

Real-time monitoring of natural and man-made land forms

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ABSTRACT

Improving the understanding of the structural health of natural landforms (e.g., mountain slopes, coastal cliffs) and man-made earthen infrastructure (e.g., levees, tailings storage facilities) over time has gained significant traction in recent years. This is due in part to a number of widely publicized catastrophic failures such as the Brumadinho tailings storage facility failure in 2019 and many recent avalanches in the Alps [1] as well as major improvements in computational algorithms and supercomputer technologies.

The objective of this proposed minisymposia focused around the “Monitoring for site characterization” theme is to collate a snapshot of the current state-of-the-art in detecting precursors to failure by means of real-time monitoring. A wide range of contributions is suitable for this broad topic, such as (but not limited to):

- Suitability of monitoring technologies for brittle and ductile types of failures
- Understanding of large landslides in high alpine environment
- Reliability of monitoring equipment in harsh environments
- Is real-time monitoring really “real-time”?
- Combined monitoring systems for effective monitoring: geotechnical and geophysical monitoring, on-site and remote
- Emerging monitoring technologies
- Criteria for assessing suitability of monitoring technologies for various applications
- Quantification of uncertainty: statistical techniques and physics-based modelling
- Open-source tools for data integration and analysis

REFERENCES

- [1] <https://www.theguardian.com/world/2022/feb/05/eight-killed-in-two-days-after-third-deadly-avalanche-hits-austria>