GEO·X

Geo-X

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2D/3D DEPTH MIGRATION

SOFTWARE

Geo-X uses the most current version of Paradigm GeoDepth software for PSDM processing. GeoDepth offers fast data access and easy 3D visualization of prestack/poststack seismic data and interpretation data for 2D/3D survey, in addition to well data.

VELOCITY MODEL BUILDING

- Constrained Velocity Inversion (CVI) PSTM velocity inversion. Robust algorithm to perform quick and accurate RMS to Interval and Time to Depth conversions.
- Near surface velocity modeling using Refraction solution
- Geostatistical velocity modeling using Vp, Vs, Epsilon, Delta from borehole information
- Full Anisotropic velocity model descriptions with interactive parameter determination

VELOCITY MODEL UPDATE

- High Resolution Automatic residual moveout using FastVel. Capable of handling 2nd, 4th order and HTI moveouts. Simultaneous Vz and Epsilon Estimation
- Layer or Horizon based Automatic RMO using Velocity Navigator. Capable of handling layer based updates
- Layer or Horizon based Manual RMO for Complex areas. Used in low S/N areas with low coherency of the reflectors. Allows updating of velocity field directly or through Tomography

TOMOGRAPHY

3D Grid Based Tomography.
- Updates velocity volumes (Vpz) as well as Epsilon and Delta simultaneously on a Regular Grid
- Update can be constrained to honor the structure (solid model)
- VSP first arrival data can be incorporated into velocity field

3D Layer Based Tomography
- Updates velocity volumes (Vpz) as well as Epsilon and Delta simultaneously along the depth model horizons
- Allows enforced geologically constrained solutions due to irregular inversion grid which follows geological layers
- Simultaneously updates both the velocity field along the geological layers and the location of the subsurface horizons

3D Well Tie Tomography
- Updates velocity volumes (Vpz) as well as Epsilon and Delta simultaneously based on well or interpretation mistie maps
- Fully utilizes well information in order to achieve faster convergence
- Velocity and Anisotropic parameter updates can follow geological structure

MULTIDISCIPLINARY APPROACH AND DATA INTEGRATION

- Geostatistical velocity modeling to fully utilize well information
- VSP Integration to velocity model and depth imaging workflow
- On the fly well tie analysis and velocity attributes update for complex imaging

MIGRATION

- Full TTI Kirchhoff Depth Migration
- Full TTI Common Reflection Angle Migration (CRAM) – Advanced Beam Migration
- Full TTI Wave Equation Migration (WEM)