

Seasonality in the Arabian Sea over glacial-interglacial cycles

Lennart Jan de Nooijer^{1*}, R Tjallingii¹, GJ Brummer¹, GJ Reichert¹

¹Royal Netherlands Institute for Sea Research

The Indian monsoon system controls seasonal precipitation alterations over the Indian continent and upwelling of nutrient-rich waters to the surface in the northern Arabian Sea. Functioning and strength of this weather system due to climate change is one of the important issues in predicting the effects of global warming on the region's economy, agriculture and social welfare. The strength of the Indian monsoon system through time can be studied by changes in seawater temperature and chemistry from single-specimen analysis of planktic foraminiferal calcite. Temperature reconstructions based on many single specimens allow reconstruction of past seasonal sea water temperatures ranges and thus seasonal temperature variability. .

Here we present seawater reconstructions based on single-specimen Mg/Ca of the surface dweller *Globigerinoides ruber* and the deeper-living *G. dutertrei* of two sediment cores of the western equatorial Indian Ocean off Tanzania and the northern Arabian Sea. From both cores, specimens are analyzed for calcitic Mg/Ca using laser ablation-ICP-MS of time-intervals representing the Holocene optimum, Last Glacial Maximum, Marine Isotope Stage 4, MIS 5 and MIS6. The resulting temperature ranges allow reconstruction of variability in the strength of the Indian Monsoon as well as cross-equatorial heat transport during glacial and interglacials.

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