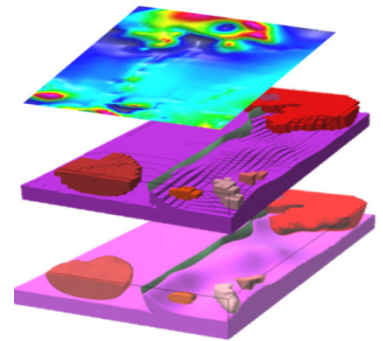


## Business Benefits with *GeoModeller* software

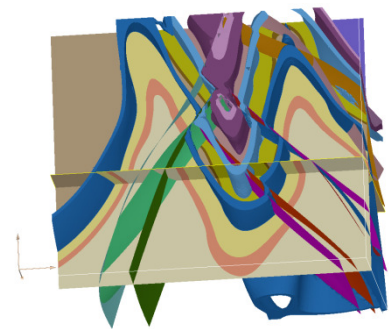
- *Save time in resource assessment and geological validation*
- *Rapidly locate drilling targets from synthesis of geophysical and geological evidence*
- *Reduce the risk of exploration with probability metrics for 3D geology and petro-physical properties*
- *Maximize data set use, all in one workspace*



**GeoModeller** is a software tool for building implicit 3D geology models from a diverse range of data sources, either rich or sparse in spatial terms (mapping, drilling, interpreted cross-sections, remote-sensing images, depth-converted interpreted constraints from magnetics, gravity, seismic, EM, etc.) **GeoModeller** also facilitates forward and inverse modelling of potential field geophysics, including full tensor gradiometry – for the purpose of optimising most probable geology and rock properties in 3D.

The software deals well with complexity including fault networks, folding, overturned strata, intrusions and thin bodies. Steady state implicit surfaces are constrained by coupled primary geological data (contact points and structural orientations). 3D geological surfaces are interpolated by a ‘potential field method’ which honours the structural data (even though it may not be located on the geology contact). Fault surfaces are interpolated in a similar manner.

**GeoModeller** employs **rule-based modelling**, adhering to the relationships within a stratigraphic pile (erode or intrude) and when setting-up fault networks (emulating fault chronologies).



**GeoModeller’s drill hole manager** includes compare and edit tools for trouble-shooting misfits in logging. Down hole attributed data (eg., density logs) can be managed through geostatistical functions, and 3D interpolation/kriging routines. Handling and creation of 2D & 3D grids and meshes is also facilitated with a 3D Mesh Calculator.

### Special features:

- Handles thin bodies such as veins and dykes
- Offers a clever kriging method eg., for assays (called ‘domain kriging’) interpolating along structural contours within the geological volumes (akin to bedding or structure).
- 2.5D forward ‘profile’ modelling of geophysics (mag, grav, seismic) direct from 3D geology
- 3D forward modelling direct from 3D geology for: magnetics, gravity, full tensor gradiometry and conductive heat flow
- Performs rock property optimization from starting tables adhering to PDF Laws (densities, susceptibilities)
- 3D Litho-constrained, stochastic inversion of magnetics or gravity (or both jointly), including chosen component tensors. Perform inversion on any use-set ratio of model perturbation from *full* rock property (fixed geometry), to *full* geology-geometry (fixed properties).
- Supports 1D and 2D inversion of EM data

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