

Application of Spectral Decomposition and Attenuation for Stratigraphy Exploration Potential in 'B' Field, Malay Basin

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The spectral decomposition technique has developed as a descriptive technique for reservoir characteristics based on frequency spectral decomposition (Li and Zhao, 2014). Spectral decomposition transforms the broadband 3D seismic data into a single frequency band. Spectral components tuned to a given thickness often exhibit a high signal-to-noise ratio and thus provide the highest lateral resolution, giving clear images of channels and other stratigraphic features that otherwise might

be buried in broadband data (Li et al., 2015). Seismic wave is attenuated as it propagates through subsurface formations. structure, layer thickness, lithology, and pore fluid properties. When the seismic wave travels back to the surface, it also brings back the information related to stratigraphic features, rock property changes and hydrocarbon accumulations (Tai et al., 2009). Castagna et al. (2009) showed that gas reservoirs could be identified by low-frequency shadows.