

EAGE

EUROPEAN
ASSOCIATION OF
GEOLOGISTS &
ENGINEERS

CONFERENCE & EXHIBITION



NEAR SURFACE GEOSCIENCE '19

25TH

European Meeting
of Environmental and
Engineering Geophysics

1ST

Conference on Geophysics for
Geothermal-Energy Utilization
and Renewable-Energy Storage

1ST

Conference on Geophysics
for Infrastructure Planning,
Monitoring and BIM

10TH

International Workshop
on Advanced Ground
Penetrating Radar

8-12 SEPTEMBER 2019
THE HAGUE, THE NETHERLANDS

PROGRAMME & CATALOGUE

WWW.NSG2019.ORG

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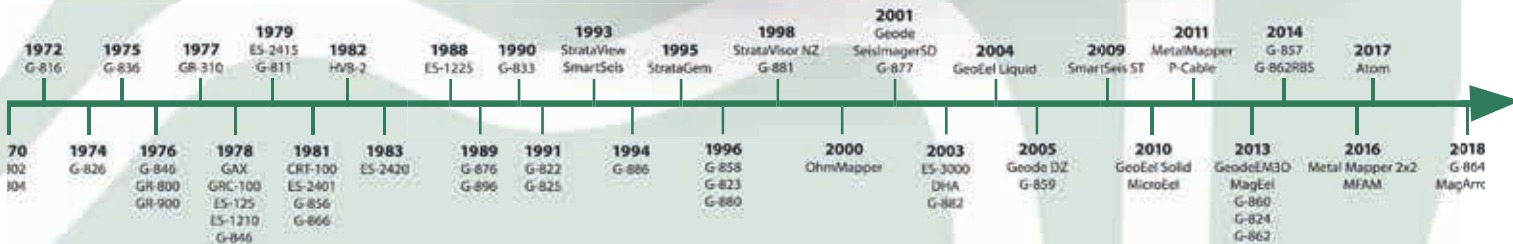


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TABLE OF CONTENTS

General Information	4
Welcome to The Hague	4
Programme Overview	4
EAGE Event App	4
About The Hague	5
Getting around The Hague	5
Venue	5
Health & Safety	5
Catering	5
Event Papers on Earthdoc	5
Wi-Fi	5
Social Media	5
Local Advisory Committee	5
Highlights of NSG 2019	6
Opening Session	6
Social Programme	6
Winners of Minus CO ₂ Challenge	6
Local Chapter Netherlands	6
EAGE Booth	6
Field Demonstrations	6
EU Affairs	6
Closing Session	6
Thanks to... ..	7
Workshops	7
Fieldtrip	7
25 th European Meeting of Environment and Engineering Geophysics	8
1 st International Conference on Geophysics for Geothermal-Energy Utilization and Renewable-Energy Storage	8
1 st International Conference on Geophysics for Infrastructure Planning, Monitoring and BIM	9
10 th International Workshop on Advanced Ground Penetrating Radar	9
Plan of the venue	10
Technical programme	11
Exhibition	33
Opening Hours Exhibition	33
Field Demonstrations	33
Exhibitors' Profiles	36
Notes	38

Near Surface Geoscience is supported by:



GENERAL INFORMATION

Welcome to The Hague

Welcome to The Hague and the Near Surface Geoscience Conference & Exhibition 2019. With this Programme & Catalogue we will help you make the most of your stay. It contains all necessary information about the workshops, field trips, technical programme, exhibition, social programme and field demonstrations.

This year's event incorporates the following meetings:

- 25th European Meeting of Environmental and Engineering Geophysics
- 1st Conference on Geophysics for Geothermal-Energy Utilization and Renewable-Energy Storage
- 1st Conference on Geophysics for Infrastructure Planning, Monitoring and BIM
- 10th International Workshop on Advanced Ground Penetrating Radar

All full conference delegates have access to the Technical Programme of each of the four meetings and the exhibition, excluding workshops and field trips. The social programme includes the Welcome Reception and the Conference Evening.

The Exhibition is the central place where companies from all disciplines display their products and services. The Coffee Breaks and Welcome Reception take place at the Exhibition and provide excellent networking opportunities in an informal setting. On Tuesday afternoon, 10 September, there will be field demonstrations just in front of the venue.



Binnenhof, the political heart of The Netherlands

Programme Overview

Sunday 8 September

09:00 – 17:00 Workshop 1	Geophysics for Geohazards
09:00 – 17:00 Workshop 2	Benchmark Testing for GPR

Monday 9 September

08:45 – 11:00	Opening Session
09:00 – 19:00	Exhibition Open
11:30 – 17:10	Technical Programme
17:10 – 19:00	Welcome Reception

Tuesday 10 September

09:00 – 15:20	Technical Programme
09:00 – 15:20	Exhibition Open
15:20 – 17:00	Field Demonstrations
19:00 – 23:30	Conference Evening

Wednesday 11 September

09:00 – 17:05	Technical Programme
09:00 – 17:00	Exhibition Open
17:05 – 17:30	Closing Ceremony

Thursday 12 September

09:15 - 16:30	Field Trip 1 - Visit to the major project site Rotterdamsebaan and the Open Innovation Centre for Well Technology
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Opening Hours EAGE Registration Desk

Sunday 8 September	08:00 – 17:00
Monday 9 September	08:00 – 19:00
Tuesday 10 September	08:00 – 17:00
Wednesday 11 September	08:00 – 16:00

EAGE Event App

Make your attendance even better with the EAGE Event App. Simply search for the EAGE app in the Apple Store or Google Play Store and download it. Put in the code **NSG2019** and you are all set! The EAGE Event App lets you check the agenda, explore our list of exhibitors, access the technical programme abstracts, check out a map of the venue and receive important alerts and updates.

Sign in using your email address and the pin-code provided in the **'Important Information' email** (sent 30 August), to create your own *personalised agenda* and *check out the extended abstracts* for all four parallel meetings.

For more information on the app, please check out our website: www.NSG2019.org, or ask a member of staff at the EAGE booth #48.



In 2019, The Netherlands celebrates the legacy of Rembrandt and the Golden Age. It is 350 years since the death of one of Holland's most beloved Dutch Masters, Rembrandt van Rijn. Experience The Hague during the time of Rembrandt & the Golden Age at Mauritshuis in The Hague.

About The Hague

The popular perception of The Netherlands' third-largest city is of a stately, regal place populated with bureaucrats and businesspeople. While this is true to some extent, the city's cultural scene is one of the most exciting in the country, its culinary scene is replete with contemporary restaurants expertly experimenting with modern European cuisine, and its entertainment scene has moved far past the embassy cocktail parties that once predominated, making the party precinct of Grote Markt and the much-loved Paard live-music venue essential stops for every visitor.

Easy to explore on foot or by tram, this is a city that amply rewards those who stay for a few days. Check out this website for more information, highlights and tips: denhaag.com/en.

Getting around The Hague

Travelling within The Hague by public transport is straight forward and convenient. The extensive network of buses, trams, and metros connects you to all parts of the city. Or do like the Dutch do, rent a bike, and explore the area on two wheels.

Venue

The Fokker Terminal, prior to being an event venue, has been a school for aeronautical engineering, named after Anthony Fokker, the Dutch aviation pioneer. The Exhibition will be set up in the old hangar, while the Technical Programme takes place in the former classrooms. It has recently been added to the list of The Hague's monuments.

The venue offers a uniquely appealing environment for our exhibition and technical programme, perfectly integrating both aspects of this meeting.

Health & Safety

Please refer to the Plan of the Venue (page 10) for the location of the First Aid. In case of emergency, always follow the instructions given by the staff of the venue and/or emergency services. Use the emergency exits to leave the building. Stay calm and avoid panic.

Catering

Coffee/tea breaks are included in the registration fee for all registered delegates and will be served at the Exhibition.

Lunch (not included in your conference and exhibition registration) will be available upon purchase at the Exhibition. For any questions, please go to the Registration desk. If you have food allergies, please indicate this to the catering staff.

Event Papers on Earthdoc and the App

EarthDoc is EAGE's online geoscience database and enables you to browse through thousands of event papers and journal articles online. EAGE members have free access to Earth-Doc (www.earthdoc.org).

The event papers of the four meetings are available online. Go to www.earthdoc.org and log in with your EAGE membership credentials. If you are yet to be processed as an EAGE member, you can also access the papers via the EAGE Event App.

Wi-Fi

You will have free access to Wi-Fi throughout the venue: the name of the network is "Free WiFi Fokker Terminal".

Social Media

Stay connected with EAGE through our Social Media channels on Facebook, LinkedIn and Twitter, and join the conversation with #NSG2019.

Local Advisory Committee

Evert Slob (Co-Chair)	TU Delft
Ranjit Ghose (Co-Chair)	TU Delft
Deyan Draganov	TU Delft
Robert van Ingen	T&A Survey BV
Richard de Kunder	Seismic Mechaonics
Dominique Ngan-Tillard	TU Delft
Elmer Ruigrok	KNMI
Johannes Singer	Fugro
Ivan Vasconcelos	University of Utrecht

HIGHLIGHTS OF NSG 2019

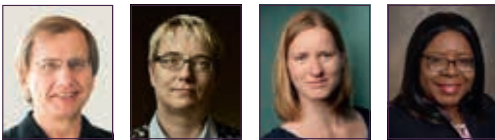
Opening Session

Monday 9 September | 08:45 - 11:00

Location: Exhibition

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 surface-related field. EAGE President Michael Pöppelreiter, George Apostolopoulos (NSG Division Chair) and Evert Slob (LAC Chair) will welcome you and take a look ahead at what is to come.

Further keynotes will be presented by Gerard Schuster (KAUST), Nicole Metje (University of Birmingham), Katrin Kieling (GFZ German Research Centre for Geosciences) and Estella Atekwana (University of Delaware).



Social Programme

Welcome Reception

Monday 9 September | 17:10 - 19:00

Location: Exhibition

Meet with exhibitors, catch up with your colleagues and expand your network while enjoying delicious finger food and drinks.

Conference Evening

Tuesday 10 September | 19:00 - 23:30

Location: De Pier, Strandweg 152, 2586 JW, The Hague

The Conference Evening will be hosted at the famous Pier in Scheveningen, The Hague. Extending 400 meters into the sea with its islands, the venue offers a fantastic view of the North Sea. All registered full delegates are invited to this extraordinary venue for a dinner filled with hospitality, gastronomy and entertainment. Join us for an informal evening with dinner and dancing with your colleagues. **Make sure you pick up your conference evening invitation at the Registration desk in the conference venue!**

Winners of Minus CO₂ Challenge

Wednesday 11 September | 15:45 - 17:05

Location: Room C

The 81st EAGE Conference & Exhibition in London hosted the final of the first EAGE Minus CO₂ Challenge, a competition between universities to develop an oil and gas field with zero net emissions. The EAGE invited the winning team to present their technical excellence and innovative ideas to develop the Equinor Norne Field, with zero net emissions while maintaining a positive NPV. Christopher Lloyd, Ross McTeir, Daniel Odjo, and Dominic Skinner, the University of Manchester team, won the finals and will present their project during the conference.

Local Chapter Netherlands

Monday 09 September | 17:30 - 18:00

Location: EAGE Booth

LC Netherlands was launched in May and plans to be the driving force for the local EAGE community! You can meet them during the Welcome Reception to learn all about their next activities and joining.

EAGE Booth

The EAGE booth #48 is the one stop shop for all that EAGE has to offer. Come by to meet the people behind our communities, our membership, our student activities and much more throughout the week. Have us explain the EAGE Recognition programme to you and pick up your special pin if you reached the status of Silver, Gold or Platinum member.

Field Demonstrations

Tuesday 10 September | 15:20 - 17:00

Location: in front of the venue

All delegates are invited to attend the special exhibits presented to you by our exhibitors in an informal setting. Enjoy a pleasant afternoon receiving useful information on the latest geophysical products from the industry. The field demonstrations are just outside the venue; we hope to welcome you there. Turn to page 33 for more information.

EU Affairs

Once again, during NSG2019, EAGE's EU Public Affairs Department will be hosting a series of activities, to connect our attendees with the right resources, people and institutions to get the most out of the EU. Join us for our Brokerage Cocktail, come by and learn all about our Smart Exploration Project, Horizon 2020, and the future of our work in Europe.

Brokerage Cocktail Session

Wednesday 11 September | 14:30 - 16:30

Location: EU Affairs-Horizon 2020, booth #48

To close EAGE EU activities at the Near Surface Conference & Exhibition, a Brokerage Cocktail will be hosted at the EU Horizon 2020 booth. While enjoying a refreshing drink, use this time to network with other interested organisations and discuss project ideas. Are you interested in finding project partners for your Horizon 2020 application, or learning more about EU funding opportunities and Horizon 2020 research calls? Join us on Wednesday at booth #48.

Closing Session

Wednesday 11 September | 17:05 - 17:30

Location: Room A

Join us as we look forward to the Near Surface Geoscience in Belgrade, 30 August - 3 September 2020, and officially close this year's activities.



Thanks to...

We would like to thank our reviewers as well as the technical committees of all four parallel meetings, for their valuable assistance in preparing the technical programme of Near Surface Geoscience 2019. In addition, thank you to everyone chairing a session and convening a workshop, and also to those who took part in our Local Advisory Committee! Without the help of our volunteers and community, EAGE would not be able to continue to expand and improve on our exciting events, such as NSG2019.

Workshops

Workshop 1: Geophysics for Geohazards

Sunday 8 September | 09:00 - 17:00

Room: C

Geophysical techniques play a pivotal role for assessing, monitoring and mitigating Geohazards in general. There are two fields of applications, namely earthquakes and slope instabilities, where geophysics is particularly prominent. In this workshop, we will discuss state-of-the-art technologies and fruitful avenues of future research related to these two topics. Besides highlighting well-known methods from applied geophysics, we would like to put a particular emphasis on the links with related fields, such as geotechnical engineering. The workshop will comprise of keynote lectures from experts in the corresponding fields, contributed presentations, and an open forum during which the workshop participants can share their experiences by presenting key challenges or solutions.

Workshop 2: Benchmarking GPR

Sunday 8 September | 09:00 - 17:00

Room: F

The aim of this workshop is two-fold: Firstly, to introduce the recently developed, during the 2019 Google summer of Code internship programme, new advanced modelling features of gprMax – a Finite-Difference Time-Domain Open Source electromagnetic wave simulator – which is a popular GPR modelling tool. Participants are encouraged to bring advanced modelling problems, questions

and ideas to discuss and find ways to move them forward or adjust their expectations taking into account what is currently feasible. Topics will cover but do not have to be limited to GPR transducer modelling, advanced material simulation, truncation boundaries and how they can be tuned, and many more.

Secondly, a discussion will be held to plan and design a realistic 3D GPR benchmarking model to be created and run by the workshop organisers in order to provide the GPR community with a realistic synthetic data set to be used for benchmarking GPR data processing, imaging and inversion procedures. This follows a similar idea that has been available for some time for benchmarking seismic processing and imaging procedures using the well-known Marmousi seismic model data set.

Field trip

Field Trip 1: Visit to the major project site Rotterdamsebaan and the Open Innovation Centre for Well Technology

Thursday 12 September | 09:15 - 16:30

Starting point at Trefpunt, Binckhorstlaan 340, The Hague

You can still register for this field trip at the registration desk until Wednesday 11th.

In the morning, the participants will visit the site of the major underground construction project – “Rotterdamsebaan”. The area around the city of The Hague has been intensely urbanised since World War II. To mitigate the traffic congestion problem and increase the accessibility, a major drilled tunnel was planned. By November 2016 the spectacular building site - 250 m long and 18 m deep - was constructed. In the afternoon, the participants will be transported to the impressive Open Innovation Centre for Well Technology, which is located in Rijswijk. With support from the Dutch Ministry of Foreign Affairs, the province of South Holland, the municipality of Rijswijk, EBN TNO, and in cooperation with academia (Delft and Utrecht universities), the Well Laboratory of Shell is reopened as Open Innovation Centre for Well Technology (OICW).

25TH | European Meeting of Environmental and Engineering Geophysics

25TH EUROPEAN MEETING OF ENVIRONMENT AND ENGINEERING GEOPHYSICS

Join us in The Hague for the 25th European Meeting of Environmental and Engineering Geophysics. We will offer you a technical programme covering the traditional as well as emerging topics and technologies including, but not being limited to, borehole geophysics, mining geophysics, CO₂ sequestration, and machine learning.

SCIENTIFIC COMMITTEE

Deyan Draganov (Chair)	TU Delft
Ranjit Ghose	TU Delft
Antonis Giannopoulos	University of Edinburgh
Elmer Ruigrok	KNMI
Johannes Singer	Fugro
Evert Slob	TU Delft
Ivan Vasconcelos	University of Utrecht



1ST | Conference on Geophysics for Geothermal-Energy Utilization and Renewable-Energy Storage



1ST INTERNATIONAL CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE

The First Conference on Geophysics for Geothermal Energy-Utilization and Renewable-Energy Storage brings together professionals from academia, service companies, operators, and energy companies, dedicated to geophysical solutions for a 'global' efficient utilization of the subsurface.

SCIENTIFIC COMMITTEE

Anne Obermann (Chair)	ServiceSwiss Seismological Service
Richard Bakker	TU Delft
Egido Armadillo	University of Genoa
Wouter van Leeuwen	IF Technology
Flavio Poletto	Nat. Inst. of Oceanography & Exp. Geophysics OGS
Thomas Reinsch	GFZ German Research Centre for Geosciences
Arie Verdel	TNO
Karl Heinz Wolf	TU Delft

1ST | Conference on Geophysics for Infrastructure Planning, Monitoring and BIM

1ST INTERNATIONAL CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM

The First Conference on Geophysics for Infrastructure Planning, Monitoring and BIM provides a platform for academia, governmental institutions and industry to address the challenges related to engineered infrastructure. State-of-the-art geophysical methods will be presented that highlight their use before, during and after construction of these structures.



SCIENTIFIC COMMITTEE

Beatriz Benjumea (Chair)	Cartographic and Geological Institute of Catalonia
Takao Aizawa	Suncoh Consultants and Managing Director of SEGJ
Thomas Dickmann	Amberg Technologies
Shane Donohue	University College Dublin
Charlotte Krawczyk	GFZ Postdam
Oliver Kuras	British Geological Survey
Alireza Malehmir	Uppsala University
Mark van der Meijde	University of Twente
Ernst Niederleithinger	BAM
Andreas Pfaffhuber	Norwegian Geotechnical Institute
Helen Reeves	British Geological Survey
Robert Sturk	Skanska
Koya Suto	Terra Australis Geophysica Pty Ltd
Mats Svensson	Tyréns
Arre Verweerd	AECOM

10TH | International Workshop on Advanced Ground Penetrating Radar

10TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR

The 10th IWAGPR will bring together scientists, engineers, industrial delegates and end-users working in all GPR areas, ranging from fundamental electromagnetics to the numerous fields of applications. The workshop will provide a supportive framework not only for updates on ongoing research activities and results, and community-building through the identification of skill sets and collaboration opportunities, but also the exposure of early-career investigators to the GPR research community.

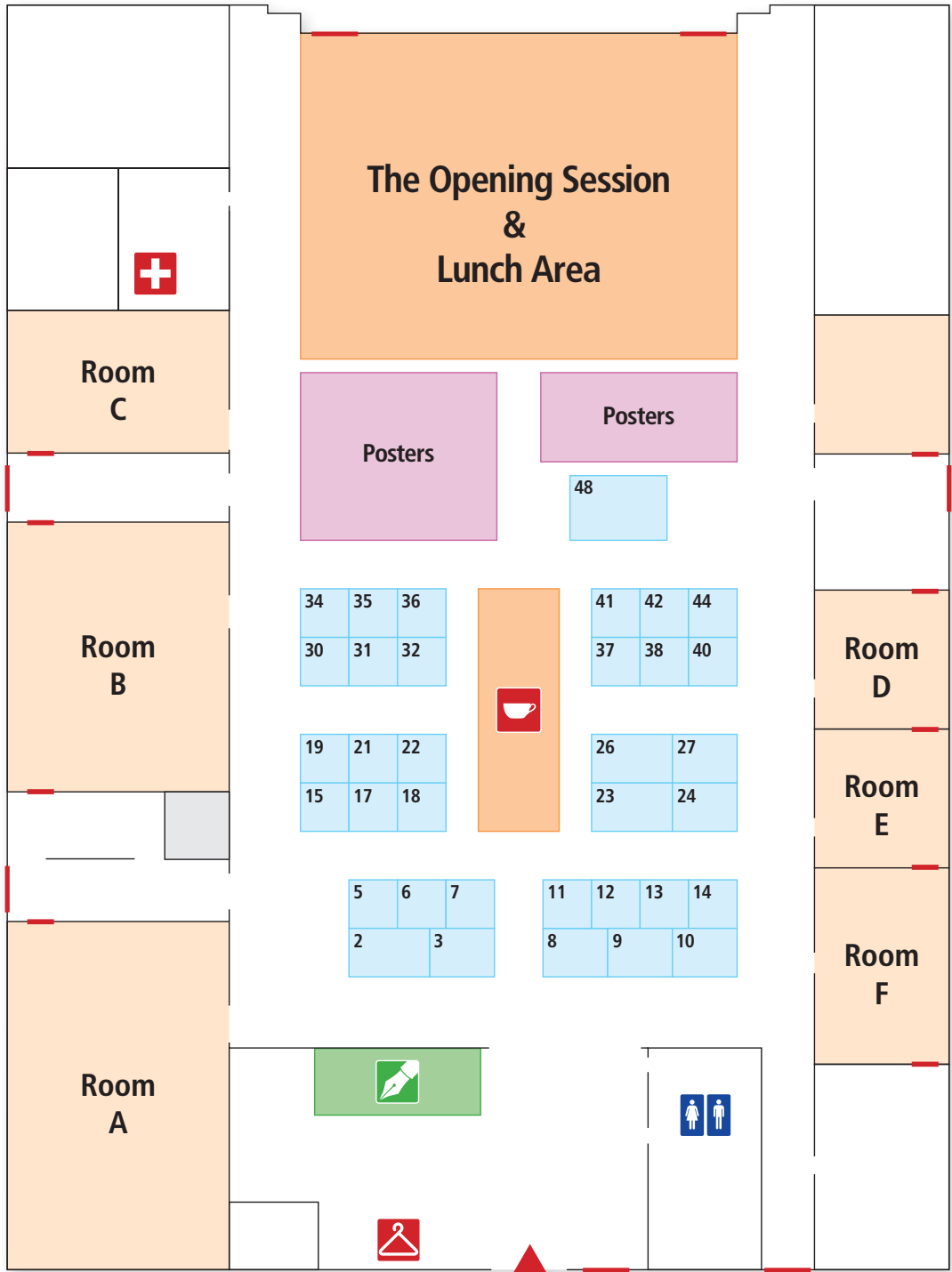
SCIENTIFIC COMMITTEE

Antonis Giannopoulos (Chair)	University of Edinburgh
Xavier Derobert	IFSTTAR
Sébastien Lambot	Université Catholique de Louvain
Evert Slob	TU Delft
Francesco Soldovieri	Nazionale delle Ricerche (CNR)
Mercedes Solla	Universidad de Vigo
Craig Warren	Northumbria University








PLAN OF THE VENUE

GENERAL INFORMATION



Main Entrance

 Registration	 Coffee Point
 Cloakroom	 First Aid
 Evacuation Meeting Point	 Toilets
 Field Demonstration Area	 Emergency Exit

TECHNICAL PROGRAMME

The technical programme consists of oral and poster presentations on a broad range of near surface related topics. In addition, workshops, field demonstrations and a field trip are offered.

MONDAY - 09 SEPTEMBER 2019

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS			1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM	10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM A	ROOM B	POSTER AREA	ROOM C	ROOM D	ROOM F	POSTER AREA
AM Opening Session						
	Best of SAGEEP	Best of ENGCEO		New Developments in Geophysical Methods for Infrastructures I	Hydrogeophysics	
PM	NMR	TEM		New Developments in Geophysical Methods for Infrastructures II	Roads and Pavement	
	Induced Polarization	Gravity and Magnetics		New Developments in Geophysical Methods for Infrastructures III		Poster: Engineering and Data Processing

TUESDAY - 10 SEPTEMBER 2019

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS			1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM	10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM A	ROOM B	POSTER AREA	POSTER AREA	ROOM D	ROOM F	POSTER AREA
AM	ERT/SP/IP	High-Resolution Seismics I	Poster: Potential Field and Electromagnetic Methods	Infrastructure Planning and Assessment, BIM Tools	Systems, Antennas and New Developments	
	FWI	GPR	Poster: ERT, SP, IP, Complex Resistivity	Detection and Localization of Underground Objects and Buried Utilities		
PM	Environmental and Hydrogeophysics I	Integrated Studies I	Poster: High-Resolution Seismic A	New and Emerging Technologies		Poster: Safety & Security, Modeling, Machine Learning and Geological Applications
Field demonstrations						
Conference Dinner						

WEDNESDAY - 11 SEPTEMBER 2019

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS			1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM	10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM A	ROOM B	POSTER AREA	ROOM C	ROOM D	POSTER AREA	ROOM F
AM	Geophysics for Geotechnics	Urban/Mining Geophysics	Poster: Hydrogeophysics, Environmental Geophysics	Seismic Methods for Geothermal Exploration and Monitoring I	Geotechnical Infrastructure condition using Geophysics I	Imaging and Tomography
	High-Resolution Seismics II	Mining Geophysics	Poster: Geophysics for Agriculture, Hydrology, Landslides, Dams, Waste Characterisation, and Urban Sites	Seismic Methods for Geothermal Exploration and Monitoring II	Geotechnical Infrastructure condition using Geophysics II	GPR Multimethod, Archeology
PM	Environmental and Hydrogeophysics II	Geophysics for Dyke Stability and Subsidence	Poster: High-Resolution Seismic B, MASW	Non-Seismic Methods for Exploration and Monitoring	General Poster Session	Safety and Security
	Integrated studies II	Geophysics for Landslides and Slope Stability		Reservoir Characterization		Non-Destructive Testing
Closing session						

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

EXHIBITION

Opening Session
E. Slob (Delft University of Technology) & G. Apostolopoulos (National Technical University of Athens)

08:45 Welcome and Introduction to NSG 2019

09:00 Keynote Speeches by:
G. Schuster (KAUST)
N. Metje (University of Birmingham)
K. Kielsing (GFZ - German Research Centre for Geosciences)
E. Atekwana (University of Delaware)

11:00 Coffee Break

ROOM A **ROOM B**

	Best of SAGEEP 2019
	11:30 Mo_25th_B01 - pyR2: An Open-Source Stand Alone Graphical User Interface for Inversion of Electrical Resistivity and Induced Polarization Measurements - S. Saneiyani ¹ , G. Blanchy ² , J. Boyd ^{3*} , A. Binley ² ¹ Rutgers University; ² Lancaster University; ³ British Geological Survey
	11:50 Mo_25th_B02 - COMET – A Python Toolbox for 1D/2D/3D Modelling and Inversion of Magnetic Resonance and Resistivity Data - N. Skibbe ^{1*} , R. Rochlitz ¹ , T. Günther ¹ , M. Müller-Petke ¹ ¹ Leibniz Institute for Applied Geophysics
	12:10 Mo_25th_B03 - Discriminating Pleistocene Alluvial Terraces on the Colorado River in Central Texas Using Lidar and Near-Surface Geophysics - J. Paine ^{1*} ¹ The University of Texas at Austin
	12:30 Mo_25th_B04 - Field Tests of Electrically Active Proppants Using Shallow Hydraulic Fractures - D. La Brecque ^{1*} , L. Murdoch ² , W. Slack ³ , M. Ahmadian ⁴ , J. Dennison ² ¹ Multi-Phase Technologies, LLC; ² Clemson University; ³ Frx Inc.; ⁴ University of Texas

12:50 Lunch Break

NMR **TEM**
J. Holzhauer (IRSN) B. Tezkan (University of Cologne)

14:00 Mo_25th_A05 - Vs Data Space Retrieval and Inversion for Surface NMR - L. Liu ^{1*} , D. Grombacher ¹ , G. Osterman ¹ , E. Auken ¹ , J.J. Larsen ¹ ¹ Aarhus University	14:00 Mo_25th_B05 - A Multipurpose Platform Towed TEM-System Imagining the Top 100m of the Subsurface: Surface, Water and Snow - E. Auken ^{1*} , P. Maurya ¹ , A.V. Christiansen ¹ , J. Lane ² , E. White ² , R. Adams ² ¹ Aarhus University; ² USGS
14:20 Mo_25th_A06 - Apsu - A New Surface NMR Instrument for Hydrogeophysics - J.J. Larsen ^{1*} , L. Liu ¹ , D. Grombacher ¹ , G. Osterman ¹ , E. Auken ¹ ¹ Aarhus University	14:20 Mo_25th_B06 - Early-Time and Late-Time Limitations on the Performance of Near-Surface TEM Measuring Systems - N. Kozhevnikov ^{1*} , M. Sharlov ² ¹ Institute of Petroleum Geology and Geophysics SB RAS; ² SIGMA-GEO
14:40 Mo_25th_A07 - Surface Nuclear Magnetic Resonance Measurements in Berlin - Proof-Of-Concept for Applying the Prepolarisation Technique in Urban Areas - S. Costabel ^{1*} , T. Hiller ² , T. Radic ³ , R. Dlugosch ² , M. Müller-Petke ² ¹ German Federal Institute for Geosciences and Natural Resources; ² Leibniz Institute for Applied Geophysics; ³ Radic Research	14:40 Mo_25th_B07 - Application of Time-Domain Electromagnetic Survey for Seafloor Polymetallic Sulphides in the Okinawa Trough - K. Nakayama ¹ , M. Moroori ¹ , A. Saito ^{2*} ¹ Japan Oil, Gas and Metals National Corporation; ² Waseda University
15:00 Mo_25th_A08 - The Influence of Non-Adiabatic Switch-Off on the Prepolarization of Surface Nuclear Magnetic Resonance Measurements - T. Hiller ^{1*} , R. Dlugosch ¹ , M. Müller-Petke ¹ , S. Costabel ² ¹ Leibniz Institute for Applied Geophysics; ² Federal Institute for Geosciences and Natural Resources	15:00 Mo_25th_B08 - A 3D Inversion Algorithm Using a Triple Mesh Approach and Domain-Decomposition for Fast Computations - K.W. Engebretsen ^{1*} , B. Zhang ¹ , G. Fiandaca ¹ , E. Auken ¹ ¹ Aarhus University

15:20 Coffee Break

TECHNICAL PROGRAMME

1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM		10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
EXHIBITION			
Opening Session E. Slob (Delft University of Technology) & G. Apostolopoulos (National Technical University of Athens)			
08:45	Welcome and Introduction to NSG 2019		
09:00	Keynote Speeches by: G. Schuster (KAUST) N. Metje (University of Birmingham) K. Kieling (GFZ - German Research Centre for Geosciences) E. Atekwana (University of Delaware)"		
11:00	Coffee Break		
ROOM D		ROOM F	
New Developments in Geophysical Methods for Infrastructures I T. Dickmann (Amberg Technologies AG)		Hydrogeophysics I. Giannakis (University of West London)	
11:30	Mo_INFRA_01 - Keynote - Geophysics in Infrastructure - An Industry Perspective - M. Brough ^{1*} , A. Verweerd ¹ ¹ AECOM	11:30	Mo_10GPR_01 - Using GPR on a Problematic Agricultural Field for Groundwater Protection in a Karst Environment - M. Zajc ^{1*} , J. Urbanc ¹ ¹ Geological Survey of Slovenia
11:50	Mo_INFRA_02 - Time-Synchronized Geophysical Investigations in Denied GPS-Time Spaces - A. Malehmir ^{1*} , L. Dynesius ¹ , T. Sjölund ² ¹ Uppsala University; ² Mic Nordic AB	11:50	Mo_10GPR_02 - A Novel Processing Framework for Tree Root Mapping and Density Estimation Using Ground Penetrating Radar - L. Lantini ^{1*} , F. Tosti ¹ , I. Giannakis ¹ , D. Egyir ¹ , A. Benedetto ² , A.M. Alani ¹ ¹ University of West London; ² Università degli Studi Roma Tre
12:10	Mo_INFRA_03 - Void Detection and Consolidation Filling Verification by ERT, GPR and Seismic Refraction Methods - G. Vargemzis ^{1*} , P. Tsourlos ¹ , I. Fikos ¹ , N. Diamanti ¹ , D. Angelis ² , E. Amanatidou ¹ ¹ Aristotle University of Thessaloniki; ² Northumbria University	12:10	Mo_10GPR_03 - Using Ground Penetrating Radar (GPR) to Detect Water Leakage from a Buried Pipeline - K. Almutairi ^{1*} , Y. Almutairi ¹ , M. Almalki ¹ ¹ King Abdulaziz City for Science and Technology
12:30	Mo_INFRA_04 - Non-Invasive Characterisation of Cement-Based Materials by Spectral Induced Polarization - J. Holzhauer ^{1*} , P. Dick ¹ , A. Revil ² ¹ Institute for Radioprotection and Nuclear Safety; ² Université Savoie Mont Blanc, ISTerre	12:30	Mo_10GPR_04 - Assessment of a Stepped-Frequency GPR for Subsurface Drainage Mapping for Different Survey Configurations and Site Conditions - T. Koganti ^{1*} , E. Van De Vijver ² , B. J. Allred ³ , M. H. Greve ¹ , J. Ringgaard ⁴ , B. V. Iversen ¹ ¹ Aarhus University; ² Ghent University; ³ USDA/ARS; ⁴ Rambøll
12:50	Lunch Break		
New Developments in Geophysical Methods for Infrastructures II A.J. Verweerd (AECOM)		Roads and Pavement X. Dérobert (IFSTTAR)	
14:00	Mo_INFRA_05 - Comparison of Reflection Seismic Data with Seismic Tomography in an Underground Environment - T. Dickmann ^{1*} ¹ Amberg Technologies AG	14:00	Mo_10GPR_05 - Measuring Asphalt Pavement Density with a GPR-based Sensor - A Case Study - N. Diamanti ^{1*} , P. Annan ² , S.R. Jackson ² ¹ Aristotle University of Thessaloniki; ² Sensors & Software Inc.
14:20	Mo_INFRA_06 - Ultrasonic Echo Testing of Concrete Structures - State of the Art - E. Niederleithinger ^{1*} , F. Mielentz ¹ , U. Effner ¹ ¹ BAM	14:20	Mo_10GPR_06 - Advances in the Prediction of the Bearing Capacity of Road Flexible Pavements Using GPR - F. Tosti ¹ , L. Bianchini Ciampoli ² , F. D'Amico ² , A.M. Alani ¹ , L. Lantini ^{1*} ¹ University of West London; ² Roma Tre University
14:40	Mo_INFRA_07 - Example of a Survey in Transition Area for Construction Purposes - A. Turchkov ¹ , A. Oshkin ¹ , V. Ignatev ^{2*} , A. Konkov ² , E. Samsonov ³ , I. Dmitriev ³ ¹ Neogen LLC; ² Geodevice LLC; ³ ROMONA Inc	14:40	Mo_10GPR_07 - Laboratory Tests in Rigid Pavement - M. Rasol ¹ , J. Pais ² , M. Solla ³ , S. Santos-Assunção ⁴ , V. Sossa ¹ , V. Perez-Gracia ^{1*} ¹ Universitat Politècnica de Catalunya; ² University of Minho; ³ Universidad de Vigo; ⁴ AAMAQ Geophysical & Geological Studies & Services
15:00	Mo_INFRA_08 - Keynote - Use of Geophysics to Provide Input Properties to Geotechnical Calculations - M. Long ^{1*} ¹ University College Dublin (UCD)	15:00	Mo_10GPR_08 - Analytic GPR Data Processing for Surface Layer Thickness Assessment - V. Marecos ^{1*} , J.P. Figueiredo ² , S. Fontul ¹ , M. Solla ³ ¹ National Laboratory for Civil Engineering; ² Nova University of Lisbon; ³ University of Vigo
15:20	Coffee Break		

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

ROOM A

Induced Polarization

M. Yi (Korea Institute of Geoscience and Mineral Resources)

ROOM B

Gravity and Magnetics

A. Csontos (Mining and Geological Survey of Hungary)

15:50	Mo_25th_A09 - 2D Inversion of Time Domain Induced Polarization Data Observed on the Black Shales Near Bramsche/Germany - B. Tezkan ^{1*} ¹ University of Cologne	15:50	Mo_25th_B09 - Nonlinear Unconstrained Inversion of Magnetic Anomalies Using Sub-Problem Trust-Region Algorithm - R. Faridi ^{1*} , R. Ghanati ¹ ¹ University of Tehran
16:10	Mo_25th_A10 - Non-Standard Responses in Time-Domain Induced Polarization Measurements - G. Fiandaca ^{1*} , P. Olsson ² , P.K. Maurya ¹ , A. Küh ¹ , T.S. Bording ¹ , T. Dahlin ² , E. Auken ¹ ¹ Aarhus University; ² Lund University	16:10	Mo_25th_B10 - Monitoring of Subrosion Induced Mass Changes by Time-Lapse Gravity Surveys – Two Case Studies from Germany - G. Gabriel ^{1,2*} , M. Kobe ¹ , A. Weise ^{2,1} , L. Timmen ² ¹ Leibniz Institute for Applied Geophysics; ² Leibniz University Hannover
16:30	Mo_25th_A11 - The Inversion of Vector Array Data Sets for 3-D Resistivity and I.P. Surveys - M.H. Loke ^{1*} , J. Gance ² , C. Truffert ² , O. Leite ² ¹ Geotomo Software Sdn Bhd; ² IRIS Instruments	16:30	Mo_25th_B11 - 3D Inversion of Gravity Data Using Graph Theory; Application of the Method on Mobrun Ore Body - S. Soodmand Niri ^{1*} , S. Vatankhah ¹ , V. Ebrahimzadeh Ardestani ¹ , R. Anne Renaut ² ¹ University of Tehran; ² Arizona State University
16:50	Mo_25th_A12 - Resistivity and Induced Polarization (ERT/IP) Survey for Bedrock Mapping in Permafrost, Svalbard - S. Bazin ^{1,2*} , A. Lysdahl ¹ , A. Olaus Harstad ¹ , R. Frauenfelder ¹ ¹ Norwegian Geotechnical Institute; ² University of Oslo	16:50	Mo_25th_B12 - Two-Dimensional Cross-Gradient Joint Inversion of Gravity and Magnetic Data by a Sequential Strategy - M. Tavakoli ^{1*} , A. Nejati Kalateh ¹ , M. Rezaie ² ¹ Shahrood University of Technology; ² Malayer University

TECHNICAL PROGRAMME



1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM		10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM D		ROOM F	
New Developments in Geophysical Methods for Infrastructures III B. Benjumea (Institut Cartografic i Geologic de Catalunya)			
15:50	Mo_INFRA_09 - Evaluation of Dispersion Diagrams Distances Based on Usual Histogram Analysis for the Surface Wave Difference Inversion - A. Wang ^{1*} , D. Leparoux ¹ , O. Abraham ¹ , M. Le Feuvre ¹ ¹ IFSTTAR		
16:10	Mo_INFRA_10 - Exploring and Modelling the Qanat Gallery Path Using Electrical Resistivity Tomography Data - A. Najafabadipour ^{1*} , G. Kamali ¹ ¹ Shahid Bahonar University of Kerman		
16:30	Mo_INFRA_11 - Performance Assessment of Novel Offshore Cable Detectors Based on Synthetic Data - T. Stolz ^{1,2*} ¹ TU Delft; ² League Geophysics		
16:50	Mo_INFRA_12 - Advanced Signal Processing Method for Detection Surface Inhomogeneities from a Reflected Signal - N. Antonyuk ^{1*} , M. Klein Wolterink ¹ , S. Kataeva ² , S. Kataev ³ ¹ Staal Technologies B.V.; ² National Research Tomsk State University; ³ Tomsk State Pedagogical University		

TECHNICAL PROGRAMME



25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

Poster Area

Poster: Best of ENGEO

11:30	Mo_25_P01 - Ensuring the Sustainable Functioning of the Geotechnical System of Mineral Deposits in Difficult Engineering and Geological Conditions - I. Abaturova ^{1*} , I. Savintsev ¹ , L. Storozhenko ¹ , O. Borisikhina ² ¹ FSBEI HE "USMU"; ² GINGEO LLC
11:40	Mo_25_P02 - Solving of Hydrogeological Problems in Permafrost Zone Conditions of the Polar Part of Western Siberia by the TEM Method - D. Ageev ^{1*} , V. Ageev ² ¹ Center EMI, Ltd; ² GEMRC IPE RAS
11:50	Mo_25_P03 - Methodical Features of Studying the Geological Structure of the Coastal Part of the Sea of Okhotsk Based on the Integration of Continuous Aquatic Electrical Sounding and Seismoacoustics Data - D. Lalomov ^{1*} , V. Glazunov ² , A. Tatarskiy ³ , S. Burlutsky ⁴ , N. Efimova ⁵ ¹ Fertoing LLC; ² Saint Petersburg Mining University; ³ NPP InzGeofizika LLC; ⁴ Saint Petersburg State University; ⁵ A.P. Karpinsky Russian Geological Research Institute (VSEGEI)
12:00	Mo_25_P04 - Engineering Magnetic Survey for the Study of Underground Infrastructure of Urbanized Areas - P. Novikova ^{1*} , A. Dolgal ¹ ¹ Mining Institute UB of RAS
12:10	Mo_25_P05 - GPR Active Layer Monitoring at CALM Sites (European North) in 2015-2018 - M. Sadurtdinov ^{1*} , M. Sudakova ² , A. Tsarev ¹ , A. Skvortsov ¹ , G. Malkova ¹ ¹ Earth Cryosphere Institute Tyumen Scientific Centre SB RAS; ² Lomonosov Moscow State University
12:20	Mo_25_P06 - Distinction of SP Anomalies Between Filtration and Diffusion-Adsorption Origin - V. Shevnin ^{1*} ¹ Moscow State University
12:30	Mo_25_P07 - The Latest Trends in Near-Surface Marine Seismic Survey at Arctic Shelf - M. Tokarev ^{1,2*} , E. Biriukov ³ , V. Ivanova ³ , A. Pirogova ^{1,2} , Y. Terekhina ^{1,2} ¹ Lomonosov Moscow State University; ² LMSU Seismic Data Analysis Center; ³ LLC 'SPLIT'

12:50 Lunch Break

Poster: Mining Geophysics and Geotechnics

M.A. Couto Junior (University of São Paulo)

14:00	Mo_25_P09 - Preliminary Results of an Integrated Passive Seismic Survey at the Gerolekas Bauxite Mining Site – Central Greece - K. Polychronopoulou ^{1,2*} , C. Orfanos ^{1,2} , N. Martakis ² , D. Draganov ³ ¹ National Technical University of Athens; ² Seismotech S.A.; ³ Delft University of Technology
14:10	Mo_25_P10 - A Litho-Constrain Approach for Gravity Data Analysis at Gerolekas Bauxite Mining Area - C. Orfanos ^{1,2*} , K. Leontarakis ^{1,2} , G. Apostolopoulos ¹ ¹ National Technical University of Athens; ² Seismotech S.A.
14:20	Mo_25_P11 - Coal 3D Seismic Data Acquisition Geometry Design and Evaluation - W. Du ^{1*} , S. Peng ¹ ¹ China University of Mining and Technology (Beijing)
14:30	Mo_25_P12 - Seismic Exploration of Mineral Resources in Western Australia with Distribute Acoustic Sensing - M. Urosevic ^{1*} , A. Bona ¹ , S. Ziramov ¹ , R. Pevzner ¹ , K. Tertyshnikov ¹ , R. Martin ² , J. Dwyer ² , D. Felding ³ , C. Guarin ³ , A. Foley ⁴ ¹ Curtin University; ² HiSeis Pty Ltd; ³ Matsa Resources Ltd; ⁴ Gold Fields
14:40	Mo_25_P13 - Mine Bench-Tunnel Seismic Data Acquisition for Characterizing Shear Zones in the Siilinjärvi Phosphate Mine, Finland - A. Donczew ^{1*} , A. Malehmir ¹ , E. Koivisto ² , M. Savolainen ³ , B. Brodic ¹ ¹ Uppsala University; ² University of Helsinki; ³ Yara
14:50	Mo_25_P14 - A Geophysical Approach to the Phenomenon of Ground Fissures at the East Thessaly Basin (Greece) - J. Alexopoulos ^{1*} , S. Dilalos ¹ , G.S. Mitsika ¹ , E. Vassilakis ¹ , S.E. Poulos ¹ ¹ National and Kapodistrian University of Athens
15:00	Mo_25_P15 - Sensitivity and Uncertainty of Petrophysical Models to Predict Storage Properties in Weathered/Fractured Hard-Rock Aquifers - J.A. Mézquita González ^{1*} , J. Comte ¹ ¹ University of Aberdeen

15:20 Coffee Break

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS**Poster Area****Poster: GPR, Integrated Studies**
K. Takahashi (OYO Corporation)

15:50	Mo_25_P17 - Seismic Risk Assessment Through Spatial Integration of Seismic Hazard and Social Vulnerability in South Korea - S. Lee ^{1*} , S. Oh ¹ , B. Lee ¹ ¹ Kangwon National University
16:00	Mo_25_P18 - Reflection Polarity Estimation of GPR Data for Under-Road Cavity Detection - J. Hwang ¹ , D. Min ¹ , J. Uhm ¹ , J. Lee ^{1*} ¹ Seoul National University
16:10	Mo_25_P19 - Attributes of 2D GPR Data to Characterize Eolian-Fluvial Interaction Deposits - P. Zabala Medina ¹ , N. Bonomo ¹ , A.M. Osella ^{1*} , S. Salvo Bernárdez ² , D. Limarino ² ¹ UBA/IFIBA-CONICET; ² UBA/IGEBA-CONICET
16:20	Mo_25_P20 - Searching for the Roman Port of Emporiae Using Frequency Domain Electromagnetic Induction Method - A. Casas ^{1*} , M. Himi ¹ , R. Lovera ¹ , L. Rivero ¹ , A. Urruela ¹ , A. Sendrós ¹ , R. García ¹ ¹ University of Barcelona
16:30	Mo_25_P21 - Multimethod 3D Geophysical Survey of a Monument - The Bell Tower of Batalha Abbey - M.J. Senos Matias ^{1*} , F. Almeida ¹ , R. Moura ² , N. Barraca ³ ¹ University of Aveiro; ² University of Porto; ³ GeoAviz
16:40	Mo_25_P22 - Application of GPR for the Reconstruction of the Ancient Copper Quarry in the Trans-Urals, Russia - V. Noskevich ^{1*} , N. Fedorova ¹ , A. Yuminov ² ¹ Institute of Geophysics Ural Branch of RAS; ² South Ural Scientific Center
16:50	Mo_25_P23 - GPR Data Background Removal Using DWT - S. Ilkhanipour ^{1*} , A. Goudarzi ¹ ¹ Graduate University of Advanced Technology

10TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR**Poster Area**

15:20 Coffee Break

Poster: Engineering and Data Processing
T. Qin (Karlsruhe Institute Of Technology)

15:50	Mo_10GPR_P17 - A Tomographic Inversion Approach for Detection of Decay and Cavities in Tree Trunks Using GPR - A.M. Alani ¹ , F. Soldovieri ² , G. Gennarelli ² , I. Giannakis ¹ , I. Catapano ² , L. Lantini ¹ , G. Ludeno ² , F. Tosti ^{1*} ¹ University of West London; ² National Research Council
16:00	Mo_10GPR_P18 - Mutually Constrained Inversion of Common Offset GPR Reflection and Surface Wave Dispersion Data in Layered Media - S. Hu ^{1*} , Y. Zhao ¹ , S. Ge ² ¹ Tongji University; ² Zhejiang University of Water Resources and Electronic Power
16:10	Mo_10GPR_P19 - Critical Verification of the Underground Cartography of the Municipality Using a High Performance Ground Penetrating Radar - M. Pieraccini ¹ , L. Miccinesi ^{1*} , H. Garcia Canizares ¹ ¹ University of Florence
16:20	Mo_10GPR_P20 - Signal Artifacts in GPR Engineering Surveys - D. Campo ^{1*} ¹ Sandberg LLP
16:30	Mo_10GPR_P21 - Laboratory and Field GPR Measurements to Detect Qanats - A. Hojat ^{1*} , L. Zanzi ² , S. Karimi-Nasab ¹ , H. Ranjbar ¹ , M.H. Loke ³ ¹ Shahid Bahonar University of Kerman; ² Politecnico di Milano; ³ Geotomo Software Sdn Bhd
16:40	Mo_10GPR_P22 - Preliminary Development of a Workflow for Processing Multi-Concurrent Receiver GPR Data - D. Angelis ^{1*} , C. Warren ¹ , N. Diamanti ² ¹ Northumbria University; ² Aristotle University of Thessaloniki

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

ROOM A

ERT/SP/IP

M.A. Martinez (Universidad Politecnica de Cartagena)

ROOM B

High-Resolution Seismics I

E.N. Ruigrok (Royal Netherlands Meteorological Institute)

09:00	Tu_25th_A01 - Keynote - ERT a Tool to Protect the Cave of Lascaux - C. Sirieix ^{1*} ¹ University of Bordeaux
09:20	Tu_25th_A02 - Processing 2D ERT Data in 3D Environment - A Case Study Inside a Karstic Cave in Greece - I. Fikos ^{1*} , G. Vargemezis ¹ , C. Pennos ² , B. Lønøy ² , K. Jensen ² , J. Tveranger ³ ¹ Aristotle University of Thessaloniki; ² University of Bergen; ³ NORCE Norwegian Research Centre AS
09:40	Tu_25th_A03 - ERT and SP Measurements for the Characterization of Fault-Controlled Soil CO₂ Degassing - C. De Paola ¹ , R. Di Maio ¹ , E. Piegari ^{1*} ¹ Università di Napoli Federico II
10:00	Tu_25th_A04 - A New Approach to Incorporate Prior Information in MGS Inversion of ERT/IP Data - R. Thibaut ^{1,2*} , T. Kremer ^{3,2} , A. Royen ² , F. Nguyen ² , T. Hermans ¹ ¹ Ghent University; ² Université de Liège; ³ Université de Nantes
10:20	Tu_25th_A05 - A Homotopy Optimization Method for Non-Liner Inversion of Geoelectrical Sounding Data - Z. Esmaili ^{1*} , R. Ghanati ¹ , M.K. Hafizi ¹ ¹ University of Tehran

10:40 Coffee Break

FWI

A. Malehmir (Uppsala University)

GPR

A. Fediuk (Christian-Albrechts-University Kiel)

11:10	Tu_25th_A06 - Time-Lapse Target-Oriented Crosswell Full Waveform Inversion without Downhole Sources - S. Minato ^{1,2*} , R. Ghose ¹ ¹ Delft University of Technology; ² OYO Corporation
11:30	Tu_25th_A07 - High-Resolution Imaging of the Shallow Subsurface with Elastic Full Waveform Inversion of Surface and Body Waves - A. Adwani ^{1*} , M. Danilouchkine ¹ , A. Soni ¹ , R. Plessix ¹ , F. Ten Kroode ¹ , S. Abri ² , F. Ernst ² , F. Alshukaili ² ¹ Shell Global Solutions International B.V.; ² Petroleum Development Oman
11:50	Tu_25th_A08 - Compact Full Waveform Inversion by Model Space Re-Parameterization - L. Xu ^{1*} , E. Manukyan ¹ , H. Maurer ¹ ¹ ETH Zurich
12:10	Tu_25th_A09 - Shallow-Seismic Wavefield Scattering and Implications for Viscoelastic FWI - N. Athanasopoulos ^{1*} , T. Bohlen ¹ ¹ Karlsruhe Institute of Technology
12:30	Tu_25th_A10 - A Workflow Allowing Multiple-Point Statistics Realizations to Reveal Where We Lack Information - M.L. Gulbrandsen ^{1*} , N. Jensen ¹ , T.M. Hansen ² ¹ •GIS A/S; ² Aarhus University

12:50 Lunch Break

09:00	Tu_25th_B01 - Recording Longer for Higher-Resolution Near-Surface Imaging - Shear-Wave Reflections from Vertical Sources and Receivers - A. Malehmir ^{1*} ¹ Uppsala University
09:20	Tu_25th_B02 - High-Resolution Seismic Imaging Using a 2C Land Streamer System - T. Szabó ^{1*} , T. Toth ¹ , Z. Hamori ¹ , V. Németh ¹ , P. Filipowski ¹ ¹ Geometa Ltd
09:40	Tu_25th_B03 - Comparison of Site H/V Spectral Ratio and Predominant Frequency by Using Microtremor and Earthquake Data - K.H. Coban ^{1*} , N. Sayil ¹ ¹ Karadeniz Technical University
10:00	Tu_25th_B04 - Seismic Imaging Using Electromagnetic Vibrators - Storm versus Lightning - B. Brodic ¹ , R. De Kunder ^{2*} , P. Ras ⁴ , J. Van den Berg ³ , A. Malehmir ¹ ¹ Uppsala University; ² Seismic Mechatronics; ³ Delft University of Technology; ⁴ Geophysical Consultant
10:20	Tu_25th_B05 - Detection of Near-Surface Heterogeneities at Archaeological Sites Using Seismic Diffractions - J. Liu ^{1*} , Q. Bourgeois ² , R. Ghose ¹ , D. Draganov ¹ ¹ Delft University of Technology; ² Leiden University

11:10	Tu_25th_B06 - Identification and Recognition of Landmine Internal Structure Scattering Contribution from GPR Data - F. Lombardi ^{1*} , M. Lualdi ¹ , F. Picetti ¹ , P. Bestagini ¹ ¹ Politecnico di Milano
11:30	Tu_25th_B07 - Application of Ground Penetrating Radar to Study the Sedimentary Architecture of an Ilmenite Beach Placer, Brazil - M. Barsottelli-Botelho ^{1*} , R. Brito ¹ ¹ Federal University of Bahia
11:50	Tu_25th_B08 - Tree Inspection by GPR Reflection and Transmission Measurements - K. Takahashi ^{1*} , K. Aoike ¹ , K. Kajino ¹ , Y. Ashiba ¹ , K. Kaneko ¹ , N. Ishizawa ¹ ¹ OYO Corporation
12:10	Tu_25th_B09 - Integrating Resistivity and GPR Data for Plant Root Study in Indoor Agricultural Environments - A.G. Gereia ^{1*} , A.E. Mihai ¹ , P. Atkins ¹ ¹ University of Birmingham
12:30	Tu_25th_B10 - The Use of Resistivity to Complement GPR Surveys on Tree Roots in Urban Areas - A. Mihai ^{1*} , A. Gereia ¹ , P. Atkins ¹ ¹ University of Birmingham

TECHNICAL PROGRAMME

1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM		10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM D		ROOM F	
Infrastructure Planning and Assessment, BIM Tools A.A. Pfaffhuber (EMerald Geomodelling / NGI)		Systems, Antennas and New Developments C. Warren (Northumbria University)	
09:00	Tu_INFRA_01 - Keynote - Identifying the Research Needs for Developing a Digital Buried Infrastructure Management Practice - L. Olde Scholtenhuis ^{1*} ¹ University of Twente	09:00	Tu_10GPR_01 - Field Experiments to Investigate Cross-polarization Characteristics of a Dipole Array Antenna in a Water-filled Borehole - S. Ebihara ^{1*} , K. Toyozawa ¹ , T. Hasegawa ¹ ¹ Osaka Electro-Communication Univ.
09:20	Tu_INFRA_02 - Ground Penetrating Radar Survey for the Assessment of a Urban Underground Tunnel - F. Lombardi ¹ , M. Lualdi ^{1*} ¹ Politecnico di Milano	09:20	Tu_10GPR_02 - Reconfigurable GPR Systems - Achievements, Errors and Perspectives - R. Persico ^{1,2*} ¹ IBAM-CNR; ² International Telematic University Uninettuno
09:40	Tu_INFRA_03 - BIM - The Key for Implementation of Geophysics in Infrastructure Planning - M. Svensson ^{1*} , O. Friberg ¹ ¹ Tyréns AB	09:40	Tu_10GPR_03 - Badger Project - GPR System Design on Board on a Underground Drilling Robot - A. Simi ^{1*} , D. Pasculli ¹ , G. Manacorda ¹ ¹ IDS Georadar s.r.l.
10:00	Tu_INFRA_04 - The Use of Geophysics in Large Swedish Infrastructure Projects - J. Gustafsson ^{1*} ¹ Tyréns AB	10:00	Tu_10GPR_04 - The Gopher Antenna - A New Efficient Design for Ground Penetrating Radar - V. Voipio ^{1*} ¹ Aalto University
10:20	Tu_INFRA_05 - Keynote - Multi Source for Digital Underground Constructions - P. Dohmen ^{1*} ¹ Amberg Group AG	10:20	Tu_10GPR_05 - A New Drone-Borne GPR for Soil Moisture Mapping - K. Wu ^{1*} , G. Rodriguez ¹ , M. Zajc ¹ , E. Jacquemin ¹ , M. Clement ¹ , A. De Coster ¹ , S. Lambot ¹ ¹ Universite Catholique de Louvain
10:40	Coffee Break		
	Detection and Localization of Underground Objects and Buried Utilities C.M. Krawczyk (GFZ German Research Centre for Geosciences)		
11:10	Tu_INFRA_06 - Beyond Locating - Resolving Unique Underground Utilities with a Handheld-Sized Stepped-Frequency Continuous-Wave (SFCW) GPR - M. Kaufmann ^{1*} , I. Tsalicoglou ¹ ¹ Proceq SA		
11:30	Tu_INFRA_07 - Ground Penetrating Radar for Site Investigations and Utility Locating – Case Studies from Leipzig and Dresden - F. Köllner ^{1*} , A. Schuck ¹ ¹ Geophysik und Geotechnik Leipzig GmbH		
11:50	Tu_INFRA_08 - Detecting the Position of Impermeable Membranes Buried in the Subsurface - P. Kruiver ^{1*} , M. Karaoulis ¹ , B. Beuving ² , M. De Kleine ¹ , V. Hopman ¹ ¹ Deltares; ² Rijkswaterstaat		
12:10	Tu_INFRA_09 - The Impact of Spatial Sampling and Polarisation in GPR Survey for Utility Mapping - F. Lombardi ¹ , M. Lualdi ^{1*} ¹ Politecnico di Milano		
12:30	Tu_INFRA_10 - Keynote - Geophysical Practice of UXO Detection - S. Van der Baan ^{1*} ¹ T&A Survey BV		
12:50	Lunch Break		

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS			
ROOM A		ROOM B	
Environmental and Hydrogeophysics I Presenter: A. Gonzalez Quiros (University of Aberdeen)		Integrated Studies I V. Balkov (IPGG SB RAS)	
14:00	Tu_25th_A11 - Geophysical Monitoring of Redox Influenced Degradation Near the Water Table - P.M. Fernandez ¹ , E. Bloem ^{2*} , H.K. French ^{1,2} , A. Binley ³ ¹ Norwegian University of Life Sciences; ² Norwegian Institute of Bioeconomy Research; ³ Lancaster University	14:00	Tu_25th_B11 - Integrated Analysis of Geophysical Data Using a Data Mining Approach - K. Sabor ^{1,2*} , D. Jougnot ¹ , R. Guerin ¹ , L. Apfel ² , B. Steck ² ¹ Sorbonne Université; ² EDF R&D
14:20	Tu_25th_A12 - Geophysical Monitoring of Initiated In-Situ Bioremediation of Chlorinated Solvent Contamination - A. Nivorlis ¹ , T. Dahlin ^{1*} , M. Rossi ¹ ¹ Lund University	14:20	Tu_25th_B12 - An Optimal Combination of Geophysical Methods to Image Geological Structures - B. Owoc ^{1*} , A. Marciniak ¹ , S. Kowalczyk ² , J. Dzierżek ² , M. Majdański ¹ ¹ Institute of Geophysics Polish Academy of Sciences; ² University of Warsaw
14:40	Tu_25th_A13 - Mapping Sediment Contamination with a Gamma-Ray Spectrometer, Underwater and on Land - R. Koomans ^{1*} , Van der Veeke ^{1,2} , P. Jacobs ² , H. Limburg ¹ ¹ Medusa Explorations; ² Tauw	14:40	Tu_25th_B13 - Enhancing Time-Lapse Geoelectrical Models of Soil Moisture Dynamics with a-priori X-Ray CT Derived Information - M. Cimpoiasu ^{1,2*} , O. Kuras ¹ , T. Pridmore ² , S. Mooney ² ¹ British Geological Survey; ² University of Nottingham
15:00	Tu_25th_A14 - An Integrated Methodology for Hydrogeological Assessment around Industrial Installations - M. Claprood ^{1*} , C. Couegnas ² , E. Gloaguen ¹ , M. Krimissa ² , D. Paradis ³ ¹ Institut National de la Recherche Scientifique; ² Electricité de France; ³ Geological Survey of Canada	15:00	Tu_25th_B14 - Co-Operative Inversion of Multi-Channel Analysis of Surface Waves and Electrical Resistivity Tomography Using Fuzzy Clustering Approach - D.T. Kieu ¹ , A. Kepic ^{2*} , K. Suto ³ ¹ Hanoi University of Mining and Geology; ² Curtin University; ³ Terra Australis Geophysics Pty Ltd

Poster presentations | 10/09/2019

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS	
Poster Area	
Poster: Potential Field and Electromagnetic Methods J.J. Larsen (Aarhus University)	
09:00	Tu_25_P01 - Landslide Investigation and Monitoring Using Self-Potential Methods - C. Sujitapan ^{1*} , M. Kendall ¹ , J.S. Whiteley ^{1,2} , J.E. Chambers ² , S. Uhlemann ³ ¹ University of Bristol; ² British Geological Survey; ³ Lawrence Berkeley National Laboratory
09:10	Tu_25_P02 - Detection of Capacitive Couplings in Ground-Based TEM Data with a 1D Convolutional Neural Network - T. Frederiksen ¹ , J.J. Larsen ^{1*} ¹ Aarhus University
09:20	Tu_25_P03 - Airborne Electromagnetic and Radiometric Peat Mapping – a Case Study from a Bog in Germany - B. Siemon ^{1*} , M. Ibs-von Seht ¹ , S. Frank ² ¹ Federal Institute for Geosciences and Natural Resources; ² State Authority for Mining, Energy and Geology
09:30	Tu_25_P04 - Long Term Variation of Geomagnetic Curvature Recorded by Absolute Measurement in Different INTERMAGNET Observatories (Comprehensive Study) - A. Csontos ^{1*} ¹ Mining and Geological Survey of Hungary
09:40	Tu_25_P05 - Analysis of Influence of the Data-Selection Procedure on 3-D MT Inversion Using Gyeongju Data in Korea - J. Uhm ^{1*} , J. Heo ¹ , D. Min ¹ , S. Oh ² , H. Chung ³ ¹ Seoul National University; ² Kangwon National University; ³ Human & Earth Inc.
09:50	Tu_25_P06 - On a New Method of Detecting Layer Boundaries at the Borehole Measurements by Gamma Logging - S. Kataev ^{1*} , S. Kataeva ² , A. Miller ³ ¹ Tomsk State Pedagogical University; ² Tomsk State University; ³ Saint Petersburg Mining University
10:00	Tu_25_P07 - Development of 3D Inversion Algorithm for Time-Domain Airborne Electromagnetic Data - S. Jeong ^{1*} , M. Yi ¹ , A. Johmori ² , Y. Sasaki ³ ¹ Korea Institute of Geoscience and Mineral Resources; ² Neoscience Co. Ltd.; ³ Tansa Geophysical Co. Ltd.
10:10	Tu_25_P08 - Magnetic Exploration of Cooper-Iran Deposits in the Exploration Area of Sahl-Abad, Eastern Iran - M. Saeidnezhad ^{1*} , S. Keshavarzipourtafti ¹ ¹ University of Tehran
10:40	Coffee Break

1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM		10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
ROOM D		ROOM F	
New and Emerging Technologies M. van der Meijde (University of Twente)			
14:00	Tu_INFRA_11 - Application Benefits of Using Downhole Magnetic Resonance and Wireline Geophysical Logging for Geotechnical Ground Investigation Projects - D. Gartner ¹ , B. Rigler ^{1*} ¹ Fugro Geoservices Ltd.		
14:20	Tu_INFRA_12 - Satellite Based Radar Technology for Asset Management During Large-Scale Transport Infrastructure Projects - R. Frauenfelder ^{1*} , M. Vöge ¹ , A. Pfaffhuber ¹ , C. Hauser ¹ ¹ Norwegian Geotechnical Institute		
14:40	Tu_INFRA_13 - Fibre-Optic Strain Sensing: Game Changer for (Urban) Seismic Surveying? - C. Krawczyk ^{1,2*} , P. Jousset ¹ , T. Reinsch ¹ ¹ GFZ German Research Centre for Geosciences; ² TU Berlin		
15:00	Tu_INFRA_14 - Keynote - Fibre-Optic Distributed Sensing for Infrastructure Objects and Near-Surface Monitoring - M. Karrenbach ^{1*} ¹ OptaSense		

Poster presentations | 10/09/2019

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS	
Poster Area	
Poster: ERT, SP, IP, Complex Resistivity	
M.H. Loke (Geotomo Software Sdn Bhd)	
11:10	Tu_25_P11 - Identifying Sedimentary Facies in Mediterranean Ephemeral Channels (MEC) by Using of Electrical Resistivity Tomography - M.A. Martínez-Segura ^{1*} , C. Conesa García ² , M.D. Vázquez-Maza ¹ , M.C. García-Nieto ¹ , P. Pérez Cutillas ² ¹ Universidad Politécnica de Cartagena; ² Universidad de Murcia
11:20	Tu_25_P12 - Geometrical Characterisation of a Marine Intrusion by Utilising Electrical Resistivity Tomography - M.D. Vázquez-Maza ^{1*} , M.A. Martínez-Segura ¹ , M.C. García-Nieto ¹ ¹ Universidad Politécnica de Cartagena
11:30	Tu_25_P13 - Electrical Resistivity Tomography (ERT) Applied to the Characterization of Fractured and Weathered Zones in Subsurface Granites - R. García ^{1,2} , M. Himi ¹ , L. Rivero ^{1,2} , L. Camarero ³ , A. Urruela ¹ , R. Lovera ^{1,2} , A. Sendrós ^{1,2} , A. Casas ^{1,2*} ¹ University of Barcelona; ² Water Research Institute; ³ Centre of Advanced Studies of Blanes
11:40	Tu_25_P14 - Numerical Estimation of Geoelectrical Data Errors - Comparison with the Method of Reciprocal Measurements - P. Martinelli ^{1,2} , V. Grünhut ^{2,3} , P. Bordon ^{1,2} , F.E. Robledo ⁴ , M.E. Franzoni ⁴ , A.M. Osella ^{1,2*} ¹ University of Buenos Aires; ² CONICET; ³ Austral University; ⁴ CNEA
11:50	Tu_25_P15 - Modular Resistivity Device for Physical Model Studies - M. De la Vega ¹ , V. Bongiovanni ² , A.M. Osella ^{1*} ¹ UBA/IFIBA-CONOCET; ² Universidad Austral/CONICET
12:00	Tu_25_P16 - Simultaneous Inversion of Multi-Channel IP Data with Structural Similarities - M. Yi ^{1*} , J. Kim ¹ ¹ Korea Institute of Geoscience and Mineral Resources
12:10	Tu_25_P17 - Theoretical Fundamentals to Obtain Complex Permittivity and Resistivity in CR Method - A. Lucuy ¹ , M.V. Bongiovanni ¹ , V. Grünhut ¹ , A.M. Osella ^{2*} ¹ Universidad Austral; ² Universidad de Buenos Aires
12:20	Tu_25_P18 - Combined GPR and ERT Survey at the Marathon (Plasi) Archaeological Excavation Site - J.D. Alexopoulos ^{1*} , N. Voulgaris ¹ , S. Dilalos ¹ , N. Souglakos ¹ , G.S. Mitsika ¹ , Y. Papadatos ¹ ¹ National and Kapodistrian University of Athens
12:30	Tu_25_P19 - High Resolution Electrical Resistivity Tomography Imaging of a Coastal Mine Tailings Deposit, Portman Bay, SE Spain - A. Urruela ¹ , M. Canals ¹ , L. Rivero ^{1,2} , M. Himi ¹ , A. Casas ^{1,2*} , R. Lovera ^{1,2} , R. García ^{1,2} , A. Sendrós ^{1,2} , J. Frigola ¹ , D. Amblàs ¹ ¹ University of Barcelona; ² Institut de Recerca de l'Aiguà
12:50	Lunch Break

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS**Poster Area****Poster: High-Resolution Seismic A**

S. Minato (Delft University of Technology)

14:00	Tu_25_P21 - Near Surface Seismic Reflection Survey - A Comparison of P- and S-waves Vibratory Seismic Sources - F. Gallais ^{1*} , K. Becker ¹ , M. Le Feuvre ¹ , M. Verdurme ² , P. Côte ¹ ¹ IFSTTAR; ² Spectrum Geo Ltd
14:10	Tu_25_P22 - Seismic Imaging of the First 30-Meter Weathered Layer in a Karst Environment (H+, Poitiers) - M. Dangeard ^{1*} , J.L. Mari ¹ ¹ Sorbonne Université
14:20	Tu_25_P23 - Effects of Physical and Acquisition Parameters on Fundamental Dispersion Curve in MASW Method - H. Karsli ^{1*} , M. Şenkaya ¹ ¹ Karadeniz Technical University
14:30	Tu_25_P24 - A Comparison of Multiple Attenuation Strategies for Shallow Water Ultra-High-Resolution (UHR) Seismic Reflection Data - S. Rosales Starcevic ^{1*} , G. Provenzano ¹ , T.J. Henstock ¹ ¹ University of Southampton
14:40	Tu_25_P25 - Wave-Equation Datuming Applied to Very High-Resolution Deep-Towed Multichannel Seismic Data - F. Colin ^{1*} , S. Ker ¹ , B. Marsset ¹ ¹ Ifremer
14:50	Tu_25_P26 - Rock Masses Characterisation Using High Frequency Piezoelectric Systems - A. Butcher ^{1*} , A. Ridsdale ¹ , J. Kendall ¹ ¹ University of Bristol
15:00	Tu_25_P27 - Global Inversion of Pressure Dependent Acoustic Velocity Data Based on a New Double Relaxation Model - J. Somogyine Molnar ^{1,2*} , T.E. Dobroka ³ , T. Ormos ² , M. Dobroka ^{1,2} ¹ MTA-ME Geoengineering Research Group; ² University of Miskolc; ³ Research Institute of Applied Earth Science

1ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE**Poster Area****Poster: Geophysical Methods for Geothermal Utilization I**

09:00	Tu_1GEOT_P01 - Combination of Electrical Resistivity Tomography and Seismic Refraction Methods to Characterize Sandstone Deposits - J. Tristany ¹ , M. Himi ¹ , R. Lovera ¹ , A. Urruela ¹ , R. Garcia ¹ , A. Sendrós ¹ , L. Rivero ¹ , A. Casas ^{1*} ¹ University of Barcelona
09:20	Tu_1GEOT_P03 - Persistent Permian Remagnetization in the Paleozoic Formations of the Illizi Basin (Algeria) - Magnetic and Gravimetric Constraints - A. Lamali ^{1*} , L. Hamai ¹ , N. Merabet ¹ , A. Yelle-Chaouche ¹ , A. Abtout ¹ , B. Henry ² , S. Maouche ¹ , M. Amenna ¹ , M. Hamoudi ³ ¹ Centre de Recherche en Astronomie, Astrophysique et Géophysique; ² Institut de Physique du Globe de Paris; ³ Université des Sciences et de la Technologie Houari-Boumediène
09:40	Tu_1GEOT_P05 - Geophysical Signatures on Mesoproterozoic Chimakurti Anorthosite-Gabbro (CAG) complex, Eastern Ghat Belt, India - Understanding the Magmatic Processes - S. Krishnamacharyulu ^{1*} , K. Vijaya Kumar ¹ ¹ Swami Ramanand Teerth Marathwada University
10:00	Tu_1GEOT_P07 - Structural Mapping of the SE Mediterranean and NE Egyptian Coastal Zone Using Geophysical Data Analysis - M. Elwan ^{1*} , A.A. Shendi ² , S. Saleh ¹ , K. Mamoun ² ¹ National Research Institute of Astronomy and Geophysics; ² Suez Canal University

10:40 Coffee Break

Poster: Geophysical Methods for Geothermal Utilization II

11:10	Tu_1GEOT_P11 - A Review of the Geodynamic Evolution of the Onshore-Offshore Central Algerian Margin Constrained by Gravity Data - L. Hamai ^{1*} , A. Lamali ¹ , A. Abtout ¹ , A. Yesses-Chaouche ¹ , A. Boudelaa ³ , J. Deverchere ² , S.S. Bougchiche ¹ , W. Bacha ¹ , L. Djadia ¹ ¹ Centre de Recherche en Astronomie, Astrophysique et Géophysique; ² Univ. Brest - CNRS, Laboratoire Géosciences Océan; ³ Université des Sciences et de la Technologie Houari-Boumediène
11:30	Tu_1GEOT_P13 - Modeling Thermal Energy Storage in Rocks - A. Santos ¹ , F. Almeida ^{1*} ¹ Aveiro University
11:50	Tu_1GEOT_P15 - Laboratory SIP Responses for Artificial Sulfide Minerals - S. Park ^{1*} , S.W. Shin ¹ , M.K. Park ² ¹ Korea Institute of Geoscience & Mineral Resources; ² Geosense, Inc.
12:10	Tu_1GEOT_P17 - Combined Seismic and GPR Surveys Supporting Dynamic Modelling of River Evolution - T. Toth ^{1*} , M. Kóbor ¹ , Z. Kádi ¹ , Z. Hamori ¹ , S. Baranya ² , G. Török ² ¹ Geomega Ltd; ² Technical University Budapest
12:30	Tu_1GEOT_P19 - Estimation of the Potential of CO₂ Storage in the Tampico Misantla Oil Province, Mexico - M. Cerca ^{1*} , E. Medina-Romero ¹ , C. Cortéz-Prado ¹ , G. Levresse ¹ , D. Carreón-Freyre ¹ ¹ Universidad Nacional Autónoma de México
12:50	Lunch Break

1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	
Poster Area	
Poster: Geophysical Methods for Geothermal Utilization III	
14:00	Tu_1GEOT_P21 - Variations of the Geomagnetic Field before the 6.2-Magnitude Earthquake of Central Italy in 2016 - S. Nourbakhsh ¹ , A. Hojat ^{1*} , M. Montahaei ² ¹ Shahid Bahonar University of Kerman; ² University of Tehran
14:20	Tu_1GEOT_P23 - Gravity Map Compilation and 2D Gravity Model in the Avinyó Area (Catalonia-Spain) - E. Álvarez ¹ , M. Himi ¹ , R. Garcia ^{1,2} , A. Urruela ¹ , R. Lovera ^{1,2} , A. Sendrós ^{1,2} , A. Casas ^{1,2} , L. Rivero ^{1,2*} ¹ University of Barcelona; ² Water Research Institute
14:40	Tu_1GEOT_P25 - Determination of the Radiation Pattern of a Piezoelectric Source Using Numerical Methods - D. Pageot ^{1*} , D. Leparoux ¹ , Y. Capdeville ² ¹ IFSTTAR-GeoEND; ² Université de Nantes
15:00	Tu_1GEOT_P27 - FD Modelling of Deeply-Buried Paleo-Dolines underneath the City of Munich - A. Sell ² , H. Bunes ^{1*} , J. Ziesch ^{1,3} , D. Tanner ¹ , A. Weller ² ¹ Leibniz Institute for Applied Geophysics; ² Clausthal University of Technology; ³ State Authority for Mining, Energy and Geology

10 TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR	
Poster Area	
Poster: Safety and Security, Modeling, Machine Learning and Geological Applications	
K. Almutairi (King Abdulaziz City for Science and Technology)	
14:00	Tu_10GPR_P21 - GPR for Preventive Conservation and Valorisation of Buried Archaeology - L. Bianchini Ciampoli ¹ , R. Santarelli ¹ , F. Tosti ² , A. Benedetto ¹ , L. Lantini ^{2*} ¹ Roma Tre University; ² University of West London
14:10	Tu_10GPR_P22 - Extraction and Sparse Representation of GPR Landmine Echo Signal - X. Tang ^{1*} ¹ Chinese Academy of Sciences
14:20	Tu_10GPR_P23 - The Poor Performance of Histogram of Oriented Gradients (HOG) for Buried Threat Detection in Ground-penetrating Radar - J. Malof ^{1*} , D. Reichman ¹ , L. Collins ¹ ¹ Duke University
14:30	Tu_10GPR_P24 - Mathematic Physical Equivalency of 2D Pure Waves in Seismics and Electromagnetics - T. Qin ^{1*} , T. Bohlen ¹ ¹ Karlsruhe Institute of Technology
14:40	Tu_10GPR_P25 - Quasi-Measurement Pitch Change - A New Framework for Machine Learning on GPR - R. Ogura ^{1*} , T. Miyata ¹ ¹ Chiba Institute of Technology
14:50	Tu_10GPR_P26 - Estimation of Local Objects Geometric Parameters Influence on GPR Wave Field by a Physical Approach - A. Rodionov ^{1*} , P. Ryazantsev ¹ ¹ Institute of Geology Karelian Research Centre of the Russian Academy of Sciences
15:00	Tu_10GPR_P27 - Integrating TDR and GPR Methods to Study the Structure of Peatland - P. Ryazantsev ^{1*} ¹ Karelian Research Centre of the Russian Academy of Sciences
15:10	Tu_10GPR_P28 - Investigation of the Characteristics of the Soil by Means of TDR Probes - R. Persico ^{1,2*} , I. Farhat ³ , L. Farrugia ³ , C. Sammut ³ ¹ IBAM-CNR; ² International Telematic University Uninettuno; ³ University of Malta



25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

ROOM A

Geophysics for Geotechnics

09:00	We_25th_A01 - Delineation of Dead-End Structure of Thin Sand Layer by ERT and Cylinder Electrode CCR Survey - C. Konishi ^{1*} , Y. Yamashita ¹ , K. Takahashi ¹ , D. Kurata ¹ , A. Shinsei ¹ ¹ OYO Corporation
09:20	We_25th_A02 - Dynamical Changes of Foundation Displacements and Local Seismic Activity Occurred During Construction of Enguri Arch Dam - T. Matcharashvili ^{1*} , T. Chelidze ¹ , N. Zhukova ¹ , E. Mepharidze ¹ , A. Sborshchikov ¹ , D. Tephnadze ¹ , L. Laliashvili ¹ ¹ Ivane Javakishvili Tbilisi State University
09:40	We_25th_A03 - Combined 3D Inversion of Ground and Airborne Electromagnetic Data over Iron Ore in Kiruna - M. Smirnova ^{1*} , N. Juhojuntti ² , M. Becken ³ , M. Smirnov ⁴ , P. Yogeshwar ¹ , A. Steuer ⁵ , R. Rochlitz ⁶ , M. Schifferl ⁷ , DESMEX ¹ University of Cologne; ² Luossavaara-Kiirunavaara AB; ³ University of Muenster; ⁴ Lulea University of Technology; ⁵ Federal Institute for Geosciences and Natural Resources; ⁶ Leibniz Institute of Applied Geophysics; ⁷ Leibniz Institute of Photonic Technologies
10:00	We_25th_A04 - ERT Survey for Identifying Mine Shafts in a Area of Municipality of Höganäs, Sweden - J. Siikanen ^{1*} , E. Lindvall ¹ , A. Fouskopoulos Larsson ¹ ¹ Tyréns AB
10:20	We_25th_A05 - Assessment of Water-Protective Sequence at the Verkhne-Kamsky Deposit of Salts from 3D Inversion Results of EMS-IP - A. Belova ^{1*} , Y. Davydenko ^{1,2} , A. Zhukov ³ , D. Bogdanovich ¹ , S. Bukhalov ¹ , M. Shkirya ² , K. Aboornev ² ¹ Irkutsk National Research Technical University; ² JSC Gelios; ³ JSC UralKaliy

10:40 Coffee Break

High-Resolution Seismics II

T. Toth (Geomega Ltd.)

11:10	We_25th_A06 - Imaging Near Surface Scatterers by Scattered Surface Waves - Revamping an Inverse Scattering Code - U. Harmankaya ¹ , A. Kaslilar ^{2*} ¹ Istanbul Technical University; ² Uppsala University
11:30	We_25th_A07 - Near-Surface Geophysical Imaging of the Permafrost – Initial Result of Two High Arctic Expeditions to Spitsbergen - A. Marciniak ^{1*} , B. Owoc ¹ , T. Wawrzyniak ¹ , A. Nawrot ¹ , M. Glazer ² , M. Osuch ¹ , W. Dobirński ² , M. Majdański ¹ ¹ Institute of Geophysics Polish Academy of Sciences; ² University of Silesia
11:50	We_25th_A08 - Seismic Monitoring and Site-Characterization with Near-Surface Vertical Arrays - E. Ruigrok ^{1,2*} , B. Dost ¹ ¹ Royal Netherlands Meteorological Institute; ² Utrecht University
12:10	We_25th_A09 - High-Resolution Crosshole Seismic Tomography (CST) Studies on Nuclear Power Plant Foundation Site - V. Ignatev ^{1*} , A. Konkov ¹ , I. Polikarpov ¹ , A. Shuvalov ² , A. Oshkin ³ ¹ Geodevice LLC; ² Saint Petersburg State University; ³ Neogen LLC
12:30	We_25th_A10 - Automated Fracture Point Calculation Procedure - I. Ravimo ^{1*} , K. Tiensuu ¹ , E. Heikkinen ¹ ¹ Poyry Finland Oy

12:50 Lunch Break

ROOM B

Urban/Mining Geophysics

A. Urruela Garcia (University of Barcelona)

09:00	We_25th_B01 - Complex Geophysical Research of Near Surface Sustainability of Mining Waste-Storages in Central Ukraine - O. Tiapkin ^{1*} , O. Kendzera ² , P. Pihulevskiy ² , M. Dovbnich ¹ ¹ Dnipro University of Technology; ² Institute of Geophysics
09:20	We_25th_B02 - Characterization of a Mine Waste Rock Pile with the DC Resistivity and Induced Polarization (DC-IP) Method - C. Power ¹ , P. Tsourlos ^{2*} ¹ Western University; ² Aristotle University of Thessaloniki
09:40	We_25th_B03 - Imaging of a Waste Deposit Site Near Cologne City, Germany Using Magnetic and ERT Methods - I. Ibraheem ^{1*} , B. Tezkan ¹ , R. Bergers ¹ ¹ University of Cologne
10:00	We_25th_B04 - Geophysical Survey of the Grand Place in Brussels - An Example of Prospection in an Urban Context - A. Tabbagh ^{1*} , M. Dabas ³ , F. Blary ² , G. Catanzariti ⁴ , P. Charruadas ² , S. Flageul ¹ , B. Van Nieuwenhoeve ² , P. Sosnowska ² ¹ Sorbonne Université; ² Université Libre de Bruxelles; ³ Centre National de la Recherche Scientifique; ⁴ 3DGeoimaging
10:20	We_25th_B05 - Seismic Interferometry for Surface-Wave Attenuation - A Case Study from the Ludvika Mines of Sweden - F. Balestrini ^{1*} , D. Draganov ¹ , A. Malehmir ² , P. Marsden ³ , R. Ghose ¹ ¹ Delft University of Technology; ² Uppsala University; ³ Nordic Iron Ore AB

Mining Geophysics

M. Smirnova (University of Cologne)

11:10	We_25th_B06 - Metallogenic Mechanism of the North Qinhang Belt, South China, from Gravity and Magnetic Inversions - Y. Liu ^{1*} , Q. Lu ¹ , C. Farquharson ² , J. Yan ¹ ¹ Chinese Academy of Geological Sciences; ² Memorial University of Newfoundland
11:30	We_25th_B07 - Geophysical Investigation for Delineating Structures Favorable to Uranium Mineralization in Al-Amerat, Sultanate of Oman - S. Narasimhan ^{1*} , E. A ¹ , P. Bernhard ¹ , T. Al-Hosni ¹ ¹ Sultan Qaboos University
11:50	We_25th_B08 - Surface-Wave Tomography at Mining Sites - A Case Study from Central Sweden - M. Papadopoulou ^{1*} , F. Da Col ¹ , L.V. Socco ¹ , S. Hu ² , E. Bäckström ³ , M. Schön ³ , P. Marsden ³ , A. Malehmir ⁴ ¹ Politecnico di Torino; ² Tongji University; ³ Nordic Iron Ore AB; ⁴ Uppsala University
12:10	We_25th_B09 - AEMIP Inversion for Gold Exploration Using Maximum Phase Angle Parameterization - Case in Quadrilátero Ferrífero Area, Brazil - M.A. Couto Jr. ^{1,2*} , G. Fiandaca ³ , P.K. Maurya ³ , E. Auken ³ , A.V. Christiansen ³ , J.L. Porsani ² ¹ Geological Survey of Brazil; ² Universidade de São Paulo; ³ Aarhus University
12:30	We_25th_B10 - CSAMT Soundings in the Band 16 - 50 000 Hz for the Study of Salt Deposit - A. Simakov ^{1*} , A. Shlykov ² , A. Konkov ¹ , V. Ignatev ¹ ¹ Geodevice LLC; ² Saint Petersburg State University

1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	
ROOM C	
Seismic Methods for Geothermal Exploration and Monitoring I	
09:00	We_1GEOT_01 - Potential of Ambient Seismic Noise Methods in a Geothermal Context - P. Sanchez-Pastor ^{1*} , A. Obermann ¹ ¹ ETH Zürich
09:20	We_1GEOT_02 - Near-Surface Geophysical Investigation for Characterization of a Volcanic Geothermal Reservoir by Active-Seismic-Data Tomography and Attenuation - G. Bohm ^{1*} , F. Poletto ¹ , E. Barison ¹ ¹ Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
09:40	We_1GEOT_03 - Offset-Gap Compensation by Seismic Interferometry for Shallow Signals of Active-Seismic Lines Acquired in a Superhot-Geothermal Field - E. Barison ^{1*} , F. Poletto ¹ , B. Farina ¹ ¹ Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
10:00	We_1GEOT_04 - Multicomponent Seismic Recording for the Exploration of a Deep Carbonate Geothermal Reservoir in Southern Germany - B. Wawerzinek ^{1,2} , H. Bunes ^{1*} , H. Von Hartmann ¹ ¹ Leibniz Institute for Applied Geophysics; ² Helmholz Zentrum Potsdam
10:20	We_1GEOT_05 - Use of Global-Local FWI of Seismic Land Data Acquired in a Geothermal Exploration Area - A. Tognarelli ^{1*} , E. Stucchi ¹ , A. Mazzotti ¹ ¹ University of Pisa
10:40	Coffee Break
Seismic Methods for Geothermal Exploration and Monitoring II	
F. Poletto (Nat. Inst. of Oceanography & Exp. Geophysics OGS)	
11:10	We_1GEOT_06 - Determining the Seismic Response Characteristics of KTU Farabi Hospital by Using Single Station Microtremor Method - O. Akin ^{1*} , N. Sayil ¹ ¹ Karadeniz Technical University
11:30	We_1GEOT_07 - Accelerating Geothermal Energy Projects in the Netherlands Through Acquisition of High Quality Long-Offset 2D Seismic - J. Rehling ^{1*} , E. Siemerink ¹ , M. Ter Borgh ¹ , G. Zaalberg-Metselaar ¹ ¹ EBN B.V.
11:50	We_1GEOT_08 - De-Risking Geothermal Plays by Seismic Reservoir Characterisation - E. Dalgaard ^{1*} , K. Bredesen ² , A. Mathiesen ² , N. Balling ³ ¹ Qeye; ² Geological Survey of Denmark and Greenland; ³ Aarhus University
12:10	We_1GEOT_09 - Seismic Reflection Imaging of Fractures Using Least-Squares Migration and Linear-Slip Theory - Laboratory and Numerical Tests - S. Minato ^{1,2*} , R. Ghose ¹ , K. Wapenaar ¹ ¹ Delft University of Technology; ² OYO Corporatoin
12:30	We_1GEOT_10 - Reconstruction of Pressure and Shear Wave Velocity Profiles from Ambient Noise Tomography - A. Konkov ^{1,2*} , S. Manakov ¹ ¹ Institute of Applied Physics; ² Geodevice LLC
12:50	Lunch Break

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS	
ROOM A	ROOM B
Environmental and Hydrogeophysics II A. Nivorlis (Lund University)	Geophysics for Dyke Stability and Subsidence D. Arosio (Universita Degli Studi di Modena E Reggio Emilia)
<p>14:00 We_25th_A11 - Saltwater Intrusion Monitoring with the SAMOS System as a Basis for Groundwater Management of Coastal Aquifers - M. Ronczka^{1*}, T. Günther¹, M. Grinat¹, H. Wiederhold¹ ¹LIAG Hannover</p> <p>14:20 We_25th_A12 - Incorporating Petrophysical Variability to Coupled Hydrogeophysical Modelling of DC Resistivity in Heterogeneous Coastal Aquifers - A. Gonzalez Quiros^{1*}, J. Comte¹ ¹University of Aberdeen</p> <p>14:40 We_25th_A13 - Investigating the Saturation State of Higher Strength Rock (HSR) by Geoelectrical Imaging at the Core Scale - O. Kuras^{1*}, T. Debouny¹, P. Wilkinson¹, L. Field¹, A. Milodowski¹, R. Metcalfe², S. Norris³ ¹British Geological Survey; ²Quintessa Ltd; ³Radioactive Waste Management Limited</p> <p>15:00 We_25th_A14 - Visualising Groundwater Flow Using Time-Lapse Electrical Resistivity Tomography - M. Karaoulis^{1*}, W. Bakx^{2,4}, P. Doornenbal¹, P. Kruijver¹, S. Rijpkema³ ¹Deltares; ²Ardacis; ³Vitens; ⁴Wetsus</p>	<p>14:00 We_25th_B11 - Testing ERT and Fiber Optic Techniques at the Laboratory Scale to Monitor River Levees - A. Hojat^{1,2*}, D. Arosio³, I. Di Luch¹, M. Ferrario¹, V. Ivov Ivanov¹, L. Longoni¹, A. Madaschi¹, M. Papini¹, G. Tresoldi¹, L. Zanzi¹ ¹Politecnico di Milano; ²Shahid Bahonar University of Kerman; ³Università di Modena e Reggio Emilia</p> <p>14:20 We_25th_B12 - Incorporating Spatial Heterogeneity in Stability Analyses of an Unsaturated Soil Embankment - Extended Role of Integrated Geophysics - A. Suzaki^{1,2*}, R. Ghose¹, S. Minato^{1,2} ¹TU Delft; ²OYO corporation</p> <p>14:40 We_25th_B13 - Levee Characterization by Means of Data Fusion of In-Situ Geophysical and Geotechnical Information - T. Dezert^{1,2*}, Y. Fargier^{2,1}, S. Palma-Lopes¹, P. Côte¹ ¹Ifsttar; ²Cerema</p> <p>15:00 We_25th_B14 - Electrical Resistivity Tomography (ERT) Study in the Xochimilco District - Mapping the Subsidence in Southeastern Mexico City - C. Arango-Galvan¹, R.E. Chavez^{1*}, A. Tejero², G. Cifuentes¹, J.E. Hernandez-Quintero¹, J.L. Salas-Corrales¹, A. Arias-Paz², J. Arellano-Gil² ¹Instituto de Geofísica; ²UNAM</p>
15:20 Coffee Break	
Integrated Studies II B. Owoc (Polish Academy of Sciences)	Geophysics for Landslides and Slope Stability L. Guireli Netto (Institute For Technological Research Of The State Of São Paulo)
<p>15:45 We_25th_A15 - Integrated Geophysical Studies on the Archaeological Sites without Relief Features (Ust-Tartas and Tartas-1) - E. Balkov^{1*}, O. Pozdnyakova³, P. Dyadkov¹, A. Alymov¹, Y. Karin¹, G. Panin¹, D. Kuleshov¹, N. Evmenov¹, L. Ngomayezwe² ¹Institute of Petroleum Geology and Geophysics SB RAS; ²Novosibirsk State University; ³Institute of Archaeology and Ethnography SB RAS</p> <p>16:05 We_25th_A16 - Geophysical Survey at a Coastal Area of Artemida City, East Attica, Greece, with Archaeological Interest - G. Apostolopoulos^{1*}, G. Amolochitis¹, A. Sakalidi¹, E. Garbi¹, D. Karaiskos¹, S. Karizonis¹ ¹National Technical University of Athens</p> <p>16:25 We_25th_A17 - Reducing Seismic Multiples in Very Shallow Water Archaeological Prospection - M. Schwardt^{1*}, D. Wilken¹, W. Rabbel¹ ¹Christian-Albrechts-University Kiel</p> <p>16:45 We_25th_A18 - An Algorithm for 3D Modelling of Direct Current Resistivity and Full-Response Time-Domain Induced Polarization Data - L.M. Madsen^{1*}, G. Fiandaca¹, E. Auken¹ ¹Aarhus University</p>	<p>15:45 We_25th_B15 - Multimethod High-Resolution Geophysical Imaging of Landslides in Mountain Area - A Case Study from Cisiec, Poland - A. Marciniak^{1*}, S. Kowalczyk², T. Gontar², B. Owoc¹, M. Majdański¹ ¹Institute of Geophysics Polish Academy of Sciences; ²University of Warsaw</p> <p>16:05 We_25th_B16 - An Overview of High Spatial Resolution Geophysical Methods for Landslide Characterisation and Monitoring - J. Whiteley^{1,2*}, M. Kendall², C. Sujitapan², C. Inauen¹, R. Swift¹, A. Watlet¹, M. Raines¹, J. Boyd^{1,3}, M. Cimpoiasu^{1,4}, J. Holmes^{1,5}, L. Sibbett^{1,4}, S. Uhlemann⁶, J. Chambers¹ ¹British Geological Survey; ²University of Bristol; ³Lancaster University; ⁴University of Nottingham; ⁵Queen's University; ⁶Lawrence Berkeley National Laboratory</p> <p>16:25 We_25th_B17 - Seismic Noise Polarization Analysis for Unstable Rock Monitoring - D. Arosio¹, M. Taruselli^{2*}, L. Longoni², M. Papini², L. Zanzi² ¹Università Degli Studi di Modena E Reggio Emilia; ²Politecnico di Milano</p> <p>16:45 We_25th_B18 - Linking Geoelectrical Monitoring to Shear Strength - A Tool for Improving Understanding of Slope Scale Stability - J. Boyd^{1,2*}, J. Chambers¹, P. Wilkinson¹, S. Uhlemann³, A. Merritt⁴, P. Meldrum¹, R. Swift¹, M. Kirkham¹, L. Jones¹, A. Binley² ¹The British Geological Survey; ²Lancaster University; ³Lawrence Berkeley National Laboratory; ⁴AECOM</p>

TECHNICAL PROGRAMME

1 ST CONFERENCE ON GEOPHYSICS FOR GEOTHERMAL-ENERGY UTILIZATION AND RENEWABLE-ENERGY STORAGE	
ROOM C	
Non-Seismic Methods for Exploration and Monitoring T. Reinsch (GFZ German Research Centre for Geosciences)	
14:00	We_1GEOT_11 - Stochastic Inverse Modeling of Magnetotelluric Data from the Larderello-Travale Geothermal Area (Italy) - F. Pace ^{1*} , A. Santilano ² , A. Godio ¹ , A. Manzella ² ¹ Politecnico di Torino; ² Institute of Geosciences and Earth Resources- National Research Council (IGG-CNR)
14:20	We_1GEOT_12 - Geophysical Exploration of the Kiejo-Mbaka Geothermal Field (Tanzania) - D. Rizzello ^{1*} , E. Armadillo ² , C. Pasqua ³ , T. Mnjokawa ⁴ , J. Mwano ⁴ , D. Makoye ⁴ , L. Tumbu ⁴ ¹ Tellus Sas; ² University of Genoa; ³ ELC-Electroconsult; ⁴ Tanzania Geothermal Development Company
14:40	We_1GEOT_13 - Magnetic, Gravimetric, TDEM and Magnetotelluric Joint Interpretations at the Luhoi Geothermal Field, Tanzania - E. Armadillo ^{1*} , D. Rizzello ² , C. Pasqua ³ , P. Pisani ³ , A. Ghirotto ¹ , K. Kabaka ⁴ , T. Mnjokawa ⁴ , J. Mwano ⁴ , M. Didas ⁴ , L. Tumbu ⁴ ¹ University of Genoa; ² Tellus s.a.s.; ³ ELC-Electroconsult; ⁴ Tanzania Geothermal Development Company Ltd
15:00	We_1GEOT_14 - Grindulu Fault Identification Using VLF-EM NA-MEMD Filter and Inversion Data in Pacitan Region, Indonesia - B. Ramadhany ^{1*} , S. Sungkono ¹ , A.R. Cahya Putra ¹ ¹ Geophysics ITS
15:20	Coffee Break
Reservoir Characterization E. Armadillo (University of Genoa)	
15:45	We_1GEOT_15 - 10 Years of Temperature Monitoring Experiments Using Electrical Resistivity Tomography - What Have We Learned? - T. Hermans ¹ , F. Nguyen ² , G. De Schepper ³ , N. Lesparre ⁴ , T. Robert ^{2*} ¹ Ghent University; ² Liege University; ³ Aquale SPRL; ⁴ University of Strasbourg
16:05	We_1GEOT_16 - Suppressing Ground Roll, P-S Conversions and Out-of-Plane Scattering in Near Surface Seismic Data Using 3C Polarization - S. Carpentier ^{1*} , P. Lamberts ² , S. Meekes ¹ ¹ TNO; ² Utrecht University
16:25	We_1GEOT_17 - Multi-Parameter Tomographic Inversion for Imaging 2D Electrical Resistivity Anisotropy - B. Zhou ^{1*} , W. Moosoo ¹ ¹ Khalifa University of Science and Technology
16:45	We_1GEOT_18 - The University of Manchester Development Plan of the Minus CO2 Challenge - Winners Minus CO2 Challenge EAGE Annual 2019 - C. Lloyd ^{1*} , R. McTeir ¹ , D. Odjo ¹ , D. Skinner ¹ ¹ University of Manchester

1ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM

ROOM D

Geotechnical Infrastructure Condition Using Geophysics I

E. Niederleithinger (BAM)

09:00	We_INFRA_01 - Using GPR at Deutsche Bahn and First Steps in Merging the Results with BIM Models - J. Wolf ^{1*} , D. Hofmann ¹ ¹ DB Engineering & Consulting
09:20	We_INFRA_02 - Spectral Analysis of Vibrations of ITU TRIGA MARK-II Nuclear Research Reactor Building, Istanbul, Turkey - M. Cakman ^{1*} , U. Harmankaya ¹ , B. Barutcu ¹ , P. Inci Kocak ² , A. Ilki ¹ , A. Kaslilar ³ ¹ Istanbul Technical University; ² Rise Engineering & Consultancy; ³ Uppsala University
09:40	We_INFRA_03 - Cross-Correlation Analysis of Surface Waves for Group and Phase Velocity Mapping along a 2D Seismic Profile - K. Leontarakis ^{1*} , C. Orfanos ¹ , G. Apostolopoulos ¹ ¹ National Technical University of Athens
10:00	We_INFRA_04 - Assessment of Reservoir Embankment Dam Condition Using Field and Laboratory Geophysical Techniques - S. Donohue ^{1*} , A. Trafford ⁴ , D. Gunn ² , B. Dashwood ² , R. Swift ² , D. McKillen ³ , D. Leemon ³ ¹ University College Dublin; ² British Geological Survey; ³ AECOM; ⁴ Queen's University Belfast
10:20	We_INFRA_05 - Keynote - Structural Health Monitoring Meets Ambient Noise Seismology - C. Hadziioannou ^{1*} , J. Salvermoser ³ , R. Steinmann ¹ , L. Marten ¹ , E. Niederleithinger ² ¹ Universität Hamburg; ² Bundesanstalt für Materialforschung und -prüfung; ³ Ludwig Maximilian University

10:40 **Coffee Break**

Geotechnical Infrastructure Condition Using Geophysics II

M. Svensson (Tyréns AB)

11:10	We_INFRA_06 - Long-Term Monitoring of Slopes that Affect Transport Infrastructure - J. Holmes ^{1*} , S. Donohue ³ , J. Chambers ² , P. Wilkinson ² , P. Meldrum ² , D. Gunn ² , R. Swift ² , B. Dashwood ² , M. Kirkham ² , S. Uhlemann ⁴ , D. Huntley ⁵ , P. Bobrowsky ⁵ ¹ Queen's University Belfast; ² British Geological Survey; ³ University College Dublin; ⁴ Lawrence Berkeley National Laboratory; ⁵ Geological Survey of Canada
11:30	We_INFRA_07 - Geoelectric Modelling of Near-Surface Resistivity Distribution for the Design of Windfarm Grounding Grids - P.P. De Lugao ^{1*} , B. Kriegshäuser ¹ , P.E. Freire ² ¹ Strataimage Consultoria; ² PAIOL Engenharia
11:50	We_INFRA_08 - Where Geophysics Meets Asphalt - Monitoring Roads Using Fibre Optics - M. Devrez ¹ , J.A. Karabacak ¹ , O. Dowd ¹ , H. Veerman ¹ , J. Singer ^{1*} ¹ Fugro Technology BV
12:10	We_INFRA_09 - Monitoring the Effect of Artificial Dune Construction Using Multiple Geophysical Methods - F. Schaars ^{1*} , M. Groen ² ¹ Artesia; ² Wiertsema & Partners
12:30	We_INFRA_10 - Raspberry Shake Sensor Field Tests for Unstable Rock Monitoring - M. Taruselli ^{1*} , D. Arosio ² , L. Longoni ¹ , M. Papini ¹ , L. Zanzi ¹ ¹ Politecnico di Milano; ² Università degli Studi di Modena e Reggio Emilia

12:50 **Lunch Break**

TECHNICAL PROGRAMME



10TH INTERNATIONAL WORKSHOP ON ADVANCED GROUND PENETRATING RADAR

ROOM F

Imaging and Tomography

N.D. Diamanti (Aristotle University of Thessaloniki)

09:00	We_10GPR_01 - Crosshole Radar Traveltime Tomography by Occam Inversion Technique - E.E. Baksi ^{1*} , S. Kadioglu ² ¹ Republic of Turkey Ministry of Environment and Urbanization; ² Ankara University
09:20	We_10GPR_02 - Anisotropic Matrix-Free Tomography Using Discontinuous Galerkin of GPR Data Acquired between Boreholes in Rustrel Carbonates - M. Salcedo ^{1*} , S. Garambois ¹ , P. Le Bouteiller ¹ , J. Virieux ¹ ¹ Université Grenoble Alpes, Univ. Savoie Mont Blanc. CNRS, IRD, IFSTTAR, ISTerre
09:40	We_10GPR_03 - Associating Borehole Radar Imaging with Petrophysical Properties for a Mud-Contaminated Reservoir - F. Zhou ^{1*} , I. Giannakis ² , A. Giannopoulos ³ , E. Slob ¹ ¹ Delft University of Technology; ² University of West London; ³ The University of Edinburgh
10:00	We_10GPR_04 - 3D Reconstruction of Tree Roots under Heterogeneous Soil Conditions Using Ground Penetrating Radar - A. Aboudourib ^{1*} , M. Serhir ¹ , D. Lesselier ² ¹ CentraleSupélec - GeePs; ² Laboratoire des Signaux et Systèmes
10:20	We_10GPR_05 - Full 3D Ground Penetrating Radar Imaging of Vertical Structures - I. Catapano ^{1*} , G. Gennarelli ¹ , C. Novello ¹ , F. Soldovieri ¹ ¹ National Research Council of Italy

10:40 Coffee Break

GPR Multimethod, Archeology

M. Zajc (Geological Survey of Slovenia)

11:10	We_10GPR_06 - GPR Survey of "Bellariva" Swimming Pool Complex with a Continuous Wave Step Frequency GPR Radar - M. Pieraccini ¹ , L. Miccinesi ^{1*} , G. Terenzi ¹ , G. Mazzi ¹ ¹ University of Florence
11:30	We_10GPR_07 - Detecting Rebar Corrosion through Complementary GPR and IRT Methodologies - M. Solla ^{1,3*} , N. Fernández ¹ , S. Lagüela ^{2,3} , J. Vidal ³ ¹ Spanish Naval Academy; ² University of Salamanca; ³ University of Vigo
11:50	We_10GPR_08 - A Multidisciplinary Study on the Roman Amphitheatre of Lecce, Southern Italy - R. Persico ^{1,2*} , G. Leucci ¹ , L. De Giorgi ¹ , F. Gabellone ¹ , F. Giuri ¹ , I. Ferrari ¹ , S. D'Amico ³ , E. Colica ³ ¹ IBAM-CNR; ² International Telematic University Uninettuno; ³ University of Malta
12:10	We_10GPR_09 - Using GPR to Evaluate the Stratigraphic Condition of the Mosaic of the Dolphins in Delos Island - M. Manatakis ^{1,4*} , C. Maris ² , A. Sarris ³ , A. Vafidis ⁴ ¹ Foundation for Research and Technology Hellas; ² Hellenic Ministry of Culture and Sports; ³ University of Cyprus; ⁴ Technical University of Crete
12:30	We_10GPR_10 - 2D Resistivity Tomography and GPR Survey to Detecting Cavities, Aqra, Iraqi Kurdistan Region - E. M.Amin ^{1*} , B. Aziz ¹ , P. Ali ¹ ¹ University of Sulaimani

12:50 Lunch Break

Safety and Security

V. Perez-Gracia (Universitat Politècnica de Catalunya)

14:00	We_10GPR_11 - Numerical Modelling of Ground Penetrating Radar for Potash Mine Safety - V. Okonkwo ¹ , T. Briggs ¹ , R. Paranjape ¹ , M. Van den Berghe ^{2*} ¹ University of Regina; ² Nutrien Ltd
14:20	We_10GPR_12 - Measuring the Permittivity of Soil Using Common-Mode Currents on Coaxial Transmission Line - W. Van Verre ¹ , F. Podd ^{1*} , X. Gao ¹ , A. Peyton ¹ ¹ University of Manchester
14:40	We_10GPR_13 - Data Augmentation in Feature-Space with Generative Adversarial Networks, Applied to GPR-Based Buried Threat Detection - J. Malof ^{1*} , D. Reichman ¹ , L. Collins ¹ ¹ Duke University
15:00	We_10GPR_14 - Estimation of False Alarms Rates for GPR Detection using the Euler characteristic of Gaussian Random Fields - C. Bräu ^{1*} , F. Rial ¹ ¹ Fraunhofer Fhr

15:20 Coffee Break

Non-Destructive Testing

M. Solla (Defense University Center)

15:45	We_10GPR_15 - GPR Method as an Efficient NDT Tool to Characterize Carbonate Rocks during Different Production Stages (Winner Best Oral EAGE-GMS Meeting) - A. Hojat ^{1,2*} , M. Izadi-Yazdanabadi ¹ , S. Karimi-Nasab ¹ , D. Arosio ³ , L. Zanzi ² ¹ Shahid Bahonar University of Kerman; ² Politecnico di Milano; ³ Università di Modena e Reggio Emilia
16:05	We_10GPR_16 - Structural Health Monitoring of Civil Engineering Structures Using GPR Detection of Patch Antenna Resonance Frequency Changes - T. Richard ² , A. Ihamouten ^{1*} , M. Latrach ³ , X. Dérobert ³ , H. Gundel ⁴ , C. Borderon ⁴ , D. Guilbert ¹ ¹ Cerema; ² ESEO / IETR; ³ IFSTTAR; ⁴ Nantes University / IETR
16:25	We_10GPR_17 - Effect of the Tide on Permittivity Values Obtained on a Reinforced Concrete Bridge in Marine Environment - X. Dérobert ^{1*} , V. Bouteiller ¹ , L. Bourreau ² , S.Y.S. Chan ³ , W.L.W. Lai ³ , J.F.C. Sham ³ ¹ IFSTTAR; ² SIXENSE; ³ Hong Kong Polytechnic University
16:45	We_10GPR_18 - Signal Processing For Tree-Trunk Investigation Using Ground Penetrating Radar - I. Giannakis ^{1*} , F. Tosti ¹ , L. Lantini ¹ , D. Egyir ¹ , A. Alani ¹ ¹ University of West London

TECHNICAL PROGRAMME

25TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS

Poster Area

Poster: Hydrogeophysics, Environmental Geophysics

O. Kuras (British Geological Survey)

09:00	We_25_P01 - Geophysical Contribution to the Reconstruction of the Hydrological Model of "Barcelona-Milazzo Plain" Groundwater Body, Northern Sicily - P. Capizzi ^{1,2*} , R. Martorana ² , R. Favara ¹ , L. Albano ¹ , A. Bonfardeci ¹ , M. Catania ² , N. Costa ¹ , A.L. Gagliano ¹ ¹ Istituto Nazionale di Geofisica e Vulcanologia; ² University of Palermo
09:10	We_25_P02 - Induced Polarisation (IP) Laboratory Measurements on Escherichia Coli (E. Coli)-Sand Mixtures - T. Martin ^{1*} , C. Paul ¹ ¹ Lund University
09:20	We_25_P03 - Electrical Resistivity Surveys to Delineate Hydrocarbon-Contaminated Zones in Military Units in South Korea - G. Lee ^{1*} , S. Song ¹ , S. Song ² , M. Nam ² ¹ Korea Rural Community Institute; ² Sejong University
09:30	We_25_P04 - Possibility of Using VIS-NIR Spectroscopic Methods to Determine the Sulfur Content in Brown Coal - A. Wojciechowicz ^{1*} , Ł. Buczkowski ¹ , S. Bednarczyk ¹ , J. Kowalewski ² , M. Zięba ² ¹ Jan Wyżykowski University; ² Scanway
09:40	We_25_P05 - TOPSOIL Project - Geophysical Input for Groundwater Models – Examples from Northern Germany - H. Wiederhold ^{1*} , M.A. Rahman ¹ , Q. Zhao ⁵ , R. Dlugosch ¹ , M. Grinat ¹ , E. González ² , N. Deus ² , W. Scheer ³ , R. Kirsch ⁴ , B. Siemon ⁶ ¹ Leibniz Institute for Applied Geophysics; ² Landesamt für Bergbau, Energie und Geologie; ³ Landesamt für Landwirtschaft, Umwelt und ländliche Räume; ⁴ Kiel University; ⁵ University of Göttingen; ⁶ Federal Institute of Geosciences and Natural Resources
09:50	We_25_P06 - Waterborne Electrical Resistivity and Land-Based GPR Surveys for Characterization of Potential River Erosion in Larvik, Norway - S. Bazin ¹ , A. Lysdahl ^{1*} , H. Anschütz ¹ , V. Jørdre Øybekk ² , R. Frauenfelder ¹ , S. Glimsdal ¹ , U. Eidsvig ¹ ¹ Norwegian Geotechnical Institute; ² Sørum Kommune
10:00	We_25_P07 - A Multidisciplinary Approach for Water Management in Saline Deposits - A. Sendros ^{1,2*} , M. Himi ² , L. Rivero ² , R. Lovera ² , A. Urruela ² , R. Garcia ^{2,3} , A. Casas ² ¹ ICL Iberia; ² Universitat de Barcelona; ³ Institut de Recerca de l'Aigua
10:10	We_25_P08 - Predicting the Fate of Chlorinated Aliphatics by Hydrogeological Modelling and DCIP Data – Färgaren Case Study - M. Lumetzberger ^{1,2*} , H. Rosqvist ^{1,3} , C. Sparrenbom ¹ , T. Dahlin ¹ , S. Johansson ¹ ¹ Lund University; ² COWI AB; ³ Sustainable Business Hub AB
10:20	We_25_P09 - Numerical Modelling of Self-Potential Signals Associated with Pumping Test of Heterogeneous Aquifer - A. Mikhailenko ^{1*} , P. Konosavsky ¹ , K. Titov ¹ ¹ Institute of Earth Sciences SPBU
10:30	We_25_P10 - Investigating the Contrast of Wooden Objects from GPR/ERT in Water - A. Fediuk ^{1*} , D. Wilken ¹ , T. Wunderlich ¹ , W. Rabbel ¹ ¹ Kiel University
10:40	Coffee Break

Poster: Geophysics for Agriculture, Hydrology, Landslides, Dams, Waste Characterisation, and Urban Sites

A. Belova (Irkutsk National Research Technical University)

11:10	We_25_P11 - Identification of Potential Water Bearing Zones Using Electrical Methods - S. Keshavarzipourtafti ^{1*} , M. Saeidnezhad ¹ ¹ University of Tehran
11:20	We_25_P12 - Current Status and Prospect of Agricultural Geophysics in S. Korea - S. Song ^{1*} , I. Cho ² , G. Lee ¹ ¹ Rural Research Institute, KRC; ² Kangwon National University
11:30	We_25_P13 - Mapping of Deltaic Aquifers with the Combined Application of DC and TEM Soundings - J.D. Alexopoulos ^{1*} , S. Dilalos ¹ , G.S. Mitsika ¹ , S.E. Poulos ¹ ¹ National and Kapodistrian University of Athens
11:40	We_25_P14 - 3D Geophysical Investigation from the Methods of Electroresistivity, Self-Potential and Seismic Refraction in an Earth Dam - L. Guireli Netto ^{1*} , Gandolfo O.C.B ¹ , W. Malagutti Filho ² , Moreira C.A ² , Dourado J.C ² , Camarero P.L ² ¹ Institute for Technological Research -; ² São Paulo State University "Julio de Mesquita Filho"
11:50	We_25_P15 - Landfill Characterization with a Multi-Method Geophysical Approach - A Case Study from Emersons Green, UK - C.M. Inauen ^{1*} , J.E. Chambers ¹ , A. Watlet ¹ , J.S. Whiteley ¹ , D.A. Gunn ¹ , B. Dashwood ¹ , P.B. Wilkinson ¹ , A. Brooks ² , O. Neal ² , D. Scott ² , D. Caterina ³ , I. Isunza Manrique ³ , X. Piquet ⁴ , A. Dimech ⁵ ¹ British Geological Survey; ² VertaseFLI Ltd; ³ University of Liege; ⁴ University of Grenoble; ⁵ Polytechnique Montreal
12:00	We_25_P16 - Optimum Use of Near Surface Resistivity Methods (i.e. - ERT, TDEM, AMT) for Improving Hydrogeological Concepts - M. Groen ^{1*} ¹ Wiertsema and Partners
12:10	We_25_P17 - The Contribution of Urban Gravity Survey to the Subsurface Geological Structure of the Athens Basin (Greece) - S. Dilalos ^{1*} , J.D. Alexopoulos ¹ , S. Lozios ¹ ¹ National and Kapodistrian University of Athens
12:20	We_25_P18 - Estimation of Tectonic Fault Systems of Mongolian Territory Using Geomagnetic Anomaly Data (Winner Best Poster EAGE-GMS Meeting) - D. Badarch ^{1*} , B. Tsermaa ¹ ¹ National University of Mongolia
12:50	Lunch Break

25 TH EUROPEAN MEETING OF ENVIRONMENTAL AND ENGINEERING GEOPHYSICS	
Poster Area	
Poster: High-Resolution Seismic B, MASW H. Bunes (Leibniz Institute for Applied Geophysics (LIAG))	
14:00	We_25_P21 - Hamiltonian Monte Carlo Inversion of Rayleigh Wave Dispersion Curves - Preliminary Results on Synthetic Data - M. Aleardi ¹ , A. Salusti ^{1*} , S. Pierini ¹ ¹ University of Pisa
14:10	We_25_P22 - Transdimensional MCMC Inversion of Rayleigh Wave Dispersion Curves - Preliminary Results on Synthetic Data - M. Aleardi ¹ , S. Pierini ^{1*} , A. Salusti ¹ , A. Mazzotti ¹ ¹ University of Pisa
14:20	We_25_P23 - Combined Approach to Simultaneous Source Data Separation - A. Tarasov ¹ , A. Shuvalov ¹ , A. Konkov ^{1*} , V. Ignatev ² , B. Kashtan ¹ , A. Oshkin ³ ¹ Saint Petersburg State University; ² Geodevice LLC; ³ Lomonosov Moscow State University
14:30	We_25_P24 - A Study on CycleGAN as a Tool for Processing Seismic Images - F. Picetti ¹ , V. Lipari ¹ , P. Bestagini ¹ , F. Lombardi ¹ , S. Tubaro ¹ , M. Lualdi ^{1*} ¹ Politecnico di Milano
14:40	We_25_P25 - Active and Passive Combination of MASW Method to Obtain the Soil Classification of Murcia Town - M.C. García-Nieto ^{1*} , M.A. Martínez-Segura ¹ , M.D. Váscquez-Maza ¹ , M. Navarro ² ¹ Universidad Politécnica de Cartagena; ² Universidad de Almería
14:50	We_25_P26 - Seismic Imaging of Shallow Groundwater Resources in Glacial Deposits, Sweden - R. Sun ^{1*} , A. Kaslilar ¹ , C. Juhlin ¹ ¹ Uppsala University

1 ST CONFERENCE ON GEOPHYSICS FOR INFRASTRUCTURE PLANNING, MONITORING AND BIM	
Poster Area	
Poster: General Poster Session S. Donohue (University College Dublin)	
14:00	We_INFRA_P21 - Geological Characterization and Geomechanical Parameters Assessment Using Electrical Resistivity Tomography and Seismic Methods - B. Benjumea ^{1*} , A. Gabàs ¹ , A. Macau ¹ , F. Bellmunt ¹ , J. Ripoll ¹ , J. Ledo ² , S. Figueras ¹ ¹ Institut Cartogràfic i Geològic de Catalunya; ² University of Barcelona
14:20	We_INFRA_P23 - Quantitative Subsurface Information of Athens Basin (Greece) Derived from Urban Gravity Measurements - S. Dilalos ^{1*} , J.D. Alexopoulos ¹ ¹ National and Kapodistrian University of Athens
14:40	We_INFRA_P25 - Field-Scale Quality Control of Lime-Cement Pillar in Conductive Clay Using Electrical Resistivity Tomography - P. Olsson ^{1*} , S. Rejkjær ¹ , T. Dahlin ¹ ¹ Lund University
15:00	We_INFRA_P27 - The Automated Goelectrical Data Processing Workflow of the PRIME Infrastructure Monitoring System - P. Wilkinson ^{1*} , J. Chambers ¹ , P. Meldrum ¹ , C. Watson ¹ , C. Inauen ¹ , R. Swift ¹ , G. Curioni ² ¹ British Geological Survey; ² University of Birmingham
15:20	Coffee Break

TECHNICAL PROGRAMME





SAGEEP 2020

DENVER | COLORADO

33rd Symposium on the Application of Geophysics
to Engineering and Environmental Problems

1st Munitions Response Conference

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MARCH 29 – APRIL 2, 2020

WWW.SAGEEP.ORG

EXHIBITION

We welcome all delegates to the Exhibition; the central meeting place at Near Surface Geoscience 2019. The Exhibition runs parallel to all four parallel meetings. All delegates are invited to join us at the Welcome Reception on Monday 9 September and during the show days to meet with exhibitors, to learn about new technology and products and to expand their network.

Come and see the future of the near surface field!

Opening Hours Exhibition

Monday 9 September	09:00 – 19:00
Tuesday 10 September	09:00 – 15:20
Wednesday 11 September	09:00 – 17:00

Field demonstrations

The field demonstrations will be held on Tuesday 10 September from 15:20 – 17:00. All delegates are invited to attend the special exhibits presented to you by our exhibitors in an informal setting. Enjoy a pleasant afternoon while the most cutting-edge products in near surface technology are put to the test in front of you. The field demonstrations are held just outside the venue.

Field demonstrations will be held by:

DMT

Light, flexible and fast: Seismic Data acquisition with SUMMIT X ONE recorders. Ultra small one-channel remote units linking to a lightweight SUMMIT line cable at any position via the optimized SUMMIT SNAP-ON technology result in the world's most flexible wired seismic acquisition system. Reliable and fast data transfer offers immediate and full quality control of acquired seismic data. The option of continuous data streaming also enables passive seismic applications such as monitoring of reservoir stimulation measures. The SUMMIT X One combines the flexibility in field deployment of a wireless system with all the benefits of reliable online data access from a cabled system.

Website: www.summit-system.de

Geo-device

ARMT-5 & FastSnap electromagnetic sounding systems. Our demonstration is intended to highlight ARMT-5 complex that is designed for implementation of a big variety of geoelectrical methods: (CS-)AMT, CSEM, (CS-)RMT. Its broad frequency range (0.1 Hz - 1 MHz) enables applying this tool for studying depths from first meters to several kilometers thus covering wide application niche. Another EM tool to be demonstrated, FastSnap is a multichannel automatically-controlled telemetry complex that ensures TEM/ TDEM, frequency sounding, induced polarization and direct current techniques. The system is by far the most advanced in its class offering high technical specifications and comprehensive software package along with an affordable cost.

Website: www.geo-device.com

Geotomographie

Geotomographie is going to demonstrate different seismic borehole sources to generate P-waves and S-waves as well as borehole receivers during field demonstration, the high energy impulse generator IPG800 will be presented.

Website: www.geotomographie.de

Guideline Geo

Guideline Geo | ABEM | MALÅ | will demonstrate a selection of advanced Resistivity/IP and GPR solutions out on the field. Take the opportunity to see the:

- ABEM Terrameter LS2 (Resistivity/IP) with the unique 100% duty cycle feature (e.g faster data collection and increased data quality) and scalable configurations. The LS2 is suitable for a broad range of applications including groundwater prospecting and geological mapping.
- MALÅ Easy Locator PRO WideRange HDR with fast high-resolution GPR data collection for both shallow and deep objects simultaneously. The WideRange in conjunction with the MALÅ Object Mapper processing- and visualization SW, have been specially developed for efficient utility locating.
- MALÅ GroundExplorer (GX) - a flexible GPR solution with multiple frequencies/antennas. The use of HDR technology means reduced noise and deep target measurements with maintained data quality. The GX is suitable for a broad spectrum of applications, such as: archaeology, infrastructure, environment and geology.

Website: www.guidelinegeo.com

ImpulseRadar

PinPointR – Utility Locator

The ImpulseRadar PinPointR is a dedicated Ground Penetrating Radar (GPR) utility locator instrument. The PinPointR has been developed to maximize in-field productivity by utilizing ImpulseRadar's innovative real-time sampling (RTS) dual-channel antenna technology, which provides incredible bandwidth, speed, and resolution, all controlled wirelessly via an intuitive Android-driven user interface.

Raptor – 3D GPR Array

High Speed 3D GPR Array ImpulseRadar Raptor system, a state-of-the-art 450 MHz or 800 MHz 3D GPR array solution. Raptor 3D arrays are based on Real-Time Sampling (RTS) technology and the unique antenna design is a milestone in the evolution the GPR.

- Fast collection, 130 km/h, 5 cm point interval
- High dynamic range and deep penetration
- Small point interval and rapid data collection regardless of number of channels
- Low weight
- Flexible, modular and plug and play configuration.
- No control unit

Website: www.impulseradar.se



Peace Palace, the city's most photographed building

Sensors & Software

Sensors & Software will demonstrate the latest Noggin and pulseEKKO Ground Penetrating Radar (GPR) systems. Noggins are the most versatile GPR systems in the market; it has several frequencies and configurations (cart, tow or chariot), and is easily integrated into customized multi-channel systems. Our newest innovation, the pulseEKKO Ultra Receiver, can achieve up to double the depth of penetration of earlier pulseEKKO systems. This opens incredible opportunities for research and advancements in low-frequency GPR applications. Join us and see the powerful in-field data viewing capabilities of both GPR systems.

Website www.sensoft.ca

Solgeo

Solgeo Cross-Hole set allows the direct measurements of horizontally travelling compression (P) and shear (Sv) seismic waves at test sites (i.e soil materials, concrete dams, embankments, etc) in order to get their Elastic modules and characteristics.

Two specific borehole seismic sources have been developed to get the best seismic signals.

Especially SOLGEO GEOS-H™ is the best tool to generate vertical polarized S waves.

The device allows to automatically produce, both upwards and downwards signals, in order to obtain an inversion of the shear waves polarization without P waves noise.

Website: www.solgeo.it

EAGE Areas

EAGE, booth #48

EAGE invites attendees to drop by our booth (#48) on the exhibition floor to learn all about EAGE's ongoing and upcoming projects, such as our events, membership and community activities, our work with students, as well as dedicated projects supported by our Green Fund.

Smart Exploration, booth #48

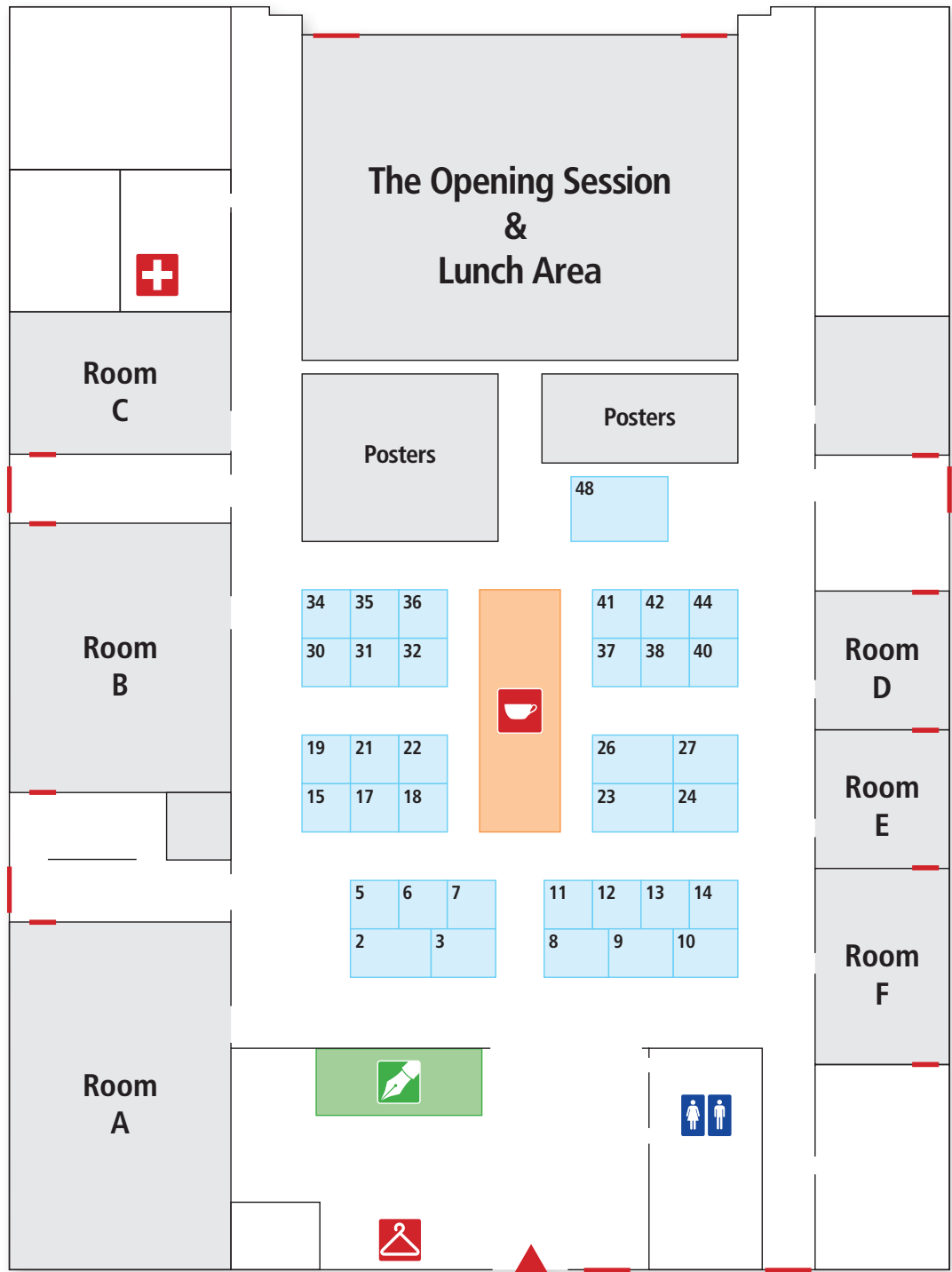
The Smart Exploration Project is a Research and Innovation project funded under the European Union's Horizon 2020 Program. Smart Exploration seeks to develop and disseminate 'new solutions for sustainable production of raw materials' not only for the EU, but to create results that will also allow improved exploration beyond its borders. The consortium consists of 27 partners from SMEs, academia, mining companies and civil society organisations, and is truly multidisciplinary. We welcome you to stop by the Smart Exploration booth to learn more about our project and the results that have been achieved so far.

EU Affairs-Horizon 2020, booth #48









Through its EU Affairs department, EAGE aims to explore funding opportunities, as well as monitor relevant EU policies, their impact and various other opportunities for our society and the geoscience world. One of the main funding mechanisms that is of interest to our members is the Horizon 2020 Programme, with its aim to promote and facilitate research and innovation and help secure Europe's global competitive position.

During the Exhibition, EAGE provides a platform for interested parties to meet, explore open and upcoming EU research calls, and discuss potential partnership opportunities at our dedicated Horizon 2020 booth.

Floorplan Exhibition



EXHIBITION

 Registration	 Coffee Point
 Cloakroom	 First Aid
 Evacuation Meeting Point	 Toilets
 Field Demonstration Area	 Emergency Exit




Main Entrance

Exhibitors' Profiles

3D-Radar AS 15

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Aarhus GeoSoftware 11

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EU AFFAIRS - HORIZON2020 48

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Check out the
full exhibitor details and
Social Media links
on the **Mobile Event App**

App name: EAGE App Event Code: NSG2019
Page 4 for more details on how to download the App

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ImpulseRadar	30
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Intelligent Resources	40
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Website: rayfract.com/	
Iris Instruments	31
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Website: www.iris-instruments.com/	
Lim Logging	21
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E-mail: martin.drake@lim.eu	
Website: www.lim.eu	
Medusa Radiometrics	42
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Robertson Geo	35
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Sensors & Software Europe GmbH	44
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SPLIT Geodevice	41
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Vista Clara Inc.	17
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W & R Instruments s.r.o.	19
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Zonge International Inc.	37
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Zz Resistivity Imaging Pty Ltd	38
Contact: Jingping Zhe	
E-mail: Zhesales@zzgeo.com	
Website: www.zzgeo.com	

Check out the **full exhibitor details** and **Social Media links** on the **Mobile Event App**

App name: EAGE App Event Code: NSG2019
Page 4 for more details on how to download the App

- Geophysical logging
- Subsurface data acquisition techniques and technologies
- Surface delivery systems



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