

Equilibrium line altitudes of late-glacial and Holocene ice extents near the Cordillera Vilcanota and Quelccaya Ice Cap, Peru

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Project Description

The tropical regions are important sources of energy and moisture for the global climate system. Recent studies indicate that a complete explanation of abrupt climatic changes must address the roles of both thermohaline circulation in the North Atlantic and processes in the tropics (*e.g.*, Chiang et al., 2004). We aim to contribute to an understanding of abrupt climatic change in the tropics by developing paleoclimatic records from terrestrial evidence in the Peruvian Andes.

The proposed study will provide the basis for a larger-scale project focused on detailed mapping and dating of former glacial extents near the Cordillera Vilcanota and Quelccaya Ice Cap (CV-QIC) region (~14°S, 70°W). Records of equilibrium line altitude (ELA) depressions during the last glacial maximum (LGM) have been extensively and successfully developed in tropical regions (*e.g.*, Klein et al., 1999; Porter, 2001, and references therein). Records of ELA depressions of tropical glaciers during the late glacial period and Holocene Epoch are more limited. We will determine ELA depressions from glacial extents during these periods that will be useful for comparison with paleoclimatic records from mid- and high-latitude regions.