GEOLOGY POSTER 20

PROSPECTIVITY IN THE SLOPE BREAK BELTS OF MALAY BASIN WESTERN MARGIN

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Malay Basin Western margin covers about 5000 km2, mainly with the steep monocline (up to 6 degree) tectonic background, which is different from other area of Malay Basin. In the Late Oligocene to Early Miocene syn-rift extension phase, Groups M, L and K were deposited in an alluvial-lacustrine setting. The slope break belts associated with fan system deposits make them a promising exploration area.

The slope break belt consists of three main parts: slope, slope break and slope-toe. It can be originally because of tectonic, deposition and erosion. There are multi belts in the Western margin. And the results of the deposition are the basin floor fan, slope fan, subaqueous fan and other gravity flow fans.

Lacustrine shales of M, L and K Groups are the main source rock in the area. The sandy fan bodies consist the high quality reservoirs. Lacustrine shales provide the top seal. Up-dip seal can be controlled by juxtaposition of sand against incised valley, palaeo-cliff, fault and sand pinch out. The key element and the risk is the up-dip sealing of the trap.

Exploration history demonstrates the slope break belt is a good prospective area in Malay Basin. The exploration approach is also discussed, especially the geophysical studies.

REFERENCES

H.D Tjia, 1999. Geological setting of Peninsular Malaysia.

Deva P. Ghosh, 2007. Interpretation of Amplitude.

Hu Wen Rei, 2005. The theory and practice of stratigraphic trap exploration.

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