



40th EARSeL Symposium 2021

European Remote Sensing - New Solutions for Science and Practice

07 – 10 June 2021

University of Warsaw, Faculty of Geography and Regional Studies
Warsaw, Poland

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Conference Agenda

Session Overview

Date: Monday, 07/June/2021

8:00am - 8:50am	Technical session allowing presenting authors to test their presentations
9:00am - 9:10am	OS: Opening session Chair: Klaus-Ulrich Komp Chair: Jean-Christophe Schyns
9:10am - 9:50am	Keynote lecture 1: ESA's Earth Observation Programme today and looking forward. Prof. Dr. Michael Rast Chair: Klaus-Ulrich Komp Chair: Jean-Christophe Schyns
9:50am - 10:20am	Keynote lecture 2: Earth Observation Data for Ecosystem Monitoring tool: an integrator of geospatial data towards policy implementation. Dr. Ioannis Manakos Chair: Klaus-Ulrich Komp Chair: Jean-Christophe Schyns
10:20am - 10:50am	Keynote lecture 3: Progress in hybrid models for applications in remote sensing of vegetation. Dr. Ir. Jochem Verrelst Chair: Klaus-Ulrich Komp Chair: Jean-Christophe Schyns
10:50am - 11:05am	Short break
11:05am - 12:50pm	LU&LC 1: Land use and land cover, degradation and desertification Chair: Ioannis Manakos Chair: Birgitta Putzenlechner Chair: Gregory Giuliani
	Can a Hierarchical Classification of Sentinel-2 Data Improve the Land Cover Mapping? Adam Waśniewski , Michał Kałuski, Agata Hościło, Aneta Lewandowska, Milena Chmielewska Centre of Applied Geomatics, Institute of Geodesy and Cartography, Modzelewskiego 27, 02-679 Warsaw, Poland
	Application of Remote Sensing Data to Identify and Assess the Condition of High Mountain Vegetation Marlena Kycko ¹ , Bogdan Zagajewski ¹ , Tomasz Zwijacz-Kozica ² 1: Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, 00-927 Warszawa, Poland; marlenakycko@uw.edu.pl; bogdan@uw.edu.pl; 2: Tatra National Park, Kuźnice 1, 34-500 Zakopane, Poland
	Mapping And monitoring Agricultural Land With Time-series Satellite Data Stavroula Dimou , Aikaterini Stamou , Dimitrios Kaimaris, Petros Patias AUTH, Greece
	Invasive and expansive plant species mapping using airborne HySpex hyperspectral, Random Forest and Support Vector Machine algorithms Anita Sabat-Tomala , Edwin Raczko, Karolina Zdunek, Bogdan Zagajewski University of Warsaw, Faculty of Geography and Regional Studies, Chair of Geomatics and Information Systems, Department of Geoinformatics, Cartography and Remote Sensing, Poland
	Landslide Mapping Using TLS and UAV-based Point Clouds. Konstantinos Nikolakopoulos , Aggeliki Kyriou , Ioannis Koukouvelas, Maria Kakavas Department of Geology, University of Patras, Greece
	Morphological Factors Analysis of Steppe Rangelands Degradation Based on Remote Sensing and GIS Techniques (Case of the Naâma Algerian Zone) Sarah Kreri , Nadjla Bentekhici, Assia Saad, Ahmed Zegrar, Khadija Bakhti Agence Spatiales Algérienne (ASAL), Centre des Techniques Spatiales (CTS), Algeria
	Remote sensing methods for Sustainable Development- urban growth monitoring Agnieszka Jenerowicz , Elżbieta Bielecka, Beata Całka Military University of Technology, Poland
12:50pm - 1:05pm	Short break
1:05pm - 1:30pm	Keynote lecture 4: Earth observation data access and processing in the cloud - new approach for scientific applications. Dr. Maciej Krzyżanowski Chair: Anca Dabija Chair: Premysl Stych Chair: Bogdan Zagajewski
1:30pm - 1:55pm	Keynote lecture 5: VHR Satellite Imagery supporting waste removal of polluted areas at land and sea. Benjamin Lieberknecht Chair: Anca Dabija Chair: Premysl Stych Chair: Bogdan Zagajewski
1:55pm - 3:35pm	LU&LC 2: Land use and land cover, degradation and desertification Chair: Anca Dabija Chair: Premysl Stych Chair: Bogdan Zagajewski

	<p>Detecting Potentially Toxic Elements In Agricultural Soils Adjacent To Mining Area Of Kajaran, Armenia Using VIS-NIR Spectroscopy Garegin Tepanosyan¹, Gevorg Tepanosyan¹, Vahagn Muradyan¹, Shushanik Asmaryan¹, Lililit Sahakyan¹, Michael Denk², Cornelia Gläßer² 1: Center for Ecological-Noosphere Studies NAS RA, Armenia; 2: Martin Luther University Halle-Wittenberg, Institute of Geosciences and Geography</p>
	<p>Estimation and Mapping Soil Chromium Pollution using Satellite Imaging Spectroscopy Vahid Khosravi¹, Faramarz Doulati Ardejani², Asa Gholizadeh³, Mohammadmehdi Saberioon^{3,4} 1: University of Birjand; 2: University of Tehran; 3: Czech University of Life Sciences Prague; 4: German Research Centre for Geosciences</p>
	<p>Earth Observation for an efficient water management in Cyprus Anastasis Evagorou^{1,2}, Christiana Papoutsas^{1,2}, Evangelos Akyilas^{1,2}, George Papadavid³, Athanasios Loukas⁴, Diofantos Hadjimitsis^{1,2} 1: Cyprus University of Technology, Cyprus; 2: Eratosthenes Centre of Excellence, Limassol, Cyprus; 3: Agricultural Research Institute, Pafos, Cyprus; 4: Aristotle University of Thessaloniki, Department of Rural and Surveying Engineering, Thessaloniki, Greece</p>
	<p>Analysing Change Dynamics of Land Cover, Erosion and Accretion of World's Largest Mangrove Forest (Sundarbans) using Remotely Sensed Data Akbar Hossain Kanan, Francesco Pirotti, Mauro Masiero University of Padova, Italy</p>
	<p>Using Imaging Spectroscopy For Predicting Land-Use Effects On Soil Quality In Dryland Nathan Levi^{1,2}, Arnon Karnieli¹, Tarin Paz-Kagan² 1: The Remote Sensing Laboratory, Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boqer Campus, 84990, Israel; 2: Department of Sensing, Information and Mechanization Systems, Institute of Agricultural Engineering, Agricultural Research Organization (ARO), Volcani Center, Israel</p>
	<p>Assessment of the Effectiveness of Land Cover Classification According to Corine Land Cover Nomenclature Marcin Kluczek¹, Anca Dabija¹, Bogdan Zagajewski¹, Edwin Raczek¹, Marlena Kycko¹, Ahmed H. Al-Sultani¹, Anna Tardá², Lydia Pineda², Jordi Corbera² 1: Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, Warszawa, Poland; 2: Catalan Earth Observation Centre, Cartographic and Geological Institute of Catalonia, E-08038 Barcelona, Spain</p>
3:35pm - 4:00pm	Lunch break
4:00pm - 6:00pm	<p>URS: Urban Remote Sensing Chair: Carsten Juergens Chair: Derya Maktav Chair: Stanislaw Lewinski</p>
	<p>Identification of Construction Areas from VHR-images for Economic Forecasts Carsten Juergens, Matthias Fabian Meyer-Heß Ruhr-University Bochum, Germany</p>
	<p>Estimation of Urban Morphology and Surface Roughness Parameters Using High-resolution Satellite Imagery Aikaterini Stamou, Petros Patias AUTH, Greece</p>
	<p>The Potential Of Geospatial Information in Mapping Perceived Tenure Insecurity in Urban Deprivation Esale Dufitimana, Jiong Wang, Divyani Kholi Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands</p>
	<p>GPU Accelerated Multiresolution Analysis For Semantic Segmentation Based Urban Building Extraction Rizwan Ahmed Ansari¹, Winnie Thomas² 1: Veermata Jijabai Technological Institute, India; 2: Indian Institute of Technology Bombay, India</p>
	<p>Characteristics of Urban Sprawl in Poland Based on Impervious Surface Change Analysis Using Landsat Wojciech Łachowski Institute of Urban and Regional Development, Poland</p>
	<p>Use of Aerial Hyperspectral Imagery and ALS Data for Urban Trees Condition Assessment in Warsaw (Poland) Krzysztof Gryguc¹, Adrian Ochtyra¹, Adriana Marcinkowska-Ochtyra¹, Anna Jarocińska¹, Dominik Kopeć^{2,3}, Anna Halladin-Dąbrowska², Łukasz Sławik^{1,2} 1: Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, Poland, emails: k.gryguc@uw.edu.pl, adriana.marcinkowska@uw.edu.pl, ajarocinska@uw.edu.pl, l.slawik@uw.edu.pl; 2: MGGP Aero sp. z o. o., Tarnów, Poland, email: ahalladin@mggpaero.com; 3: Department of Geobotany and Plant Ecology, Faculty of Biology and Environmental Protection, University of Lodz, email: dominik.kopec@biol.uni.lodz.pl</p>
	<p>The Impact of Fluctuations in the Legislative Process on the Loss of Urban Tree Canopy and Changes in the Ecosystem Services Provided by Trees - A Case Study In Poland Based On LIDAR and Aerial Orthophotos Piotr Wężyk¹, Karolina Zięba-Kulawik¹, Paweł Hawryło¹, Piotr Matczak², Patrycja Przewoźna³, Adam Inglot⁴, Krzysztof Mączka² 1: Dep. of Forest Resources Management, Faculty of Forestry, University of Agriculture in Krakow, Poland; 2: Department for the Study of Social Dynamics, Faculty of Sociology, Adam Mickiewicz University in Poznan, Poland; 3: Department of Geoinformation, Faculty of Geographical and Geological Sciences, Adam Mickiewicz University in Poznan, Poland; 4: 4 Department of Geodesy, Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Poland</p>
	<p>Strategizing the "Smart City" Model into an Integrated System Utilizing Space Technology and Geoinformatics Assets: A Systematic Approach to a Resilient Society: The Case Study of Limassol, CY Polina Sokratous^{1,2}, Athos Agapiou^{1,2}, Kyriacos Themistocleous^{1,2}, Chris Danezis^{1,2}, Phaedon Kyriakidis^{1,2}, Diofantos Hadjimitsis^{1,2} 1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence, Limassol, Cyprus</p>
6:00pm - 6:15pm	Short break
6:15pm - 7:15pm	<p>3D RS Chair: Mattia Crespi Chair: Karsten Jacobsen Chair: Markéta Potůčková</p>
	<p>Free Height Models as Replacement of National Height Models ? Karsten Jacobsen Leibniz University Hannover, Germany</p>
	<p>The Utility of Point Cloud and Rectangular Pixel Raster Data Representations in Hyperspectral Imaging Deep Inamdar¹, Margaret Kalacska¹, J. Pablo Arroyo-Mora², George Leblanc^{2,1} 1: Applied Remote Sensing Laboratory, Department of Geography, McGill University, Montréal, QC H3A 0B9, Canada; 2: Flight Research Laboratory, National Research</p>

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Development Of Smoothed DSM For Improvement of Airborne Data Georectification

Lukáš Slezák^{1,3}, Tomáš Purket¹, Jan Hanuš^{1,2}

1: Global Change Research Institute of the Czech Academy of Science, Czech Republic; 2: Czech Technical University, Faculty of Civil Engineering, Department of Geomatics, Czech Republic; 3: Masaryk University, Faculty of Science, Department of Geography, Czech Republic

Increase Efficiency and Productivity in SAR Operational Processing with SARscape and ENVI Server

Nicolai Holzer¹, Emlyn Hagen¹, Alberto Meroni²

1: Harris Geospatial Solutions GmbH, Talhofstraße 32a, 82205 Gilching, Germany; 2: Harris Geospatial Solutions Italia S.r.l., Centro Direzionale Colleoni, Viale Colleoni 25, 20864 Agrate Brianza, Italy

Date: Tuesday, 08/June/2021

8:00am - 8:50am	Technical session allowing presenting authors to test their presentations	
9:00am - 9:30am	Keynote lecture 6: Development of Advanced Microwave Remote Sensor for Urban Disaster Monitoring. Prof. Josaphat Tetuko Sri Sumantyo Chair: Stefanie Holzwarth Chair: Eberhard Parlow Chair: Elzbieta Bielecka	
9:30am - 11:30am	Applications: Applications of remote sensing Chair: Stefanie Holzwarth Chair: Eberhard Parlow Chair: Elzbieta Bielecka Mapping of Geophysical Land, Ocean and Atmosphere Products over Europe from 40 Years of AVHRR Data– the TIMELINE Project Stefanie Holzwarth¹, Sarah Asam¹, Martin Bachmann¹, Martin Böttcher², Andreas Dietz¹, Christina Eisfelder¹, Andreas Hirner¹, Matthias Hofmann¹, Grit Kirches², Detmar Krause¹, Simon Plank¹, Thomas Popp¹, Philipp Reiners¹, Sebastian Rößler¹, Thomas Ruppert¹, Alexander Scherbachenko¹, Ranjitha Vignesh¹, Meinhard Wolfmüller¹ 1: German Remote Sensing Data Center (DFD), German Aerospace Center (DLR), 82234 Wessling, Germany; 2: Brockmann Consult GmbH, 21029 Hamburg, Germany Mask R-CNN based Mapping of Dwellings in Refugee Camps from High-Resolution Satellite Imagery Getachew Workineh Gella^{1,3}, Lorenz Wendt^{1,3}, Andreas Braun^{1,2,3}, Dirk Tiede^{1,3}, Stefan Lang^{1,3} 1: Paris Lodron University of Salzburg, Austria; 2: University of Tübingen, Department of Geography, Germany; 3: Christian Doppler Laboratory for Geospatial and EO-based Humanitarian Technologies (CDL GeoHum) Scale Effect In The Spatial Distribution Of GHS-POP Population Data Beata Calka¹, Elzbieta Bielecka¹, Eufémia da Glória Patrício², Elisabete dos Santos Veiga Monteiro², Maria João Gomes² 1: Military University of Technology, Poland; 2: Polytechnic Institute of Guarda, Portugal Threshold- and Trend-based Vegetation Change Monitoring Algorithm Based on the Inter-annual Multi-temporal Normalized Difference Moisture Index Series Adrian Ochtyra, Adriana Marcinkowska-Ochtyra, Edwin Raczko Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, Poland Asbestos-Cement Roofing Identification Using Remote Sensing And Convolutional Neural Networks (CNNs) Małgorzata Krówczyńska, Edwin Raczko, Ewa Wilk University of Warsaw, Faculty of Geography and Regional Studies, Poland Building Detection based on improved Deep Learning model Mohammed Bilel Amri, Mohammed El Amin Larabi, Khadidja Bakhti Centre des Techniques Spatiales, Algeria A Multi-disciplinary integrated approach using Earth Observation, GIS, Hydraulic Modelling for flood risk assessment in catchment areas in Cyprus. Iosifina Kountouri^{1,2}, Chris Danezis^{1,2}, Athos Agapiou^{1,2}, Nicholas Kyriakides^{1,2}, Kyriacos Themistocleous^{1,2}, Phaedon Kyriakides^{1,2}, Haris Kontoes^{1,2}, Christodoulos Mettas^{1,2}, Silas Michaelides^{1,2}, Diofantos Hadjimitsis^{1,2} 1: Cyprus University of Technology.; 2: ERATOSTHENES Centre of Excellence, Cyprus Considerations and Multi-Criteria Decision Analysis for the Installation of Permanent Infrastructures for Continuous Space-based Monitoring of Natural Hazards Dimitris Kakouli^{1,2}, Kyriaki Fotiou^{1,2}, George Melillos^{1,2}, Chris Danezis^{1,2} 1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence, Cyprus Evaluation of Citizen Science Data for Disaster Management: Case Study Forest Fires in Croatia Marina Tavra¹, Ljiljana Šerić², Ivan Racetin¹, Anka Lisec³ 1: University of Split, Faculty of Civil Engineering, Architecture and Geodesy, Croatia; 2: Department for Modelling and Intelligent Systems, University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia; 3: Department of Geodesy, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Slovenia 11:30am - 11:45am	Short break
11:45am - 12:15pm	Keynote lecture 7: A decade of drone remote sensing: smaller areas in more detail. Prof. Rudi Goossens Chair: Anna Zmarz Chair: Lammert Kooistra	
12:15pm - 1:45pm	UAS: Unmanned Aircraft Systems from theory to application Chair: Anna Zmarz Chair: Lammert Kooistra UAS and Machine Learning for Mapping Riparian Vegetation Along Federal Waterways in Germany Edvinas Rommel¹, Laura Giese¹, Katharina Fricke¹, Tina Mölter², Filip Dzunic², Maryam Asgari³, Paul Nätke⁴, Gilles Rock², Jens Bongartz³, Andreas Burkart⁴, Maike Heuner¹, Ina Quick¹, Uwe Schröder¹, Björn Baschek¹ 1: German Federal Institute of Hydrology, Koblenz, Germany; 2: Geocoptix, Trier, Germany; 3: University of Applied Sciences, Koblenz, Germany; 4: JB Hyperspectral Devices, Düsseldorf, Germany Spatio-Temporal Heterogeneity of Vegetation – Could We Understand It Better Using UASs? Jana Mullerova^{1,2}, Rafi Kent³, Josef Bruna¹, Martynas Bucas⁴, Joan Estrany⁵, Xurxo Gago⁵, Adrien Michez⁶, Martin Mokros^{7,8}, Maria Tsiafouli⁹, Salvatore Manfreda¹⁰ 1: Institute of Botany of the Czech Academy of Sciences, Czech Republic; 2: Jan Evangelista Purkyně University, Ústí n. L., Czech Republic; 3: independent researcher, Bahan, Israel; 4: Klaipeda University, Klaipeda, Lithuania; 5: University of the Balearic Islands/Instituto de Agroecología y Economía del Agua (INAGEA), Palma de Mallorca, Spain; 6: University Rennes 2 LETG (CNRS UMR 6554), CEDEX, Rennes, France; 7: Technical University, Zvolen, Slovakia; 8: Czech University of Life Sciences Prague, Prague, Czech Republic; 9: Aristotle University of Thessaloniki, Thessaloniki, Greece; 10: Università Degli Studi di Napoli Federico II, Napoli, Italy Low-Budget Ultra-Lightweight UAVs and Immersive Virtual Environments: Potentials and Limitations of Processing 3D Point Clouds and Drone Images for the VR-based Representation of Post-Industrial Landmarks Marco Weißmann, Dennis Edler, Andreas Rienow Geomatics Group, Institute of Geography, Ruhr-University Bochum (RUB), Germany	

	<p>Comparison Of Predicted Topsoil Organic Carbon Maps Generated From UAV Hyperspectral Imagery János Mészáros¹, Mátys Árvai¹, Gergely Jakab², Zoltán Szalai², Gábor Szatmári¹, László Pásztor¹ 1: Centre for Agricultural Research, Institute for Soil Sciences, Hungary; 2: Research Centre for Astronomy and Earth Sciences, Geographical Institute, Hungary</p>
	<p>Challenges in Mapping Landslide Features from Drone's Geocoded Videos Ionut Sandric^{1,2}, Viorel Ilinca^{3,2}, Radu Irimia^{1,2}, Zenaida Chitu², Marta Jurchescu⁴, Alin Plesoianu⁵ 1: University of Bucharest, Faculty of Geography, Romania; 2: Research Institute of the University of Bucharest, Bucharest, Romania; 3: Geological Institute of Romania, Romania; 4: Institute of Geography, Romanian Academy, Romania; 5: Esri Romania</p>
	<p>Development And Optimisation Of An UAV For Counting Of Big Animals In Forestry By Use Of Thermovision Rafał Frackowiak WARSAW UNIVERSITY OF TECHNOLOGY, FACULTY OF POWER AND AERONAUTICAL ENGINEERING, POLAND</p>
	<p>Modelling vegetation attributes in temperate grasslands with Sentinel-2 and Unmanned Aerial Vehicles Javier Muro¹, Lisa Schwarz¹, Florian Männer¹, Anja Linstädter², Olena Dubovyk¹ 1: University of Bonn, Germany; 2: University of Potsdam</p>
1:45pm -	Short break
2:00pm	
2:20pm	<p>Keynote lecture 8: Future Applications of Spaceborne LiDAR in Coastal and Oceanic Waters. Dr. Martin Alejandro Montes Chair: Florinda Artuso Chair: Luca Fiorani Chair: Vittorio E. Brando</p>
2:00pm -	<p>UAS WS 1: UAV Platforms: operators training and optimization Chair: Anna Zmarz Chair: Lamert Kooistra</p>
5:30pm	
2:20pm -	<p>Keynote lecture 9: Overview Of HPLC Phytoplankton Pigments Intercomparisons (HIPs) Organized In Support To Satellite Data Validation Activities. Dr. Elisabetta Canuti Chair: Luca Fiorani Chair: Florinda Artuso Chair: Vittorio E. Brando</p>
2:40pm	
2:40pm -	<p>Keynote lecture 10: Multi- and Hyperspectral Remote Sensing Applications in Highly Turbid Coastal Waters: Challenges and Opportunities. Dr. Ana Inés Dogliotti Chair: Luca Fiorani Chair: Florinda Artuso Chair: Vittorio E. Brando</p>
3:00pm	
3:20pm	<p>Keynote lecture 11: Assessment of Ocean Color Products in the Framework of the Copernicus Climate Change Service. Dr. Salvatore Marullo Chair: Luca Fiorani Chair: Florinda Artuso Chair: Vittorio E. Brando</p>
3:20pm -	Short break
3:40pm	
6:40pm	<p>WS Coastal Zone: 9th EARSeL Workshop on Remote Sensing of Coastal Zone 2021 Chair: Luca Fiorani Chair: Florinda Artuso Chair: Vittorio E. Brando</p>
	<p>Mapping Intertidal Zones Using Time Series of Sentinel-2 Corine Davids, Jörg Haarpaintner NORCE, Norway</p>
	<p>Mapping Atmospheric Exposure Of The Intertidal Zone With Sentinel-1 CSAR In Norway. Jörg Haarpaintner, Corine Davids NORCE - Norwegian Research Centre AS, Norway</p>
	<p>"Assessment of the Shoreline Evolution Using Declassified Images. A Case Study in the Region of Pinios Municipality, Greece" Dionysios Apostolopoulos, Konstantinos Nikolopoulos University of Patras, Greece</p>
	<p>Spectral Characteristics Of In-Situ and Harvested Marine Macroplastics of Varying Surface Cover Measured Against a Sand Substrate Jenna A Guffogg^{1,2}, Samantha M Blades¹, Mariela Soto-Berelov¹, Christopher J. Bellman¹, Andrew K. Skidmore^{2,3}, Simon D. Jones¹ 1: RMIT University, Australia; 2: ITC, University of Twente, Netherlands; 3: Department of Environmental Science, Macquarie University, Australia</p>
	<p>Lidar Fluorosensor for the Remote Sensing of Coastal Zone and Open Sea Luca Fiorani, Federico Angelini, Andrea Chiuri, Francesco Colao, Antonio Palucci Nuclear Fusion and Safety Technologies Department (FSN) of the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Via Enrico Fermi 45, 00044 Frascati, Italy</p>
	<p>Statistical Tools To Extract Information From A Data Set Of A Maritime Campaign Andrea Chiuri¹, Federico Angelini¹, Florinda Artuso¹, Francesco Colao¹, Luca Fiorani¹, Isabella Giardina¹, Antonella Lai¹, Ivano Menicucci¹, Marcello Nuvoli¹, Antonio Palucci¹, Marco Pistilli¹, Maurizio Demarte², Massimo Ercolani², Roberta Ivaldi² 1: Nuclear Fusion and Safety Technologies Department (FSN) of the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), via Fermi 45, 00044 Frascati, Italy; 2: Istituto Idrografico della Marina, Passo dell'Osservatorio 4, 16134 Genova, Italy</p>
	<p>HPLC Marine Pigment Analysis Applied to Studies of Phytoplankton Community Composition in the Mediterranean Sea Florinda Artuso¹, Annalisa Di Cicco², Federico Angelini¹, Andrea Chiuri¹, Francesco Colao¹, Luca Fiorani¹, Isabella Giardina¹, Antonia Lai¹, Salvatore Marullo¹, Antonio Palucci¹, Vittorio Brando², Simone Colella², Michela Sammartino², Rosalia Santoleri², Gianluca Volpe² 1: ENEA, Via Enrico Fermi 45, 00044 Frascati, Italy; 2: ISMAR, CNR, Via Fosso del Cavaliere 100, 00133 Rome, Italy</p>
	<p>Remote Sensing as a Tool to Assess the Role of Coastal Upwelling in the Baltic Sea Ecosystem Toma Dabulevičienė¹, Diana Vaiciute¹, Igor Kozlov^{1,2}, Inga Daillidienė¹ 1: Klaipėda University Marine Research Institute, Lithuania; 2: Satellite Oceanography Laboratory, Russian State Hydrometeorological University, St. Petersburg, Russia</p>
	<p>Image Spectroscopy Of Shallow Coastal Waters Despina Makri¹, Diofantos Hadjimitsis¹, Dimosthenis Traganos², Athos Agapiou¹ 1: Cyprus University of Technology, Cyprus; 2: German Aerospace Center, Helmholtz Association of German Research Centers (HZ) Cologne, Germany</p>
	<p>Estimation of Mean Sea Surface Height Variability in Cyprus using Tide Gauge and Sentinel-3 Satellite Altimetry Data</p>

Marina Fragkiskou Pekri^{1,2}, **Dimitris Kakoullis**^{1,2}, **Marios Nikolaidis**^{1,2}, **Evangelos Akylas**^{1,2}, **Chris Danezis**^{1,2}

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Space-based Deformation Monitoring of Coastal Urban Areas: The Case of Limassol's Coastal Front

Kyriaki Fotiou^{1,2}, **Dimitris Kakoullis**^{1,2}, **Marina Pekri**^{1,2}, **George Melillos**^{1,2}, **Ramon Brcic**³, **Michael Eineder**³, **Diofantos G. Hadjimitsis**^{1,2}, **Chris Danezis**^{1,2}

1: Cyprus University of Technology; 2: ERATOSTHENES Centre of Excellence; 3: German Aerospace Center (DLR)

Documentation and Survey of an Abandoned Air Base from World War II in Greenland

Karel Pavelka, **Paulina Raeva**, **Karel Pavelka Jr.**, **Eva Matoušková**

Czech Technical University in Prague, FCE, Czech Republic

Date: Wednesday, 09/June/2021

8:00am -	Technical session allowing presenting authors to test their presentations
8:50am	
9:00am -	Forestry: Forestry - mapping, monitoring and change analysis
12:15pm	Chair: Piotr Wezyk Chair: Bogdan Zagajewski Chair: Lucie Kupková
	Assessing the Robustness of Inversion Methods to Estimate Leaf Traits from Leaf Spectra of Mixed Broadleaf/Conifer Ecosystems Thierry Gaubert^{1,2}, Karine Adeline¹, Margarita Huesca³, Susan Ustin⁴, Xavier Briottet¹ 1: ONERA, France; 2: Université Fédérale Toulouse Midi-Pyrénées, Toulouse, France; 3: Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, Enschede, Overijssel, Netherlands; 4: John Muir Institute of the Environment, University of California, Davis, California, USA
	Assessing The Vegetation Traits Retrieval Capabilities Of The Biodiversity And SBG Hyperspectral Satellite Missions Over Open Canopies Thomas Miraglio¹, Karine Adeline¹, Margarita Huesca², Susan Ustin³, Xavier Briottet¹ 1: ONERA/DOTA, Université Fédérale de Toulouse, 2 avenue Edouard Belin, 31055 Toulouse, France; 2: Natural Resources Department, Faculty of Geo-information Science and Earth Observation, University of Twente, Enschede, Netherlands; 3: John Muir Institute of the Environment, University of California, Davis, One Shield Avenue, 95616 Davis, CA, USA
	UAV-derived FCOVER as a Proxy for FAPAR in a Mixed-coniferous Forest? Birgitta Putzenlechner^{1,2}, Philip Marzahn², Philipp Koal³, Arturo Sánchez-Azofeifa⁴ 1: Georg-August-Universität Göttingen; 2: Ludwig-Maximilians-Universität Munich; 3: Forestry Research and Competence Center ThüringenForst; 4: University of Alberta
	The Application of UAV-based Phenological Data and Machine Learning Models for Drought Stress Detection in European Beech Stuart Krause, Tanja Sanders Thünen Institute - WO, Germany
	Forest-Structure Analysis In The Paraguayan Chaco, Combining Sentinel And GEDI Data Patrick Kacic¹, Emmanuel Da Ponte² 1: University of Freiburg im Breisgau, Germany; 2: German Remote Sensing Data Center
	Comparison of Random Forest and Support Vector Machines for forest species mapping of the UNESCO Krkonoše/Karkonosze Transboundary Biosphere Reserve Marcin Kluczek¹, Bogdan Zagajewski¹, Edwin Raczek¹, Ajda Njegovec², Krzysztof Gryguc¹, Anca Dabija¹, Marlena Kycko¹ 1: University of Warsaw, Faculty of Geography and Regional Studies, Chair of Geomatics and Information Systems, Department of Geoinformatics, Cartography and Remote Sensing, Poland; 2: Geodetski Zavod Celje, D.O.O., Slovenia
	Rapid Assessment Of Post-Fire Forest Regeneration Based On Burn Severity Gradient Using The Google Earth Engine. Maria Prodromou^{1,2}, Chris Danezis^{1,2}, Ioannis Gitas³, Diofantos Hadjimitsis^{1,2} 1: Department of Civil Engineering and Geomatics, Cyprus University of Technology, Limassol, Cyprus; 2: ERATOSTHENES Centre of Excellence, Limassol, Cyprus; 3: Department of Forestry, Laboratory of Forest Management and Remote Sensing, Aristotle University of Thessaloniki, Greece
	Assessment of Plant Species Distribution and Diversity Along a Climatic Gradient from Mediterranean Woodlands to Semi-arid Shrublands Tarin Paz-Kagan¹, Jisung Geba Chang², Maxim Shoshany³, Marcelo Sternberg⁴, Arnon Karnieli² 1: Agricultural Research Organization, Volcani Center, Israel; 2: Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev; 3: Faculty of Civil and Environmental Engineering, Technion - Israel Institute of Technology, Haifa; 4: School of Plant Sciences and Food Security, Faculty of Life Sciences, Tel Aviv University, Tel Aviv
	Evaluating a Potential of Satellite and Airborne Data for Shrubby Formation Communities Detection. Marlena Kycko¹, Bogdan Zagajewski¹, Anna Tardá², Lydia Pineda², Vicenc Palà², Jordi Corbera² 1: University of Warsaw, Faculty of Geography and Regional Studies, Department of Geoinformatics, Cartography and Remote Sensing, Krakowskie Przedmieście 30, 00-927, Warsaw, Poland; 2: Institut Cartogràfic i Geològic de Catalunya, Parc de Montjuïc s/n. Barcelona, Spain
	Monitoring Bark Beetle Disturbances With Dense Multi-Source Satellite Time Series Simon König^{1,2,3}, Frank Thonfeld^{4,5}, Olena Dubovyk^{3,6}, Marco Heurich^{1,2,7} 1: Department of Visitor Management and National Park Monitoring, Bavarian Forest National Park, Germany; 2: Faculty of Environment and Natural Resources, University of Freiburg, Germany; 3: Department of Geography, University of Bonn, Germany; 4: German Remote Sensing Data Center, German Aerospace Center, Germany; 5: Department of Geography and Geology, University of Würzburg, Germany; 6: Center for Remote Sensing of Land Surfaces, University of Bonn, Germany; 7: Department of Forestry and Wildlife Management, Inland Norway University of Applied Sciences, Norway
	Relation Between Pine Spectral Response And Its Heavy Metal Content On A Former Ore Processing Site Luc Béraud^{1,2}, Arnaud Elger¹, Olivier Beseille¹, Thomas Rivière², Sophie Fabre² 1: Laboratoire Ecologie Fonctionnelle et Environnement - Avenue de l'Agrobiopole 31326 Castanet-Tolosan cedex France; 2: ONERA DOTA, BP74025 2 av. Edouard Belin, FR-31055 TOULOUSE CEDEX 4
	"Monitoring of Scots Pine Stands in Terms of Hazards from Mistletoe - Based on the Analysis of High-resolution UAV Images" Jakub Michał Mischyszyn, Piotr Wężyk University of Agriculture in Krakow, Poland
	Automatic Gap Fraction Estimation in Forest Using Point Clouds from UAV Francesco Pirotti^{1,2}, Erico Kutchart², Patricio Corvalan³, Alvaro Promis⁴, Jaime Hernandez³ 1: CIRGEO Interdepartmental Research Center in Geomatics, University of Padova, Italy; 2: TESAF Department, University of Padova, Italy; 3: Departamento Gestión Forestal y su Medio Ambiente, Universidad de Chile, Chile; 4: Departamento Silvicultura y Conservación de la Naturaleza Universidad de Chile, Chile
	Using Aerial Photographs And Sentinel-2 ESA Imagery For Mapping Of Windstorm Damages Occurred In The Forest Stands Of Czerniejewo Forest District (Polish State Forests National Holding) Wojciech Krawczyk, Piotr Wężyk University of Agriculture in Cracow, Department of Forest Resources Management, Faculty of Forestry, Poland
12:15pm -	Short break
12:30pm	
12:30pm -	Keynote lecture 12: Citizens meet Sensors – Application of Earth Observation for Sustainability Literacy. Jun. Prof. Dr. Andreas Rienow
1:00pm	Chair: Agata Hościlo Chair: Andreas Rienow Chair: Claudia Lindner

1:00pm -	EO Education: EO Education Chair: Agata Hościlo
2:30pm	Chair: Andreas Rienow Chair: Claudia Lindner
	Teaching Interferometry Easily: An Augmented Reality App About Radar Interferometry In Volcano Monitoring Claudia Lindner, Andreas Rienow, Carsten Jürgens Ruhr-University Bochum, Germany
	Configure, Deploy, Implement – An integrated teaching environment for purposeful processing of EO Data in schools Henryk Hodam, Fabian Selg, Andreas Rienow Ruhr-Universität Bochum, Germany
	From Space to Place – Capacity Development of UNESCO site stakeholders on digital geo-media Lisa Dannwolf¹, Prof. Dr. Alexander Siegmund^{1,2,3} 1: Heidelberg University of Education, Germany; 2: Heidelberg Center for the Environment (HCE); 3: Institute of Geography, Heidelberg University, Germany,
	Geo:spektiv2GO – Making Remote Sensing Mobile for Students Mario Biersch¹, Johannes Keller¹, Christian Plass¹, Alexander Siegmund^{1,2} 1: Department of Geography – Research Group for Earth Observation (rgeo) Heidelberg University of Education, Germany; 2: Heidelberg Center for the Environment (HCE) & Institute of Geography, Heidelberg University, Germany
	Dissemination of Earth Observation Knowledge Among Secondary School Students in Bulgaria Garó Hugasov Mardirossian, Lachezar Hristov Filchev Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS), Bulgaria
	Review of the Moon and Mars Observation Missions Lachezar Hristov Filchev Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS), Bulgaria
1:00pm -	UAS WS 2: Processing of UAV images: from image to relevant information Chair: Lammet Kooistra
4:00pm	Chair: Anna Zmarz
2:30pm -	Short break
2:45pm	
2:45pm -	Workshop EO: EO Education Workshop Chair: Agata Hościlo
7:30pm	Chair: Andreas Rienow Chair: Marlena Kycko
4:00pm -	GA: EARSeL General Assembly
6:00pm	

Date: Thursday, 10/June/2021

8:00am - 8:50am	Technical session allowing presenting authors to test their presentations
9:00am - 9:30am	Keynote lecture 13: Can we assess what we do not see? spectral sensing of vegetation. Dr. Ittai Herrmann Chair: Miriam Machwitz Chair: Helge Aasen
9:30am - 10:00am	Keynote lecture 14: Accessing Traits from Satellite to Close Range Phenotyping: a Change of Paradigm. Dr. Fred Baret Chair: Miriam Machwitz Chair: Helge Aasen
10:00am - 11:30am	Vegetation: The cutting edge of remote sensing & plant phenotyping – common interest and techniques and potential new concepts Chair: Miriam Machwitz Chair: Helge Aasen High-Resolution (drone based) Remote Sensing for Field-Phenotyping Helge Aasen ETH Zurich, Switzerland On The Potential Of Emulating Solar-Induced Chlorophyll Fluorescence From Multispectral UAV Data For Applications In Breeding Research Bastian Siegmann¹, Juliane Bendig¹, Marco Celesti², Erekle Chakhvashvili¹, David Herrera¹, Laura Verena Junker-Frohn¹, Oliver Knopf¹, Thorsten Kraska³, Onno Muller¹, Nils Müller¹, Patrick Rademske¹, Jochem Verrelst⁴, Uwe Rascher¹ 1: Institute of Bio- and Geosciences, IBG-2: Plant Sciences, Forschungszentrum Jülich, Germany; 2: Remote Sensing of Environmental Dynamics Lab., DISAT, University of Milano-Bicocca, Italy; 3: Field Lab Campus Klein-Altendorf, Faculty of Agriculture, University of Bonn, Germany; 4: Laboratory of Earth Observation, Image Processing Laboratory, University of Valencia, Spain Assessment Of Downey Mildew Disease Severity On Grapevine Using Different Hyperspectral UAV Data Including a Comparison Of Nadir And Oblique Observations Miriam Machwitz¹, Christian Bossung¹, Rebecca Retzlaff², Krittiya Pimkot², Steffen Günster², Daniel Molitor¹, Doriane Dam¹, Mareike Schultz³, Franz Ronellenfisch¹, Martin Schlierf¹, Marco Beyer¹ 1: LIST, Luxembourg; 2: University of Trier, Germany; 3: Institute Viti Vinicole, Luxembourg Spectral Assessment of Chickpea Morpho-Pysiological Traits From Space and Ground Roy Sadeh¹, Asaf Avner¹, Yaniv Tubul¹, Ran Lati², Shahal Abbo¹, David Bonfil³, Zvi Peleg¹, Ittai Herrmann¹ 1: The Hebrew University of Jerusalem, Israel; 2: Department of Weed Research Agricultural Research Organization (ARO) Neve Ya'ar Research Center Israel; 3: Field Crops and Natural Resources Department, Agricultural Research Organization Gilat Research Center Israel Open PhenoLiDAR: An Open Source LiDAR Phenotyping Platform Jose Antonio Jimenez-Berni¹, Sergio Bellido Jiménez¹, Jose M Alvarez² 1: IAS-CSIC, Spain; 2: NVIDIA, USA Using Hyperspectral Imaging For Automated Plant Disease Detection In Field And Greenhouse Stefan Paulus Institute of sugar beet research, Germany
11:30am - 11:45am	Short break
11:45am - 1:45pm	Precision Farming: Remote Sensing for Precision Farming Chair: Katarzyna Dabrowska - Zielinska Crop Growth Monitoring and Yield Forecast for Winter Wheat Under Different Soil-Water Conditions in Poland and South Africa Katarzyna Dabrowska - Zielinska¹, Solomon W. Newete², Radoslaw Gurdak¹, Maciej Bartold¹, Khaled Abutaleb³, George J. Chirima², Alicja Malinska¹, Eric Economon² 1: Institute of Geodesy and Cartography, Poland; 2: Agricultural Research Council – Soil, Climate and Water (ARC-SCW), Geo-Information Science division, Arcadia, Private Bag X79, 0001, Pretoria, South Africa.; 3: National Authority for Remote Sensing and Space Sciences, Cairo, Egypt Applications of Hyperspectral Field Remote Sensing and Fluorescence Methods for Wheat Phenological Change Monitoring Bogdan Zagajewski, Marlena Kycko University of Warsaw, Faculty of Geography and Regional Studies, Chair of Geomatics and Information Systems, Department of Geoinformatics, Cartography and Remote Sensing, Poland Tools for Information to Farmers on Grasslands Yields Under Stressed Conditions to Support Management Practices Radoslaw Gurdak^{1,2}, Katarzyna Dąbrowska-Zielińska², Zbigniew Bochenek², Marcin Kluczek², Piotr Goliński³, Tomas Persson⁴, Corine Davids⁵, Michał Wyczalek-Jagielto⁶ 1: University of Warsaw, Poland; 2: Institute of Geodesy and Cartography, Poland; 3: Poznań University of Life Sciences, Poland; 4: Norwegian Institute of Bioeconomy Research, Norway; 5: NORCE Norwegian Research Centre AS, Norway; 6: GEOMATIC Michał Wyczalek-Jagielto, Poland Preliminary Tests For Detection Of Winter Manure Releases Onto Fields By Free Satellite Data Filippo Sarvia, Samuele De Petris, Tommaso Orusa, Federica Ghilardi, Enrico Borgogno-Mondino Department of Agricultural, Forest and Food Sciences (DISAFA), University of Turin, Italy Calibration of Ground-based Radar Data for Precipitation Estimation in the Area of Cyprus Eleni Loulli^{1,2}, Johannes Bühl³, Silas Michaelides^{1,2}, Athanasios Loukas⁴, Diofantos G. Hadjimitsis^{1,2} 1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence, Cyprus; 3: Leibniz Institute for Tropospheric Research (TROPOS), Germany; 4: Aristotle University of Thessaloniki, Greece Time Series Analysis using the Kalman Filter to Assess Drought in Maize Cultivation in Near Real-Time Manuela Hirschmugl^{1,2}, Carina Sobe¹, Martin Puhm¹, Andreas Wimmer¹ 1: Joanneum Research; 2: Uni Graz Assessment of the Accuracy of Winter Wheat Yield Models Based on Remote Sensing Data Radoslaw Gurdak^{1,2}, Katarzyna Dąbrowska-Zielińska² 1: University of Warsaw, Poland; 2: Institute of Geodesy and Cartography, Poland "Application of Satellite Data for Drought Monitoring and Assessment of Its Impact on Yield of Winter Wheat" Martyna Gatkowska University of Warsaw, Poland

1:45pm -	Lunch Break
2:15pm	
2:15pm -	Natura 2000: Remote sensing for Natura 2000 habitats monitoring Chair: Łukasz Ślawik Chair: Dominik Kopeć
4:00pm	Classification of Natura 2000 Grassland Habitats on Fused Multitemporal Hyperspectral and Topographical Data Krzysztof Gryguc¹, Adriana Marcinkowska-Ochtyra¹, Adrian Ochtyra¹, Dominik Kopeć^{2,3}, Anna Jarocińska¹, Łukasz Ślawik^{1,2} 1: Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, Poland, emails: adriana.marcinkowska@uw.edu.pl, adrian.ochtyra@uw.edu.pl, ajarocinska@uw.edu.pl, l.slawik@uw.edu.pl; 2: MGGP Aero sp. z o. o., Tarnów, Poland; 3: Department of Geobotany and Plant Ecology, Faculty of Biology and Environmental Protection, University of Lodz, Poland, email: dominik.kopec@biol.uni.lodz.pl
	Monitoring Common Agriculture Policy and Cross Compliance with Sen4Cap in Eastern Macedonia and Thrace. Maria Iordanidou^{1,2}, Christiana Papoutsas^{1,2}, Athos Agapiou^{1,2}, Harris Kontoes^{2,3}, Diofantos Hadjimitsis^{1,2} 1: Cyprus University of Technology, Cyprus; 2: Eratosthenes Centre of Excellence, Limassol, Cyprus; 3: National Observatory of Athens, Institute for Environmental research and sustainable development, Greece
	Differentiation of Non-forest Natura 2000 Habitats on the Basis of Hyperspectral and Multispectral Data Anna Jarocińska¹, Marlena Kycko¹, Hubert Piórkowski², Agnieszka Błońska³, Dominik Kopeć^{4,5} 1: University of Warsaw, Faculty of Geography and Regional Studies, Poland; 2: The Institute of Technology and Life Sciences, Poland; 3: University of Silesia in Katowice, Faculty of Natural Sciences, Poland; 4: University of Lodz, Faculty of Biology and Environmental Protection, Poland; 5: MGGP Aero sp. z o. o., Tarnów, Poland
	Variabilities of Rubus caesius L. Discrimination on HySpex Images Anna Jarocińska¹, Dominik Kopeć^{2,3}, Barbara Tokarska-Guzik⁴, Edwin Raczek¹, Kornel Szubzdą¹ 1: University of Warsaw, Faculty of Geography and Regional Studies, Poland; 2: University of Lodz, Faculty of Biology and Environmental Protection, Poland; 3: MGGP Aero sp. z o. o., Tarnów, Poland; 4: University of Silesia in Katowice, Faculty of Natural Sciences, Poland
	Identification Of The Invasive Lupinus Polyphyllus Species Using Aerial Hyperspectral Remote Sensing And The Support Vector Machines Method Anita Sabat-Tomala, Edwin Raczek, Marlena Kycko, Bogdan Zagajewski Department of Geoinformatics, Cartography and Remote Sensing, Chair of Geomatics and Information Systems, Faculty of Geography and Regional Studies, University of Warsaw, Poland
	Services for EO-based Statistical Information for Agriculture and Verification on Farmers' Obligations under Common Agricultural Policy Jędrzej S. Bojanowski¹, Edyta Woźniak², Sebastian Aleksandrowicz², Zbigniew Bochenek¹, Katarzyna Dąbrowska-Zielińska¹, Stanisław Lewiński², Radek Malinowski², Jan P. Musiał¹, Marcin Rybicki², Sylwia Sikora¹, Tomasz Milewski³, Magdalena Mleczko³, Stanisław Sas⁴, Artur Łaczyński³ 1: Institute of Geodesy and Cartography, Poland; 2: Space Research Centre, Polish Academy of Sciences, Poland; 3: Statistics Poland, Poland; 4: Agency for Restructuring and Modernisation of Agriculture, Poland
4:00pm -	Keynote lecture 15: Measure To Manage – Earth Observation based Monitoring of Complex Systems to Guide Sustainability. Dr. Valerie Graw Chair: Monika Kuffer
4:30pm	Chair: Angela Abascal
4:30pm -	Urbanization: Earth Observation Proxies to Predict Urban Deprivation, Socio-Economic and Environmental Inequalities Chair: Monika Kuffer
6:10pm	Chair: Angela Abascal
	Location Matters: Topographic Analysis Of Slum Locations Inken Müller¹, Hannes Taubenböck^{1,2}, Monika Kuffer³, Michael Wurm¹ 1: German Remote Sensing Data Center, German Aerospace Center (DLR), 82234 Weßling-Oberpfaffenhofen, Germany; 2: Institute for Geography and Geology, Julius-Maximilians-Universität Würzburg, Würzburg 97074, Germany; 3: Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, PO Box 217,7500 AE Enschede, The Netherlands
	User Requirements For Deprived Urban Area EO-Based Modelling Monika Kuffer¹, Jon Wang¹, Sabine Vanhuyse², Stefanos Georganos², Angela Abascal³, Maxwell Owusu¹, Dana R. Thomson¹ 1: University of Twente, Netherlands, The; 2: Universite Libre De Bruxelles, Belgium; 3: University of Navarra, Spain
	Identifying Degrees Of Deprivation From Space: Building Detection And Morphological Analysis Of Urban Slum Areas Angela Abascal¹, Ignacio Rodriguez¹, Sabine Vanhuyse², Richard Sliuzas³, Monika Kuffer³ 1: University of Navarra; 2: Université Libre de Bruxelles; 3: University of Twente
	Mapping And Predicting The Intra-urban Degrees Of Deprivation Using EO Data Egi Luo, Monika Kuffer, Jiong Wang Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, the Netherlands
	Sentinel-2 and Google Street View data indicate income levels in subdistricts of Tallinn, Estonia Oleksandr Karasov, Evelyn Uuema, Tiit Tammaru Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu, Estonia
	Urban-rural Gradients Spatialize Educational Gaps: A Machine Learning Approach Using Micro-data, High School Locations And Impervious Surfaces For Evaluate Academic Performance In Ecuador Fabián Santos¹, Karina Delgado Valdivieso², Andreas Rienow³, Joaquín Gairín⁴ 1: Centro de Investigación para el Territorio y el Hábitat Sostenible (CITEHS). Universidad Indoamérica; 2: Centro de Investigación de Ciencias Humanas y de la Educación. Universidad Indoamérica, Ecuador; 3: Institute of Geography, Ruhr University Bochum; 4: Centro de Investigación y Estudios para el Desarrollo Organizativo (CRIEDO). Universitat Autònoma de Barcelona
6:10pm -	12th EARSeL Workshop on Imaging Spectroscopy in Potsdam, 23-25.03.2022 - announcement Chair: Sebastian van der Linden
6:15pm	Chair: Saskia Foerster
6:15pm	41st EARSeL Symposium 2022 - announcement
6:20pm	
6:20pm -	CS: Closing Session Chair: Klaus-Ulrich Komp
6:50pm	Chair: Jean-Christophe Schyns