PetroMod

Petroleum systems modeling software

PetroMod* petroleum systems modeling software combines seismic, well, and geological information to model the evolution of a sedimentary basin. PetroMod software will predict if, and how, a reservoir has been charged with hydrocarbons, including the source and timing of hydro-carbon generation, migration routes, quantities, and hydrocarbon type in the subsurface or at surface conditions.

Increase exploration success

PetroMod software helps you establish the volume and composition of hydrocarbons in place before drilling. It allows for the easy integration of all exploration data in a singular 3D workflow—even in challenging fold and thrust belts. PetroMod software helps evaluate prospects in a mature basin by analyzing charge, trap, seal, and reservoir; quantifying and understanding the risk; and integrating play-to-prospect evaluations. This prevents a prospect from ending up as a dry hole because of an unsealed structure or trap, prohibitively tight reservoir rock, or lack of commercial accumulation.

Petroleum systems modeling

Petroleum systems modeling (sometimes called "charge modeling") is a vital additional component in assessing exploration risk before drilling. It helps predict which traps are most likely to contain hydrocarbons, as well as the type of expected hydrocarbon and its properties. PetroMod software is the industry leader in petroleum systems modeling technology, providing unique workflow capabilities. Pairing PetroMod software with Petrel* seismic-to-simulation software provides powerful basin-to-prospect scale exploration solutions.
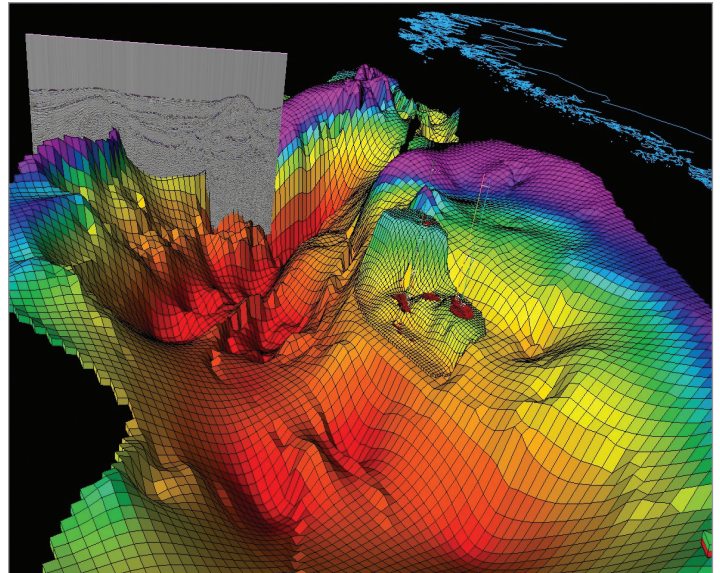
PetroMod models

PetroMod software models are dynamic, meaning they provide a complete record of the generation, migration, accumulation, and loss of oil and gas in a petroleum system through geologic time. Properties such as gas/oil ratios and API gravities can be analyzed, understood, and then predicted. Oil-versus-gas distributions can also be subjected to rigorous analysis.

Model capabilities

Models can be

- from one square kilometer to thousands of square kilometers
- to a depth of more than 100 km
- hundreds of millions of years in scope
- more than 100 layers in depth.

Additionally, local grid refinement is possible for a locally-defined, high-resolution model within a larger PetroMod software model or a higher-resolution reservoir within an existing model.

Regional source-rock color-coded according to transformation ratio, locally refined grid in the area of interest and potential vapor-phase accumulations.

PetroMod software

PetroMod software is the only petroleum systems modeling package with a standardized, and fully integrated, user interface covering the entire workflow and range of 1D, 2D, and 3D modeling products. PetroMod 3D petroleum migration simulation technology is the most advanced commercially available tool. It provides an extensive range of unique technical features including 1D, 2D, and 3D temperature and pressure simulators, and fully PVT-controlled modeling of n-component/n-phase relationships during the entire migration process and its geologic his-tory. The primary application of PetroMod 2D software is in areas with sparse data—for example, if the data is only sufficient to construct a 2D geologic section. PetroMod 2D software is also routinely applied in areas with dense data coverage, when rapid analyses are desired, and for pressure prediction work.

The PetroMod 2012.1 update is distributed in a modular format. This allows users to customize the PetroMod software system to focus on exploration workflows, while fitting individual organizational structures.

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Specifications

Supported hardware platforms include Microsoft Windows Vista 64-bit, Windows 7 64-bit, and Red Hat Enterprise Linux 5.3 64-bit.

E-mail petromod@slb.com or contact your local Schlumberger representative to learn more.
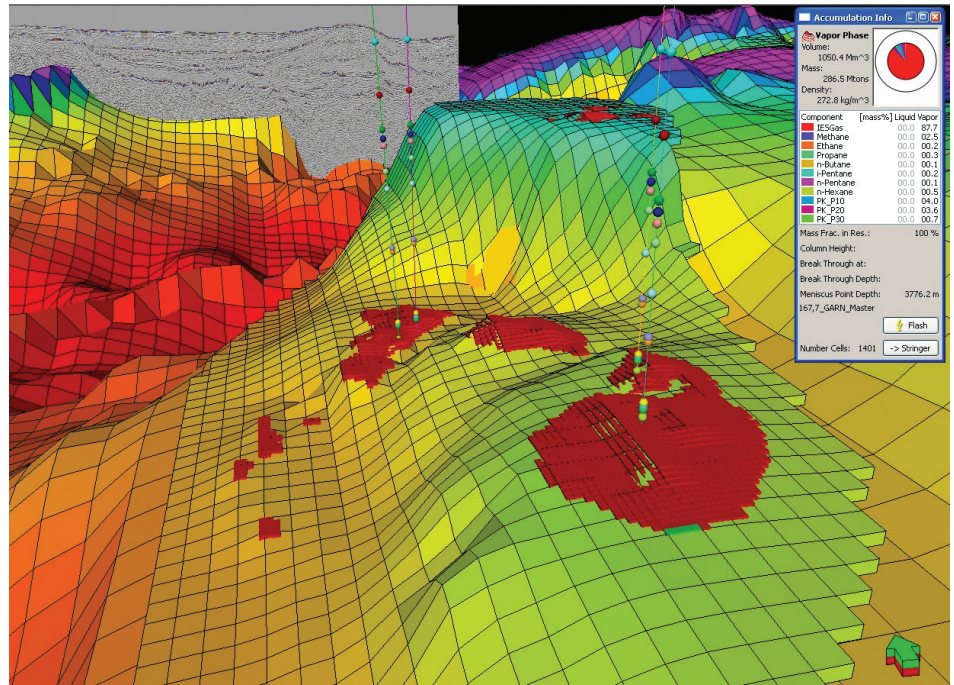
Area of interest modeled using a locally refined grid; distribution of hydrocarbon components within the accumulation in the foreground.

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