

International Explorationists Dinner Meeting

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Focus On Angola

Salt-tectonics provinces and superposed deformation across the continental-oceanic boundary in offshore Angola

Abstract

The Angolan margin is the type area for raft tectonics. New seismic data reveal the contractional buffer for this thin-skinned extension. A composite section from the Lower Congo Basin and Kwanza Basin illustrates a complex history of superposed deformation caused by (1) progradation of the margin and (2) episodic Tertiary epeirogenic uplift. Late Cretaceous tectonic movement was driven by a gentle slope created by thermal subsidence. Extensional rafting took place updip, contractional thrusting and buckling downdip. Some distal folds were possibly unroofed to form massive salt walls.

Oligocene deformation was triggered by kinking of the Atlantic Hinge Zone as the shelf and coastal plain rose by 2 or 3 km. Uplift stripped Paleogene cover off the shelf, provided space for Miocene progradation, and steepened the continental slope, triggering more extension and buckling.

In Neogene time a subsalt half-graben was inverted, creating keystone faults that may have controlled the Congo Canyon.

A thrust duplex of seaward-displaced salt jacked up the former abyssal plain, creating a plateau of salt 5–4 km thick on the present lower slope. The Angola Escarpment may be the toe of the the Angola thrust nappe, in which a largely Cretaceous roof of gently buckled strata may have been transported above the salt duplex as far as 1–20 km.

Biographical Sketch

Martin Jackson's early career interests included lunar structures, mineral exploration, and Precambrian geology. He received his Ph.D. from the University of Cape Town in 1976. He joined the Bureau of Economic Geology at the University of Texas at Austin in 1980, where he currently directs the Applied Geodynamics Laboratory, funded by a consortium of oil companies. A recipient of AAPG's Sproule, Matson, and Dott awards, he lectured in AAPG's Structural Geology School, was an AAPG Distinguished Lecturer, and served 6 years as Associate Editor for AAPG Bulletin and GSA Bulletin. □

HGS International Explorationists Dinner Meeting • Monday, October 18 • Westchase Hilton, 9999 Westheimer
Social: 5:30 p.m., Dinner 6:30 p.m.