

SEA SURFACE TEMPERATURE VARIATIONS DURING THE LAST 100 YEARS IN A MUDBELTS AREA OF THE SOUTHEAST BRAZILIAN CONTINENTAL SHELF

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The reconstruction of past sea surface temperatures (SST) from marine sedimentary records is essential to evaluate the ocean variability and its potential relation to ocean-atmosphere interactions or to oceanographic dynamics. The South Atlantic SST variability plays a fundamental role in the dynamics of the South American Monsoon System that controls summer precipitation over the southeastern portion of continent. In order to evaluate a lesser-studied temporal scale of SST variability, the alkenone based paleotemperature index- $U^{K'}_{37}$ was used in five short sediment cores (40 cm) covering the last 100 years. They were collected from the 10 to 90m isobath near the Cabo de Santa Marta in the SW Atlantic Ocean. The sampling region is particularly interesting because it is inserted in a mudbelt area influenced by the penetration of cold and nutrient-rich waters from the la Plata River that affects the productivity of the region and its sedimentation, allowing proxy reconstructions of recent and high time resolution. The sediment cores were sub-sampled continuously at 1-cm interval and soxhlet-extracted with a mixture of dichloromethane and n-hexane (1:1, v:v) and purified with an alumina chromatographic column. Alkenones were quantitatively analyzed in a gas chromatograph coupled to a flame ionization detector (GC-FID). The age models for the five cores were obtained each 2-cm interval using ^{210}Pb and ^{137}Cs in bulk organic sediments. The contents of Σ alkenones (C37:2, C37:3, C38:2 and C38:3) found in the sediment samples of all cores ranged from 0.15 to 4.94 $\mu\text{g g}^{-1}$. The $U^{K'}_{37}$ -SST shows a significant short-term gradient with a general trend of gradual cooling in the last 45 ca. years, with the distinction of the core stations nearshore presenting SST values varying between 23.0 and 25.1 °C, while the values in deeper stations ranged from 22.3 to 23.4 °C. The $U^{K'}_{37}$ -SST values decrease are related to the displacement of the la Plata River plume to the north and, in a lesser extent, the increasing influence of the South-Atlantic Central Water in superficial waters, both events caused by the intensification of NE/N winds in South America S/SE continental shelf.