



Interwell

Advanced Seismic Inversion

InterWell is a modern, versatile seismic inversion and characterization software dedicated to post- and pre-stack elastic inversion for both 3D and 4D seismic data. InterWell is built on the modern INTviewer platform, available in Linux and Windows environments.

A wide applicability range

Seismic inversion and characterization with InterWell may be successfully applied to:

- Matrix properties estimation (lithology, porosity and fluid)
- Fault and fracture network detection and characterization
- Understanding the field dynamic behavior using 4D inversion
- Designing well trajectories and geosteering
- Inferring geomechanical parameters before drilling
- Assessing inversion uncertainties and propagating them throughout reservoir property prediction

A unique workflow with high performance computing capabilities

Built upon the extensive IFPen Group experience for seismic inversion, InterWell offers a unified workflow:

- Seismic data QC & conditioning: leveraging capabilities for statistical analysis, seismic quality control, sub-stack misalignment correction, horizon management and more.
- Multi-well and multi-cube wavelet estimation: best in class well-to-seismic calibration based on a hybrid deterministic statistical multi-well, multi-trace procedure.
- Initial acoustic/elastic parameter model creation: based on a stationary or un-stationary interpolation of well log data (using seismic velocities) according to the stratigraphy.
- Acoustic/elastic inversion: relying on unified Bayesian formalism for both 3D and 4D inversion for multi-channel grid-based joint inversion

with a priori information. It takes into account the interpreted structures and stratigraphy in the optimization process. It also features the unique capability to manage inter-bed multiples. The inversion algorithm is optimized for HPC performance.

- Azimuthal inversion: complete workflow, still based on Bayesian formalism, for fracture assessment prior to reservoir characterization.
- Computation of inversion uncertainties.

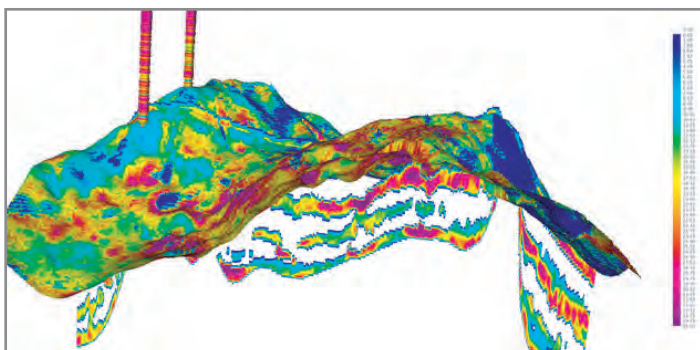
A Leading Edge Technology

- Geostatistical inversion: increase the inversion resolution by integrating the high resolution provided by the well-log data while using the spatial constrain of the seismic data.
- Seismic reservoir characterization: InterWell workflow allows performing lithology prediction from inversion results
- An integrated ToolBox: designed to share a comprehensive set of functionalities and attributes to enrich both seismic inversion and reservoir characterization workflows.

Next Releases

The future versions of InterWell will include the following advanced technologies:

- Joint multi-component inversion: improved imaging from converted wave dataset inversion.



InterWell visualization of 3D lithology probability from inversion results

Key Benefits

- Leading wavelet estimation technique
- Next generation user interface for productivity
- A unique workflow for all kinds of inversion
- Leading wavelet estimation technique
- Best-in-class inter-bed multiple removal technique
- Quality results through ability to weight the influence of the seismic and geological data in the inversion process
- Direct uncertainties quantification through Bayesian formalism
- Specifically designed for HPC performance



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