

Geomorphological evolution and environmental variation after a deglaciation in the high-land of central Peru

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We attempt to reconstruct past environment after deglaciation by using a glacier lake on the central Peru. For this, we had undertaken field investigation as echo sounding and piston coring at Lake Yauriuri, which is 130 km apart from Nazca city. The lake is one of typical glacier lake at height of 4,384 m. By the seismic record of the lake bottom from echo sounding, it is identified that 10-m thick mud layer with the intercalated fine sand layers on the bedrocks. And, two sediment cores were taken from the southwestern point at 50 m in water depth. The length of the cores is 50, and 170 cm, respectively. Lithology of the sediment shows that almost homogenous dark grey slit with two thin brownish flood-origin layers. We have analyzed physical properties, magnetic susceptibility, color reflectance, chemical compounds by XRF with multiple radiocarbon dating for the whole core section. Our preliminary results indicated two cyclic variations of $L^*a^*b^*$ values, magnetic susceptibility, suggesting that past lake level fluctuation over the last 2,000 years caused by climate changes. These past environmental variations in Lake Yauriuri may have the similar pattern with other records in inland area of Peru as well as off shore Peruvian marine records.

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