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Martin Grecula<sup>1</sup>, Stephen S Flint<sup>2</sup>, Peter Sixsmith<sup>2</sup>, Graham Potts<sup>2</sup>, De Ville Wickens<sup>3</sup> (1) Nederlandse Aardolie Maatschappij, Assen, Netherlands (2) University of Liverpool, Liverpool, United Kingdom (3) University of Stellenbosch, Stellenbosch, South Africa

**Partial Ponding of Turbidite Systems in a Basin with Subtle Growth-Fold Topography: An Example from Laingsburg-Karoo Basin, South Africa**

The Laingsburg Formation of the South African Karoo foreland basin provides an excellent opportunity to study the interplay between deep-water sedimentation and syn-depositional fold growth. The 800 m thick formation, consisting of six sand-rich turbidite units separated by basin-wide mud-dominated intervals, occupies a sub-basin created by the onset of Cape Fold Belt deformation during the Late Paleozoic.

Episodic growth of local fold structures is documented by significant changes in the thickness of turbidite deposits. Isopach analysis of successive depositional units indicates that initial shortening in the basin occurred through growth of isolated periclinal antiforms and synforms that underwent progressive linkage along their hinges. Terminations, bifurcations and regional changes in the plunge of the growth folds created a series of depocenters. Spatial continuity of sand-rich turbidite units suggests surface topographic relief was not large enough to cause complete confinement of deposits in lows. Pronounced thickness variations, however, indicate strong influence of topography on the location of deposition from turbidity currents. Although the vertical and lateral facies distribution records an overall progradation of slope deposits, downstream variation between erosional, transitional and depositional architectural types occurs along the stepped basin profile, resulting in highly variable coeval stratigraphic units in different parts of the deepwater basin.

The partial ponding of Laingsburg turbidite systems represents the middle part of a spectrum between graded basin margin/plain environments (characterized by development of extensive basin-floor fans followed by slope systems) and the conditions of successive fill-and-spill (as in the Gulf of Mexico slope minibasins with significant salt-withdrawal-generated topography).