



Permafrost Geomorphology & Hazards

4E - Permafrost Mass-Wasting Processes and Slope Hazards

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Permafrost mass-wasting has increased in frequency and magnitude across permafrost slopes in the last two decades due to a changing climate. This recent acceleration of thaw-driven landscape change can rapidly alter hazards and risks to infrastructure and ecosystems. However, the diversity and variability of permafrost hillslopes make assessing the interactions between permafrost degradation, mass-wasting processes, and associated hazards a complex issue. Bridging these fundamental knowledge gaps remains essential in evaluating spatiotemporal thaw trajectories and the associated hazards of thawing permafrost slopes.

This session, therefore, aims to present developments in permafrost mass-wasting processes and their associated hazards. We welcome contributions from an array of scientific disciplines, timescales (past, current, future), and local- to circumpolar scales that assess permafrost mass-wasting processes and hazards from mountain and lowland settings. This includes studies on field and remote sensing observations, geomorphology, engineering geology, surface-subsurface hillslope interactions, big data processing, machine learning, mapping, and modelling, monitoring, and adaptation strategies.

Keywords: Permafrost Degradation, Slope Processes, Thermokarst

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