINCE

Mei Xue, Chinese Academy of Forestry; YunZhi Chen, LiangLiang Jia, XiaoQin Wang, Fuzhou University; Min Yan, Xin Tian, Chinese Academy of Forestry

FRP1-PI.3: INTERPRETATION AND IMPLICATION OF CANOPY DIURNAL FLUORESCENCE 6217
BY THE FIELD AUTOMATIC MEASUREMENT SYSTEM

Changping Huang, Lifu Zhang, Na Qiao, Siheng Wang, RADI, CAS

FRP1-PI.4: SPATIAL ANALYSIS OF GROWING SEASON PEAK CONTROL OVER GROSS PRIMARY PRODUCTION IN NORTHERN ECOSYSTEMS USING MODIS-GPP DATASET	6221
<i>Yuke Zhou, Shuli Niu, IGSNRR; Lili Xu, Central China Normal University; Xizhang Gao, IGSNRR</i>	
FRP1-PI.5: RETRIEVE VEGETATION EFFECTIVE OPTICAL DEPTH USING TIME-SERIES AMSR-E BRIGHTNESS TEMPERATURE DATA AT C BAND---A CASE STUDY	6225
<i>Yunqing Li, Beijing City University; Jiancheng Shi, Chinese Academy of Sciences; Tao Zhang, National Administration of Surveying, Mapping and Geoinformation of China; Tianjie Zhao, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences. Beijing 100101, China</i>	
FRP1-PJ: INLAND WATERS	
FRP1-PJ.1: EVALUATION OF MULTI-TEMPORAL LANDSAT 8 DATA FOR WETLAND CLASSIFICATION IN NEWFOUNDLAND, CANADA	6229
<i>Meisam Amani, Memorial University of Newfoundland; Bahram Salehi, C-CORE; Sahel Mahdavi, Jean Granger, Memorial University of Newfoundland; Brian Brisco, Canada Center for Mapping and Earth Observation</i>	
FRP1-PJ.2: BUILDING AN ONTOLOGY FOR HYDROLOGIC MONITORING	6232
<i>Chao Wang, Wei Wang, Nengcheng Chen, Wuhan University</i>	
FRP1-PJ.4: FIRST VIEW ON THE FLOOD DETECTION BY THE DUAL-FREQUENCY PRECIPITATION RADAR	6235
<i>Vladimir Karaev, Maria Panfilova, Yuriy Titchenko, Eugeny Meshkov, Galina Balandina, Institute of Applied Physics Russian Academy of Sciences; Zoya Andreeva, State Research Center</i>	
FRP1-PJ.5: INTERFEROMETRIC SAR FOR CHARACTERIZATION OF WETLAND LAKES AS A FUNCTION OF SUSPENDING SEDIMENT COVER AND DEPTH	6239
<i>Esra Erten, Istanbul Technical University; Cristian Rossi, Satellite Applications Catapult; Juan Ma Lopez-Sanchez, University of Alicante; Mehmet Furkan Celik, Istanbul Technical University</i>	
FRP1-PJ.6: APPLICATION OF OPTICAL FLOW FOR RIVER VELOCIMETRY	6243
<i>Musaab Khalid, Lionel Pénard, IRSTEA; Etienne Mémén, Inria</i>	
FRP1-PK: TOPOGRAPHY, GEOLOGY AND GEOMORPHOLOGY II	
FRP1-PK.2: MODELING THE TOPOGRAPHY OF FAULT ZONE BASED ON STRUCTURE FROM MOTION PHOTOGRAMMETRY	6251
<i>Haiyun Bi, Institute of Geology, China Earthquake Administration; Wenjun Zheng, Sun Yat-sen University; Jiangyuan Zeng, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences; Xiwei Fan, Institute of Geology, China Earthquake Administration</i>	
FRP1-PK.3: DISTRIBUTION OF MICAS USING ASTER DATA AND FIELD SAMPLE IN NURI DEPOSIT OF TIBET	6255
<i>Zhaoqiang Huang, Institute of Mineral Resources, China Metallurgical Geological Bureau; Jianchun Zheng, Beijing Research Center of Urban System Engineering</i>	
FRP1-PK.6: CASCADE SUB-PIXEL UNMIXING OF ASTER SWIR DATA FOR MAPPING ALTERATION MINERALS IN TAMRA SIDI-DRISS SITE, NW TUNISIA	6267
<i>Nouha Mezned, Wejdane Bouzidi, Belgacem Dkhala, Saadi Abdeljaouad, Sciences Faculty of Tunis, University of Tunis El Manar</i>	
FRP1-PL: REMOTE SENSING APPLICATIONS IN URBAN AREAS	
FRP1-PL.1: RAPID TRAFFIC SIGN DAMAGE INSPECTION IN NATURAL SCENES USING MOBILE LASER SCANNING DATA	6271
<i>Changbin You, Chenglu Wen, Huan Luo, Cheng Wang, Jonathan Li, Xiamen University</i>	

FRP1-PL.2: ESTIMATING SURFACE TEMPERATURE AND LAND COVER CHANGE IN 6275
HSINCHU CITY

Kuan-Tsung Chang, Minghsin University of Science and Technology; Ge-Wen Lee, Chien Hsin University of Science and Technology; Long-Shin Liang, Ph. D./National Central University; Jin-King Liu, CEO/LiDAR Technology Co., Ltd.; Feng-Chi Yu, Minghsin University of Science and Technology

FRP1-PL.3: THE ONGOING DESTABILIZATION OF THE MOSUL DAM AS OBSERVED BY 6279
SYNTHETIC APERTURE RADAR INTERFEROMETRY

Pietro Milillo, California Institute of Technology; Maria Cristina Porcu, University of Cagliari; Paul Lundgren, California Institute of Technology; Fabio Soccodato, University of Cagliari; Jacqueline Salzer, GFZ German Research Centre for Geosciences; Eric Fielding, California Institute of Technology; Roland Burgmann, University of California, Berkeley; Giovanni Milillo, Italian Space Agency; Daniele Perissin, Purdue University; Filippo Biondi, University of L'Aquila

FRP1-PL.4: IMPERVIOUS SURFACE EXTRACTION FROM MULTISPECTRAL IMAGES 6283
USING MORPHOLOGICAL ATTRIBUTE PROFILES AND SPECTRAL MIXTURE ANALYSIS

Changyu Zhu, Shaoquan Zhang, Sun Yat-sen University; Javier Plaza, University of Extremadura; Jun Li, Sun Yat-sen University; Antonio Plaza, University of Extremadura

FRP1-PL.5: URBAN IMPERVIOUS SURFACE EXTRACTION FROM VERY HIGH 6287
RESOLUTION IMAGERY USING SPATIAL AND SPECTRAL UNMIXING AND DECISION TREE
METHOD

Peijun Li, Peking University; Yan Chen, Migu Digital Media Co. Ltd

FRP1-PL.6: URBAN SURFACE ENERGY BUDGET STUDY USING FLUX TOWER 6290
OBSERVATIONS AND REMOTE SENSING MEASUREMENTS

Hamidreza Norouzi, New York City College of Technology, CUNY; Brian Vant-Hull, Prathap Ramamurphy, City College of New York, CUNY; Reginald Blake, Satya Prakash, New York City College of Technology, CUNY; Marzi Azarderakhsh, Fairleigh Dickinson University

FRP1-PL.7: DOWNSCALING RESEARCH OF REMOTELY SENSED LAND SURFACE 6293
TEMPERATURE

Zihao Wang, Yuanheng Sun, Huazhong Ren, Qiming Qin, Guhuai Han, Peking University