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To the Editor, Quaternary Science Reviews

Dear Prof. Claude Hillaire-Marcel,

Enclosed pleased find our manuscript "*Hydroclimate variations over the last 17,000 years as measured by leaf waxes in vegetation physiognomic and rodent middens from the south-central Atacama Desert, Chile*" authored by an interdisciplinary team of geoscientists, paleoclimatologists and paleoecologists. We would like to submit this manuscript as an original article that integrates for the first time research of leaf waxes in ancient rodent middens and plants along an altitudinal transect in the Atacama Desert. Furthermore, we investigate their applicability as a new tool for paleoenvironmental studies. We feel that our results will be of interest to researchers in the fields of paleoclimatology, paleoecology, biogeochemistry and Quaternary scientists in general, and is particularly suited for the readership of Quaternary Science Reviews.

The manuscript identifies and characterizes the main relationship between the abundance of long-chain n-alkyl (n-alkane and n-alkanoic acids) leaf wax along an environmental gradient in the Atacama Desert. It discusses the climate-induced waxes productivity in the vegetation physiognomic from Atacama Desert and its paleoclimatic interpretations using a series of fossil rodent middens that span the last 17 ka BP. We attribute the n-alkanes variability in the rodent middens as part of a specie-specific response in the vegetation belts to the increased moisture availability due to ENSO-like and South American Summer Monsoon millennial dynamics.

We declare that none of these results have been previously published and that we have no competing financial interests.

Sincerely,

Dr. Matías Frugone-Álvarez on behalf of my coauthors

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