

# CONFERENCE & EXHIBITION NEAR SURFACE GEOSCIENCE'20

#### 7-8 DECEMBER 2020 I ONLINE





3rd

European Meeting of Environmental and Engineering Geophysics

Applied Shallow Marine Geophysics Conference

Conference on Geophysics for Mineral Exploration and Mining

# PROGRAMME & CATALOGUE



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## WELCOME TO THE NEAR SURFACE GEOSCIENCE 2020 ONLINE

**/**th



European Meeting of Environmental and Engineering Geophysics

Applied Shallow Marine Geophysics Conference



Conference on Geophysics for Mineral Exploration and Mining

It's been quite a journey for the Near Surface Geoscience 2020 Conference & Exhibition but we are finally there! On 7-8 December you will be able to join the special online version and experience what our conference and exhibition have to offer. Register today and attend from your preferred location, with no need for other arrangements except for a strong internet connection.

We are confident that the programme that we have devised will meet all the quality criteria traditionally expected of this longstanding event in the industry calendar. We have over 25 sessions that offer a diverse range of topics related to Applied Shallow Marine Geophysics, Geophysics for Mineral Exploration and Mining, innovative technical and hardware solutions for Environmental and Engineering Geophysics, and more!

Along with the conference proceeding we are of course hosting the **Online Exhibition**. Our plan is to connect companies in the near-surface field with our delegates, and enable them to showcase their newest activities, products and services. As an event participant you will be able to interact with our exhibitors and get the latest reports on how the industry has advanced and adapted in recent times.



### European Meeting of Environmental and Engineering Geophysics

For its 26<sup>th</sup> edition, the European Meeting of Environmental and Engineering Geophysics will continue to build on 26 years of research and development in the field of engineering geophysics as we join two of our successful conferences. The three day scientific conference will cover a wide array of topics related to the near surface field, drawing on a wealth of excellent plenary talks, oral and poster presentations, and rich discussions. Being Europe's most significant meeting of its kind, the 26<sup>th</sup> European Meeting of Environmental and Engineering Geophysics offers participants the opportunity to meet the people behind the most cutting-edge research across a range of topics, from the applications of geophysics to the emergence of new technologies and research trends. Take part in the bright future of environmental and engineering geophysics, and join us.



Following the successful conferences in Athens (2014), Barcelona (2016) and Porto (2018), professionals from academia, research institutes, service and engineering companies, operators and offshore energy companies will reconvene, to further present and discuss the state-ofthe-art in characterizing the shallow subsurface in aquatic settings (rivers, lakes, fjords, coastal systems, offshore and deep offshore).

The safe assessment of site conditions for all types of marine installations and infrastructure requires a detailed understanding of the shallow subsurface and the changes therein over the lifetime of the areas of interest. This essential objective can only be achieved through the extensive use of complementary geophysical methods and monitoring approaches, as well as a proper, data-driven integration of geotechnical, geomechanical, metocean and geophysical data and models.

The 4<sup>th</sup> conference will cover the widest range of topics of applied high-resolution geophysics in all types of aquatic settings, with specific focus on:

- Characterization and monitoring in shallow water environments, lakes, river beds and coastal areas for engineering (bridges, tunnels, harbour installations, dredging) and specific processes assessment (liquefaction, excavations, erosion) and their mitigation;
- Geophysical investigations for offshore wind energy and Oil & Gas activities;
- Environmental geophysics (e.g., pollution of sewage,nuclear waste deposits, identifying contaminants,archaeology);
- Research into the effects of global warming/climate change in vulnerable areas (e.g., polar regions, coastal areas);
- Advances in integration and very-high-resolution inversion for establishing data-driven ground models and uncertainty assessment;
- Novel data acquisitions, data processing and data analysis techniques (multi-method approaches, beyond P-wave reflection for the marine environment; Machine Learning);
- Monitoring and risk mitigation assessment (including CO<sub>2</sub> Capture and Storage activities);
- International guidelines and standards;
- Case studies.



#### Conference on Geophysics for Mineral Exploration and Mining

Following the two EAGE Conferences on Geophysics for Mineral Exploration and Mining in Barcelona, 2016, and in Porto, 2018, the Third Conference will invite researchers from academia, industry, and government organizations to share recent advances, trending topics, and novel geophysical methods in mineral exploration and mining. Geophysics plays a major role in unlocking mineral reserves. It is well recognized that many easily-discovered large mineral deposits with the strong geophysical signature have been already identified. Future discoveries present significant challengers being located undercover, in remote areas, with less prominent geophysical signal. The modern-day challenges of exploration require developing novel geophysical techniques, which improve exploration success and lead to new discoveries. The Third Conference invites papers which focus on emerging geophysical techniques for mineral exploration, novel interpretation methods, including joint inversion of multiphysics data, and challenging case studies. We encourage contributions from all over the world, especially those with a European focus and application.

#### Highlights of NSG2020 Online

#### **Opening Session**

#### Monday, 7 December | 10:30 - 11:20 CET

Join us for the Opening Session where we will kick off the event by exploring the future of the Near Surface Division and the continued sustainability of the wider near surfacerelated field.

#### **Keynote Speakers**



#### Jun Sugawara

Director of Geotechnical Section at Department of Transport and Main Roads Queensland Government, Australia



#### Frank van Erp and Peter-Paul Lebbink Project managers Off Shore Wind Energy, Netherlands Enterprise Agency (RVO)



Valentina Socco Associate Professor of Geophysics at Politecnico di Torino, Italy

#### **Happy NSG Hour**

#### Monday, 7 December | 12:30 - 12:55 CET

Near-surface Geoscience Division of EAGE is pleased to invite you to the virtual Happy NSG Hour event that will take place during the online NSG2020 on 7 December. We are proud of our near-surface geoscience community and personal network, and the great atmosphere the NSG events bring for our members.

We want to provide a taste of all of the above even during this difficult time of the Covid-19 pandemic. Which is why we welcome you to join this Happy NSG Hour event for catching up with colleagues, collaborators, friends and networks and to hear how you are doing while enjoying a friendly atmosphere and more importantly look into year 2021 and beyond.

Dress casually and bring your drinks to this virtual happy hour event and we will make sure it will be an attractive hour for you. Looking forward to seeing you at the Happy NSG Hour!



#### **Closing Session**

#### Tuesday, 8 December | 14:00 - 14:45 CET

Join us as we look forward to the Near Surface Geoscience Conference & Exhibition in Bordeaux, France next year between 29 August – 2 September 2021, and officially close this year's activities.

#### **List of Exhibitors**

NSG 2020 Online will include a dedicated Online Exhibition. Key international companies from the Near Surface Geoscience industry will present their latest developments, newest technologies and innovative ideas. Make sure you engage with them on event days via the virtual platform!

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#### Technical Programme Sponsors



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#### Technical Programme Schedule

#### Presentations | Monday 7 December



TDA	<sup>1</sup> EUROPEAN MEETING OF ENVIRONMENTAL AN	1	TRACK 2		
10:30					
- 11:20	Opening Session				
Environmental Geophysics I - Geohazard and Anthropogenic Hazard Studies Session Chairs: D. Đurić (University Of Belgrade, Faculty Of Mining And Geology), F. Tuluca (Romanian Society of Applied Geophysics)		New Technologies, Developments and Research Trends Session Chair: R. Persico (University Of Calabria),			
11:30	A Non-Seismic Data Interpretation of Gas Seepage in the Mesohellenic Basin in Greece - G. Papailias <sup>1*</sup> , G. Efremidis <sup>2</sup> <sup>1</sup> Greek Ministry Of Transport And Infrastructure; <sup>2</sup> Geotechnical and Geoenvironmental Engineering of the Civil Engineering Department, University of Thessaly	11:30	Drone-Borne Electromagnetic (DREM) Surveying in The Netherlands - M. Karaoulis <sup>1*</sup> , I. Ritsema <sup>1</sup> , C. Bremmer <sup>1</sup> , M. De Kleine <sup>2</sup> <sup>1</sup> Deltares; <sup>2</sup> Mdk-Geologic		
11:40	Integration of ERT and MASW Methods for Cavity and Weak Zones Detection, Case Studies - H.A. Hamdan <sup>1*</sup> <sup>1</sup> University of Sharjah	11:40	Efficient State-of-Art HDR 3D GPR Compared to 2D Traditional Utility Investigations - J. Emilsson <sup>1</sup> , A. Viberg <sup>1</sup> , J. Gustafsson <sup>1*</sup> , M. Langton <sup>1</sup> , J. Friborg <sup>1</sup> <sup>1</sup> Guideline Geo		
11:50	Two Dimensional ERT Simulations to Check the Integrity of Geomembranes at the Base of Landfill Bodies - A. Aguzzoli <sup>1*</sup> , A. Hojat <sup>2</sup> , L. Zanzi <sup>3</sup> , D. Arosio <sup>1</sup> <sup>1</sup> Università Degli Studi di Modena E Reggio Emilia; <sup>2</sup> Shahid Bahonar University of Kerman; <sup>3</sup> Politecnico di Milano	11:50	A New Technique for Increasing the Sensitivity of Marine DC-Electrical Resistivity Acquisitions - S. Palma Lopes <sup>1*</sup> , P. Côte <sup>1</sup> <sup>1</sup> Université Gustave Eiffel		
12:00	Practical Application of Kinematic Fracture Analysis in Assessing the Probability of Slope Failure - S. Korchak <sup>1*</sup> , I. Abaturova <sup>1</sup> , I. Savintsev <sup>1</sup> , L. Storozhenko <sup>1</sup> <sup>1</sup> Ural State Mining University	12:00	Surface Seismic with Distributed Acoustic Sensing: Is Trenching Worthwhile? - A. Nap <sup>1*</sup> , P. Edme <sup>1</sup> , C. Schmelzbach <sup>1</sup> , P. Paitz <sup>1</sup> , J.O.A. Robertsson <sup>1</sup> <sup>1</sup> ETH Zürich		
12:10		12:10	Monitoring a Drilling Trajectory by Using the Drill-Bit Signal as a Source - J. Ridderbusch <sup>1</sup> , M. Abbasian <sup>1</sup> , A. Kaslilar <sup>1*</sup> <sup>1</sup> Uppsala University		
12:30 - 12:55	Нарру М	ISG Ho	ır		
Environmental Geophysics II - Geohazard and Anthropogenic Hazard Studies Session Chair: E. Bloem (Norwegian Institute of Bioeconomy Research)			Modelling, Inversion and Data-Processing in Near-Surface Geophysics I Session Chair: T. Burschil (Leibniz Institute for Applied Geophysics)		
13:00	<b>Geophysical Recipe to Model the Covid-19 Epidemic</b> - A. Godio <sup>1</sup> , F. Pace <sup>1</sup> , A. Vergnano <sup>1*</sup> <sup>1</sup> Politecnico Di Torino	13:00	Joined Migrations in GPR Prospecting: An Example in the Field - R. Persico <sup>1*</sup> , G. Morelli <sup>2</sup> <sup>1</sup> University Of Calabria; <sup>2</sup> Geostudi Astier Ltd		
13:10	Monitoring System for Remediation of a Brownfield Area - K. Tsakirmpaloglou <sup>1*</sup> , T. Martin <sup>1</sup> , O. Kaufmann <sup>1</sup> , P. Goderniaux <sup>1</sup> <sup>1</sup> UMONS	13:10	A Convolutional Neural Network Approach to Electric Resistivity Tomography - M. Aleardi <sup>1</sup> , A. Vinciguerra <sup>2*</sup> , A. Salusti <sup>2</sup> <sup>1</sup> University of Pisa; <sup>2</sup> University of Florence		
13:20	Coastal Soil Characterization Using Remote Sensing, Geoelectrical and Borehole Data: Insights from Nile Delta Coast, Egypt - M. Attwa <sup>1,2*</sup> , A. El Mahmoudi <sup>3</sup> , A. Altahrany <sup>4</sup> , A. Elshennawey <sup>3</sup> 'Structurasl Geophysics Group (SGG), Zagazig University, Faculty of Science; <sup>2</sup> National Authority for Remote Sensing and Space Sciences, (NARSS); <sup>3</sup> Mansoura University, Faculty of Science; <sup>4</sup> Mansoura University, Faculty of Engineering	13:20	Novel Approach to Modelling the Elastic Waves in a Cluster of 3D Fractured Structures - N. Khokhlov <sup>1</sup> , P. Stognii <sup>1*</sup> , M. Zhdanov <sup>1,2,3</sup> <sup>1</sup> Moscow Institute of Physics & Technology; <sup>2</sup> University of Utah; <sup>3</sup> Technolmaging		
13:30	Geostatistical Electromagnetic Inversion for Landfill Characterization - J. Narciso <sup>1*</sup> , L. Azevedo <sup>1</sup> , E. Van De Vijver <sup>2</sup> , M. Van Meirvenne <sup>2</sup> <sup>1</sup> CERENA/DECivil, Instituto Superior Técnico, Universidade de Lisboa; <sup>2</sup> Department of Environment, Ghent University	13:30	Points Per Wavelength Analysis in Global Elastic Fwi of Surface Waves: A Synthetic Case Study - S. Pierini <sup>1*</sup> , E. Stucchi <sup>1</sup> <sup>1</sup> University Of Pisa		
13:40		13:40	<b>3D Subsurface Resistivity Imaging Using a Modified Roll-</b> <b>Along Measurement Technique</b> - Y. Gundogdu <sup>1*</sup> , G.E. Karakulak <sup>1</sup> , M.E. Candansayar <sup>1</sup> <sup>1</sup> Ankara University, Geophysical Modeling Group		

#### Presentations | Monday 7 December



#### 26<sup>TH</sup> EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS TRACK 1 TRACK 2 **Exploration under Cover** Modelling, Inversion and Data-Processing in Session Chair: G. Apostolopoulos (National Technical **Near-Surface Geophysics II** University of Athens) Session Chairs: R. Persico (University Of Calabria) 3-D Multi-Component S-Wave Survey in the Tannwald Basin: 14:00 Imaging Glacial Sediments and Tectonics with a Small-Scale 14:00 3-D Reflection Seismic Survey - H. Buness1\*, T. Burschil1, D. Tanner1 Data Processing and Component Rotation - T. Burschil1\*, <sup>1</sup>Leibniz Institute for Applied Geophysics (LIAG) H. Buness<sup>1</sup>, C. Schmelzbach<sup>2</sup> <sup>1</sup>Leibniz Institute for Applied Geophysics; <sup>2</sup>Institute of Geophysics, ETH Zurich Discrete Cosine Transform for Parameter Space Reduction in Bayesian ERT Inversion - A. Vinciguerra<sup>1\*</sup>, M. Aleardi<sup>2</sup>, A. Hojat<sup>3</sup>, 14:10 Delineating Shallow Bedrock Geology beneath Glacial Cover 14:10 Using Multi-Parameter Geophysics - A. Ondercova1\*, A. Furlan<sup>2</sup>, H. Ugalde<sup>2</sup>, B. Milkereit<sup>1</sup> E. Stucchi<sup>2</sup> <sup>1</sup>Department of Earth Sciences, University Of Toronto; <sup>2</sup>Department of <sup>1</sup>University of Florence; <sup>2</sup>University of Pisa; <sup>3</sup>University of Kerman Earth Sciences, Brock University 14:20 Anticlines Prediction Using Deep Learning - R. Okhrimchuk<sup>1\*</sup>, 14.20 Inverse Scattering of Surface Waves: Imaging Density and Lame I. Tishaiev<sup>1</sup>, V. Zatserkovnyi Parameter Contrasts of near Surface Scatterers - U. Harmankaya1\*, <sup>1</sup>Taras Shevchenko National University of Kyiv A. Kaslilar<sup>2</sup> <sup>1</sup>Istanbul Technical University; <sup>2</sup>Uppsala University 14:30 Utilisation of Stochastic MT Inversion Results to Constrain 14:30 Azimuthal Anisotropy in Layer Media from SV and SH Velocities Gravity Inversion - J. Giraud<sup>1,2\*</sup>, H. Seillé<sup>3</sup>, G. Visser<sup>3</sup>, V. Ogarko<sup>4</sup>, Obtained by Ray-Based Tomography - G. Böhm<sup>1</sup> M. Lindsay<sup>1,2</sup>, M. Jessell<sup>1,2</sup> <sup>1</sup>OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale <sup>1</sup>Centre of Exploration Targeting (School of Earth Sciences), University of Western Australia; <sup>2</sup>Mineral Exploration Cooperative Research Centre, School of Earth Sciences, University of Western Australia; <sup>3</sup>CSIRO Deep Earth Imaging Future Science Platform; <sup>4</sup>International Centre for Radio Astronomy Research (ICRAR), University of Western Australia 14:40 14:40 Differential Inversion of Surface Wave Methods: Proposition of Diagram Distance as Inversion Data - A. Wang1\*, D. Leparoux1, O. Abraham<sup>1</sup>, M. Le Feuvre<sup>1</sup> <sup>1</sup>Gustave Eiffel University, Campus Nantes **Groundwater Exploration and Integrated Approaches in Near-Surface** Hydrogeophysics I Geophysics Session Chair: J. Alcalde (Geosciences Barcelona, CSIC) Session Chair: D. Đurić (University Of Belgrade, Faculty Of Mining And Geology) 15:00 A Fully Coupled Hydrogeophysical Inversion Strategy for the 15.00 In-Situ Stresses and Pore Pressure Prediction of a Well in an Calibration of Groundwater Models Using Geophysical Data Iranian Southwest Oil Field - M. Motahari1\*, H. Ameri1 A. Gonzalez Quiros<sup>1\*</sup>, J. Comte<sup>1</sup> <sup>1</sup>Petroleum University of Technology <sup>1</sup>University of Aberdeen Multiple Method Monitoring in a Declining Norway Spruce Hydrological Variability in Crystalline Basement Aquifers -15.10 15.10 Insight from a First Hydrogeophysics Research Site in Nigeria -Forest: Challenge for Electrical Resistivity Tomography -U. Noell<sup>1\*</sup>, C. Neukum<sup>1</sup>, H. Meesenburg<sup>2</sup>, S. Stadler<sup>1</sup>, P. Koeniger<sup>1</sup> K.O. Doro1\*, C.O. Adegboyega<sup>2</sup>, A.P. Aizebeokhai<sup>3</sup>, M.A. Oladunjoye<sup>2</sup> <sup>1</sup>Department of Environmental Sciences, University of Toledo; <sup>1</sup>Federal Institute for Geosciences and Natural Resources (BGR); <sup>2</sup>Northwest German Forest Research Institute <sup>2</sup>Department of Geology, University of Ibadan; <sup>3</sup>Department of Physics, Covenant University 15:20 The Added Value of Combining VES and TEM Data Focusing on A Geophysical Study at an Anthropogenic Created Coastal Area 15:20 Macro-Anisotropy - J.A. Meekes1\*, J. Gunnink1 of Thorikos, Attica, Greece - S. Karizonis1\*, G. Apostolopoulos1, 1TNO G. Amolochitis <sup>1</sup>National Technical University of Athens 15:30 Geochemistry of Soda-Type Groundwater in the Torey Lakes 15:30 Effect of Data Normalization on Neural Networks for the Forward Region (Russia): Differences between Catchment Area and Modelling of Transient Electromagnetic Data - M.R. Asif1\* Beyond - V. Drebot<sup>1,2</sup> T.S. Bording<sup>2</sup>, A.S. Barfod<sup>1</sup>, E. Auken<sup>2</sup>, J.J. Larsen<sup>2</sup> <sup>1</sup>Tomsk Branch of the Trofimuk Institute of Petroleum Geology and <sup>1</sup>Department of Engineering, Aarhus University; <sup>2</sup>HydroGeophysics Group Geophysics in the Siberian Branch of the Russian Academy of Sciences; (HGG), Department of Geoscience, Aarhus University <sup>2</sup>Tomsk Polytechnic University

#### Presentations | Monday 7 December



4 <sup>™</sup> APPLIED SHALLOW MARINE GEOPHYSICS CONFERENCE			3 <sup>RD</sup> CONFERENCE ON GEOPHYSICS FOR MINERAL EXPLORATION AND MINING		
TRACK 3 Advanced Processing and Case Studies Session Chairs: M. Vanneste (Norwegian Geotechnical Institute), N.B. Soerenes (Equinor)		TRA	TRACK 4		
		Seismic Methods in Mineral Exploration I Session Chair: A. Malehmir (Uppsala University)			
11:30	A Comparison of HR2D and 3D Seismic Anomalies by Frequency Dependent AVO Analysis - F. Buckley <sup>1*</sup> , Ø. Tysse <sup>2</sup> <sup>1</sup> Lloyd's Register; <sup>2</sup> OMV (Norge) A/S	11:30	Mineral Exploration with Active- and Passive-Source Seismic Interferometry: More Data for Less - D. Draganov <sup>1*</sup> <sup>1</sup> TU Delft		
11:40	Assessment of Imaging Approaches for Ultra-High Frequency Seismic Data in the Shallow Subsurface - S. Clay <sup>1*</sup> , T. Henstock <sup>1</sup> , M. Vardy <sup>2</sup> <sup>1</sup> University Of Southampton; <sup>2</sup> SAND Geophysics	11:40	Seismic Imaging of the Subsurface at the Malmberget Iron Ore Mine, Northern Sweden - C. Juhlin <sup>1*</sup> , E. Lundberg <sup>1</sup> , B. Brodic <sup>1</sup> , J. Juslenius <sup>2</sup> , F. Ersholm <sup>2</sup> , H. Van den Berg <sup>2</sup> , N. Juhojuntti <sup>3</sup> , S. Buske <sup>4</sup> <sup>1</sup> Uppsala University; <sup>2</sup> LKAB Malmberget; <sup>3</sup> LKAB Kiruna; <sup>4</sup> TU Bergakademie Freiberg		
11:50	Sub-Seafloor Object Detection through Dedicated Diffraction Imaging - S. Wenau <sup>1,2*</sup> , N. Römer-Stange <sup>1,2</sup> , H. Keil <sup>2</sup> , V. Spiess <sup>2</sup> , B. Preu <sup>1</sup> <sup>1</sup> Fraunhofer IWES; <sup>2</sup> University of Bremen	11:50	Combination of 3D Borehole Radar and Underground Reflection Seismic - A Case Study for In-Mine Exploration - T. Hupe <sup>1*</sup> , D. Orlowsky <sup>1</sup> , U. Swoboda <sup>1</sup> , M. Sniehotta <sup>2</sup> <sup>1</sup> DMT GmbH & Co.KG; <sup>2</sup> BGE - Federal company for radioactive waste disposal		
12:00	Geophysical Mapping of Coastal Landscape During the Last Glacial Cycle, NW Shelf Australia - A. Fogg <sup>1</sup> *, J. Dix <sup>1</sup> , H. Farr <sup>1</sup> <sup>1</sup> University of Southampton	12:00	Data Reconstruction Using Seismic Interferometry Applied to Active-Source Data from the Ludvika Mines of Sweden - F. Balestrini <sup>1*</sup> , M. Sacchi <sup>2</sup> , A. Malehmir <sup>3</sup> , P. Marsden <sup>4</sup> , R. Ghose <sup>1</sup> , D. Draganov <sup>1</sup> <sup>1</sup> Delft University Of Technology; <sup>2</sup> University of Alberta; <sup>3</sup> Uppsala University; <sup>4</sup> Nordic Iron Ore AB (NIO)		
12:10	Marine Karst Environment Characterization Using Jointly Seismic Imaging, Marine ERT and Geotechnical Data - J. Flamme <sup>1,2*</sup> , P. Tarits <sup>1</sup> , A. Lepot <sup>2</sup> , R. Isorna <sup>3</sup> , M. Fabre <sup>1</sup> <sup>1</sup> European Institute for Marine Studies (IUEM); <sup>2</sup> MAPPEM Geophysics SAS; <sup>3</sup> France Energies Marines	12:10	Data-Driven Weathering Layer Statics for Hardrock Imaging: Solutions Based on First-Breaks and Surface Waves - B. Brodic <sup>1*</sup> , M. Papadopoulo <sup>2</sup> , L. Bräunig <sup>3</sup> , V. Socco <sup>2</sup> , D. Draganov <sup>4</sup> , S. Buske <sup>3</sup> , A. Malehmir <sup>1</sup> <sup>1</sup> Uppsala University; <sup>2</sup> Politecnico di Torino; <sup>3</sup> TU Bergakademie Freiberg; <sup>4</sup> Delft University of Technology		
12:30 - 12:55	Нарру М	ISG Ho	ır		
Sess	Characterization and Imaging ion Chairs: S. Oakley (Fugro), C.F. Forsberg wegian Geotechnical Institute)	Sol Sess	ovative EU-Funded Mineral Exploration utions ion Chair: G. Apostolopoulos (National Technical ersity of Athens)		
13:00	Using Migrated Dip-Angle Gathers for Boulder Detection in UHR Seismic Reflection Data - N. Ettrich <sup>2</sup> , V. Tschannen <sup>2</sup> , S. Wenau <sup>1*</sup> <sup>1</sup> Fraunhofer IWES; <sup>2</sup> Fraunhofer ITWM	13:00	Subsurface Imaging Using Ambient Noise Surface Wave Tomography in Areas with Limited Surface Access - D. Hollis <sup>1*</sup> , S. Beaupretre <sup>2</sup> , A. Kantsler <sup>3</sup> , J. Ong <sup>4</sup> , A. Mordret <sup>2</sup> , J. McNutt <sup>3</sup> <sup>1</sup> Sisprobe SAS; <sup>2</sup> Sisprobe SAS; <sup>3</sup> Transform Exploration; <sup>4</sup> PT Gema Terra		
13:10	Reconstruction of P-Wave Velocity Model through Geostatistical Inversion of Seismic Travel Time for Offshore Site Characterization - M. Moradi <sup>1*</sup> , Z. Medina-Cetina <sup>1</sup> <sup>1</sup> Texas A&m University	13:10	Smart Exploration: Stepping Up Innovative Geophysical Solutions for Mineral Exploration - A. Malehmir <sup>1*</sup> , P.G. Gisselø <sup>2</sup> , V.L. Socco <sup>3</sup> , J. Carvalho <sup>4</sup> , P. Marsden <sup>5</sup> , A. Onar Verboon <sup>6</sup> , M. Loska <sup>7</sup> <sup>1</sup> Uppsala University; <sup>2</sup> SkyTEM Surveys; <sup>3</sup> Politecnico di Torino; <sup>4</sup> LNEG; <sup>5</sup> Nordic Iron Ore AB; <sup>6</sup> EAGE; <sup>7</sup> Proxis		
13:20	Characterization of Shallow Gas in Coastal Environment Using Jointly Marine ERT and UHR Seismic Imaging - J. Flamme <sup>1,2*</sup> , P. Tarits <sup>1</sup> , M. Fabre <sup>1</sup> , G. Jouet <sup>3</sup> , A. Ehrhold <sup>3</sup> , A. Lepot <sup>2</sup> , B. Marsset <sup>3</sup> <sup>1</sup> European Institute for Marine Studies (IUEM); <sup>2</sup> MAPPEM Geophysics SAS; <sup>3</sup> IFREMER	13:20	SIT4ME - Seismic Imaging for Mineral Exploration - J. Alcalde <sup>1*</sup> , R. Carbonell <sup>1</sup> , A. Malehmir <sup>2</sup> , A. Gil <sup>2</sup> , S. Buske <sup>3</sup> , D. Orlowsky <sup>4</sup> , T. Hupe <sup>4</sup> , P. Ayarza <sup>5</sup> , Y. Martínez <sup>5</sup> , F. Tornos <sup>6</sup> <sup>1</sup> ICTJA-CSIC; <sup>2</sup> Uppsala University; <sup>3</sup> TU Bergakademie Freiberg; <sup>4</sup> DMT GmbH & Co; <sup>5</sup> University of Salamanca; <sup>6</sup> IGEO-CSIC		
13:30	Acoustic Impedance Inversion of High Resolution Marine Seismic Data with Deep Neural Network - J.R. Dujardin <sup>1*</sup> , G. Sauvin <sup>1</sup> , M. Vanneste <sup>1</sup> <sup>1</sup> NGI	13:30	Integrated Study of the Gerolekas Bauxite Mining Site Using Passive Geophysical Methods - K. Polychronopoulou <sup>1,2*</sup> , C. Orfanos <sup>1,2</sup> , K. Leontarakis <sup>1,2</sup> , G. Apostolopoulos <sup>1</sup> , N. Martakis <sup>2</sup> , C. Tzimopoulos <sup>3</sup> <sup>1</sup> National Technical University of Athens; <sup>2</sup> Seismotech S.A.; <sup>3</sup> DELPHI- DISTOMON S.A.		
13:40	Interpolation of CPT Data Supported by 3D Seismic Data for Offshore Soil Characterization - A. Werpup Oguro <sup>1</sup> , H. Keil <sup>2</sup> , V. Spiess <sup>2</sup> , B. Preu <sup>1</sup> , V. Herwig <sup>3</sup> , S. Wenau <sup>1</sup> <sup>1</sup> Fraunhofer IWES; <sup>2</sup> University of Bremen; <sup>3</sup> Innogy SE	13:40			



#### 3<sup>RD</sup> CONFERENCE ON GEOPHYSICS FOR MINERAL EXPLORATION AND MINING

TRACK 3		TRA	TRACK 4		
		Sess	ophysical Methods in Mining Engineering sion Chair: D. Draganov (Delft University of nnology)		
14:00		14:00	<b>Characterisation of the Tunnel-Channel Wave around a Coal</b> <b>Mine Roadway Based on Synthetic and Real Data</b> - R. Czarny <sup>1*</sup> , M. Malinowski <sup>1</sup> , M. Ćwiękała <sup>2</sup> , S. Olechowski <sup>2</sup> , Z. Isakow <sup>3</sup> , P. Sierodzki <sup>3</sup> <sup>1</sup> Institute of Geophysics, Polish Academy of Sciences; <sup>2</sup> PGG KWK ROW Ruch Rydułtowy; <sup>3</sup> Centre of Technology Transfer EMAG		
14:10		14:10	Microseismic Monitoring of Rockburst with an Ensemble Kalmar Filter - A.C. Dip <sup>1*</sup> , B. Giroux <sup>1</sup> , E. Gloaguen <sup>1</sup> <sup>1</sup> Institut National De La Recherche Scientifique		
14:20		14:20	Sparse 3D Reflection Seismic Survey at Ludvika Mines of South- Central Sweden - M. Markovic Juhlin <sup>1*</sup> , A. Malehmir <sup>1</sup> , S. Buske <sup>2</sup> , E. Bäckström <sup>3</sup> , P. Marsden <sup>3</sup> , Ł. Sito <sup>4</sup> <sup>1</sup> Uppsala University; <sup>2</sup> TU Bergakademie Freiberg; <sup>3</sup> Nordic Iron Ore AB; <sup>4</sup> Geopartner Ltd.		
14:30		14:30	Geophysical Investigation of Copper-Gold Deposit at Cukaru Peki, Serbia - D. Stojanovic Stepic <sup>1*</sup> , M. Urosevic <sup>2</sup> <sup>1</sup> Rakita Exploration; <sup>2</sup> Curtin University		
Me	ck Physics of Mineral Deposits & Electrical thods in Mineral Exploration sion Chair: F. Dauti (Pisa University)		t of KEGS ion Chair: C.J.M. Nind (Abitibi Geophysics)		
15:10	An Investigation Into Seismic Modeling of Iron-Oxide Mineralization in a Heterogeneous Hardrock Environment - G. Maries <sup>1*</sup> , A. Malehmir <sup>1</sup> , P. Marsden <sup>2</sup> <sup>1</sup> Uppsala University; <sup>2</sup> Nordic Iron Ore AB	15:10	Inversion of Borehole Gravity Data using GeoTk - N. Young <sup>1*</sup> , N. Foudil-Bey <sup>1</sup> , M. Chemam <sup>1</sup> , C. Nind <sup>1</sup> <sup>1</sup> Abitibi Geophysics		
15:20	Application of the Tau Transformation over the Pole Dipole IP Data in the Gold Deposit - B. Turtogtokh <sup>1*</sup> , T. Endre <sup>1</sup> , D. Mihály <sup>1,2</sup> <sup>1</sup> University of Miskolc, Department of Geophysics; <sup>2</sup> MTA-ME Geoengineering Research Group, University of Miskolc	15:20	<b>3D Inversion Modeling of Natural and Controlled Source EM in</b> <b>Complex Terrain</b> - W. Soyer <sup>1*</sup> , R. Mackie <sup>1</sup> , F. Miorelli <sup>1</sup> , V. Schifano <sup>2</sup> , S. Hallinan <sup>1,3</sup> <sup>1</sup> CGG Geoscience; <sup>2</sup> EOST; <sup>3</sup> University of Strasbourg		
15:30	Fast Finite-Difference Audiomagnetotelluric Simulation - M. Malovichko <sup>1,2*</sup> , N. Yavich <sup>1,2</sup> , Y. Kravets <sup>2</sup> , A. Shlykov <sup>3</sup> <sup>1</sup> Skolkovo Institute of Science and Technology; <sup>2</sup> Moscow Institute of Physics and Technology; <sup>3</sup> Saint-Petersburg State University	15:30	Deeper, Cheaper and Faster – Recent Advances in Long-Range Ground Penetrating Radar - J. Francke <sup>1*</sup> , J. Macnae <sup>2</sup> <sup>1</sup> Groundradar Inc; <sup>2</sup> RMIT University		





#### 26<sup>TH</sup> EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

TRACK 1		TRACK 2		
Groundwater Exploration and Hydrogeophysics II Session Chair: G. Apostolopoulos (National Technical University of Athens)		Neo	Modelling, Inversion and Data-Processing in Near-Surface Geophysics III Session Chair: R. Persico (University Of Calabria)	
10:30	Groundwater Level Monitoring Tests with Seismic Interferometry - M. Taruselli <sup>1*</sup> , A. Aguzzoli <sup>2</sup> , L. Zanzi <sup>1</sup> , D. Arosio <sup>2</sup> <sup>1</sup> Politecnico di Milano; <sup>2</sup> Università degli Studi di Modena e Reggio Emilia	10:30	Probabilistic Inversion of Magnetic UXO Data: Implementing Prior UXO Data from the North Sea - M.D. Wigh <sup>1*</sup> , A. Døssing <sup>1</sup> , T.M. Hansen <sup>2</sup> <sup>1</sup> Crustal Magnetism Technology and Research Group, DTU Space, Danish Technical University; <sup>2</sup> Department of Geoscience, Aarhus University	
10:40	Parallelized Hybrid Bloch Solver for Surface Nuclear Magnetic Resonance - M. Griffiths <sup>1*</sup> , D. Grombacher <sup>2</sup> , J.J. Larsen <sup>1</sup> <sup>1</sup> Department of Engineering, Aarhus University; <sup>2</sup> Department of Geoscience, Aarhus University	10:40	Data Adaptive GPR Diffraction Focusing Using Multi-Path Summation - H. Hamdan <sup>1*</sup> , N. Economou <sup>2</sup> , A. Vafidis <sup>2</sup> <sup>1</sup> University of Sharjah, Petroleum Geosciences and Remote Sensing Program, Department of Applied Physics and Astronomy; <sup>2</sup> Technical University of Crete, School of Mineral Resources Engineering, Applied Geophysics Lab	
10:50	Incorporation of Unsaturated Zone Effects in Coupled Hydrogeophysical Modelling of Gravity Anomalies Caused by Pumping Tests - A. Gonzalez Quiros <sup>1*</sup> , J.P. Fernández Álvarez <sup>2</sup> <sup>1</sup> University of Aberdeen; <sup>2</sup> University of Oviedo	10:50	Addressing the Inherent Issues with the Deconvolution of Vibroseis Seismic Data in View of Near-Surface Exploration - L. Gupta <sup>1*</sup> , N. Vedanti <sup>2</sup> <sup>1</sup> Indian Institute of Technology Roorkee; <sup>2</sup> National Geophysical Research Institute	
11:00	An ERT Time-Lapse Method to Characterize Water Movements in a Karstic Medium - C. Verdet <sup>1*</sup> , C. Sirieix <sup>1</sup> , J. Riss <sup>1</sup> , D. Lacanette <sup>1</sup> <sup>1</sup> University of Bordeaux, CNRS, Arts et Metiers Institute of Technology, Bordeaux INP, INRAE, I2M Bordeaux	11:00	Using Convolutional Neural Networks to Expedite the Hamiltonian Monte Carlo Inversion of Rayleigh Wave Dispersion Curves - A. Salusti <sup>2*</sup> , M. Aleardi <sup>1</sup> <sup>1</sup> University of Pisa; <sup>2</sup> University of Florence	
11:10	Multi-Sensor Acoustic Parameter Analysis System for Monitoring, Characterization and Evaluation of Drilling and Reservoir Stimulation Operations - S. Jamali <sup>1*</sup> , V. Wittig <sup>1</sup> , R. Bracke <sup>1</sup> <sup>1</sup> Fraunhofer IEG	11:10	Model-Parameterization Scaling for Improving Accuracy of Seismic Tomography in Reconstructing Near-Surface Velocity Model - G. Chernyshov <sup>1*</sup> , A. Duchkov <sup>1</sup> , I. Kulakov <sup>1</sup> <sup>1</sup> IPGG SB RAS	
Tec Sess	ophysics in Engineering Geology and Geo- hnical Investigations ion Chair: J. Sugawara (Department Of Transport Main Roads)	Gro Sess	ophysical Methods and Applications for bundwater and Archaeological Studies sion Chair: F. Tuluca (Romanian Society of Applied ophysics)	
11:30	<b>Combined Shear-Wave Seismic Reflection and H/V Spectral Ratio Surveys - A Case Study</b> - B. Dietiker <sup>1*</sup> , A.J Pugin <sup>1</sup> , J.A. Hunter <sup>1</sup> <sup>1</sup> Geological Survey of Canada	11:30	Time Based Radar Signal Analysis Revealing Nature and Properties of Surface Scans - H. Kelderman <sup>1*</sup> , S.S. Kataeva <sup>2</sup> , M. Klein Wolterink <sup>1</sup> , N.A. Antonyuk <sup>1</sup> , S.G. Kataev <sup>3</sup> <sup>1</sup> Staal Technologies B.V.; <sup>2</sup> Tomsk State University; <sup>3</sup> Tomsk State Pedagogical University	
11:40	<b>Combined Geophysical-Geotechnical Investigations Using Share</b> <b>Waves: A Case Study from Budapest</b> - A.C. Kovács <sup>1*</sup> , Z. Szilágyi <sup>2</sup> , J. Stickel <sup>3</sup> , M. Bauer <sup>4</sup> , R. Csabafi <sup>4</sup> , G. Bernáth <sup>1</sup> <sup>1</sup> Geo-Log Ltd; <sup>2</sup> Geoplan Ltd; <sup>3</sup> Elgoscar 2000 Ltd; <sup>4</sup> MBFSZ	11:40	Characterization of Shallow Sediments in an Urban Area from Inversion of P, SV and SH Arrivals - G. Böhm <sup>1</sup> , F. Accaino <sup>1</sup> , F. Meneghini <sup>1</sup> , A. Schleifer <sup>1</sup> , Ž. Nikoli <sup>2</sup> <sup>1</sup> OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale; <sup>2</sup> Faculty of Civil Engineering and Architecture, University of Split	
11:50	A Surface Wave Tomography Tool in Geotechnical Applications - A 3D Experiment at a Controlled Test Site - C. Orfanos <sup>1*</sup> , K. Leontarakis <sup>1</sup> , G. Apostolopoulos <sup>1</sup> <sup>1</sup> National Technical University of Athens	11:50	Detection of Shallow-Buried Objects by the Ditmar-Yanovskaya Method of Surface-Wave Tomography - A. Ponomarenko <sup>1,2*</sup> , V. Polovkov <sup>1,2</sup> , A. Nikitin <sup>2</sup> , I. Levin <sup>1</sup> , D. Popov <sup>2</sup> , B. Kashtan <sup>1</sup> <sup>1</sup> St Petersburg State University; <sup>2</sup> LTD SPBU IMRC	
12:00	Blind Testing Using Seismic Methods for Detecting Flaws in an Experimental Embankment Dam in Älvkarleby, Sweden - S. Salas-Romero <sup>1*</sup> , C. Juhlin <sup>1</sup> , C. Bernstone <sup>2</sup> <sup>1</sup> Department of Earth Sciences, Uppsala University; <sup>2</sup> Business Area Generation, Vattenfall AB	12:00	A Geophysical Study near the Temple of Olympian Zeus, Athens, for the Detection of Ancient Structures - G. Apostolopoulos <sup>1*</sup> , K. Leontarakis <sup>1</sup> , C. Orfanos <sup>1</sup> , G. Amolochitis <sup>1</sup> , D. Karaiskos <sup>1</sup> , S. Karizonis <sup>1</sup> <sup>1</sup> National Technical University of Athens	
12:10		12:10	Laboratory Study of the Electrical Properties of Lutetian Limestones after Heating Up - B. Souffaché <sup>1</sup> , A. Tabbagh <sup>1*</sup> <sup>1</sup> Sorbonne Université	
12:30		hrash		
- 12:55	Lunch	break		

#### Presentations | Tuesday 8 December



26 <sup>TH</sup> EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS				
RACK 1 Posters: Environmental and Engineering Geophysics 1 lession Chair: E. Bloem (Norwegian Institute of lioeconomy Research)		TRACK 2 Posters: Environmental and Engineering Geophysics 2 Session Chair: B. Brodic (Uppsala University)		
	Full-Wave Modeling of Early Times in TDEM: Estimation of All Potential Coupling with Numerical FDTD Simulationsw - C. Finco <sup>1*</sup> , C. Schamper <sup>1</sup> , F. Rejiba <sup>2</sup> , L.H. Cavalcante Fraga <sup>3</sup> <sup>1</sup> Sorbonne Université - UMR 7619 Metis; <sup>2</sup> Université de Rouen Normandie - UMR CNRS 6143 M2C; <sup>3</sup> Envisol	-	Defect Detection in Embankment Dams Using Artificial Neural Networks, Electrical Resistivity Tomography and Seepage Numerical Model - R. Norooz <sup>1*</sup> , R. Ghiassi <sup>1</sup> University Of Tehran & Sweco AB	
	Romania CCS Demo Project-Monitoring Technologies for CO2 Injection and Storage - S. Anghel <sup>1*</sup> , C.S. Sava <sup>1</sup> , A. Dudu <sup>1</sup> <sup>1</sup> National Institute for Research and Development on Marine Geology and Geo-ecology – GeoEcoMar	-	Integrated Methodologies for Seismic Risk Mitigation in Gjirokastër (Albania) - K. Skrame <sup>2*</sup> , R. Muçi <sup>2</sup> , M. Simionato <sup>1</sup> , M.S. Benigni <sup>1</sup> , I. Gaudiosi <sup>1</sup> , M. Giuffè <sup>1</sup> , M. Mancini <sup>1</sup> , M. Moscatelli <sup>1</sup> <sup>1</sup> Institute Of Environmental Geology And Geoengineering Of The Italian National Research Council (cnr-igag), Roma, Italy.; <sup>2</sup> Polytechnic University of Tirana, Department of Applied Geology Environment and Geoinformatics, Faculty of Geology and Mining	
	<b>The Mapping of Submerged (Flooding) Lands by Geophysical</b> <b>Methods (Best of 'Monitoring 2019')</b> - S. Vyzhva <sup>1</sup> , V. Onyshchuk <sup>1*</sup> , I. Onyshchuk <sup>1</sup> , N. Reva <sup>1</sup> , O. Shabatura <sup>1</sup> <sup>1</sup> Taras Shevchenko National University of Kyiv		Multichannel Analysis of Surface Waves (MASW) to Characterize of Fault Zone in Alhama de Murcia Fault - H. Handoyo <sup>1,2,*</sup> , J. Alcalde <sup>1</sup> , D. Martí <sup>33</sup> , J.J. Martínez-Díaz <sup>4</sup> , T. Teixidó <sup>5</sup> , R. Carbonell <sup>1</sup> Institute of Earth Sciences Jaume Almera (ICTJA – CSIC), Department of Earth's Structure and Dynamics, C/Lluís Solé i Sabarís s/n, 08028; <sup>2</sup> Teknik Geofisika, Institut Teknologi Sumatera, Jalan Terusan Ryacudu Kecamatan Jati Agung, 35365; <sup>3</sup> Lithica SCCL, Santa Coloma de Farners 17430; <sup>4</sup> Universidad Complutense de Madrid, Avda. de Séneca, 2 Ciudad Universitaria 28040; <sup>5</sup> Universidad de Granada, Calle La Paz 18, 52005	
	The Deep Learning Approach for Pan Sharpening Aster SWIR Data (Best of Monitoring 2019) - I. Tishaiev <sup>1</sup> , R. Okhrimchuk <sup>1*</sup> , I. Tishaiev <sup>1</sup> <sup>1</sup> Taras Shevchenko National University of Kyiv		Education for the Students through Extracurricular Activities Related to Petroleum Engineering and Geophysics - M. Vukić <sup>1</sup> , M. Đuričić <sup>2</sup> , S. Komatina <sup>2</sup> , Đ. Surla <sup>2*</sup> <sup>1</sup> AGES Serbia; <sup>2</sup> Technical Faculty "Mihajlo Pupin"	
	<b>The Structural Mapping of the Pletmos Basin through the</b> <b>Mesozoic and Cenozoic</b> - A. Davids <sup>1*</sup> , J. Salomo <sup>1</sup> , C. Van Bloemenstein <sup>1</sup> , L. Esterhuizen <sup>1</sup> , R. Tshikovhi <sup>1</sup> , S. Davids <sup>1</sup> , T. Buthelezi <sup>1</sup> <sup>1</sup> Petroleum Agency SA		ERT Investigation for Assessment of Sealing Faults at Homorod Mud Volcano Area - F. Chitea <sup>1,2*</sup> , H. Mitrofan <sup>2</sup> , M. Constantin <sup>3</sup> , A. Tudorache <sup>3</sup> , I. Fikos <sup>4</sup> <sup>1</sup> University of Bucharest; <sup>2</sup> Institute of Geodynamics "Sabba S. Stefanescu" of Romanian Academy; <sup>3</sup> "Emil Racoviță" Institute of Speleology, Romanian Academy; <sup>4</sup> Exploration Geophysics Laboratory, Aristotle University of Thessaloniki	



#### 3RD CONFERENCE ON GEOPHYSICS FOR MINERAL EXPLORATION AND MINING

TRACK 3		TRACK 4		
<b>Airborne Surveys</b> Session Chair: Jean Legault (Geotech Ltd.)		New Developments in 3D Modelling & Best of SAGA Session Chairs: M.S. Malovichko (Skolkovo Institute of Science and Technology), N. Phillips (Computational Geosciences Inc)		
10:30	Optimizing the SkyTEM Airborne System to 6.25 Hz Base Frequency Operation for Increased Depth of Penetration - P.G. Gisselø <sup>1*</sup> , N.S. Nyboe <sup>1</sup> , E. Bäckström <sup>2</sup> , P. Marsden <sup>2</sup> <sup>1</sup> SkyTEM Surveys ApS; <sup>2</sup> Nordic Iron Ore AB	10:30	Application of Gramian and Focusing Structural Constraints to Joint Inversion of Gravity and Magnetic Data - M. Jorgensen <sup>1,2*</sup> , M. Zhdanov <sup>1,2</sup> <sup>1</sup> Consortium for Electromagnetic Modeling and Inversion, University of Utah; <sup>2</sup> Technolmaging	
10:40	Case Study of the Helitem2 System at 6.25 Hz from the Iberian Pyrite Belt - A. Smiarowski <sup>1*</sup> <sup>1</sup> CGG	10:40	Three-Dimensional Transient Electromagnetic Modelling and Inversion Using the Octree-Based Vector Finite Element Method - L. Xiao <sup>1*</sup> , B. Zhang <sup>1</sup> , G. Fiandaca <sup>2</sup> , E. Auken <sup>1</sup> <sup>1</sup> Aarhus University; <sup>2</sup> The university of Milan	
10:50	Investigation of UAV Noise Reduction for Electromagnetic Induction Surveying - T. Bjerg <sup>1*</sup> , E. Lima Simões da Silva <sup>1</sup> , A. Døssing <sup>1</sup> <sup>1</sup> Dtu Space	10:50	Near Surface Mapping of Parts of the Far Western Limb of the Bushveld Complex Using Geophysics - T. Nadan <sup>1*</sup> , M. Manzi <sup>1</sup> , S. Scheiber-Enslin <sup>1</sup> <sup>1</sup> University of the Witwatersrand	
11:00	A Multidisciplinary UAV- and Ground-Geophysical Mapping of Complex Mineralisations in an Inter-Tidal Coastal Zone, Brittany (France)Rev - A. Døssing <sup>1*</sup> , G. Martelet <sup>2</sup> , T. Mack Rasmussen <sup>3</sup> , E. Gloaguen <sup>2</sup> , E. Lima Simões da Silva <sup>1</sup> , J. Linde <sup>1</sup> <sup>1</sup> DTU Space, Technical University of Denmark; <sup>2</sup> French Geological Survey (BRGM); <sup>3</sup> Luleå Technical University	11:00	Reappraisal of Legacy Reflection Seismic Data for the Prospection of Iron Mineralisation - M. Westgate <sup>1*</sup> , M. Manzi <sup>1</sup> , 1. James <sup>2</sup> , W. Harrison <sup>1</sup> <sup>1</sup> University of the Witwatersrand; <sup>2</sup> HiSeis Pty Ltd	
	<b>Ind Other Geophysical Surveys</b> ion Chair: A. Smiarowski (CGG)		smic Methods in Mineral Exploration II ion Chair: T.J. Hupe (Ruhr University of Bochum)	
11:30	<b>Comparing Ground 3D DCIP and Airborne Inductive IP over</b> <b>the Hickey's Pond High Sulphidation Epithermal Target</b> - B. Lo <sup>4</sup> , D. Clark <sup>3</sup> , J. Rudd <sup>2</sup> , J. Legault <sup>1*</sup> , K. Kwan <sup>1</sup> <sup>1</sup> Geotech Ltd.; <sup>2</sup> Dias Geophysical; <sup>3</sup> Bonavista Resources Corp.; <sup>4</sup> Consultant	11:30	Reflection Seismic Imaging in the Zinkgruvan Mining Area, Central Sweden - A. Gil <sup>1*</sup> , A. Malehmir <sup>1</sup> , S. Buske <sup>2</sup> , J. Alcalde <sup>3</sup> , P. Ayarza <sup>4</sup> , L. Lindskog <sup>5</sup> , B. Spicer <sup>6</sup> , R. Carbonell <sup>3</sup> , D. Orlowsky <sup>7</sup> , J. Carriedo <sup>6</sup> , A. Hagerud <sup>5</sup> <sup>1</sup> Uppsala University; <sup>2</sup> Technische Universität Bergakademie Freiberg; <sup>3</sup> Institute of Earth Sciences Jaume Almera (CSIC); <sup>4</sup> University of Salamanca; <sup>5</sup> Zinkgruvan Mining AB; <sup>6</sup> Lundin Mining Corporation; <sup>7</sup> DMT GmbH Co	
11:40	Three-Dimensional Inversion of Distributed Array Spectral IP Data and Comparison with AEM-Derived Conductivity Model, Saudi Arabia - F. Alfouzan <sup>2</sup> , A. Alotaibi <sup>2</sup> , L. Cox <sup>1*</sup> , M. Zhdanov <sup>1,3</sup> <sup>1</sup> Technolmaging LLC; <sup>2</sup> King Abdulaziz City for Science and Technology; <sup>3</sup> University of Utah	11:40	<b>3D Prestack Depth Imaging of the Iron-Oxide Deposit in</b> <b>the Ludvika Mining Area (Central Sweden)</b> - F. Hlousek <sup>1*</sup> , M. Malinowski <sup>2</sup> , L. Bräunig <sup>1</sup> , R. Kramer <sup>1</sup> , S. Buske <sup>1</sup> , A. Malehmir <sup>3</sup> , L. Sito <sup>4</sup> , E. Bäckström <sup>5</sup> , M. Schön <sup>5</sup> , P. Marsden <sup>5</sup> <sup>1</sup> TU Bergakademie Freiberg; <sup>2</sup> Institute of Geophysics, Polish Academy of Sciences; <sup>3</sup> Uppsala University; <sup>4</sup> Geopartner; <sup>5</sup> Nordic Iron Ore AB	
11:50	<b>Evolution of BHIP</b> - N. Veillette <sup>1*</sup> , P. Coles <sup>1</sup> , N. Younge <sup>1</sup> <sup>1</sup> Abitibi Geophysics	11:50	Increasing the effectiveness of 3D modeling visco-acoustic wave propagation with a solver based on contraction operator - E. Avdotin <sup>2</sup> , N. Yavich <sup>1,2*</sup> , N. Khoohlov <sup>2</sup> , M. Zhdanov <sup>2,3</sup> <sup>1</sup> Skoltech; <sup>2</sup> MIPT; <sup>3</sup> University of Utah	
12:00	Robust Scanning of AEM Data for IP Effects - F. Dauti <sup>1*</sup> <sup>1</sup> Pisa University	12:00	<b>3D Velocity Model Building in Hardrock Environment Using</b> <b>FWI: A Case Study from Blötberget Mine, Sweden</b> - B. Singh <sup>1*</sup> , A. Górszczyk <sup>12</sup> , A. Malehmir <sup>3</sup> , F. Hlousek <sup>4</sup> , S. Buske <sup>4</sup> , Ł. Sito <sup>5</sup> , P. Marsden <sup>6</sup> <sup>1</sup> Institute of Geophysics, Polish Academy of Sciences Warsaw; <sup>2</sup> ISTerre, University Greoble Alpes; <sup>3</sup> Uppsala University; <sup>4</sup> TU Bergakademie Freiberg; <sup>5</sup> Geopartner; <sup>6</sup> Nordic Iron Ore AB	
12:10	Evaluation of Plant Roots Ability to Remove Lead and Zink Mining Drainage Contamination by Geoelectric Surveys - H. Sarkheil <sup>1,2*</sup> , Y. Azimi <sup>2</sup> <sup>1</sup> Kharazmi University; <sup>2</sup> College of Environment	12:10	Ambient Noise Rayleigh and Love Wave Tomography beneath the Sally Palladium Copper Deposit (Ontario, Canada) - A. Lavoué <sup>1*</sup> , N. Arndt <sup>1</sup> , J. McBride <sup>2</sup> , A. Mordret <sup>1</sup> , F. Brenguier <sup>3</sup> , P. Boué <sup>3</sup> , R. Courbis <sup>1</sup> , S. Beauprêtre <sup>1</sup> , C. Beard <sup>1</sup> , D. Hollis <sup>1</sup> , R. Lynch <sup>1</sup> <sup>1</sup> Sisprobe; <sup>2</sup> Generation Mining; <sup>3</sup> ISTerre	
12:30 - 12:55	Lunch	break		

#### Presentations | Tuesday 8 December



RA	ACK 3		TRACK 4		
Posters: Geophysics for Mineral Exploration and Mining 1 Session Chair: L. Cox (Technolmaging LLC)		Posters: Geophysics for Mineral Exploration and Mining 2 Session Chairs: A. Gil de la Iglesia (Uppsala University), S. Buske (TU Bergakademie Freiberg)			
:00	<b>The Effectiveness of Pseudo-Gravity Transformation in Mineral</b> <b>Exploration: an Example from a Placer Magnetite Deposit</b> - S.R. Mashhadi <sup>1*</sup> , M. Safari <sup>2</sup> <sup>1</sup> Amirkabir University Of Technology; <sup>2</sup> Sahand University of Technology	13:00	A New 2D Seismic Survey and 3D Forward Modelling over the Lombador VMS Deposit, Portugal - G.A. Donoso <sup>1*</sup> , A. Malehmir <sup>1</sup> , B. Brodic <sup>1</sup> , N. Pacheco <sup>2</sup> , J. Carvalho <sup>3</sup> , V. Araujo <sup>2</sup> <sup>1</sup> Uppsala University; <sup>2</sup> Somincor (Lundin Mining); <sup>3</sup> LNEG		
	A Bayesian Approach to the Gravity Interpretation Problem - D. Sampietro <sup>1*</sup> , M. Capponi <sup>1</sup> <sup>1</sup> Geomatics Research & Development s.r.l.		Cooperative Inversion of Seismic and Gravity Data Using Weighted Structure-Based Constraints - M. Rashidifard <sup>1,3,*</sup> , J. Giraud <sup>1,3</sup> , V. Ogarko <sup>1,2</sup> , M. Jessell <sup>1,3</sup> , M. Lindsay <sup>1,3</sup> <sup>1</sup> Centre of Exploration Targeting (School of Earth Sciences), University of Western Australia; <sup>2</sup> International Centre for Radio Astronomy Research (ICRAR), University of Western Australia; <sup>3</sup> Mineral Exploratio Cooperative Research Centre, School of Earth Sciences, University of Western Australia		
	Noise Analysis of a Portable Aeromagnetic Surveying System Using a Hybrid UAV - J. Jirigalatu <sup>1*</sup> , A. Døssing Andreasen <sup>1</sup> , E. Lima Simões da Silva <sup>1</sup> <sup>1</sup> Technical University of Denmark		Seismic-Signal Distortion Analysis in Marine Profiling Data - N. Goreyavchev <sup>1*</sup> , G. Mitrofanov <sup>1</sup> , M. Tokarev <sup>2</sup> <sup>1</sup> Institute of Petroleum Geology and Geophysics; <sup>2</sup> Moscow State University		
	Illumination Diagnosis for Retrieval of Reflections from Ambient- Noise Seismic Data in the Siilinjärvi Mining Site, Finland - M. Papadopoulou <sup>1*</sup> , D. Draganov <sup>2</sup> , E. Koivisto <sup>3</sup> , M. Savolainen <sup>4</sup> , Ł. Sito <sup>5</sup> , V. Socco <sup>1</sup> <sup>1</sup> Politecnico di Torino; <sup>2</sup> TU Delft; <sup>3</sup> University of Helsinki; <sup>4</sup> Yara Suomi Oy; <sup>5</sup> Geopartner s.p. z.o.0	-	Magnetic and IP/RS Data Inversion for Gold Prospecting at Koh-e Lakht Epithermal Deposit, Central Iran - G. Janghorban <sup>1</sup> , S.M. Abtahi Forooshani <sup>1</sup> , H. Asadi Haroni <sup>1,2</sup> , H. Sadeghisorkhani <sup>1</sup> , K. Moshtaghian <sup>1*</sup> <sup>1</sup> Isfahan University of Technology; <sup>2</sup> University of Western Australia		
	<b>Geophysical Prospecting at Dalli Porphyry Gold-Copper</b> <b>Deposit Via Magnetic and IP/RS Data Inversion</b> - M. Hajheidari <sup>1*</sup> , K. Moshtaghian <sup>1</sup> , S.M. Abtahi Forooshani <sup>1</sup> , H. Asadi Harooni <sup>1,2</sup> <sup>1</sup> Isfahan University Of Technology; <sup>2</sup> University of Western Australia		Reflection Seismic Imaging for Mineral Exploration in the Soti Coronada Area, Southwest Spain - Y. Martínez <sup>1,2*</sup> , J. Alcalde <sup>1</sup> , D. Martí <sup>7</sup> , P. Ayarza <sup>2</sup> , M. Ruiz <sup>1</sup> , I. Mazán <sup>1</sup> , F. Tornos <sup>3</sup> , A. Malehmir <sup>4</sup> , A. Gil <sup>4</sup> , S. Buske <sup>5</sup> , D. Orlowsky <sup>6</sup> , R. Carbonell <sup>1</sup> <sup>1</sup> Institute of Earth Sciences Jaume Almera (ICTJA-CSIC); <sup>2</sup> Salamanca University; <sup>3</sup> Institute of Geosciences, CSIC-UCM; <sup>4</sup> Uppsala University; <sup>5</sup> Technische Universität Bergakademie Freiberg; <sup>6</sup> DMT GmbH & Co; <sup>7</sup> Lithica SCCL		
	A New 3D Geological Model for the Neves-Corvo Mine Region, Iberian Pyrite Belt, Portugal - J. Carvalho <sup>1</sup> , P. Dias <sup>1</sup> , C. Reveaux <sup>2</sup> , C. Inverno <sup>1</sup> , N. Pacheco <sup>3</sup> , J. Matos <sup>1</sup> , A. Malehmir <sup>4*</sup> , F. Marques <sup>1</sup> , V. Araújo <sup>3</sup> , M.J. Batista <sup>1</sup> , B. Spicer <sup>5</sup> , G.A. Donoso <sup>4</sup> , L. Albardeiro <sup>1</sup> , I. Morais <sup>1</sup> , E. Ramalho <sup>1</sup> , A. Filipe <sup>1</sup> , D. Oliveira <sup>1</sup> <sup>1</sup> Laboratório Nacional de Energia e Geologia; <sup>2</sup> Emerson; <sup>3</sup> Somincor (Lundin Mining); <sup>4</sup> Uppsala University; <sup>5</sup> Lundin Mining Corp.		Complex Geophysical Investigation in Search of Chromite Deposits at Ljuboten Greenfield Site - E. Hornicka <sup>1*</sup> , P. Targosz <sup>1</sup> , M. Loska <sup>2</sup> , M. Wojdyła <sup>1</sup> <sup>1</sup> Geopartner Ltd.; <sup>2</sup> Proxis Ltd.		
	Constrained 3D Inversion of Airborne Magnetic Data Using Geological and Reflection Seismic Data- Example in Sweden - M. Bastani <sup>1,2*</sup> , S. Luth <sup>1</sup> , A. Malehmir <sup>2</sup> , M. Sadeghi <sup>1</sup> , P. Marsden <sup>3</sup> <sup>1</sup> Geological Survey of Sweden; <sup>2</sup> Dept. of Earth Sciences, Uppsala University; <sup>3</sup> Nordic Iron Ore AB		Application of the Advanced Cross-Hole Seismic Tomography Kimberlite Pipe Detection in Yakutsk Diamondiferous Province S. Vakulenko <sup>1</sup> , E. Goncharov <sup>2</sup> , V. Ignatiev <sup>1</sup> , A. Oshkin <sup>3</sup> , A. Shuvalov <sup>1*</sup> <sup>1</sup> Geodevice; <sup>2</sup> ALROSA; <sup>3</sup> NEOGEN		

**Closing Session** 



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