

PRODUCT SHEET



InterWell

Seismic inversion
and reservoir characterization

InterWell is a seismic inversion and characterization software for reservoir and exploration geophysicists, available in Linux and Windows environments. It handles a large range of seismic data in dedicated workflows from data conditioning to quantitative property estimation.

Seismic reservoir characterization software

InterWell provides a comprehensive set of geophysical workflows to solve challenges from regional exploration to reservoir development scale. Joint inversion allows quantifying acoustic and elastic rock properties from 2D and 3D data. Interwell proprietary simultaneous inversion also handles multi-component, multi-azimuth and time-lapse seismic surveys. Dedicated tools are available for prediction of lithologies and reservoir properties from inversion results.

Geophysical workflows

- Matrix properties characterization (lithology, porosity & fluid) up to seismic constraint maps computation for constraining the geological model;
- Fault and fracture network detection and characterization;
- Assessing risk throughout reservoir property prediction;
- Understanding the field dynamic behavior;
- Inferring geomechanical parameters, including pore pressure, before drilling;
- Designing well trajectories and geosteering.

Lithologies and reservoir properties prediction

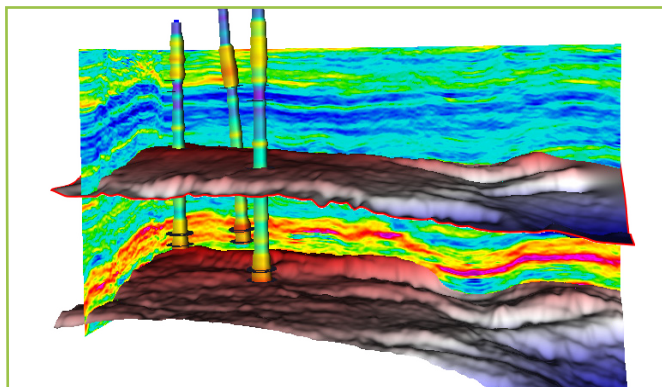
- Evaluating elastic rock properties and predicting lithology or fluid distributions - from seismic inversion results including impedance, density and associated seismic attributes;
- Multi-variate statistical methods for prediction of lithology and key reservoir properties from inversion results;
- Quick-look analyses using fast-track AVO interpretation and full-seismic inversion.

Model-based inversions with Bayesian formalism

- Seismic gathers conditioning; NMO correction and stacking;
- Seismic data registration and conditioning tools;
- Multi-well wavelet estimation and multi-cube well calibration based on a hybrid deterministic and statistical procedure.
- Prior model from well log data and seismic velocities according to the stratigraphy (horizons and deposit modes);
- Post-stack and pre-stack simultaneous seismic inversion;
- InterBed Multiple Modeling option for attenuating the impact of the inter-bed multiple contamination;
- Azimuthal inversion for anisotropy and fracture assessment;
- Joint multi-component inversion for improved imaging from converted wave dataset;
- Time-lapse 4D joint seismic for monitoring and interpreting saturation and pressure changes in the reservoir.

Geostatistical inversion

- Post-stack and pre-stack geostatistical inversion that integrates high resolution well data with seismic data to provide a model with high vertical details.
- Characterization from geostatistical inversion results for associating uncertainties to reservoir properties.



InterWell visualization of inversion results

Key benefits

- Inversion algorithm optimized for HPC performance
- A unified Bayesian formalism for all types of inversion
- Easy to tune parameters with direct impact on results
- Dedicated workflows for time-lapse, azimuthal and multi-component seismic data
- Uncertainties quantification through geostatistical inversion
- Fast and user-friendly multi-well wavelet estimation and multi-cube well calibration
- Matrix and fracture prediction workflows
- Inter-bed multiple attenuation during inversion
- Dedicated trend modeling module for seismic constraints generation