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Analysis of sedimentation pattern at the shore region of Yemen during the last 36 kyrs reveals deglacial environmental changes

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We present results of deglacial sea-level history and associated sedimentation changes from a 11 m-long sediment section of core SO121-KL46. The core was sampled from the continental shelf in the Gulf of Aden, close to the strait of Bab al-Mandab from 383 m of modern water depth. The homogeneously colored core reveals sporadic occurrence of large (>0.5 cm) well-preserved macrofossils, including gastropods and shells. AMS ^{14}C dating suggests an average sedimentation rate of 13.8 mm/yr, corresponding to a time period of deposition over the last 36 kyrs B.P. for the studied interval. This time period includes maximum sea-level lowstand during the Last Glacial Maximum (LGM; ~24 kyrs B.P.). We used magnetic susceptibility to measure the degree of magnetization and the amount of ferromagnetic minerals in the samples. Planktic (P) and benthic (B) foraminifera were counted and planktic foraminifera percentages (P/B ratio) were determined. P/B ratio is, among others, indicative of productivity and organic matter flux to the sea floor. In this study, we evaluate the relationships of P/B ratio with paleo-water depth and sedimentation processes. Our first results suggest that P/B ratio is inversely related to magnetic susceptibility. This indicates that high concentration of ferromagnetic minerals is related to sea level lowstand. Most common planktic foraminiferal species are *Globigerina bulloides*, *Globigerinoides ruber* (white) and *Globigerinoides sacculifer trilobus*. The species *Globorotalia truncatulinoides* (dextral) occurs during the glacial and Early Holocene interval of the core, possibly associated with enhanced deep winter mixing.