

GeoModeller V4 NEW Features:

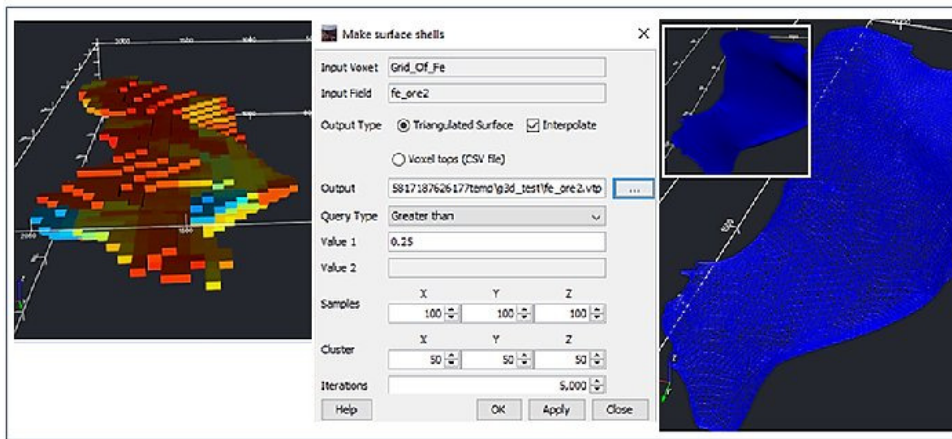
- Direct export of layered finite element meshes & fully unstructured meshes, with adaptive-to-geology-mesh characterisation (VTK, MEDIT and FELOW formats)
- New capability to create Interpolated Surface Shells
- Enhanced Mesh Grid Calculator functionality! - Describe property fields by formulae and formation
- 1D & 2.5D airborne EM results – now supporting unlimited line lengths
- Example tasks for over 70 processes hosted on GitHub (load & run ready-batch files from new Navigator pane in v4)
- Bug fixes in key modules: Inversion, meshing, projections
- Additionally, we offer web-hosted upgraded documentation: <https://www.intrepid-geophysics.com/ig/index.php?page=download-geomodeller-tutorials>

New: Interpolated Surface Shells

Ore body: krig to blocks

Make surface shells and export with interpolation (.vtp)

Interpolated surface shells



**Enhanced: Mesh Grid Calculator functionality
Describe property fields by formulae and formation**

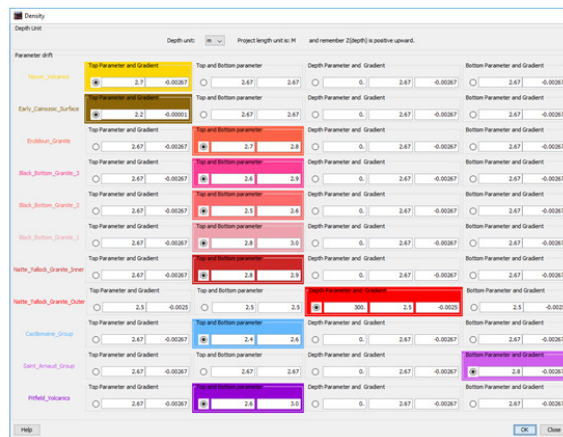
Prescribe physical property fields by:

- By Formation, *and*
- By Formulae

Density
Susceptibility
Remanence
Thermal Conductivity
Heat Production Rate
Specific Heat
Advection Rate
Sonic velocity
Sonic Shear Velocity
Porosity
Fluid Velocity
Electrical Conductivity
Electrical Resistivity
IP Chargeability
IP Time Decay

User choice:

- Top parameter and gradient
- Bottom parameter and gradient
- Top and bottom parameter
- Depth Parameter and gradient



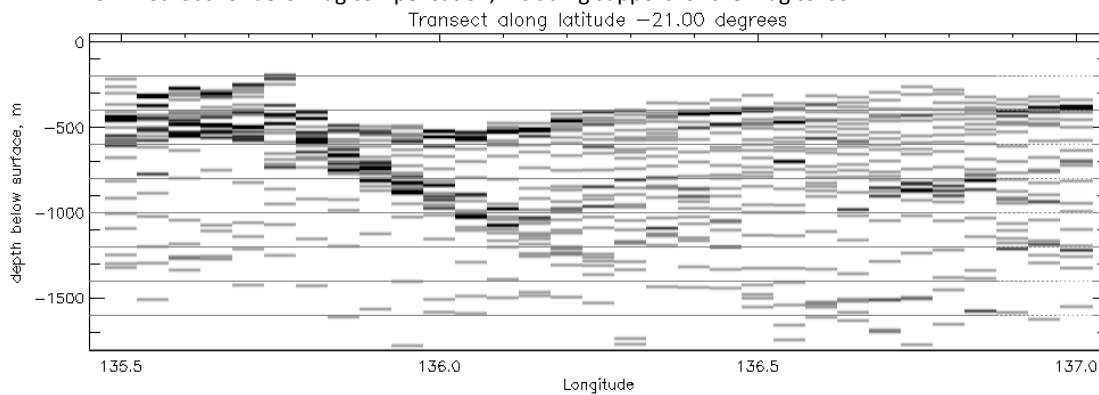
Release Status for INTREPID products

The current release status of **INTREPID is version 5.6.2** (released on June 1, 2017). [DOWNLOAD NOW](https://www.intrepid-geophysics.com/ig/index.php?page=downloads)
<https://www.intrepid-geophysics.com/ig/index.php?page=downloads>

The next scheduled release target of INTREPID will be June 30, 2018. We look forward to offering more than 6 new geophysics tools in **INTREPID v6.0.0** !

Some of Intrepid's new release features will include:

- Multiple flood basalt layer depth estimation (using a random dipole and FFT methods, implemented from work by Roger Clifton et al.)
- Anisotropic clustering of point clouds and FTG tensor data for dip/strike mapping of faults
- New co-kriging methods, instead of using FFT, for magnetic data interpretation products. (Implemented from work by Stephen Maus et al.)
- New radiometrics query options using the Australian consolidated and re-calibrated datasets
- An improved tool for multi-scale edge detection (worming) that extends to 3D
- New methods for aero-mag compensation, including support for the mag tensor



New tool in INTREPID v6.0.0 - Multiple flood basalt layer depth estimation on transects. A descending basalt can be traced as it tilts downwards and appears to sole out at 1500 m.

Upgrades for JetStream product

Team progress has ensured that most of the JetStream software tools now have a Google protobuf specified API, and these are included in our automatic test system. Next efforts will be to finish updating the LINUX version of the development platform. Forward development plans will introduce a new modern architecture – a welcome anticipated shift which will greatly enhance the JetStream product.

INTREPID Sea-g product news

A new maintenance release of INTREPID Sea-g v5.6.2 with build date December 14, 2017 is now available for Sea-g customers (please directly request the MSI installer file from sales@intrepid-geophysics.com). Release notes for improvements and bugs fixes are included. This version was updated in time for recent training events in Indonesia and Melbourne, and performed to a very pleasing level: Smoother and more stable, than ever before; and demonstrating easy and rapid generation of a final map which can be interpreted geologically, on a day-to-day basis (onshore or offshore). Important new features acknowledged by our new customers are:

- Being able to overlay their data on google earth was an appreciated feature
- Using the automated line splitting (turn removals) task file was an important workflow for non-optimal

A decision to make public the Sea-g standard tutorial (“Moving Platform Processing Tutorial using Sea-g”) via the Intrepid Website has been a welcome one. Available now for download:

<https://www.intrepid-geophysics.com/ig/index.php?page=sea-g-tutorial>

Fourteen GeoModeller/FEFLOW trainees welcomed at BRGM France

Hosted by BRGM in Orléans, France on February 19-20, 2018 – we were particularly pleased to present training to 14 people, both existing customers and new interested modellers. Thank you all for spending the time to have a closer look at the GeoModeller v4 capabilities, and try exercises and workflows which may help you in your own projects ! For this event DHI-Berlin’s Dr. Björn Kaiser co-presented the second day of training to explain the GeoModeller model transfer steps, and how to set-up and perform a simple flow simulation problem in FEFLOW. All trainees received a CGAL libraries licence from Intrepid Geophysics (re-distributed under a royalty agreement), for the purpose of training exercises comprising tetrahedron meshing.

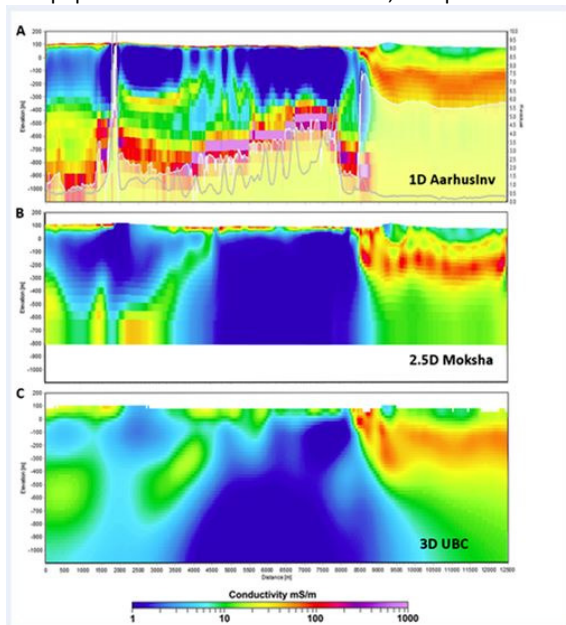
Interested ? Ask us about this event – we are looking for opportunities to repeat this training in new locations soon!
<https://www.intrepid-geophysics.com/ig/index.php?page=training-calendar>

Reports from AEGC (Sydney) and PDAC (Toronto)

AEGC Sydney: 18 to 21 February 2018

Great interest followed the IG team’s presentation of helicopter EM 2.5D inversion results, using our in-house code “2.5D MOKSHA™” [compared with other codes: 1D Aarhus Inv and 3D UBC] for an Australian Case study: The McArthur Basin. This study stimulated investigation within the survey footprint, of a dipping fault (Emu Fault) and a strong conductor buried to one side of the fault. Clarity and accuracy of the verified geological and structural sources for this part of the McArthur Basin AEM survey was under scrutiny in a region of sediment-hosted base metal mineralisation. We are very pleased that 2.5D MOKSHA™ outcomes held up to the test with strong approval from independent expert mentors in this field !

This paper was co-authored with CSIRO, Computational Geosciences Inc. & Aarhus Geophysics Aps.



Conductivity-depth sections for line 10440, with results for three inversion approaches shown in the three panels (A,B,C). The dipping

conductor represents Barney Creek Formation sediments intersected by drillhole DD83CA3 in Line 10460 to the north.

For details, download the full paper from the Intrepid Geophysics' [Website Home PAGE](#)

Or, Get the Session 2 abstracts, from Monday February 19, [Download HERE](#)

PDAC Toronto: 4 to 7 March 2018

A new booth look was noticeable for PDAC this year, where here again INTREPID GEOPHYSICS was found among our fellow Australians - in the Australian Pavilion. Here we enjoyed again the many opportunities PDAC affords to catch up with customers, friends, and associates – and to make new contacts. A special thanks to **Hernan Ugalde** from **PGW** our associate, reseller and supporter in Canada and Central America for being always available and enthusiastic at the booth !



Desmond FitzGerald in front of the new-look Intrepid Geophysics booth at PDAC

Fourth Meeting of the European 3D Geomodelling community

Following immediately after GeoModeller V4 & FEFLOW combined training was the Fourth Meeting of the European 3D Geomodelling community – This wonderful free event was hosted this year by BRGM, in the beautiful surrounds of the Orleans Cathedral precinct.

After an underground quarry demonstration for acquisition and use of LIDAR data, the 3-day workshop began in earnest on Wednesday afternoon February 21. Countries and Projects Updates kicked off the program. Many interesting papers followed covering challenging aspects of the storage, updating and delivery of 3D models to end-users and stakeholders. Lively presentations ensued around moving models into Minecraft, ArcGIS, and other virtual reality spaces.

A highlight of the 3D geological modelling value chain session was a presentation by ISSKA (Malard et. al.) about Visual KARSYS, a web-platform for the documentation of karst aquifers – incidentally now supporting the import and export of GeoModeller models. For further information about the Visual KARSYS product, see our Partnerships Page: <https://www.intrepid-geophysics.com/ig/index.php?page=partnerships>

Helen Gibson presented on behalf of Dr. Imen Hassen “Coupling of GeoModeller & FEFLOW: A Case Study – Tunisia groundwater challenges addressed”. Poster sessions were lively: Des and Helen were busy in just one corner, where strong interest was received for a new poster on “Geological Uncertainty Automation using Google Protocol Buffers”.



4th European meeting on 3D Geological Modelling. Helen Gibson, Des FitzGerald, Conxi Ayala Galan

New Case Study web-page "Geological Uncertainty Quantified with GeoModeller!"

GeoModeller's unique method of geological and structural data management, and implicit method of computation lends well to quantitative analysis of geological uncertainty.

This is not new for GeoModeller!

Our page is new, however – and conveniently lists work on this topic, occurring by different universities and organisations since 2011 – Happy reading!

Here is the link to our web-page <http://www.intrepid-geophysics.com/ig/index.php?page=geological-uncertainty>

And finally, Conferences coming up...

- Intrepid Geophysics will be attending the 80th EAGE Conference and Exhibition Copenhagen, June 11-14 2018, *and ..*
- 7th International Workshop on Airborne Electromagnetics, Jutland, Denmark, June 17-20, 2018

From the team at Intrepid Geophysics – we hope you are well

Please drop us a line sometime, we hope you'll stay in touch!

Questions? Contact us today: info@intrepid-geophysics.com or call +61 3 9593 1077

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This message was sent to helen@intrepid-geophysics.com from elise@intrepid-geophysics.com

Elise Wade
Intrepid Geophysics
3 Male Street Suite 110
Brighton, Victoria 3186, Australia

