

## **Cretaceous paleogeographic and paleoceanographic evolution of the northern South Atlantic: A review.**

<sup>1</sup>KOUTSOUKOS, E.A.M. <sup>1</sup>PETROBRAS/CENPES, RJ, Brazil.

The first marine incursions into the northern coastal basins of the South Atlantic occurred during the Aptian when the São Paulo Plateau-Walvis Ridge complex was bypassed and saline waters flooded the central rift-graben system from the south (proto-marine evaporitic phase). As a consequence of increased ocean-floor spreading and progressive subsidence, full marine conditions were established by late Aptian times. There was intermittent connection with the North Atlantic from the late Aptian onwards, through the Gulf of Guinea and/or across the Brazilian Northeast bulge.

The evolutionary history of the marine phase can be summarized as follows:

- The late Aptian-Albian marine carbonate platform and slope sequence is mainly composed of fine to coarse carbonates accumulated in the predominantly neritic environments of a narrow epicontinental sea. Deposition of the organic-rich marlstones and carbonate mudstones took place in hypersaline stratified water-masses and intermittently oxygen-depleted bottom conditions.
- Widespread oxygen-depleted conditions were established from Cenomanian to Turonian time in progressively deepening basins, with the formation of organic-rich rocks such as carbonate mudstones and black shales in most of the Brazilian marginal basins.
- The Coniacian/Santonian to Maastrichtian oceanic sequence is characterized chiefly by distal, deep-water (bathyal) shales and turbidites. Well oxygenated waters prevailed in the whole water column. Coeval deposits from neritic environments probably extended westwards, beyond the present-day limits of the basins. These were mostly eroded as a result of the continuous eastward tilting of the basins.