Paleoclimate changes recorded in the sediments of high-altitude shallow lakes from eastern Cordillera, northwestern Argentina

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Lucia Guerra and her group have initiated a multiproxy study of sedimentary cores retrieved in high altitude (> 4000 m a.s.l.) shallow lakes (< 2 m water depth) located in different environments from the Eastern Cordillera to identify major sedimentological changes and to define their relationship to regional climate. Results from Laguna Salada Grande (23°S/65°W) a shallow lake located at 4102 m a.s.l with an endorheic basin, which has not been glaciated during the late Quaternary and from Laguna Leoneajo (22°S/65°W) located in a glacial valley at 4526 m a.s.l, is fed by rock glacial melting water with an exorheic basin, will be presented. Analyses of cores and outcrops (ongoing) include: petrophysical properties (magnetic susceptibility), focusing in XRF geochemistry, microstratigraphy, and detailed mineralogy along with a radiocarbon chronology. Lake records from glaciated and non-glaciated environments from Eastern Cordillera combined with former paleoclimatological records in the region (e.g. glacial deposits, lake transgressions) can supply critical information to understand the past patterns of atmospheric circulation in the central Andes region.