

# Programme Agenda

Day 1 - 19/06/2023

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## Espaces Vanel

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### Registration and Coffee (S0)

The registration will take place at Espace Vanel 6th Floor.

The registration desk is in the hall just outside the lifts.

09:00 - 10:30

### Workshop Opening (S1)

Chairs: Yves Louis Desnos, European Space Agency, ESA, Jean-Claude Souyris, Centre National d'Études Spatiales, CNES

10:30 - 11:10



#### 10:30-10:40 | Welcome message from ESA

Presenting author: Desnos, Yves Louis

Desnos, Yves Louis, European Space Agency, ESA, Italy



#### 10:40-10:50 | Welcome message from CNES

Presenting author: Souyris, Jean-Claude

Souyris, Jean-Claude, Centre National d'Études Spatiales, CNES, France



#### 10:50-11:10 | Workshop Objectives and Organisation

Presenting author: Scipal, Klaus

Scipal, Klaus; Sarti, Francesco, European Space Agency, Italy

### SAR Missions (S2)

Chairs: Yves Louis Desnos, European Space Agency, ESA, Thuy Le Toan, CESBIO

11:10 - 12:50



#### 11:10-11:30 | Status of Copernicus Sentinel-1, Sentinel-1 Next Generation and ESA's Earth Explorer 10 Harmony

Presenting author: Rommen, Bjorn

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Rommen, Bjorn, European Space Agency, ESA, Netherlands, The



### 11:30-11:50 | Rose-L Mission Status

Presenting author: Albinet, Clement

Pinheiro, Muriel; Albinet, Clement, European Space Agency, ESA



### 11:50-12:10 | SAOCOM Mission (Recorded Video)

Presenting author: Frulla, Laura

Frulla, Laura, CONAE, Argentine Republic



### 12:10-12:30 | NISAR Mission Status

Presenting author: Lavallo, Marco

Lavallo, Marco, NASA JPL/Caltech, United States of America



### 12:30-12:50 | Tandem-X Mission Status

Presenting author: Hajnsek, Irena

Hajnsek, Irena, ETH Zurich / DLR, Germany

## Lunch Break

12:50 - 14:10

## SAR Missions & Calibration (S3)

Chairs: Subrahmanyeswara Rao Yalamanchili, Indian Institute of Technology Bombay, Francesco Sarti,

ESA/ESRIN

14:10 - 15:50



### 14:10-14:30 | Estimating SAR Polarimetric System Errors in the Presence of Faraday Rotation Using a Transponder

Presenting author: Quegan, Shaun

Quegan, Shaun; Lomas, Mark, University of Sheffield, National Centre for Earth Observation, UK



### 14:30-14:50 | Polarimetric Requirements on Spaceborne SAR for the Observation of Mid-latitude Ionospheric Activity

Presenting author: Kim, Jun Su

Kim, Jun Su (1); Sato, Hiroatsu (2); Papathanassiou, Konstantinos (1), 1: German Aerospace Center, Microwaves and Radar Institute, Germany; 2: German Aerospace Center, Institute for Solar and Terrestrial Physics, Germany

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### 14:50-15:10 | Observation Requirements for Ionospheric Tomographic Reconstructions with Polarimetric SAR Acquisitions

Presenting author: Pardini, Matteo

Pardini, Matteo (1); De Palma, Simone (1,2); Kim, Jun Su (1); Papathanassiou, Konstantinos (1); Lombardini, Fabrizio (2), 1: German Aerospace Center (DLR), Germany; 2: University of Pisa, Italy



### 15:10-15:30 | NovaSAR-1 Operational Updates and CARD4L PFS Compliant ARD Production in Australia

Presenting author: Zhou, Zheng-Shu

Zhou, Zheng-Shu (1); Brindle, Laura (2); Lehmann, Eric (1); Nethery, Matt (3); Parker, Amy (2), 1: CSIRO Data61, Australia; 2: CSIRO S&A; 3: CSIRO IMT

## Coffee Break

15:50 - 16:20

## PolSAR and PolInSAR Methods (S4)

Chairs: Laurent Ferro-Famil, ISAE-SUPAERO & CESBIO, Ludovic VILLARD, CESBIO

16:20 - 18:00



### | PolInSAR Recommendations 2021-2023

Presenting author: Sarti, Francesco

Sarti, Francesco, ESA/ESRIN, Italy



### 16:20-16:40 | Change Detection in Multilook Polarimetric SAR Imagery With Hoteling Lawley Trace and Determinant Ratio Test Statistics

Presenting author: Akbari, Vahid

Akbari, Vahid (1); Boulel, Nizar (2), 1: Department of Computing Science and Mathematics, The University of Stirling, Stirling, FK9 4LA, United Kingdom; 2: Institut Agro, Univ Angers, INRAE, IRHS, SFR QuaSaV, 49000, Angers, France



### 16:40-17:00 | Polarimetric Analysis of Permanently Shadowed Regions on the Moon Using Dual-Frequency Full-Pol Data From Chandrayaan-2 DFSAR

Presenting author: Khati, Unmesh

Dsouza, Hamish (1); Kumar, Dr. Shashi (1); Khati, Unmesh (2), 1: Indian Institute of Remote Sensing, India; 2: Indian Institute of Technology, Indore, India



### 17:00-17:20 | Constrained Tensor Decompositions for Polarimetric Time Series Change Analysis

Presenting author: Basargin, Nikita

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Basargin, Nikita (1,2); Alonso-González, Alberto (1,3); Hajnsek, Irena (1,4), 1: German Aerospace Center (DLR), Microwaves and Radar Institute, Weßling, Germany; 2: Technical University of Munich (TUM), School of Life Sciences, Freising, Germany; 3: Universitat Politecnica de Catalunya (UPC), Signal Theory and Communications Department, Barcelona, Spain; 4: ETH Zürich, Institute of Environmental Engineering, Zürich, Switzerland

## Icebreaker

18:00 - 19:30

## Day 2 - 20/06/2023

### Espaces Vanel

## Biomass Mission Overview (S5)

Chairs: Thuy Le Toan, CESBIO, Björn Rommen, European Space Agency, ESA

09:00 - 10:40



### 09:00-09:20 | The Preparation Status of the BIOMASS mission

Presenting author: Quegan, Shaun

Quegan, Shaun (1); Le Toan, Thuy (2); Chave, Jerome (3); Dall, Jorgen (4); Paillou, Philippe (5); Papathanassiou, Kostas (6); Reichstein, Markus (7); Rommen, Bjorn (8); Saatchi, Sassan (9); Scipal, Klaus (10); Shugart, Hank (11); Tebaldini, Stefano (12); Ulander, Lars (13); Williams, Mathew (14), 1: University of Sheffield & National Centre for Earth Observation, UK; 2: CESBIO, Toulouse; 3: Université Toulouse III Paul Sabatier, France; 4: DTU, Denmark; 5: Université de Bordeaux, France; 6: DLR, Germany; 7: MPI for Biogeochemistry, Jena, Germany; 8: ESA-ESTEC, the Netherlands; 9: Jet Propulsion Laboratory, Pasadena, USA; 10: ESA-ESRIN, Italy; 11: University of Virginia, Charlottesville, Virginia USA; 12: POLIMI, Italy; 13: Chalmers University of Technology, Sweden; 14: University of Edinburgh & National Centre for Earth Observation, UK



### 09:20-09:40 | Biomass Mission Status

Presenting author: Fehring, Michael

Fehring, Michael (1); Patterson, Janice (2); Willemsen, Philip (3); Hernando, Lucia (4); Kiryenko, Stefan (5); Fava, Gian Luigi (6); Rautakoski, Jan (7), 1: ESA-ESTEC; 2: ESA-ESTEC; 3: ESA-ESTEC; 4: ESA-ESTEC; 5: ESA-ESTEC; 6: ESA-ESTEC; 7: ESA-ESTEC



### 09:40-10:00 | Biomass In-Orbit Calibration And Performance Verification Overview

Presenting author: Leanza, Antonio

Leanza, Antonio (2); Willemsen, Philip (1); Carbone, Adriano (1); Simon, Tristan (1); Rommen, Bjoern (1); Fehring, Michael (1); Malik, Maktar (1); Scipal, Klaus (3); Rama, Serdar (1), 1: ESA, Netherlands, The; 2: Serco B.V. for ESA - ESTEC; 3: ESA - ESRIN

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### 10:00-10:20 | Biomass Mission Panning and Operations Concept

Presenting author: Simon, Tristan

Simon, Tristan (1); Bras, Sergio (4); Willemsen, Philip (1); Leanza, Antonio (5); Carbone, Adriano (1); Rommen, Bjorn (1); Fehringer, Michael (1); Malik, Maktar (1); Scipal, Klaus (2); Lopes, Cristiano (2); Maestroni, Elia (3), 1: ESA/ESTEC, Netherlands, The; 2: ESA/ESRIN, Italy; 3: ESA/ESOC, Germany; 4: HE Space Operations, Netherlands; 5: Serco B.V for ESA/ESTEC, Netherlands



### 10:20-10:40 | Biomass Phase-E Cal/Val activities

Presenting author: Rommen, Bjorn

Rommen, Bjorn, European Space Agency, ESA, Netherlands, The

## Coffee Break

10:40 - 11:10

## Biomass Products and Algorithms (S6)

Chairs: Shaun Quegan, University of Sheffield, Klaus Scipal, European Space Agency

11:10 - 12:50



### 11:10-11:30 | The Biomass Processing Suite (BPS): an Overview of BIOMASS Operational Processor and Products

Presenting author: Novelli, Antonio

Pinheiro, Muriel; Novelli, Antonio, European Space Agency, Italy



### 11:30-11:50 | BIOMASS Interferometric Processor: Current Status

Presenting author: Banda, Francesco

Banda, Francesco (1); Mancon, Simone (1); Mariotti D'Alessandro, Mauro (2); Tebaldini, Stefano (2); Giudici, Davide (1); Pinheiro, Muriel (3); Scipal, Klaus (3), 1: aresys, Italy; 2: Politecnico di Milano, Italy; 3: ESA/ESRIN, Italy



### 11:50-12:10 | The Global Above-ground Biomass Estimation Algorithm for ESA's BIOMASS Mission

Presenting author: Soja, Maciej Jerzy

Soja, Maciej Jerzy (1); Banda, Francesco (2); Mazzucchelli, Paolo (2); Mariotti d'Alessandro, Mauro (3); Quegan, Shaun (4); Miranda, Nuno (5); Scipal, Klaus (5), 1: WUR, Netherlands, The; 2: Aresys, Italy; 3: Politecnico di Milano, Italy; 4: University of Sheffield, UK; 5: ESA ESRIN, Italy



### 12:10-12:30 | BIOMASS Level-2 Algorithms: Current Status

Presenting author: Banda, Francesco

Banda, Francesco (1); Tebaldini, Stefano (2); Quegan, Shaun (3); Soja, Maciej (4); Giudici, Davide (1); Mariotti D'Alessandro, Mauro (2); Ulander, Lars (5); Papathanassiou, Konstantinos (6); Le Toan, Thuy (7); Villard, Ludovic (7); Rommen, Bjorn (8); Scipal, Klaus (9), 1: aresys,

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Italy; 2: Politecnico di Milano, Italy; 3: University of Sheffield, England; 4: Wageningen University and Research, Netherlands; 5: Chalmers University of Technology, Sweden; 6: DLR, Germany; 7: CESBIO, France; 8: ESA/ESTEC, Netherlands; 9: ESA/ESRIN, Italy



### 12:30-12:50 | The BIOMASS Mission Algorithm & Analysis Platform (MAAP) and related Open-Source developments (BioPAL)

Presenting author: Albinet, Clement

Albinet, Clement (1); Lopes, Cristiano (1); Scipal, Klaus (1); Pinheiro, Muriel (1); Rommen, Björn (2), 1: ESA, Italy; 2: ESA, The Netherlands

## Lunch Break

12:50 - 14:10

## Biomass Methods (S7)

Chairs: Stefano Tebaldini, Politecnico di Milano, Antonio Novelli, RHEA System S.p.A.

14:10 - 15:50



### 14:10-14:30 | Performance Limits Of Sar Tomography For The Characterization Of Forested Areas. Specific Case Of Tropical Forests Measured In The Biomass Configuration

Presenting author: Ferro-Famil, Laurent

Ferro-Famil, Laurent (1,2); Huang, Yue (2); Tebaldini, Stefano (3); Villard, Ludovic (2); Koleck, Thierry (4,2); Le Toan, Thuy (5), 1: ISAE-SUPAERO, University of Toulouse, France; 2: CESBIO, University of Toulouse, France; 3: DEIB, Politecnico di Milano, Italy; 4: CNES, France; 5: GLOBEO, France



### 14:30-14:50 | Comparison Of Low Dimensionality Profile Models For The Characterization Of Tropical Forest Using SAR Tomography

Presenting author: Bou, Pierre-Antoine

Bou, Pierre-Antoine (1,2); Ferro-Famil, Laurent (2,3); Huang, Yue (2); Brigui, Frédéric (4); Villard, Ludovic (2), 1: ONERA, DEMR, Toulouse, France; 2: CESBIO, University of Toulouse, CNES/CNRS/INRAE/IRD/UPS, Toulouse, France; 3: ISAE-SUPAERO, University of Toulouse, DEOS Dept., Toulouse, France; 4: ONERA, DEMR, Palaiseau, France



### 14:50-15:10 | Tropical Forest Parameter Estimation Using P-band SAR Tomography In Both Airborne And Simulated BIOMASS Configurations

Presenting author: Huang, Yue

Huang, Yue; Ferro-Famil, Laurent; Bou, Pierre-Antoine; Koleck, Thierry, IETR, University of Rennes 1, France



### 15:10-15:30 | Revolutionizing the Estimation of Tropical Forest Vertical Structure with Spaceborne GEDI and SAR Tomography

Presenting author: Ho Tong Minh, Dinh

Ho Tong Minh, Dinh (1); Ngo, Yen-Nhi (1); Baghdadi, Nicolas (1); Fayad, Ibrahim (1); Ferro-Famil, Laurent (2); Huang, Yue (2); Villard, Ludovic (2); Le Toan, Thuy (2), 1: INRAE, France; 2: CESBIO, France

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### 15:30-15:50 | Estimating Tropical Forest Biomass and its Change by Means of Multi-mission / Multi-scale Structure Measurements

Presenting author: Hartweg, Benedikt

Hartweg, Benedikt (1,2); Albrecht, Lea (1,2); Mansour, Islam (1,3); Papathanassiou, Konstantinos (1); Lehnert, Lukas (2), 1: Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR); 2: Ludwig-Maximilians-Universität München (LMU); 3: Eidgenössische Technische Hochschule Zürich (ETH)

## Coffee Break

15:50 - 16:20

## Forest Applications I (S8)

Chairs: Unmesh Khati, Indian Institute of Technology Indore, Noelia Romero-Puig, German Aerospace Center (DLR)

16:20 - 18:00



### 16:20-16:40 | Machine Learning in Model-Based Forest Height Inversion

Presenting author: Mansour, Islam

Mansour, Islam (1,2); Papathanassiou, Konstantinos (1); Hänsch, Ronny (1); Hajnsek, Irena (1,2), 1: Microwaves and Radar Institute, German Aerospace Center (DLR), Germany; 2: Institute of Environmental Engineering, ETH Zürich, Switzerland



### 16:40-17:00 | A Dual-frequency Approach to Detect Forest Height and Structure Using Polinsar Technique

Presenting author: Hosseini, Samira

Hosseini, Samira (1,2); Garestier, Fanck (1); Agnus, Benoit (2), 1: university of caen, france; 2: scienteama, 27 rue des glengarrians, 14610 villons les buissons france



### 17:00-17:20 | An Assessment of SAOCOM L-Band Pol-InSAR Capabilities For Canopy Height Estimation: A Case Study Over Managed Forests In Argentina

Presenting author: Seppi, Santiago Ariel

Seppi, Santiago Ariel (1); López-Martínez, Carlos (2); Joseau, Marisa Jacqueline (3), 1: Comisión Nacional de Actividades Espaciales, Argentine Republic; 2: Universidad Politécnica de Catalua, Spain; 3: Universidad Nacional de Córdoba, Argentine Republic



### 17:20-17:40 | L-Band Interferometric Coherence Time-Series For Forest Parameters Retrieval

Presenting author: Telli, Chiara

Telli, Chiara (1); Lavalle, Marco (2); Pierdicca, Nazzareno (1), 1: La Sapienza University of Rome, Italy; 2: NASA Jet Propulsion Laboratory

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**17:40-18:00 | A ground finding approach over the Howland forest Based on Interferometric Phase Histogram using Spaceborne TanDEM-X InSAR and GEDI Lidar Data**

Presenting author: Yu, Yanghai

Yu, Yanghai (1); Lei, Yang (1); Tebaldini, Stefano (2); Wu, Chuanjun (2), 1: National Space Science Center, Chinese Academy of Sciences, China.; 2: Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Italy

### Day 3 - 21/06/2023

#### Espaces Vanel

### Forest Applications II (S9)

Chairs: Francesco Banda, aresys, Chiara Telli, La Sapienza University of Rome

09:00 - 10:40



**09:00-09:20 | Estimation Of Mangrove Forest Vertical Structure With UAVSAR And Lidar Data Fusion Using AfriSAR Campaign Data**

Presenting author: Denbina, Michael

Denbina, Michael; Simard, Marc; Chen, Richard; Stiles, Bryan; Saatchi, Sassan; Lou, Yunling, NASA Jet Propulsion Laboratory, California Institute of Technology, United States of America



**09:20-09:40 | Estimating Forest Structure Change by Means of Wavelet Statistics**

Presenting author: Albrecht, Lea

Albrecht, Lea (1); Papathanassiou, Konstantinos (1); Fischer, Rico (2); Huth, Andreas (2); Lehnert, Lukas (3), 1: Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany; 2: Helmholtz Zentrum für Umweltforschung (UFZ); 3: Ludwig-Maximilians-Universität München (LMU)



**09:40-10:00 | TomoSAR Sensitivity to Temperate Forest Above-Ground Biomass at P- and L-band in the TomoSense ESA Campaign**

Presenting author: Tebaldini, Stefano

Bennet, Patrik John (1); Ulander, Lars M. H. (1); Mariotti D'Alessandro, Mauro (2); Tebaldini, Stefano (2), 1: Chalmers University of Technology, Gothenburg, Sweden; 2: Politecnico di Milano, Milan, Italy



**10:00-10:20 | Addressing Forest Change by means of Pol-InSAR Measurements at L- and P-band**

Presenting author: Romero-Puig, Noelia

Romero-Puig, Noelia; Pardini, Matteo; Papathanassiou, Konstantinos P., German Aerospace Center (DLR), Germany



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### 10:20-10:40 | SAR4Change: Deforestation Detection Using Dual-polarimetric SAR Information

Presenting author: Khati, Unmesh

Khati, Unmesh (1); Lavalley, Marco (2); Sabir, Anam (1), 1: Indian Institute of Technology Indore, India; 2: NASA-Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA

## Coffee Break

10:40 - 11:10

## Agriculture Applications (S10)

Chairs: Elise Colin, Onera, Armando Marino, The University of Stirling

11:10 - 12:50



### 11:10-11:30 | Monitoring Crop Harvest And Tillage Using Sentinel-1 Coherence Change Detection And Polarimetric Parameters

Presenting author: Jiao, Xianfeng

Jiao, Xianfeng (1); McNarin, Heather (1); Kooij, Marco van der (2); Halstead, Amanda (1); Davidson, Andrew (1); Joosse, Pamela (3), 1: Agriculture and Agri-food Canada, Agri-Environment Division, Ottawa, Ontario, Canada; 2: Vanderkooij Consult, Ottawa, Ontario, Canada; 3: Agriculture and Agri-food Canada, Harrow Research & Development Centre, Harrow, Ontario, Canada



### 11:30-11:50 | Polarimetric Processing and Analysis of Sentinel-1 Time Series for State-wide Crop Mapping in Victoria

Presenting author: Zhou, Zheng-Shu

Zhou, Zheng-Shu (1); Caccetta, Peter (1); Furby, Suzanne (1); Mata, Gonz (2); Lawes, Roger (2), 1: CSIRO Data61, Australia; 2: CSIRO A&F, Australia



### 11:50-12:10 | A Novel Crop Classification Method Based on ppfSVM Classifier with Time-series Alignment Kernel from Dual-polarization SAR Datasets

Presenting author: Gao, Han

Gao, Han, China University of Petroleum (East China), China, People's Republic of



### 12:10-12:30 | Sensitivity Of Different Scattering Mechanisms To Soil Moisture And Vegetation Over Corn Fields In Argentina

Presenting author: Papale, Lorenzo Giuliano

Anconitano, Giovanni (1); Siad, Si Mokrane (1); Pierdicca, Nazzareno (1); Papale, Lorenzo Giuliano (2); Guerriero, Leila (2); Acua, Mario Alberto (3); Sarabakha, Olena (4), 1: Department of Information Engineering, Electronics and Telecommunications (DIET), Sapienza University of Rome, Rome, Italy; 2: Department of Civil Engineering and Computer Science Engineering (DICII), Tor Vergata University of Rome, Rome, Italy; 3: Comisión Nacional De Actividades Espaciales (CONAE), Buenos Aires, Argentina; 4: Sapienza University of Rome

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Department: Department of Information Engineering, Electronics and Telecommunications (DIET)



### 12:30-12:50 | Temporal Coherence of Multitemporal and Polarimetric SAR Data: Application To Agricultural Event Detection Using Sentinel-1 Data

Presenting author: Paillou, Nathan

Paillou, Nathan; Daniel, Sandrine; Angeli, Suzanne, Capgemini, France

## Biomass - Validation & Carbon Modelling (S11)

Chairs: Clement Albinet, ESA, Jérôme Chave, CNRS

11:10 - 12:50



### 11:10-11:30 | The Geo-Trees Initiative

Presenting author: Dion, Iris-Amata

Dion, Iris-Amata (1); Chave, Jérôme (1); Scipal, Klaus (2); Davies, Stuart (3); Phillips, Oliver (4); Piponiot-Laroche, Camille (5); Shchepashchenko, Dmitry (6), 1: CNRS, France; 2: ESA, Italy; 3: Smithsonian Institution, USA; 4: University of Leeds, UK; 5: CIRAD, France; 6: IIASA, Austria



### 11:30-11:50 | Terrestrial Laser Scanning Has Potential to Support Cal/Val Activities of Radar Biomass Estimates

Presenting author: Van den Broeck, Wouter A. J.

Van den Broeck, Wouter A. J. (1); Cherlet, Wout (1); Cooper, Zane (1); Disney, Mathias (2,3); Origo, Niall (4); Villard, Ludovic (5); Calders, Kim (1), 1: CAVELab, Ghent University, Ghent, Belgium; 2: UCL Department of Geography, London, UK; 3: NERC National Centre for Earth Observation (NCEO), UK; 4: Climate and Earth Observation Group, National Physical Laboratory, Teddington, Middlesex, UK; 5: Centre d'Etudes Spatiales de la Biosphère (CESBIO), Université de Toulouse, CNES/CNRS/INRAE/IRD/UPS, Toulouse, France



### 11:50-12:10 | The Dynamics Of The Amazon Forests And The Role Of Forest Structure - Linking Vegetation Modelling And Remote Sensing

Presenting author: Huth, Andreas

Huth, Andreas; Fischer, Rico; Fischer, Luise; Bohn, Friedrich; Knapp, Nikolai; Roedig, Edna, Helmholtz Centre of Environmental Research - UFZ, Germany



### 12:10-12:30 | Understanding Of Africa's C-Cycling Is Improved By Combining Models With Multi-annual EO AGB Maps

Presenting author: Smallman, Thomas Luke

Smallman, Thomas Luke (1); Rodriguez-Veiga, Pedro (2,3); Carreiras, Joo (4); Quegan, Shaun (4); Williams, Mathew (1), 1: National Centre for Earth Observation & School of GeoSciences, University of Edinburgh, EH9 3FF, United Kingdom; 2: National Centre for Earth Observation & Centre for Landscape and Climate Research, School of Geography, Geology and the Environment, University of Leicester, University of Leicester, Leicester LE1 7RH, UK; 3: Sylvera, London, UK; 4: National Centre for Earth Observation & School of Mathematics and Statistics, University of Sheffield, Sheffield S3 7RH, UK

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### 12:30-12:50 | Forest Flows – Integration Of Terrestrial, Remote Sensing And Airborne P-Band SAR Data For Identifying And Quantifying The Drivers Of Forest Hydrological Processes Across Different Scales

Presenting author: Meason, Dean Francis

Meason, Dean Francis (1); Moller, Delwyn (2); Moghaddam, Mahta (3); Zhao, Yuhuan (3); Andreadis, Konstantinos (4); Höck, Barbara (5); Salekin, Serajis (1); Lad, Priscilla (1); Owens, Jennifer (1); White, Don (1); Xue, Jianming (1); Zhu, Hongfen (1); Villamor, Grace (1); Zhang, Yi (6); Dudley, Bruce (7); Griffins, James (7); Yang, Jing (7); Dempster, Alec (7); Rajanayaka, Channa (7); Srinivasan, Mathirimangalam (8); Bifet, Albert (9); Cassales, Guilherme Weigert (9); Clearwater, Mike (9); West, Moari (9); Schafer, Robert (10); Araki, Ryoko (11); Palma, Joo (12); Wuroala, Adedamola (13); Somchit, Chanatda (14); Matson, Amanda (15), 1: Scion (NZ Forest Research Institute), New Zealand; 2: University of Auckland, New Zealand; 3: University of Southern California, USA; 4: University of Massachusetts Amherst, USA; 5: Candleford Consulting, USA; 6: Hydrosat Inc, USA; 7: National Institute of Water and Atmospheric Research (NIWA), New Zealand; 8: Ministry for Primary Industries, New Zealand; 9: University of Waikato, New Zealand; 10: XERRA, New Zealand; 11: San Diego State University, USA; 12: MVARC, Portugal; 13: Imagr, New Zealand; 14: AgResearch, New Zealand; 15: Wageningen Environmental Research, Netherlands

## Lunch Break

12:50 - 14:10

## Land Applications (S21)

Chairs: Magdalena Fitrzyk, RSAC c/o ESA/ESRIN, Armando Marino, The University of Stirling

14:10 - 15:50



### 14:10-14:30 | PolTimeSAR: the New Benefit of Polarimetry for Urban Areas

Presenting author: Colin, Elise

Colin, Elise, DTIS-Onera, France



### 14:30-14:50 | Assessing Polarimetric SAR Interferometry Coherence Region Parameters Over a Permafrost Landscape

Presenting author: Saporta, Paloma

Saporta, Paloma (1,2); Alonso González, Alberto (3); Hajnsek, Irena (1,2), 1: German Aerospace Center (DLR), Germany; 2: ETH Zurich, Switzerland; 3: Universitat Politcnica de Catalunya, Spain



### 14:50-15:10 | Monitoring Peatland Water Table Depth Using Polarimetric SAR

Presenting author: Page, Georgina

Sterratt, Benjamin David; Silva-Perez, Cristian; Page, Georgina; Hunter, Peter; Subke, Jens-Arne; Marino, Armando, Faculty of Natural Sciences, University of Stirling, Stirling, United Kingdom

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### 15:10-15:30 | Burned Area Mapping Using Scattering Spectrum Information from Full Polarimetric ALOS-2 SAR Data

Presenting author: Dey, Subhadip

Dey, Subhadip (1); Richardson, Ashlin (2); Bhattacharya, Avik (3), 1: Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, India; 2: British Columbia Wildfire Service, Canada; 3: Microwave Remote Sensing Lab (MRS Lab), Indian Institute of Technology Bombay, Mumbai, India



### 15:30-15:50 | Pol-InSAR-Island – A Multi-frequency Pol-InSAR Benchmark Dataset for Land Cover Segmentation

Presenting author: Hochstuhl, Sylvia

Hochstuhl, Sylvia (1,2); Pfeffer, Niklas (1,2); Thiele, Antje (1,2); Amao-Oliva, Joel (3); Scheiber, Rolf (3); Dirks, Holger (4), 1: Institute of Photogrammetry and Remote Sensing, Karlsruhe Institute of Technology, Germany; 2: Fraunhofer IOSB, Ettlingen, Germany; 3: Microwaves and Radar Institute, German Aerospace Center (DLR), Wessling, Germany; 4: Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency - Coastal Research Station, Norden, Germany

## Biomass - Multimission Context (S22)

Chairs: Marco Lavallo, NASA JPL/Caltech, Iris-Amata Dion, CNRS

14:10 - 15:50



### 14:10-14:30 | BIOMASS Mission: Synergy with Contemporary Multi-sensor Missions for the Estimation of Biomass and Biomass Change

Presenting author: Le Toan, Thuy

Le Toan, Thuy (1,2); Villard, Ludovic (1); Mermoz, Stephane (2); Ferro-Famil, Laurent (1,3); Bouvet, Alexandre (1); Koleck, Thierry (1,4); Planells, Milena (1,4); Tong Minh, Dinh Ho (5), 1: CESBIO/GlobEO, France; 2: GlobEO; 3: INSAE-SupAero; 4: CNES; 5: INRAE



### 14:30-14:50 | GEDI Mission and Product Status

Presenting author: Goetz, Scott

Dubayah, Ralph (1); Goetz, Scott (2), 1: University of Maryland, USA; 2: Northern Arizona University



### 14:50-15:10 | Cci Biomass: Status and Developments for Global Mapping Of Aboveground Biomass and Change

Presenting author: Cartus, Oliver

Cartus, Oliver (1); Santoro, Maurizio (1); Lucas, Richard (2); Kay, Heather (2); Herold, Martin (3); Araza, Arnan (4); Chave, Jerome (5); Le Toan, Thuy (6); Bouvet, Alexandre (6); Qeagan, Shaun (7); Balzter, Heiko (8); Seifert, Frank Martin (9), 1: GAMMARS, Switzerland; 2: Aberystwyth University; 3: GFZ-Potsdam; 4: Wageningen University & Research; 5: Laboratoire Evolution et Diversite Biologique; 6: Centre d'Etudes Spatiales de la Biosphere; 7: University of Sheffield; 8: University of Leicester; 9: ESA Esrin

## Programme Agenda



### 15:10-15:30 | ESA Forest Carbon Monitoring: Evaluation of various Earth Observation datasets and methods

Presenting author: Antropov, Oleg

Antropov, Oleg (1); Miettinen, Jukka (1); Häme, Tuomas (1); Seitsonen, Lauri (1); McRoberts, Ronald E. (2); Santoro, Maurizio (3); Cartus, Oliver (3); Ge, Shaojia (4); Pardini, Matteo (5); Papathanassiou, Kostas (5); Hajnsek, Irena (5), 1: VTT Technical Research Centre of Finland, Finland; 2: University of Minnesota, United States; 3: Gamma Remote Sensing, Switzerland; 4: Nanjing University of Science and Technology, China; 5: German Aerospace Centre, Germany



### 15:30-15:50 | Improving Early Detection of Forest Disturbances in the Tropics

Presenting author: Mermoz, Stéphane

Mermoz, Stéphane (1); Koleck, Thierry (2,3); Doblas, Juan (1); Bouvet, Alexandre (3,4); Bottani, Marta (2,5); Laurent, Ferro-Famil (5); Le Toan, Thuy (1,3), 1: GlobEO, France; 2: CNES, France; 3: CESBIO, France; 4: IRD, France; 5: ISAE-SUPAERO, France



### 15:50-16:10 | Estimating Biomass from Low Frequency Passive Microwave Observations

Presenting author: Salazar-Neira, Julio-César

Rodriguez-Fernandez, Nemesio J (1); Mialon, Arnaud (1); Salazar-Neira, Julio-César (1); Richaume, Philippe (1); Pique, Gaétan (1); Boitard, Simon (1); Bouvet, Alexandre (1); Mermoz, Stephane (2); Le Toan, Thuy (1); Kerr, Yann (1), 1: CESBIO, France; 2: Globeo, France

## Poster Session and Aperitif (S12)

16:20 - 18:00



### | A Comparative Study on the X- and C-band Data Application for the Estimation of Crop Phenology Development

Presenting author: Paw<sup>3</sup>uszek-Filipiak, Kamila Teresa

Pasternak, Marta; Paw<sup>3</sup>uszek-Filipiak, Kamila Teresa, Wroc<sup>3</sup>aw University of Environmental and Life Sciences, Poland



### | Probability of Convergence of Land Use Change with Soil Organic Carbon Storage Using Digital Mapping and Cellular Automata in a Representative Watershed in the West of Iran

Presenting author: Parvizi, Yahya

Parvizi, Yahya (1); Fatehi, Shahrokh (2); Kolahchi, Abdonnabi (1), 1: Soil Conservation and Watershed Management Research Institute, AREEO, Tehran, Iran; 2: Agriculture and Natural Resource Research Center of Kermanshah, AREEO, Kermanshah, Iran



### | Land Subsidence Assessment due to Groundwater Over-Exploitation and Aquifer Characteristic in Qazvin plain, Iran

Presenting author: Abdeh Kolahchi, Abdolnabi

Janbaz, Mahdieh (1); Abdeh Kolahchi, Abdolnabi (2); Kholghi, Majid (1); Roostaei, Mahasa (3), 1: College of Agriculture & Natural Resources, University of Tehran; 2: Soil Conservation and Watershed Management Research Institute (SCWMRI), ARREO, Iran; 3: Geological Survey of Iran (G.S.I)

## Programme Agenda



### | Large-Scale Canopy Height Estimation using C-band InSAR Correlation

Presenting author: Bhogapurapu, Narayanarao

Bhogapurapu, Narayanarao (1,2); Siqueira, Paul (1); Armston, John (3); Li, Xiaoxuan (4); Urbazaev, Mikhail (3); Wessels, Konrad (4); Duncanson, Laura (3), 1: University of Massachusetts Amherst, United States of America; 2: Indian Institute of Technology Bombay, India; 3: University of Maryland, United States of America; 4: George Mason University, United States of America



### | Mapping the 2022 landslide in Ischia Island (Southern Italy)

Presenting author: Polcari, Marco

Polcari, Marco; Ferrentino, Emanuele; Bignami, Christian; Borgstrom, Sven; Nappi, Rosa; Siniscalchi, Valeria, Istituto Nazionale di Geofisica e Vulcanologia, Italy



### | Multi-polarimetric SAR methods to detect damage due to the 2023 Turkey Earthquake

Presenting author: Ferrentino, Emanuele

Ferrentino, Emanuele; Bignami, Christian; Stramondo, Salvatore, Istituto Nazionale di Geofisica e Vulcanologia, Italy



### | On Importance of Off-Diagonal Elements in the Polarimetric Covariance Matrix: A Sea Ice Application Perspective

Presenting author: Ratha, Debanshu

Ratha, Debanshu; Doulgeris, Anthony P.; Marinoni, Andrea; Eltoft, Torbjørn, UiT The Arctic University of Norway, Norway



### | Polarimetric and Interferometric Investigation of Subsurface Structures of Glacier Ice

Presenting author: Schlenk, Patricia

Schlenk, Patricia (1,2); Fischer, Georg (1); Pardini, Matteo (1); Hajnsek, Irena (1,3); Krieger, Gerhard (1,2), 1: German Aerospace Center – Microwaves and Radar Institute, Wessling, Germany; 2: Friedrich-Alexander-Universität – Institute of Microwaves and Photonics, Erlangen, Germany; 3: ETH Zurich – Institute of Environmental Engineering, Zurich, Switzerland



### | Quantifying The Impact Of Climate-change Induced Desertification In Agrifood Production In Senegal Using BIOMASS

Presenting author: O Fionnagain, Dualta

O Fionnagain, Dualta (1); O'Farrell, Jemima (1); Geever, Michael (1); Trearty, Ross (1); Mesfin, Yared (2); Codyre, Patricia (2); Spillane, Charles (2); Golden, Aaron (1), 1: School of Natural Sciences & Ryan Institute, University of Galway, Galway, Ireland; 2: Agriculture and Bioeconomy Research Centre, Ryan Institute, University of Galway, Galway, Ireland



### | Investigating Seasonal Changes in Vertical Canopy Cover Profiles in Temperate Forests Using GEDI and Sentinel-1

Presenting author: Liu, Xiao

Liu, Xiao; Forkel, Matthias; Kranz, Johanna, Technische Universität Dresden, Institute of Photogrammetry and Remote Sensing, Germany



### | Response of Mango Orchard Biophysical Parameters to Conjunctive Use of SAR and Optical Remote Sensing Data

Presenting author: Haldar, Dipanwita

Haldar, Dipanwita (1); S, Steena (2); S, Souravi (3); Patel, NR (1); Kumar, Suresh (1), 1: IIRS, ISRO, India; 2: Skylark Drone; 3: Wageningen

## Programme Agenda

University



### | Robust Change Detection in Urban Environments using Multi-Temporal and Polarimetric SAR Data

Presenting author: Kim, Duk-jin

Kim, Duk-jin, Seoul National University, Korea, Republic of (South Korea)



### | SAR And InSAR Based Monitoring Of Peatland Condition And Hydrology: A case study in Scotland

Presenting author: Silva-Perez, Cristian

Silva-Perez, Cristian; Marino, Armando; Subke, Jens-Arne; Hunter, Peter, University of Stirling, United Kingdom



### | Sensitivity Of Multi-Frequency SAR To Different Structural Properties Of Temperate Forests Derived From ALS And GEDI Data

Presenting author: Dubois, Clémence

Dubois, Clémence (1); Böhm, Marianne (1); Urbazaev, Mikhail (2); Zehner, Markus (1); Schellenberg, Konstantin (1,3); Bueso-Bello, Jose-Luis (4); Rizzoli, Paola (4); Schmillius, Christiane (1), 1: Department for Earth Observation, Institute of Geography, Friedrich Schiller University Jena, Germany; 2: University of Maryland, MD 20742, USA; 3: Department of Biogeochemical Processes, Max Planck Institute for Biogeochemistry, Jena, Germany; 4: Microwaves and Radar Institute, German Aerospace Center, Wessling, Germany



### | The Efficacy Of GEDI And ICESat-2 For Estimation Of Vegetation Cover And Height In Savannas

Presenting author: Urbazaev, Mikhail

Urbazaev, Mikhail (1); Armston, John (1); Li, Xiaoxuan (2); Wessels, Konrad (2); Duncanson, Laura (1); Bhogapurapu, Narayanarao (3); Siqueira, Paul (3), 1: University of Maryland, United States of America; 2: George Mason University, United States of America; 3: University of Massachusetts Amherst, United States of America



### | Three Component Scattering Powers From Sentinel-1 SAR Data

Presenting author: Verma, Abhinav

Verma, Abhinav (1); Bhattacharya, Avik (1); Dey, Subhadip (2), 1: Indian Institute of Technology Bombay, India; 2: Indian Institute of Technology Kharagpur, India



### | KAPRI - the Polarimetric and Interferometric Bistatic Real-Aperture Ku-Band Radar for Environmental Information Retrieval

Presenting author: Mas i Sanz, Esther

Mas i Sanz, Esther (1); Stefko, Marcel (1); Hajnsek, Irena (1,2), 1: Institute of Environmental Engineering, ETH Zürich, Switzerland; 2: Microwaves and Radar Institute, German Aerospace Center, Germany



### | InSAR BASED PREDICTION OF RAINFALL INDUCED LANDSLIDES

Presenting author: Rao, Yalamanchili Subrahmanyeswara

Singh, Shubham (1); Panigrahi, Rajib Kumar (1); Garg, Rahul Dev (1); Kanungo, Debi Prasanna (2); Rao, Yalamanchili Subrahmanyeswara (3), 1: IIT Roorkee, India; 2: CSIR-CBRI Roorkee, India; 3: Indian Institute of Technology Bombay Centre of Studies in Resources Engineering (CSRE)

## Programme Agenda



### | A Novel MT-PolInSAR Deformation Monitoring Method Considering the Characteristics of Polarimetric Scattering and Coherence

Presenting author: Wang, Guanya

Wang, Guanya, Central South University, People's Republic of China



### | Deep Learning For Sentinel-1 Polarimetric Information Reconstruction

Presenting author: De Laurentiis, Leonardo

De Laurentiis, Leonardo; Albinet, Clément, ESA, Italy



### | Analysis of the Performance of Polarimetric Persistent Scatterer Interferometry on Persistent and Distributed Scatterers with Sentinel-1 Data

Presenting author: Luo, Jiayin

Luo, Jiayin (1); Lopez-Sanchez, Juan M (1); De Zan, Francesco (2), 1: University of Alicante, Spain; 2: Delta phi remote sensing GmbH, Germany



### | Analyzing the Sensitivity and Estimation Potential of Multi-Frequency Polarimetric SAR to Forest Stem Volume

Presenting author: Fan, Yaxiong

Fan, Yaxiong (1); Chen, Erxue (1); Li, Zengyuan (1); Zhao, Lei (1); Zhang, Wangfei (2); Xu, Kunpeng (1); Ma, Yunmei (1), 1: Research Institute of Forest Resource Information Techniques, Chinese Academy of Forestry, China, People's Republic of; 2: Southwest Forestry University, China, People's Republic of



### | Bisecting Stochastic Clustering

Presenting author: Rodrigues Lima Carvalho, Naiallen Carolyne

Rodrigues Lima Carvalho, Naiallen Carolyne; Siqueira Sant'Anna, Sidnei Joo, INPE (National Institute for Space Research), Czech Republic



### | Coherent Target Characterization in Radar Polarimetry

Presenting author: Bhattacharya, Avik

Bhattacharya, Avik (1); Verma, Abhinav (1); Dey, Subhadip (2), 1: Indian Institute of Technology Bombay, India; 2: Indian Institute of Technology Kharagpur, India



### | Combining Optical and SAR Remote Sensing for Forest Disturbance Mapping: A case of a country-wide bark beetle outbreak in Central Europe

Presenting author: Washaya, Prosper

Washaya, Prosper; Modlinger, Roman; Singh, Arunima; Hlásny, Tomáš, Faculty of Forestry and Wood Sciences Czech University of Life Sciences Prague



### | Comparison of Quad and Compact-pol SAR data of RISAT-1A for Classification of Various Land Features

Presenting author: Yalamanchili, Subrahmanyeswara Rao

Yalamanchili, Subrahmanyeswara Rao; Kumar, Vineet, Indian Institute of Technology Bombay, India



## Programme Agenda



### | Detection of Acacia Xanthophloea spp using Sentinel-1( Single Look Complex) and Machine Learning Approaches

Presenting author: Osio, Anne

Osio, Anne; Ayugi, Okoth, Technical University of Kenya



### | Improved Forest Parameter Mapping by Fusion of TanDEM-X InSAR Data and Simulated BIOMASS PolInSAR Data

Presenting author: Xie, Yanzhou

Zhao, Rong (1); Xie, Yanzhou (2,3); Zhu, Jianjun (3); Liu, Zhiwei (4,3); He, Wenjie (3); Fu, Haiqiang (3), 1: Central South University of Forestry and Technology, China, People's Republic of; 2: Centre d'Etudes Spatiales de la Biosphère (CESBIO), CNRS-CNES-Université Paul Sabatier-IRD, Toulouse, France; 3: Central South University, Changsha, China; 4: University of Alicante, P.O.Box 99, E-03080 Alicante, Spain



### | Downscaling Approach To Estimate Forest Disturbance Biomass Removal

Presenting author: Filippini, Federico

Filippini, Federico; Agrillo, Emiliano, Italian Institute for Environmental Protection and Research (ISPRA), Italy



### | Dual-polarimetric Sentinel-1 SAR time series for Po River basin monitoring

Presenting author: Ferrentino, Emanuele

Ferrentino, Emanuele (1); Bignami, Christian (1); Polcari, Marco (1); Nunziata, Ferdinando (2); Stramondo, Salvatore (1); Migliaccio, Maurizio (1,2), 1: Istituto Nazionale di Geofisica e Vulcanologia, Italy; 2: Universit degli studi di Napoli Parthenope



### | ESA Forest Carbon Monitoring project – Key achievements

Presenting author: Antropov, Oleg

Miettinen, Jukka (1); Antropov, Oleg (1); Auvinen, Markus (2); Cartus, Oliver (3); Herold, Martin (4); Häme, Lauri (5); Häme, Tuomas (1); Katila, Matti (6); Korhonen, Kari T. (6); Lozano, Ismael (7); Malaga, Natalia (8); Maximo, Yasmin (9); McRoberts, Ronald (10); Minunno, Francesco (7); Mäkelä, Annikki (7); Pihlajamäki, Petteri (2); Santoro, Maurizio (3); Seifert, Frank Martin (11); Seitsonen, Lauri (1); Sirro, Laura (1); VanBrusselen, Jo (9); Verkerk, Hans (9), 1: VTT Technical Research Centre of Finland, Finland; 2: AFRY; 3: Gamma Remote Sensing; 4: GFZ German Research Centre for Geosciences; 5: Terramonitor; 6: Natural Resources Institute Finland; 7: University of Helsinki; 8: Wageningen University; 9: European Forest Institute; 10: University of Minnesota; 11: European Space Agency



### | Estimation of Daily CO2 Fluxes and Carbon Budgets for Rapeseed by the Assimilation of Optical and SAR Remote Sensing Data into a Crop Model

Presenting author: Fieuzal, Rémy

Fieuzal, Rémy (1); Diop, Souleymane (2); Wijmer, Taeken (1); Pique, Gaetan (1); Al Bitar, Ahmad (1); Baup, Frédéric (1); Allies, Aubin (3); Roumiguié, Antoine (4); Arnaud, Ludovic (1); Champolivier, Luc (5); Dejoux, Jean-François (1); Tallec, Tiphaine (1); Ceschia, Eric (1), 1: Centre d'Études de la Biosphère (CESBIO), Université de Toulouse, CNES/CNRS/INRAE/IRD/UT3, 31401 Toulouse, France; 2: Université Paris-Saclay, INRAE, AgroParisTech, UMR EcoSys, 91120 Palaiseau, France; 3: EarthDaily Agro, 31130 Balma, France; 4: Airbus Defense and Space Geo, 31030 Toulouse, France; 5: Station Inter-Instituts, Terres Inovia, 31450 Bazige, France

## Programme Agenda



### | Evaluation Of Planet's Biomass Proxy Product To Monitor Crop Growth And Forecast Yield

Presenting author: Guillevic, Pierre

Guillevic, Pierre (1); Aouizerats, Benjamin (1); Burger, Rogier (1); Den Besten, Nadja (1); Jackson, Daniel (1); Zajdband, Ariel (2); Catarino, Filipe (1); Van der Horst, Teije (1); Koopmans, Regan (1); Houborg, Rasmus (2); Franz, Trenton (3); Tallec, Tiphaine (4); Brut, Aurore (4); De Jeu, Richard (1), 1: Planet Labs PBC, Haarlem, The Netherlands; 2: Planet Labs PBC, San Francisco, USA; 3: Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, USA; 4: Centre d'Études Spatiales de la Biosphère (CESBIO), Toulouse, France



### | Forest Classification For Biomass Estimation By SAR Polarimetry

Presenting author: Chen, Ji

Chen, Ji; Greene Gondi, Fernando; Robson, Mike; Branson, Wendy, MDA, Canada



### | GEO-Trees Data Component – a Global Harmonised In-situ Data Repository for Forest Biomass Maps Validation

Presenting author: Schepaschenko, Dmitry

Schepaschenko, Dmitry (1); Chave, Jérôme (2); Phillips, Oliver L. (3); Lewis, Simon L. (3,4); Davies, Stuart J. (5); Réjou-Méchain, Maxime (6); Sist, Plinio (7); Dürauer, Martina (1); Fritz, Steffen (1); Dion, Iris-Amata (2); Scipal, Klaus (8), 1: International Institute for Applied Systems Analysis, Austria; 2: Evolution and Biological Diversity (EDB), CNRS/IRD/UPS, Toulouse, France; 3: School of Geography, University of Leeds, Leeds, UK; 4: Department of Geography, University College London (UCL), London, UK; 5: Forest Global Earth Observatory, Smithsonian Tropical Research Institute, Washington, District of Columbia, USA; 6: AMAP, Univ. Montpellier, IRD, CNRS, CIRAD, INRAE, Montpellier, France; 7: Forests and Societies, CIRAD, Montpellier, France; 8: European Space Agency (ESA), Frascati, Italy



### | Tropical Forest Characterization by Multi-baseline PolInSAR under the BIOMASS Mission Context

Presenting author: Xie, Yanzhou

Xie, Yanzhou (1,2); Ferro-Famil, Laurent (3,1); Huang, Yue (1); Le Toan, Thuy (1); Zhu, Jianjun (2); Fu, Haiqiang (2); Shen, Peng (2), 1: Centre d'Études Spatiales de la Biosphère (CESBIO), Toulouse, France; 2: Central South University, Changsha, China; 3: ISAE-SUPAERO, University of Toulouse, France

## Day 4 - 22/06/2023

### Espaces Vanel

### TomoSAR Methods (S13)

Chairs: Yue Huang, IETR, University of Rennes 1, Kostas Papathanassiou, DLR

09:00 - 10:40

## Programme Agenda



### 09:00-09:20 | Tomographic SAR Algorithms Performance in Co-Fliers Mission Concept Formulation

Presenting author: Lavalle, Marco

Lavalle, Marco; Joshil, Shashank; Seker, Ilgin; Loria, Eric; Ahmed, Razi; Hawkins, Brian, NASA JPL/Caltech, United States of America



### 09:20-09:40 | Spaceborne FDM MIMO SAR Tomography

Presenting author: Tebaldini, Stefano

Tebaldini, Stefano (1); Ferro-Famil, Laurent (2,3); Giudici, Davide (4); Banda, Francesco (4), 1: Politecnico di Milano, Italy; 2:

ISAE-SUPAERO, University of Toulouse; 3: CESBIO Toulouse; 4: Aresys



### 09:40-10:00 | Deep Learning based Enhancement of TomoSAR Stacks

Presenting author: Serafin Garcia, Sergio Alejandro

Serafin Garcia, Sergio Alejandro; Matteo, Nannini; Martin del Campo Becerra, Gustavo Daniel; Haensch, Ronny; Reigber, Andreas, German Aerospace Center (DLR), Germany



### 10:00-10:20 | Multifrequency Polarization Coherence Tomography In Forests

Presenting author: Guliaev, Roman

Guliaev, Roman; Pardini, Matteo; Papathanassiou, Konstantinos, German Aerospace Center (DLR) – Microwave and Radar Institute – Wessling (Germany)



### 10:20-10:40 | Linking Changes of TomoSAR 3-D Reflectivity Profiles and Pol-InSAR Measurements in Forest Scenarios

Presenting author: Pardini, Matteo

Pardini, Matteo; Romero-Puig, Noelia; Guliaev, Roman; Papathanassiou, Konstantinos, German Aerospace Center (DLR), Germany

## Coffee Break

10:40 - 11:10

## Campaigns (S14)

Chairs: Matteo Pardini, German Aerospace Center (DLR), Dinh Ho Tong Minh, INRAE

11:10 - 12:50



### 11:10-11:30 | Mapping Tropical Forest in Gabon With L-/P-band Multibaseline Acquisitions: First Results From The GabonX Campaign

Presenting author: Hajnsek, Irena

Hajnsek, Irena (1,2); Pardini, Matteo (1); Guliaev, Roman (1); Papathanassiou, Kostas (1); Horn, Ralf (1); Keller, Martin (1); Jaeger, Marc (1);

Casal, Tania (3), 1: ETH Zurich / DLR, Germany; 2: DLR, Germany; 3: ESA, ESTEC

## Programme Agenda



### 11:30-11:50 | Multi-Wavelength Mono- And Bi-Static Phenomenological Analysis Of Microwave Scattering From A Temperate Forest: Results From The Tomosense Campaign

Presenting author: Tebaldini, Stefano

Tebaldini, Stefano; Mariotti d'Alessandro, Mauro, Politecnico di Milano, Italy



### 11:50-12:10 | The Potential of SAR Tomography and Phase Histogram Techniques for Estimating Forest Structure: An Assessment Based on TomoSense Data

Presenting author: Wu, Chuanjun

Wu, Chuanjun (1,2); Tebaldini, Stefano (1); Mariotti d'Alessandro, Mauro (1); Yu, Yanghai (3); Lei, Yang (3); Zhang, Lu (2); Liao, Mingsheng (2), 1: Politecnico di Milano, Italy; 2: Wuhan University, Wuhan, Hubei, China; 3: National Space Science Center, Chinese Academy of Sciences, Beijing, China



### 12:10-12:30 | Tomographic Calibration And Processing For Repeat-pass Bistatic Airborne SAR: A Case Study On New TomoSense L-band Data

Presenting author: Yu, Yanghai

Yu, Yanghai (1); Tebaldini, Stefano (2); Mariotti d'Alessandro, Mauro (2); Lei, Yang (1); Liao, Mingsheng (3); Zhang, Lu (3), 1: National Space Science Center, Chinese Academy of Sciences, China; 2: Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Italy; 3: State Key Laboratory of Information Engineering in Survey, Mapping and Remote Sensing, Wuhan University, China



### 12:30-12:50 | Fifth Anniversary of the TropiScat-2 Experiment: Insights for the BIOMASS Mission & Beyond

Presenting author: Villard, Ludovic

Villard, Ludovic (1); El Idrissi Essebtey, Salma (1); Menez, Thibault (1); Koleck, Thierry (2,1); Vincent, Grégoire (3); Demontoux, François (4); Burban, Benoît (5); Borderies, Pierre (6); Ferro-Famil, Laurent (7); Le Toan, Thuy (1), 1: CESBIO, Université de Toulouse, CNES/CNRS/INRAE/IRD/UPS, Toulouse, France; 2: CNES, Toulouse, France; 3: AMAP, IRD, CNRS, INRA, Université Montpellier, CIRAD, 34000 Montpellier, France; 4: IMS, Université de Bordeaux, Bordeaux, France; 5: Ecofog, Laboratoire Ecologie des forts de Guyane, Kourou (Guyane française); 6: ONERA/DEMR, The French Aerospace Lab, Toulouse (France); 7: ISAE SUPAERO, University of Toulouse, Toulouse, France

## Lunch Break

12:50 - 14:10

## Cryosphere Applications (S15)

Chairs: Torbjrn Eltoft, UiT the Arctic University of Norway, Irena Hajnsek, ETH Zurich / DLR

14:10 - 15:50

## Programme Agenda



### 14:10-14:30 | An Investigation of Snow Water Equivalent Retrieval by Across-Track SAR Formations

Presenting author: Tebaldini, Stefano

Tebaldini, Stefano (1); Ferro-Famil, Laurent (2,3); Giudici, Davide (4); Banda, Francesco (4), 1: Politecnico di Milano, Italy; 2: ISAE-SUPAERO, University of Toulouse; 3: CESBIO Toulouse; 4: Aresys



### 14:30-14:50 | Retrieval of Snow Water Equivalent During Snow Accumulation Using ALOS-2 and Sentinel-1 SAR Interferometry

Presenting author: Lei, Yang

Lei, Yang (1); Liang, Cunren (2); Shi, Jiancheng (1); Werner, Charles (3); Zhang, Jing (1), 1: Chinese Academy of Sciences, China, People's Republic of; 2: Peking University, China, People's Republic of; 3: Gamma Remote Sensing AG, Switzerland



### 14:50-15:10 | Snow Water Equivalent Retrieval using Interferometric and Polarimetric SAR Data

Presenting author: Belinska, Kristina

Belinska, Kristina (1,2); Fischer, Georg (1); Hajnsek, Irena (1,2), 1: Microwaves and Radar Institute, German Aerospace Center (DLR); 2: Institute of Environmental Engineering, ETH Zurich



### 15:10-15:30 | Monostatic and Bistatic Polarimetric Observations of Snow Cover on Top of the Great Aletsch Glacier at Ku-band

Presenting author: Stefko, Marcel

Stefko, Marcel (1); Bernhard, Philipp (1); Frey, Othmar (1,2); Hajnsek, Irena (1,3), 1: ETH Zurich, Switzerland; 2: Gamma Remote Sensing AG, Switzerland; 3: German Aerospace Center, Germany



### 15:30-15:50 | Towards a Pol-InSAR Firn Density Retrieval

Presenting author: Fischer, Georg

Fischer, Georg (1); Papathanassiou, Kostas (1); Hajnsek, Irena (1,2), 1: German Aerospace Center (DLR), Microwaves and Radar Institute, Germany; 2: ETH Zurich, Institute of Environmental Engineering, Switzerland

## Coffee Break

15:50 - 16:20

## Ocean/Sea Ice Applications (S16)

Chairs: Georg Fischer, German Aerospace Center (DLR), Kristina Belinska, DLR

16:20 - 18:00

## Programme Agenda



### 16:20-16:40 | Antarctic Sea Ice Elevation and Roughness Retrieval Using Polarimetric SAR Interferometry

Presenting author: Huang, Lanqing

Huang, Lanqing (1); Hajnsek, Irena (1,2), 1: ETH Zurich, Switzerland; 2: DLR, Germany



### 16:40-17:00 | Polarimetric Signatures for the Analysis of Fast Sea Ice in the Belgica Bank Area

Presenting author: Eltoft, Torbjørn

Eltoft, Torbjørn (1); Ratha, Debanshu (1); Ferro-Famil, Laurent (2), 1: UiT the Arctic University of Norway, Norway; 2: ISAE-Supaero, Toulouse, France



### 17:00-17:20 | Automatic Refugee Inflatable Vessel Detection with Polarimetric SAR

Presenting author: Lanz, Peter

Lanz, Peter (1,2,4); Marino, Armando (3); Simpson, Morgan (3); Brinkhoff, Thomas (2); Köster, Frank (1,4); Möller, Matthias (5), 1: Univ. of Oldenburg, Germany; 2: Jade University of Applied Sciences Oldenburg, Germany; 3: University of Stirling, Scotland; 4: German Aerospace Center; 5: Otto-Friedrich-University of Bamberg, Germany



### 17:20-17:40 | Calibration and Validation of EOS-04 Hybrid Polarimetric ScanSAR Data

Presenting author: Poludasu, Jayasri V

Poludasu, Jayasri V; Sahu, Samvram; K, Niharika; Y, Ramu; Ryali, HSV Usha Sundari; EVS, Sita Kumari, Indian Space Research Organization ISRO, India

## GEO-TREES community engagement (hybrid splinter meeting) (S17)

This is a closed hybrid meeting.

16:20 - 18:00

## PolInSAR Party

21:00 - 23:30

Day 5 - 23/06/2023

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**Espaces Vanel**

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## Hydrology Applications (S18)

Chairs: Philippe Paillou, University of Bordeaux, Jolanda Patruno, RHEA SpA

## Programme Agenda

09:00 - 10:40



### 09:00-09:20 | Comparison of Soil Moisture Retrieval Models using Polarimetric SAR data

Presenting author: Bhogapurapu, Narayanarao

Sahu, Uddesh (1); Rao, Y.S (1); Bhogapurapu, Narayanarao (1,2), 1: IIT Bombay, India; 2: University of Massachusetts, Amherst



### 09:20-09:40 | Physics-Based ML And Polarimetric SAR For Soil Moisture Retrieval

Presenting author: Papale, Lorenzo Giuliano

Papale, Lorenzo Giuliano; Guerriero, Leila; Del Frate, Fabio; Schiavon, Giovanni, Tor Vergata University of Rome, Italy



### 09:40-10:00 | Polarimetric Decomposition Techniques and Machine Learning Modelling for Soil Moisture Retrieval from Simulated NASA-ISRO SAR (NISAR) L-Band Data

Presenting author: Khati, Unmesh

Dinesh, Dev; Kumar, Shashi; Khati, Unmesh; Saran, Sameer, Indian Institute of Remote Sensing, Indian Space Research Organisation (ISRO), India



### 10:00-10:20 | The Ephemeral Kuiseb River (Namibia): Past and Present History from SAR Imagery

Presenting author: Paillou, Philippe

Paillou, Philippe (1); Lopez, Sylvia (1); De Zan, Francesco (2); Normandin, Cassandra (3); Scipal, Klaus (4); Marais, Eugene (5), 1: University of Bordeaux, France; 2: Delta Phi Remote Sensing GmbH, Germany; 3: INRA Bordeaux, France; 4: ESRIN, Frascati, Italy; 5: Gobabeb Research and Training Centre, Namibia



### 10:20-10:40 | Detecting and Monitoring of Water Hyacinth in Lake Victoria Using Radar Polarimetric Data

Presenting author: Isundwa, Felix

Isundwa, Felix (1); Morgan, Simpson (1); Vahid, Akbari (1); Deepayan, Bhowmik (3); Srikanth, Rupavatharam (2); Aviraj, Datta (2); Pranuthi, Gogumalla (2); G Nagendra, Prabhu (4); Savitri, Maharaj (1); Armando, Marino (1), 1: Faculty of Natural Sciences, University of Stirling, Stirling, United Kingdom; 2: International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India; 3: Faculty of Science, Agriculture & Engineering, Newcastle University, Newcastle, United Kingdom; 4: Centre for Research on Aquatic Resources, Sanatana Dharma College, Alleppey, India

## Sessions Recommendation & Summary (S19)

11:10 - 12:50

## Workshop Closure (S20)

12:50 - 13:00