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ABSTRACT

Seismic inversion is the procedure for extracting the multi-dimensional earth model of quantitative physical properties of a reservoir by combining both seismic reflection and well logging/core data. In most cases, the target physical parameters are the earth's acoustic impedance, seismic velocity and bulk density. Seismic attributes based on such an inversion are also utilized to improve the subsurface interpretation. The inversion procedure starts usually with mathematically-generated forward calculations of the earth's seismic response using a set of initial model parameters. The scope of this study is to undertake three-dimensional (3D) smoothed-earth post-stack seismic inversion trials for imaging both the subsurface lithological–structural fashion and fluid coverage within the Simian gas field at the Egypt's offshore west Nile Delta.