



## **Cryo-conditioning of geomorphological processes in steep slopes in time and space**

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The role of the ground thermal regime on geomorphological processes in settings associated to steep slopes has received considerable attention in the past. It is evident from recent studies that e.g. rock walls have a profound effect on the thermal regime in mountain sides, a.o. influencing rock wall stability, weathering regimes and glacier-permafrost interaction in space and time. This presentation discusses the importance of the thermal regime in space and time on geomorphological processes in steep slopes. We combine direct observations of air, ground and rock wall temperatures with numerical simulations using a 2D transient thermal model (CryoGRID 2D). We analyze how thermal gradients in rock walls or coastal cliffs may influence important geomorphological processes related to weathering, talus developments, material accumulation and ice aggregation in coarse material. On longer time scales, permafrost dynamics associated with glaciation and deglaciation phases, may have influenced the development and stability of large-scale valley systems.