DATAMINE

ISATIS.NEO

Isatis.neo 2025.3

Release Notes

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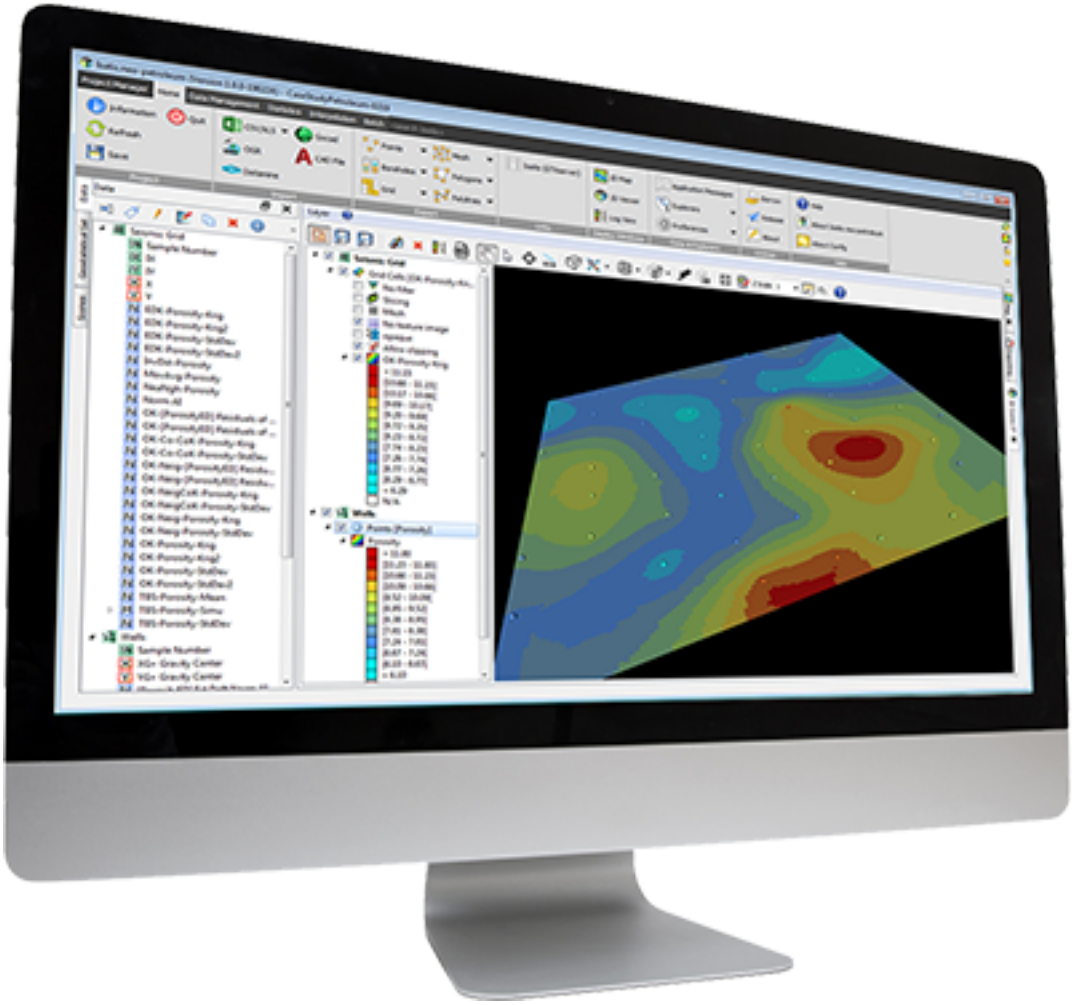
Contents

Overview

Isatis.neo is a sophisticated solution offering unmatched flexibility for geostatisticians and mineral resource estimation geologists. It provides a wide range of statistical and geostatistical tools designed to efficiently achieve precise resource estimations while adressing unique project challenges. Automatic parameter settings streamline processes, while advanced users can modify parameters for greater precision and control. Its intuitive interface, combined with cutting-edge parallelised algorithms, ensures both ease of use and high-performance computing. With Python integration for enhanced extensibility and batch processing capabilities that guarantee traceability and reproducibility, Isatis.neo enables seamless adaptation to various configurations and empowers users to customise their workflows with confidence.



Licensing

Before installation of the new Isatis.neo version, please check that your license is still covered by a maintenance contract and/or your license key is still available. By default, license keys are valid for 12 months. They are compatible with all the software versions that will be released during the validity period of your maintenance contract.

Site licenses need to be installed on your license server by your license administrators. For the cloud licenses, a new license file will be automatically deployed on Geovariances' servers.

For **Isatis.neo-mining**, we now provide a version on the Customer Support Portal and on Geovariances' website compatible with **Datamine License services** and **Geovariances License Manager** (RLM). You will only have to choose one of the License system during the installation.

Please contact us via the Customer Support Portal for any information regarding your license and maintenance contract.

Project compatibility

Your projects are automatically converted into the new format when you open them.

Platforms and Requirements

Before installing Isatis.neo, please make sure that the following software products are also installed on your Personal Computer:

- Windows 10 or 11 (64 bits only) or Linux Ubuntu 20.04 or higher - on PCs with Intel compatible processors are supported by Isatis.neo.
- An HTML 5.0 compliant browser such as Google Chrome (recommended, Firefox or Microsoft Edge are also supported).

> **Note:** NVIDIA graphic cards with the most recent drivers are recommended for the use of the 3D Viewer. AMD/ATI cards with recent drivers are also supported. Intel graphic cards are known to cause some problems during 3D graphic rendering.

Further Information

This document includes cumulative release notes for Isatis.neo. Release notes for other versions of Isatis.neo are available via the Customer Support Portal or via the Geovariances' website.

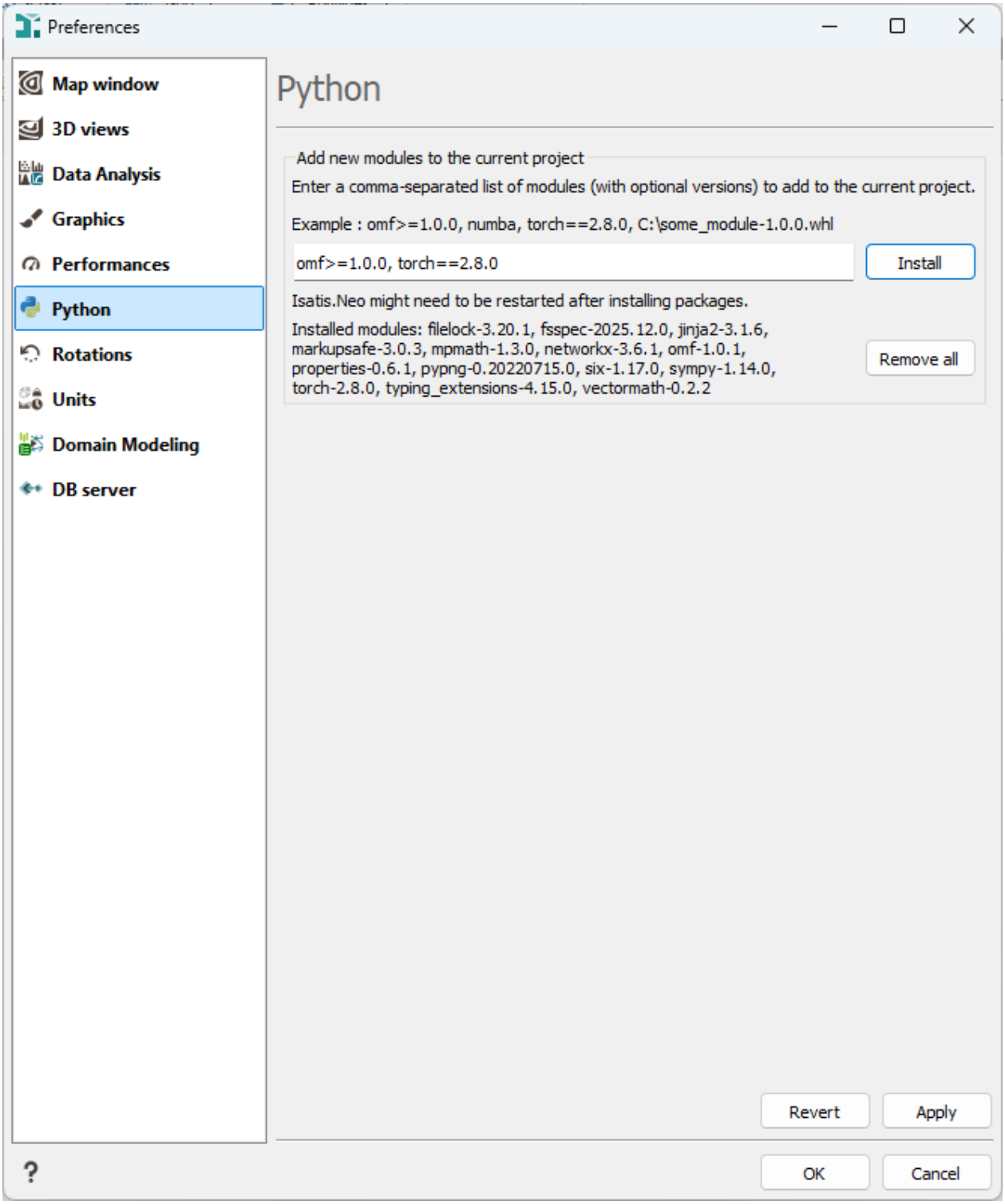
Isatis.neo 2025.3

Datamine Licensing

By popular request, **License Services 7.0** supports **Microsoft's Transport Layer Security (TLS)** layer to **protect data traffic between client and server environments**. This ensures systems are protected from eavesdropping, tampering, and forgery. If you plan to take advantage of this facility (recommended), both server and client must be upgraded to 7.0. If you don't plan to enhance their security, a server upgrade is not required.

Home

A new **Python** tab, in the Preferences, lets you **install and manage additional Python modules directly within the current project environment**. You can install packages by name (with optional version constraints) or from a local wheel file, making them immediately available in Python blocks and scripts executed from Isatis.neo. The tab also lists all modules installed for the project and provides a one-click option to remove them. Note that a restart of Isatis.neo may be required after installation, and imported packages remain available for the duration of the current session.

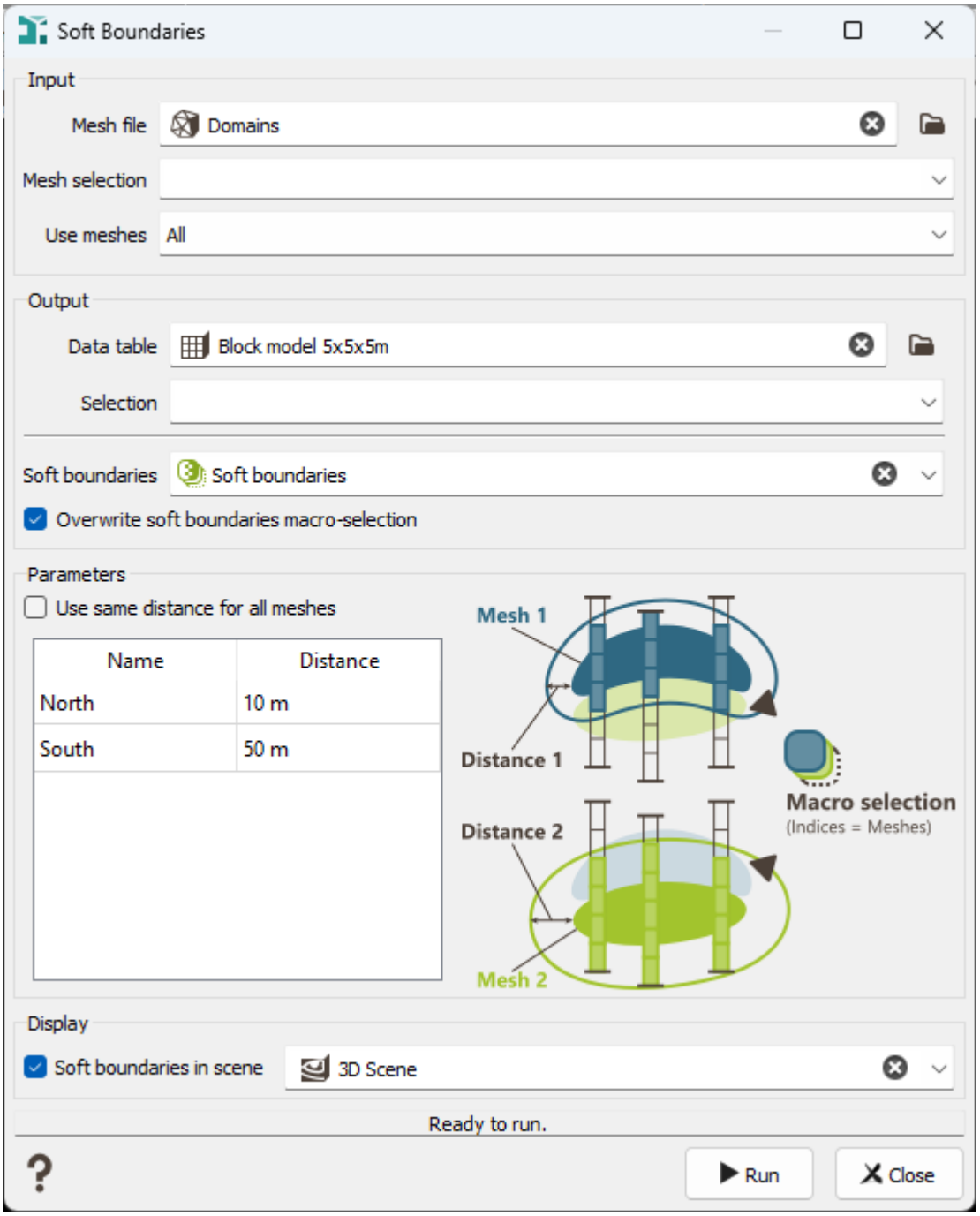

Preferences
Map window
3D views
Data Analysis
Graphics
Performances
Python
Rotations
Units
Domain Modeling
DB server
Python
Add new modules to the current project
Enter a comma-separated list of modules (with optional versions) to add to the current project.
Example : omf>=1.0.0, numba, torch==2.8.0, C:\some_module-1.0.0.whl
omf>=1.0.0, torch==2.8.0
Install
Isatis.Neo might need to be restarted after installing packages.
Installed modules: filelock-3.20.1, fsspec-2025.12.0, jinja2-3.1.6, markupsafe-3.0.3, mpmath-1.3.0, networkx-3.6.1, omf-1.0.1, properties-0.6.1, pypng-0.20220715.0, six-1.17.0, sympy-1.14.0, torch-2.8.0, typing_extensions-4.15.0, vectormath-0.2.2
Remove all
Revert
Apply
OK
Cancel

Data Management

With the new **Soft Boundaries** utility, you can now take into account grade continuity across geological domain boundaries when performing mineral resource estimation. Instead of relying solely on hard boundaries - where data from adjacent domains are ignored- you can define a soft boundary **macro-selection** variable that expands a mesh by a specified distance during interpolation. This determines which samples are included in the neighborhood search, improving the accuracy of your grade estimates.

The Soft Boundaries utility is designed to be a simple and intuitive tool that lets you easily extend your mesh by a chosen distance. If you need a more detailed analysis of how grades vary near geological contacts and guidance in defining the appropriate transition distance, you can use the Border Analysis tool.

You can **customize distances for each mesh** and save results as a macro-variable with as many indices as meshes selected. This new functionality helps you better capture grade correlations across domains and enhances the quality of your interpolation results.


Soft Boundaries
Input
Mesh file
Domains
Mesh selection
Use meshes
All
Output
Data table
Block model 5x5x5m
Selection
Soft boundaries
Soft boundaries
Overwrite soft boundaries macro-selection
Parameters
Use same distance for all meshes
Name
Distance
North
10 m
South
50 m
Mesh 1
Distance 1
Distance 2
Mesh 2
Macro selection
(Indices = Meshes)
Display
Soft boundaries in scene
3D Scene
Ready to run.
Run
Close

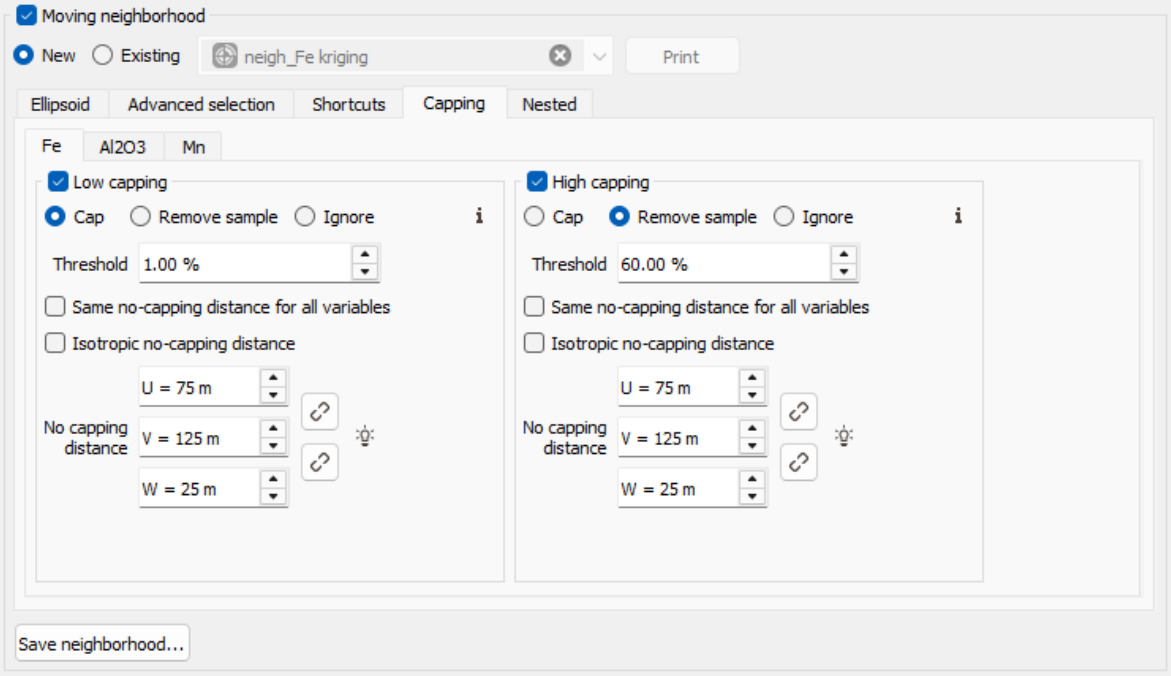
Interpolation

- You can now apply **capping to multiple variables simultaneously** within the **Neighborhood** settings. This enhancement allows you to better control extreme sample values and improve the robustness of your grade estimates.

  In the **Capping** tab, each selected variable now has its own dedicated tab, where you can define specific **low and high capping thresholds**, as well as corresponding **no-capping distances**. A new button in the Neighborhood Explorer lets you easily add multiple capped variables at once using the Data Selector - each chosen variable automatically creates its own configuration tab.

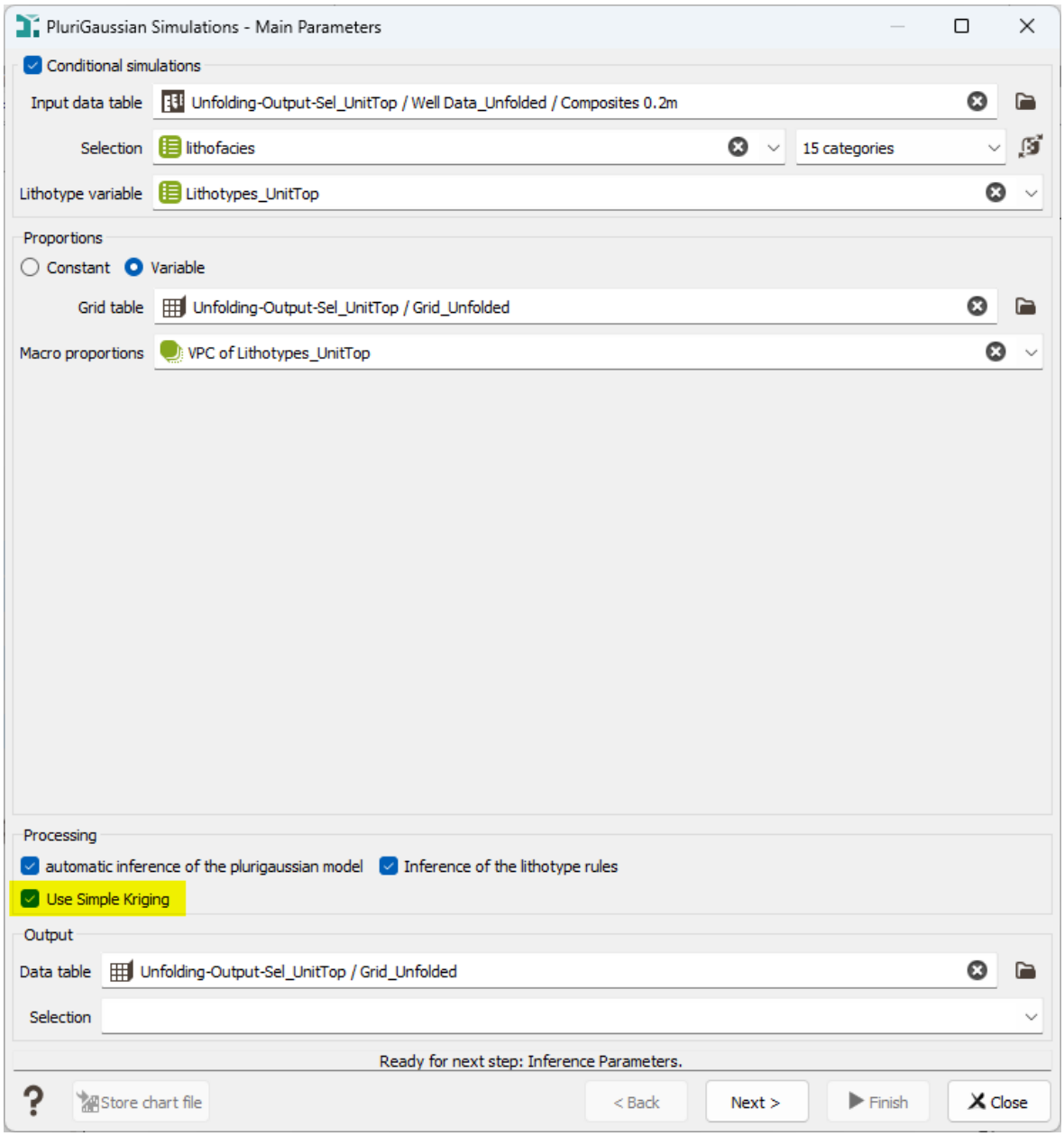
  You can also simplify configuration by applying the **same no-capping distance to all variables** or using an **isotropic distance**.

  This new multivariable capping capability makes it easier to manage several variables in a single neighborhood, providing greater flexibility and consistency in your interpolation workflows.



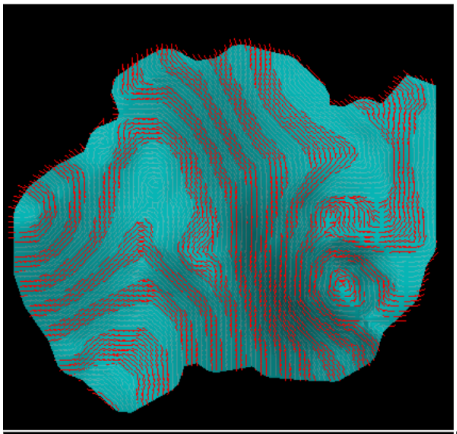
- A new **Use Simple Kriging** option is now available for **PluriGaussian simulations**. When enabled, conditioning is performed using **simple kriging** (with zero mean) under a strict stationarity assumption. By default, conditioning of Turning Bands Simulations continues to use ordinary kriging.

Note that when **local parameters** are defined, the software automatically switches to SPDE-based simulations, which always rely on simple kriging, regardless of this option.

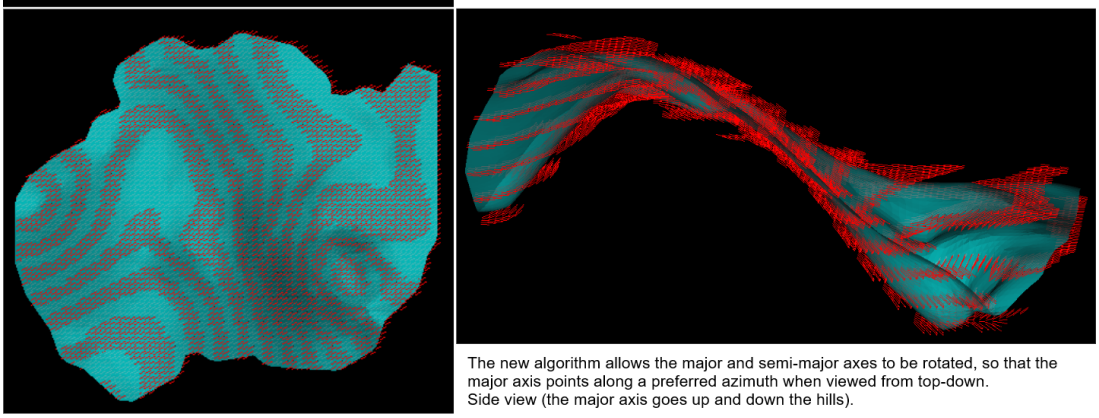


- The **Local Anisotropies** task has been improved. Compared to previous versions, the module now provides:
  - A new **Method** parameter to control how the major axis is oriented:
    - With the **Major axis along strike** method (previous algorithm), the major axis will be horizontal. This method is appropriate if the reference surface is dipping. If the plane itself is horizontal, then the major axis will be set to the preferred azimuth, and otherwise this parameter is ignored.

- With the **Major axis with preferred azimuth** method, the major axis, when viewed from top-down, will point in the direction of the preferred azimuth. This method is appropriate when the reference surface is close to horizontal.



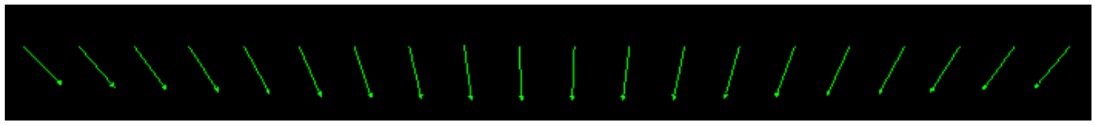
The old algorithm orients the major axis along strike. When a surface is close to horizontal, it will go around a hill in a circle. This algorithm is still useful when the reference surface is dipping.



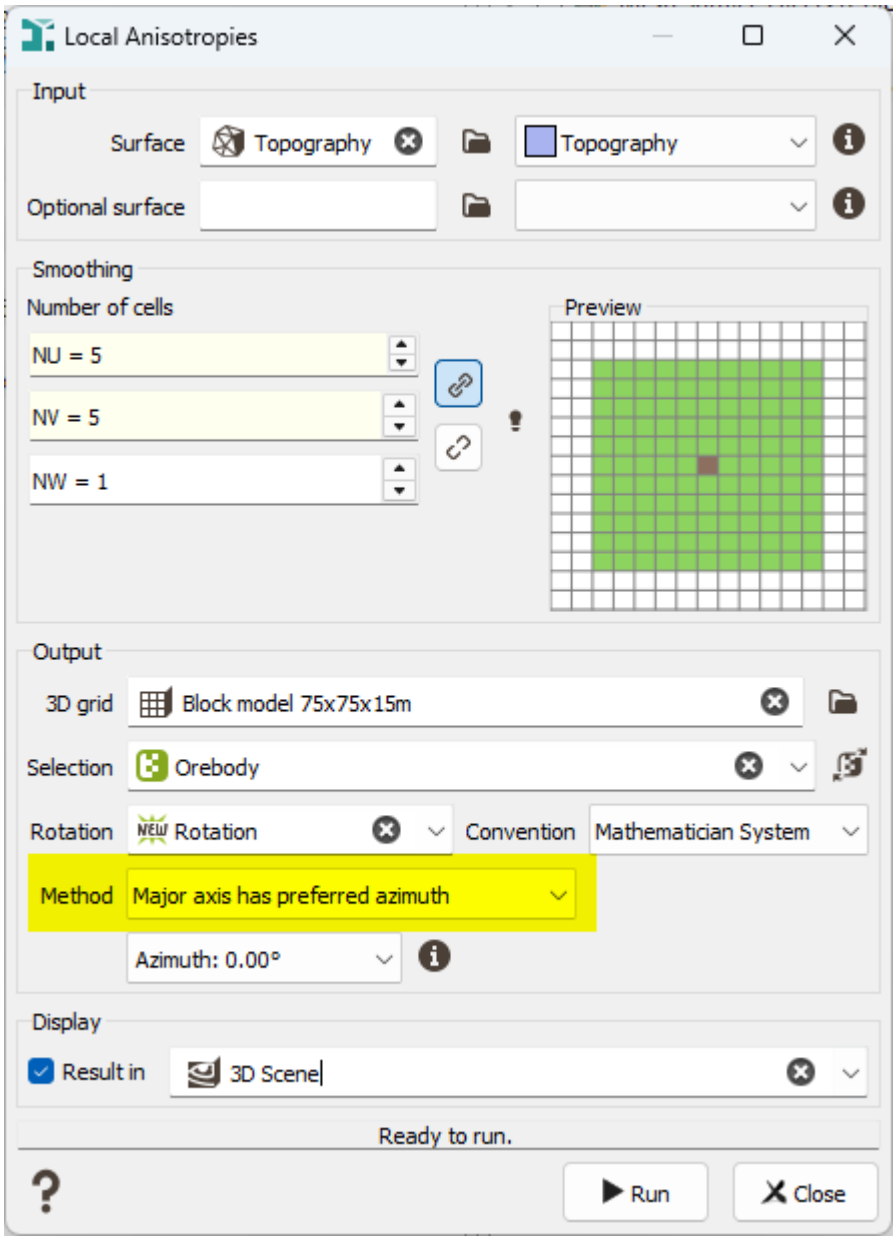
The new algorithm allows the major and semi-major axes to be rotated, so that the major axis points along a preferred azimuth when viewed from top-down. Side view (the major axis goes up and down the hills).

- Smoother and more stable transitions between anisotropy directions thanks to a revised averaging algorithm, while its computational performance has been enhanced at the same time.

Old averaging algorithm



New averaging algorithm


Local Anisotropies
Input
Surface
Topography
Topography
Optional surface
Smoothing
Number of cells
NU = 5
NV = 5
NW = 1
Preview
Output
3D grid
Block model 75x75x15m
Selection
Orebody
Rotation
Rotation
Convention
Mathematician System
Method
Major axis has preferred azimuth
Azimuth: 0.00°
Display
Result in
3D Scene
Ready to run.
Run
Close

Display

You can now **display labels inside 3D grid cells** directly in the **3D Viewer**, giving you a clearer and more informative visualization of your model data. This new feature is available in the **Clipping** properties when a 3D grid is selected.

By enabling the **Label** option, you can display the values of selected variables as text inside each grid cell. You can fully customize the label content, appearance, and layout:

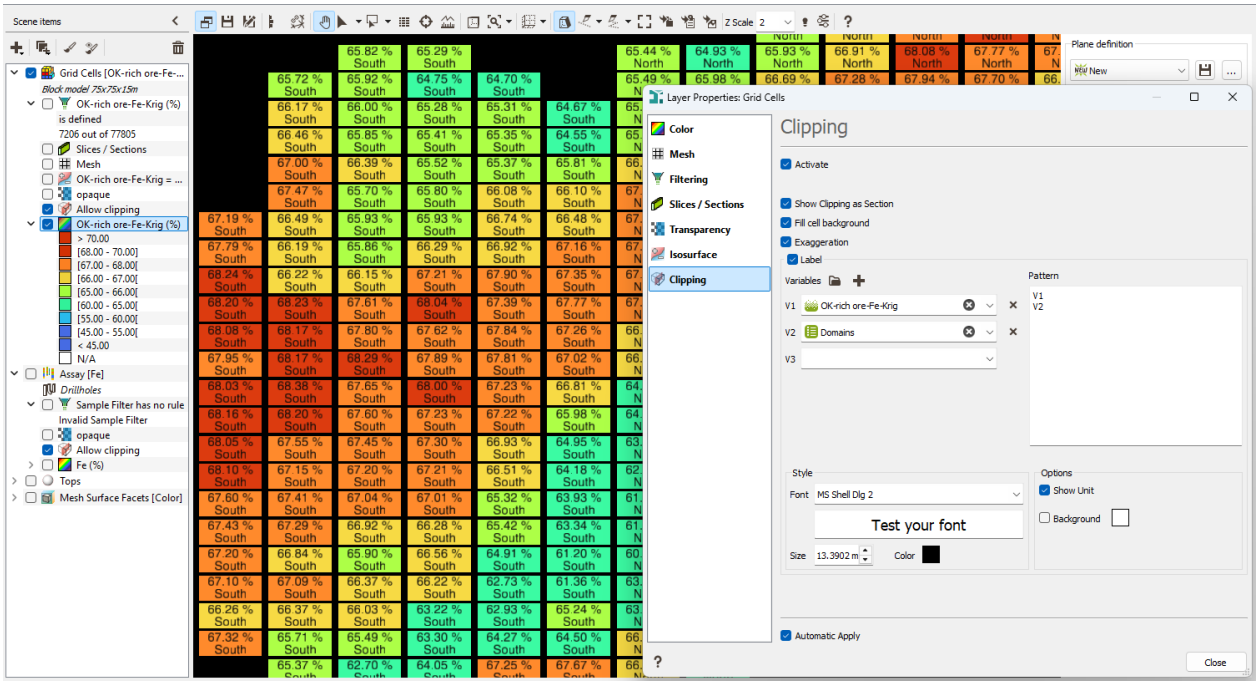
- **Variables**: Choose which variables to display and define their format using the label pattern (V1, V2, etc.).
- **Style**: Adjust the font, size, and color.
- **Options**: Add background colors and show units for clearer interpretation.

The **Fill cell background** option allows you to color each cell according to its corresponding value. When enabled (by default), cells are filled with their representative colors, making it easier to visually distinguish different zones or value ranges. If disabled, only the cell borders are displayed and colored.

The **Exaggeration** parameter lets you control the spacing between cells. By default, cells are adjacent, but you can increase the exaggeration to add space between them, making individual cells and their labels easier to read and compare.

You can also combine this with the **Show clipping as section** option to view labels on both sides of a slice, providing a detailed cross-sectional view of your data. This labeling functionality is also available in the **Section Viewer**, allowing you to benefit from the same display options across your different visualization tools.

This enhancement makes it easier to analyze and present 3D grid information by directly linking visual geometry with the underlying variable values — all within the same viewer.


Scene items
Grid Cells [OK-rich ore-Fe-...
Block model 75x75x15m
OK-rich ore-Fe-Krig (%)
is defined
7206 out of 77805
Slices / Sections
Mesh
OK-rich ore-Fe-Krig = ...
opaque
Allow clipping
OK-rich ore-Fe-Krig (%)
> 70.00
[68.00 - 70.00[
[67.00 - 68.00[
[66.00 - 67.00[
[65.00 - 66.00[
[60.00 - 65.00[
[55.00 - 60.00[
[45.00 - 55.00[
< 45.00
N/A
Assay [Fe]
Drillholes
Sample Filter has no rule
Invalid Sample Filter
opaque
Allow clipping
Fe (%)
Tops
Mesh Surface Facets [Color]
Z Scale 2
Plane definition
New
Layer Properties: Grid Cells
Color
Mesh
Filtering
Slices / Sections
Transparency
Isosurface
Clipping
Clipping
Activate
Show Clipping as Section
Fill cell background
Exaggeration
Label
Variables
V1 OK-rich ore-Fe-Krig
V2 Domains
V3
Pattern
V1
V2
Style
Font MS Shell Dlg 2
Test your font
Size 13.3902 m
Color
Options
Show Unit
Background
Automatic Apply
Close

Defect Fixes

ING-4162 - 3D Viewer

On high-resolution monitors with custom scaling and recent Nvidia drivers, the 3D Viewer could appear in a small corner of the window. A fix was applied by **forcing Nvidia's OpenGL compatibility mode** to avoid this rendering issue.

ING-5384 - Create polyline file

Creating a 3D polyline file incorrectly set **Z values to undefined**. This has been fixed—Z is now initialized to 0, as already done for polygons.

ING-5391 - Kriging

Switching from a subblock model to a regular grid in **Block Kriging** could trigger an error if the "Use customized block sizes" option was deactivated too early. The option handling has been corrected to avoid this issue.

ING-5393 - Create Selection from Mesh(es)

Multithreading was suboptimal when **selecting from meshes** on large grids, due to unnecessary coordinate reading and stats computation. These steps are now skipped when not needed, improving performance in optimal cases (e.g. vertical vector or "Inside Mesh" mode).

This change may also benefit other calculators that shared the same underlying mechanism.

ING-5395 - Upscaling

In **Categorical** mode, using a macro variable as input produced incorrect results when computing the **probability above cutoff**, returning only the last index's result, even when all indices were selected.

ING-5396 - Import Mesh (CAD File)

Some DXF files with **complex polyface polylines** failed to import due to Teigha limitations. The importer now automatically retries using Assimp when Teigha fails, improving support for such wireframe mesh files.

DATAMINE

ISATIS.NEO

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