

Providing a **bedrock** for structural geology



Scenario based geomechanical restoration

4DRestore is a module of 4DMove providing a workflow managed 3D volumetric restoration tool for model validation and advanced structural systems analysis. The interface allows the user to default to a semi automatic or saved parameter set, or to take step by step control.

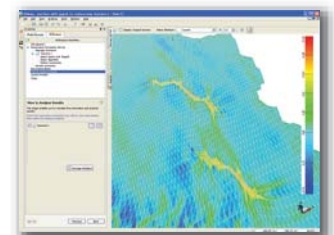
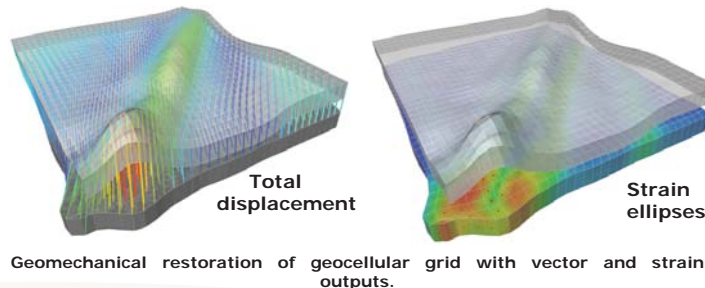
A better understanding of both the model and modelling uncertainties are aquired using the ability to carry out multiple modelling scenarios at the one time. Results generated are analysed and then saved for input into fracture modelling, basin modelling, reservoir characterisation and reservoir simulation. The automated and high end analysis techniques give both individual and comparative analyses. Direct surface and geocellular model outputs include strain and uncertainty.

4DRestore can be used in conjunction with 2DMove and 3DMove or as a stand alone modelling workflow. It supports horizons and

volumes direct from seismic interpretation packages, fully conditioned structural framework models or geomodelling packages. The restoration workflow outputs quantitative results including geocellular support for input into a range of modelling packages or the decision making process. The scenario based approach provides the user with a unique modelling environment to clearly assess model validity & uncertainties.

Combining the entire Move structural modelling toolkit with 4DRestore provides the user with the *'Power User Workbench Configuration'*: established 2D & 3D structural modelling are integrated with the latest in structural modelling technologies for users requiring both the traditional modelling environment and high end scenario, batch and uncertainty based modelling techniques to optimise structural systems modelling in both Exploration and Production.

The automated 3D volumetric restoration workflow for model validation and advanced structural systems analysis



4DRestore supports restoration of both soft linked and hard linked structures.

Functional benefits of 4DRestore

- Specifically designed restoration workflow: 25 years of Midland Valley's structural modelling expertise has shaped the 4DRestore tool from the restoration algorithm to the workflow parameters, user interface, analysis and outputs.
- 'Pick-up & Use' Automated Workflow - designed with clear, stepped modelling stages reducing training requirements and catering for infrequent, regular and advanced users.
- Simple input data requirements - such as picked horizons direct from interpretation packages to modelling with volumes from fully conditioned structural framework models from geomodelling software.
- Supporting both soft and hard linked systems reducing requirement for model conditioning.
- Scenario based modelling - use of multi-threading computational capability to enable users to run multiple restoration scenarios at one time providing direct comparative analysis of results.
- Quantitative & Comparative Analysis - extensive automated analysis capability, including output of attributes, colour maps, residual plots and a variety of graphical displays.
- Direct outputs for Fracture Modelling in 4DFrac (finite strain attribute) and turbidite flow modelling in 4DSediment.
- Outputs to map and direct to the geocellular model - such as strain, uncertainty, misfit analysis & movement vectors.
- Intelligent defaults - for effective modelling by both the generalist and specialist user.
- Data input/output, management, visualisation and additional analysis using 4DMove.

Further information on 4DRestore can be found in the software pages of our website, www.mve.com or contact help@mve.com.