

## **THE TERTIARY CALUMBI FORMATION TURBIDITES OF THE SERGIPE-ALAGOAS BASIN, BRAZIL: A SUCCESSFUL EXAMPLE OF GEOLOGICAL AND GEOPHYSICAL INTEGRATION.**

1MENDES, J.M.C., 1VALENÇA, R.M., and 1DA SILVA, C.F, 1Petrobras-E&P-SEAL, Aracaju, Brazil.

The Sergipe-Alagoas basin is located in northeastern Brazil, covering an area ca. 36,000 square km to the water depth of 2,000 m. Its boundaries to the south and north are the Jacuípe and Pernambuco-Paraíba basins, respectively. Petroleum exploration commenced during the 1930's. Commercial petroleum discoveries, however, started in the 1960's. The first offshore oil discovery on the Brazilian platform took place in the Sergipe-Alagoas basin in 1968 within the post-rift turbidites of the Calumbi Formation. During that time, the main exploration focus were structural highs imaged on the top of the sin-rift interval. Because of the success of the Campos basin, the search for turbidites reservoirs in the Sergipe-Alagoas basin has become the main exploration focus during the 1990s. The Calumbi Formation turbidites are characterized by: 1) excellent reservoir parameters, 2) high API gravity and 3) high initial rates. Offshore turbidite exploration in Sergipe-Alagoas has been successful during the last three years. Main reason for this success has been the integration of stratigraphic refinement with detailed seismic analysis based on seismic amplitude anomalies. AVO analysis, seismic modeling and prestack migration, are attributes commonly applied to screening new prospects. As consequence of this success, it was possible to halt a 12-year oil production decline in the basin. The perspective of new 3D's, increases chances of new oil discoveries within the Calumbi Formation reservoirs in the Sergipe-Alagoas basin.