

PERIGLACIAL SEDIMENTARY STRUCTURES, CENTRAL ANDES, ARGENTINA.

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The distribution of the Andean permafrost was identified in two altitudinal levels in the Central Andes. The geoforms suite of lower level (3100-3500 m a.s.l.) manifest the presence of seasonal freezing. The upper level (3500-4500 m a.s.l.) present rock glaciers. These mesoforms suggest the presence of discontinuous permafrost.

At this level, freezing cyclic activity of the active layer was observed. The following primary structures were observed:- Vertical sorting: the textural sorting of the stratum present coarse material in the upper part grading to fine in the base. This kind of the sedimentary structure constitutes one of the most conspicuous evidence of the freezing and thawing cycles in the active layer. The inverse gradation in rock glaciers is produced by the formation of needle ice and lenticular ice, that generates a non laminar fabric but with well differentiated granulometries, coarse material at the top and fines in the base.- Openwork gravels: there have been observed in sectors of the active layer conglomerate fabrics in the form of coarse material groupings or nests of smooth rounded pebbles and gravels with high porosity and permeability. The open texture is related to growth of inner ice that, once it has thawed, leaves porous spaces in the sediment of the entire active layer. The sedimentological structures in the identification of active and fossil periglacial geoforms constitutes a useful tool for the recognition of periglacial environment .