13-16 September 2022
Paphos - Cyprus

Earth Observation for Environmental Monitoring

41st EARSeL Symposium 2022
6th EARSeL Workshop on Developing Countries

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Final Programme

41st EARSeL Symposium 2022

Date: Tuesday, 13/Sept/2022

9:00am - 10:30am

OC: Opening Ceremony
Location: **Aphrodite Hall**

10:30am - 11:00am

KS1: Keynote Speech
Location: **Aphrodite Hall**

Keynote Speaker: Prof. Ioannis Gitas, Aristotle University of Thessaloniki
Title: "EO Applications in Forest Fire Management - A European Mediterranean perspective"

11:00am - 11:30am

Coffee Break
Location: **Arion Bar**

11:30am - 1:00pm

S_CC: Climate Change and Desertification	SS_WM: Special Session - Wildfires Monitoring
Location: **Adonis**	Location: **Aphrodite Hall**
Chair: **Dr. Felix Bachofer**	Chair: **Prof. Arnon Karnieli**
	Chair: **Dr. Manuel Salvoldi**

S_CC: Climate Change and Desertification — Location: **Adonis** — Chair: **Dr. Felix Bachofer**

Four Decades of Geophysical Land, Ocean and Atmosphere Products over Europe to Answer Climate-related Questions - the TIMELINE Project

Stefanie Holzwarth[1], Asam Sarah[1], Bachmann Martin[1], Böttcher Martin[2], <u>Sophie Reinermann</u>[1], Dietz Andreas[1], Eisfelder Christina[1], Hirner Andreas[1], Hofmann Matthias[1], Kirches Grit[2], Krause Detmar[1], Meyer-Arnek Julian[1], Plank Simon[1], Popp Thomas[1], Reiners Philipp[1], Rößler Sebastian[1], Rupert Thomas[1], Scherbachenko Alexander[1], Wolfmüller Meinhard[1]
1: DLR, Germany; 2: Brockmann Consult GmbH

Monitoring Drought Events In Germany And Cyprus Using More Than 20 Years Of MODIS Data

Ursula Gessner[1], <u>Sophie Reinermann</u>[2], Sarah Asam[1], Ioannis Varvaris[3], Eleni Loulli[3,4], Felix Bachofer[1], Diofantos Hadjimitsis[3,4], Claudia Kuenzer[1]
1: German Aerospace Center, Germany; 2: University of Würzburg, Germany; 3: ERATOSTHENES Centre of Excellence, Limassol, Cyprus; 4: Cyprus University of Technology, Limassol, Cyprus

Light Pollution in Selected Polish Cities Using VIIRS and Census Data

Wojciech Łachowski, <u>Aleksandra Łęczek</u>
Institute of Urban and Regional Development, Poland

Correlation Of Abrupt Shifts In Forest Phenology With Amplitude Changes In Sentinel-1 SAR Data And Land Surface Temperature From Landsat-8

<u>Christos Theocharidis</u>[1,2], Chris Danezis[2,1], Ioannis Gitas[3], Diofantos Hadjimitsis[2,1]

SS_WM: Special Session - Wildfires Monitoring — Location: **Aphrodite Hall** — Chair: **Prof. Arnon Karnieli** — Chair: **Dr. Manuel Salvoldi**

Understanding Fire Dynamics Using FRP: The GEO Perspective

<u>Simon Jones</u>, Kostas Chatzopoulos-Vouzoglanis, Karin Reinke, Mariela Soto-Berelov, Chermelle Engel
RMIT UNIVERSITY, Australia

Satellite-based Detection of Potential Post-fire Regime Shifts in Multiple Dimensions of Ecosystem Functioning

<u>Bruno Marcos</u>[1], João Gonçalves[2], Domingo Alcaraz-Segura[3], Mário Cunha[4], João P. Honrado[5]
1: CIBIO-InBIO/BIOPOLIS (University of Porto); 2: CIBIO-InBIO/BIOPOLIS (University of Porto), proMetheus (IPVC); 3: iecolab-IISTA & Dept. of Botany (University of Granada), CAESCG (University of Almería); 4: DGAOT-FCUP & INESC TEC (University of Porto); 5: DBio-FCUP & CIBIO-InBIO/BIOPOLIS (University of Porto)

Wildfire Damage Assessment Over Arakapas Village In Cyprus Using Sentinel-2 Imagery.

<u>Maria Prodromou</u>[1,2], Kyriacos Themistocleous[1,2], Chris Danezis[1,2], Ioannis Gitas[3], Hadjimitsis Diofantos[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

	1: ERATOSTHENES Centre of Excellence, Cyprus; 2: Cyprus University of Technology, Department of Civil Engineering and Geomatics, Cyprus; 3: Aristotle University of Thessaloniki, School of Forestry and Natural Environment, Greece	**Spatial Consistency Regularized Weakly-Supervised Deep Learning for Wildfire Burned Area Mapping with Low-Resolution Labels** **Puzhao Zhang, Yifang Ban** KTH Royal Institute of Technology, Sweden
		Mapping Wildfire Scares – NDVI vs. NBR vs. AFRI **Arnon Karnieli, Manuel Salvoldi** Ben Gurion University, Israel

1:00pm - 2:00pm

Lunch Break
Location: **Pantheon Restaurant**

2:00pm - 4:00pm

P1: Poster Session (5-Slides Presentations)
Location: **Aphrodite Hall**
Chair: **Dr. Argyro Nisantzi**

Ecological Impacts of Wildfire Severity and Pyrodiversity Quantified with Remote Sensing and Deep-Learning
Xi-Lillian Pang[1], Puzhao Zhang[2], Ulla Mörtberg[1], Yifang Ban[2]
1: Department of Sustainable Development, Environmental Science and Engineering. KTH Royal Institute of Technology, Sweden; 2: Division of Geoinformatics. KTH Royal Institute of Technology, Sweden.

A Long-Term Spatiotemporal Analysis Of Biocrusts Across A Diverse Arid Environment: The Case Of The Israeli-Egyptian Sandfield
Klil Noy[1], Noa Ohana-Levi[1,2], Natalya Panov[1], Micha Silver[1], Arnon Karnieli[1]
1: The Remote Sensing Laboratory, French Associates Institute for Agriculture and Biotechnology of Drylands, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Israel; 2: Independent researcher, Ashalim, 85512, Israel

Evaluation Of Open-Source Data And Remote Sensing Techniques For Spatially Explicit Very High-Resolution Soil Sealing Information In North-Rhine Westphalia (Western Germany)
Jan-Philipp Langenkamp, Christian Daniel, Andreas Rienow
Ruhr-University Bochum, Germany

Joint Exploitation of Sentinel-1 and Sentinel-2 Temporal Composites for Land Cover and Crop Type Mapping
Giorgos Begkos, Christina Karakizi, Konstantinos Karantzalos
National Technical University of Athens, Remote Sensing Laboratory, Greece

Local Climate Zone Mapping for Climate Mitigation and Adaption
Benjamin Bechtel[1], Matthias Demuzere[1], Jonas Kittner[1], Panagiotis Sismanidis[1], Gerald Mills[2]
1: Ruhr-University Bochum, Germany; 2: University College Dublin, Ireland

Detecting ships in the Cyprus region using Sentinel-1 SAR data: A comparison of results using Sentinel Application Platform (SNAP) and Arc GIS Pro - deep learning
Eleftheria Kalogirou[1], Diofantos G. Hadjimitsis[1,2], George Melillos[1,2]

1: Department of Civil Engineering and Geomatics, Cyprus University of Technology, Limassol, Cyprus; 2: ERATOSTHENES Centre of Excellence, Limassol, Cyprus

Flood Risk Assessment in catchment areas in Cyprus using Earth Observation

Iosifina Kountouri[1,2], Evagoras Evagorou[2,1], Christodoulos Mettas[1,2], Christiana Papoutsa[1,2], Chris Danezis[1,2], Haris Kontoes[3], Argyro Nisantzi[1,2], Kyriacos Themistocleous[2,1], Silas Michaelides[2,1], Diofantos Hadjimitsis[1,2]
1: Department of Civil Engineering and Geomatics, Cyprus University of Technology, Limassol, Cyprus; 2: ERATOSTHENES Centre of Excellence, Cyprus; 3: National Observatory of Athens, Beyond Centre of Excellence, Athens, Cyprus

Advanced Training Course On Remote Setting For Educators At The Junior Academy Of Sciences Of Ukraine

Svitlana Babiichuk[1], Olga Tomchenko[2], Natalia Kobliuk[1]
1: National Center "Junior Academy of Sciences of Ukraine", Kyiv, Ukraine; 2: State Institution "Scientific Centre for Aerospace Research of the Earth of the Institute of Geological Sciences of the National Academy of Sciences of Ukraine", Kyiv, Ukraine

Belgian Experience In The Eagle LULUCF Cross Border Mapping Exercise

Benjamin Beaumont[1], Nathalie Stéphenne[2], Johannes Van Geertsom[3], Stefan Kleeschulte[4]
1: Institut Scientifique de Service Public - ISSeP, Remote Sensing and Geodata Unit,; 2: Service Public de Wallonie - SPW, Geomatic Department, Belgium; 3: National Geographic Institute – NGI, Belgium; 4: Space4Environment, Luxembourg

Assessing the consistency of forest biophysical parameters retrieved from Sentinel-2, Landsat-8 and GEDI in Central Germany

Birgitta Putzenlechner[1], Federico Filipponi[2], Philipp Koal[3], Iris Jeuffrard[4], Martin Kappas[1]
1: Georg-August-Universität, Göttingen, Germany; 2: Institute for Environmental Protection and Research (ISPRA), Rome, Italy; 3: Forestry Research and Competence Center ThüringenForst, Gotha, Germany; 4: National School of Geographic Sciences (ENSG), Champs-sur-Marne, France

Wood Decay Detection In Norway Spruce Trees With Multitemporal PlanetScope Data Analysis

Michele Dalponte[1], Yady Tatiana Solano-Correa[2], Hans Ole Ørka[3], Erik Næsset[3], Terje Gobakken[3]
1: Fondazione Edmund Mach, Italy; 2: University of Cauca, Colombia; 3: Faculty of Environmental Sciences and Natural Resource Management, Norwegian University of Life Sciences, Norway

Integration of Terrestrial Laser Scanning (TLS) and Airborne Laser Scanning (ALS) Processed Data for fhe Assessment of Norway Spruce Dendrometric Characteristics – a Case Study

Bogdan Apostol[1], Adrian Lorent[1,2], Serban Chivulescu[1], Albert Ciceu[1,2], Marius Petrila[1], Florin Capalb[1,2], Cristiana Marcu[1], Ovidiu Badea[1,2]
1: National Institute for Research and Development in Forestry (INCDS) "Marin Drăcea", Romania; 2: "Transilvania" University of Braşov, Faculty of Silviculture and Forest Engineering, Braşov, Romania

Assessment Of GEDI Data For Its Use In Deriving Remote-Sensing-Based 3D Forest Information

Florian Josef Lippl[1], Manuela Hirschmugl[1,2]
1: University of Graz, Austria, Austria; 2: Joanneum Research, Institute DIGITAL, Graz, Austria

Integration of Canopy Height Models Derived from Airborne LiDAR Data and UAV Aerial Imagery by DTM-DSM Matching in the Forest Free Areas

Bogdan Apostol[1], Marius Petrila[1], Juan Garcia Duro[1], Adrian Lorent[1,2], Florin Capalb[1,2], Cristiana Marcu[1], Sorina Farcas[1]

1: National Institute for Research and Development in Forestry (INCDS) "Marin Drăcea", Voluntari, Romania; 2: Transilvania" University of Braşov, Faculty of Silviculture and Forest Engineering

Comparison of PRISMA and Sentinel-2 Imagery for Detection of Agricultural Areas

Francesco Pirotti[1], Mario Angelo Gomarasca[2], Enrico Borgogno Mondino[3]

1: University of Padova, TESAF Department, Italy; 2: National Research Council (CNR-IREA), Italy; 3: University of Torino, Department of Agricultural, Forest and Food Sciences, Italy

Evaluation Of Sentinel-2 Vegetation Indices To Differentiate Forest Recovery Phases In Czechia

Natalia Kobliuk, Daniel Paluba, Přemysl Štych

Charles University, Department of Applied Geoinformatics and Cartography, Czech Republic

Choosing Optimal Time For Estimating Yield of Winter Oilseed Rape And Winter Wheat

Jakub Tomasz Ceglarek[1], Agnieszka Glinko[2], Cezary Kaźmierowski[1], Remigiusz Łukowiak[3], Sławomir Królewicz[1], Jan Piekarczyk[1]

1: Adam Mickiewicz University in Poznan, Poland; 2: GISPRO S.A.; 3: Poznan University of Life Sciences

A Web GIS Mapping Service For A Better Exploitation Of The Forest Melliferous Resources In South East Romania

Adrian Lorent[1,2], Vladimir Gancz[1], Marius Petrila[1], Bogdan Apostol[1], Florin Capalb[1,2], Ionica Soare[3]

1: National Institute for Research and Development in Forestry (INCDS), "Marin Drăcea", Romania; 2: "Transilvania" University of Braşov, Faculty of Silviculture and Forest Engineering, Braşov, Romania; 3: "Dunărea de Jos" University of Galaţi, Faculty of Economics and Business Administration, Galaţi, Romania

Grassland Mowing Frequency Estimation in Google Earth Engine Using Sentinel-2 Imagery.

Davide Andreatta[1,2], Damiano Gianelle[2], Michele Scotton[1], Loris Vescovo[2], Michele Dalponte[2]

1: University of Padova, Department of Agronomy, Food, Natural Resources, Animals and Environment, Italy; 2: Edmund Mach Foundation, Research and Innovation Centre, Italy

3:00pm - 4:00pm

S_Agri1: Agroforestry, Forests, Agriculture and Food Security
Location: **Adonis**
Chair: **Dr. Marios Tzouvaras**

Detecting Large Scale Land Deals From Landsat Timeseries As Spatial Implications Of Export-Oriented Policies Along The Nacala Development Corridor, Mozambique

Ricardo Paris, Andreas Rienow

Ruhr university Bochum, Germany

Mapping Forest Change Areas and Assessing Forest Disturbance Agents from Sentinel-2 Time Series

Janik Deutscher[1], Martin Puhm[1], Andreas Wimmer[1], Katja Öhmichen[2], Jens Wiesehahn[3]

1: Joanneum Research, Austria; 2: Thünen Institute of Forest Ecosystems, Germany; 3: Nordwestdeutsche Forstliche Versuchsanstalt, Germany

Improved Handling of Artefacts in Sentinel-2 Time Series Modelling and in Detection of Vegetation Disturbances

Martin Puhm, Janik Deutscher, Andreas Wimmer

Joanneum Research, Austria

The use of Sen4CAP in an attempt to perform Common Agricultural Policy monitoring in Cyprus

Marios Tzouvaras[1,2], Dimitris Sykas[1], Christiana Papoutsa[1,2], Maria Prodromou[1,2], Elena Papageorgiou[3], Christiana Theodorou[3], Agathangelos Hadjichristofi[3], George Georgiou[4], Diofantos Hadjimitsis[1,2]

1: Department of Civil Engineering and Geomatics, Faculty of Engineering and Technology, Cyprus University of Technology, Limassol, Cyprus; 2: Eratosthenes Centre of Excellence, Limassol, Cyprus; 3: Cyprus Agricultural Payments Organisation, Cyprus; 4: Novatex Solutions Ltd, Nicosia, Cyprus

4:00pm - 4:30pm

Coffee Break
Location: **Arion Bar**

4:30pm - 5:30pm

S_Agri2: Agroforestry, Forests, Agriculture and Food Security
Location: **Adonis**
Chair: **Dr. Marios Tzouvaras**

Multi-annual Monitoring Of Mowing Dynamics In German Grasslands With Sentinel-2 Time Series

Sophie Reinermann[1], Sarah Asam[2], Ursula Gessner[2], Claudia Kuenzer[1,2]

1: Department of Remote Sensing, Institute of Geography and Geology, University of Würzburg, Germany; 2: German Aerospace Center (DLR), Earth Observation Center (EOC), German Remote Sensing Data Center (DFD), Germany

Assessment of Growth and Mortality Rates in Canadian Boreal Forest using Landsat Time Series.

Alexandre Morin-Bernard[1], Alexis Achim[1], Nicholas C. Coops[2]

1: University Laval, Department of Wood and Forest Sciences, Canada; 2: University of British Columbia, Department of Forest Resources Management, Canada

Spectral Indices as a Tool to Assess the Moisture Status of Forest Habitats

Adam Młynarczyk[1], Monika Konatowska[2], Sławomir Królewicz[1], Paweł Rutkowski[2], Jan Piekarczyk[1], Wojciech Kowalewski[3]

1: Adam Mickiewicz University in Poznań, Faculty of Geographic and Geological Sciences, Poland; 2: Poznań University of Life Sciences, Faculty of Forestry and Wood Technology, Poland; 3: Adam Mickiewicz University in Poznań, Faculty of Mathematics and Computer Science, Poland

High-resolution Aerial RGB Imagery For Flowering Intensity Quantification: A Triennial Study In A High-density Apple Orchard

Chenglong Zhang[1], Lammert Kooistra[1], Joao Valente[2], Leifeng Guo[3], Wensheng Wang[4]

1: Wageningen University & Research, Laboratory of Geo-Information Science and Remote Sensing, The Netherlands; 2: Wageningen University & Research, Information Technology Group, The Netherlands; 3: Chinese Academy of Agriculture Science, Agriculture Information Institute, China; 4: Ministry of Agriculture and Rural Affairs, Key Laboratory of Agricultural Big Data, China

6:30pm - 8:30pm

IB: Icebreaker
Location: **Aphrodite Gardens**

Date: Wednesday, 14/Sept/2022

9:00am - 9:30am

KS2: Keynote Speech
Location: **Aphrodite Hall**
Keynote and Panel Expert Discussion
Keynote: Monika Kuffer
Experts: Caroline Gevaert, Stefanos Georganos, Dana R. Thompson, Jon Wang, Sabine Vanhuysse
Moderator: Jean-Christophe Schyns

9:30am - 10:30am

SS_WR: Special Session - Water Resources Management
Location: **Adonis**
Chair: **Diofantos Hadjimitsis**
Chair: **Dr. Christiana Papoutsa**

Comparison Of Rainfall Rate Retrieval Algorithms Using Ground-Based Radar Data, Intended For Drought Monitoring In Cyprus

Eleni Loulli[1,2], Johannes Bühl[3], Silas Michaelides[1], Athanasios Loukas[4], Diofantos G. Hadjimitsis[1,2]
1: ERATOSTHENES Centre of Excellence, Cyprus; 2: Cyprus University of Technology, School of Engineering and Technology, Department of Civil Engineering and Geomatics, Cyprus; 3: Leibniz Institute for Tropospheric Research (TROPOS), Germany; 4: Aristotle University of Thessaloniki, Greece

Remote Sensing-based Algorithm for Monitoring Water Quality of Inland Water Bodies

Gordana Jakovljevic[1], Miro Govedarica[2], Flor Álvarez Taboada[3]
1: Faculty of Architecture, Civil engineering and Geodesy, Bosnia and Herzegovina; 2: Faculty of Technical Science, Serbia; 3: University of Leone, Spain

Deriving Strong Rain Hazard Risk Maps from Geo-Mophology

Thomas Krauß, Veronika Gstaiger
DLR - German Aerospace Center, Germany

Use Of Remote Sensing For Assessing Water Quality In Open-Surface Water Systems In Cyprus

Ioannis Varvaris[1], Christiana Papoutsa[1,2], Marios Tzouvaras[1], Felix Bachofer[3], Albert Ansmann[4], Johannes Bühl[4], Kyriacos Themistocleous[1,2], Kyriacos Neocleous[1,2], Chris Danezis[1,2], Nicholas Kyriakides[1,2], Georgios Komodromos[5], Charalampos Kontoes[6], Silas Michaelides[1], Diofantos Hadjimitsis[1,2]
1: Eratosthenes Centre of Excellence, Limassol, Cyprus; 2: Department of Civil Engineering and Geomatics, Faculty of Engineering and Technology, Cyprus University of Technology, Limassol, Cyprus; 3: Earth Observation Center, German Aerospace Center (DLR), Wessling, Germany; 4: Leibniz Institute for Tropospheric Research, Leipzig, Germany; 5: Department of Electronic Communications, Ministry of Transport, Communications and Works, Nicosia, Cyprus; 6: National Observatory of Athens, Athens, Greece

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WSDC_DUA1: Workshop on Developing Countries: Deprived Urban Areas I
Location: **Aphrodite Hall**
Chair: **Dr. Stefanos Georganos**
Chair: **Monika Kuffer**

Deprived Area Mapping using Deep and Machine Learning on Sentinel-2 Imagery

Ryan Engstrom[1], Amir Jafari[1], Arathi Nair[1], Abdulaziz Gebril[1], Mina Hanna[1], Mojahid Osman[1], Jake Lieberfarb[1], Bradely Reardon[1], Maxwell Owusu[1], Dana Thomson[2], Monika Kuffer[2]
1: George Washington University, United States of America; 2: University of Twente, Netherlands

The Diversity Of Deprived Areas: Applications Of Unsupervised Machine Learning And Open Geodata To São Paulo, Brazil

Lorraine Trento Oliveira[1], Monika Kuffer[1], Nina Schwarz[1], Julio Cesar Pedrassoli[2]
1: University of Twente, The Netherlands; 2: Federal University of Bahia, Brazil

Predicting Perceived Urban Deprivation Using Deep Learning

Tais Grippa[1], Angela Abascal[1,2], Sabine Vanhuysse[1], Eleonore Wolff[1]
1: Université Libre de Bruxelles, Belgium; 2: Navarra Center for International Development, University of Navarra, 31009 Pamplona, Spain

Mapping Slums Using Satellite Imagery: A Comparison of Image Processing Techniques

Agatha Mattos, Gavin McArdle, Michela Bertolotto
University College Dublin, Ireland

10:30am - 11:00am

Coffee Break
Location: **Arion Bar**

11:00am - 1:00pm		

11:00am - 1:00pm

S_DRR1: Disaster Risk Reduction
Location: **Adonis**
Chair: **Dr. Kyriacos Themistocleous**

Disaster Capitalism And Land Grabbing Revisited With Volunteered Geographic Information And Multi Sensor Earth Observation: The Case of Barbuda

Andreas Rienow, Torben Dedring, Marcus Goebel, Valerie Graw
Ruhr-University Bochum, Germany

A Multi-Sensor Approach Towards A Disaster Risk Reduction Framework for Tailings Dam Failures Using the Example of Brumadinho

Torben Dedring[1], Valerie Graw[1], Kristina Thygesen[2], Andreas Rienow[1]
1: Ruhr University Bochum, Germany; 2: GRID-Arendal, Norway

The Establishment of the CyCLOPS Integrated Strategic Research Infrastructure Unit for Geohazard Monitoring Activities: Considerations, Performance Assessment and Initial Results

Chris Danezis[1,2], Dimitris Kakoullis[1,2], Kyriaki Fotiou[1,2], Marina Pekri[1,2], Christopher Kotsakis[1,3], Miltiadis Chatzinikos[1,3], George Melillos[1,2]
1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence; 3: Aristotle University of Thessaloniki

A Review Of Current GNSS Interference Detection And Localisation Techniques Towards The Development Of Resilient GNSS Strategic Infrastructure

Nikolas Christoforou[1,2], Chris Danezis[1,2]
1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence, Cyprus

Assessing the Resilience of Flood Defense Structures via Radar MTI & Backscatter Analysis

Dimitris Kouhartsiouk, Skevi Perdikou
Geofem Ltd., Cyprus

Combined Use Of InSAR And FEA For The Monitoring Of Landslides

Egli Michailidou, Styliana Stavrou, Christakis Iereidis, Iordanis Aloupas, Skevi Perdikou
GEOFEM, Cyprus

WSDC_DUA2: Workshop on Developing Countries: Deprived Urban Areas II
Location: **Aphrodite Hall**
Chair: **Dr. Stefanos Georganos**
Chair: **Angela Abascal**

Urban Morphology For Mapping Deprived Urban Areas Across Cities In Sub-Saharan Africa

Sabine Vanhuysse[1], Jiong Wang[2], Priscilla Kabiru[3], Monika Kuffer[2], Stefanos Georganos[4], Angela Abascal[5,1], Eléonore Wolff[1]
1: Université libre de Bruxelles (ULB), Department of Geosciences, Environment and Society, Belgium; 2: University of Twente, Faculty of Geo-Information Science and Earth Observation (ITC), The Netherlands; 3: Foresight Planners Limited, Kenya; 4: KTH Royal Institute of Technology, Division of Geoinformatics, Sweden; 5: University of Navarra, Navarra Center for International Development, Spain

Requirements to Model Slum Dynamics in Cities of the Global South

John Friesen, Julius Breuer
Technische Universität Darmstadt, Germany

The Varying Similarity In The Morphology Of The Urban Divide

Jiong Wang[1], Sabine Vanhuysse[2], Stefanos Georganos[2,3], Monika Kuffer[1], Angela Abascal[4,1]
1: University of Twente, Netherlands, The; 2: Université libre de Bruxelles (ULB), Department of Geosciences, Environment and Society, Belgium; 3: KTH Royal Institute of Technology, Division of Geoinformatics, Sweden; 4: University of Navarra, Navarra Center for International Development, Spain

IDeaMapSudan: Mapping Urban Deprivation In Khartoum Combining EO And Geospatial Data

Monika Kuffer[1], Nuha Eltinay[2], Maysoon Badi[2], Wafa Sakhi[2], Inas M.M. Ali[3], Asgad Gummah[4], Julia Kumi[4], Ibrahim Kushieb[4], Mosub Abdallah[6], Taha Elzaki[5], Mustafa Hamza[6], Fatima Ahmed[5], Marwa Ali[6], Jon Wang[1], Caroline Margaux Gevaert[1], Charlotte Flasse[7], Andre Da Silva Mano[1], Serkan Girgin[1], Francis Cheruiyot Onyambu[8], Dana R. Thomson[1], Caroline Kabaria[8]
1: University of Twente, Netherlands, The; 2: Sudan Urban Development Think Tank Organization, Sudan; 3: Independent consultant, Sudan; 4: Ministry of Social Development, Sudan; 5: Ministry of Transport, Sudan; 6: Ministry of Physical Planning-Khartoum State, Sudan; 7: Université Libre de Bruxelles, Belgium; 8: African Population & Health Research Center, Kenya

Leveraging community-generated data in research: The KnowYourCity Campaign data set by Slum Dwellers International

Slide-Map – a Platform for Landslide Risk Mapping in Near-real Time

Ionut Sandric[1,2], Viorel Ilinca[3,2], Radu Irimia[1,2], Zenaida Chitu[4,5,2], Andrei Stefan[6]
1: University of Bucharest, Faculty of Geography, Romania; 2: University of Bucharest, Institute for Research (ICUB); 3: Geological Institute of Romania, Caransebeş Street, no. 1, Bucharest, Romania; 4: National Meteorological Administration, 013686 Bucharest, Romania; 5: National Institute of Hydrology and Water Management, 013686 Bucharest, Romania; 6: ESRI Romania

Remotely Sensed Early Warning Signals of Critical Transitions of Forest Ecosystems

Filippos Eliades[1,2], Diofantos Hadjimitsis[1,2], Chris Danezis[1,2], Felix Bachofer[3]
1: Cyprus University of Technology; 2: Eratosthenes Center Of Excellence; 3: German Aerospace Center/Deutsches Zentrum für Luft- und Raumfahrt DLR

Dana R. Thomson[1], Hazem Mahmoud[2], Forrest R. Stevens[3], Robert Chen[4], Argyro Kavvada[5], Andrea E. Gaughan[3]
1: University of Twente, Faculty of Geo-Information Science & Earth Observation, Netherlands; 2: University of Texas at San Antonio, Department of Geological Sciences, USA; 3: University of Louisville, Department of Geography and Geosciences, USA; 4: Columbia University, Center for International Earth Science Information Network, USA; 5: National Aeronautics and Space Administration, Earth Sciences Division, USA

Finding Biases in Geospatial Datasets in the Global South: Are we Missing Vulnerable Populations?

Caroline M. Gevaert
University of Twente, Netherlands, The

SkySat – Geometry and Effective Resolution

Karsten Jacobsen
Leibniz University Hannover, Germany

Garbage in/Garbage Out: Understanding Cities Through a Geospatial Analysis of Waste Management Processes

Isaac Oluoch[1], Monika Kuffer[1], Michael Nagenborg[1], Kevin Pijpers[1], Dana Thomson[1], Stefanos Georganos[2], Angela Abascal[3], Sabine Vanhuysse[4], Nicera Wanjiru[5], Eric Rovoga[5]
1: University of Twente, Netherlands; 2: Royal Institute of Technology, Sweden; 3: University of Navarra, Spain; 4: Université libre de Bruxelles (ULB), Belgium; 5: Community Mappers, Kenya

1:00pm - 2:00pm

Lunch Break
Location: **Pantheon Restaurant**

2:00pm - 2:30pm

Poster Session (Exhibition)
Location: **Aphrodite Hall**

2:30pm - 3:30pm

S_AI: Artificial Intelligence and Big Earth Data
Location: **Zeus**
Chair: **Dr. Nektarios Chrysoulakis**
Chair: **Dr. Ioannis Varvaris**

Machine and Deep Learning Tools Exploiting Earth Observation for Airport Geodata Production

Benjamin Beaumont, Dimitri Graur, Eric Hallot
Remote Sensing and Geodata Unit, Institut Scientifique de Service Public (ISSeP), Liège, Belgium

Exploring The Potential Of Future Satellite Imagers: Assessing The Hyperspectral Sensors' Soil Organic Carbon Predictive Capacity

Stylianos Kokkas[1], Nikolaos Tziolas[1], Nikolaos L. Tsakiridis[1,2], Konstantinos Karyotis[1], George Zalidis[1]

1: Aristotle University of Thessaloniki, Laboratory of Remote Sensing, Spectroscopy and GIS, Department of Agriculture, Greece; 2: Aristotle University of Thessaloniki, Automation and Robotics Laboratory, Department of Electrical and Computer Engineering, Faculty of Engineering, Greece

Optimizing Ground-Based Observations Of Global Precipitation Patterns

Johannes Bühl[1], Martin Radenz[1], Patric Seifert[1], Argyro Nisantzi[2], Rodanthi Mamouri[2], Ulla Wandinger[1], Albert Ansmann[1]
1: TROPOS, Leipzig, Germany; 2: ERATOSTHENES Center of Excellence, Limassol, Cyprus

Copernicus for Urban Resilience in Europe: Intermediate results from the CURE project

Nektarios Chrysoulakis[1], Zina Mitraka[1], Mattia Marconcini[2], David Ludlow[3], Zaheer Khan[3], Brigitte Holt Andersen[4], Tomas Soukup[5], Mario Dohr[6], Alessandra Gandini[7], Jürgen Kropp[8], Dirk Lauwaet[9], Christian Feigenwinter[10]
1: FORTH (Foundation for Research and Terchnology Hellas), Greece; 2: Deutsches Zentrum für Luft- und Raumfahrt, Germany; 3: University of the West of England, Bristol, United Kingdom; 4: CWare ApS, Denmark; 5: Gisat S.R.O., Czech Republic; 6: GeoVille Informationssysteme und Datenverarbeitung GMBH, Austria; 7: TECNALIA, Fundacion Tecnalia Research & Innovation, Spain; 8: PIK, otsdam Institut fuer Klimafolgenforschung, Germany; 9: VITO, laamse Instelling voor Technologisch Onderzoek N.V., Belgium; 10: Universitaet Basel, Switzerland

2:30pm - 4:00pm

SS_LCLU: Special Session - Land Use Land Cover
Location: **Adonis**
Chair: **Dr. Gregory Giuliani**
Chair: **Dr. Birgitta Putzenlechner**

An Automated Approach to Habitat Mapping on a Rehabilitation Peatland Using Google Earth Engine
Richa Marwaha[1], Stuart Green[2], Matthew Saunders[1]
1: Trinity College Dublin, Ireland; 2: Ashtown Food Research Centre, Ireland

Random Forest and Convolutional Neural Networks Classification of LULUCF Using Sentinel-2 Data in Czechia
Gabriel Antonio Carneiro[1,2], Jan Svoboda[3], Přemysl Štych[3], Joaquim João Moreira de Sousa[1,2], António Cunha[1,2]
1: University of Trás-os-Montes e Alto Douro, Department of Engineering, Vila Real, Portugal; 2: INESC-TEC, Porto, Portugal; 3: Charles Universty - Faculty of Science, Czech Republic

Performance Analysis of Pixel-Based and Object-Oriented LULC Classification in Google Earth Engine Using Multi-Temporal Sentinel-2 Imagery
Suzanna Cuypers[1], Korneel Hoebeke[1], Sander Bracke[1], Andrea Nascetti[2], Maarten Vergauwen[1]
1: KU Leuven, Belgium; 2: Polytechnic University of Bari, Italy

Agricultural Land Use Forecasting – Preliminary Results for a Case Study in the Paphos district, Cyprus
Stelios Neophytides[1,2], Christiana Papoutsa[1,2], Diofantos Hadjimitsis[1,2], Phaedon Kyriakidis[1,2]

WSDC_SDGs: Workshop on Developing Countries: SDGs urban sustainability , demographic and health modelling
Location: **Aphrodite Hall**
Chair: **Dr. Dana Renee Thomson**
Chair: **Sabine Vanhuysse**

Vector-borne Disease Risk Mapping in Sub-Saharan African Cities: Challenges and Opportunities
Catherine Linard, Camille Morlighem
University of Namur, Belgium

"Making Urban Slum Population Visible: An Earth-Observation Based Approach"
Jorge Klinnert[1], Angela Abascal[1,3], Stefanos Georganos[2], Sabine Vanhuysse[3], Monika Kuffer[4], Eleonore Wolff[3]
1: Universidad de Navarra, Spain; 2: KTH Royal Institute of Technology, Sweden; 3: Department of Geosciences, Environment & Society, Belgium; 4: Faculty of Geo-information Science and Earth Observation, Netherlands

Spatial And Temporal Urban Population Distribution Mapping In Sub-Saharan African Cities Using Earth Observation and Deep Learning
Stefanos Georganos[1], Sebastian Hafner[1], Theodomir Mugiraneza[2], Yifang Ban[1]
1: Division of Geoinformatics, KTH Royal Institute of Technology, Sweden; 2: University of Rwanda, Centre for GIS and Remote Sensing, Rwanda

Fusing Earth Observation and Socioeconomic Data to Increase the Transferability of Large-scale Urban Land Use Classification
Job Fabian Rosier[1], Hannes Taubenböck[2,3], Peter H. Verburg[1], Jasper van Vliet[1]

1: ERATOSTHENES Centre of Excellence, Cyprus; 2: Cyprus University of Technology	1: Vrije Universiteit Amsterdam, Netherlands, The; 2: German Aerospace Center (DLR), German Remote Sensing Data Center (DFD), Oberpfaffenhofen, 82234, Wessling, Germany; 3: Institute for Geography and Geology, Julius-Maximilians-Universität Würzburg, Würzburg 97074, Germany

Adaptability of Inundation Mapping in Service of the Water Utilities: the Case of Giaretta Lake and Brenta River

Ioannis Manakos[1], Afroditi Kita[1], Francesco Zaffanella[2], Sofia Papadopoulou[1], Lisa Napolitano[2]
1: Centre for Research and Technology Hellas, Greece; 2: Autorità di bacino Distrettuale delle Alpi orientali, Italy

Assessing the Utility of Open-Source Geo-Spatial Data for AI-Driven Estimation of Fire Spread Risk in Informal Settlements

Dagmara Panas[1], Sohan Seth[1], Gary Watmough[2], David Rush[3]
1: School of Informatics, University of Edinburgh, United Kingdom; 2: School of Geosciences, University of Edinburgh, United Kingdom; 3: School of Engineering, University of Edinburgh, United Kingdom

Mapping Access to Electricity and Urban Night Lights: Leveraging the Massive Repository of Astronaut Photography of the Earth

Monika Kuffer[1], Tobias Storch[2], Alejandro Sánchez De Miguel[3], Franz Hölker[4], Eleanor Stokes[5]
1: Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands; 2: Earth Observation Center (EOC), German Aerospace Center (DLR), 82234 Weßling, Germany; 3: Universidad Complutense de Madrid, Spain; 4: Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), 12587 Berlin, Germany; 5: Universities Space Research Association, USA

4:00pm - 4:30pm

Coffee Break
Location: **Arion Bar**

The coffee for the workshop participants will be at 04:00 pm - 04:15 pm due to practical reasons.

4:25pm - 5:40pm

WSDC_EC: Workshop on Developing Countries: Environmental and Climatic applications
Location: **Aphrodite Hall**
Chair: **Dr. Jiong Wang**
Chair: **Prof. Catherine Linard**

Characterising the Changes in Land Use and Land Cover amid Changing Climatic Conditions using Remote Sensing Techniques in the Muringato Basin, Kenya

Simon Wachira Muthee, Bartholomew Thiong'o Kuria, Charles Ndegwa Mundia
Dedan Kimathi University of Technology, Kenya

Evaluation Of The Dempster-Shafer Theory For Oil Palm Plantations Mapping: Application To Sumatra (Indonesia)

Carl Bethuel[1], Damien Arvor[1], Thomas Corpetti[1], Jérémie Gignoux[2], Samuel Corgne[1]
1: UMR LETG 6554 CNRS, UNIVERSITY OF RENNES 2; 2: PSE - Paris School of Economics

Classification Features and Object-based Mapping for Heterogenous Tropical Highlands Using a Synergetic Multi-Sensor Approach Based on Sentinel-1, Sentinel-2, and GEDI Data - A Case Study of the Muringato Sub-catchment, Kenya.

Marcus Frederik Goebel[1], Kuria Thiong'o[2], Andreas Rienow[1]
1: Ruhr-University Bochum, Germany; 2: Dedan Kimathi University of Technology, Kenya

A Universal Data Processing Method for Global Production of Water-quality Indicators in Support of SDG 6.3.2

Nima Pahlevan[1,2], Akash Ashapure[1,2], Asen Radov[2,3], Navid Golpayegani[2]

1: Science Systems and Applications Inc.; 2: NASA GSFC, United States of America; 3: University of Marylland

Assessing The Effectiveness Of Participatory GIS Tool For Environmental Conservation Of The Muringato Catchment Area.

Wisdom Kipkemboi, Bartholomew Thiong'o Kuria, David Ndegwa Kuria

Dedan Kimathi University of Technology, Kenya

4:30pm - 6:00pm

CM: Council Meeting
Location: **Adonis**

Date: Thursday, 15/Sept/2022

9:00am - 9:30am	**KS3: Keynote Speech** Keynote Speaker: Prof. Gilberto Camara, National Institute for Space Research of Brazil Title: "LUCC Classification with Big Earth Observation Data: Challenges and Current Status"
9:30am - 10:30am	**SS_ET1: Special Session - Education and Training** Chair: **Alexander Siegmund** Chair: **Dr. Premysl Stych** **Around The Earth In Less Than 5 Minutes – Exploring Earth Observation Satellites In An Augmented Reality App** Claudia Lindner, Henryk Hodam, <u>Annette Ortwein</u>, Andreas Rienow Ruhr-University Bochum, Germany **Developing and Testing Explainer Videos on Earth Observation** <u>Henryk Hodam</u>, Andreas Rienow, Carsten Juergens Ruhr-Universität Bochum, Germany **PULCHRA Project: Earth Observation and Open Schooling** <u>Přemysl Štych</u>, Josef Laštovička, Jan Svoboda, Natalia Kobliuk, Daniel Paluba Charles University, Faculty of Science, Department of Applied Geoinformatics and Cartography, EO4Landscape research team, Czechia **Potentials of the App BLIF:Explorer for Location-based Use of Satellite Imagery to Foster Remote Sensing in Schools** <u>Johannes Keller</u>[1], Mario Blersch[1], Christian Plass[1], 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
10:30am - 11:00am	**Coffee Break** Location: **Arion Bar**
11:00am - 11:45am	**SS_ET2: Special Session - Education and Training** Location: **Aphrodite Hall** Chair: **Alexander Siegmund** Chair: **Dr. Premysl Stych** **The European Perspective: Earth Observation for Education (EO4Edu)** <u>Annette Ortwein</u>, Kilian Staar, Claudia Lindner, Henryk Hodam, Andreas Rienow University of Bochum, Germany **"From Space to Classroom" using ESA's Climate Change Initiative Educational and Training Resources** Eirini Politi[1], Suhyb Salama[2], <u>Catherine Fitzsimons</u>[3], Norman Fomferra[1], Tonio Fincke[1], Carsten Brockmann[1] 1: Brockmann Consult GmbH, Germany; 2: University of Twente, the Netherlands; 3: University of Leicester, United Kingdom

Promoting The Benefits Of Earth Observation In Secondary And Higher Education In Cyprus

Maria Prodromou[1,2], Eleni Loulli[1,2], Christiana Papoutsa[1,2], Christos Theocharidis[1,2], Antonis Hadjiantonis[3], Diofantos Hadjimitsis[1,2]
1: ERATOSTHENES Centre of Excellence, Limassol, Cyprus; 2: Department of Civil Engineering and Geomatics, Faculty of Engineering and Technology, Cyprus University of Technology, Limassol, Cyprus; 3: Cyprus Research and Innovation Centre (CyRIC), Nicosia, Cyprus

12:00pm - 1:00pm

S_SP: Sponsors Session
Location: **Aphrodite Hall**

1. Long term changes identification and analysis of river deltas and riparian zones using time-series multispectral data - GEOSYSTEM HELLAS (Christos Kontopoulos, Dimitra Kitsiou, Stavros Chlorokostas, Vasiliki Charalampopoulou, Nikos Grammalidis, Anastasios Tzepkenlis)

2. Addressing the use of EO and remote sensing technologies to assess economic indicators and identify economy trends - MonItoring CypRus ecOnomy by Space (MICROS) - GEOSYSTEM HELLAS (Christos Kontopoulos, Thomas Papakosmas, Vasiliki Charalampopoulou, Giovanni De Angelis, Stelios Zervos)

3. Nextland - Next Generation Land Management Services for Agriculture and Forestry (Nuno Grosso, Isabelle Piccard, Hervé Caumont, Luís Filipe Lages, David Cordeiro, Greg Robson, Radoslaw Guzinski, Jo Van Brusselen, Tord Sorensen, Ioannis Manakos, Christos Kalogeropoulos, Jim Wilson, Pieter Janssens, Alireza Taravat)

4. ArcGIS Imagery Solutions - MARATHON DATA SYSTEMS (John Kontos, Maria Pafi)

5. Importance of the ERATOSTHENES Centre of Excellence for the EMMENA region (Eleni Loulli)

1:00pm - 2:00pm

Lunch Break
Location: **Pantheon Restaurant**

2:00pm - 2:30pm

Poster Session (Exhibition)
Location: **Aphrodite Hall**

2:30pm - 4:00pm

SS_GRS1: Special Session - Geological Remote Sensing
Location: **Aphrodite Hall**
Chair: **Prof. Konstantinos Nikolakopoulos**
Chair: **Aggeliki S. Kyriou**

Creation Of High-Precision 3D Reference Point Clouid Using UAV And TLS Data, Within "PROION" Project

Konstantinos Nikolakopoulos[1], Aggeliki Kyriou[1], Athanassios Ganas[2], Yiannis Maroufidis[3], Vassiliki {Betty} Charalampopoulou[3], Theodoros Athanasopoulos[4]
1: University of Patras, Greece; 2: National observatory of Athens; 3: Geosystems Hellas S.A; 4: ES Systems

SAR-based Automated Unsupervised Rapid Mapping of Land Surface Changes after Volcanic Eruptions in Indonesia

Aiym Orynbaikyzy[1], Simon Plank[1], Sandro Martinis[1], Arum Tjahjaningsih[2], Rido Dwi Ismanto[2], Farikhotul Chusnayah[2], Imam Santoso[2], Suwarsono -[2], M. Rokhis Khomarudin[2], Yenni Vetrita[2]
1: German Remote Sensing Data Center (DFD), German Aerospace Center (DLR), Germany; 2: Research Organization for Aeronautics and Space, National Research and Innovation Agency (BRIN), Indonesia

Satellite-based Monitoring of an Active and Fast-moving Landslide Using PSI and DINSAR Analysis: The Case Study of Pissouri Village in Cyprus

Kyriaki Fotiou[1,2], Dimitris Kakoullis[1,2], Marina Pekri[1,2], Diofantos G. Hadjimitsis[1,2], George Melillos[1,2], Chris Danezis[1,2]
1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES Centre of Excellence, Cyprus

Seismic Activity Monitoring And Surveillance Of Active Geotectonic Region Vrancea In Romania Via In-Situ And Geospatial Data

Maria Zoran, Roxana Savastru, Dan Savastru, Marina Tautan
National Institute of R&D for Optoelectronics, Romania

	Potentiality of Landslide Detection in Open-pit Mines Using Satellite-Based Techniques: The Case Study Of Vasiliko Open-Pit Mine In Cyprus **Marinos Avgousti[1], _Kyriaki Fotiou_[1,2], Dimitris Kakoullis[1,2], Chris Danezis[1,2]** 1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES CENTRE OF EXCELENCE, Cyprus
4:00pm **-** **4:30pm**	**Coffee Break** Location: **Arion Bar**
5:00pm **-** **6:00pm**	**GA: General Assembly** Location: **Aphrodite Hall**
8:30pm **-** **11:59pm**	**SD: Symposium Dinner** Location: **Pantheon Ballroom**

Date: Friday, 16/Sept/2022

9:00am - 9:30am

KS4: Keynote Speech

Keynote Speaker: Prof. Maria Antonia Brovelli, Politecnico Di Milano
Title: "Openness in Geospatial Science and Earth Observation"

9:30am - 10:30am

S_InnT: Innovative Technologies in Remotely Sensed & In-situ Data
Location: **Adonis**
Chair: **Prof. Andreas Anayiotos**
Chair: **Maria Zoran**

UAV-based Glacier Monitoring: GNSS Kinematic Track Post-processing For Accurate Reconstruction In Challenging Environments
Valeria Belloni[1], Davide Fugazza[2], Martina Di Rita[3], Mattia Crespi[1]
1: University of Rome La Sapienza, Italy; 2: Università degli Studi di Milano; 3: Leica Geosystems AG

A Comparison Between Satellite Altimetry and Tide Gauge Observations in Monitoring Sea Level Changes in Cyprus
Marina Pekri[1,2], Marios Nikolaidis[1,2], Dimitris Kakoullis[1,2], Chris Danezis[1,2]
1: Cyprus University of Technology, Cyprus; 2: ERATOSTHENES CENTRE OF EXCELLENCE,Cyprus

Assessment Of COVID-19 Impacts On Satellite-Observed Aerosol Loading Over Few European Metropolitan Cities
Dan Savastru, Maria Zoran, Roxana Savastru, Marina Tautan
National Institute of R&D for Optoelectronics, Romania

Landsat 9 Data And GEE For Estimating Land Surface Albedo Over Southern Italian Cities
Carlo Barletta, Alessandra Capolupo, Eufemia Tarantino
Department of Civil, Environmental, Land, Construction and Chemistry (DICATECh), Politecnico di Bari, Italy

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SS_CNH: Special Session - Cultural and Natural Heritage
Location: **Aphrodite Hall**
Chair: **Dr. Athos Agapiou**

An Experimental Study For The Detection Of Surface Ceramics Through Unmanned Aerial Vehicles (UAV)
Argyro Argyrou, Vasiliki Lysandrou, Michalis Christoforou, Athos Agapiou
Earth Observation Cultural Heritage Research Lab, Cyprus University of Technology

Automated Mapping of Cultural Heritage in Norway from Airborne Laser Scanning Data Using Faster R-CNN
Øivind Due Trier[1], Jarle Hamar Reksten[1], Kristian Løseth[2]
1: Norwegian Computing Center, Norway; 2: The Directorate for Cultural Heritage, Norway

Optimal Selection Of Physiologically Distinct Periods To Detect Invasive Plant Robinia Pseudoacacia In Natura 2000 Sites Of The Danubian Lowland, Slovakia.
Tomáš Rusňák, Andrej Halabuk, Juraj Lieskovský
ILE SAS v.v.i., Slovak Republic

The Use of Digital Geomedia for Management of UNESCO Sites – Current State of Knowledge and Future Potential
Lisa Dannwolf[1], Emmanuel Eze[1,2], Nicolás Zanetta-Colombo[1,2], Maike Petersen[1], 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

U-Net: A Deep Convolutional Encoder-Decoder Architecture to Discover Ancient Agricultural Terraces using LiDAR and Orthophoto
Arti Tiwari, Micha Silver, Aviv Lee Cohen-Zada, Arnon Karnieli
Ben Gurion university of Negev, Israel, Israel

10:30am - 11:00am

Coffee Break
Location: **Arion Bar**

11:00am - 11:30am	**S_EOC: Earth Observation Challenges: Open Science, Open Innovation, Digital Innovation Hubs, Sustainable Development Goals (SDGs)**
	Location: **Zeus**
	Chair: **Prof. Mattia Crespi**
	Chair: **Prof. Andreas Anayiotos**

Global Monitoring of Inland Water Surface With GEDI Geo Big Data Using Google Earth Engine: Preliminary Analysis, Potentials and Issues

Alireza Hamoudzadeh[1], Roberta Ravanelli[1], Isabel Cocozza[1], Virginia Coletta[1], Mattia Crespi[1,2]

1: Sapienza University of Rome, DICEA, Geodesy and Geomatics Division, Italy; 2: Sapienza School for Advanced Studies, Sapienza University of Rome, Italy

Comparison of Copernicus Urban Atlas and HRL Imperviousness enhanced by administrative data in urbanization studies.

Wojciech Łachowski

Institute of Urban and Regional Development, Poland

11:30am - 1:00pm	**S_OT: Other Topics**
	Location: **Aphrodite Hall**
	Chair: **Dr. Kyriacos Themistocleous**

Detection of Nature Interventions in Sentinel-2 Images of Norway Using U-Net

Øivind Due Trier[1], Arnt-Børre Salberg[1], Ragnvald Larsen[2], Ole T. Nyvoll[2]

1: Norwegian Computing Center, Norway; 2: Norwegian Environment Agency

Comparison of Digital Elevation Models by Chernoff faces

José Rodríguez-Avi, Francisco Javier Ariza-López

University of Jaén, Spain

Topographic Position Index and height error of Digital Elevation Models

José Rodríguez-Avi[1], Francisco Javier Ariza-López[1], Juan Francisco Reinoso-Gordo[2]

1: University of Jaén, Spain; 2: University of Granada, Spain

What Tell The Male and Female Testimonials From the Women in Copernicus Survey ?

Marine Nyssen[1], Caroline Closon[1], Eleni Loulli[3,4], Nathalie Stéphenne[2], Barbara Riedler[2], Marie Jagaille[2]

1: Université Libre de Bruxelles, Belgium; 2: Women in Copernicus; 3: ERATOSTHENES Centre of Excellence, Limassol, Cyprus; 4: Cyprus University of Technology, Limassol, Cyprus

The Implementation Of Forest Canopy Density Model In Cyprus Forests Using Landsat-8 and Sentinel-2 Satellite Data For The Assessment Of the Fire Impacts

Maria Prodromou[1,2], Kyriacos Themistocleous[1,2], Chris Danezis[1,2], Ioannis Gitas[3], 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

Tack Project: Tunnel Automatic Crack Monitoring Using Deep Learning and Photogrammetry

Valeria Belloni[1], Andreas Sjölander[2], Roberta Ravanelli[1], Mattia Crespi[3], Andrea Nascetti[4]

1: DICEA, University of Rome La Sapienza, Italy; 2: Division of Concrete Structures, KTH Royal Institute of Technology; 3: Sapienza University of Rome, DICEA - Sapienza School for Advanced Studies; 4: Geoinformatics Division, KTH Royal Institute of Technology

1:00pm - 2:00pm

Lunch Break
Location: **Pantheon Restaurant**

2:00pm - 3:45pm

P4: Poster Session (5-Slides Presentations)
Location: **Aphrodite Hall**
Chair: **Dr. Silas Michaelides**

The Valuable Usage Of The Multitemporal Data To The Rate of Shoreline Change Determination In Sandy Beaches

Dionysios Apostolopoulos, Konstantinos Nikolakopoulos
University of Patras, G.I.S & Remote Sensing Laboratory, Greece

Using Remote Sensing Data with Machine Learning to Predict Distribution of Red-listed Forest Species

Xi-Lillian Pang[1], Stefanos Georganos[2], Ulla Mörtberg[1], Yifang Ban[2]
1: Department of Sustainable Development, Environmental Science and Engineering, KTH Royal Institute of Technology, Sweden; 2: Department of Urban Planning and Environment, KTH Royal Institute of Technology, Sweden

Documentation and monitoring of the rehabilitation of the historic World War II US Air Force Base in Greenland

Karel Pavelka, Jaroslav Šedina, Karel Pavelka. jr., Eva Matoušková, Martin Kýhos
Czech Technical University in Prague, FCE, Czech Republic, dept.of geomatics

Mapping Exposure to Landslides by Means of Artificial Intelligence and UAV Aerial Imagery in the Curvature Subcarpathians, Romania

Zenaida Chitu[1], Ionut Sandric[2,1], Viorel Ilinca[3,1], Radu Irimia[2,1]
1: University of Bucharest, Institute for Research (ICUB); 2: University of Bucharest, Faculty of Geography, Romania; 3: Geological Institute of Romania, Caransebeş Street, no. 1, Bucharest, Romania

The Utilisation Of DInSAR For The Monitoring Of The Shuibuya's Concrete-Face Rockfill Dam (CDRF) In China

Styliana Stavrou, Egli Michailidou, Skevi Perdikou
Geofem Ltd., Cyprus

In Situ Topsoil Sensing System to Support Environmental Performance Monitoring

Konstantinos Karyotis[1], Nikolaos L. Tsakiridis[1,2], Nikolaos Tziolas[1], Eleni Kalopesa[1], Periklis Chatzimisios[3], Georgios Zalides[1]
1: Aristotle University of Thessaloniki, Laboratory of Remote Sensing, Spectroscopy and GIS, Department of Agriculture, Greece; 2: Aristotle University of Thessaloniki, Automation and Robotics Laboratory, Department of Electrical and Computer Engineering, Faculty of Engineering, Greece; 3: International Hellenic University, Department of Information and Electronic Engineering, Greece

Using the VENμS Super-Spectral Camera for Detecting Moving Vehicles

Arnon Karnieli, Manuel Salvoldi, Aviv Cohen-Zada
Ben Gurion University, Israel

Enhancing PRISMA and Sentinel 2 Capabilities for Marine Plastic Litter Detection Using Image Fusion Techniques, Spectral Signature Unmixing and Spectral Indexes

Maria Kremezi, Viktoria Kristollari, Vassilia Karathanassi, Pol Kolokoussis

National Technical University of Athens, Greece

Reference Target Extraction for Point Cloud Intensity Normalization in Scan to BIM

Rabia Rashdi[1,2], Zhouyan Qiu[1,2], Pedro Arias[1], Joaquín Martínez-Sánchez[1]

1: University of Vigo, Spain; 2: ICT & Innovation Department, Ingeneria Insitu,Spain

Estimation of Solar Radiation at Ground Level using SENTINEL 3 data and machine learning techniques: a case study in Cyprus.

Diofantos Hadjimitsis[1,2], George E. Georghiou[3], Silas Michaelides[2], Maria Prodromou[1,2], Argyro Nisantzi[1,2], Christiana Papoutsa[1,2], Rodanthi Mamouri[1,2], Eleni Loulli[1,2], Marina Pekri[1,2], Spyros Theocharides[3], Javier Lopez Lorente[3], George Makrides[3], Konstantinos Fragkos[2]

1: Cyprus University of Technology, Department of Civil Engineering and Geomatics, Limassol, Cyprus; 2: Eratosthenes Centre of Excellence, Limassol, Cyprus; 3: 1PV Technology Laboratory, FOSS Research Centre for Sustainable Energy, Department of Electrical and Computer Engineering, University of Cyprus, Nicosia, 1678, Cyprus

Crowdsourced Observations and Geospatial Data for the Modelling of Butterfly Distribution using MAXENT in Styria, Austria

Daniel Kulmer[1], Manuela Hirschmugl[1,2]

1: University of Graz, Austria; 2: Joanneum Research

Health-Related Disparities in the Metropolitan Region Ruhr – Large-Scale Spatial Model of Local Asthma Prevalence, Accessibility of Health Facilities and Socio-economic and Environmental Factors

Nicolai Moos[1], Annette Ortwein[2], Andreas P. Redecker[1]

1: Ruhr University Bochum, Germany; 2: Philipps University Marburg, Germany

What is the Role of Aerosol to the Cloud Formation and Evolution?

Rodanthi Elisavet Mamouri[1,2], Argyro Nisantzi[1,2], Holger Baars[3], Ronny Engelmann[3], Diofantos Hadjimitsis[1,2], Albert Ansmann[3]

1: ERATOSTHENES Centre of Excellence, Cyprus; 2: Cyprus University of Technology, Department of Civil Engineering and Geomatics, Cyprus; 3: Leibniz Institut für Troposphärenforschung, Leipzig, Germany

Time Series Satellite Data For Urban Thermal Environment Changes Analysis Over Bucharest Metropolitan City

Maria Zoran, Roxana Savastru, Dan Savastru, Marina Tautan

National Institute of R&D for Optoelectronics, Romania

Novel Radargrammetric Approach for Capella Space Imagery

Karlheinz Gutjahr[1], Can Atalay[2], Roland Perko[1], Hannes Raggam[1], Janik Deutscher[1], Mathias Schardt[1,3], Umut Gunes Sefercik[4]

	1: Joanneum Research, Austria; 2: Zonguldak Bülent Ecevit University, Turkey; 3: Graz University of Technology, Austria; 4: Gebze Technical University, Turkey
3:45pm - 4:30pm	**CC: Closing Ceremony** Location: **Aphrodite Hall**