



Post-breakup Basin Evolution along the South-Atlantic Margins

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The post-breakup tectono-stratigraphic evolution of large offshore basins along the South American and African continental margins record strongly varying post-rift sedimentary successions. The northernmost segment of the South Atlantic rift and salt basins is characterized by a pronounced asymmetry, with the Brazilian margin comprising narrower and deeper rift basins with less salt in comparison to the Congo–Gabon conjugate margin. Another important observation is that multiple phases of uplift and subsidence are recorded after the break-up of the southern South Atlantic on both sides of the Florianopolis-Walvis Ridge volcanic complex, features that are regarded as atypical when compared to published examples of other post-breakup margin successions.

A regional comparison based on tectonic-stratigraphic analysis of selected seismic transects between the large basins offshore southern Brazil (Espírito Santo Basin, Campos Basin, Santos Basin, Pelotas Basin) and southwest Africa (Lower Congo Basin, Kwanza Basin, Namibe Basin, Walvis Basin) provides a comprehensive basin-to-basin documentation of the key geological parameters controlling ocean and continental margin development. This comparison includes the margin configuration, subsidence development through time, sediment influx and storage patterns, type of basin fill (e.g. salt vs. non-salt systems; carbonate-rich vs. clastics-dominated systems) and finally major tectonic and magmatic events. Data from the salt basins indicate that salt-related tectonic deformation is amongst the prime controls for the non-uniform post-rift margin development.

The diversity in the stratigraphic architecture of the conjugate margins offshore southern Brazil, Namibia and Angola reflects variations in the interplay of a number of controlling factors, of which the most important are (a) the structural configuration of each margin segment at the time of break-up, (b) the post break-up subsidence history of the respective margin segment, (c) variations in the type, quantity and distribution of margin sediment, and (d) sea-level changes.