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Biostratigraphic, paleoclimatic and paleobatymetric events in the upper continental slope, north Bahia, Brazil

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The foraminiferal fauna present in 1.90 m long cores from the north coast of the State of Bahia, were analyzed for developing a biostratigraphic zonation and interpretating paleoclimatic and paleobathymetric events that occurred during the Quaternary in this part of the Brazilian Continental Margin. Four sample stations were piston cored from the upper continental slope: cores 132 (730 m deep), 141 (790 m deep), 147 (640 m deep) and 160 (480 m deep). From forty samples selected from the cores, 10,544 foraminifer specimens were picked up and 312 taxa were identified representing 96 genera and 302 species. The frequency and distribution patterns of the planktonic foraminifera suggest the presence of assemblage indicators that may be correlated with international Quaternary biozones. The frequency variations of planktonics indicate warm water as *Globigerinoides ruber* and *Globorotalia menardii s.l.* show an increasing frequency from the top to 40 cm of cores 132, 141 and 160, and to 60 cm depth of core 147. The presence of *Globorotalia menardii f. fimbriata* and *Globorotalia menardii f. ungulata*, which occur only in the Holocene, suggests warm water conditions for this core interval, as well as absence of *Globorotalia inflata*, which is a bioindicator of cold water. This is a suggestion that this core interval might be correlated with the international biozone Z of Quaternary time (Holocene – Interglacial). Likewise, the variations observed in the frequency of the cold water planktonic bioindicators, *Globigerina bulloides* and *Globorotalia truncatulinoides*, show an increasing frequency from 40 cm depth in the cores 132, 141 and 160 to their bottoms and from 60 cm deep until the bottom of core 147. This observation suggests that this core interval might be correlated with international Y zone (Pleistocene – Glacial) of the Quaternary. Variations observed in the relative frequency of benthonic versus planktonic speces show predominance of benthonics at the bottom of cores 141, 147 and 160. Moreover, changes in the high proportion of

benthonic species in the bottom of cores 141 and 147, to increased frequency of planktonic ones at the top of these cores suggest eustatic sea level variations, which may be correlated with Quaternary global climatic changes, with the paleoclimatic Pleistocene Glacial at the bottom and the climatic Holocene Interglacial in the top. The frequency variations of the benthonic depth indicators such as *Uvigerina peregrina* and *Bolivina subaenariensis* show an increased frequency from the top to 20 cm depth in core 160, indicating an interglacial period (Holocene) and a sea level increase. In this same core the species *Bulimina marginata, Bulimina patagonica* and *Bulimina subaenariensis* show an increase in their frequency from 1m deep to its bottom, indicating a decrease in water temperature (Pleistocene), reduction of eustatic sea level and an increase in productivity. Therefore, based on these results, it is suggested that during the Holocene in the north coast of the State of Bahia, a high eustatic sea level and warm waters predominated. Otherwise, during the Pleistocene low eustatic sea level, cold water and a high productivity pattern predominated. ^{14}C foraminiferal dating and $ä^{18}O$ analysis are needed to confirm the findings of this work.