Sub-Salt AVO and Seismic Inversion analysis: An example from deep water, Gulf of Mexico

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Abstract

Deep water exploration efforts in the Gulf of Mexico (GOM) are challenged by illumination limitations of sub-salt prospects especially if wide azimuth seismic data is not available. Despite, the modern technological advances in imaging of narrow azimuth 3D seismic data, which is usually available at relatively low cost in the GOM, questions are raised on whether it contains enough angle of incidence information as to be used in amplitude and rock physics analysis. Higher angle of incidence becomes an issue due to the lack of amplitude information in mid-far and far traces needed for fluid interpretation. This paper analysis the scopes of the AVO and pre-stack seismic inversion studies in sub-salt exploration using narrow azimuth 3D seismic data.

Keywords: AVO, subsalt, seismic, inversion, Deepwater, Gulf of Mexico

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