

## Hydrocarbon Neighbourhoods, Salt Diapirs & Oil Migration Limits: G3 Interpretation in Campos and Santos basins of Brazil

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Brazil's continental margin basins contain prolific oil habitats. Most historic production sourced from lacustrine sediments deposited during Neocomian rifting (Brice et al. 1980, Mello et al. 1988a&b; Burwood 1997; etc.) Increasingly important oil sources are Late Cretaceous post-evaporite sediments laid down in shallow marine and fluvial-deltaic environments (Mello et al. 1988a&b; Sofer 1993; Burwood 1997; Katz et al. 1997; etc.)

This investigation began as an analysis of South Atlantic Margin basins using paleo-reconstructions of multiple data sets (Dickson et al. 2001). Initial rough correlations between conjugate basins suggested missing source rock plays by highlighting a series of oil family matches and gaps along the margins. Oil families seemed in each basin or sub-basin to relate closely to structural elements imaged from regional gravity data.

Recent availability of higher resolution gravity and magnetics grids and the determination of oil sub-families allowed detailed work in two Brazilian basins, Santos and Campos. Results in the latter strongly reinforced the definition of source kitchens and transfer faults or zones of weakness that separate oil types. Basins and even individual paleo-lakes were imaged and we mapped limits on oil migrations from their sources. The lack of well control in the Santos Basin placed more reliance on piston core data (seeps and temperatures) and their correlations to detailed published maps of salt diapirs and gravity (potential field) attributes. Syn-rift and post-rift trends were distinguished; predictions of salt feature type (ie, rooted diapir vs detached tear drop) should assist the definition of sub-salt plays.

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