



Early Post-rift of transform margins: the african margins of the Equatorial Atlantic

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We investigated the structural variability of the African Equatorial Atlantic margin, and, in particular, the stratigraphic architecture of the early post-rift sedimentary wedges (Upper Cretaceous). A major segmentation of the margin results from the obliquity of each segment with respect to the direction of the transform faults bounding the 3 main depocenters (Sierra Leone-Liberia, Ivory-Coast, Ghana-Togo-Benin). It produced margin segments with various widths of the crustal necking zone (very narrow transform segments vs wider divergent segments) and of the continent-ocean transition. Also, along transform segments, only the distal part of the early post-rift sedimentary wedge was preserved whereas, along divergent segments, the whole wedge has been preserved. As a difference, the late post-rift stage wedge (Cenozoic) has been well preserved on both types of segment. We interpret this differential preservation, during the early post-rift stage, as the result of different histories of vertical movements along segments having different extension obliquities. Faster early post-rift uplift is expected along transform segments because of their very narrow necking domain amplifying the flexural response of the lithosphere to stretching and erosion/sedimentation transfers. This resulted in sediment bypass and shelf erosion of the proximal sedimentary wedge along transform segments whereas accommodation allowed for the sedimentary wedge to be preserved, at the same time, along divergent segments. During the following late post-rift stage, the differential behavior was smoothed out.