



Mira Geoscience

...modelling the earth

GOCAD® Mining Suite

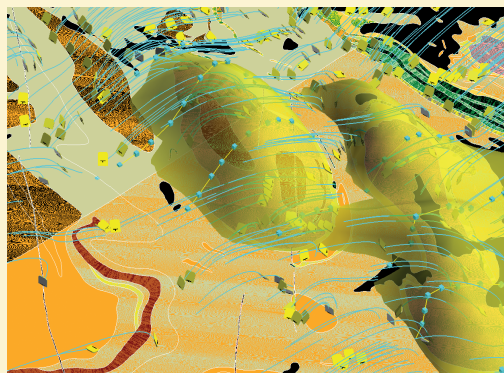
Sparse Module – Structural Geology Tools

Earth modelling and 3D-GIS solutions for mineral exploration

Summary

The GOCAD Mining Suite Sparse Module was developed in collaboration with the Geological Survey of Canada to address the problem of constructing 3D structural geology models given sparse structural data. It provides the user with the tools needed to quickly build smooth 3D curves and surfaces that represent their structural data while maintaining the freedom to use the GOCAD Mining Suite editing and interpolation tools.

GOCAD Mining Suite Sparse Module is an extension of Paradigm™ GOCAD, the world's most sophisticated geological modelling platform, adapted specifically for the mining industry with mining modules available exclusively from Mira Geoscience.



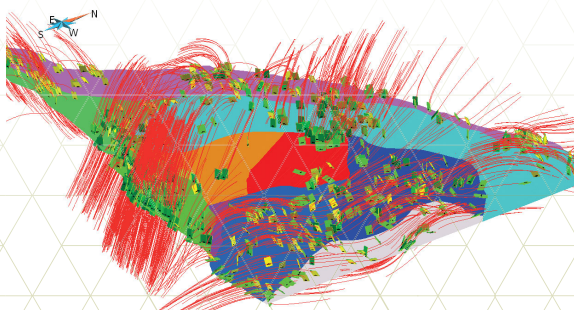
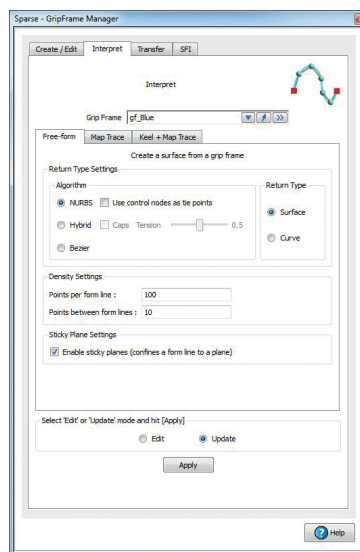
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Structural data interpretation tools that interactively and automatically create 3D earth models

- » Facilitates construction of faults, lithological contacts and closed bodies
- » Model smooth surfaces and curves by using grip frames that can be manipulated in 2D or 3D - grip frame construction can be carried out as part of 2D section interpretation
- » Edit and interpolate sparse surfaces using the Mining Suite tools
- » Incorporate surface, drillhole and underground measurements
- » Create 3D geology models from surface mapping only

NEW extension: 3D Structural Fields Interpolator

- » Provides first-pass interpretation of fold closures and plunge
- » Supports bedding and foliation input data



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Key Features

Task pane interface

- » Intuitive layout
- » Create/Edit grip frame
- » Interpret surface/curves
- » Transfer structural measurements

Structural Fields Interpolator

- » Interpolates 3D plunge and structural fields in form lines or block models from raw oriented data
- » Overcomes the complexity of rock geometry interpretation
- » Incorporates facing direction into the interpolation
- » Models the geometric behaviour of structural elements in 3D using point data
- » Views the structural fields as streamlines from point data or as a voxel property
- » Compatible with 2D sections to assist traditional section interpretation

Interpretation tools

- » Grip frame (free form) to surface or closed body
- » Map trace
- » Map trace and keel
- » Return curves or surfaces
- » Control mesh density
- » Edit/Update

Parametric interpolators

- » NURBS
- » Bezier
- » Hybrid

Sticky planes

- » Constraint grip frame to section plane
- » Can be turned on and off

Grip frames

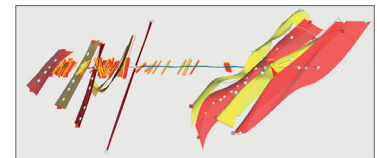
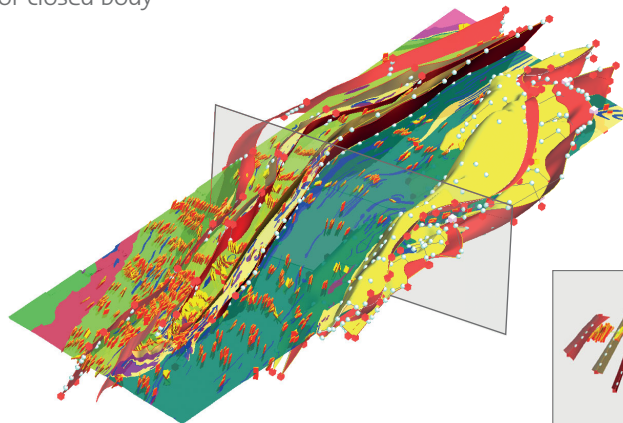
- » Create by digitising from existing curves, map traces and points
- » Digitise on 2D sections
- » Insert between grip frame lines or at the end of the grip frame
- » Edit like regular GOCAD curve objects
- » Fit to points
- » Extend
- » Snap to map trace

Map traces

- » Estimate strike and dip from geometry
- » Transfer structural information and interpolate along trace
- » Project surface from interpolated structure
- » Project grip frame from interpolated structure

Structural measurements

- » Uses GOCAD Mining Suite Structural Graphics
- » Transfer from points to map trace
- » Transfer from map trace to grip frame



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