

## **Deep-water Salt Tectonics in the South Atlantic Sedimentary Basins**

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An integrated, multidisciplinary study of the salt tectonics styles in the South Atlantic Eastern Brazilian sedimentary basins was carried out. The methodology was based on integration of geological and geophysical data, particularly regional seismic reflection profiles, gravity and magnetic data, results of exploratory drilling, physical models and analogs with other sedimentary basins.

The most common halokinetic structures along the Eastern Brazilian margin correspond to synthetic and antithetic normal faults developed in the extensional domain along the continental platform and slope. The deep basin is characterized by compressional features including thrusts, reverse faults, and allochthonous bodies on volcanic rocks near the boundary between the continental and oceanic crust. Salt tectonics structures (such as pillows, diapirs, turtlebacks and rafts) occur from northeastern Brazil towards the Santos Basin in the southeastern segment of the margin, and are responsible for several exploratory plays.

The Eastern Brazilian salt basin is very wide in the south, particularly along the Santos Basin, and it becomes narrower and in some basins, such as Jequitinhonha and Camamu, where large compressional features are observed. Two end-member styles of salt tectonics with basal shear may be identified in the margin, both developing very large stratigraphic gaps. The synthetic basal shear resulted in rafts that moved basinwards during overburden extension, and the antithetic basal shear mechanism resulted in touch-down of the hanging-wall blocks, basinward salt flow, and mobilization of the footwall blocks.