

Search for publications, researchers, or questions



or

Discover by

Join for free

Log in

See all >

2 Citations

See all >

122 References

See all >

4 Figures

Share

Download full-text PDF

Holocene changes in monsoon precipitation in the Andes of NE Peru based on $\delta^{18}O$ speleothem records

Article (PDF Available) in Quaternary Science Reviews 146 · July 2016 with 458 Reads

DOI: 10.1016/j.quascirev.2016.05.023

1st [M.G. Bustamante Rosell](#)
6.15 · University of São Paulo

2nd [Francisco W Cruz](#)
32.72 · University of São Paulo

3rd [Mathias Vuille](#)
39.17 · University at Albany, The State University of New Y...

+ 11

Last [R L Edwards](#)

Show more authors

Abstract

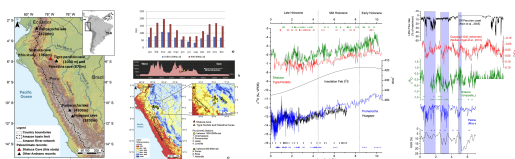
Two well-dated $\delta^{18}O$ -speleothem records from Shatuca cave, situated on the northeastern flank of the Peruvian Andes (1960 m asl) were used to reconstruct high-resolution changes in precipitation during the Holocene in the South American Summer Monsoon region (SASM). The records show that precipitation increased gradually throughout the Holocene in parallel with the austral summer insolation trend modulated by the precession cycle. Additionally the Shatuca speleothem record shows several hydro-climatic changes on both longer- and shorter-term time scales, some of which have not been described in previous paleoclimatic reconstructions from the Andean region. Such climate episodes, marked by negative excursions in the Shatuca $\delta^{18}O$ record were logged at 9.7e9.5, 9.2, 8.4, 8.1, 5.0, 4.1, 3.5, 3.0, 2.5, 2.1 and 1.5 ka b2k, and related to abrupt multi-decadal events in the SASM. Some of these events were likely associated with changes in sea surface temperatures (SST) during Bond events in the North Atlantic region. On longer time scales, the low $\delta^{18}O$ values reported between 5.1-5.0, 3.5e3.0 and 1.5 ka b2k were contemporaneous with periods of increased sediment influx at Lake Pallacocha in the Andes of Ecuador, suggesting that the late Holocene intensification of the monsoon recorded at Shatuca site may also have affected high altitudes of the equatorial Andes further north. Numerous episodes of low SASM intensity (dry events) were recorded by the Shatuca record during the Holocene, in particular at 10.2, 9.8, 9.3, 6.5, 5.1, 4.9, 2.5 and 2.3 ka b2k, some of them were synchronous with dry periods in previous Andean records.

Discover the world's research

- 13+ million members
- 100+ million publications
- 700k+ research projects

Join for free

4 Figures



People who read this publication also read:

Article: Calibration of speleothem $\delta^{18}O$ records against hydroclimate instrumental records in Central Brazil

Full-text · Feb 2016 · Global and Planetary Chang...