

Supporting Information for

Impact of the Southern Ecuadorian Andes on oxygen and hydrogen isotopes in precipitation

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This file contains the caption of the Supplementary Table 1, and Figures 1 and 2 as well as references.

Table 1: Oxygen and hydrogen isotope composition of water samples collected from streams and lakes. Location (GPS coordinates) and elevation of each sampling site is indicated. Also, mean catchment elevation derived using the ArcGIS flow accumulation model (see text for detailed information) and catchment size (m^2) for each sampling site are mentioned. Are also mentioned isotope values of shallow groundwater samples from springs (Garcia et al., 1998; Maldonado et al., 1995) and precipitation from IAEA stations (Jackson et al., 2019).

Figure 1: Spatial distribution of deuterium excess (d) values over southern Ecuador.

Figure 2: Map showing the location of shallow groundwater samples from springs (Garcia et al., 1998; Maldonado et al., 1995) and precipitation from IAEA stations (Jackson et al., 2019) in relation to our sampling sites.

References

Garcia, M., Villalba, F., Araguas-Araguas, L., & Rozanski, K. (1998). The role of atmospheric circulation patterns in controlling the regional distribution of stable isotope contents in precipitation: Preliminary results from two transects in the Ecuadorian Andes. In: Isotope Techniques in the Study of Environmental Change. International Atomic Energy Agency, Vienna, 127–140, 1998.

Jackson, L.J., Horton, B.K., Beate, B.O., Bright, J. & Breecker, D.O. (2019). Testing stable isotope paleoaltimetry with Quaternary volcanic glasses from the Ecuadorian Andes. *Geology* 47, 411-414. <https://doi.org/10.1130/G45861.1>

Maldonado, A.S., Cepeda, T.H., & Araguás Araguás, L. (1995). Hydrogeological and isotopic study of groundwater in the Chacras-Huaquillas area (Ecuador). International Atomic Energy Agency Technical Document IAEA-TECDOC-835, 195-209.