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## Impact of colder vs. warmer tropical sea-surface temperature on water isotopes in precipitation during the Last Glacial Maximum

André Paul<sup>1</sup>, Thejna Tharammal<sup>2</sup>, Martin Werner<sup>3</sup>, Stefan Mulitza<sup>1</sup>, and Alexandre Cauquoin<sup>4</sup>

<sup>1</sup>University of Bremen, MARUM - Center for Marine Environmental Sciences, Department of Geosciences, Bremen, Germany (apaul@marum.de)

<sup>2</sup>Centre for Atmospheric And Oceanic Sciences, Indian Institute of Science, Bangalore, India (thejnat@iisc.ac.in)

<sup>3</sup>Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI), Bremerhaven, Germany (martin.werner@awi.de)

<sup>4</sup>Institute of Industrial Science, The University of Tokyo, Kashiwa, Chiba, Japan (cauquoin@iis.u-tokyo.ac.jp)

Using the isotope-enabled atmospheric general circulation models iCAM5 and ECHAM6-wiso, we investigate the impact of relatively colder vs. warmer tropical sea-surface temperature on isotopes in precipitation during the Last Glacial Maximum. We forced the two models by the same sets of pre-industrial (PI) and Last Glacial Maximum (LGM) surface boundary conditions; the latter were taken from GLOMAP (Paul et al., 2021), which in turn were based on the MARGO project (MARGO Project Members, 2009) and recent estimates of Last Glacial Maximum sea-ice extent.

To test the sensitivity to changes in tropical sea-surface temperature, we deliberately increased respectively decreased the reconstructed tropical sea-surface temperature by about 1.5 °C. We compared our model results to reconstructions from ice cores (cf. Risi et al., 2010) and speleothems (cf. Comas-Bru et al., 2020). However, the resulting changes in water isotopes in precipitation were surprisingly small and difficult to detect, hence the sensitivity to changes in tropical sea-surface temperature is rather low. We discuss our results as well as the prospect of utilizing more sensitive proxy data that would allow to discriminate between the two scenarios.