

PROGRAMME BOOK

13th EARSeL

16 - 19 April 2024, València, Spain



EUROPEAN ASSOCIATION
OF REMOTE SENSING LABORATORIES



UNIVERSITAT
D'VALÈNCIA



A warm thanks to our sponsors and participants at the 13th EARSeL Workshop!

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It is with great pleasure that EARSeL and the local organizers at University of Valencia welcome all participants to this 13th EARSeL Imaging Spectroscopy Workshop.

Imaging spectroscopy science became more exciting than ever. Firstly, there has been an increase in the availability of airborne imaging spectroscopy data, as well as the development of operational processing chains and robust analysis methods. These advancements have contributed to more accurate and reliable analyses. Secondly, the emergence of new-generation spaceborne imaging spectrometers, both recently launched scientific precursor missions and upcoming operational ones, offers the potential for obtaining unprecedented levels of environmental information. These missions promise to deliver more accurate, frequent, timely, and large-scale data on the environment. Concurrently, there have been rapid advancements in Unoccupied Aerial Vehicles and close-range spectroscopy at more regional and local scales.

Furthermore, the progress in solar-induced fluorescence (SIF) and mid-infrared spectroscopy for environmental applications has further enhanced the relevance of Earth observation through imaging spectroscopy. These new developments have significantly expanded the applications of Earth observation and fostered greater interdisciplinary collaboration within the hyperspectral community.

As a result, the workshop series organized by the EARSeL Special Interest Group on Imaging Spectroscopy has attracted an increasingly international and interdisciplinary audience. It has gained recognition as one of the premier conferences on imaging spectroscopy for Earth observation in Europe and worldwide.

We extend a warm invitation to researchers, students, and professionals from Earth and environmental sciences who work with imaging spectroscopy data or engage in field and laboratory spectroscopy. We cordially welcome you at the 13th EARSeL Workshop on Imaging Spectroscopy in Valencia in 2024. The workshop will feature oral and poster sessions centred around emerging and mature hyperspectral topics, and an after-workshop day is offered to include tutorials and demonstrations.

Jochem Verrelst, Katja Berger and the Organizing Committee

Scientific Committee

Agnieszka Soszynska (Univ. of Leicester, UK)

Akpona Okujeni (HU Berlin, Germany)

Ana Belen Ruescas (Univ of València, Spain)

Bastian Siegmann (FZ Jülich, Germany)

Clement Atzberger (BOKU Vienna, Austria)

Daniel Odermatt (Eawag, Switzerland)

David R. Thompson (NASA JPL, US)

Elnaz Neinavaz (UT ITC, Netherlands)

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Jean-Christophe Schyns (BELSPO, Belgium)

Jennifer Adams (Univ. of Zurich, Switzerland)

Jocelyn Chanussot (Grenoble Institute of

Technology, France)

Jorge Vicent (Univ. of València, Spain /

Magellium, France)

Jose Moreno (Univ. of València, Spain)

Juliane Bendig (FZ Jülich, Germany)

Klaus-Ulrich Komp (EFTAS, Germany)

Nicole Pinnel (DLR Oberpfaffenhofen, Germany)

Lucie Homolová (Global Change Research Institute CAS, Czech Republic)

Luis Guanter (Univ. Politècnica de València, Spain)

Marco Celesti (ESA, Netherlands)

M^a Pilar Cendrero Mateo (Univ. of València, Spain)

Markus Immitzer (BOKU Vienna, Austria)

Martin Bachmann (DLR Oberpfaffenhofen, Germany)

Martin Schlerf (LIST, Luxembourg)

Mathias Kneubühler (Univ. of Zurich, Switzerland)

Mattia Crespi (Univ. of Rome, Italy)

Miriam Machwitz (LIST, Luxembourg)

Niklas Bohn (NASA JPL, US)

Nima Pahlevan (NASA GSFC / SSAI, U.S.)

Patrick Hostert (HU Berlin, Germany)

Phil Townsend (Univ. of Wisconsin, US)



Roshanak Darvishzadeh (UT ITC, Netherlands)
Sabine Chabrilat (GFZ Potsdam, Germany)
Saskia Förster (UBA, Dessau-Roßlau, Germany)
Sebastian van der Linden (Univ. Greifswald, Germany)
Shari van Wittenberghe (Univ. of València, Spain)

Raquel de los Reyes (DLR Oberpfaffenhofen, Germany)
Stefanos Georganos (Geomatics Unit, Sweden)
Tobias Hank (LMU München, Germany)
Uta Heiden (DLR Oberpfaffenhofen, Germany)
Zbynek Malenovsky (Univ. of Bonn, Germany)

Organizing Committee

Jochem Verrelst (Univ. of Valencia, Spain)
Katja Berger (GFZ Potsdam, Germany and University of Valencia, Spain)
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Adrián Jacinto Guillem (Univ. of Valencia, Spain)
Dávid D. Kovács (Univ. of Valencia, Spain)



Internet access

EDUROAM is available at ADEIT. For participants who may not have access to it, ADEIT provides wifi access. Configuration instructions are available in the rooms.

Posters

Posters will be displayed every day in a dedicated room (Room 0.1) throughout the workshop. Please hang your poster on the poster board according to the number indicated in the programme. Sticky pads to hang the posters are available at the venue. Posters have to be removed at the end of the day to leave the space for the next poster session. In the case a printing service is needed there is one near the ADEIT centre (named as "Servicio de Copiar Formato") at "Calle de l'Abadia de Sant Martí, 8"; Tel. +34 963 94 34 53.

Oral Presentations

Oral presentations will usually be of 12 min length plus 3 min for questions and change over to the next speaker. The length of the presentations may vary in some sessions depending on the planned number of presentations. Please check the workshop programme or consult the session chair, if unsure. Please upload your presentation as PPT or PDF file directly to the presentation laptop well before the session during breaks. From 30 min before the session start, there will be technical staff on site to assist with this.

Young Scientist Award

A first, second and third prize will be awarded for the best Young Scientists' oral and poster presentations.

Potentially 6 best oral presentations were already selected by the reviewers. The candidate talks are given in a dedicated plenary session (18th April at 10:30 in ADEIT assembly Hall). The winners will be selected during a live voting after the respective presentations with a poll accessed through a QR code shown after the presentations.

Eligible posters will be voted through a QR code. Note that only one time can be voted per person for a first, second and third award throughout the three days. Each day new posters will be displayed. Keep the voting for once having seen all posters.





April 16, 2024: Icebreaker

At the end of the first workshop day, we will provide a guided tour through the city centre to the botanical garden where the **ICEBREAKER** will take place.

The Botanic Garden of Valencia, also known as the “Jardí Botànic de la Universitat de València”, is a renowned botanical garden located in Valencia, Spain. Founded in 1567, it has a rich history of botanical research and conservation. This garden, affiliated with the University of Valencia, spans approximately 50,000 square meters and is known for its diverse plant collections.

The garden boasts an extensive range of plants, including native Mediterranean species, exotic plants, tropical flora, succulents, and more. It plays a vital role in scientific research, focusing on plant biodiversity, ecology, and conservation efforts. Additionally, it serves as an educational hub, offering programs, workshops, and exhibitions to promote environmental awareness and botanical knowledge.

Location: Jardí Botànic, C/ de Quart, 80, Extramurs, 46008 València, Valencia

Time: April 16, 2024 07:00pm-09:00pm



April 17, 2024: Conference Dinner at Only You Hotel

A conference dinner will take place on Wednesday 17th April at “Only You” restaurant. Note that for assisting the dinner a previous quantity of 55€ (30€ for Young Scientists) should have been paid out during the registration in the workshop.

Location: Plaça de Rodrigo Botet, 5, Ciutat Vella, 46002 València, Valencia

Time: April 17, 2024 – 08:30pm-11:30pm





Following the successful tradition of EARSeL Imaging Spectroscopy Workshops, we will offer ~six half-day tutorials free of charge on the day after the workshop on **April 19, 2024**, at the Image Processing Laboratory (IPL) of the University of Valencia, located at the Science Park outside Valencia. See transport option and location on next page. If you have any questions, please contact us: earselvalencia24@gmail.com

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| 09:00 | SS6 seminar room: The EnMAP-Box: Analyzing EnMAP-Data with the EnMAP-Box I |
| 11:00 | SS6 meeting room: The PRISMA toolbox Room 211 – AE 2.1.1 – 1st floor ETSE: The ARTMO toolbox for analyzing and processing hyperspectral data I |
| 11:00 | Break |
| 11:15 | |
| 11:15 | SS6 seminar room: The EnMAP-Box: Analyzing EnMAP-Data with the EnMAP-Box II |
| 13:15 | SS6 meeting room: The EnGeoMAP/EnSoMAP toolboxes Room 211 – AE 2.1.1 – 1st floor ETSE: The ARTMO toolbox for analyzing and processing hyperspectral data I |
| 13:15 | Lunch Break |
| 14:15 | |
| 14:15 | SS6 seminar room: EnMAP IPP User Portal |
| 16:15 | SS6 meeting room: The Atmospheric Look-up table Generator (ALG) toolbox Room 211 – AE 2.1.1 – 1st floor ETSE: The Spectral Information System SPECCHIO |



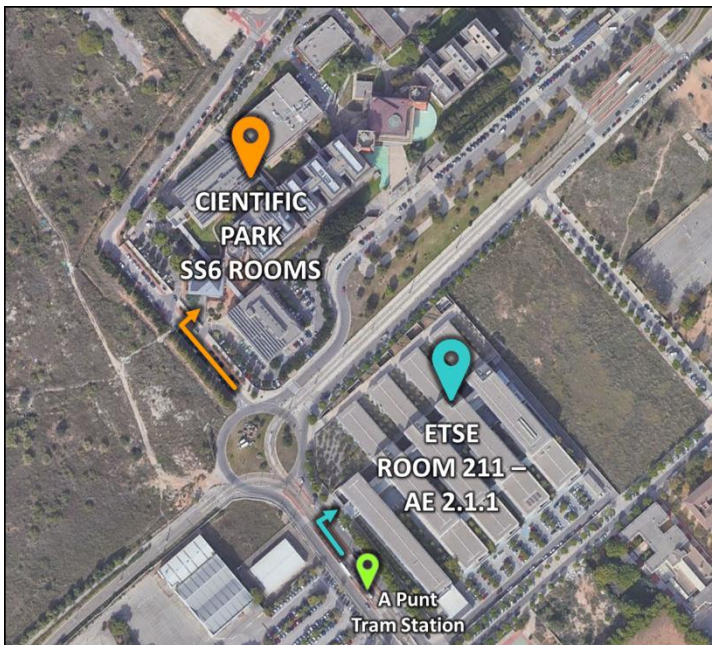
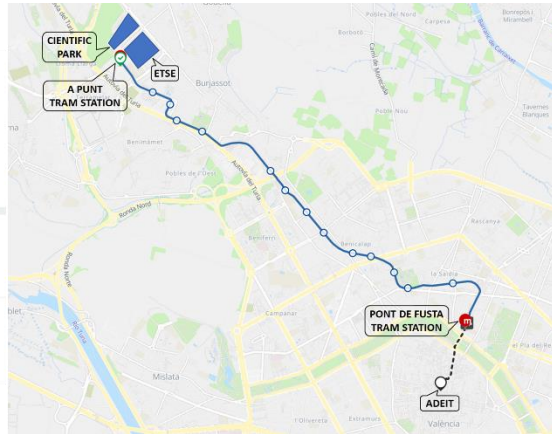
Tutorial room locations:

Fundació Universitat Empresa ADEIT
Plaça Mare de Déu de la Pau, 3 • Valencia

Walk to
Pont De Fusta(4)
About
970m - 13 min

Wait for tram – Mas Del Rosari direction
M4 Mas Del Rosari

Go to
A Punt
4
7 stops – 22 min





Tuesday, 16/Apr/2024

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| 8:30 | Registration Day 1 | | |
| 17:00 | <i>Location: ADEIT Conference Center</i> | | |
| 10:00 | Plenary 1: Welcome plenary session | | |
| 10:30 | <i>Location: ADEIT: Assembly Hall. Chairs: Jochem Verrelst & Katja Berger</i> Dr. Klaus-Ulrich Komp - Treasurer of EARSeL | | |
| 10:30 | Keynote 1: New vegetation products from imaging spectroscopy: physical meaning, quantitative information, uncertainties and validation by Jose Moreno | | |
| 11:00 | <i>Location: ADEIT: Assembly Hall. Chair: Jochem Verrelst</i> | | |
| 11:00 | Break 1-1: Coffee Break | | |
| 11:30 | <i>Location: ADEIT Conference Center</i> | | |
| 11:30 | Keynote 2: Assessing The State of Aquatic Ecosystems With 5 Years of PRISMA Observations by Claudia Giardino | | |
| 12:00 | <i>Location: ADEIT: Assembly Hall. Chair: Jochem Verrelst</i> | | |
| 12:00 | Keynote 3: Mapping and Monitoring Peatlands with Spaceborne Imaging Spectroscopy Data – Opportunities and Challenges by Sebastian van der Linden | | |
| 12:30 | <i>Location: ADEIT: Assembly Hall. Chair: Katja Berger</i> | | |
| 12:30 | Lunch 1: Lunch break | | |
| 14:00 | <i>Location: ADEIT Conference Center</i> | | |
| 14:00 | Them.Sess. 1-1: Preparing for the Copernicus Hyperspectral Imaging Mission for the Environment (CHIME). <i>Location: ADEIT: Assembly Hall. Chairs: Marco Celesti & Anke Schickling</i> | Them.Sess. 1-2: Advancements in field and laboratory measurements of vegetation spectra. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Miina Rautiainen & Lucie Homolová</i> | Them.Sess. 1-3: Assesment of Advancing Water Quality Monitoring with Hyperspectral Satellite Imagery and Explainable Machine Learning. <i>Location: ADEIT: Room 1.4. Chairs: Ana Belen Ruescas & Katalin Blix</i> |
| 15:30 | The Copernicus Hyperspectral Imaging Mission For The Environment (CHIME): Current Status. <u>Marco Celesti</u> , Kevin Alonso, Valentina Boccia, Lauren Despoisse, Antonio Gabriele, Ferran Gascon, Nafiseh Ghasemi, Claudia Isola, Giuseppe Ottavianelli, Anke Schickling, Helene Strese, Heidrun Weber, Jens Nieke CHIME Level 2A and 2B: Atmospheric Correction and Higher-Level Processing. <u>Tobias Storch</u> , Raquel de los Reyes, Peter Schwind, Maximilian Langheinrich, David MarsHall Ingram, Andreas Hueni, Pieter de Vis, Nicolas Lamquin, Vincent Levasseur, Jerome Louis, Sebastien Saunier, Martin Bachmann, | An Innovative UAV-HIS Integration For The Validation Of Current And Upcoming Space Borne Spectroscopy Platforms Reflectance Products. <u>Juan Pablo Arroyo Mora</u> , Margaret Kalacska, Oliver Lucanus, Raymond J. Soffer, Maximilian Brell Spectral Invariant-Based Illumination Correction Of Shaded And Sunlit Surfaces In Close-Range Imaging Spectroscopy Data. <u>Olli Ihalainen</u> , Theresa Sandmann, Matti Möttus, Uwe Rascher Variability in Biochemical and Optical Traits of Coniferous and Deciduous Tree Species - Implications for Validation of Remote Sensing Products. <u>Petr Lukeš</u> , Lucie Homolová, | First Look at Mondrian Forests for Hyperspectral Secchi Depth Estimation. <u>Sivert Bakken</u> , Geir Johnsen, Tor Arne Johansen Advancing Phytoplankton Primary Production Modelling through Hyperspectral Neural Network-Based Uncertainty Quantification. <u>Mortimer Werther</u> , Daniel Odermatt, Arun M. Saranathan, Nima Pahlevan, Sundarabalan V. Balasubramanian, Daniela Gurlin, Jonas Wydler, Olivier Burggraaff Machine Learning-Based Assessment of Cyanobacteria concentration with hyperspectral In-situ data: Implications and insights for Remote Sensing |



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| | <p>Jochem Verrest, Katja Berger, Stephane Guillaso, Karl Segl, Luigi Agrimano, Lucie Homolova, Kevin Alonso, Ferran Gascon, Valentina Boccia</p> <p>Progress in the Development of the L2B Mineral Module for the CHIME E2E Simulator (CHEES). <u>Karl Segl</u>, Stéphane Guillaso, Saeid Asadzadeh, Massimo Musacchio, Ana Maria Sánchez Montero</p> <p>Progress in the Development of the L2B Soil Module for the CHIME-E2E Simulator. <u>Stéphane Guillaso</u>, Karl Segl, Robert Milewski, Stefano Pignatti, Raffaele Casa, Ana Maria Sánchez Montero</p> <p>Latest Status of the Vegetation Traits Retrieval Processor and Models in the Context of Chime Mission Preparation. <u>José Luis García Soria</u>, Miguel Morata, Jochem Verrest, Ana Belén Pascual-Venteo, Katja Berger, Cinzia Panigada, Giulia Tagliabue, Ana María Sánchez Montero</p> <p>How Accurately and How Frequently Must We Retrieve Snow Properties from Imaging Spectroscopy? <u>Jeff Dozier</u>, David Thompson, Niklas Bohn, Edward Bair</p> | <p>Zuzana Lhotáková, Eva Neuwirthová, Aarne Hovi</p> <p>Assessment Of Heavy Metals Contamination Of Selected Tree Species Using Imaging Spectroscopy. <u>Dominik Kopeć</u>, Marelna Kycko, Daniel Okupny, Ryszard Borówka, Dominik Žmuda</p> <p>Diversification Of The FAPAR: Retrieval Of Leaf Energy Dissipation Mechanisms Based On Spectral Unmixing. <u>Shari Van Wittenberghe</u>, Eatidal Amin, Sara Pescador-Dionisio, Ana Belén Pascual, Adrián Moncholí, M^a Pilar Cendrero-Mateo, José Moreno</p> <p>UAV- and Handheld Hyperspectral Imaging for Sphagnum Discrimination and Vegetation Modelling. <u>Franziska Wolff</u>, Pasi Korpelainen, Anette Eltner, Timo Kumpula, Sandra Lorenz</p> | <p>Applications. <u>Jorge García Jiménez</u>, Katalin Blix, Ana B Ruescas, Julia Amorós-López, Dagmar Müller, Carole Lebreton, Kerstin Stelzer</p> <p>Phytoplankton Recognition in Modelled Hyperspectral Data Using Machine Learning and Classical Data Analysis Methods. <u>Adriënnne Esmeralda Oudijk</u>, Alvaro Flores-Romero, Jon Alvarez Justo, Oliver Kevin Hasler, Tor Arne Johansen, Morten Omholt Alver</p> <p>Advances In Ocean Surface Modelling To Correct For Sun And Sky Glint Contributions In Imaging Spectroscopy Measurements. <u>Niklas Bohn</u>, Philip Brodrick, John Chapman, Adam Chlus, Regina Eckert, Robert O. Green, Marcel König, Jeremy Kravitz, Kelly Luis, Jouni Susiluoto, David Thompson</p> <p>Estimating Aquatic Plant Diversity Using Spectral Metrics from Drone Hyperspectral Imaging. <u>Paolo Villa</u>, Andrea Berton, Rossano Bolpagni, Michele Caccia, Maria B. Castellani, Andrea Coppi, Alice Dalla Vecchia, Francesca Gallivanone, Lorenzo Lastrucci, Erika Piaser</p> |
| <p>15:30 16:00</p> | <p>Break 1-2: Coffee Break <i>Location: ADEIT Conference Center</i></p> | | |
| <p>16:00 17:15</p> | <p>Them.Sess. 1-4: Imaging spectroscopy for soil applications. <i>Location: ADEIT: Assembly Hall.</i> <i>Chairs: Eyal Ben Dor & Sabine Chabrilat</i></p> <p>Spaceborne Hyperspectral Time Series For Soil Properties Mapping.</p> | <p>Them.Sess. 1-5: Machine learning and emulation for imaging spectroscopy applications. <i>Location: ADEIT: Room 1.1-1.2.</i> <i>Chairs: Jorge Vicent Servera & Jouni Susiluoto</i></p> <p>Multi-fidelity Gaussian Process Emulation for</p> | <p>Them.Sess. 1-6: Imaging Spectroscopy for climate robust agriculture. <i>Location: ADEIT: Room 1.4.</i> <i>Chairs: Stephanie Delalieux & Gabriele Candiani.</i></p> <p>The SPAGHYTI Project - Assessing the Nitrogen Status and Monitoring the</p> |



Kathrin J. Ward, Saskia Foerster, Sabine Chabrilat

Hyperspectral Remote Sensing for Soil Salinization Assessment.

Giacomo Lazzari, Robert Milewski, Saskia Förster, Sandro Moretti, Sabine Chabrilat

Using Coupled Radiative Transfer Models to Improve Soil Organic Carbon Estimation at the EO Scale. Asmaa Abdelbaki, Robert Milewski, Sabine Chabrilat

Mapping Soil Microbiological Biodiversity Using Simulated CHIME Hyperspectral Data.

Andrew Skidmore, Haidi Abdullah, Andjin Siegenthaler, Yiwei Duan, Devara Adiningrat, Melody Rousseau, Alejandra Torres Rodriguez, Roshanak Darvish, Tiejun Wang, Arjen De Groot

Modelling of Soil Parameters in the Atacama Desert Based on the New EnMAP Sensor. Christopher Loy, Robert Milewski, Jens Boy, Diana Boy, Sabine Chabrilat

Assessment of EnMAP Imaging Spectroscopy Data for the Estimation of Soil Properties in Mediterranean Croplands.

Robert Milewski, Sabine Chabrilat, Nikos Tziolas, Thomas Schmid

Atmospheric Radiative Transfer Models. Jorge Vicent Servera, Luca

Martino, Jochem Verrelst, Gustau Camps-Valls

Local Linear Emulators Accelerate Atmospheric Correction. David

Thompson, Regina Eckert, Philip Brodrick, U. Niklas Bohn, Nimrod Carmon, Robert O. Green

Probabilistic Radiative Transfer Emulation for Imaging Spectroscopy Applications with Kernel Flows. Jouni Susiluoto, Amy

Braverman, Philip G. Brodrick, Nimrod Carmon, Otto Lamminpaa, Houman Owjadi, Michael Turmon

Using Deep Learning To Generate Fractional Vegetation Cover From Multispectral Data. Peter

Schwind, Kevin Kühl, David MarsHall Ingram, Martin Bachmann, Uta Heiden

Comparison of Explainable Machine Learning Methods for Marine Vegetation

Mapping by Using Hyperspectral Imagery.

Katalin Blix, Jorge Garcia-Jimenez, Ana B. Ruescas, Julia Amorós, Galice G. Hoarau, Eli Rinde, Kasper Hancke, Martin H. Skjeltvareid

(a)biotic Stress Levels of Winter Wheat Using Hyperspectral Satellite Imagery. Louise Leclère,

Yannick Curnel, Philippe Vermeulen, François Stevens, Vincent Baeten, Damien Malice, Anne-Michelle Faux, Damien Eylenbosch, Charlotte Bataille, Benjamin Van Der Verren, Nicolas Chamberland, Maxime Troiani, Pierre Defourny, Viviane Planchon

Hyperspectral Remote Sensing And 3D Radiative Transfer Modelling For Maize Crop Monitoring.

Romain Démoulin, Jean-Philippe Gastellu-Etchegorry, Xavier Briottet, Matthieu Marionneau, Zhijun Zhen, Karine Adeline, Valérie Le Dantec

Towards Pixel-Based PROSAIL Inversion for Large-Scale Crop Trait Retrieval Using EnMAP Satellite Data. Peter

Borrmann, Sebastian Preidl

Multi-Year And Multi-Crop Traits Estimation Through Hybrid Approach From PRISMA Hyperspectral Data. Gabriele Candiani,

Alberto Crema, Ramin Heidarian Dehkordi, Francesco Nutini, Cinzia Panigada, Lorenzo Parigi, Monica Pepe, Marina Ranghetti, Micol Rossini, Giulia Tagliabue, Giulio Tellina, Mirco Boschetti

17:15 **Posters Day 1** (List of posters at the end of this programme book)

18:00 *Location: ADEIT: Room 0.1*

18:00 **Guided Tour:**

19:00 Tour through city center to Botanical garden

19:00 **Icebreaker**

21:00 *Location: Botanical garden*



Wednesday, 17/Apr/2024

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| <p>8:00 17:00</p> | <p>Registration Day 2 <i>Location: ADEIT Conference Center</i></p> | | |
| <p>8:30 10:00</p> | <p>Them.Sess. 2-1: EnMAP's first two years in orbit-current status and recent activities – PART I. <i>Location: ADEIT: Assembly Hall. Chairs: Sabine Chabrilat & Anke Schickling</i></p> | <p>Them.Sess. 2-2: Hyperspectral imaging of chlorophyll fluorescence across scales - PART I: retrieval and modeling trends. <i>Location: ADEIT: Room 1.1-1.2. Chair: Uwe Rascher & M^a Pilar Cendrero-Mateo</i></p> | <p>Them.Sess. 2-3: Thermal Infrared (TIR) Remote Sensing Special Session. <i>Location: ADEIT: Room 1.4. Chairs: Jennifer Susan Adams & Elnaz Neinavaz</i></p> |
| | <p>EnMAP: The German Hyperspectral Mission. Sebastian Fischer, Laura La Porta, Anke Schickling, Sabine Chabrilat, Emiliano Carmona Flores, Nicole Pinnel</p> | <p>SIF Spectrum Retrieval in The Framework Of The ESA EE-8 FLEX Mission. Sergio Cogliati, Pietro Chierichetti, Jorge Vicent, Neus Sabater, Pekka Kolmonen, Gwennael Matot, Matthias Drusch, Marc Bouvet, Claudia Isola, Roberto Colombo, José Moreno</p> | <p>Evaluation of the Daytime corrected AVHRR Land Surface Temperature Time Series. Philipp Reiners, Stefanie Holzwarth, Claudia Kuenzer</p> |
| | <p>EnMAP: A breakthrough for Hyperspectral Earth observation. Seen from the manufacturer of the satellite, 2 years after Launch. Rupert Feckl, Simon Baur, Matthias Betz, Bernhard Sang</p> | <p>Leveraging A Large-Scale Radiative Transfer Simulation For An Emulator Based Retrieval Scheme of Sun-Induced Fluorescence in HyPlant Imagery. Jim Loïc Buffat, Miguel Pato, Stefan Auer, Kevin Alonso, Emiliano Carmona, Stefan Maier, Rupert Müller, Patrick Rademske, Uwe Rascher, Hanno Scharr</p> | <p>Comparing Forest Species Emissivity Using Airborne Thermal Infrared Hyperspectral data in a Mixed Temperate Forest. Hillary Korir, Elnaz Neinavaz, Roshanak Darvishzadeh, Andrew K. Skidmore</p> |
| | <p>Two years of EnMAP Ground Segment Operations. Emiliano Carmona Flores, Sabine Engelbrecht, Martin Habermeyer, Sebastian Hartung, Lukas Hoffmann, Helmut Mühle, Miguel Pato, Nicole Pinnel, Peter Schwind, Katrin Wirth</p> | <p>MIDNIGHTS – Monitoring Instrument Detecting NIGHT Spectra: a low-cost system for validation and calibration of SIF retrievals. Troy Sehlin Magney, Christopher Wong, Logan Brissette, Devin McHugh</p> | <p>Hyperspectral Soil Property Mapping Using Thermal Infrared (LWIR) Imagery. Helge L. C. Daempfling, Robert Milewski, Sabine Chabrilat</p> |
| | <p>Status Of EnMAP Processor And Calibration Activities. Miguel Pato, Kevin Alonso, Martin Bachmann, Simon Baur, Maximilian Brell, Raquel de los Reyes, Birgit Gerasch, Martin Habermeyer, Stefanie Holzwarth, Maximilian Langheinrich, David MarsHall Ingram, Mathias Schneider, Peter Schwind, Helge Witt, Emiliano Carmona</p> | <p>Solar-induced Chlorophyll Fluorescence Efficiency Estimated with Radiative Transfer Modelling and Airborne Diurnal Measurements in Barley. Juliane Bendig, Zbynek Malenovsky, Bastian</p> | <p>A Comparative Analysis Of Airborne Hyperspectral And Thermal Infrared Data In The Assessment Of Peatland Drying: A Case Study Of Tuchola Forest, Poland. Martyna Wietecha, Dominik Kopec, Justyna Wylazłowska, Agata Zakrzewska, Jan Niedzielko, Maciej Gąbka, Mariusz Lamentowicz, Stanisław Rosadziński, Stefan Konczal</p> |
| | <p>A Brief History of the Inflight Spectral and</p> | | <p>A Novel Method To Derive Land Surface Temperature And Spectral Emissivity From Airborne Hyperspectral Thermal Infrared Image Data. T. Hu, M. Schlerf, F. Ronellenfitsch, D. Skokovic, R. Llorens, C. Corbari, J. Sobrino, M.</p> |



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| | <p>Radiometric Performance of EnMAP. <u>David MarsHall Ingram</u>, Kevin Alonso, Martin Bachmann, Simon Baur, Birgit Gerasch, Martin Habermeyer, Stefanie Holzwarth, Maximilian Langheinrich, Miguel Pato, Raquel de los Reyes, Mathias Schneider, Peter Schwind, Helge Witt, Emiliano Carmona</p> <p>EnMAP Product Validation: Lessons Learned From Two Years In Orbit. <u>Maximilian Brell</u>, Luis Guanter, Daniel Scheffler, Karl Segl, Niklas Bohn, Sabine Chabrilat, Mariana Soppa, Astrid Bracher, Martin Bachmann, Raquel De Los Reyes, Miguel Pato, Emiliano Carmona, Michael Bock, Laura La Porta, Sebastian Fischer</p> | <p>Siegmann, Julie Krämer, Uwe Rascher</p> <p>A Novel Approach to Retrieve Canopy Evapotranspiration from Hyperspectral Reflectance and Solar-induced Fluorescence Data. <u>Bastian Siegmann</u>, Egor Prikaziuk, Oscar Hartogensis, Mary Rose Mangan, Jim Buffat, Julie Krämer, Juan Quiros Vargas, Juliane Bendig, Patrick Rademske, Uwe Rascher, Christiaan van der Tol</p> <p>Retrieving Sun-Induced Chlorophyll Fluorescence from water bodies using the FLEX mission. <u>Carolina Tenjo</u>, Shari Van Wittenberghe, Antonio Ruiz-Verdú, Jesús Delegido, Jose Moreno</p> <p>Potential Of The Fluorescence Explorer Mission For Inland And Coastal Water Science And Applications. <u>Alexander Damm</u>, Daniel Odermatt</p> | <p>Mancini, L. Hoffmann, K. Mallick</p> |
| <p>10:00 10:30</p> | <p>Break Day 2-1: Coffee Break <i>Location: ADEIT Conference Center</i></p> | | |
| <p>10:30 12:00</p> | <p>Them.Sess. 2-4: EnMAP's first two years in orbit- current status and recent activities – PART II. <i>Location: ADEIT: Assembly Hall. Chairs: Nicole Pinnel & Saskia Foerster</i></p> <p>EnMAP Mission After 2 Years in Orbit: Advances from the Scientific Exploitation Program. <u>Sabine Chabrilat</u>, Maximilian Brell, Karl Segl, Saskia Foerster, Robert Milewski, Saeid Asadzadeh, Kathrin Ward, Daniel Scheffler, Alexander Kokhanovsky, Stephane Guillaso, Arlena Brosinsky, Katrin Koch, Tobias Hank, Astrid Bracher, Mariana Soppa, Anke Schickling, Michael Bock</p> <p>Towards Informed Default Parametrizations of Machine Learning Algorithms for Biophysical Variable Retrieval in the EnMAP-Box. <u>Tobias Hank</u>,</p> | <p>Them.Sess. 2-5: Hyperspectral imaging of chlorophyll fluorescence across scales - PART II: sampling strategies and interpretation. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Shari Van Wittenberghe & Bastian Siegmann</i></p> <p>Measuring Plant Fluorescence across Scales to Understand the Dynamics of Photosynthesis and Stress Resilience – Steps towards the Development of Novel Vegetation Products. <u>Uwe Rascher</u>, Juliane Bendig, Jim Buffat, Antony Castro, Sofia Choza Farias, David Herrera, Ireneus Kleppert, Deepthi Konche, Caspar Kneer, Oliver Knopf, Julie Krämer, Vera Krieger, Onno Muller, Huaiyue Peng, Juan Quiros-Vargas, Saja Salattna, Theresa Sandmann, Bastian Siegmann</p> | |



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| | <p>Stefanie Steinhauser, Aaron Banze, Matthias Wocher</p> <p>Towards a Universal Approach for Retrieval of Non-photosynthetic Vegetation Across Ecosystems from EnMAP Time Series. <u>Akpona Okujeni</u>, Katja Kowalski, Neija Elvekjaer, Patrick Hostert</p> <p>Enmap Hyperspectral Data For Mineral Exploration: Case Studies And Application Examples. <u>Saeid Asadzadeh</u>, Sabine Chabrilat</p> <p>Advantages Of EnMAP Time Series For Plant Life-form Mapping And Fuel Type Characterization In Fire-prone Mediterranean Ecosystems. <u>Neija Elvekjaer</u>, Dong Pham, Sebastian van der Linden, Patrick Hostert, Andreas Janz, Akpona Okujeni</p> <p>EnsAD: EnMAP Satellite-based Algae Detection for Copernicus and Downstream Services. <u>Dagmar Müller</u>, Shun Bi, Rüdiger Röttgers, Martin Hieronymi, Jorge García, Katalin Blix, Ana Ruescas, Julia Amorós, Kerstin Stelzer, Carsten Brockmann, Eefke van der Lee, Annika Grage, Karin Heyer, Johannes Timm</p> | <p>Waking Before the Snow Melts: Seasonal Timing of Fluorescence and Photosynthetic Yields at Needle and Canopy Scales in Evergreen Needleleaf Forests. <u>Zoe Amie Pierrat</u>, Troy Sehlin Magney, Andrew Maguire, Logan Brissette, Russell Doughty, David R. Bowling, Barry Logan, Nicholas Parazoo, Jochen Stutz</p> <p>New approaches for environmental sensing using a UAV-based Active Laser Fluorescence Imaging System. <u>Lammert Kooistra</u>, Hasib Mustafa, Chenglong Zhang, Harm Bartholomeus</p> <p>Top of Canopy Fluorescence Quantum Efficiency from Hyperspectral Point-radiometer Systems. <u>Adrian Moncholi-Estornell</u>, Maria Pilar Cendrero-Mateo, José Moreno, Shari Van Wittenberghe</p> <p>Defining The Spatial Heterogeneity Of FLEX Sun Induced Chlorophyll Fluorescence From Hyperspectral HyPlant And Multispectral Sentinel-2 Data. <u>Nela Jantol</u>, Egor Prikaziuk, Marco Celesti, Itza Hernandez-Sequeira, Enrico Tomelleri, Javier Pacheco Labrador, Shari Van Wittenberghe, Filliberto Pla, Subhajt Bandopadhyay, Gerbrand Koren, Bastian Siegmann, Tarzan Legović, Hrvoje Kutnjak, M^a Pilar Cendrero Mateo</p> <p>Tracing Changes in Subsurface Water Storage Through a Novel Satellite-Based Time-Series of Far-Red Solar-Induced Fluorescence Emission Efficiency. <u>David Herrera</u>, Uwe Rascher, Alexandre Belleflamme, Bastian Siegmann</p> | |
| <p>12:00 13:00</p> | <p>Plenary 2: Panel discussion <i>Location: ADEIT: Assembly Hall. Chair: Marco Celesti</i></p> | <p>Sponsors: Technical talks <i>Location: ADEIT: Room 1.1-1.2. Francesco Beccari (Headwall) Natalia Garcia (ReSe Applications) Trond Løke (Hypspec, NEO)</i></p> | |
| <p>13:00 14:00</p> | <p>Lunch 2: Lunch break <i>Location: ADEIT Conference Center</i></p> | | |
| <p>14:00 15:30</p> | <p>Them.Sess. 2-7: Status and applications of the PRISMA mission at the turn of 5 years in orbit. <i>Location: ADEIT: Assembly Hall. Chairs: Giorgio Licciardi & Patrizia Sacco</i> <i>Introduction "Status of the PRISMA mission at the turn of 5 years in orbit" (Ettore Lopinto, Patrizia Sacco, ASI)</i></p> | <p>Them.Sess. 2-8: Results from the EMIT imaging spectroscopy mission on the International Space Station. <i>Location: ADEIT: Room 1.1-1.2. Chair: Robert Green & K. Dana Chadwick</i> First Year of Observations and Key Results from NASA's EMIT Imaging Spectroscopy Mission.</p> | <p>Them.Sess. 2-9: Discovering the world's aquatic ecosystems through spaceborne spectroscopy: status and Prospects. <i>Location: ADEIT: Room 1.4. Chairs: Nima Pahlevan & Astrid Bracher</i> GALENE: A Future Hyperspectral Satellite</p> |



Hyperspectral Applications and innovation: the “PRISMA SCIENZA” ASI Program Fostering the National Downstream Sector. Giorgio Licciardi, Maria Girolamo Daraio, Maria Elena Cianfanelli, Maria Libera Battagliere, Rocchina Guarini, Luigi D'Amato, Antonio Montuori, Alessandro Coletta

The Characterization Of Phosphate Waste Rock Piles Using PRISMA Hyperspectral Images. Abdelhak El Mansour, Ahmed Laamrani, Abdellatif El Ghali, Rachid Hakkou, Mostafa Benzaazoua

Estimation of Photosynthetic and Non-photosynthetic Vegetation Structural Traits in Mediterranean Tree-grass Ecosystem Using in Situ and PRISMA Satellite Hyperspectral Data. María Dolores Raya-Sereno, María Pilar Martín, Rosario Gonzalez Cascon, Vicente Burchard-Levine, Daniel Pfitzer, Lucía Casillas, David Riaño, Javier Pacheco, Héctor Nieto

Exploitation Of The Prisma Hyperspectral Payload For Vegetation, Fuel And Burn Scar Mapping. Renato Aurigemma, Carlo De Michele, Fabrizio Ferrucci, Valerio Pisacane, Salvatore Schiano lo Moriello, Barbara Hirn, Salvatore Falanga Bolognesi, Fabiana Ravellino

Developing Algorithms for Estimating Functional Traits and biodiversity Indices from PRISMA Imagery. Micol Rossini, Giulia Tagliabue, Rodolfo Gentili, Beatrice Savinelli, Luigi Vignali, Jiawei Gao, Valentina Picchi, Antonella

Robert Green, David Thompson

On-orbit Calibration and Performance of NASA’s EMIT Imaging Spectrometer. David R. Thompson, Robert O. Green, Philip Brodrick, K. Dana Chadwick, Red Willow Coleman, Regina Eckert, Andrew K. Thorpe

Evaluating The Accuracy Of Surface Reflectance Products From The EMIT Imaging Spectrometer. Red Willow Coleman, David R. Thompson, Philip G. Brodrick, Francisco Ochoa, Gregory S. Okin, Raymond Kokaly, Gregg Swayze, Todd Hoefen, John M. Meyer, Evan Cox, Eyal Ben Dor, Daniela Heller Pearlshien, Robert O. Green

Mapping Snow Properties On A Global Scale - A First Outlook To The SBG/CHIME Era Using Observations From The EMIT Imaging Spectrometer. Niklas Bohn, Edward Bair, Philip Brodrick, Nimrod Carmon, Jeff Dozier, Robert O. Green, Thomas Painter, David Thompson

EMIT Applications and Data Accessibility. K. Dana Chadwick, Robert O. Green, David R Thompson, Philip G Brodrick, Kelly Luis, Niklas Bohn, Michael Bramble, Andrew Thorpe, Erik Bolch, Brianna Lind, Mahsa Jami, Aaron Friesz, Cole Krehbiel

Global Mineral Products From EMIT: From Radiance To EarthSystem Model. Philip G. Brodrick, Robert O. Green, David R. Thompson

Mission For Observing Coastal And Inland Aquatic Ecosystems And Wetlands. Malik Chami, Astrid Bracher, Xavier Briottet, Maycira Costa, Alexander Damm-Reiser, Arnold Dekker, Peter Gege, Shungu Garaba, Claudia Giardino, Els Knaeps, Tiit Kutser, Richard Lucas, Daniel Odermatt, Gerard Otter, Nima Pahlevan, Nicole Pinnel, Sindy Sterckx, Kevin Turpie

A Perspective On The Relevance Of The CHIME Mission For Monitoring Inland And Coastal Waters. Marco Celesti, Kevin Alonso, Valentina Boccia, Laurent Despoisse, Alice Fabbretto, Diego Fernandez Prieto, Antonio Gabriele, Ferran Gascon, Nafiseh Ghasemi, Claudia Giardino, Giuseppe Ottavianelli, Andrea Pellegrino, Helene Stresse, Heidrun Weber, Jens Nieke

Hyperspectral EnMAP Data Processing For Aquatic Science And Applications. Nicole Pinnel, Maximilian Langheinrich, Thomas Heege, Mariana Althenburg Soppa, PeterGege, Raquel de los Reyes, Astrid Bracher, Emiliano Carmona

Aquatic observations by the EMIT imaging spectrometer onboard the International Space Station. Kelly Luis, David R. Thompson, Robert O. Green, Philip Brodrick, U. Niklas Bohn, K. Dana Chadwick, Regina Eckert

NASA’s Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission: Ushering a new era in ocean colour measurements. Antonio



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| | <p>Calzone, Roberto Colombo, Cinzia Panigada</p> | | <p>Mannino, Jeremy Werdell, Nasa PACE Project</p> <p>NASA's Geostationary Littoral Imaging and Monitoring Radiometer (GLIMR): Capturing Ocean Colour Dynamics at Diurnal Timescales. Antonio Mannino, Joseph Salisbury, Nasa GLIMR Team</p> |
| <p>15:30 16:00</p> | <p>Break 2-2: Coffee Break <i>Location: ADEIT Conference Center</i></p> | | |
| <p>16:00 17:15</p> | <p>Them.Sess. 2-10: Hyperspectral Remote Sensing of Forest Traits – PART I. <i>Location: ADEIT: Assembly Hall. Chairs: Martin Schlerf & Andrew Skidmore</i></p> <p>Influence Of Surface Anisotropy On Trait-based Functional Diversity Metrics. <u>Marius Vögtli</u>, Isabelle S. Helfenstein, Meredith C. Schuman, Michael E. Schaepman, Mathias Kneubühler, Alexander Damm</p> <p>Exploring The Spectral Variation Hypothesis For α-And β Diversity: A Comparison Of Open Vegetation And Forests. <u>Christine I. B. Wallis</u>, Anna L. Crofts, Mark Vellend</p> <p>Upscaling Drought Disturbance Monitoring in the Amazon Forests by Combining Terrestrial Laser Scanning and Field Spectroscopy. <u>Wouter A. J. Van den Broeck</u>, Zane T. Cooper, Wout Cherlet, Patrick Meir, Antonio Carlos Lola da Costa, Kim Calders</p> <p>Challenges Of Hyperspectral High-Throughput Phenotyping For Drought Tolerance In Conifer Seedlings. <u>Eva Neuwirthová</u>, Jaroslav Čepel, Jiří Chuchlík, Zuzana</p> | <p>Them.Sess. 2-11: Technical discussions on imaging spectroscopy. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Stefan Livens & Sivert Bakken</i></p> <p>Hyperspectral Point Cloud based Geometric and Atmospheric Processing in Complex Terrain. <u>Daniel Schläpfer</u>, Simon Alexander Trim</p> <p>A Small Hyperspectral Satellite Mission Targeting Big Image Quality. <u>Stefan Livens</u>, Dirk Nuyts</p> <p>Not as Dirty as They Look: Flawed Spectral Measurements of Bright Surfaces. <u>Edward Bair</u>, Dar Roberts, David Thompson, Brenton Wilder, Niklas Bohn, Miguel Roman, Christopher Crawford, Jeff Dozier</p> <p>Creating Temporal Hyperspectral Regional Endmember Bundles (THREBs): Automatic Imaged Based EM Extraction And Library Reduction To Derive Regional Fractional Vegetation Cover. <u>Kevin Kühn</u>, David MarsHall Ingram, Uta Heiden, Martin Bachmann</p> <p>What's New in the EnMAP-Box? Visualization and Analysis of EnMAP Data for</p> | <p>Them.Sess. 2-6: Advances in DESIS data products and applications. <i>Location: ADEIT: Room 1.4. Chairs: Nicole Pinnel & Raquel de los Reyes</i></p> <p>Identifying and Handling of Errors Caused by Spectral Ambiguities over Water. <u>Peter Gege</u>, Milad Niroumand-Jadidi</p> <p>Hyperspectral Imaging of the Earth with the DESIS instrument. <u>Emiliano Carmona Flores</u>, Martin Bachmann, Cerra Daniele, Raquel de los Reyes, Daniele Dietrich, Uta Heiden, Uwe Knodt, David Krutz, Heath Lester, Rupert Müller, Mirco Tegler</p> <p>Temporal Soil Composites from the EnMAP and DESIS hyperspectral image archive. <u>Paul Karlsruher</u>, Kevin Kuehl, David MarsHall, Martin Bachmann, Uta Heiden</p> <p>Towards A Machine Learning Retrieval Of Solar-induced Fluorescence From DESIS Data. <u>Miguel Pato</u>, Jim Buffat, Kevin Alonso, Stefan Auer, Emiliano Carmona, Stefan Maier, Rupert Müller, Patrick Rademskje, Uwe Rascher, Hanno Scharr</p> |



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| | Lhotáková, Jan Stejskal, Miroslav Píkl, Daniel Provazník, Jana Albrechtová, Milan Lstibůrek | Everyone. Benjamin <u>Jakimow</u> , Andreas Janz, Fabian Thiel, Leon-Friedrich Thomas, Patrick Hostert, Sebastian van der Linden | |
| 17:15 18:00 | Poster Day 2: Poster session (List of posters at the end of this programme book) <i>Location: ADEIT: Room 0.1</i> | | |
| 20:30 23:30 | Conference Dinner <i>Location: Restaurant ONLY YOU</i> | | |

Thursday, 18/Apr/2024

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| 8:00 10:00 | Registration Day 3 <i>Location: ADEIT Conference Center</i> | | |
| 8:30 10:00 | <p>Them.Sess. 3-1: Hyperspectral Remote Sensing of Forest Traits - PART II. <i>Location: ADEIT: Assembly Hall. Chairs: Roshanak Darvishzadeh & Martin Schlerf</i></p> <p>Leaf Spectroscopy of Defence Traits in Temperate Forests. <u>Rui Xie</u>, Roshanak Darvishzadeh, Andrew Skidmore, Freek Van der Meer</p> <p>Mapping Phyllospere and Soil Fungal Function Using AVIRIS-NG Hyperspectral Data. <u>Andjin Siegenthaler</u>, Haidi Abdullah, Andrew K Skidmore, Yiwei Duan, Mélody Rousseau</p> <p>Retrieving Leaf Lignocellulose of Conifer Species Using PROSPECT-PRO Model. <u>Alejandra Torres Rodriguez</u>, Roshanak Darvishzadeh, Andrew K. Skidmore, Tiejun Wang</p> <p>Quantifying Canopy Nitrogen Content in a Soil-Acidified Temperate Forest Using Image Spectroscopy. <u>Haidi Abdullah</u>, Andrew Skidmore, Andjin Siegenthaler, Roshanak Darvishzadeh,</p> | <p>Them.Sess. 3-2: Exploring the synergies between imaging spectrometer missions and between multispectral data and imaging spectrometer data for advancing applications. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Uta Heiden & Akpona Okuji</i></p> <p>Synergetic Use Of Multispectral And Hyperspectral Imagery Data For Inland Water Applications. <u>Alice Fabbretto</u>, Andrea Pellegrino, Mariano Bresciani, Claudia Giardino, Federica Braga, Krista Alikas, Nicola Ghirardi, Diana Vaičiūtė</p> <p>CHIME Hypersense Campaign Data Harmonisation and Quality Assessment via Uncertainty Analysis. <u>Mike Werfeli</u>, Daria Larcher, Andreas Hueni, Kimberly Mason, Cinzia Panigada, Giulia Tagliabue, Raquel De Los Reyes, Jens Nieke, Michael Rast, Marco Celesti</p> <p>Fusion of Airborne Remote Sensing Data for Description of Thermal Heat Island. <u>Daniel</u></p> | <p>Them.Sess. 3-3: Imaging spectroscopy for diverse ecosystem applications. <i>Location: ADEIT: Room 1.4. Chair: Philip Andrew Townsend</i></p> <p>Urban Tree Species Mapping – Development and Application of the Method Using Hyperspectral and LiDAR Data Fusion. Jan Niedzielko, Dominik Kopeć, Justyna Wylazłowska, Jakub Charyton, Dominik Żmuda</p> <p>Application Hyperspectral Data To Assess The Condition And Identification Of High Mountain Vegetation Along The Trails. <u>Marlena Kycko</u>, Bogdan Zagajewski, Tomasz Zwijacz-Kozica, Marcin Kluczek</p> <p>Biodiversity from Imaging Spectroscopy in Contrasting Tundra and Fynbos Biomes. <u>Philip A Townsend</u>, Kyle R Kovach, Henry A Frye, Ting Zheng, Ryan P Pavlick, Fabian D Schneider, John A Silander, Jeannine Cavender-Bares, Simcelile Chenge, Jasper A Slingsby</p> <p>Advancing The Monitoring Of Species Composition</p> |



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| | <p>Elnaz Neinavaz, Alejandra Torres Rodriguez, Yiwei Duan</p> <p>Mapping Leaf Pigment Contents of a Tall Eucalyptus Forest from Drone Imaging Spectroscopy Data Using the DART Model and Machine Learning. <u>Zbyněk Malenovský</u>, Krishna Lamsal, Růžena Janoutová, Timothy Devereux, William Woodgate, Leonard Hambrecht, Emiliano Cimoli, Arko Lucieer, Lucie Homolová, Omar Regaieg, Yingjie Wang, Jean-Philippe Gastellu-Etchegorry</p> <p>Plant Trait Estimation in a Forest Ecosystem from Hyperspectral Satellites through Machine Learning and Hybrid Approaches. <u>Cinzia Panigada</u>, Jochem Verrelst, Giulia Tagliabue, Jose Luis Garcia Soria, Gabriele Candiani, Boschetti Mirco, Miguel Morata Dolz, Rodolfo Gentili, Beatrice Savinelli, Luigi Vignali, Luca Gallia, Valentina Picchi, Antonella Calzone, Roberto Colombo, Micol Rossini</p> | <p><u>Kopkáně</u>, Jan Novotný, Jan Hanuš, Lucie Homolová, Frantisek Zemek</p> <p>Towards consistent EnMAP, Landsat, and Sentinel-2 Analysis Ready Data cubes for multisensor monitoring applications. <u>Akpona Okujeni</u>, Andreas Janz, Neija Elvekjaer, Katja Kowalski, Benjamin Jakimow, Sebastian van der Linden, Patrick Hostert</p> <p>Mapping The Colors Of Flowering Phenology With Imaging Spectroscopy. <u>Yoseline Angel</u>, Dhruva Kathuria, Evan Lang, K. Dana Chadwick, Philip G. Brodrick, Alexey Shiklomanov</p> <p>Species-Level Fractional Savannah Woody Vegetation Mapping with Drone and EnMap Hyperspectral Data. <u>Christina Karakizi</u>, Akpona Okujeni, Vasileios Tsironis, Athina Psalta, Konstantinos Karantzas, Patrick Hostert, Elias Symeonakis</p> | <p>And Biomass In Grasslands Through Hyperspectral Satellites. <u>Christine I. B. Wallis</u>, Ann-Kathrin Holtgrave, Michael Förster, Birgit Kleinschmit</p> <p>Biodiversity Survey Of The Cape: A Nasa Campaign to Understand Earth's Biodiversity Through the Lens of Spectroscopy. <u>Philip G. Brodrick</u>, Anabelle Cardoso, Adam Wilson, Erin Hestir, Jasper Slingsby, Cherie Forbes</p> <p>Ordination Analysis with Multitemporal EnMAP Data To Map Patterns of Species Composition in Peatland Vegetation. <u>Christina Hellmann</u>, Bernd Bobertz, Hannes Feilhauer, Manuel Reese, Marcel Schwieder, Björn Waske, Sebastian van der Linden</p> |
| <p>10:00 10:30</p> | <p>Break Day 3-1: Coffee Break <i>Location: ADEIT Conference Center</i></p> | | |
| <p>10:30 12:00</p> | <p>YSc: Young Scientist Awards. <i>Location: ADEIT: Assembly Hall. Chairs: Katja Berger & Jochem Verrelst</i></p> <p>Quantification And Mapping Of Non-Photosynthetic Cropland Biomass Using Hyperspectral Data And Machine Learning. <u>Stefanie Steinhauser</u>, Matthias Woher, Andrej Halabuk,</p> | <p>Them.Sess. 3-4: Validation of L2A products: content and format for a global joint effort to validate atmospheric correction products. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Raquel de los Reyes & Andreas Hueni</i></p> <p>Measurements and Simulations of Irradiance Fields. <u>Andreas Hueni</u>, Helena Kuehnle</p> | <p>Neo: Practical session on UAS-based hyperspectral geology for mining. <i>Location: ADEIT: Room 1.4</i></p> <p>A practical workshop led by Neo, Hypspx. Guidance through some hyperspectral UAS data using ENVI and Breeze Geo software.</p> |



Svetlana Košanová, Tobias Hank

Determining Tree Diversity Indicators In Tropical Dry Forests Using Orbital Hyperspectral Sensors.

Patrick B. O'Brien, Arturo Sanchez Azofeifa

On the Potential of Principal Component Analysis for the

Reconstruction of the Full SIF Signal to Emulate SIF Satellite Data.

Miguel Morata Dolz, Bastian Siegmann, Juan Pablo Rivera Caicedo, Jochem Verrelst

Detecting Methane Emissions From Palm Oil Mills Using Spaceborne Imaging Spectrometers.

Adriana Valverde, Itziar Irakulis Loitxate, Javier Roger, Javier Gorroño, Luis Guanter

Early-stress Detection in Tomato: Combining Fluorescence and NPQ-related Absorption Mechanisms.

Sara Pescador-Dionisio, M^a Pilar Cendrero-Mateo, Sergio G Nebauer, Carolina Rausell, Adrián Moncholí Estornell, Aida Robles-Fort, Dani Gil Villar, M^a Dolores Real, Begoña

Renau-Morata, Rosa Victoria Molina, Inmaculada García-Robles, Shari Van Wittenbergh

Temporal And Spatial Retrieval Of Solar-Induced Fluorescence Quantum Efficiency From In-situ And Airborne Observations With DART Modelling.

Omar Regaieg, Zbyněk Malenovský, Bastian Siegmann, Julie Krämer, Juan Quiros Vargas, Nicolas Lauret, Yingjie Wang, Valérie

Uncertainties in Field Spectroscopy

Measurements: Impact of Different Distances of the Fibre Optic Tip of a Field Spectroradiometer to the Reference Panel on Reflectance Factors.

Carmen Meiller, Andreas Hueni, Reinhard Furrer, Bernhard Schmid, Maria Joao Santos

Developing a Strategy To Transfer TRUTHS Radiometric Accuracy To Surface Reflectance

Measurements. Javier Gorroño, Luis Guanter, Montserrat Piñol, Nigel Fox, Thorsten Fehr

Validation of EnMAP Level-2A bottom-of-atmosphere reflectance produced with the EnMAP Processing

Tool (EnPT). Daniel Scheffler, Maximilian Brell, Mariana A. Soppa, Leonardo Alvarado, Astrid Bracher, Karl Segl, Sabine Chabrilat

Next-Generation Imaging Spectroscopy Calibration Methods for SBG-VSWIR.

Regina Eckert, David Thompson, Diana Blaney, Carl Bruce, Lori Moore, Byron Van Gorp, Zachary Small, Peter Sullivan, Hong Tang, Robert Green

Evaluating the EnMAP L2A Normalized Water Leaving Reflectance Product over Two Years of Mission.

Mariana A. Soppa, Maximilian Brell, Sabine Chabrilat, Leonardo Alvarado, Peter Gege, Stefan Plattner, Ian Somlai-Schweiger, Thomas Schroeder, Vittorio Brando, Simone Colella, Mariano Bresciani, Claudia Giardino, Quinten Vanhellemont, François Steinmetz, Daniel Scheffler, Maximilian



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| | <p>Le Dantec, Jean-Philippe Gastellu-Etchegorry</p> | <p>Langheinrich, Emiliano Carmona, Martin Bachmann, Miguel F. V. Pato, Laura La Porta, Sebastian Fischer, Astrid Bracher</p> | |
| <p>12:00</p> | <p>Poster Day 3: Poster session (List of posters at the end of this programme book)</p> | | |
| <p>13:00</p> | <p><i>Location: ADEIT: Room 0.1</i></p> | | |
| <p>13:00</p> | <p>Lunch 3: Lunch break</p> | | |
| <p>14:00</p> | <p><i>Location: ADEIT Conference Center</i></p> | | |
| <p>14:00 15:30</p> | <p>Them.Sess. 3-5: Hyperspectral remote sensing of vegetation health. <i>Location: ADEIT: Assembly Hall. Chairs: Roshanak Darvishzadeh & Clement Atzberger</i></p> | <p>Them.Sess. 3-6: Imaging spectroscopy for environmental applications. <i>Location: ADEIT: Room 1.1-1.2. Chairs: Martin Bachmann & Daniel Schläpfer</i></p> | |
| | <p><i>This session will be finalized by a round table including Miriam Machwitz, Roshanak Darvishzadeh and Clement Atzberger</i></p> | <p>First Nighttime VNIR-SWIR Spectra from Space – Mapping Artificial Lights using EnMAP. <u>Martin Bachmann</u>, Miguel Pato, Tobias Storch</p> | |
| | <p>How Many Bands - How Narrow? A Comparison Of Three Different Sensors For Disease Severity Mapping. <u>Miriam Machwitz</u>, Christian Bossung, Mario Gilcher, Gilles Rock, Franz Ronellenfitsch, Adriano Gama, Daniel Molitor, Kristina Heilmann, Mareike Schultz</p> | <p>Potential of Optical Spaceborne Sensors for the Differentiation of Plastics in the Environment. Toni Schmidt, Theres Kuester, Taylor Smith, <u>Mathias Bochow</u></p> | |
| | <p>Utilization of Deep Learning and Hyperspectral Imaging for Water Deficient Potato Plant Identification. <u>Janez Lapajne</u>, Andrej Vončina, Uroš Žibrat</p> | <p>Using Global Imaging Spectroscopy To Detect And Monitor Climate Extremes. <u>Bryce Currey</u>, Benjamin Poulter, Shawn P. Serbin, David R. Thompson, Phillip A. Townsend, Arlindo M. Da Silva, Alexey N. Shiklomanov</p> | |
| | <p>Leveraging Multimodality For UAV-based Disease Detection In Seed Potatoes. <u>Magdalena Smigaj</u>, Ellis van de Laak, Ricardo da Silva Torres, Jan Kamp, Lammert Kooistra</p> | <p>A Physical Method for Optical Characterization of Pollution in Industrial Wastewater Ponds using Imaging Spectroscopy. Louis Zaugg, <u>Rodolphe Marion</u>, Malik Chami, Xavier Briottet, Laure Roupioz</p> | |
| | <p>Understanding the Effects of Bacterial Leaf Blight Disease on Rice Spectral Signature. <u>Ziyi Wang</u>, Roshanak Darvishzadeh, Nancy Castilla, Alice Laborte, Andy Nelson</p> | <p>Detection Methane Emissions from Municipal Solid Waste Landfill Using Airborne Spectroscopy. <u>Olga Brovkina</u>, Adam Bednařík, Daniel Kopkáně, Tomáš Fabiánec</p> | |
| | <p>The Spatial Scaling CHallenge: ecophysiological variables retrieval and stress detection. Javier Pacheco-Labrador, <u>MaPilar Cendrero-Mateo</u>, Shari Van Wittenberghe, Itza Hernandez Sequeira, Gerbrand Koren, Egor Prikaziuk, Szilvia Fóti,</p> | <p>Attribution Of Individual Methane And Carbon Dioxide Emission Sources Using EMIT Observations From Space. <u>Andrew Thorpe</u>, Robert Green, David Thompson, Philip Brodrick, John Chapman, Clayton</p> | |



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| | <p>Enrico Tomelleri, Kadmiel Maseyk, Nataša Čerešević, Rosario Gonzalez-Cascon, Zbyněk Malenovsky, Mar Albert-Saiz, Michal Antala, János Balogh, Henning Buddenbaum, Mohammad Hossain Dehghan-Shoar, Joseph T. Fennell, Jean-Baptiste Feret, Balde Hamadou, Miriam Machwitz, Ádám Mészáros, Guofang Miao, Miguel Morata, Paul Naethe, Zoltán Nagy, Krisztina Pintér, R. Reddy Pullanagari, Anshu Rastogi, Bastian Siegmann, Sheng Wang, Chenhui Zhang</p> | <p>Elder, John Worden, Dana Chadwick, Willow Coleman, Claire Villanueva-Weeks, Amanda Lopez, Daniel Jensen, Michael Eastwood, Jay Fahlen, Charles Miller</p> |
| <p>15:30 16:00</p> | <p>Break 3-2: Coffee Break <i>Location: ADEIT Conference Center</i></p> | |
| <p>16:00 16:30</p> | <p>Awards: Young Scientist Awards <i>Location: ADEIT: Assembly Hall. Chairs: Mathias Kneubühler & Katja Berger</i></p> | |
| <p>16:30 17:00</p> | <p>Closing: Closing ceremony <i>Location: ADEIT: Assembly Hall. Chairs: Jochem Verrelst & Katja Berger</i> <i>Dr. Klaus-Ulrich Komp - Treasurer of EARSel (Wrap-Up, next EARSel location)</i></p> | |

Posters

Tuesday, 16 April 2024

- 1 **Towards quantification of non-photosynthetic vegetation from Copernicus Hyperspectral Imaging Mission for the Environment (CHIME_NPV).** Andrej Halabuk, Tomáš Rusňák, Svetlana Košťánová
- 2 **Cross Validation of Orbital Hyperspectral Sensors: A Case Study Using PRISMA, EnMAP, DESIS, and EMIT.** Daniela Heller Pearlstein, Eyal Ben Dor
- 3 **The Role of the Scene Generation Module (SGM) into the CHIME End-to-End Simulator (CHEES).** Carolina Tenjo, Adrián Jacinto-Guillén, Antonio Ruiz-Verdú, José Moreno
- 4 **Towards Global Detection of Methane Plumes in Hyperspectral Data of EMIT with Focus for On-board Deployment.** Vít Růžička, Andrew Markham
- 5 **Advancing Topographic Correction in Hyperspectral Imaging: The Shape from Spectra Method.** Nimrod Carmon, Alexander Berk, Niklas Bohn, David R Thompson, Philip G Brodrick, Charles Bachmann
- 6 **Validation of the WORLDSOIL Organic Carbon Monitoring System in the area of Demmin, Germany: Comparison with in-situ and air and spaceborne hyperspectral imagery prediction.** Asmaa Abdelbaki, Sabine Chabrilat, Robert Milewski, Kathrin Ward, Bas van Wesemael, Marmar Sabetizadeh, AsaGholizadeh, Daniel Žížala, Nikolaos Tziolas, Nikolaos Tsakiridis, Uta Heiden, Pablo d'Angelo, Laura Poggio, Eyal Ben-dor, Adrián Sanz Díaz, Julia Yagüe Ballester.
- 7 **HYPERedu Online Learning Program: Concept, Implementation Status and Cooperation Opportunities.** Arlena Brosinsky, Katrin Koch, Saskia Foerster, Robert Eckardt, Michael Bock
- 8 **Mineral Mapping Using EnMAP Hyperspectral Data: A Comparison of Selected Machine Learning Algorithms.** Anna Maria Buczyńska, Saeid Asadzadeh
- 9 **Mapping Land Surface Covers of Ice-free Areas within the South Shetland Islands, Antarctica using hyperspectral imaging spectroscopy.** Thomas Schmid, Robert Milewski,



- Sabine Chabrilat, Claudia Giménez Poblador, Stéphane Guillaso, Juan Pablo Corella, Magaly Koch, Jerónimo López-Martínez
- 10 **Assessment of Atmospheric Correction Algorithms in PRISMA, DESIS, and EnMAP Images in Inland Waters.** Xavier Soria-Perpinya, Eduardo Vicente, Bárbara Alvado, Rebeca Pérez-González, Esther Patricia Urrego, Gabriel R. Caballero, Carolina Tenjo, Antonio Ruiz-Verdú, Jesús Delegido, Juan Miguel Soria, José Moreno, María A. Rodrigo
 - 11 **Assessment of The Influence of Wildfires on Water Quality of Lakes in ESA CCI Global Datasets by Deep Learning.** Lorenzo Parigi, Daniela Stroppiana, Gloria Bordogna, Claudia Giardino, Monica Pinardi, Giulio Tellina, Rossana Caroni, Mariano Bresciani, Clément Albergel
 - 12 **Imaging Spectroscopy of Phytoplankton Species: Investigating the Link Between Inherent Optical Properties and Illumination Conditions.** Loé Maire, Alexander Damm-Reiser, Daniel Odermatt
 - 13 **A Machine Learning Approach for Mapping Chlorophyll Fluorescence at Inland Wetlands.** Maciej Bartold, Marcin Kluczek
 - 14 **Autonomous Hyperspectral Radiometry Systems to support monitoring of Coastal and Inland Water Quality in Belgium.** Francesca Ortenzio, Heloise Lavigne, Quinten Vanhellemont, Clemence Goyens, Kevin Ruddick
 - 15 **From Hyper- to Multi-spectral Databases: Training Machine Learning Models for Turbidity Estimation.** Masuma Chowdhury, Ana B. Ruescas, Irene Laiz, Ignacio De La Calle
 - 16 **Advanced Training Material and Tools for The Next Generation of Marine Remote Sensing Experts.** Ana Belen Ruescas, Hayley Evers-King, Benjamin Loveday, Juan Ignacio Gossn, Vinca Rosmorduc, Kevin Ruddick, Gary Corlett
 - 17 **A TIR Data-Based Service Supporting the Identification of Heat Mitigation Measures in Cities.** Anita D. Bayer, Marco Spagnoli, Dietrich Kuhn, Stephan Holsten
 - 18 **Airborne Hyperspectral Imaging for the Detection, Identification, and Quantification of Pollutant and Toxic Gas Emissions from Inefficient Methane Flaring.** Antoine Dumont, Frédéric Marcotte, Hajera Kouser, Stephane Boubanga
 - 19 **Emissivity Estimation of Metal Roofs from Hyperspectral Thermal Data.** Daniel Kopkáně, Jan Hanuš, Miroslav Píkl, Lucie Homolová

Wednesday, 17 April 2024

- 1 **PRISMA-Learn Project - Advanced Machine Learning Techniques for Data Fusion and Analysis of Images from the PRISMA Mission.** Luca Bergamasco, Francesca Bovolo, Lorenzo Bruzzone, Jia Chen, Fabio Dell'Acqua, Paolo Gamba, Ignacio Masari, Gabriele Moser, Martina Pastorino, Sebastiano B. Serpico, Abhishek Singh, Giulio Weikmann
- 2 **Integrating Spaceborne Hyperspectral Data Interpretation into Mineral Mapping Workflows.** Alice Burrell, Olivia Rhind, Alfred Baines, Richard Chiles, Mark Broadley
- 3 **Above and Beyond: UAV-borne Hyperspectral Mapping Approaches at a Legacy Mine and Tailings Site Within The M4Mining Project.** Friederike M. Koerting, Justus Constantin Hildebrand, Ekaterina Savinova, Steven Micklethwaite, Peter D. Erskine, David Lindblom, Matthew Greenwood, Dominic Brown
- 4 **Impact of Surface Humidity on the Spectral Signature of Industrial and Mining Minerals – Implications for their Detection by Hyperspectral Imaging.** Erica Uccellatori, Stéphane Jacquemoud, Rodolphe Marion



- 5 **Spatial and Spectral Analysis of Fairy Circles In Namibia On Landscape Scale Using Satellite Image Processing And Machine Learning Analysis.** Klii Noy, Micha Silver, Ondrej Pesek, Hezi Yetzhak, Eugene Marais, Arnon Karnieli
- 6 **Advancements in Near-infrared Reflectance Measurements Of Small Leaves And Pine Needles.** Nicolas Venjean
- 7 **Characterization of Multi-Angular Response Of Vegetated Surfaces In The Optical Domain And Use of BRDF Models.** Pietro Chierichetti, Sergio Cogliati, Dirk Schuettemeyer, Jan Hanuš, Marco Celesti, Cinzia Panigada, Micol Rossini, Giulia Tagliabue, Luigi Vignali, Roberto Colombo
- 8 **Hyperspectral Leaf Spectroscopy Reveals the Response of Beech (*Fagus sylvatica*) Seedlings from Across the Species' Range to Simulated Drought.** Dave Kurath, Jolanda Klaver, Tis Voortman, Meredith Christine Schuman, Sofia Julia van Moorsel
- 9 **Linking Tower Remote Sensing with Ecosystem Fluxes - Opportunities, CHallenges, and Recommendations for a Path Forward.** Zoe Amie Pierrat, Troy Sehlin Magney, Loren Albert, Xi Yang, Anam Khan, Benjamin Runkle, Mallory Barnes, Matthew PDannenber, John Gamon, Miriam Johnston, Tommaso Julitta, Charles Southwick, Christopher Still, William Woodgate
- 10 **Modeling Forest Canopy Spectral Transmittance Using Photon Recollision Probability.** Aarne Hovi, Růžena Janoutová
- 11 **Spectral Properties of Vegetation in Northern Peatlands.** Sini-Selina Salko, Aarne Hovi, Iuliia Burdun, Jussi Juola, Miina Rautiainen
- 12 **Remotely Sensing Intraspecific Variation in European Beech (*Fagus sylvatica*) and Its Relation to Drought.** Julia S Joswig, Meredith C Schuman, Anna K Schweiger, Hannes Feilhauer
- 13 **Mapping Forest Canopy Water Content Using Hyperspectral Imagery.** Laura Recuero Pavón, Margarita Huesca, Roshanak Darvishzadeh, Andrew K. Skidmore, Tawanda W. Gara
- 14 **Dealing With Variability In Vegetation Functional Trait Retrievals: Case Study Of Floodplain Forests In Lanžhot, Czech Republic.** Adenan Yandra Nofrizal, Lucie Kupková, Petr Lukeš, Marian Švik, Lucie Červená, Zuzana Lhotáková, Eva Neuwirthová, Jana Albrechtová
- 15 **Identification of a Biodiversity Indicator Species in the Hyperspectral Signature of Boreal Forests.** Eelis Halme, Olli Ihalainen, Matti Möttus
- 16 **The PANDA-WATER Project: PRISMA Products and Applications for Inland and Coastal WATER.** Federica Braga, Mariano Bresciani, Alessia Tricomi, Vittorio Ernesto Brando, Alice Fabbretto, Claudia Giardino, Paolo Villa, Andrea Pellegrino, Salvatore Mangano, Gian Marco Scarpa, Maria Laura Zoffoli, Giorgia Manfè, Marco Bellacicco, Jaime Pitarch Portero, Federico Falcini, Luis Gonzalez Vilas, Roberta Bruno, Maria Libera Battagliere, Giorgio Licciardi, Maria Girolamo Daraio
- 17 **Chlorophyll-b Detection Over Concentrated Harmful Algal Blooms Using Hyperspectral PRISMA Imagery.** Maria Laura Zoffoli, Pierre Gernez, Michael Retho, Soazig Manach, Schapira Mathilde, Federica Braga
- 18 **PRISMA Prototype Algorithms for Estimating Environmental Damage and Vulnerability to Land Degradation: the SAPP4VU Project.** Stefano Pignatti, Maria Francesca Carfora, Rosa Coluzzi, Italia De Feis, Vito Imbrenda, Giovanni Laneve, Maria Lanfredi, Saham Mirzaei, Angelo Palombo, Simone Pascucci, Francesco Rossi, Federico Santini, Tiziana Simoniello, Vanguri Rajesh



- 19 **Quantify Non-Photosynthetic Vegetation (NPV) fraction in the Kenyan Grasslands through Unmixing Hyperspectral Remote Sensing Data.** [Rodolfo Ceriani](#), Francesco Fava, Katayoun Fakherifard, Giulia Tagliabue, Micol Rossini, Sonja Leitner, Cinzia Panigada, Vincent Odongo, Valentina Vaglia, Paul Mutuo, Kelvin Kinuthia, Monica Pepe
- 20 **Explorative Analysis for Assessing Wheat Yield and Grain Protein Content with Machine Learning and PRISMA Hyperspectral Data.** [Marina Ranghetti](#), Mirco Boschetti, Francesco Nutini, Micol Rossini, Gabriele Candiani
- 21 **Early- Season Crop Mapping Using PRISMA image and Machine and Deep Learning Techniques.** [Saham Mirzaei](#), Stefano Pignatti, Maria Francesca Carfora, Francesco Rossi, Simone Pascucci, Federico Santini, Angelo Palombo
- 22 **Radiometric Evaluation of The Updated Version of The Hyperspectral PRISMA Products.** [Andrea Pellegrino](#), Alice Fabbretto, Mariano Bresciani, Federica Braga, Vittorio Ernesto Brando, Salvatore Mangano, Claudia Giardino
- 23 **Assessing Prisma Imagery for Soil Organic Matter Prediction in a Complex Forested Area: An Ensemble Machine Learning Approach.** [Francisco M. Canero](#), Victor Rodriguez-Galiano
- 24 **Characterization of Spectral Response Function of High-Resolution Chlorophyll Fluorescence Spectrometer Using the Slanted-Edge Method.** [Óscar Gutiérrez de la Cámara Ara](#), Félix Muñoz Sánchez, Jorge Alonso Pardo, Marcos Jimenez Michavila, Tomas Belenguer Davila
- 25 **Non-Linear Research Directions to Address the Spatial Scaling Issue Of Solar-Induced Chlorophyll Fluorescence (SIF) Imagery.** [Juan Jose Quiros](#), Gregory Duveiller, Bastian Sigmund, Uwe Rascher
- 26 **Uncertainty assessment in Sun-Induced Chlorophyll Fluorescence retrieval for FLEX Calibration and Validation campaigns.** [Juanjo Peón](#), Marcos Jimenez Michavila, M^o Pilar Cendrero-Mateo, Adrián Moncholí, Javier Gorroño, Shari Van Wittenberghe, Jose Moreno
- 27 **End-To-End Simulations to Optimize Hyperspectral Mission Requirements For 7 Scientific Applications.** [Xavier Briotte](#), Karine Adeline, Touria Bajjouk, Véronique Carrère, Malik Chami, Yevgeni Derimian, Marie Dumont, Stéphanie Doz, Sophie Fabre, Pierre-Yves Foucher, Hervé Herbin, Stéphane Jacquemoud, Marc Lang, Arnaud Le Bris, Sophie Loyer, Rodolphe Marion, Audrey Minghelli, David Sheeren, Benjamin Szymanski, Camille Desjardins, Damien Rodat
- 28 **Agricultural Soil Properties Mapping from PRISMA And EnMap Data: Exploiting Multitemporal Bare Soil Approaches.** [Francesco Rossi](#), Luca Marrone, Khalil Misbah, Saham Mirzaei, Alessia Tricomi, Raffaele Casa, Stefano Pignatti, Giovanni Laneve

Thursday, 18 April 2024

- 1 **Investigating Pseudo-Invariant Targets for Validation in SHIFT Time-Series Spectroscopy.** [Regina Eckert](#), Helena Kuehnle, David Thompson, Philip Brodrick, K. Dana Chadwick, Kathleen Grant, Mark Helmlinger, Daniel Jensen, Raymond Kokaly, Ryan Pavlick, Fabian Schneider, Robert Green
- 2 **The Role of Scale in Predicting Tree Physiology With Hyperspectral Data From Five Mid-European Tree Species.** [Ephraim Amos Schmidt-Riese](#), Michael Förster, Fabian Fassnacht, Pia Kräfft, Robert Jackisch, Birgit Kleinschmit
- 3 **Advancing Plant Trait Estimation using Imaging Spectroscopy: A Bayesian Approach with Enhanced Interpretability and Uncertainty Propagation.** [Dhruva Kathuria](#), Yoseline



Angel, Evan Lang, Alexey N. Shiklomanov

- 4 **Target Detection using UAV-Borne Hyperspectral Imagery.** Luc Jérôme Sierro, Marius Vögtli, Simon Schreiner, Wolfgang Gross, Florian Queck, Jannick Küster, Jonas Mispelhorn, Wolfgang Middelmann, Mathias Kneubühler
- 5 **Comparing Hyspex Airborne Hyperspectral Imagery to Multi-Temporal Sentinel-2 Composites for High-Mountain Plant Communities Mapping.** Marcin Kluczek, Bogdan Zagajewski, Marlena Kycko
- 6 **Identification Of Biophysical Traits In Spectral Signatures At The Leaf Level In A Mixed Beech Forest in Northeast Germany.** Pia Kräft, Ephraim Schmidt-Riese, Michael Förster, Robert Jackisch, Ralf Kätzler, Frank Becker, Anne Clasen, Kai Jütte, Fabian Fassnacht, Birgit Kleinschmit
- 7 **Validation of L2A Surface Reflectances Products using ROSAS (RObotic Station for Atmosphere and Surface) In-Situ Measurements.** Sophie Coustance, Jérôme Colin, Arthur Dick, Olivier Hagolle, Aimé Meygret, Xavier Lenot, Lucas Landier
- 8 **The Invisible Plant: Spectral Feature Analysis of Tillandsia Landbeckii in the Atacama Desert.** Fabian Reddig, Alexander Jenal, Christoph Hütt
- 9 **Nitrogen Monitoring in Specialty Crops Of California; Case Studies In Almond And Grape.** Alireza Pourreza, Momtanu Chakraborty, Parastoo Farajpoor, Sirapoom Peanusaha
- 10 **Understanding The Potential For Hyperspectral Remote Sensing Supporting Peatland Restoration Projects.** Michael Williams, Alice Burrell, Richard Chiles
- 11 **Exploring Sequential Machine Learning Models Regarding Generalisation Opportunities ForHyperspectral Data Processing.** Maximilian Langheinrich
- 12 **Developing An Automatic Approach For Validating Fractional Cover Of Soils In Agricultural Fields Using UAV And Cellphone Images.** Kevin Kühn, Paul Karlshoefer, David MarsHall Ingram, Pablo d' Angelo, Uta Heiden
- 13 **Leaf Structure Matters For Field Evaluation Of Chlorophyll Content With Portable Meters.** Zuzana Lhotakova, Eva Neuwirthová, Markéta Potůčková, Lucie Červená, Lena Hunt, Lucie Kupková, Petr Lukeš, PetyaCampbell, Jana Albrechtová
- 14 **Monitoring Grassland Traits – from Multispectral to Hyperspectral Approaches.** Anne Schucknecht, Sophie Reinermann, Francesco Fava, Giovanni Argenti, Ralf Kiese, Anita Bayer
- 15 **Deep Learning based Semantic Segmentation for EnMAP-Box.** Leon-Friedrich Thomas, Benjamin Jakimow, Andreas Janz, Patrick Hostert, Antti Lajunen
- 16 **Utilizing Hyperspectral Imaging Spectroscopy for the Identification of Potential Toxic Elements (PTE) in the Hyperaccumulator Plant Brassica juncea, with a Focus on Remediation.** Friederike Kästner, Kuester Theres, Feilhauer Hannes, Sut-Lohmann Magdalena
- 17 **Comparison Of Hyperspectral And Multispectral Remote Sensing For Improved Surface Soil Moisture Estimation.** Hadi Shokati, Mahmoud Mashal, Aliakbar Noroozi, Ali Akbar Abkar, Thomas Scholten
- 18 **Towards a Unified Data Model for Ground Based Surface Reflectance Measurements.** Claas H. Köhler, David MarsHall Ingram, Bringfried Pflug, Raquel de los Reyes
- 19 **EUFAR – Current Status and Recent Development.** Lucie Homolová, IIs Reusen, Jan Hanuš, Thomas Rhutz
- 20 **Hyperspectral Remote Sensing of Wheat Lodging: An Insight to Its Physiology.**



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| | Padmageetha Nagarajan , Roshanak Darvishzadeh, Andrew Nelson |
| 21 | Understanding the Changes in Maize Canopy Structure Caused By Fall Armyworm (J.E. Smith Spodoptera frugiperda) Using Field Hyperspectral Spectroscopy Measurements. Tatenda Dzurume , Roshanak Darvishzadeh, Timothy Dube, Andy Nelson |
| 22 | Sharing in-situ Measurements for Surface Reflectance Product Validation: A Proposal for Content, Format and Tools. Jérôme Louis , Bringfried Pflug, Sébastien Saunier, Raquel De Los Reyes |
| 23 | PRISMA and EnMAP Comparison in the context of Wheat Nitrogen Status Assessment. Maxime Troiani , Jean Bouchat, Louise Leclère, Yannick Curnel, Philippe Vermeulen, François Stevens, Benoît Scaut, Damien Malice, Vincent Baeten, Nicolas Chamberland, Viviane Planchon, Pierre Defourny |
| 24 | An Integrated Atmospheric-Terrain Correction Method for Imaging Spectroscopy. Yujie Zhao , Guorui Jia, Huijie Zhao |
| 25 | Soil Organic Carbon Estimation Using VNIR–SWIR Spectroscopy and Machine Learning. Ashfak Mahmud , Markku Luotamo, Kristiina Karhu, Petri Pellikka, Juuso Tuure, Janne Heiskanen |
| 26 | The Impact and Correction of Illumination and View Geometry (I&VG) on Spectral Reflectance Measured In Situ. Ziwei Wang , Guorui Jia, Huijie Zhao |
| 27 | A Prototype for Physiologically Based Retrieval of Landscape-scale Crop Growth and Development from Spaceborne Imagery. Lukas Valentin Graf , Flavian Tschurr, Quirina Noëmi Merz, Raphael Portmann, Achim Walter, Helge Aasen |
| 28 | The Accuracy of European Dry Heaths Identification Dependent on the Feature Reduction Method of Hyperspectral Images. Anna Jarocińska, Marlena Kycko , Dominik Kopec |

Abstracts

All conference abstracts in the order of oral sessions followed by poster sessions



Tuesday, 16 April 2024

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|---------------|--|--|---|
| 8:30 – 17:00 | Registration [ADEIT Conference center] | | |
| 10:00 – 10:30 | Welcome plenary session [ADEIT: Assembly hall] | | |
| 10:30 – 11:00 | Keynote 1: Jose Moreno [ADEIT: Assembly hall] | | |
| 11:00 – 11:30 | Coffee break [ADEIT Conference center] | | |
| 11:30 – 12:00 | Keynote 2: Claudia Giardino [ADEIT: Assembly hall] | | |
| 12:00 – 12:30 | Keynote 3: Sebastian van der Linden [ADEIT: Assembly hall] | | |
| 12:30 – 14:00 | Lunch break [ADEIT Conference center] | | |
| 14:00 – 15:30 | Them.Sess. 1-1: CHIME [ADEIT: Assembly hall] | Them.Sess. 1-2: Vegetation spectra [ADEIT: Room 1.1-1.2] | Them.Sess. 1-3: Water Quality [ADEIT: Room 1.4] |
| 15:30 – 16:00 | Coffee break [ADEIT Conference center] | | |
| 16:00 – 17:15 | Them.Sess. 1-4: Soil [ADEIT: Assembly hall] | Them.Sess. 1-5: Machine learning and emulation [ADEIT: Room 1.1-1.2] | Them.Sess. 1.6: Agriculture [ADEIT: Room 1.4] |
| 17:15 – 18:00 | Poster session [ADEIT: Room 0.1] | | |
| 18:00 – 19:00 | Guided tour through the city center to Botanical Garden [Start: ADEIT] | | |
| 19:00 – 21:00 | Icebreaker [Botanical Garden] | | |

Wednesday, 17 April 2024

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| 8:30 – 17:00 | Registration [ADEIT Conference center] | | |
| 8:30 – 10:00 | Them.Sess. 2.1: EnMAP [ADEIT: Assembly hall] | Them.Sess. 2-2: Chlorophyll fluorescence [ADEIT: Room 1.1-1.2] | Them.Sess. 2-3: Thermal Infrared (TIR) [ADEIT: Room 1.4] |
| 10:00 – 10:30 | Coffee break [ADEIT Conference center] | | |
| 10:30 – 12:00 | Them.Sess. 2-4: EnMAP [ADEIT: Assembly hall] | Them.Sess. 2.5: Chlorophyll fluorescence [ADEIT: Room 1.1-1.2] | |
| 12:00 – 13:00 | Plenary: Panel discussion [ADEIT: Assembly hall] | Sponsors: Technical talks [ADEIT: Room 1.1-1.2] | |
| 13:00 – 14:00 | Lunch break [ADEIT Conference center] | | |
| 14:00 – 15:30 | Them.Sess. 2.7: PRISMA [ADEIT: Assembly hall] | Them.Sess. 2.8: EMIT [ADEIT: Room 1.1-1.2] | Them.Sess. 2.9: Aquatic ecosystems [ADEIT: Room 1.4] |
| 15:30 – 16:00 | Coffee break [ADEIT Conference center] | | |
| 16:00 – 17:15 | Them.Sess. 2.10: Forest traits [ADEIT: Assembly hall] | Them.Sess. 2.11: Technical discussions [ADEIT: Room 1.1-1.2] | Them.Sess. 2.6: DESI [ADEIT: Room 1.4] |
| 17:15 – 18:00 | Poster session [ADEIT: Room 0.1] | | |
| 18:30 – 23:30 | Conference Dinner [Restaurant: ONLY YOU] | | |

Thursday, 18 April 2024

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| 8:30 – 10:00 | Registration [ADEIT Conference center] | | |
| 8:30 – 10:00 | Them.Sess. 3.1: Forest traits [ADEIT: Assembly hall] | Them.Sess. 3-2: Data synergies [ADEIT: Room 1.1-1.2] | Them.Sess. 3-3: Ecosystem applications [ADEIT: Room 1.4] |
| 10:00 – 10:30 | Coffee break [ADEIT Conference center] | | |
| 10:30 – 12:00 | Young Scientist Awards [ADEIT: Assembly hall] | Them.Sess. 3.4: Validation of L2A products [ADEIT: Room 1.1-1.2] | Neo: Practical session [ADEIT: Room 1.4] |
| 12:00 – 13:00 | Poster session [ADEIT: Room 0.1] | | |
| 13:00 – 14:00 | Lunch break [ADEIT Conference center] | | |
| 14:00 – 15:30 | Them.Sess. 3.5: Vegetation health [ADEIT: Assembly hall] | Them.Sess. 3.6: Environmental applications [ADEIT: Room 1.1-1.2] | |
| 15:30 – 16:00 | Coffee break [ADEIT Conference center] | | |
| 16:00 – 16:45 | Closing: Awards and closing ceremony [ADEIT: Assembly hall] | | |

SEDE EARSel 2024. ADEIT



- Stand 01**
ITRES
 Medidas: 3,10 x 1,2 m.
- Stand 03**
Headwall
 Medidas: 2,50x2,10 m.
- EARSel Desk**
- Stand 02**
ReSe Applications
 Medidas: 2,50x1,8 m.
- Stand 04**
HySPeX
 Medidas: 2,30x3 m.

