

## **EVIDENCE OF THE MONTEREY EVENT IN A SHALLOW-MARINE CARBONATE SEQUENCE OF POTIGUAR BASIN, EQUATORIAL BRAZILIAN MARGIN.**

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Strong evidence of the Monterey event has been detected on the basis of  $\delta^{13}\text{C}$  data from shallow-marine carbonate deposits in the Potiguar Basin. The study section comprises Neogene sedimentary rocks composed by three lithostratigraphic units, viz the Tibau Formation (sandstones and conglomerates), Guamaré Formation (limestones) and Ubarana Formation (marine shales). Those units represent a large regressive cycle spanning from Late Campanian to Holocene, forming a seaward thickening coastal-shelf-slope-basin system. The long term  $\delta^{13}\text{C}$  anomaly was recorded on whole-rock isotopic analyses of 54 well-cuttings. This isotopic anomaly is accompanied by a negative  $\delta^{18}\text{O}$  excursion, which follows the pattern described for the Monterey event. The Oligocene/Miocene boundary is also characterized by a  $\delta^{18}\text{O}$  maximum correlated to a well-known widespread glacioeustatic sea-level lowering. Biostratigraphic data based on large benthic and planktonic foraminifera have been used as a reference to determine the age of the study section. The identification of isotopic anomalies has determined a more accurate range for biostratigraphic units and helped date stratigraphic surfaces, such as sequence boundaries and a maximum flooding surface. The study was focused on shallow marine carbonates deposited between two erosional unconformities easily recognized in the Potiguar Basin. A 3rd order depositional sequence was then outlined, bounded by unconformities of Early Miocene (17.6 Ma) and a Middle Miocene (15.5 Ma) age. The maximum flooding surface corresponds to the Monterey's maximum, around 16.2 Ma. The absence of major erosion surfaces within the sequence assures the completeness of the lithological record, thus permitting age definition based on the isotopi