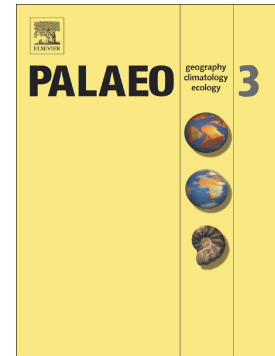


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Late Holocene palaeotemperatures and palaeoenvironments in the Southeastern Brazilian coast inferred from otolith geochemistry

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Abstract

Holocene palaeoceanography and climatic reconstructions were evaluated based on proxy analyses of fish otoliths from shellmounds located along the coast of Rio de Janeiro State, Brazil. Modern coastal seasonal upwelling is associated with the ascension of a deep and cold-water mass as a consequence of persistent NE winds that affect the climate in southeastern Brazil. However, this seasonal influence and the effect of the Holocene palaeoenvironment on shallow water are poorly known. In this work, coastal palaeotemperatures were estimated based on the geochemical analyses of otolith. The results of the $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ analyses from Holocene otoliths, obtained from coastal shellmounds separated by a distance of almost 200 km, show two distinctive otolith-derived palaeotemperature signals in a coastal region under upwelling influence. Additionally, this analysis suggests that the fish lived in marine waters, showing similar microchemistry values composition when compared with modern marine otoliths.

Keywords: Atlantic, Palaeoceanography, Shellmounds, Upwelling, Multiproxy, Isotopic

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