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**Segmentation of Extensional Structures in the Lower Congo/ Kwanza Basins: an Effect of Lateral Boundary Conditions**

In the Lower Congo and the Kwanza Basins gravity spreading is the major mode of deformation of post-salt sediments. Regional seismic lines show a remarkably constant zonation of extensional structures. The zonation comprises, from upslope to downslope, sealed tilted block, rollover and diapir domains. On a regional scale, each of these domains is laterally segmented with variations in main structural directions.

The Lower Congo Basin displays high amount of extension and coast-parallel deformation trends dominated by large antithetic and synthetic rollovers. By contrast, the Kwanza Basin displays a lower amount of extension characterized by low amplitude synthetic rollovers and diapirs. To analyze top salt structures, we use analogue experiments on sand/silicone models. At the end of experiment, sand layers (sediments in nature) are removed exposing the silicone layer top surface (top salt in nature) showing the exact geometry of rafts, rollers and diapirs. Experimental results and structures observed in basins show directly comparable trends and structural zonation. This implies that lateral variation of structures and corresponding structural domains depend on lateral boundary conditions. Resulting variations in slope parallel spreading rates are partly accommodated by large slope parallel shear zones.

In the south of the Kwanza Basin, a basement high, inherited from the rift phase, is responsible for a southward thinning of the salt layer at time of deposition. This structure likely acts as a mechanical lateral boundary during spreading above salt.