

# 6<sup>th</sup> Edition of World Congress on GEOLOGY & EARTHSCIENCE

## September 29-30, 2025 at Berlin, Germany

### Scientific Program

Day 1- September 29, 2025

Meeting Hall- Conference 1

Registrations Open (08:00-08:45)

Welcome Ceremony (08:45-09:00)

#### Moderator:

**Lisa Bithell Kirk**, *Montana State University, USA*

### Keynote Talks

**Rajesh Kalra**,  
*SLB (Schlumberger),  
Colombia*

**09:00-09:30**

Advanced 3D Seismic Techniques:  
De-Risking Prospects from Deepwater  
Andaman and Sub-Basalt Basins to  
Carbon Capture and Storage (CCS)  
Projects

**Johann Hohenegger**,  
*Vienna University, Austria*

**09:30-10:00**

The ecological species concept  
allows for comparisons between  
contemporary and fossil species

**Lawrence Haar**,  
*The University of Brighton,  
UK*

**10:00-10:30**

Derivatives and the Management  
of Geo-Political Risk in Petroleum  
Markets

Group Photo & Refreshment Break (10:30-10:50)

## Technical Session-I

**Session Themes:** Geo-Technical Engineering  
Remote sensing and GIS  
Ore & Mineral Geology  
New Technologies and Applications of Earth Science

### Session Chairs:

**Rajesh Kalra**, SLB (Schlumberger), Colombia  
**Lawrence Haar**, The University of Brighton, UK

**Jean-Jacques Ponciano**,  
Mainz University of  
Applied Sciences, i3mainz  
Germany

**10:50-11:10**

Enhancing Geospatial Data  
Integration and Completeness  
through Semantic Web and Linked  
Open Data

**Erick Baziw**,  
Baziw Consulting  
Engineers Ltd, Canada

**11:10-11:30**

The requirement of implementing  
Fermat's principle of least  
time in geotechnical DST site  
characterization

**Franco Pavese**,  
Italy

**11:30-11:50**

Quantitative Analysis of Colour Maps  
as A Powerful Alternative to Analysis  
of Numerical Databases of Earth's  
Surface Climate Parameters

**Lauro Bucio**,  
Instituto de Fisica,  
Universidad Nacional  
Autonoma de Mexico,  
Mexico

**11:50-12:10**

Animations, Videos And 3D Models  
For Improving The Perception  
Of Space Group Symmetry In  
Crystalline Minerals

**Oya Cengiz**,  
University of Suleyman  
Demirel, Turkey

**12:10-12:30**

Mineralogical and geochemical  
properties of placer ilmenite-rutile  
occurrences in the Koseler region  
(Gordes-Manisa, Turkiye)

**Cristiano Tolomei**,  
Istituto Nazionale di  
Geofisica e Vulcanologia,  
Italy

**12:30-12:50**

A multidisciplinary approach to  
investigate the impact of urban  
development on the activation of  
a paleolandslide: a focus on the  
Pissouri (Cyprus) case.

**Ferhat Cavit,**  
*ITU, Turkiye*

**12:50-13:10**

Stable isotopes composition and their implications regarding the geological fluid sources of the volcanic-hosted zinc-lead sulfide ore deposit, Kirazliyayla, NW Turkiye)

**Lunch Break @ Restaurant 13:10-14:00**

### Technical Session-II

**Session Themes:** Environmental Geo-sciences  
Climatology and Meteorology  
Geophysics & Geochemistry  
Volcanology and Geothermal Research

#### Session Chairs:

**Franco Pavese,** *Italy*  
**Jacek Galas,** *Tele and Radio Research Institute, Poland*

**Alexander Khain,**  
*The Hebrew University of  
Jerusalem, Israel*

**14:00-14:20**

Do we describe cloud-aerosol interaction correctly?

**Mariola Marszalek,**  
*AGH University of Krakow,  
Poland*

**14:20-14:40**

Rare Minerals in Salt Efflorescence on Weathered Sandstone Tors in The Stone Town Nature Reserve, Ciekowice (Outer Carpathians, Poland)

**Imaneh Goli,**  
*University of Liege, Belgium*

**14:40-15:00**

Toward tenure security: The relationship between women's land ownership, formal land title documents and their empowerment

**Jacek Galas,**  
*Tele and Radio Research  
Institute, Poland*

**15:00-15:20**

Process monitoring and operational control in the flotation process supported by AI methods

**Yusheng Jiang,**  
*China University of Mining  
and Technology - Beijing,  
China*

**15:20-15:40**

Field Testing of Vibration Characteristics and Propagation Induced by Double-shield TBM Construction in Urban Areas

## Refreshment Break @ (15:40-15:55)

**Jasminka Alijagic,**  
*Geological Survey of  
Slovenia, Slovenia*

**15:55-16:15**

Application of advanced soil mapping  
technique through different case  
studies

**Zhijun Du,**  
*Ocean University of China,  
China*

**16:15-16:35**

Deep Learning Inversion of Marine  
Controlled Source Electromagnetic  
Data Using Convolutional Neural  
Network

**Wolfgang Wehr & Oliver  
Buchmann,**  
*Erfurt University of Applied  
Sciences, Germany*

**16:35-16:55**

CO2 content in Puerto Naos after  
the volcanic eruption on the island of  
La Palma-recalculation with artificial  
intelligence

**Ariuntogos Munkhjargal,**  
*Mongolian University of  
Science and Technology,  
Mongolia*

**16:55-17:15**

Facies analysis from a Late Devonian  
island arc setting of the Baruunhuurai  
Terrane, Mongolia

## Panel Discussions & End of the Day

## Day 2- September 30, 2025

### Meeting Hall- Conference 1

#### Moderator:

**Lisa Bithell Kirk**, *Montana State University, USA*

#### Keynote Talks

**Krzysztof Wozniak**,  
*University of Warsaw,  
Poland*

**09:30-10:00**

Experimental quantitative charge density redistributions in minerals exhibiting pressure induced phase transitions

**Lorraine Tighe**,  
*Esri, USA*

**10:00-10:30**

Integrating State-Level Geologic Mapping into the National Framework: The Role of ArcGIS in Advancing the National Geologic Map Database (NGMDB)

**Sergio Cappucci**,  
*ENEA Casaccia Research  
Centre, Italy*

**10:30-11:00**

Anthropogenic sediment management and impact of human activities in coastal areas

#### Refreshment Break @ (11:00-11:20)

#### Technical Session-III

**Session Themes:** Environmental Geo-sciences  
Structural Geology & Rock Mechanics  
Geoarchaeology & Forensic Geology  
Geological Hazards & Geological Risk Assessment

#### Session Chairs:

**Lorraine Tighe**, *Esri, USA*  
**Sergio Cappucci**, *ENEA Casaccia Research Centre, Italy*

**Patrick Jenny**,  
*ETH Zurich, Switzerland*

**11:20-11:40**

Fracture Displacement Basis Function (FDBF) Framework for Fast Geomechanical Simulations

**Lisa Bithell Kirk**,  
*Montana State University,  
USA*

**11:40-12:00**

Selenate bioreduction in a large in situ field trial

**Pauline Mbatha,**  
*University of Helsinki,  
Finland*

**12:00-12:20**

Proboscidean post-cranial morphometrics and ecomorphology and their utility in reconstructing past environments

**Zakaria SAADI,**  
*Autorite de surete  
nucleaire et de  
radioprotection(ASNR),  
France*

**12:20-12:40**

Impact of entry pressure and hysteresis on the evaluation of two-phase gas migration in a deep geological disposal of radioactive waste

**Tadeusz Chmielewski,**  
*Poland*

**12:40-13:00**

A proposal for the classification of maximum wind speeds in Poland

**Lunch Break @ Restaurant 13:00-14:00**

#### **Technical session- IV**

**Session Themes:** Environmental Geo-sciences  
Geological Hazards & Geological Risk Assessment

#### **Session Chairs:**

**Patrick Jenny, ETH Zurich, Switzerland**  
**Ilya Prutkin, Jena University, Germany**

**Raquel Fernanda Gerlach,**  
*University of Sao Paulo, Brazil*

**14:00-14:20**

Dental Enamel: the rocky dental tissue of vertebrates

**Ilya Prutkin, Jena University, Germany**

**14:20-14:40**

3D geological interpretation of gravitational and magnetic anomalies based on advanced nonlinear inversion

**Abdelmajid Kouraich,**  
*Sultan Moulay Slimane University, Morocco*

**14:40-15:00**

Metallogenic Expressions and Geochemical Contrasts of Silver-Bearing Galena in the Sidi Ahmed and Iguer Oujna Veins (Tighza District, Central Morocco)

**Ali. I. M. Ismail,**  
*National Research Centre,  
Egypt*

**15:00-15:20**

Mechanical-mineralogical properties  
and crack propagation of Sharm El  
Sheikh-Dahab Road, South Sinai,  
Egypt

**Cheng-Yu Ku,**  
*National Taiwan Ocean  
University, Taiwan*

**15:20-15:40**

AI-Driven Liquefaction Susceptibility  
Mapping for Offshore Wind Farms

**Refreshment Break @ (15:40-15:55 )**

**Elnara Seyidova,**  
*Nakhchivan State  
University, Azerbaijan*

**15:55-16:15**

Geological Development Features  
and Application Directions of Rock  
Salt Deposits In The Nakhchivan  
Autonomous Republic

**Nkumbesone Makoley  
ESSONE,**  
*University of Douala,  
Cameroon*

**16:15-16:35**

Topographic variation and  
suburbanization currents: a  
comparative analysis of the south  
western and the north eastern  
fringes of dschang, cameroon

**Panel Discussions & End of the Conference**

## Day 1- September 29, 2025

### Virtual Presentations (Time Zone: CET)

<b>Kithsiri Perera,</b> <i>USQ, Australia</i>	<b>10:00-10:20</b>	The impact of greenery changes on human-elephant conflict in Sri Lanka: a model-based assessment using satellite imagery
<b>Weizhen Tian,</b> <i>Southwest Petroleum University, China</i>	<b>10:20-10:40</b>	Multi-phase Evolution of Strike-Slip Faults in the Central Sichuan Basin, SW China
<b>Xueqing Xu,</b> <i>Shanghai Astronomical Observatory, China</i>	<b>10:40-11:00</b>	Continental and oceanic AAM contributions to Chandler Wobble with the amplitude attenuation from 2012 to 2022
<b>Yoshiaki Hisada,</b> <i>Kogakuin University, Japan</i>	<b>11:00-11:20</b>	Building Damage Caused by Fault Displacement in Recent Fault Zone Earthquakes and Effective Measures
<b>Yunfeng Zhao,</b> <i>The Second Monitoring and Application Center, China Earthquake Administration, China</i>	<b>11:20-11:40</b>	Prediction of MS 6.9 Menyuan and MS 6.8 Luding earthquakes in 2022 based on gravity data
<b>Xudong Liang,</b> <i>State Key Laboratory of Severe Weather Meteorological Science and Technology, CAMS, China</i>	<b>11:40-12:00</b>	High resolution wind fields observed by Doppler radar network
<b>Wenhai Shi,</b> <i>Chang'an University, China</i>	<b>12:00-12:20</b>	A modified CSLE for soil loss prediction under different vegetation patterns at slope scale in China
<b>Mohit Kumar,</b> <i>Indian Meteorological Department, India</i>	<b>12:20-12:40</b>	Inter-seasonal variation of rainfall microphysics as observed over New Delhi, India

<b>Anatoly V. Vershinina,</b> <i>Lomonosov Moscow State University, Russia</i>	<b>12:40-13:00</b>	Full-Waveform Seismic Modeling Based on Digital Geological Model Using Spectral Element Method
<b>Chaouki Khalfi,</b> <i>University of Gabes, Tunisia</i>	<b>13:00-13:20</b>	In-situ tectonic stress characterization based on well logs and drilling data in the Tunisian Oriental Platform: A new result that enhances the coverage of high-quality data in North Africa
<b>Anna Fijalkowska Mader,</b> <i>Polish geological Institute – National research Institute, Poland</i>	<b>13:20-13:40</b>	Climatic changes during the Triassic in the eastern part of the German Basin based on palynological evidence
<b>Huimin Kong,</b> <i>Institute of Disaster Prevention, China</i>	<b>13:40-14:00</b>	Numerical Simulation of Pre-Seismic and Coseismic Continuous Response of Water Level to the 2014 Ludian MS6.5 Earthquake: A Case Study of Huize Well
<b>James Curran,</b> <i>UK</i>	<b>14:00-14:20</b>	Natural sequestration of carbon dioxide is in decline: climate change will accelerate
<b>Christopher Burn,</b> <i>Carleton University, Canada</i>	<b>14:20-14:40</b>	Prognosis, based on field observations, of key issues emanating from permafrost instability
<b>Mario German Trujillo-Vela,</b> <i>Universidad Surcolombiana, Colombia</i>	<b>14:40-15:00</b>	Towards a unified classification framework for debris-flow mathematical models
<b>Esperanza Lopez-Vazquez,</b> <i>Universidad Autónoma del Estado de Morelos, Mexico</i>	<b>15:00-15:20</b>	Social Construction of Volcanic Risk Perception from an Intergenerational Perspective
<b>Ralph Kahn,</b> <i>Lab for Atmospheric &amp; Space Physics, University of Colorado Boulder, USA</i>	<b>15:20-15:40</b>	Dust Plume Microphysical-Property Evolution During Trans-Atlantic Transport

<b>Zeev Reches,</b> USA	<b>15:40-16:00</b>	Energy dissipation, fault dilation, and rock strength of experimental rock failure
<b>Anne Wein,</b> <i>US Geological Survey, USA</i>	<b>16:00-16:20</b>	Long-term Communication of Aftershock Forecasts: the Canterbury Earthquake Sequence in New Zealand
<b>Mark J. Kimsey,</b> <i>Intermountain Forestry Cooperative (University of Idaho), USA</i>	<b>16:20-16:40</b>	Geologic influence on forest health, nutrition, and productivity
<b>Kevin Cunningham,</b> <i>US Geological Survey, USA</i>	<b>16:40-17:00</b>	Formation of vertical columnar seismic structures and seafloor depressions by groundwater discharge in the offshore southeastern Florida, USA
<b>Goodluck Ofoegbu,</b> <i>GNO Modeling Research LLC, USA</i>	<b>17:00-17:20</b>	Fracture-based continuum modeling for the analysis of mechanical and hydrological processes in geologic media and examples

**Day-1 Virtual Concludes**

## Day 2- September 30, 2025

Time Zone: CET (Berlin Time)

<b>Phillip Lawrence,</b> <i>Crown Institute of Higher Educ, Australia</i>	<b>10:00-10:20</b>	The Importance of the 1862 Companies Act, The Day the World Changed
<b>Robert Thomas Pidgeon,</b> <i>Curtin University, Australia</i>	<b>10:20-10:40</b>	Incorporation of incompatible elements in radiation damaged zircon by interaction with ground waters in the weathering environment
<b>Mingliang Kang,</b> <i>Sun Yat-sen University, China</i>	<b>10:40-11:00</b>	Reductive immobilization of U and Se-79 under nuclear waste repository conditions
<b>Lihong Song Yan Yi,</b> <i>Leshan Normal University, China</i>	<b>11:00-11:20</b>	Differential effects of climate and litter quality on soil fauna-mediated litter decomposition across size classes
<b>Mazova Raissa Khaimovna,</b> <i>Nizhny Novgorod State Technical University, Russia</i>	<b>11:20-11:40</b>	A tsunami in Antarctica caused by the collapse of the Thwaites Glacier
<b>Masahiro Shiba,</b> <i>Japan</i>	<b>11:40-12:00</b>	Depositional process and palaeogeography of the Ogasa Group, Pleistocene series on the Pacific coast of central Japan
<b>Emiema Soosai,</b> <i>Fisheries college and research institute, India</i>	<b>12:00-12:20</b>	Acceptability and Shelf Life Evaluation of Surimi Gel-Based Fish Bait under Refrigerated and Ambient Storage
<b>Andrzej Staniek,</b> <i>Central Mining Institute, Poland</i>	<b>12:20-12:40</b>	On the way to improve safety in building and mining industry - monitoring of rock bolt support systems
<b>Aladdin Nasibov,</b> <i>Azerbaijan State Oil and Industry University, Azerbaijan</i>	<b>12:40-13:00</b>	Seismic Inverse Modeling and Attribute Analysis of Complex Structures in North Absheron Region

<b>Maria D. Kamitsou,</b> <i>University of Patras, Greece</i>	<b>13:00-13:20</b>	A Contribution towards a More Sustainable Cement: Synergy of Mill Scales, Greek Wet Fly Ash, Conventional Raw Materials and Clinkering Temperature
<b>Ali Harlin,</b> <i>Technical Research Centre VTT, Finland</i>	<b>13:20-13:40</b>	Next Generation of Polyolefin Plastics: Improving Sustainability with Existing and Novel Feedstock Base
<b>Michel Lang,</b> <i>INRAE, France</i>	<b>13:40-14:10</b>	Use of historical information on past floods over the last few centuries to assess extreme floods. Case studies on three French and German Rivers
<b>Gary Rollefson,</b> <i>Whitman College, Germany</i>	<b>14:10-14:30</b>	Deceiving appearances: Neolithic game boards or what?
<b>Herbert Huppert,</b> <i>Cambridge University, UK</i>	<b>14:30-14:50</b>	Keynote: Buoyant granular column collapses
<b>Mochi Liao,</b> <i>University of Illinois Urbana-Champaign, USA</i>	<b>14:50-15:10</b>	A high-resolution dataset of extreme orographic Quantitative Precipitation Estimates (QPE) constrained to water budget closure for historical floods in the Appalachian Mountains
<b>Alec Feinberg,</b> <i>Northeastern University, USA</i>	<b>15:10-15:30</b>	Time Left Estimates to Critical Feedback/Loops: Proposed Annual Solar Geoengineering Pathways as CO2 Goals Falter
<b>Boris Amusin,</b> <i>USA</i>	<b>15:30-15:50</b>	Critical Analysis of Rock Mass Classification for the Design of Underground Constructions
<b>Alec Feinberg,</b> <i>Northeastern University, USA</i>	<b>15:50-16:10</b>	Solar Geoengineering Likely up to 14 Times More Efficient than CDR: Issues in Climate Forcing and Governance
<b>Mengli Zhang,</b> <i>Colorado School of Mines, USA</i>	<b>16:10-16:30</b>	Low-cost and high-resolution geophysical data acquisition using ergodic survey design

<b>Stephen Kaffka,</b> <i>University of California,            USA</i>	<b>16:30-16:50</b>	Agriculture, Water Quality, and Public Policy in the Upper Klamath Basin of Oregon and California
<b>Petr Chylek,</b> <i>Los Alamos National            Laboratory, USA</i>	<b>16:50-17:10</b>	Climate Models and the US Southwestern Precipitation in 1900-2100
<b>Kristin Boye,</b> <i>SLAC, USA</i>	<b>17:10-17:30</b>	Importance of alluvial aquifer small-scale physio-geochemical heterogeneities for environmentally relevant exports
<b>Lorne Arnold,</b> <i>University of Washington            Tacoma , USA</i>	<b>17:30-17:50</b>	Seismically-induced failure mechanisms in massive rock slopes