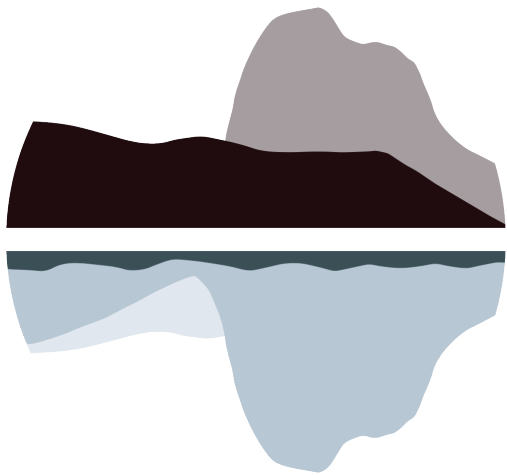




BOOK OF ABSTRACTS

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Periglacial activity in the Central and Southern Andes

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Abstract

The Andes Mountain range runs along the western margin of South America for ~7500 km, from the Sierra Nevada de Santa Marta, next to the Caribbean Sea, to Cape Horn, at the southern tip of the continent. Based on structural differences, the Northern Andes (11°N-1°S), Central Andes (1°-47°S) and Southern Andes (47°-68°S) have been differentiated. In the Central Andes the mountain range is divided into Western and Eastern Andes, between which the Altiplano, a plateau of 300x500 km and 3800- 4900 m surrounded by peaks that reach 6000 m in altitude. Only the Himalayas and Tibet are higher and larger than Andes-Altiplano. Glaciers are preserved on many peaks of the Andes, and on their slopes, there are moraines revealing a much larger glacial extent in the past. Today, in the deglaciated areas there are extensive periglacial landscapes. However, the extent to which altitude and latitude modify periglacial forms and processes has not yet been investigated. Our team aims to make a first approach to the problem by analyzing three representative Study areas of a north- south transect of the Central and Southern Andes: Nevado Coropuna volcanic complex (16°S, 73°W, 6377 m), in the Arequipa region (Peru); Cerro Aconcagua (33°S, 70°W, 6960 m), in Mendoza (Argentina) and Cerro Alvear (54°S, 68°W, 1490 m), in the Argentinean side of Tierra del Fuego. In the last 20 years we have identified different periglacial processes linked to permafrost, such as: rock glaciers, protalus ramparts, debris lobes, patterned grounds including tundra polygons associated with active ice wedges, cryo-ejected clast, tors, nivation hollows or boulder (clast) pavements. This periglacial activity probably records aspects of current interests, as climate change, interhemispheric teleconnections, or ENSO phenomenon, which modify snow cover. Understanding this record is an interesting geomorphological challenge that we begin to address by presenting this work.