

EAGE

CONFERENCE & EXHIBITION

NEAR SURFACE GEOSCIENCE'21

29 AUGUST - 2 SEPTEMBER 2021 | BORDEAUX, FRANCE

27th

European Meeting of
Environmental and
Engineering Geophysics

1st

Conference on Hydrogeophysics
Contribution to Exploration and Management
of Groundwater, Land-Use and Natural Hazards
under a Changing Climate

2nd

Conference on Geophysics
for Infrastructure Planning,
Monitoring and BIM

FIRST ANNOUNCEMENT

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WELCOME TO THE NEAR SURFACE GEOSCIENCE CONFERENCE & EXHIBITION 2021

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Conference on Hydrogeophysics
Contribution to Exploration and Management of
Groundwater, Land-Use and Natural
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About the event

For this year's Near Surface Geoscience Conference & Exhibition, the 27th European Meeting of Environmental and Engineering Geophysics will be accompanied by two conferences, the 1st Conference on Hydrogeophysics: Contribution to Exploration and Management of Groundwater, Land-Use and Natural Hazards under a Changing Climate and the 2nd Conference on Geophysics for Infrastructure Planning, Monitoring and BIM. Through this innovative combination, NSG2021 will:

- Provide insight into emerging geophysical techniques for mineral exploration and discuss the state-of-the-art in characterizing the shallow subsurface in aquatic settings;
- Offer three world class technical programmes in the near surface field for the price of one;
- Bring together the most innovative companies working in the near surface industry in our exhibition;
- Offer incredible networking opportunities through our much-anticipated social programme, including our **Welcome Reception** in the Exhibition, and **Conference Evening** at a delightful local venue that combines culture, entertainment and local gastronomy.

FACTS

VENUE

BORDEAUX CONGRESS CENTRE
BORDEAUX, FRANCE

EXPECTED ATTENDANCE

350-450

EXPECTED EXHIBITORS

35

IMPORTANT DATES

Call for Extended Abstracts Open	September 2020
Deadline Early Booth Booking	1 March 2021
Registration Open	1 April 2021
Deadline for Extended Abstract Submission	15 April 2021
Event Dates	29 August - 2 September 2021
Exhibition Dates	30 August - 1 September 2021

Welcome Word



On behalf of the EAGE Near Surface Geoscience Division, I cordially invite you to attend the Near Surface Geoscience Conference & Exhibition 2021 to be held in Bordeaux, France, from 29 August to 2 September 2021.

We are pleased to announce that this year's event will be hosted for the first time in Bordeaux, where we'll introduce the 1st parallel Conference on Hydrogeophysics alongside the 27th European Meeting of Environmental and Engineering Geophysics, and the 2nd Conference on Geophysics for Infrastructure Planning, Monitoring and BIM. Without a doubt the main conference and the two parallel meetings cover topics that are of societal relevance for the whole world and our near-surface geoscience community.

Bordeaux is a hub for non-destructive testing (NDT) in France and French companies are on the forefront of developing complex infrastructures such high-speed trains, underground facilities as well as bridges, airports and shipping ports. This is therefore a great opportunity to welcome newcomers to the conference particularly to the infrastructure planning, monitoring and BIM conference.

Water and natural resources in a rapidly changing climate and their implications to build a resilience society are not hidden

from NGOs and governmental bodies. The introduction of the Hydrogeophysics parallel conference aims to connect the science with the public sectors and governmental entities.

The local advisory committee and division members have now worked more than a year to make sure a carefully selected programme with numerous highlights will make the event unforgettable and useful for you. I personally welcome our exhibitors bringing their newest achievements in technology, services and equipment along with the technical talks.

A rapid-fire presentation event on innovation with mingling possibilities will be organized to present top-notch ideas from various sectors connected to the conferences. Students and young professionals will have a chance to network, meet industry representatives and interact with their own peers. The local advisory committee has planned great networking opportunities for you so make sure you do not miss Bordeaux.

Join us and discover both the city and how the near-surface geosciences have advanced, meet your colleagues, expand your network and enjoy the great atmosphere our event will offer you; it will be unforgettable! I look forward to seeing and welcoming you in Bordeaux NSG2021!

Alireza Malehmir

Near Surface Geoscience Division Chair

NEAR SURFACE GEOSCIENCE 2021 OVERVIEW*

SUNDAY 29 AUGUST	MONDAY 30 AUGUST	TUESDAY 31 AUGUST	WEDNESDAY 1 SEPTEMBER	THURSDAY 2 SEPTEMBER
REGISTRATION				
Registration	Registration	Registration	Registration	
PROGRAMME				
Workshop 1 Electrical Resistivity Tomography: Pitfalls and ARTIfact removal from lab to field scale applications (ERT-PARTI)	Exhibition	Exhibition	Exhibition	Field Trip 1 Geology and Bordeaux Wines (AOC Saint-Emilion)
Workshop 2 Electrical Properties of Clay Rocks: Challenges and opportunities	Technical Programme	Technical Programme	Technical Programme	Field Trip 2 Dune of Pyla, Arcachon Lagoon
Workshop 3 Seismic Interferometry: Imaging and monitoring from Near-Surface to Civil Engineering applications		Field Demonstrations		Field Trip 3 The Myth of Lascaux
SOCIAL PROGRAMME				
	Welcome Reception	Conference Evening		

*May be subject to changes

Times and details will be posted on the website in due course at www.NSG2021.org.



Exhibition and Sponsoring

Near Surface Geoscience 2021 will include an exhibition that will enable you to network with key international companies from the Near Surface Geoscience industry. Here you will be able to witness the latest developments, newest technologies, and innovative services. Besides the exhibition, Near Surface Geoscience 2021 will offer a wide variety of sponsoring opportunities. As a sponsor, you will have dedicated exposure at the event.

Field Demonstrations

EAGE offers exhibitors the opportunity to showcase their products live at the conference venue. For more information about this increasingly-popular event, please contact the exhibition team.

If you are interested in participating at this event as an exhibitor or sponsor, please refer to the event website or contact us at exhibition@eage.org.

Venue

The Bordeaux Congress Centre, with its contemporary architecture focusing on light, is located in the heart of the Lac district in Bordeaux.

The Congress Centre is surrounded by many hotels, or if you stay elsewhere it has a good connection by public transport, bus as well as tram.



About Bordeaux

Visitors will get the pleasure to discover more than 360 buildings which are registered with the French Historical Monuments records, in the Pey Berland, Port de la Lune neighbourhoods, the Esplanade des Quinconces, the Grand Théâtre and CAPC contemporary art museum. The historic part of the city, Port of the Moon, is on the UNESCO World Heritage List, described as “an outstanding urban and architectural ensemble” of the 18th century.

Saint-Emilion and the Bassin d’Arcachon make for a very attractive surrounding area.

Bordeaux is a gourmet city, at the crossroads of all South Western France specialities and at the heart of the worlds largest wine growing region with very well known names: Margaux, Saint-Emilion, Sauternes, Pessac-Léognan.

With this excellent international reputation, built over many decades, Bordeaux is also decidedly looking towards the future and is dedicated to innovation, trying to obtain the French status of “metropole européenne”.

Social Media

Connect with EAGE! You can find us on LinkedIn, Facebook, and Twitter where you will be able to find all updates on the three conferences! Feel free to add comments, like, share or tag our posts, and don’t forget to follow us!

Contact

For more information or enquiries please visit the event website www.NSG2021.org or contact the EAGE Europe Office via registration@eage.org.

Welcome by the Local Advisory & Scientific Committee

We are honoured to welcome you to the Near Surface Geoscience Conference and Exhibition 2021 in Bordeaux, France. Under the auspices of the EAGE, three conferences will take place in parallel.

France has a long history with geophysics, as the homeland of great scientists such as René Descartes, Pierre Bouguer, the Schlumberger brothers and Louis Cagniard who brought significant insights to geophysics. Geophysicists are now present all around the country in numerous laboratories. The University of Bordeaux, established 1445, is one of the oldest in Europe. The faculty of Earth sciences originally grew on the work of geologists and paleontologists from the late 1830's, such as Giacinto di Collegno and Fernand Daguin. For 60 years, research domains such as archaeology, prehistoric sciences, oceanography and petroleum engineering have been expanding at the University. Within the last 50 years, engineering geology and geophysics also emerged as an active research area in Bordeaux.

The city of Bordeaux is certainly a good choice, since it's been ranked the world's best city on the Lonely Planet's Best in Travel 2017 list. Bordeaux is in the south-west of France, along the Garonne River close to the Atlantic Ocean. The city is an ancient and growing town that faces the challenge of staying in harmony with both culture heritage and natural resources sustainability. It is an inhabited historic city, with an outstanding urban and architectural ensemble, created in the age of Antiquity and expanded in the Enlightenment. Bordeaux, thanks to its Port of the Moon, is listed as a Unesco world heritage city.

Capital of the Nouvelle Aquitaine, the city of Bordeaux is associated with famous vineyards, gastronomy, long sand beaches, and prehistorical sites offering you the opportunity to benefit from studious moments and sightseeing. Weather conditions in September are very pleasant. The LAC has selected special field trips such as wine and geology, coastal processes, prehistorical Lascaux cave site and research workshops to widen your knowledge spectrum.

We expect a large participation of scientists from universities and industries, all focused on networking opportunities and cross-fertilization between geology, geophysics, hydrology, geotechnics, civil engineering, natural hazards, raw materials, energy science. Key

academic and industrial actors located nearby will attract others for fruitful discussions and collaborations. The area as a breeding ground will offer the opportunity to exhibitors, speakers and visitors to display and exchange their latest products, research and discoveries. Field method demonstrations will also take place. The young geoscientists' generation, represented by students, will be gladly received as they will have to close the gap between classical and emergent key issues among with all disruptive situations as climate change.

The technical programme will cover traditional topics such as Shallow Marine, Modeling & Inversion, Measurements while Drilling, Mining and Post- Mining, CO2 Storage, Cultural Heritage, Hot Zones and Polar investigation and, Geo- and Anthropogenic hazards. A large panel of state of the art geophysical methods will be presented among with Seismic, Electrical Resistivity and Induced Polarization, Electro- Magnetic, Magnetic, Magneto-Telluric, Ground Penetrating Radar, Gravimetry. This will be the opportunity to focus on emerging issues (e.g. Nearshore Processes and Coastal Evolution, Climate Change Impacts) and technologies (e.g. Muons, UAV, and Machine Learning). Selected workshops will take place on Sunday prior to the conference.

In addition to the technical sessions and exhibitions, an amazing social programme will be organized, including a conference evening, that will offer you a taste of south-western France. We hope that attending the Near Surface Geoscience Conference and Exhibition 2021 will stay in your memory for decades.

We are looking forward to welcoming you in 2021 in Bordeaux!

Local Advisory & Scientific Committee

Colette Sirieix (Chair)	University of Bordeaux I2M
Vincent Allègre	University of Bordeaux I2M
Konstantinos Chalikakis	University of Avignon EMMAH
Philippe Cosenza	University of Poitiers and the French CNRS, Institute of Chemistry of Materials and Media of Poitiers (IC2MP)
François Demontoux	University of Bordeaux IMS
Olivier Douez (Mallet Cyril)	BRGM Nouvelle-Aquitaine Bordeaux
Jérôme Gouin	Pôle Avenia
Delphine Lacanette	University of Bordeaux I2M
Olivier Le Roux	Bordeaux INP
Antoine Marache	University of Bordeaux I2M
Medhi Sbartai	University of Bordeaux I2M
Myriam Schmutz	Bordeaux INP
Catherine Truffert	Iris Instrument
Cécile Verdet	University of Bordeaux I2M

Over the last three decades, hydrogeophysics has emerged as an important sub-discipline in hydrogeology and ecohydrology. It involves investigations of the structure and processes of the subsurface environment, at different spatiotemporal scales, by identifying key properties and state variables related to water flow and solute transport.

The first EAGE Conference on Hydrogeophysics, in Bordeaux, 2021, will bring together geoscientists from academia, research institutes, industry, service and engineering companies to present and discuss the latest state-of-the-art in research and advances on Hydrogeophysics.

The objective is to provide a comprehensive overview of the state of hydrogeophysical research (tools and theoretical advances) for investigating dynamic processes in subsurface settings regarding various environmental issues such as water resources management, remediation, natural and anthropogenic hazards as well shallow geothermal energy. It will allow identification of challenges and ways forward within an integrated cross disciplinary Framework.

The technical programme of this first EAGE Conference on Hydrogeophysics will cover the widest range of topics on geophysics (e.g. airborne/satellite, surface based and logging) applied in all types of hydrosystems of the Critical

Zone (e.g. fractured, karstified and porous aquifers, volcanic and complex aquifers, island aquifers, wetlands, saltwater intrusion, permafrost) and at different temporal (from seasonal to high frequency monitoring) and spatial scales (from sample to the catchment scale).

Scientific Committee

Kostas Chalikakis (Chair)	University of Avignon
George Apostolopoulos	National Technical University of Athens
Andrew Binley	University of Lancaster
Esther Bloem	Norwegian Institute of Bioeconomy Research
Anders Vest Christiansen	Aarhus University
Nathalie Dörflinger	BRGM
Adrián Flores-Orozco	Technical University of Wien
Thomas Günther	Leibniz Institute for Applied Geophysics
Max Halkjær	Ramboll Group
Olivier Kaufmann	University of Mons
Patrick Lachassagne	University of Montpellier
Frédéric Nguyen	University of Liege
Myriam Schmutz	Bordeaux INP
Lee Slater	Rutgers University
Panos Tsourlos	Aristotle University of Thessaloniki
Ute Wollschläger	Helmholtz Centre for Environmental Research



The second Conference on Geophysics for Infrastructure Planning, Monitoring and BIM aims to bridge the gap between geoscientists, geotechnical and geomechanical engineers, and asset owners/planners in this specific field. The conference will provide a platform for academia, governmental institutions and industry to address the challenges related to infrastructure life cycle: prior, during and after the construction of engineered structures and their long-term maintenance.

Detailed imaging of problematic geology, as well as quantification of physical properties of the soil- subsoil, are among the significant roles that geophysics can play during the infrastructure planning phase. In addition to these characterization tasks, geological risk assessment is a critical first step during the design of infrastructure projects. A detailed evaluation of the possible disruptions to infrastructure caused by natural events can avoid budget overruns, significant delays during the construction phase and excessive maintenance costs throughout the lifespan.

Monitoring during and after construction are important control measures for hazards associated with infrastructure development. At these stages, geoscience can make a valuable contribution to assessing the impact of construction on the risk of landslides, subsidence, structure-related noise and/or building damage. Geophysical methods can also provide subsurface information at high resolution in space and time, and may be used to detect subsurface objects and utilities, as well as to identify problem areas for targeted maintenance of ageing infrastructure.

In all these steps prior, during and after construction, geophysical information must be delivered in a way that is meaningful to geotechnical and civil engineers, planners and asset owners. For this purpose, links between geophysics and geotechnical models must be established and new efforts must be made to communicate novel and multidisciplinary datasets. BIM (Building Information Modelling) tools are now becoming crucial for the communication of geomodels to clients, thus aiding decision making and overall understanding of the results. Given its significance, the conference will offer dedicated sessions on this subject as well as on the integration between geophysics and geotechnics.



Finally, special focus will be placed on new technologies and methodologies that can enhance the efficacy of geophysical methods applied to infrastructure, and on more challenging working environments such as in mega cities and in shallow-water cover infrastructure developments.

Scientific Committee

Beatriz Benjumea Moreno (Chair)	Cartographic and Geological Institute of Catalonia
Takao Aizawa	Suncoh Consultants and Managing Director of SEGJ
Thomas Dickmann	Amberg-Switzerland
Shane Donohue	University College Dublin
Charlotte Krawczyk	GFZ
Oliver Kuras	British Geological Survey
Alireza Malehmir	Uppsala University
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
Mark van der Meijde	University of Twente
Arre Verweerd	AECOM



CALL FOR ABSTRACTS

**SUBMIT YOUR EXTENDED ABSTRACTS BEFORE 15 APRIL 2021 AT
WWW.NSG2021.ORG**

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