

Controlled Sensitivity Tomography for Depth Imaging the NAZ Surveys in the Nile Delta's Messinian

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Abstract

Narrow azimuth surveys struggle to illuminate the pre-Messinian section of the Nile Delta due to the complex geometry of the Messinian layer and the failure in capturing these complexities in conventional model building. The presence of high velocity pods inside the Messinian, with variable geometries, will affect the azimuth and arrival time behaviour of the recorded waves from the pre-Messinian section, leading to a structurally distorted image. Multi-azimuth (MAZ) surveys capture more of the wavefield and accordingly records more information from different azimuths that help in picking more accurate depth errors which help the tomography to be statistically more robust.