

Summary of changes for revised manuscript: A continental reconstruction of hydroclimatic variability in South America during the past 2000 years (egusphere-2024-545)

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Summary of changes (minor revision)

Dear Kathleen Wendt,

Thank you for the positive assessment of the manuscript revision.

As suggested, we have further expanded the discussion of the drivers influencing $\delta^{18}\text{O}$ in precipitation:

For South America, particularly in the South American Summer Monsoon (SASM) influenced region, the primary driver of $\delta^{18}\text{O}$ signatures in precipitation is the amount of rainfall during the monsoon season, rather than temperature (Vuille et al., 2003; Moquet et al., 2016). Additionally, the $\delta^{18}\text{O}$ signatures are influenced by the location of the moisture source, notably the moisture contribution from the ITCZ region, and the degree of upstream rain-out, which captures the precipitation history of the air mass along its trajectory as demonstrated by cave monitoring studies (Ampuero et al., 2020; Jiménez-Iñiguez et al., 2022; Moquet et al., 2016) and modeling studies (Vuille et al., 2003; Vuille and Werner, 2005; Vuille et al., 2012) working with station data from the Global Network of Isotopes in Precipitation (GNIP) (IAEA/WMO, 2020). $\delta^{18}\text{O}$ in speleothems in tropical South America is thus closely linked to changes in both regional and large-scale atmospheric circulation patterns.

Additionally, the first two sentences of the abstract has been reworded to emphasize the importance of understanding hydroclimatic variability:

Paleoclimatological field reconstructions are valuable for understanding past hydroclimatic variability, which is crucial for assessing potential future hydroclimate changes. Despite being as impactful on societies as temperature variability, hydroclimatic variability—particularly beyond the instrumental record—has received less attention.

We have also adjusted the numbering and naming of the supplement sections and checked that the color cycles for the line plots show a reasonable contrast under different colorblind filters.

Best regards,

Mathurin Choblet
On behalf of the authors

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