
12th Congress of the Balkan Geophysical Society

GEOPHYSICS FOR THE BETTER WORLD

- PROGRAM -



Hotel *Kraljevi čardaci*, Kopaonik Mt., Serbia
May 27-31, 2024

INVITATION



Members of the Organizing Committee of the 12th Congress and Technical Exhibition of the Balkan Geophysical Society (BGS) *Geophysics for the better world* send a warm welcome to the world geophysical community and cordially invite you to participate in the event which is held on May, 27-31, 2024, at the *Kraljevi čardaci* Hotel, Kopaonik mt., Serbia.

The event is organized by *Association of Geophysicists and Environmentalists of Serbia (AGES)* and *SEG/SPE Student Section* of the Technical Faculty *Mihajlo Pupin*, University of Novi Sad, Zrenjanin, Serbia. We have support of traditional partners: EAGE (European Association of Geoscientists & Engineers), Ministry of Science, Technological Development and Innovation of the Republic of Serbia and Serbia Convention Bureau, as well as local partners: Hotel *Kraljevi Čardaci Spa*, Kopaonik National Park, Tourist Organization Raška and Ski Resorts of Serbia.

Balkan Geophysical Society (BGS) is a non-profit organization established by the geophysical societies in the countries of the Balkan Region and neighboring countries (Albania, Bulgaria, Greece, Hungary, Romania, Serbia and Turkey), in order to promote collaboration and mutual assistance between geophysicists from the BGS Member Countries, teaching of Geophysics and R&D in the Universities and Institutions, but also networking and friendship among our members. BGS cooperates with the Member National Geophysical Societies/Unions/Committees, with the international organizations such as EAGE, EAPG, SEG, SPE, UNESCO, etc., as well as with Geophysical Societies in other countries, whose activities could help in the fulfillment of the goals of BGS. BGS is open to other Balkan and neighboring Countries, which can act either like full or associate member.

BGS Congress is organized every third year, at the end of one country member presidency. The 1st Congress of BGS was held in Athens, in 1996, and the last one till now, the 11th, was organized in Bucharest, in 2021, but in virtual form.

In May 2009, during Serbian presidency, the 5th BGS Congress and Technical Exhibition *Geophysics at the Cross-Roads* was organized by *AGES* and co-organized with EAGE, EnerG and SEG in Belgrade. Almost 250 geophysicists (professionals and students) from Balkans and the world participated in the event. Beside the world known geophysicists and representatives of EnerG, EAGE, SEG and IUGS, our special guest was Director of UNESCO-BRESCIE office. During the three-days *AGES/BGS/ENeRG/UNESCO* Side-event *Energy, Economy & Environment* at Mečavnik (ethno-village owned by the famous movie director Emir Kusturica), organized just after the Congress in Belgrade, Letter of Interest in R&D cooperation between UNESCO and AGES (on behalf of BGS) related to the CCS in Balkans was signed.



This May, 27-31, the 12th Congress and Technical Exhibition of the Balkan Geophysical Society (BGS) is held in Serbia again, at the *Kraljevi čardaci* Hotel, Kopaonik mt., Serbia. During the Congress, participants will enjoy amazing Kopaonik National Park, the number one ski resort in Serbia during the winter (sometimes the ski season lasts till the end of May!), but also an ideal destination for hiking lovers, and for many other activities which are organized during the spring and summer.

After a decade-long cooperation with the Hotel, AGES members guarantee that with its functional, stylish and well-equipped conference halls in conjunction with the unique professional team, *Kraljevi Čardaci* Hotel is the perfect location for organizing the BGS Congress. It is important to note that the Hotel leads the way in sustainability (Ethical partnerships, Eco-Friendly choices, Wellness promotion, Water conservation, Renewable energy, Cutting-Edge Technologies, etc.).

Beside standard topics of the Technical Program, goal of the Organizing Committee is to provide some additional contents. Special message of the event is that, beside professionals, there are three pillars more – students, young professionals and seniors. Only this combination gives the best result. Various panel discussions and Workshops for students and young professionals are planned, but also the special program – session and exhibition *Pioneers of Geoscience*, dedicated to distinguished colleagues who established Geoscience and Geophysics at Balkan countries. That is why special program is planned to emphasize the importance of each of them as BGS leaders for sustainable, inclusive and growing future – *working together for a positive social change*.

12th BGS Congress is the event where All are the hosts and that will be the nice opportunity to present not only the knowledge and experience of Balkan geophysicists to the world, but also the unique energy and hospitality.

All geophysicists (and not only geophysicists) are welcome – please join us to make unforgettable event! *Geophysics for the better world*.

On behalf of the *BGS* Organizing Committee

Prof.Dr. Snežana Komatina, Chair

President of *Balkan Geophysical Society (BGS)*

President/Founder of the *Association of Geophysicists and Environmentalists of Serbia (AGES)*



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12th CONGRESS OF BGS IS HOSTED BY:

- ***AGES (Association of Geophysicists and Environmentalists of Serbia)***
- ***SEG/SPE Student Section, Technical Faculty Mihajlo Pupin, Zrenjanin, Serbia***

WITH THE SUPPORT OF:

- **EAGE (European Association of Geoscientists & Engineers)**
- **Ministry of Science, Technological Development and Innovation of the Republic of Serbia**
- **Serbia Convention Bureau**

LOCAL PARTNERS:

- ***Hotel Kraljevi Čardaci Spa***
- **Kopaonik National Park**
- **Tourist Organization Raška**
- **Ski Resorts of Serbia**

VENUE

Hotel Kraljevi Čardaci Spa

Vikend naselje, Čajetinska česma bb, Kopaonik, Serbia

Tel.: +381(0)36 428 743, +381(0)36 428 673

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EPOS, the European Plate Observing System, is a multidisciplinary, distributed research infrastructure that facilitates the integrated use of data, data products, and facilities from the solid Earth science community in Europe.

EPOS brings together Earth scientists, national research infrastructures, ICT (Information & Communication Technology) experts, decision makers, and public to develop new concepts and tools for accurate, durable, and sustainable answers to societal questions concerning geohazards and those geodynamic phenomena (including geo-resources) relevant to the environment and human welfare.

Luleå University of Technology
Division of Geosciences and Environmental Engineering
e-mail: georg.andreas.donoso@ltu.se



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Monday, 27 May

17:30-18:30 Registration of participants

19:00-21.00 Dinner

Tuesday, 28 May

10:00-11:00 Opening Ceremony

11:00-12.30 Invited Lecturers

- **Aldo Vesnaver:** *Amplitude and travelttime inversion for mono-channel Boomer surveys*
- **Aleksandra Kolarski:** *Solar-Terrestrial Interactions: Solar Flares as Earth's lower ionospheric Perturbbers*
- **Florina Chitea Tuluca:** *The role of geophysics and cross-sector technologies for methane abatement strategies in the Waste Sector*

12:30-14:00 Lunch

14:00-14:15 Special Lectures

- **George A. Donoso:** *Introduction to EPOS, the EUROPEAN PLATE OBSERVING SYSTEM*

14:15-16:00 Workshop:

Learning how to use the EPOS Data Portal: harnessing cross-disciplinary research

Presenters: *Harald Nedrebø*¹, *Jan Michalek*¹ and *George A. Donoso*²

¹University of Bergen, Norway, ²Luleå University of Technology, Sweden (e-mail: georg.andreas.donoso@ltu.se)

Short Description: In April 2023, **EPOS, the European Plate Observing System launched the EPOS Data Portal** (<https://www.ics-c.epos-eu.org/>), which provides access to multi-disciplinary data, data products, services and software from solid Earth science domain. Currently, ten thematic communities provide input to the EPOS Data Portal through services: Anthropogenic Hazards, Geological Information and Modelling, Geomagnetic Observations, GNSS Data and Products, Multi-Scale Laboratories, Near Fault Observatories, Satellite Data, Seismology, Tsunami and Volcano Observations. The EPOS Data Portal enables search and discovery of assets thanks to metadata and visualization in map, table or graph views, including download of the assets, with the objective to enable multi-, inter-transdisciplinary research by following FAIR principles.

The training will provide an introduction to the EPOS ecosystem, demonstration of the EPOS Data Portal and hands-on training by following a scientific use case from the Balkan region using the online portal. It is expected that participants have scientific background in one or more scientific domains listed above. The training targets young researchers and all those who need to combine multi-, inter- and transdisciplinary data in their research. The use of the EPOS data Portal will simplify data search for Early Career Scientists and potentially help them in accelerating their career development. Feedback from participants will be collected and used for further improvements of the portal.

Short Presenters Bio:



Harald Nedrebø is chief engineer at the University of Bergen (Norway) with background in geoscience, teaching and geomodelling. He has been participating in EPOS activities since early 2022 and is contributing to training workshops and management of reported issues at the EPOS Data Portal.



Jan Michalek is currently having a Senior Engineer position at University of Bergen (Norway). His background is in seismology and since 2016 he is actively contributing to developments of EPOS, currently coordinating interactions of individual thematic communities with the Integrated Core services of EPOS.



George A. Donoso is Postdoc researcher in Exploration Geophysics at Luleå University of Technology (Sweden) with background in magnetotelluric and seismic methods for oil, gas and mineral exploration, and representative for the EPOS Geomagnetic data and Anthropogenic hazards thematic core services.

10:00-16:00 Poster presentations

- **Ndreko Dhurata:** *Evaluation of the macroseismic field of moderate M4.8 of Klosi earthquake in Albania*
- **Lule Arjol:** *MODERATE TO STRONG EARTHQUAKES OF ALBANIA DURING THIS CENTURY AND THEIR SEISMOGENIC ZONES*
- **Rumiana Bojilova:** *Ionospheric co-seismic effects after MW 5.9 earthquake in Greece on 29 March 2024*
- **Dimcho Solakov:** *Seismological analysis of the swarm type seismicity in the Kresna seismogenic zone (Bulgaria)*
- **Ormeni Rrapo:** *SEISMOTECTONIC ACTIVITY OF THE CURRAJ I EPREM-RAGAMI TRANSVERSAL FAULT ZONE, ALBANIA*
- **Sunjay Sunjay:** *Carbon Capture Geological Storage*
- **Omoregbe Omoare:** *HYDROGEOPHYSICAL INVESTIGATION OF ASABA AREA, DELTA STATE, NIGERIA*

10:00-16:00 Technical Exhibition

16:30-18:30 Walking tour Čardaci 1

19:00-21:00 Ice-breaker reception



Wednesday, 29 May

09:00-10:30 - Oral presentations

- **Ndreko Dhurata:** *Some aspects of seismic activity during 2023 in Albania and surrounding area*
- **Lule Arjol:** *SEISMICITY OF SHKODER-PEJE DEEP FAULT ZONE DURING THIS CENTURY*
- **Ormeni Rrapo:** *STATISTICAL ANALYSIS OF THE CURRENT SEISMICITY IN THE KURBNESH-KUKES-PRIZREN ZONE, ALBANIA*
- **Marko Vanić:** *Seismic porosity prediction through wave-equation based AVO seismic inversion in the Pannonian Basin*
- **Vita Kalashnikova:** *Method for spatial First Break Picking using Neural Network, QC, editing and smoothing*
- **Andrei Voronin:** *Application of CRS technique to poor quality of seismic signal data*

10:30-10:45 Coffee-break

10:45-11:15 – Commercial presentation

- **RadExPro seismic software** - Sergey Buryak, RADEXPRO SEISMIC SOFTWARE, LLC OGRANAK BEOGRAD

11:15-12:30 - Oral presentations

- **Laurențiu Asimopolos:** *Study about Block Size Distribution Curves and Commercial Boundaries of the marble quarries*
- **Moataz Mohamed Gomaa Abdelrahman:** *Hybrid Singular Value Decomposition (SVD)-based interval inversion algorithm for robust petrophysical parameters prediction*
- **Vita Kalashnikova:** *Lithology and fluid prediction using AI algorithms around the Shrek area in the Norwegian Sea*
- **Christian Tzankov:** *Integrated geophysical study of the ancient city of Cabyle, Southern Bulgaria*
- **Peter Tildy:** *Geophysical Investigation of Organic Contaminant Plume using ERT and IP – a case study from Hungary*

12:30-14:00 Lunch



14:00-14:45 – Distinguished Lecturers

- *Insights into dike nucleation and eruption dynamics from high-resolution seismic imaging of magmatic system at the East Pacific Rise – **Milena Marjanović** (Université Paris Cité, Institut de Physique du Globe de Paris, CNRS, Paris, France)*

Short Description: In volcanic systems, rupture to the surface leading to eruptions is primarily governed by processes within the shallow part of the magma plumbing system with conduits, including dikes, nucleating from and tapping the shallow-level magma bodies. Where and how dikes nucleate from these magma accumulations to breach the layer above and erupt are subjects of ongoing debate of central importance for understanding volcano evolution and hazard assessment. Numerical models indicate that the geometry of magma bodies play an important role in dike nucleation and eruption triggering. However, due to the general inaccessibility of most active volcanic systems to high-resolution imaging, only the large-scale general morphology of these magma reservoirs is known leading to conceptualizations of smooth bodies with simple geometric shapes. Obtaining a detailed architecture of the shallow magma system from which eruptions are staged is important for evaluating end member models for eruption triggering and for understanding what controls the location, style, and frequency and duration of volcanic eruptions.

Mid-ocean ridges host the most extensive magmatic system on Earth, with 98% of its length below the ocean surface, which makes them an ideal target to be scanned by controlled-source marine seismic techniques. Beneath some portions of this vast system, the shallowest magma bodies are present and represented by long-linear Axial Magma Lenses (AML). It is at these shallow-most AMLs where dikes nucleate and connect the magma accumulations to the surface to result in an eruption.

To explore the magma plumbing systems at mid-ocean ridges, we use 3-D multichannel seismic data across a mid-ocean ridge environment and apply advanced marine seismic techniques to develop the highest resolution reflection images of the AMLs so far. The data were collected across a magmatically dynamic portion of the East Pacific Rise at 9°50'N with documented dike intrusion and eruptions in 1991/1992 and 2005/06. The obtained ultra-high-resolution images reveal that shallow magma accumulations are not smooth bodies but rather display prominent ridges and troughs that we interpret as remanent dike root zones where repeat dikes nucleate due to topography-induced stress concentrations. In the detailed topography, we find evidence for: 1) a dike root zone beneath where a caldera-like axial eruptive fissure zone is present, 2) deep excavation of this root zone within the primary eruption site for the last documented eruption, and 3) dikes rupturing from edges as well as the center of magma lenses. The results demonstrate that the distribution of additional, off-axis crustal magma accumulations further impact the stresses and melt budget at shallow-level magma accumulations leading to more frequent eruptions and argue for the bottom-up triggering mechanism. Considering the fine-scale morphology of shallow magma bodies will be critical for future generations of more realistic numerical models to aid in effective global volcanic hazard assessment and mitigation.

Short Bio:



I am a Marine Geophysicist interested in exploring characteristics of the oceanic lithosphere and associated processes using advanced geophysical techniques in combination with high-quality controlled-source seismic reflection and wide-angle datasets. My research has been focused on addressing questions related to past and present melt distribution along mid-ocean ridges (MOR), from fast (East Pacific Rise - EPR) to intermediate (Juan de Fuca Ridge - JdFR) spreading centers, and related phenomena such as crustal accretion, ridge propagation and segmentation, hydrothermal circulation, and dike intrusion. In addition, I have been working on characterizing deeper portions of the oceanic lithosphere at slow (Mid-Atlantic Ridge - MAR) and intermediate (JdFR) spreading MORs. Recently, together with my colleagues, I presented the first ultra-high-resolution images of magma bodies beneath the EPR that provide new insights into dike nucleation and dynamics of volcanic eruptions. In parallel, I have been developing and applying a number of different geophysical techniques to address the nature of magmatic systems and associated hydrothermal processes.

14:45-15:30 - Oral presentations

- **Nádasi Endre Kázmér:** *Modeling the detectability of cavities under rebar structures in case of GPR measurements*
- **Marjan Delipetrev:** *Potential for construction of a geothermal power plant in the Republic of North Macedonia*
- **Natalia-Silvia Asimopolos:** *Analysis of the geomagnetic storm from March 23-24, 2024, which had a strong impact on the Earth*
- **Magdalena Marković:** *Ophiolites in Serbia: An untapped energy source/storage rock*

15:30-15.45 Coffee-break

15:45-16:30 Distinguished Lecturer

- **Maria Angela Capello, OSI:** *The Strategic Opportunity of Sustainability in the Energy Sector*

Short Description: Sustainability is an essential topic to meet the expectations of investors and to walk in the energy transition path with success. Rankings of ESG parameters position companies and attract investors. This lecture is to help your incursion in sustainability, learning the why and how. You will gain an understanding of the global framework related to sustainability, as well as the challenges to integrating sustainability workflows and objectives in corporate and organizational strategies. Your awareness of how to ingrain sustainability in your geoscientist work will be enhanced and fortified. A clear business opportunity lies in ingraining sustainability in your corporate, team, and professional value proposition, with schemes that are efficient, practical, and support your resilience at work.

The lecture presents examples taken from rankings and descriptors of sustainability, which have propelled or at times hampered the success of operators in oil and gas.

Short Bio:



Maria Angela Capello - An inspirational leader in geosciences and the energy sector, Maria Angela Capello (“MAC”) is the President of Red Tree Consulting LLC, and a passionate advocate for Sustainability and Diversity, Equity, and Inclusion. She has worked in leading roles for national, international, independent, and service oil companies. She is a dynamic collaborator of academia and professional societies globally and most particularly in Latin America, the Middle East and USA for careers related to energy.

She crafts and leads sustainability strategies and actively collaborates with the United Nations, via UNECE, UNESCO, and numerous professional technical professional associations to promote sustainability and geosciences. She has published 4 books, more than 98 peer-reviewed articles and conference presentations and is regularly invited for speaking engagements around the globe.

MAC is Knight (“Cavaliere”) of the Order of the Star of Italy, a high civilian honor bestowed to her by the President of Italy in 2020. MAC is the 2025 Secretary Elect of the American Geosciences Institute (AGI), a member of the National Science Foundation GEO Advisory Council and is a member of the Board of Directors of the SEG Foundation. The leader of “*Geoscience in Action: Advancing Sustainable Development*”, a co-publication of UNESCO-AGU, she is an SPE Honorary Member, SEG Presidential Honoree, SEG Lifetime Member and is the Chair of the SPE Management Technical Section and the SEG Sustainability Committee.

MAC is currently a PhD Candidate of the University of Plymouth (UK), has a Master in Science in Geophysics from the Colorado School of Mines (USA) and a BS in Physics from Simon Bolivar University (Venezuela). She also holds certifications in sustainability from Cambridge University (UK), Penn State University (USA) and the IFP (France).

16:30-17:00 Distinguished Lecturer

- **Koya Suto** (Terra Australis Geophysica Pty Ltd): *Contribution of geophysics to Disaster Assessment and Community Development – An example from a GwB Project –*

Short Description: In response to the devastating heavy storm in Central Europe in May 2014, the GwB project titled “Flood damage assessment in Serbia and Bosnia & Herzegovina” started in 2015. The project was to assess damage and potential of landslides in rural areas. The participants of this project were mainly students of several universities in the area, but some teachers and experts also came from eight countries to help. This project bridged a broad spectrum of communities: between the students and the industry experts; between geophysics and engineers; between residents and visitors; between different cultures; between different nations; and different generations. The field work consisted of seismic and electric resistivity surveys.

Students learnt practical application and procedure which is hard to obtain in the classroom. The engineers from district governments had an opportunity to see applicability of geophysics in their engineering problems. The results benefitted the locals in understanding their own conditions, risks and suggestions of disaster prevention. Coordination with district governments and the residents of affected areas was a major work in the preparation. This presentation outlines the concept and organisation of the project and assessment of the project after its completion.

Short bio:



Koya Suto received bachelor’s and master’s degrees in exploration geophysics from Mining College, Akita University, and studied further at the University of Adelaide. Born in Japan, Suto first studied gravity, airborne magnetics, and radiometrics for geologic mapping and mineral exploration. He worked for the petroleum industry as a seismic geophysicist for 25 years. Koya started Terra Australis Geophysica in 2003 to service the civil engineering and environmental industries with near-surface geophysical surveys using the surface wave seismic (MASW) method. Since then, he has presented a number of case histories of MASW surveys in international conferences. He served as a Federal Executive of the Australian Society of Exploration Geophysicists (ASEG) for more than 20 years including as president in 2013–14. Through his involvement in ASEG and its international associates, he was awarded a Service Certificate from ASEG and Recognition of Merit from the Society of Exploration Geophysicists of Japan. Koya also was awarded an Honorary Membership of ASEG in 2010, an Honorary Membership of the Association of Geoscientists and Environmentalists of Serbia in 2015, and the Harold Mooney Award from the SEG Near Surface Technical Section in 2015. Suto translated *The Microtremor Survey Method* by Prof Okada, published in 2003 by SEG, and *Application Manual of Geophysical Methods to Engineering and Environmental Problems* published in 2014 by EAGE. Koya has served on the SEG Global Affairs Committee since 2005, and was chairman in 2014.



17:00-17:45 - Oral presentations

- **Boyko Rangelov:** *Seismology of extraterrestrial bodies in the Solar system*
- **Filip Arnaut:** *River Proximity Data as A Predictor for Ophiolite Classification: A Machine Learning Approach with OSM Data*
- **Sherif M. Elkholy:** *Investigating the Impact of Reservoir Temperature Variation on the Geological CO₂ Storage Capacity*

9:00-18:00 Poster presentations

- **Irina Stanciu:** *Contributions to the Active Tectonics and Geodynamics Research on the Moesian Platform*
- **Erald Silo:** *Building the bathymetryc map of the coastal line of Adriatic Sea, Seman region, Albania with the aid of geological and reflection seismics cross-sections*
- **Dragana Đurić:** *DEMONITOR Project: Advancing Landscape Monitoring and Conservation through Integrated Geophysical Techniques*
- **Christian Tzankov:** *Estimation of sediment thickness of Sofia city from Horizontal-to-Vertical Spectral Ratio (HVSr) curve inversion*
- **Maya Tomova:** *Geophysical methods for optimizing the design and construction of underground mining*
- **Florina Chitea Tuluca:** *The X-ray Fluorescence method and magnetic susceptibility measurements for Roman bricks evaluation. Examples from the Romula-Resca (Romania) site*

9:00-18:00 Technical Exhibition

19:30-23:30 Gala Dinner



Thursday, 30 May

09:00-09:30 Invited lecturer

- **Magdalena Marković:** *Postgraduate education in Earth Sciences: where are we heading?*

09:30-10:30 - Oral presentations

- **Florina Chitea Tuluca:** *Role of Geophysics for security challenges in the world*
- **Igbinedion Pedro Imafidon:** *GEOPHYSICAL INVESTIGATION OF PART OF AHMADU BELLO UNIVERSITY FARM, NIGERIA*
- **Dejan Bajić:** *Geothermal Energy in Serbia and Its Potential*
- **Đorđe Maroš:** *Response and criteria for CO2 storage*
- **Branislava Radišić:** *Non-renewable and renewable energy sources*
- **Mbata Dennis-Godfrey Praise:** *OWNERSHIP OF OIL AND GAS IN NIGERIA*

10:30-10:45 Coffee-break

10:45-12:30 Special lecture

- **Marko Vanić** (NIS NTC): *The Adventure Begins: Discovering Joyful and Simple Ways to Mastering Skills for the Future You Want to Create*

Short Description:

Join us for a dynamic and engaging interactive training designed to help you uncover the secrets to joyful and effective skill mastery. Through a series of fun activities and practical exercises, you'll learn how to identify the skills you need for the future you envision and discover enjoyable methods to develop them. This session will empower you to embrace a growth mindset, leverage your unique strengths, and craft a personalized roadmap for continuous learning and success. Whether you're looking to advance your career, pursue a passion, or simply enrich your life, this adventure will equip you with the tools and inspiration to start creating the future you desire today. Join us for this immersive experience where you'll discover that the path to mastering new skills can be as enjoyable as the destination itself.

Short bio:



Marko Vanić is a geophysicist currently employed at the Science & Technology Center of the Petroleum Industry of Serbia. His passion for science was ignited during his formative years as a high school student, where he actively participated in the Petnica Science Center geology program. Since then, he has dedicated himself to the pursuit of scientific knowledge, youth education, and the promotion of scientific endeavors.

Marko holds a Bachelor of Science degree in Applied Geophysics from the University of Belgrade, followed by a Master of Science degree obtained through the IDEA League Joint Master Program, a collaborative effort between the Delft University of Technology, ETH Zurich, and RWTH Aachen University.

In addition to his academic achievements, Marko is an active member of the Novi Sad Amateur Theater, where he engages in the performing arts. He is also a certified NLP trainer and coach, demonstrating his commitment to personal and professional development.

12:30-14:00 Lunch



14:00-15:30 Carbon Capture Utilization Storage (CCUS): A Panel Discussion

HOW to SCALEUP CCUS? From Technology, to Safety, considering Economics, expanding Policies, including social Justice & Equity

Moderator: *Mileva Radonjić, PhD, Oklahoma State University*
(mileva.radonjic@okstate.edu)

Short Description: As CO₂ storage pilots and CCUS hubs are multiplying in different parts of the globe, and the technology attracts various business from energy to materials and infrastructure, the panel will discuss the advances in cost-effective monitoring of the CO₂ plume conformance to predictions in terms of spreading underground. What are the most promising techniques, how can costs be further decreased, what are the challenges expected and how ML and AI can move this technology through the death valley.

Humans in general resist change, and at the same time, some of the biggest technological breakthroughs and inventions in human history are the result of adapting to new circumstances. The panel members bring diverse expertise, experience, and views on how to overcome current gaps and limitations in the big scale implementation of CCUS.

Panelists:

- **Pierre Cerasi:** *Modelling of Fracture Healing due to Creep of Caprock Shale in CO₂ Geological Sequestration*
- **Sherilyn Williams-Stroud:** *Integrating Induced Seismicity with Fault Interpretation at the Decatur, IL CCS Projects*
- **Camelia Knapp:** *Seismic Inversion for Carbon Storage in Onshore/ Offshore Environments*
- **Christine Ehlig Economides:** *Integrating Hydrogen Generation with CO₂ Storage*
- **Yunxing Aron Lu:** *Advancing CCS with AI: Addressing Regulatory Complexities and Enhancing Public Acceptance through Large Language Models (LLMs)*
- **Ben Anderson:** *Integrated Core Analysis Techniques for CCUS*

Short Bio of Panelists:



Pierre Rolf Cerasi (SINTEF Industry, Trondheim, Norway, pierrero.cerasi@sintef.no) - Pierre Cerasi holds a position of Senior Scientist at SINTEF Industry, a member institute of the SINTEF non-profit research foundation based in Trondheim, Norway. Pierre received his PhD in Physics from the Denis Diderot University in Paris and went on to post-doc positions at Institut Français du Pétrole, Paris and Schlumberger Cambridge Research, UK (EU Marie Curie position), before joining SINTEF in 2000. He has 20+ years of experience in petroleum-related research in the disciplines of geomechanics and flow in porous media, in particular wellbore stability, solids production and formation damage. Since 2009, he has applied this expertise to CCS research and newly also to underground hydrogen storage. He has held the position of project manager for many Single Client, Joint Industry and Research Council of Norway projects during the past 24 years at SINTEF.



Sherilyn Williams-Stroud (University of Illinois Urbana Champaign, sherilyn@illinois.edu) - Dr. Sherilyn Williams-Stroud is a Research Scientist, and Research Associate Professor at the Illinois State Geological Survey / University of Illinois Urbana - Champaign. Her areas of expertise include structural and fracture analysis and modeling for oil and gas and geothermal energy production, with a specialization in microseismic data interpretation and induced seismicity. She has more than 25 years of experience in government, industry, and academia, has held adjunct positions at the University of Houston, California State U. Los Angeles, and Northridge, and was a full-time faculty member at Whittier College. Her industry experience includes major operators, consulting, and service companies, working in research and technology development. She is an active member of several professional organizations and received the AAPG Honorary Membership Award in 2022 and is an AAPG Distinguished Lecturer for 2023-2024. From 2015-2019 she served as a member of the National Academies of Sciences Engineering and Medicine (NASEM) Committee on Seismology and Geodynamics planning and moderating workshops to help inform the federal government on scientific issues important to the nation's needs, and she was a member of the National Petroleum Council's Coordinating Subcommittee for a greenhouse gas study on methane emissions in the oil and gas industry. Dr. Williams- Stroud received her B.A. in geology from Oberlin College, and her M.A. and Ph.D. from The Johns Hopkins University, and is a licensed professional geologist in the state of California.



Camelia Knapp (Oklahoma State University, USA, Email: camelia.knapp@okstate.edu) - Dr. Knapp is the Associate Dean for Research for the Oklahoma State University College of Arts and Sciences and a Professor of Geophysics in the Boone Pickens School of Geology (BPSoG) where she holds the V. Brown Monnett Chair of Petroleum Geology. She is the past Head of BPSoG. She also serves on the Board of Directors for the Oklahoma Geological Foundation. She received a Ph.D. in Geophysics from Cornell University and a B.S. in Geophysical Engineering from the University of Bucharest, Romania. She was a Fulbright fellow at Cornell University. In the early years, she worked with the Romanian National Oil and Gas Company and the Romanian National Institute for Earth Physics. Before moving to Oklahoma, she was a Professor in the School of the Earth, Ocean and Environment and the Director of the Earth Sciences and Resources Institute at the University of South Carolina. She is married to Jim Knapp, the Boone Pickens Distinguished Chair of Geoscience at OSU, and they have two daughters.



Christine Ehlig Economides (University of Houston, USA, Email: ceconomi@central.uh.edu) - Dr. Christine Ehlig-Economides is Professor and Hugh Roy and Lillie Cranz Cullen Distinguished University Chair at the University of Houston. Prior to her current position, Ehlig-Economides taught at Texas A&M University for ten years and worked twenty years for Schlumberger. While at A&M, she managed research in production and reservoir engineering in conventional and shale reservoirs and helped the petroleum engineering department to grow and evolve to a broader energy scope that she now leverages toward research related to the energy transition. Ehlig-Economides was elected to the U.S. National Academy of Engineering in 2003 and was a member of the National Academy of Science Committee on America's Energy Future and the NRC Board on Energy and Environmental Systems (BEES). She chaired The Academies of Medicine, Engineering, and Science in Texas (TAMEST) shale task force in 2017. She currently is a Board member for QRI. She became an Honorary Member of the Society of Petroleum Engineers in 2018. Ehlig-Economides earned a Bachelor of Arts in Math-Science from Rice University, a Master of Science in chemical engineering from the University of Kansas, and a Ph.D. in petroleum engineering from Stanford University.



Yunxing Aron Lu (University of Pittsburgh, USA, Email: YUL184@pitt.edu) - Dr. Yunxing (Aaron) Lu earned his Master of Science in Geotechnical Engineering from Texas A&M University in 2017 before joining the University of Pittsburgh. After completing his PhD in 2022, he extends his research journey by continuing working as a postdoctoral researcher with Dr. Andrew Bungler at the University of Pittsburgh. Aaron is committed to advancing the energy sustainability in several critical areas: paving the way for safer clean energy solutions, innovating more resilient geomaterials capable of withstanding extreme conditions, and harnessing the power of advanced AI, such as large language models and deep learning-based natural language processing, to streamline the analysis of extensive public energy and environment data records and drive smarter, more efficient sustainability practices.



Ben Anderson (Oklahoma State University, USA, Email: cande47@okstate.edu) - Ben Anderson currently serves as a Lab Coordinator at the Chemical Engineering Department of Oklahoma State University, where he contributes to research projects focusing on supporting reservoir characterization, production optimization efforts, and other related challenges. With over 15 years of industry experience, Ben has worked in diverse hands-on roles, ranging from field operations to lab deployments across more than 25 countries. He has extensive experience in Routine Core Analysis (RCA), Special Core Analysis (SCAL), and the operation and development of core analysis laboratory equipment.



Mileva Radonjic (Oklahoma State University, Email: mileva.radonjic@okstate.edu) - Mileva is currently a faculty member in the Petroleum Program, where she is leading Barrier materials and Geomimcry lab, which she founded in 2018. Prior to academia she worked for BP America in Houston and the Federation of American Scientists in Washington DC. She was a postdoctoral scholar at Princeton University, as a member of the Princeton Carbon Mitigation Initiative. She has PhD from Bristol University, United Kingdom, and Geology Degree from Tuzla University. Mileva was born in Kraljevo, Serbia and her immediate family still lives in Serbia.

09:00-15:00 – Poster presentations:

- **Maya Tomova:** *Electrical resistivity tomography for mine planning and identifying potential hazards of underground operations*
- **Marjan Delipetrev:** *High seismic activity of Republic of North Macedonia in the period 2015-2020*
- **Atanas Kisyov:** *Application of the ERT method for mapping landslide bodies in tectonically disrupted rock masses*
- **Kritikakis George:** *3D Electrical Tomography for monitoring sea water intrusion at Samaria gorge National Park*
- **Rumiana Boijlova:** *Ionospheric effects during annular solar eclipse on 14 October 2023*
- **Kritikakis George:** *Application of MASW and SRT methods for nearshore antiquities imaging*
- **Florina Chitea Tuluca:** *Geohazards in urban areas. Study case: Slanic town (Prahova county, Romania)*

15:30-16:00 Closing ceremony

16:00-17:00 Meeting of BGS-members Presidents

16:30-19:30 Walking tour Čardaci 2

20:00-21.30 Dinner

21:30-24:00 Thursday Night Wrap-up Party - Karaoke party at the beer tavern of Kraljevi Čardaci



Friday, 31 May

9:00 – 16:00 Field trip (you can still apply – payment on site)

11:00 - Departure



CONTACT:

Prof.Dr. Snežana Komatina, President/Founder
Association of Geophysicists and Environmentalists of Serbia (AGES)
E-mail: komsne@yahoo.com
Mob.: +381616438360
www. AGESerbia.org