

Quantitative modelling and understanding the evolution and distribution of reservoirs in West Sabah continental margin, Malaysia

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The evolution and distribution of reservoirs in the West Sabah Continental margin, in particular the deepwater area, is not well understood. This paper presents the results of recent attempts in quantitative modelling of the study area.

Quantitative stratigraphic modelling, based on regional 2D seismic lines from the West Sabah continental margin area, adequately modelled the stratigraphic and structural geometries of the continental margin and deepwater basins. Good match between modelled and observed stratigraphy based on seismic and well data has enhanced the current understanding of the evolution and distribution of both shallow water and deepwater reservoirs in the area.

Tectonically induced subsidence/uplift is found to be the main controlling factors on reservoir evolution and distribution. Thrust-sheet piggy-back basins and associated thrust ridges form an ideal trap for the ponding of turbidites on the shelf, slope and basin by the fill-and-spill mechanism. In addition, eustatic sea level changes have major impact on the rate of sediment supply, accommodation space and environment of deposition, and often enhanced the effects of tectonic activity.