

5th Edition of World Congress on
Geology &
Earth Science
September 09-11, 2024 at Lisbon, Portugal



GEOEARTH-2024
PROCEEDINGS

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SCIENTIFIC PROGRAM

5th Edition of World Congress on

Geology & Earth Science

September 09-11, 2024 at Lisbon, Portugal

Scientific Program

Day 1- September 09, 2024

Meeting Hall: LAPA

Registrations Open (08:00-08:45)

Moderator: Vili Grigorova, *Macquarie University, Australia*

Welcome Remarks by Moderator (08:45-09:00)

Keynote Talks

**Stephen Meinhold and
Jennifer Horan,**
University of North
Carolina Wilmington, USA

09:00-09:30

Living with Hazards: Prediction
Uncertainty and Personal Protective
Behavior at Frequently and
Infrequently Erupting Volcanoes—
Tungurahua and Cotopaxi, Ecuador

Roman Alvarez,
National University of
Mexico, UNAM, Mexico

09:30-10:00

The magmatic chambers of
Popocatepetl and Iztaccíhuatl
volcanoes, Mexico, derived from
gravity analyses

Ted Lawrence,
African Center for Aquatic
Research and Education,
USA

10:00-10:30

Future success and ways forward for
scientific approaches on the African
Great Lakes

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

Technical Session-I

Session Theme: Environmental Geo-sciences

Session Chairs:

Henrique De Andrade Penido, VALE S.A, Brazil

Carmen Mihaela Neculita, UQAT - University of Quebec in Abitibi-Temiscamingue, Canada

Lorraine Tighe,
ESRI, USA

10:50-11:10

The Geographic Approach in
Geoscience: Enhancing Applications
from Exploration to Environmental
Assessment

Carmen Mihaela Neculita,
UQAT - University of
Quebec in Abitibi-
Temiscamingue, Canada

11:10-11:30

Passive Treatment Residues of
Mine Drainage: Mineralogical and
Environmental Assessment, and
Management Avenues

**Alessandro Jesus
Guimaraes**,
GEOSOL S/A (GEosol
GEologia e Sondagem),
Brazil

11:30-11:50

Study of breakouts in rocks masses
to determine the magnitude of in situ
stress field

Pablo Vizguerra Morales,
Instituto Politecnico
Nacional, Mexico

11:50-12:10

Modeling and Simulation in CFD of
Mercury Contamination in the City of
Guanajuato, Mexico

Jeffrey D. Boehm Jr.,
USDA-ARS, USA

12:10-12:30

Upper yield plateaus detected in
winter wheats adapted to the Northern
Great Plains of North America in
historic USDA-ARS nursery datasets
from 1959--2021.

Daniel OConnell,
Tetra Tech, USA

12:30-12:50

Hosgri fault transpressional slip rates
reproduce observed central California
coast uplift rates

Shi Xin Dai,
Hunan University of Science
and Technology, China

12:50-13:10

A sensitivity analysis of factors
affecting in geologic CO₂ storage in
the Ordos Basin and its contribution to
carbon neutrality

Lunch Break @ Restaurant (13:10-14:00)

Technical Session-II

Session Theme:
Geo-technical Engineering, Geological Hazards
Geological Risk Assessment and
Soil Science and Soil Biodiversity

Session Chairs:
Lorraine Tighe, ESRI, USA
Robert Mahler, University of Idaho, USA

Robert Mahler,
University of Idaho, USA

14:00-14:20

The development and evaluation of a drinking water and human health course to broaden soils science offerings at the university level

Henrique De Andrade Penido, VALE S.A, Brazil
&
Guilherme Passos Ribas,
MecRoc Engenharia, Brazil

14:20-14:40

Methodology For Geotechnical Instrumentation and Monitoring Along the Vitória-Minas Railroad (EFVM), Using Satellite Data Transmission Technology

Nicolae Har,
Babes- Bolyai University
Cluj Napoca, Romania

14:40-15:00

The Weathering Processes and The Nature of Infill Material on Discontinuities of The Muntele Mare Granitic Rock (Belis - Fantanele, Romania)

Jose Melendez,
University of Oregon, USA

15:00-15:20

The Charter Fellows Mentoring Model for Underrepresented Students: Challenges and Opportunities

Vili Grigorova,
Macquarie University,
Australia

15:20-15:40

How fast can clay heal?

Van Nguyen,
University of Hohenheim,
Germany

15:40-16:00

Soil resistivity measurements to evaluate subsoil salinity in rice production systems in the Vietnam Mekong Delta

Refreshment Break (16:00-16:15)

Sylvain Bascle,
Universiti de Limoges,
France

16:15-16:35

Impact of the nature of organic matter and/or its organo-mineral interaction on microbial activity in dam sediment

Emil Pucko,
Geological Survey of
Slovenia, Slovenia

16:35-16:55

The influence of anthropogenic and natural factors on the composition of topsoils and subsoils at a national level

**AN-JUI LI & Alejandro
Daniel Bordas Segovia,**
National Taiwan
University of Science and
Technology, Taiwan

16:55-17:15

An Investigation of Anchor Failure Order Using Numerical Simulation

Virginia Mosquera,
SLU, Sweden

17:15-17:35

Concentration-Discharge Patterns Reveal Catchment Controls Over the Stoichiometry of Carbon and Nutrient Supply to Boreal Streams

Panel Discussions & End of the Day

Day 2- September 10, 2024

Meeting Hall: LAPA

Moderator: Vili Grigorova, Macquarie University, Australia

Keynote Talks

Richard Dick,
Ohio State University, USA

09:00-09:30

Optimized Shrub-Intercropping
for Food Production, Drought
Resistance and Ecosystem
Restoration in the Sahel

Stephen Miller,
University of Neuchatel,
Switzerland

09:30-10:00

Implications and observations of a
fluid-driven earthquake cycle

Technical Session-III

Session Themes:
Water: sea, surface and subsurface
Oceanography & Marine geology
Igneous & Metamorphic Petrology
Geophysics & Geochemistry

Session Chairs:
Richard Dick, *Ohio State University, USA*
Denes Vigh, *SLB, USA*
Ramiro Matos, *Universidad Mayor de San Andres, Bolivia*

Denes Vigh,
SLB, USA

10:00-10:20

Sparse-node acquisition for data
fitting velocity model building via FWI

Rajesh Kalra,
SLB (Schlumberger),
Colombia

10:20-10:40

Exploration of Deepwater Regions
Offshore India

Ramiro Matos,
Universidad Mayor de San
Andres, Bolivia

10:40-11:00

Orosirian-Stenian evolution of the
Bolivian Precambrian Shield, SW
Amazonian Craton, constrained by
U-Pb geochronology and Nd-Hf
isotopic parameters

Refreshment Break (11:00-11:15)

Kamiński Mirosław,
Polish Geological Institute-
National Research
Institute, Poland

11:15-11:35

Application of 3D ERT and 4D ERT
differential models in the study of an
active landslide - an example from
Podhale (Southern Poland)

Cinzia Federico,
Istituto Nazionale di
Geofisica e Vulcanologia,
Italy

11:35-11:55

Impact of acidic volcanic emissions
on ash leaching and on the mobility
and bioavailability of trace metals in
soils of Mt. Etna

Yosuke Miura,
Ritsumeikan University,
Japan

11:55-12:15

The effects of runoff bias on climate
factors bias in atmospheric general
circulation models

Lin Lin,
Max Planck Institute for
Meteorology, Germany

12:15-12:35

The internal variability in the marginal
seas

Walter L. Pohl,
Corresponding Member
of Academy of Science,
Austria

12:35-12:55

Quo vadis Gold Metallogenesis?

Lunch Break @ Restaurant (12:55-13:50)

Technical Session IV

Poster Viewing Session (13:50-14:20)

Session Themes:
Environmental Geo-sciences
Structural Geology & Rock Mechanics

Session Chairs:

Walter L. Pohl, *Corresponding Member of Academy of Science, Austria*
Stephen Miller, *University of Neuchatel, Switzerland*
Rajesh Kalra, *SLB (Schlumberger), Colombia*

Shana Debrock,
University of Antwerp,
Belgium

14:20-14:40

Design recommendations for
sustainable urban underground

**Alexsandro Guerra
Cerqueira,**
GAIA-UFBA, Brazil

14:40-15:00

Zero-phase wavelet estimation from
a deep-learning model applied to
seismic well-tie

Ingibjorg L. Omarsdottir,
University of Iceland,
Iceland

15:00-15:20

Community resilience through the
lens of social support: Recovering
from the 2010 Eyjafjallajökull
eruption in Iceland

Eugene Morozov,
Russian Academy of
Sciences, Russia

15:20-15:40

Spreading of Antarctic Bottom Water
in the abyssal depths of the Atlantic

Refreshment Break (15:40-15:50)

**Palwasha Shahzad
Rathore,**
Quaid-i-Azam University
Islamabad, Pakistan

15:50-16:10

Well log analysis and comparison
of supervised machine learning
algorithms for lithofacies
identification in pab formation, lower
indus basin

**Mirurgia Aguilar
Velázquez,**
University of Havana,
Cuba

16:10-16:30

Estimation of risk to subsidence in
karst terrain. Case study: Sierra de
Cubitas municipality, Cuba

Kang He,
China University of
Geosciences (Wuhan),
China

16:30-16:50

An assessment on the off-road
trafficability using a quantitative
rule method with geographical and
geological data

Panel Discussions & End of the Day

Poster Presentations (13:50-14:20)

Pasquale De Gori,
Istituto Nazionale di
Geofisica e Vulcanologia,
Italy

P1

The 2016 Amatrice-Norcia fault system mapped by seismic attenuation tomography

Francesco Pio Lucente,
Istituto Nazionale di
Geofisica e Vulcanologia,
Italy

P2

The 2016 Amatrice-Norcia fault system mapped by seismic attenuation tomography

Edgar Santoyo,
Institute for Renewable
Energy (UNAM), Mexico

P3

Towards a better understanding of the REE fractionation in the Prospection of the Acoculco Geothermal System (Mexico)

Hector Lopez Loera,
Instituto Potosino de
Investigacion Cientifica y
Tecnologica A.C. (IPICYT),
Mexico

P4

Internal structure of the southern and central Colima volcanic complex, western Mexico, revealed by 3D modeling of aeromagnetic data

Conference Hotel: Masa Hotel Campo Grande, Lisbon-Portugal