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POSTER PRESENTATION

Reservoir Characterisation in the Presence of Thin Beds and Elastically Ambiguous Facies

Rob Ross[1], Ask Frode Jakobsen[1], Henrik Juhl Hansen[1]

[1]*Qeye, Australia*

rr@qeye-labs.com

There is an infinite number of subsurface facies and fluid configurations that can give rise to any given seismic response with the presence of noise. Traditional reservoir characterisation workflows struggle to discriminate between facies with very elastically similar properties but facies that are elastically very similar may have very different petrophysical properties.

As beds become thinner the seismic response, and hence the response in any elastic AVO inversion, becomes that of the package response. The package response can be thought of as some type of average response for all the facies within a given interval, where this interval is based on the bandwidth of the input data.

This poster will describe a technique that uses an innovative Bayesian framework and inversion formulation. The inversion is one step, it takes data directly from the reflected amplitude domain to the facies domain. The key advantages of this approach are that it is robust in the presence of noise and correctly propagates spatial correlations. This allows for rigorous data driven confidence in the results and is able within certain limits to classify facies at sub-seismic resolution.