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The Angola-Gabon rifted margin: reappraisal of the upper- and lower-plate concept

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In this contribution we summarize observations from the South Atlantic Angola-Gabon rifted margin. Our study is based on interpretation of a selection of deep penetration depth migrated seismic reflection profiles. We describe the dip architecture of the margin under five structural domains (proximal, necking, distal, outer and oceanic), listing their characteristics. We further explain the necking domain and discuss the architecture of the distal domain as a combination of hyper-extended crust and exhumed mantle.
The mapping and characterization of these domains permit to illustrate the along strike structural and stratigraphic variability of the margin. We interpret this variability as the result of a shift from an upper-plate setting (central segment, South Congo to North Angola) to lower-plate settings (southward with the inner Kwanza Basin, and northward with the Gabon Basin). The transfer from one setting to the other is either sharp, typified by a major regional normal fault on the northern flank of a (residual) H-block, identified offshore Cabinda-Zaire, or more diffuse southward. First order screening of conjugate profiles confirmed the segmentation and the structural characteristics of the transfer zones. The studied dataset also permitted identifying key sections that can be considered as type-examples of upper-plate and lower-plate settings, what permits us reviewing the characteristics of upper- and lower-plate rifted margins.