



SESSIONS EUCOP6_ 2023

Session title: Steep rock slope permafrost processes and hazards

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Summary: Permafrost in steep rock slopes has gained increasing attention in the last two decades because of the increased frequency and magnitude of rock slope failure in high mountain terrain. Rockfalls, rock avalanches and subsequent cascading processes (e.g. displacement waves, debris flows, snow avalanches) are an impending hazard to human lives and infrastructure. These emerging hazards present a growing scientific and societal relevance and require immediate attention. Determining spatiotemporal trends of rock slope failure and linking permafrost dynamics to slope instability is a significant challenge facing researchers. The role of permafrost dynamics as a trigger for slope failure and the mechanical properties of rockwalls spanning seasonal to millennial timescales is still not very well understood. Thus, key research questions have come to light 1) How do steep frozen rock slopes respond to climate parameters? 2) What are the predisposed permafrost conditions and mechanisms causing slope instability? 3) What is the spatiotemporal distribution of unstable steep frozen rock slopes? This session invites all studies aiming to enhance our understanding of steep periglacial rock slope processes and hazards. Contributions focusing on field observations, monitoring, remote sensing, geomorphology, modelling, mapping, hazard characterization, and assessment, as well as mitigation and adaptation strategies are welcome.