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Please fill in your abstract title.	A New Way to Regularise Full Azimuth 3D Data while Preserving Its Azimuthal Attributes

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Abstract

Objectives/Scope:

For full azimuth 3D land seismic data, we need to find a new way to regularize and interpolate the data prior to migration, to preserve data's true amplitude across offset as well as azimuth direction. The new way need to have advantage over the currently popular OVT method.

Methods, Procedures, Process:

In the data interpolation and regularization stage of this survey, we meticulously tested three strategies: 1) keep the original geometry; 2) regularize data to ideal straight source and receiver lines geometry and split data into offset vector tile domain; 3) interpolate and regularize data into evenly distributed azimuth sectors and evenly distributed offset groups - which is called radial domain interpolation. The interpolation algorithm used was 5D Matching Pursuit Fourier Interpolation (5D MPFI) in both cases.

We will then compare and analyze the CMP gathers, migration sections, time slices and attribute maps to evaluate the different methods and strategies.

We will also look at seismic inversion results on top of the proposed Radial interpolation dataset.

Results, Observations, Conclusions:

Based on the experiments we have done for this survey, we concluded that radial domain interpolation is an alternative regularization scheme suitable for wide to full azimuth datasets. It has obvious advantage of better offset sampling, better vertical resolution, better shallow illumination while maintaining regular azimuth sampling. The migrated image shows no deterioration in data quality but resulting in improved S/N, spatial resolution, and event continuity. The preliminary inversion analysis shows encouraging results for the ongoing AVO and AVOAz work.

Novel/Additive Information:
The method described here is a new workflow and not presented by others in local market.