

Poster 5

4D seismic forward modeling in offshore Sarawak fields

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4D seismic forward modeling is applied to oil and gas fields of offshore Sarawak, Malaysia. Three examples from clastic and carbonate fields are presented to show 4D feasibility for oil and gas reservoirs with different drive mechanisms.

- Clastic reservoir with depletion drive. Fast pressure declines result in excess gas production. The reservoir is complex in its geometry and compartments. 4D forward modeling shows clear seismic response changes as production progress. The 4D seismic survey is seen as a critical reservoir management tool.
- Carbonate build up with strong aquifer drive. Production results in high residual gas saturation, leaving behind a substantial amount of reserve. 4D forward modeling and 4D seismic survey provide monitoring of water movements and is therefore a critical tool in reservoir management.
- Platform carbonate build up gas reservoir with weak aquifer support. The reservoir has low porosity. 4D forward modeling provides the asset team with feasibility of future 4D seismic survey.

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