

Orthorhombic Time Tomography: Accounting for Azimuthal Effects in Long-Offset WAZ Data

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Abstract

Accounting for azimuthal effects in long-offset full/wide-azimuth data is crucial to ensure focusing of time migrated sections and better interpretation of estimated subsurface parameters. To that end, we propose an extension of vertically transverse isotropic non-linear slope tomography for time imaging to account for azimuthal anisotropy (orthorhombic). We illustrate the effectiveness of our approach at improving knowledge of the subsurface by analyzing and interpreting the obtained subsurface parameters (in particular at the reservoir level). The benefit is also illustrated on the final image; indeed, “wobbling” effects are suppressed in pre-stack time migration gathers, greatly improving focusing and signal to noise ratio in the stack.