





Accurate and predictive reservoir models

StatMod[®] performs single stack geostatistical reservoir characterization to produce multiple predictive fine scale reservoir models that are consistent across all pertinent geoscience domains. This degree of cross-domain consistency ensures that reservoir models are realistic and maximizes the value of all measured data and inferred information. In addition, these reservoir models remain accurate away from the available well control where reliability of conventional stochastic models typically suffers. **StatMod** is relevant where single parameter like P-Impedance is sufficient to distinguish the facies of interest.

- Produces accurate and predictive reservoir models that are consistent with all data and knowledge available in the field
- Generates highly detailed multiple realizations to provide a reliable basis for quantitative measure of uncertainties associated with data, models and thin beds





Joint inversion of Facies and P-Impedance solves the most critical uncertainty in stochastic reservoir modeling. It ensures preservation of sharp boundaries and continuity/discontinuity of facies that directly impact the flow behavior of reservoir models.

Key features and benefits

- Joint inversion of facies, elastic and engineering (petrophysical) properties
- Invert directly for engineering properties through rock physics models that include uncertainties between properties
- Invert in depth through the use of velocity model
- Advanced multi-level facies association and ordering
- Advanced use of Constant, 1D, 2D and 3D facies proportions
- Intuitive 1D and 3D facies probabilities trend editor
- Flexible variogram modeling
- Backus upscaling of elastic properties for enhanced calibration with seismic
- Advanced geophysical options (Laterally varying wavelet and S/N)
- Automated quality controls for single and multiple realizations
- Support for multi-core and multi-machine processing for maximum productivity
- Quick Property Setup available to speed up preparation of run job
- Advanced Ranking tool with flexible cutoff criteria and highly configurable volume extent to select P10, P50 and P90 models
- Efficient and accurate transfer of results into reservoir and simulation models (CPGs)



StatMod



StatMod: Solution for tight carbonate reservoir.

(a) The seismic section (top) shows strong wavelet effects at the boundaries of the carbonate layer and the surrounding clastic layers. Where are the prospects? The inverted mean Porosity (below) from StatMod shows three distinct sub-layers within the carbonate interval. The prospects are now easily distinguishable. (b) Having accurate porosity maps with high level of detail has allowed the drilling plan to be changed from regular grid to drilling high porosity targets.

Operating system requirements

On Linux[™] x64, the following operating systems are supported:

- SUSE[™] Linux[™] Enterprise Server 11 or later, with latest updates
- Red Hat[®] Linux[™] Enterprise Server (CentOS) 4, 5 or 6, with latest updates

On Windows[®], only 64-bit version of the following are supported:

• Windows® 7 and 8, with latest service packs installed

Interoperability

- Jason[®] Workbench
- EarthModel[®] FT
- Easy transfer of model properties to Petrel[®] corner point grids, through **EarthModel FT** Petrel plugin

Recommended hardware

Processor:

8+, 16+ and 32+ cores for working with small, mid and large sized datasets respectively.

Hard drives:

SATA-II hard drive with enough disk space for your data.

Disk space for software installation:

10 GB of free disk space recommended for installation since the installer un-compresses files and generates temporary files. The installed software will occupy about 4 GB of disk space.

Memory:

16+, 64+ and 128+ GB for small, mid and large sized datasets respectively.

Graphics card:

512 MB NVIDIA[®] OpenGL 3.0 capable video card with at least 48 shader cores. No requirement for computer cluster.

Monitors:

Dual monitors are recommended. On Linux[™], configure the Xserver to use NVIDIA TwinView architecture. Xinerama is not supported because it causes performance issues in the viewers.

Regional Contacts

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