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Comparative analysis of post-breakup basin evolution along the South-American and South-African margins, southern Atlantic

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Recently, considerable attempts have been made to compare the sedimentary basin evolution and the associated tectonic framework on both sides of the South-Atlantic. However, yet there are still unresolved questions concerning the tectono-sedimentary styles of margin basin evolution that markedly differ from north to south. Amongst the most striking observations is that multiple phases of uplift and subsidence are recorded after the break-up of the southern South Atlantic margin segment 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. Adding to the heterogeneity of the system, the northernmost segment of the South Atlantic rift and salt basins is also characterized by a pronounced asymmetry, with the Brazilian margin now comprising narrower and deeper rift basins with less salt than the Congo–Gabon conjugate margin. This project deals with a large-scale comparison of this very different post-breakup tectono-stratigraphic development of the southern and northern South American and African continental margins that both record thick post-rift sedimentary successions. To gain detail of the basin margin evolution, we focus on a regional comparison between the post-breakup records archived in the large offshore southern Brazil basins (Pelotas, Santos, Campos) and the post-breakup continental margin successions of offshore Namibia (e.g. Orange Basin) and southern Angola (e.g. Kwanza Basin). A tectonic-stratigraphic comparison of representative geological transects provides a comprehensive basin-to-basin documentation of key factors influencing margin development which include the subsidence development through time, the sediment (in-)flux and storage patterns and the respective type of basin fill (e.g. salt vs. non-salt systems; carbonate-rich vs. clastics-dominated systems). Data from the salt-prone areas offshore South America and southern Africa indicate that salt-related tectonics is amongst the key parameters controlling differential post-rift margin development.