



Transient simulation of oxygen stable isotopes over the Asian monsoon region with the iLOVECLIM model

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The Asian summer monsoon affects the economical prosperity of vast, heavily populated regions (almost two-third of humanity). Asian summer monsoon dynamics at the orbital scale is a subject of considerable debate. Central in this debate is the interpretation of the Asian speleothem $\delta^{18}\text{O}$ record as a valid proxy for summer monsoon intensity.

In this study, we present a transient simulation of the last 150,000 years, performed with a numerical isotope-enabled fully coupled atmosphere-ocean-vegetation model (iLOVECLIM). This enables us to assess the nature of the $\delta^{18}\text{O}$ signal in South Asian speleothems. We discuss the validity of Asian speleothem $\delta^{18}\text{O}$ records as a proxy for summer monsoon intensity and the ultimate forcings of Asian monsoon precipitations at orbital scale.