

GEOEARTH -2023



4th Edition of World Congress on

GEOLOGY & EARTH SCIENCE

SEP 04-06, 2023 at ROME, ITALY

Day-1 (September 04, 2023)

Hall-Parioli- 2

Moderator:
Suphicha Muangsri,
Silpakorn University, Thailand

Registrations Open (8:00-08:45)

Opening Ceremony (8:45-09:00)

Keynote Talks

Jerry Miller,
*Western Carolina
 University, USA*

09:00-09:30

Microplastic sources, abundance,
 and cycling dynamics in an
 Appalachian headwater basin, USA

Andrew Abbott,
University of Leicester, UK

09:30-10:00

Extraction of metals from minerals
 using deep eutectic solvents

Alan Arbogast,
*Michigan State University,
 USA*

10:00-10:30

The geomorphic evolution of coastal
 sand dunes along Lake Michigan
 (USA) in the past ~ 5,500 years

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

Technical Session-I

THEME: Environmental Geo-sciences

Session Chairs:
Dr. Jerry Miller & Dr. Kaori Kitagawa

Lionel Villarroel,
*Western Carolina
 University, USA*

10:50-11:10

Quantification of the Temporal
 Variations in Sediment Provenance
 within the Big Harris Creek
 Basin, USA using a Geochemical
 Fingerprinting Approach

Marek Vach, <i>Czech University of Life Sciences Prague, Czech Republic</i>	11:10-11:30	A stochastic game theoretical model to compute equilibrium probability in environmental spatial data and its practical applications
Roman Alvarez, <i>National University of Mexico, UNAM, Mexico</i>	11:30-11:50	Looking at volcanoes' interiors with high-resolution gravity data
Valerio Vivaldi, <i>University of Pavia, Italy</i>	11:50-12:10	Analysis of hillslope hydrological conditions leading rainfall-induced shallow landslides in different geological contexts.
Arup Kumar Sarma, <i>Indian Institute of Technology Guwahati, India</i>	12:10-12:30	Characterization of Dam Augmented Flow on Downstream of a Hydropower Dam
Kaori Kitagawa, <i>University College London (UCL), UK</i>	12:30-12:50	Everyday-life preparedness': case studies and applicability
Sergio Cappucci, <i>Italian National Agency for New Technologies, Italy</i>	12:50-13:10	Transition dynamics of coastal wetlands

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

Technical Session-II

THEME: Environmental Sustainability

Session Chairs:
Dr. Lionel Villarroel & Dr. Carmen Mihaela NECULITA

Carmen Mihaela NECULITA, <i>University of Quebec , Canada</i>	14:00-14:20	Sustainable Production of Rare Earth Elements from Mine Waste and Geoethics
--	--------------------	---

So Yoon Lee, <i>Shibaura Institute of Technology, Japan</i>	14:20-14:40	Study of facile synthesis of nanostructured potassium incorporated titanium oxide film to enhance the photocatalysis performance such as water purification
LI Guiyuan, <i>Hubei University of Technology, China</i>	14:40-15:00	Resilience Assessment of Urban Complex Giant Systems in Hubei Section of the Three Gorges Reservoir Area Based on Multi-Source Data
Xianjun Lyu, <i>Shandong University of Science and Technology, China</i>	15:00-15:20	Preparation and Property of High-Strength Slag-Based Geopolymers
Fenjuan Wang, <i>National Institute for Environmental Studies (NIES), Japan</i>	15:20-15:40	Atmospheric Observations Suggest Methane Emissions in North-Eastern China Growing with Natural Gas Use
Refreshment Break (15:40-16:00)		
Khalifa Mohammed Al Kindi, <i>University of Nizwa, Oman</i>	16:00-16:20	Machine Learning and Hyperparameters Algorithms for Identifying Groundwater Aflaj Potential Mapping in Semi-Arid Ecosystems Using LiDAR Sentinel-2 GIS Data and Analysis
Guilherme de Oliveira Ferreira, <i>Ortec, Brazil</i>	16:20-16:40	A joint Markov Decision Process - Two-stage Stochastic Optimization framework for capacitated supply acquisition and distribution in humanitarian operations
Deepak Singh, <i>Centre of Studies in Resources Engineering, IIT Bombay, India</i>	16:40-17:00	Determination of surface albedo and snow/ice content variation using the MODIS data in the past two decades (2001 – 2020)

Pannel Discussions

Day-2 (September 05, 2023)

Technical Session-III

Hall-Parioli- 2

THEMES:
Remote sensing and GIS
Geophysics & Geochemistry Geo-technical Engineering

Session Chairs:
Dr. Lorraine Tighe and Dr. Roman Alvarez

Moderator:
Ramata Magagi, *University de Sherbrooke, Canada*

Lorraine Tighe, <i>ESRI, USA</i>	09:00-09:20	ArcGIS Artificial Intelligence Based Lithology Classification Using Sentienti-1 Data in Amurang Sulawesi Indonesia.
Ramata Magagi, <i>University de Sherbrooke, Canada</i>	09:20-09:40	Synergistic use of SMAP brightness temperature and RADARSAT-2 surface power for multi-resolution soil moisture estimation
Yuto Yamanoi, <i>Central Research Institute of Electoric Power Industry, Japan</i>	09:40-10:00	Numerical model of cracked concrete considering the disintegration of cement bond
Najeeb Aladwani, <i>Kuwait University , Kuwait</i>	10:00-10:20	Evaluation of the Hydrocarbon Source Rock and the Reservoir Characterization of the Minagish Formation Using Wireline Logs
Maria Eugênia Silva de Souza, <i>Universidade Federal de Ouro Preto, Brazil</i>	10:20-10:40	The Geociências Sem Muros programme and University extension activities in the Ouro Preto city, Minas Gerais, Brazil
Arash Bastani, <i>Energy Efficiency and Technology Sector Natural Resources Canada, Canada</i>	10:40-11:00	Studying a field of shallow boreholes with latent heat storage and solar injection in cold climate regions

Refreshment Break (11:00-11:20)**THEME: Water: sea, surface and subsurface****Session Chairs:
Dr. Mourice Czerewko****Mourice Czerewko,**
*AECOM Ltd, UK***11:20-11:40**

Investigation of destructive ground heave affecting new-build properties in the Dublin area of Ireland, attributed to pyritic fill

Ulrich Burger,
*Brenner Base Tunnel BBT
SE, Austria***11:40-12:00**

Monitoring concepts and analyses for evaluating the geothermal potential of a deep railway tunnel, the Brenner Base Tunnel

Luis Walter Daesslé ,
*Universidad Autónoma de
Baja California, Mexico***12:00-12:20**

Tracing groundwater recharge sites and pollution sources in the wine-producing Guadalupe Basin (Mexico).

Tim Lansivaara,
*Tampere University,
Research Centre Terra,
Finland***12:20-12:40**

Characteristic value for soil

Maxim Shoshany,
*Technion, Israel Institute of
Technology , Israel***12:40-13:00**

Universal Quadratic Soil reflectance line : A generalization from Global Data-Base

Lunch Break @ Restaurant (13:00-14:00)**Technical Session-IV****THEMES:**
Structural Geology & Rock Mechanics
Sedimentology & Stratigraphy**Session Chairs:**
Dr. Henrique De Andrade Penido & Dr. Luis Miguel Nieto Albert

Luis Miguel Nieto Albert, <i>University of Jaen, Spain</i>	14:00-14:20	Demise of the lower Jurassic carbonate platform and development of pelagic environments (Subbetic zone, Betic external zones)
Paula Mendes Serrano, <i>UFOP, Brazil</i>	14:20-14:40	The role of structural geology architecture in the bench slope stability: Case study of an open pit mine
KONGYOU WU, <i>China University of Petroleum, China</i>	14:40-15:00	Types and evolution of faults in the east area of the Wushi Sag, Beibuwan Basin
Alessandro Jesus Guimaraes, <i>Geosol S.A, Brazil & Henrique De Andrade Penido,</i> <i>VALE S.A , Brazil</i>	15:00-15:20	Application of the Hydraulic Fracture, Deformation Rate Analysis and Diametrical Core Deformation Analysis technologies for in situ stress determination in Iron Quadrangle rock masses
Ezzedine Saidi, <i>The Tunisian Public Oil Company (ETAP), Tunisia</i>	15:20-15:40	Microfacies, biostratigraphy and environmental setting of the crosscut lower and middle Nara successions (early Jurassic; eastern central Tunisia)
Refreshment Break (15:40-16:00)		
Raphael Teixeira Correa, <i>University of Brasilia, Brazil</i>	16:00-16:20	Mapping the Thermal Structure of the Amazon Craton to Constrain the Tectonic Domains
Suphicha Muangsri, <i>Silpakorn University, Thailand</i>	16:20-16:40	WHERE, WHEN, and HOW can green stormwater infrastructure play a role in adaptive flood mitigation?
Maria Eugênia Silva de Souza, <i>Universidade Federal de Ouro Preto, Brazil</i>	16:40-17:00	The role of Large Igneous Provinces in lithosphere breakup attempts

Day-3 (September 06, 2023)

Technical Session-V

Hall-Parioli- 2

THEMES:
Geological Disasters and Management
Geological Hazards & Geological Risk Assessment

Session Chairs:
Dr. Kasra Farain & Dr. Rodolfo Console

David Astrain,
*Universidad Publica de
 Navarra, Spain*

09:20-09:40

Autonomous thermoelectric
 generators for volcanic surveillance

Jesper Olsen,
*Aarhus University,
 Denmark*

09:40-10:00

Radiocarbon Dating of Mortars

Kasra Farain,
*University of Amsterdam,
 The Netherlands*

10:00-10:20

Perturbation-induced Granular
 Fluidization as a Model for Remote
 Earthquake Triggering

Rodolfo Console,
*Istituto Nazionale di
 Geofisica e Vulcanologia,
 Italy*

10:20-10:40

From simulated earthquakes a key to
 modelling the occurrence of a strong
 event

Alvaro Hurtado,
Universidad de Lima, Peru

10:40-11:00

A cost-benefit analysis for the
 appraisal of social and market prices
 in the probabilistic seismic risk
 assessment of building portfolios:
 a methodology for the evaluation of
 disaster risk reduction programs

Ana Lia Noguera,
*Universidad de la
 Republica, Centro
 Universitario Regional del
 Este, Uruguay*

11:00-11:20

Radiological hazards due to natural
 radionuclides in Rocha, Uruguay

Refreshment Break (11:20-11:30)

Richard Camilli, <i>Woods Hole Oceanographic Institution, USA</i>	11:30-11:50	Real-time elemental characterization of ocean floor biogeochemical structures with the XRF-ARIA
Rebecca Zengeni, <i>University of KwaZulu- Natal, South Africa</i>	11:50-12:10	Phosphorus and nitrogen pools in different tillage techniques and N fertilization under dryland agriculture
Gabriel Candia, <i>Universidad del Desarrollo, Chile</i>	12:10-12:30	Performance-based analysis of Transit tunnels in the Chilean subduction zone
Cristina Cazan, <i>Transilvania University of Brasov, Romania</i>	12:30-12:50	Research and development priorities for C&D waste recycling to support a circular economy
Closing Remarks		
Lunch @ Restaurant (12:50-14:00)		

VIRTUAL PROGRAM

(CET- ROME - ITALY)



[Join Zoom Meeting](#)

Meeting ID: 853 8801 2081

Pass code: 587985

(GeoEarth-2023)
Day-2 (September 05, 2023)

Parallel Virtual Session- CET, Rome timezone

Sayyad Zahid Qamar, <i>Sultan Qaboos University, Oman</i>	13:00-13:20	Plenary Speaker: Past, Present, and Future of Renewability and Sustainability
Jaroszewicz Leszek R, <i>Military University of Technology/Elproma Elektronik LTD, Poland</i>	13:20-13:40	Usefulness of different types of rotational seismometers for seismology as well as engineering applications
Taro Kakinuma, <i>Kagoshima University , Japan</i>	13:40-14:00	Generation and amplification of tsunamis due to air pressure waves over topography
Johanes Amate Belle, <i>University of the Free State-Disaster Management Training and Education Centre for Africa (UFS-DiMTEC), South Africa</i>	14:00-14:20	Assessing the use of Indigenous Knowledge as an early warning system for seismic activities: A case study of Mount Cameroon/Fako Volcanic eruptions
Solomon Temidayo Owolabi, <i>University of the Free State-Disaster Management Training and Education Centre for Africa (UFS-DiMTEC), South Africa</i>	14:20-14:40	Investigating morphometric parameters performance for hydrographic domain assessment and soil erosion risk and vulnerabilities
Karen Correa, <i>Universidad Andres Bello, Chile</i>	14:40-15:00	Timing of Magmatism and Ore Formation in the El Abra Porphyry Copper Deposit, Northern Chile

Lohan Barbosa Baia, <i>Federal University of Para, Brazil</i>	15:00-15:20	Provenance of the Middle Miocene Barreiras Fan Delta in the Onshore Pará-Maranhão Basin, Northern Brazil
Beatriz Jesus, <i>University Federal Fluminense/ National Observatory, Brazil</i>	15:20-15:40	Crustal temperature distribution (1D) of the Campos Basin, Brazil
Sheila Serrano Vincenti, <i>Universidad Politecnica Salesiana, Ecuador</i>	15:40-16:00	Harmonic analysis of the correlation between GNSS- precipitable water vapor and intense precipitation in the equatorial Coast, Andes, and Amazon regions.
Jean-Baptiste Poline, <i>McGill University, Canada</i>	16:00-16:20	Challenges and directions for open and reproducible publishing
Meredith G Meyer, <i>University of North Carolina at Chapel Hill, USA</i>	16:20-16:40	Quantifying Seasonal Particulate Organic Carbon Concentrations and Export Potential in the Southwestern Ross Sea Using Autonomous Gliders
Chris Barth, <i>US Dept. of Interior, Bureau of Land Management, USA</i>	16:40-17:00	Parcel level risk affects wildfire outcomes
Juan Antonio garcia Aragon, <i>IITCA-Universidad Autonoma del Estado de Mexico, Mexico</i>	17:00-17:20	Application of optical techniques for physical and hydrodynamics characteristics of flocs in the Usumacinta-Grijalva river system, Mexico
Rajesh Kalra, <i>SLB (Schlumberger), USA</i>	17:20-17:40	Mesozoic Deccan Lava Flows in the Offshore West Coast of India and its Imaging

(GeoEarth-2023)
Day-3 (September 06, 2023)

Parallel Virtual Session- CET, Rome timezone

Sarah Jones, <i>SJGeology Ltd, New Zealand</i>	09:00-09:20	Transition from vertical to horizontal tectonics in the late Archean: field evidence from the Eastern Goldfields, Western Australia
Francesco (Franco) Pirajno, <i>University of Western Australia, Australia</i>	09:20-09:40	Carbonatites, alkaline complexes and associated REE mineral systems and their significance in modern technology
Tsai Sung Lun, <i>Kyoto University, Japan</i>	09:40-10:00	A framework for NGO-led post-disaster reconstruction programs in the indigenous community: A case study of the 2009 Typhoon Morakot in Taiwan
Avner Adin, <i>Hebrew University of Jerusalem, Israel</i>	10:00-10:20	Effluent filtration modelling, mechanisms and applications
Tomomi Okada, <i>Tohoku University, Japan</i>	10:20-10:40	Stress control on the 2016 Mw7.8 Kaikoura earthquake, New Zealand
Jerome Gabutero Gacu, <i>Romblon State University, Philippines</i>	10:40-11:00	Flood risk assessment using GIS-Based Analytical Hierarchy Process in the Municipality of Odiongan, Romblon, Philippines
Liping Liu, <i>Second Institute of Oceanography, MNR, China</i>	11:00-11:20	Sedimentary manganese metallogenesis throughout the geological era: Review and future perspective
Christoph Korte, <i>University of Copenhagen, Denmark</i>	11:20-11:40	The role of oceanography in Jurassic climate mode changes

Andrea Abbate, <i>RSE Ricerca Sistema Energetico, Italy</i>	11:40-12:00	On the applicability of the Linear Upslope Model Extension (LUME) for orographic rainfalls in the pre-Alpine Mountain range
Massimiliano Schiavo, <i>University of Padova, Italy</i>	12:00-12:20	Groundwater discharges stochastic quantification upon multiple sources of uncertainty in heterogeneous aquifers
Tadeusz Paszko, <i>University of Life Sciences in Lublin, Poland</i>	12:20-12:40	Factors affecting adsorption, degradation and leaching of tebuconazole in mineral soils with low organic matter content
Laura Longoni, <i>Politecnico di Milano, Italy</i>	12:40-13:00	Invited Speaker: The importance of monitoring and numerical modelling of sediment transport in mountain area
Edwin Peeters, <i>Wageningen University, Netherlands</i>	13:00-13:20	What can be learned from water quality assessment by volunteers in the Netherlands?
Hector Aroquipa Velasquez, <i>Universidad de Lima, Peru</i>	13:20-13:40	a cost-benefit analysis for the appraisal of social and market prices in the probabilistic seismic risk assessment of building portfolios: a methodology for the evaluation of disaster risk reduction programs
Marcel Hijma, <i>Deltares, Netherlands</i>	13:40-14:00	Geology and dike-failure mechanisms: the case of piping in tidal sand
Bianca Carvalho Vieira, <i>Universidade de São Paulo, Brazil</i>	14:00-14:20	Spatial dynamics of shallow landslides and debris flows in Brazil

Paulo Roberto Alves Netto, <i>PETROBRAS, Brazil</i>	14:20-14:40	Paleoenvironmental implications of authigenic magnesian clay formation sequences in the Barra Velha Formation
Bruno Mazzorana, <i>Universidad Austral de Chile, Chile</i>	14:40-15:00	Distributary dynamics of biphasic flows on alluvial fans: findings from recent experimental studies and implications for risk assessment
Farouk El Baz, <i>Boston University, USA</i>	15:00-15:20	Development Corridor for Egypt and East Africa
Ann E Benbow, <i>Mineralogical Society of America, USA</i>	15:20-15:40	Minerals Day: Exciting outreach to schools and the public
Mariana Vazquez, <i>University of Cincinnati, USA</i>	15:40-16:00	Lidar-based forest biomass estimations for landscape history
Jonas Vanardois, <i>University of Minnesota, USA</i>	16:00-16:20	Deformation, crustal melting and magmatism in the crustal-scale East-Variscan Shear Zone (Aiguilles-Rouges and Mont-Blanc massifs, Western Alps).
Warren Day, <i>U.S. Geological Survey, USA</i>	16:20-16:40	USGS Earth Mapping Resources Initiative: Progress on Mapping Critical Minerals for the United States