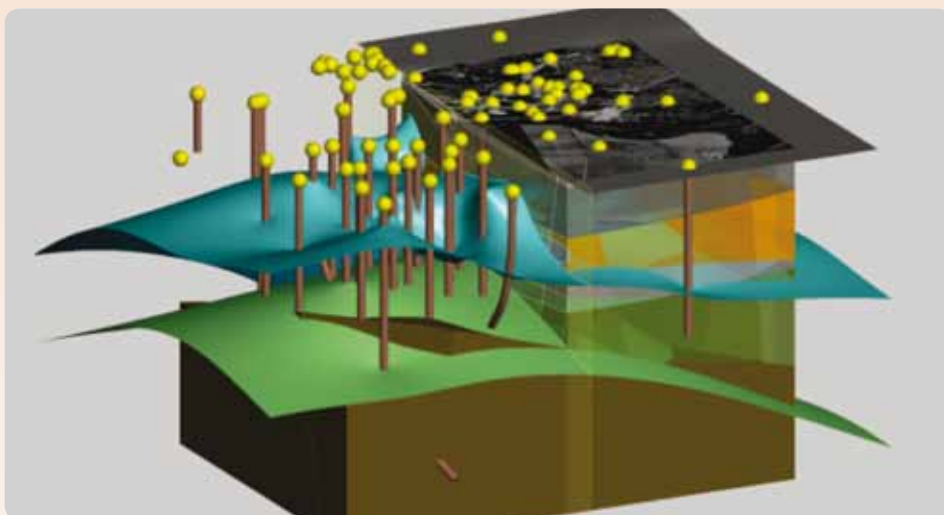


integrated 3D modelling using Leapfrog Geothermal

3D modelling and visualisation for the geothermal industry.

GNS Science have experienced professionals from all geothermal disciplines, and we can build integrated 3D models for a comprehensive understanding of your geothermal reservoir.

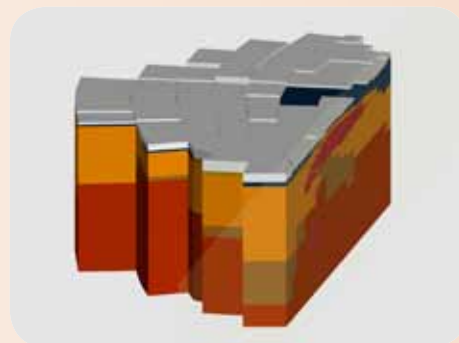
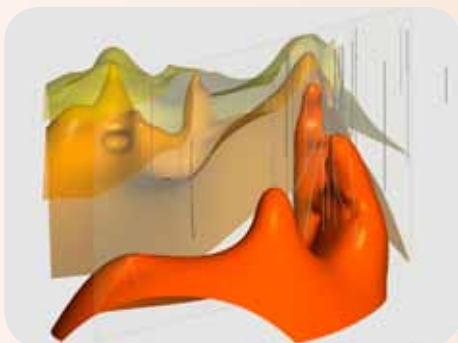
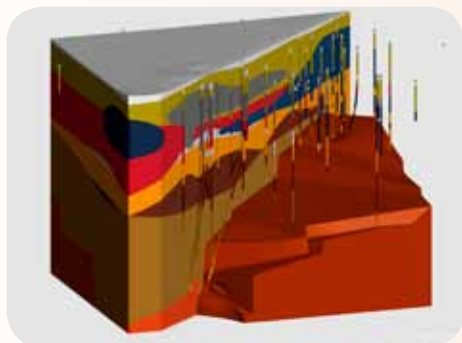


Leapfrog Geothermal is an innovative 3D modelling software developed by GNS Science and ARANZ Geo specifically for the geothermal industry. It provides a 3D interface for the visualisation of geothermal datasets, and tools to create comprehensive models of the field geology, including stratigraphy and structures, rock properties and reservoir parameters.

This software accelerates geothermal modelling for efficient and effective decision making for all stages of field use: exploration of a new field, well targeting, reservoir development and production, and assisting with the management of future development strategies.

at a glance →

- **Innovative** Production of grid-free 3D implicit geological and numerical models directly from data through a process of refinement. Model generation at a range of different resolutions.
- **Versatile** Intuitive and user-friendly to build, maintain and update models. Logical work flows. Multiple model operation in conjunction for quick and easy comparison. Automatic updating when data is modified.
- **Integrated** Interoperable with a large variety of data formats. Modelling of surface and subsurface geology, as well as faults and structural features, physical properties, hydrothermal alteration and reservoir parameters. Measured and user interpreted data are stored separately to maintain consistency, and are then merged to generate alternative scenarios.
- **Efficient** Maximising understanding of geothermal data within moments. Implicit modelling approach dramatically improves processing speed and data capacity. Accelerated 3D model generation and updating in near real-time.
- **Appealing** A clean and simple interface. Flexible modelling tools in a high quality visual interface. A free viewer to distribute modelling results in a true 3D platform.



applications for the geothermal industry →

- **Geothermal modelling** Modelling of complex geological structures, including intricate fault networks. Input data includes borehole data, sections and maps, GIS layers and point data through to the addition of user-defined trends and edits. The geological model correlates with hydrothermal alteration models and numerically interpolated parameters, such as rock properties (e.g. porosity, density) and reservoir parameters (e.g., temperature, pressure) to aid visualising interaction.
- **Well planning** Flexible well targeting and reservoir management tool for visualising future development strategies. Predictive borehole data and conditions can be interpolated from geological and numerical models.
- **Flow modelling** A TOUGH2 interface is being developed. Data modelled within Leapfrog Geothermal can be populated into TOUGH2 grids and exported in a form compatible with other reservoir modelling software.
- **Resource Management** Automatic updating of existing models in near-real time, allowing scientists and developers to test alternative scenarios for better management of the resource.

training →

GNS Science offers tailored training courses in Leapfrog Geothermal. We can deliver individual or small group training in New Zealand or your home country; 3 days generic course or 5 day customised to client data.

about us →

The GNS Science geothermal team is internationally recognised for innovative, robust geoscientific research, expertise and consultancy advice. We have been supporting the geothermal community in New Zealand and internationally for over 50 years.

Our experienced professionals integrate geology, geophysics, geochemistry and modelling expertise for exploration, drilling, environmental sustainability, field development, optimal production, and ongoing resource management

contact us →

Contact us to find out how we can address your unique question, and support the success of your project.

VISIT www.gns.cri.nz/geothermal

CALL +64 7 376 0136

Geothermal Business Development Manager

Email: geothermal@gns.cri.nz

Wairakei Research Centre

114 Karetoto Road

Wairakei 3377

Private Bag 2000

Taupo 3352

New Zealand

T +64-7-374 8211

F +64-7-374 8199

