



Paleoceanography of the eastern Indian Ocean: a seasonality issue?

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Study of two sediment cores in the eastern Indian Ocean (GeoB 10029-4 and GeoB 10038-4) reveals differing patterns in Mg/Ca and alkenone-based sea surface temperature (SST) reconstructions during the last glacial-interglacial cycle. During the last deglacial transition, Mg/Ca-based SSTs measured on *G. ruber* s.s. started to increase at ~19 ka, simultaneously with the decrease in global ice volume, as indicated by the benthic foraminiferal $\delta^{18}\text{O}$ values measured on *C. wuellerstorfi*. In contrast, the alkenone-based SST reconstruction shows an initial warming at ~14 ka well behind the decrease in global ice volume.

Comparison of the alkenone-based SST reconstruction with both precipitation (XRF-data) and paleoproductivity proxies (organic carbon, opal, and chlorins) in the same core suggests a rather seasonal signal of these proxies representative of the SE-monsoon season. On the other hand, the Mg/Ca-based SST reconstruction reflects annual average values, as indicated by a sediment trap experiment in the same area. We therefore suggest that seasonality of the paleotemperature proxies, as previously proposed for other tropical records, is critical for the SST reconstructions and can explain proxy-dependent contrasting patterns of deglacial warming in the tropics.