



4th International Workshop on NATURAL HAZARDS

GEOTECHNICAL RISKS



Horta, Faial Island, Azores
23rd and 24th October 2025



"GEOTECHNICAL RISKS"

IV International Workshop on NATURAL HAZARDS

SUMMARY PROGRAM

	Thursday, 23 rd October	Friday, 24 th October	Saturday, 25 th October
08:15 - 08:45	REGISTRATION		
08:45 - 09:15	OPENING CEREMONY		
09:15 - 10:00	Luis Gonzalez de Vallejo (Keynote 1) "Thermal and Geotechnical Contributions to Reconstruction after the 2021 La Palma Volcanic Eruption"		
10:00 - 11:00	Main Session 1 "Multi-hazards and georisks assessment: geoscience, geoengineering, and societal issues"		
11:00 - 11:30	COFFEE - BREAK Poster Exhibition		
11:30 - 12:50	Main Session 2 "Mapping, monitoring, and evaluating natural hazards: landslides, rock falls, and slopes"	Field Trip Faial 1 (English) Coordinator: João Carlos Nunes	
12:50 - 14:30	LUNCH Poster Exhibition		Field Trip Pico Island Coordinator: João Carlos Nunes
14:30 - 15:15	Farrokh Nadim (Keynote 2) "Management of Geohazard Risks Considering the Changing Climate and Societal Priorities"	Field Trip Faial 2 (Portuguese) Coordinator: Carlos Faria	
15:15 - 16:30	Main Session 3 "Ground evaluation and environmental geotechnics: implications on geotechnical hazards "		
16:30 - 16:50	COFFEE - BREAK Poster Exhibition		
16:50 - 17:30	Main Session 4 "Assessment, planning, and design with natural hazards: urban planning, engineering works, and hydrological issues "		
17:30 - 18:15	Mario Parise (Keynote 3) "Natural Hazards in Coastal Carbonate Environments: Geological, Hydrogeological and Geotechnical Aspects"		
18:15 - 18:30	CLOSING CEREMONY		
20:00	WORKSHOP DINNER (Azoris Faial Garden Resort Hotel)		

EXTENDED PROGRAM

THURSDAY, 23rd of October 2025

08:15 - 08:45 **REGISTRATION**

08:45 - 09:15 **OPENING CEREMONY**

09:15 - 10:00 **Luis Gonzalez de Vallejo** (Keynote 1)
"Thermal and Geotechnical Contributions to Reconstruction
after the 2021 La Palma Volcanic Eruption"

Chair: Helder I. Chaminé

10:00 - 11:00 **Main Session 1** - Multi-hazards and georisks assessment:
geoscience, geoengineering, and societal issues

Session Chairs: João Carlos Nunes and Ana Malheiro

10:00	Geotechnical Hazards Associated with Intraplate Crustal Reactivation, and Criteria for Recognizing Seismogenic Range-Bounding Faults: Lessons from Central Asia By Dickson Cunningham
10:10	Sinkhole Processes in Carbonates and Evaporites of Apulia, and their Impacts on Society By Isabella Serena Liso and Mario Parise
10:20	Risk Analysis Methodologies in Heterogeneous Rock Masses: Examples Related to Heritage Cavities By Luis Ribeiro e Sousa , Rita Leal e Sousa, Ana Malheiro and Helder I. Chaminé
10:30	Integrated Seismic and Geodetic Monitoring of the Recent Seismo-Volcanic Activity on São Jorge Island, Azores (Portugal) By José Borges , Bento Caldeira and Rui Oliveira
10:40	3D Analysis of Collapse Geometries for Irregular Shapes of Lunar Lava Tubes By Mariusz Myszor and Marcin Chwała
10:50	<i>Discussion</i>

11:00 - 11:30

COFFEE-BREAK

11:30 - 12:50 **Main Session 2** - Mapping, monitoring, and evaluating natural hazards: landslides, rock falls, and slopes

Session Chairs: Celeste Jorge and Sérgio Oliveira

11:30	Insights into the volcanic unrest deformation episode 1999-2007 at Fogo Volcano, São Miguel, Azores By António Trota , Virgílio Mendes and Paulo Amaral
11:40	Dismantling of a Rock Block on an Unstable Slope on The EN1-1 ^a Road, Grotta Dos Sernos, Nordeste, São Miguel Island, Azores By António Trota , Miguel Bernardo, Fernando Sousa, Francisco Costa, Pedro Raposo, Andre Furtado, Kleiton Dias, Miguel Soares and Carla Leal
11:50	Integrated Morphological, Geophysical and Geotechnical Analysis of the Timzguida Oufftas Landslide (Morocco): Insights into Mechanisms and Instability Factors By Abdellah Khouz, Jorge Trindade, Sérgio C. Oliveira , Raquel Melo, Fernando Marques, Fatima El Bchari, Blaid Bougadir and Ricardo A. C. Garcia
12:00	Defining Landslide-Triggering Rainfall Thresholds by Environmental Units in Mainland Portugal By Teresa Vaz, Raquel Melo, Sandra Oliveira, Pablo Valenzuela and José Luís Zêzere
12:10	Application of a Sustainable Solution for the Stabilization of a Highway Slope By Diana Rodrigues , José Sousa, Adriana Neves and Alexandra Ferreira
12:20	Project Roadmap to Assembly and Deploy a Portable Infrasound Array on Faial Island, Azores, Portugal By Linda Inês Silva , Sandro Matos and Nicolau Wallenstein
12:30	<i>Discussion</i>

12:50 - 14:30

LUNCH

14:30 - 15:15 **Farrokh Nadim (Keynote 2)**
"Management of Geohazard Risks Considering the Changing Climate and Societal Priorities"

Chair: José Neves

15:15 - 16:30 **Main Session 3** - Ground evaluation and environmental geotechnics: implications on geotechnical hazards

Session Chairs: Pedro Santos and António Trota

15:15	Geological Risks of Soft Volcanic Rocks in an Urban Context – Assessing Susceptibility for Slope Stability By Celeste Jorge
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15:25	Challenges in Defining Failure Criteria for Macroporous Volcanic Rocks: Uncertainty and Analysis Methods By Rubén Galindo, Fausto Molina-Gómez , Miguel Ángel Millan and Carlos Sánchez Barberán
15:35	Geotechnical Characterization and Preliminary Assessment of Soil Liquefaction Susceptibility in an Urban Area of Figueira da Foz By Marco Cavaleiro, Pedro Andrade and António Trota
15:45	Terramesh: Solutions for Great Heights. Design and Durability By Laura Molano, Ginna Torres and Diogo Freitas
15:55	New 1:100 000 Scale Soil Mapping of Mainland Portugal By Gonçalo Batista , Mariana Conceição, Ricardo A. C. Garcia, Sérgio Oliveira, André Trindade, Cláudia M. Viana and Jorge Rocha
16:05	Mapping Soil District Boundaries Across Mainland Portugal By Mariana Conceição , Gonçalo Batista, Ricardo A. C. Garcia, Sérgio Oliveira, André Trindade, Cláudia M. Viana and Jorge Rocha
16:15	<i>Discussion</i>

16:30 - 16:50

COFFEE-BREAK

16:50 - 17:30 **Main Session 4** - Assessment, planning, and design with natural hazards: urban planning, engineering works, and hydrological issues

Session Chairs: José Teixeira and Tiago Abreu

16:50	Impact of Storm Events on the Morphological Evolution of the Submerged Sandbar at Figueira da Foz Inlet By Tiago Abreu , Ângela Fontan-Bouzas, Paulo A. Silva and Paulo Baptista
17:00	Coastal Erosion in the Azores: Environmental Impact Assessment in the Rabo de Peixe Sector – Ribeira Grande, São Miguel Island, Azores By Ana Rita Botelho, António Trota , Paulo Borges and Caroline Ferreira
17:10	Flood Hazard Hydrologic and Hydraulic Modeling in the Anergui Valley, Central High Atlas (Morocco) By Brahim Nait Ouach, Abdellah Khouz, Pedro Santos , Fatima El Bchari, Jorge Trindade, Abdellatif Souhel, Sérgio Cruz Oliveira and Ricardo A. C. Garcia
17:20	<i>Discussion</i>

17:30 - 18:15 **Mario Parise (Keynote 3)**
"Natural Hazards in Coastal Carbonate Environments: Geological, Hydrogeological and Geotechnical Aspects"

Chair: José Luís Zêzere

18:15 - 18:30 **CLOSING CEREMONY**

POSTER EXHIBITION

Multi-hazards and georisks assessment: geoscience, geoengineering, and societal issues

Geohazards Assessment in Renewable Energy Projects: Case Study of a Hypothetical Cable Route Crossing the Madeira Insular Margins By Joaquim Pombo and Aurora Bizarro
The Price of Uncertainty: Risk Classification of Dams According Brazilian Law By Antônio A. Mendonça, Antônio M. Topa Gomes, Ecidinéia Pinto Soares, Antônio Viana da Fonseca, Lúcio F. Souza Villar and Marcus V. Torres de Oliveira
Application of an Iphone LiDAR on Mountain Trails Management and Safety By Rui Morais Fernandes, Jorge Costa, José Teixeira and Alberto Gomes
Integration of UAV-GPS Surveys and Terrestrial LiDAR for High-Resolution Mapping: an Exploratory Methodology for Hazards By Patrícia Moreira, Jorge Costa, José Teixeira, Ana Pires, Paulo Rodrigues, André Dias, José Almeida, Liliana Freitas, Cristina Rodrigues and Helder Chaminé

Mapping, monitoring, and evaluating natural hazards: landslides, rock falls, and slopes

Comparison of Methods for Remote Detection of Discontinuity Families by Photogrammetry with the Traditional Method By Ian Landerer and Javier González-Gallego
Contributions to the Topographic Monitoring of Ground Under Construction on the Island of São Miguel, Azores, Portugal By António Trota and Pedro Raposo
Geological Risk in Karst Regions - The Case of Minde Polje Slopes By Luís Lopes, Fernanda Bessa Ferreira and Jorge Medina
Dynamics and Thermodynamics of Rock and Ice Avalanches By Fabio Vittorio De Blasio
PRISMAC: Analysis, mitigation, and management of risks to landslides aggravated by climate change in Macaronesia By Paulo Amaral, Filipe Marques, Letícia Moniz, Rui Marques, Rui Fagundes Silva, João Rebelo Costa, Luis Hernández Gutiérrez, Dácil López, Óscar Pérez Martín, Sónia Victória, Ineda Carvalho and Alexandra Delgado

Ground evaluation and environmental geotechnics: implications on geotechnical hazards

Getting Undisturbed Specimens of Lithified Canarian Pyroclasts By Fausto Molina-Gómez, Rubén Galindo-Aires, Miguel Ángel Millán, Jesús Page and Luis Hernández-Gutiérrez
Bearing Capacity and Safety Factor Evaluation of Shallow Foundations on Low-Density Pyroclastic Rocks By Carlos Sánchez Barberán, Rubén Galindo, Miguel Ángel Millan and Fausto Molina-Goméz

Santa Bárbara's Volcano Seismicity (Terceira Is. - Azores), from June 2022 to June 2025 By Matilde Silva , Maria Escuer and Fernando Carrilho
Numerical Modeling of Volcanic Soil Crushing, Including the Collapse Mechanism By Miguel Angel Millán Muñoz, Ruben Angel Galindo Aires, Fausto Molina-Gómez and David Mencías-Carrizosa
DInSAR Technology for Monitoring Ground Deformation in a Historical Mining Area (Tibães, NW Portugal): A Preliminary Hazard Analysis By José Teixeira , Stélio Tavares Júnior, Alberto Gomes, Maria João Dias Costa and Helder I. Chaminé
A Brief State-of-the-Art of Polymers for Secured Drapery Systems in Aggressive Environments By Diego Garcia, Ginna Torres and Diogo Freitas

Assessment, planning, and design with natural hazards: urban planning, engineering works, and hydrological issues

Hydrogeology of Pyroclastic Flow Plateau – Case study of the Yabakei Pyroclastic Flow in Kyusyu Island, Japan By Takehiro Ohta , Nanami Sengoku, Atsuki Uchida and Masayoshi Chidori
A New Methodology to Predict Flash Flood Risk Areas in the United Arab Emirates By Tew-Fik Mahdi
Promoting the resilience of road pavements by mitigating geotechnical risks due to climate change – A review By José Neves
Detecting Vulnerability Hotspots along the Galician Coastline: Toward Improved Risk Management By Alejandro Gómez-Pazo, Augusto Pérez-Alberti and Helder I. Chaminé
Geotechnical Risks in Natural Stone Quarries By Luís Lopes, António Pinho , Ruben Martins and Isabel Duarte
Geotechnical Project Life Cycle Assessment: A Tool for Sustainability and Minimizing Potential Future Risks By Fernando Pereira

ORGANIZING



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