

**EAGE**

CONFERENCE & EXHIBITION

# NEAR SURFACE GEOSCIENCE'22

18-22 SEPTEMBER 2022 | BELGRADE, SERBIA

28<sup>th</sup>

European Meeting of  
Environmental and  
Engineering Geophysics

4<sup>th</sup>

Conference on Geophysics  
for Mineral Exploration  
and Mining

3<sup>rd</sup>

Conference on  
Airborne, Drone and  
Robotic Geophysics

## FIRST ANNOUNCEMENT

[WWW.NSG2022.ORG](http://WWW.NSG2022.ORG)

#NSG2022



# WELCOME TO THE NEAR SURFACE GEOSCIENCE CONFERENCE & EXHIBITION 2022

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## About the event

For this year's Near Surface Geoscience Conference & Exhibition, the 28<sup>th</sup> European Meeting of Environmental and Engineering Geophysics will be accompanied by two returning successful conferences, the 4<sup>th</sup> Conference on Geophysics for Mineral Exploration & Mining and the 3<sup>rd</sup> Conference on Airborne, Drone and Robotic Geophysics. Through this innovative combination, NSG2022 will:

- Provide insight into emerging geophysical techniques for environmental sciences, mineral exploration and discuss the state-of-the-art in characterizing the near-surface in a broad range of geological settings and challenges;
- 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 growing exhibition;
- Offer incredible networking opportunities through our delightful social programme, including our **Welcome Reception** in the Exhibition and **Conference Evening** at an impressive, local and traditional venue.

## FACTS

### VENUE

CROWNE PLAZA HOTEL  
BELGRADE, SERBIA

### EXPECTED ATTENDANCE

350 - 450

### EXPECTED EXHIBITORS

45

## IMPORTANT DATES

Call for Extended Abstracts Open	November 2021
Deadline Early Booth Booking	1 March 2022
Registration Open	1 April 2022
Deadline for Extended Abstract Submission	25 April 2022
Event Dates	18-22 September 2022
Exhibition Dates	19-21 September 2022

## Welcome Word



On behalf of the EAGE Near Surface Geoscience Division, I cordially invite you to attend the Near Surface Geoscience Conference & Exhibition 2022 to be held in Belgrade, Serbia from 18-22 September 2022.

We are pleased to announce that after our successful virtual conference in 2020 and our first ever hybrid in Bordeaux in 2021, we will return in-person to Belgrade and host it for the first time there. For NSG2022, we'll introduce the first of its kind or rebranded 3<sup>rd</sup> Conference on Airborne, Drone and Robotic Geophysics along with the 28<sup>th</sup> European Meeting of Environmental and Engineering Geophysics, and the 4<sup>th</sup> Conference on Geophysics for Mineral Exploration and Mining in this attractive region of Europe. The Balkans, and especially Serbia, is a region that our near-surface geoscience community would benefit to be present and exchange knowledge on a variety of emerging topics and societal challenges from access to the critical raw materials in this important era of energy transition and climate action to environmental issues as well as geohazards, water accessibility for agriculture, and archaeology. We have deliberately combined the newly branded conference of robotic geophysics with mineral exploration and mining geophysics to showcase new technologies emerging from these sectors so that the two

parallel conferences would complement each other and attract new faces to our events.

The local advisory committee and division members have now worked for more than two years to make sure a carefully selected programme with numerous highlights will make the event not only fruitful but also memorable for you. I personally welcome our exhibitors and technology providers to bring their newest achievements, best service practices and equipment along with the technical talks. We intend to reinitiate our popular "rapid-fire presentations" on geo-innovation with networking possibilities for both young professionals as well as companies in order to present cutting edge ideas from various sectors related to the topics of the three conferences. The local advisory committee and the chairs of the conferences have approached a number of key players in the sectors to be present and we hope that NSG 2022 will be a milestone in the history of our events.

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 an incredible conference! I look forward to seeing and welcoming you in Belgrade for NSG 2022!

**Alireza Malehmir**  
Near Surface Geoscience Division Chair

## NEAR SURFACE GEOSCIENCE 2022 OVERVIEW\*

	SUNDAY 18 SEPTEMBER	MONDAY 19 SEPTEMBER	TUESDAY 20 SEPTEMBER	WEDNESDAY 21 SEPTEMBER	THURSDAY 22 SEPTEMBER
<b>REGISTRATION</b>					
	Registration	Registration	Registration	Registration	
<b>PROGRAMME</b>					
Workshop 1		Exhibition	Exhibition	Exhibition	<b>Field Trip 1</b> Geoscientists at Walk - Witchery of The Old Fortress
Workshop 2		Technical Programme	Technical Programme	Technical Programme	<b>Field Trip 2</b> (Thursday 22 - Friday 23 September) Western Serbia - A Never-Ending Story
Workshop 3			Field Demonstrations		
Workshop 4					
<b>SOCIAL PROGRAMME</b>					
		Icebreaker Reception	Conference Evening		

\*May be subject to changes

Times and details will be posted on the website in due course at [www.NSG2022.org](http://www.NSG2022.org).



## Exhibition and Sponsoring

Near Surface Geoscience 2022 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 2022 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 EAGE website or contact us at [corporaterelations@eage.org](mailto:corporaterelations@eage.org).

## Venue

Formerly known as the Intercontinental Hotel Belgrade, the Crowne Plaza is one of the most prestigious hotels in Belgrade. The hotel is located at the Novi Beograd business "Glass" district, and has a good public transport connection to downtown, Belgrade Arena and Merkator.



## About Belgrade

Outspoken, adventurous, proud and audacious: Belgrade ('White City') is by no means a 'pretty' capital, but its up-beat energy makes it one of Europe's most famous cities. Belgrade is well connected by air worldwide, with flight connections to/from 70 major European, Middle Eastern, Asian, and North American cities. While it heads towards a brighter future, its chaotic past unfolds before your eyes: socialist blocks are squeezed between art nouveau masterpieces, and remnants of the Habsburg legacy contrast with Ottoman relics and socialist modernist monoliths. This is where the Sava and Danube Rivers kiss, an old-world culture that at once evokes time-capsuled communist-era Yugoslavia and new-world, EU-contending cradle of cool.

### A City Underneath The City

Belgrade has so many secrets, but one of them hides just below the surface. More than one hundred caves, canals, tunnels, passages tell the story of its connection to various empires and states that ruled over the ages. Roman halls and aqueducts, Tito's secrets as well those of Communist Information Bureau spies – you can find them all beneath Belgrade.

## 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.NSG2022.org](http://www.NSG2022.org) or contact the EAGE Europe Office via [registration@eage.org](mailto:registration@eage.org).

## Welcome by the Local Advisory Committee

The following three conferences will take place as parallel programs:

- 28<sup>th</sup> European Meeting of Environmental and Engineering Geophysics;
- 4<sup>th</sup> Conference on Geophysics for Mineral Exploration and Mining;
- 3<sup>rd</sup> Conference on Airborne, Drone and Robotic Geophysics.

Registering for the Near Surface Geoscience 2022 will give you the opportunity to benefit from all conferences.

It is important to highlight that the Technical Exhibition will be held parallel to the three conferences. It will be the central meeting place where companies display products and services that are relevant to all events, introducing new products and services, but also demonstrating novel technology and equipment. During the event, instrument and field method demonstrations will take place. The exhibition will be a nice opportunity for exhibitors and participants to monitor the competition and expand their network in the Balkan region.

Furthermore, all participants will have the opportunity to attend a number of interesting side events. Special attention will be given to hands-on learning workshops, dedicated sessions and more. We expect the highest level meeting with a large number of professionals from academia and industry, as well as a large number of young professionals and students. The meetings, workshops and networking opportunities will be a benefit to all of us in the field of geosciences.

In addition to the technical sessions and the exhibition, the conference will have an enjoyable and unique social program. Belgrade is located at the confluence of the two rivers. All geological locations in Serbia are in a few hours

distance from the city, but Belgrade itself has a unique history, architecture and the most important - interesting geological settings and landscape (29 hills, two rivers, one plain, and a mountain).

After the Conference, unforgettable field trips will take place. We will start from Kalemegdan fortress, visiting the natural monument - the profile of the marine Neogene sandbank, but also discovering Belgrade underground, as Kalemegdan Fortress reveals the most hidden secrets of this city (Geoscientists at walk – Witchery of the old Fortress). As Belgrade is a perfect starting point of an adventure-filled, EAGE Conference participants may choose a field trip to Western Serbia – A never-ending story (two days by bus, boat and train with steam locomotive at the Europe's most attractive narrow gauge museum railway, Šargan Eight). So, you will learn a lot of about geological diversity/ heritage of Serbia, but also discover magnificent nature, monasteries, archaeological sites, wineries, and ethno villages. With these field trips, LAC really wishes to leave EAGE delegates breathless!

We hope that attending the Near Surface Geoscience Conference and Exhibition 2022 will be an enriching professional experience, with a lot of networking and sharing experiences and a lot of fun for you. We are looking forward to meeting you in September 2022, in Belgrade!

### Local Advisory Committee

Snežana Komatina (Chair)	AGES
Magdalena Marković Juhlin (Co-chair)	Uppsala University
Marko Vanić (Co-chair)	Scientific and Technological Research Centre NIS
Milan Milošević	Energoprojekt - Hidroinženjering a.d.
Victor Mocanu	University of Bucharest
Monika Ivandić	Uppsala University
Raffaele Persico	Institute for Archaeological and Monumental Heritage
Klodian Skrame	Polytechnic University of Tirana
Florina Tuluca	University of Bucharest



## European Meeting of Environmental and Engineering Geophysics

For its 28<sup>th</sup> edition, the European Meeting of Environmental and Engineering Geophysics will continue to build on 28 years of research and development in the field of engineering geophysics. The three day scientific conference will cover a wide array of topics related to the near surface field, drawing on a wealth of excellent plenary talks, oral and poster presentations, and rich discussions. Being Europe's most significant meeting of its kind, the 28<sup>th</sup> European Meeting of Environmental and Engineering Geophysics offers participants the opportunity to meet the people behind the most cutting-edge research across a range of topics, from the applications of geophysics to the emergence of new technologies and research trends. Take part in the bright future of environmental and engineering geophysics, and join us in Belgrade this year.

### Scientific Committee

Snežana Komatina (Chair)	Technical Faculty "Mihajlo Pupin", University of Novi Sad
Milovan Urošević (Co-Chair)	Curtin University of Technology
Koya Suto (Co-Chair)	Terra Australis Geophysics Pty. Ltd.
Takao Aizawa	Suncoch Consultants Co
George Apostolopoulos	National Technical University of Athens
Mehmet Salih Bayraktutan	Igdir University
Sergey Buryak	DECO Geophysical SC
M. Emin Candansayar	Ankara University
Monika Ivandić	Uppsala University
Alireza Malehmir	Uppsala University
Musa Manzi	Witwatersrand University
Milan Mitrović	Energoprojekt - Hidroinženjering a.d.
Victor Mocanu	University of Bucharest
Jun Sugawara	Queensland Government
Raffaele Persico	Institute for Archaeological and Monumental Heritage
Florina Tuluca	University of Bucharest



## Conference on Geophysics for Mineral Exploration and Mining

Following the EAGE Conferences on Geophysics for Mineral Exploration and Mining in Barcelona, 2016, and in Porto, 2018, the third conference held virtually in 2020, we are very much looking forward to meeting again in person in Belgrade in 2022.

Recent advances, trending topics, and novel geophysical methods in mineral exploration and mining will be presented by invited researchers from academia, industry, and government organizations. New major discoveries of base metals and REE are required for the green technologies needed to meet the target of Net Zero By 2050. These future discoveries will be located undercover, in remote areas, and so will present significant exploration challenges. Geophysics will play a major and expanding role in this crucial quest for mineral reserves.

The modern-day challenges of exploration require developing novel geophysical techniques, which improve exploration success and lead to new discoveries. The fourth Conference invites papers that focus on emerging geophysical techniques for mineral exploration, novel

interpretation methods, including joint inversion of multiphysics data, and challenging case studies. We encourage contributions from all over the world, especially those with a European focus and application.

### Scientific Committee (To be confirmed)

Musa Manzi (Chair)	University of Witwatersrand
Chris Nind (Co-chair)	Abitibi Geophysics
George Apostolopoulos	National Technical University of Athens
Esben Auken	GEUS
Elizabeth Baranyi	Seequent
Joe Cucuzza	industry21
Ashley Grant	BHP
Suvi Heinonen	Geological Survey of Finland
Jean Legault	Geotech
Lindsay Linzer	University of Witwatersrand
Alireza Malehmir	Uppsala University
Greg Paleolog	CGG
Heather Schijns	BHP
Ioannis Tsitos	Goldsource Mines Inc.
Milovan Urosevic	Curtin University
Michael Zhdanov	University of Utah/ Technolmaging

The gap between ground-based geophysics as a suite of small-scale, profile-based and high-resolution methods on one side and airborne geophysics as large-scale, spatial coverage and mapping / low-resolution methods on the other side is steadily closing with the development of increasingly accurate and (very-)near-surface systems. This development has been going on for 15+ years in airborne electromagnetics (AEM) and has recently been accelerated by the introduction of drone- and robotics-based acquisition methods. These rapid spatial acquisition platforms enable highly efficient data coverage with resolution close to elaborate ground coupled systems. The 3rd Conference on Airborne, Drone and Robotic Geophysics aims at assembling the latest research, development and use cases to share and celebrate groundbreaking success stories, to dig into today's remaining limitations and analyze ways forward. We welcome contributions with a technology focus both in hardware and towards algorithms as well as complex case studies that illustrate the added value of going beyond the limitations with ground-based methods.

Join us in Belgrade in a hopefully post-covid world!

## Scientific Committee

Andi A Pfaffhuber (Chair)	Emerald Geomodelling
Anders V Christiansen (Co-chair)	Aarhus University
Ana Pires	Inesctec
Anders Edsen	WSP
Anne-Sophie H Christensen	GEUS
Arnauld Le Breton	EMerald Geomodelling
Arne Døssing	DTU
Craig W Christensen	EMerald Geomodelling
Jacopo Sala	3D-Radar
Johannes Stoll	Mobile Geophysical Tech.
Kristoffer S Mohr	Airborne Instruments
Liz Thompson	Transition Elements
Malte Vöge	NGI
Mats Gudbrandsen	iGIS
Mehrdad Bastani	SGU
Nicklas S Nyboe	SkyTEM Surveys
Oliver Lang	Airbus
Sean Walker	Campbell & Walker
Thomas M Hansen	Aarhus University
Thue Bording	Aarhus Geoinstruments
Tim Archer	Reid Geophysics





# LIST OF TOPICS



28<sup>th</sup>

## European Meeting of Environmental and Engineering Geophysics

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1. Geophysical Fields and Human Health
2. Geophysics and Climate Changes
3. Environmental Geophysics - Geohazard and Anthropogenic Hazard Studies
4. Geophysical Investigations in Karst Terrains
5. Groundwater Exploration and Hydrogeophysics
6. Geophysics in Engineering Geology and Geo-Technical Investigations
7. Monitoring and Reservoir Characterization with Near-Surface Methods
8. Geophysics in Studies for Geothermal Energy and CO<sub>2</sub> Storage
9. Measurement while Drilling (for Mineral Exploration, Geotechnical, Groundwater and Environmental Geophysics)
10. Geophysical Surveys of Cryosphere and Arctic
11. Forensic Geophysics/Geosciences
12. Archaeogeophysics
13. Humanitarian Geophysics/Geosciences (Geophysics and Geosciences Applied to Solve Humanitarian Problems)
14. Modeling, Inversion and Data-Processing in Near-Surface Geophysics
15. Geophysics in 3D Geological Modelling
16. Integrated Approaches in Near-Surface Geophysics
17. New Technologies, Developments and Research Trends
18. Education for Industry
19. Geophysics supporting Sustainable Development Goals (SDGs)
20. Applied Geophysics Case Studies from the Balkans
21. Special Session: Geophysics and Geosciences as a Tool of Biomedicine (Influence of Environment on Human Health)





4<sup>th</sup>

## Conference on Geophysics for Mineral Exploration and Mining

1. Rock Physics of Mineral Deposits
2. New Advances in Interpretation of Magnetic and Magnetic Gradiometry Data
3. Gravity and Gravity Gradiometry Methods in Mineral Exploration
4. Electrical Methods in Mineral Exploration
5. Airborne Electromagnetic Surveys and Mapping of Mineral Resources
6. Ground, Borehole, and Airborne IP Methods
7. Seismic Methods in Mineral Exploration
8. Downhole Geophysics
9. New Developments in 3D Imaging/Inversion of Geophysical Data
10. Joint Inversion of Multiphysics Data
11. Exploration under Cover
12. Geophysical Methods in Mining Engineering
13. GPR Applications in Mining
14. AI and Machine Learning in Mineral Exploration and Mining
15. Special Session: Innovative EU-funded Mineral Exploration Solutions

3<sup>rd</sup>

## Conference on Airborne, Drone and Robotic Geophysics

1. Airborne EM technology
2. General airborne technology (magnetics, lidar, hyperspectral, etc.)
3. Drone EM technology
4. General Drone technology, including magnetics & remote sensing
5. Robotic & ground-based spatial geophysics
6. Terrestrial and space-borne Remote Sensing
7. Data Integration & AI
8. 3D modelling & visualization
9. Geological application focus
10. Engineering / Environmental application focus



# CALL FOR ABSTRACTS

SUBMIT YOUR EXTENDED ABSTRACTS AT  
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