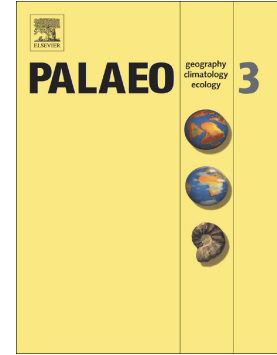


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**Glacial to Holocene changes in sea surface temperature and seawater $\delta^{18}\text{O}$ in the northern
Indian Ocean**

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Abstract

Sea surface temperature (SST) and seawater $\delta^{18}\text{O}_{\text{sw}}$ records were generated from sediment cores located in the southern Bay of Bengal (SBOB) and the northeastern Arabian Sea (NEAS) to understand glacial to Holocene changes in the hydrography of these regions. This was accomplished through the use of paired $\delta^{18}\text{O}$ and Mg/Ca measurements in planktic foraminifera (*Globigerinoides ruber*) from two sediment cores; SK157-14 in the SBOB (lat. $5^{\circ}11'N$; long. $90^{\circ}05'E$; water-depth 3306 m) and SK148-21 in the NEAS (lat. $21^{\circ}29'N$, long. $67^{\circ}01'E$; water-depth 1900 m). The results suggest significant changes in SST and $\delta^{18}\text{O}_{\text{sw}}$ since last glacial period. The glacial SSTs in the SBOB and the NEAS were lower by ~ 2 - 2.5°C relative to the Holocene. The deglacial period in both cores is characterized by significant variations in SSTs and seawater $\delta^{18}\text{O}_{\text{sw}}$. The Dansgaard-Oeschger (DO) cycles and Heinrich events are strongly expressed in SST and $\delta^{18}\text{O}_{\text{sw}}$ records of the SBOB core. These records support a strong control of atmospheric-oceanic changes in the northern high latitude on thermal state of the SBOB. The

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