



Permafrost Environments

3B - Characteristics of Permafrost in the Andes

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The Andes of South America are the longest continental mountain range in the world, with an average elevation of about 4,000 m. Due to this height, permafrost plays a crucial role in its morphology and local ecosystems. Similar to many cold regions around the world the Andes are currently facing unprecedented changes in climate conditions, which are leading to the degradation of permafrost and other related processes such as rock glaciers degradation, slope instabilities, and changes in local hydrology. However, today, our understanding of the spatial extent, thermal conditions and its characteristics, including ground ice content, hydrological role, is still very limited, leading to large uncertainties when projecting future behaviour of permafrost conditions in the Andes.

This session will provide an opportunity for researchers and engineers from various disciplines to present their findings on the characteristics of permafrost in the Andes, specifically its spatial distribution, thickness, thermal state, presence of periglacial ice and paleopermafrost. Presenters will have the chance to share their knowledge, experiences, and ideas about the role of permafrost in this particular mountain ecosystems and how climate change impacts the current and future state of permafrost in the region.

The session accepts topics, such as permafrost mapping and modelling, ground temperature observations, use of remote sensing techniques, geomorphological and hydrological effects of permafrost degradation. It is expected that this session will contribute to the advancement of our understanding of permafrost in the Andes and provide opportunities for researchers from different disciplines and background to collaborate and exchange ideas.

Keywords: South America, Andes, Permafrost Distribution, Thermal State, Paleopermafrost

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