



Gabon-Angola vs Namibia Atlantic margins: Are they that different?

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The integrated geophysical and well-based characterization of the distal domain of the West Africa passive margin in Angola (Kwanza basin) and Gabon (Lower Congo basin) reveals the presence of systematically distributed volcanic structures along the continent-ocean transition zone. Interpretation of reflection seismic profiles constrained by well data (sampled volcanic rocks) and gravity and magnetic anomaly data indicates that volcanic units underlie the regional Aptian salt unit, and are interpreted to post-date hyperextension but pre-date oceanization of the margin. The morphology and distribution of anomalies interpreted as volcanic bodies aligned with the continent-ocean boundary, suggests that these volcanic structures represent some form of proto- or pre-oceanic volcanism, with bodies apparently dissected by the oceanic ridge during spreading.

Volcanic units (including SDRs) along the volcanic-rich Namibia margin are also known to pre-date oceanization. The structural characterization of the margin based on geophysical data indicates that they also mostly post-date hyperextension of the margin. As such, timing of volcanism in both margins (Gabon-Angola and Namibia) seems to occur during the latest stages of development of the passive margin, with the difference between both systems being the budget of mantle melt available prior to oceanization.