4B - Periglacial Geomorphology

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Periglacial landforms are observed in cold-climate environments, both at high-latitudes and high elevation. Diverse processes such as physical and chemical weathering, mass-wasting, fluvial, aeolian, coastal, and paraglacial phenomena are common in such cold, non-glacial environments.

In periglacial regions, freeze-thaw cycles occur at varying times (i.e., diurnal, seasonal), and spatial scales (i.e., seasonal thawing of the active layer). Local factors including topography, snowfall, snow cover, aspect, and mean-annual ground and air temperatures, determine the presence and distribution of permafrost in periglacial areas. When permafrost is absent, frost-action processes dominate the periglacial environment.

Periglacial landforms can be highly susceptible to anthropogenic forcings and climate warming. Rising temperatures affect the thermal and geomorphological equilibrium of certain landforms. As a result, some areas are experiencing accelerated permafrost thaw and weathering, increased slope instability, thermokarst formation, and subsidence.

Periglacial geomorphology facilitates the integration of expertise from geomorphology, ecology, paleoclimatology, and engineering to address changing permafrost landscape dynamics. This session aims to foster discussions highlighting innovative approaches and multidisciplinary partnerships to improve our understanding of future permafrost thermal regimes within periglacial terrain. We welcome contributions outlining field observations, geophysical studies, laboratory testing, numerical modelling, and remote sensing techniques investigating the spatial and temporal evolution of periglacial landscapes.

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