

PALEOPRECIPITATION OVER NORTH-EASTERN PERUVIAN ANDES DURING THE HOLOCENE INFERRED BY WELL DATED SPELEOTHEM RECORDS

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We aim to reconstruct changes in precipitation during the Holocene in the Andes, two speleothems were collected from Santa Halana cave, a site in the northeastern flank of Peruvian Andes (1800 m asl). Profound hydroclimatic changes are observed for the early Holocene at this intermediate altitude. Among them, abrupt wet events in Santa Halana are synchronous with abrupt cold events of the North Atlantic, such as Bond event 6 and the 8.2 kyr B.P. cold event. During the middle Holocene, the $\delta^{18}\text{O}$ record indicates a gradual precipitation increase following the insolation trend (10°S). This gradual increase is more pronounced during the transition from early to middle Holocene than in speleothem records in lowlands (van Breukelen et al. 2008) and shows a striking similarity with high altitude records, such as the Huascarán ice core. At 6 kyr B.P. a reorganization of the climatic system seems to occur where the decreasing trend is replaced by high variability in the $\delta^{18}\text{O}$ that records millennial variability (1200 yr). The millennial variability pattern is synchronous with the occurrence of Bond events in the North Atlantic. However, some periods of aridity appear in the record and include a peak of extreme dryness at 6.4 kyr B.P. and two periods with lower moisture availability between 4.9 and 2.1 kyr B.P.