

Late Quaternary paleoceanographic changes in the northeastern Arabian Sea;
Inferred from sedimentary organic matter records.

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The northeastern Arabian Sea is characterized by a widespread midwater oxygen minimum zone (OMZ), between 80 to 1300 m, with oxygen concentrations reaching values of $<0.05 \text{ mL/L}^{-1}$ at present. In particular, biogenic particle fluxes in this region have experienced large seasonal changes due to strong monsoonal winds in summer and winter. Here we report carbon and nitrogen isotope data for a sediment core (ER-4) collected from this region. Synchronous downcore variations in the $\delta^{15}\text{N}$ record, which are explained by regional changes in the isotopic composition of subsurface nitrate, and hence denitrification were found. Moreover, these variations are synchronous with Indian monsoon changes during the glacial-interglacial cycles, thereby establishing a link with global climate. We discuss that these climate linked variations in this region that are likely to have experienced marine biogeochemical cycles during the Late Quaternary.

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