

dGB Earth Sciences launch SynthRock Plugin



dGB Earth Sciences, the leading provider of open source seismic interpretation software to the oil & gas industry, has announced the launch of its new SynthRock plugin. SynthRock is a software module that combines forward modeling, rock physics and inversion into one package and will play a key role in lowering exploration risk and quantifying reserves.

The new plugin, which will form part of the latest version of dGB’s seismic interpretation software OpendTect 4.6, is a new and powerful toolkit for creating and using forward models in qualitative and quantitative seismic interpretation studies.

SynthRock will enable users to utilize simple wedge models and cross-sections created from interpolated (pseudo-) wells to build

Latest plugin is powerful means of lowering exploration risk and quantifying reserves

workflows and create ‘what if’ scenarios. The wedge models will help interpreters understand the seismic response of the interval of interest and more complex stochastic simulations can open the way to advanced reservoir characterization workflows via cross-plots, Probability Density Functions or a unique inversion approach called the HitCube.

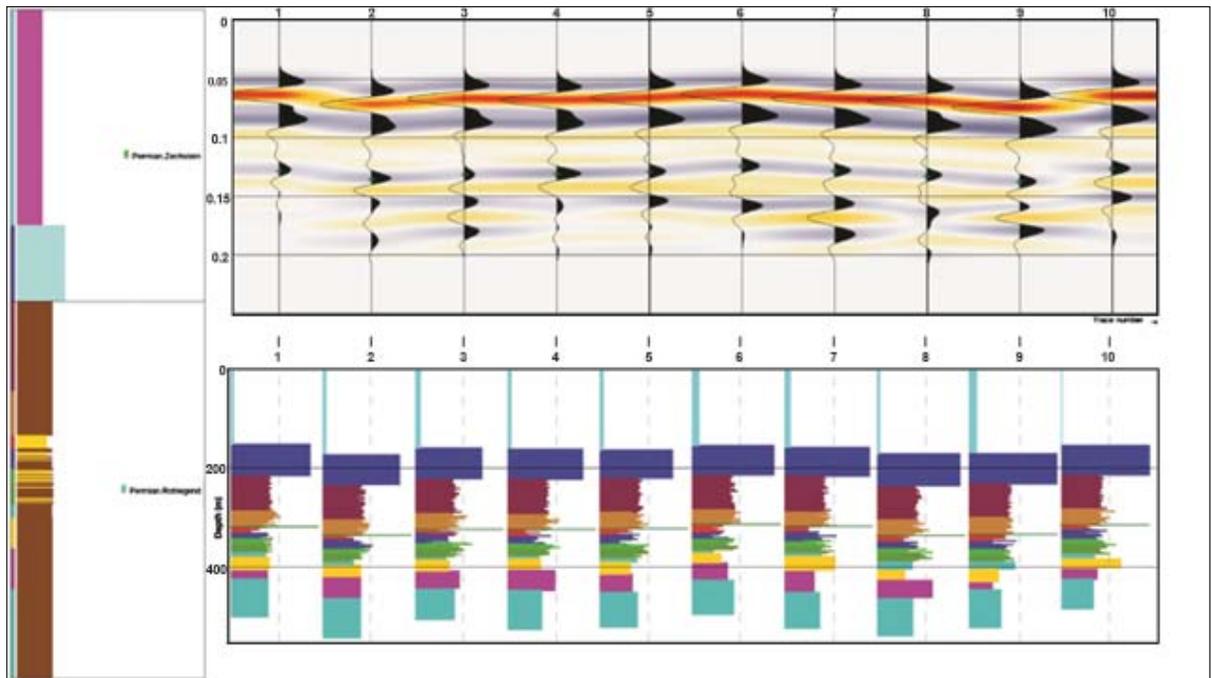
Model parameters can also be varied stochastically and run to create a database of pseudo-wells representative of the expected geologic and seismic variations at target level. Such models can then be used to predict rock properties with uncertainties from pre- and post-stack seismic volumes.

Other features of SynthRock

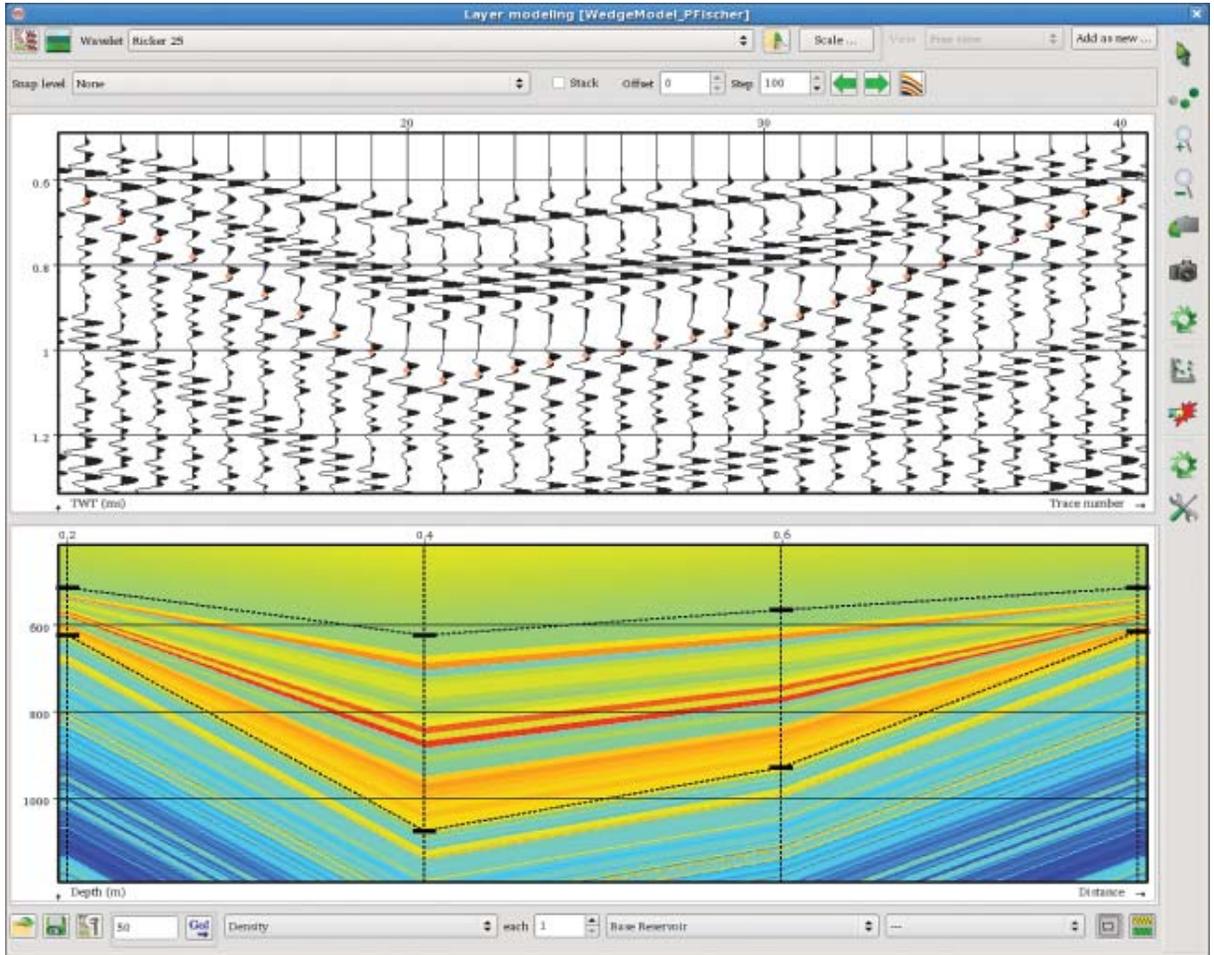
include the ability to build Monte-Carlo style simulations; generate pre-stack synthetic seismic data using state of the art ray tracing, reflectivity calculations, cross-over handling, and frequency-domain convolution; and the ability to modify parameters on the fly to instantly analyze the response on the seismic data.

“With the forward modeling of synthetic seismic data enabling interpreters to separate true hydrocarbon anomalies from false positives and make more accurate reservoir predictions, SynthRock comes at a vital time for the industry,” said dGB CEO, Kristofer Tingdahl. “We are confident that SynthRock and its combination of forward modeling, rock physics and inversion will play a crucial role in helping operators lower exploration risk, quantify reserves and squeeze that extra value out of their seismic data.”

SynthRock makes full use of OpendTect to support a range of



SynthRock Stochastic Module modeled pseudo wells with zero-offset synthetic responses



SynthRock

modeling and inversion work flows. Functions, that are supported, include:

- A Profile module for the creation of cross-sections from existing wells with manual updates of model parameters.
- A Stochastic module to create stochastically varying pseudo-wells.
- Pre-stack synthetics; PP, PS; near, mid, far, full & angle stacks optionally with multiples.
- The automated update of the synthetics as the model is created/updated.
- A comprehensive rock-physics library (Castagna, Krief, Gardner, Biot-Gassmann, etc.) and the ability to define any rock physics formula using maths & logic.
- The interactive scaling of the

synthetics to the actual seismic.

- Inversion possibilities, such as: The HitCube: cross-matching procedures to create probability volumes; and Probability Density Functions derived from cross-plots (using OpendTect functionality).

dGB Earth Sciences, a privately owned company based in the Netherlands, has been providing seismic interpretation solutions to the oil and gas industry since 1995. Current customers include Addax, BG, DetNorske, Ecopetrol, ENI, Marathon, Petrobras, Petrochina, Saudi Aramco, Sinopec, Statoil, Talisman and Wintershall among others.

dGB's flagship seismic interpretation solution, OpendTect, is the only available open source seismic interpretation platform used

in the oil & gas industry today, allowing the visualization and interpretation of multi-volume seismic data. OpendTect, which is available at no cost under the GNU GPL license, provides sophisticated interactive attribute analysis.

dGB and its partners have also developed a wide variety of commercial plugins for customers (companies are also encouraged to develop their own customised plugins). These include plugins relating to attribute and processing analysis, sequence stratigraphy, fluid migration, rock property predictions, and velocity modelling. Partners that have also developed commercial plugins of OpendTect include ARK CLS, ARKeX, Earthworks, Geokinetics and SITFAL.