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The XIV Congress of the International Association for Engineering Geology and the Environment

Session 8-1

Georisk assessment using machine learning



Conveners



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Brief Introduction of the Session:

The main objective of this Session is to provide a scientific forum for advancing the successful implementation of excellent and up-to-date machine learning models in georisk assessment. Generally speaking, the georisk issue in this session mainly include prevention engineering of landslide, rock fall and debris flow, slope environmental remediation, hydroelectric dam engineering, geomembrane in slope treatment, slope groundwater seepage, slope contaminant treatment, mine slope protection, slope risk assessment, etc. The georisk assessment involves the modelling of complex behaviors of soils, rocks and water where traditional analytical solutions, physical experiments and numerical simulations may be difficult to apply.

In recent years, advanced machine learning models have found more and more applications in modelling the georisk assessment. This is because the machine learning models have abilities to produce knowledge and discover hidden and unknown patterns from the data samples of the slope engineering through input-output variables. A series of machine learning models including fuzzy and neuro-fuzzy logic, decision tree models, artificial neural networks, ensemble algorithms, deep learning models, evolutionary algorithms, et al, have been proposed and used widely. To sum up, it is significant to summarize and explore the research frontiers in the fields of georisk assessment modelled by the machine learning. This session aims to cover, without being limited to, the following areas:

- Assessment modelling of various georisk issues using machine learning;
- Frontiers of machine learning in georisk and other engineering issues;
- Generation and quality assessment of georisk big datasets;
- Uncertainty assessment of high-dimensional georisk assessment models;
- Machine learning and numerical simulation for georisk assessment;
- Design of georisk control measures and related environmental science;
- Sources and level of uncertainty in georisk modelling with different scales.

IMPORTANT DATES



Abstract for Oral Presentation and
Poster Submission Deadline

Jun. 30, 2023



Early Bird Registration Deadline

Aug. 10, 2023



Online Registration Deadline

Sept. 21, 2023

SUBMISSION

For the full-length submission

The submission system is now open for full-length papers. The deadline for submission of full-length paper has been extended to May 31, 2023. Please read the guidelines for paper submittal prior to submitting your full-length paper.

Please read the guidelines prior to submitting your full-length paper or long abstract at <https://www.iaeg2023.org/cfp.html>

For the abstract submission

The abstract submission system for oral presentations and posters is open! If you would rather prepare an abstract for an oral or poster presentation, rather than submitting a full paper, please submit your abstract for consideration by June 30, 2023.

Please read the guidelines prior to submitting your abstract at <https://www.iaeg2023.org/cfa.html>



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