

Salt Tectonics in Atlantic-type Sedimentary Basins: Brazilian and West African Perspectives Applied to the Iberian and NW African Margins

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The South Atlantic divergent continental margin extends from East Brazil towards the continental margin off Argentina and from Rio Muni towards Namibia along the West African side. This segment is limited both to the north and south by transcurrent movements associated with oceanic fracture zones, and by the subduction zone north of Antarctica. The evaporite basin is associated with siliciclastic and carbonate sediments deposited above a regional unconformity (breakup unconformity) that heralds the continental drift phase, which is followed by a thick sag basin and by Aptian evaporate sedimentation. The evaporitic conditions seem to extend up to Early Albian in some regions, as evidenced by extremely thick layers of stratified evaporites, indicating several depositional cycles. The presence of a highly mobile evaporite layer resulted in the development of a characteristic tectonic style marked by salt diapirs and extensional and compressional structures affecting the post-salt sedimentary successions.

The regional deep seismic profiles acquired in the South Atlantic provide a unique dataset that allows identification of salt tectonics domains from the platform towards the oceanic crust boundary. These prolific salt basins constitute a framework for the interpretation of the less developed salt basin in the North Atlantic continental margins, particularly along the Iberian and Northwest African continental margins. Examples of analogue autochthonous and allochthonous salt structures, and their geodynamic evolution, have important implications for petroleum exploration in the deep water frontier regions.