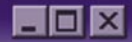


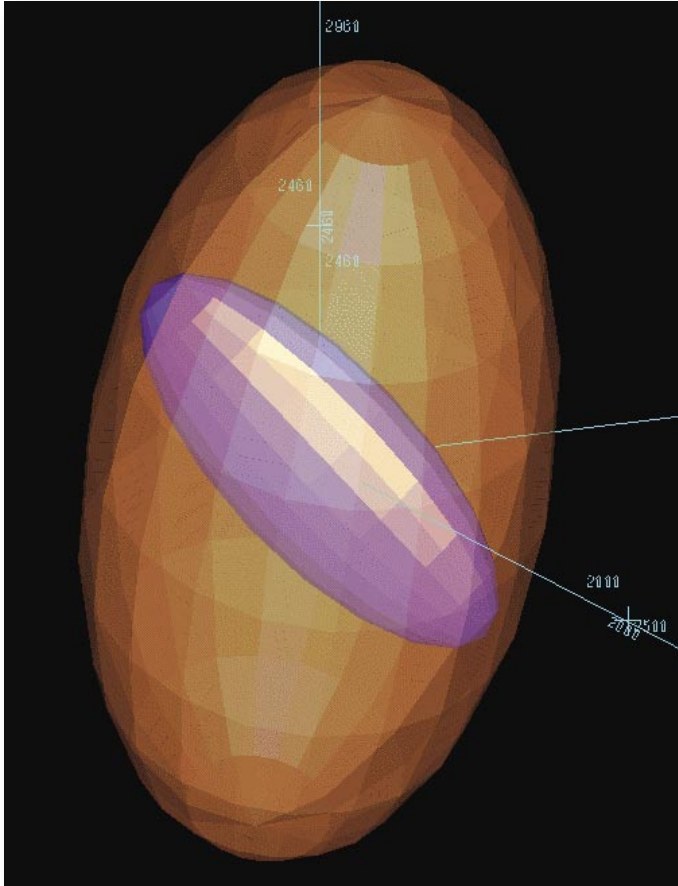


Current Affairs

A Window on Software Engineering



Floating Ellipsoid Display in MineSight® 3-D



In MineSight® 3-D v.3.40-00, the variogram parameters used for interpolation can be imported and displayed as floating ellipsoids. This is a great aid in visualizing the variogram parameters you are using to interpolate a model.

Variograms are created by the examination of pairs of composite data to determine if there is any grade or spatial continuity by distance or in a particular direction. In MineSight®, variograms are created either using MineSight® Data Analyst (MSDA) or via the MineSight® Compass™ procedures **p30301.dat**, **p30302.dat**, or **p30304.dat** (which run programs m301v1, m303v2, or m303v1).

Along the direction(s) of greatest geostatistical continuity, one has to determine parameters such as the nugget, sill, and the range in 3 directions (X,Y, and Z). These parameters are then used in interpolation using the MineSight® kriging programs m624v1, m624ik, and m624mik.

Variogram Parameter Files

Variogram parameter files are ASCII files that can either be created in MSDA or they can be created using procedures **pvgpar.dat** and/or **pvgmik.dat** (* see comment below) in MineSight® Compass™. A standard MineSight® variogram parameter file must be in the following format (see also, Example 1).

The lines defined in a variogram parameter file are as follows:

Line #1: Description or comment line

Line #2: Nugget value for the first item

Line #3: TYPE SILL R1 R2 R3 ROTN DIPN DIPE
or

TYPE SILL R1 R2 R3 ROT1 ROT2 ROT3 GSLIB
where

TYPE = Variogram type: 1=Spherical, 2=Linear, 3=Exponential

SILL = Sill of the variogram excluding the nugget value.

R1 = Search distance (range) in the new north (major-axis) direction.

R2 = Search distance (range) in the new east (minor-axis) direction.

R3 = Search distance (range) in the new up (vertical) direction.

ROTN, DIPN, DIPE = MEDS rotation angles.

ROT1, ROT2, ROT3 = GSLIB rotation angles.

Rotation angles should be entered either with respect to model coordinates for *all* variograms (default), or with respect to project coordinates for *all* variograms. To enter angles with respect to project coordinates, add command in the run-file:

Lines #4 = End of Input (0)

** In MineSight® 3-D v.3.40, variogram parameter files created using procedure **pvgmik.dat** (for IK/MIK) are not read properly and will give unexpected results. This issue has been resolved in MineSight® v.3.50.*

(continued on page 8)

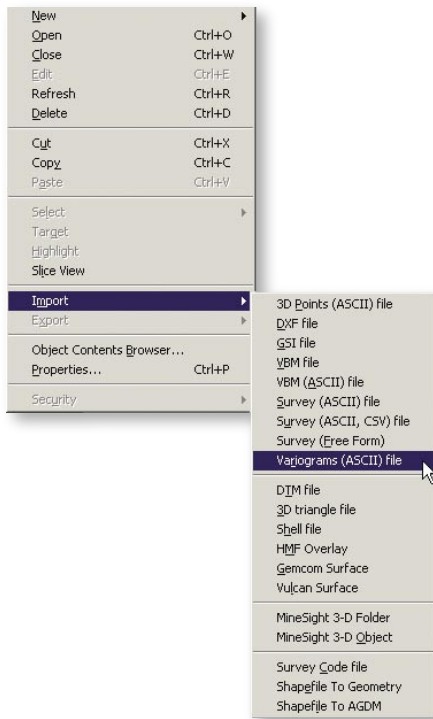
(Floating Ellipsoid Display in MineSight® 3-D continued from page 7)

```

variogram for rock type 1
0.23 0
1 0.17 200. 100. 10. 0. 0. 70. GSLIB
1 0.30 300. 150. 15. 0. 50. 0. GSLIB
1 0.50 400. 200. 20. 10. 0. 0. GSLIB
0
0.23 0
1 0.77 400. 200. 20. 0. 70. 70. GSLIB
0
    
```

Example 1: Variogram parameter file that consists of two variograms (one of which contains three nested structures).

Importing a Variogram Parameter File into MineSight® 3-D

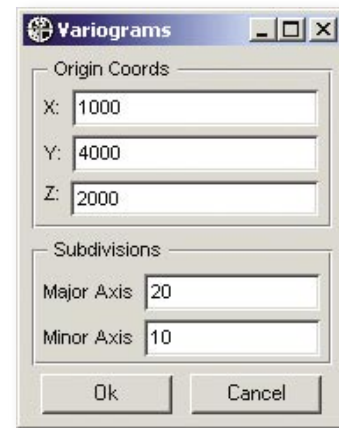


To import a variogram parameter file, from the right click menu in the **Data Manager**, choose **Import | Variograms (ASCII) file**. When the file chooser is displayed, select the **Variogram Parameter file** to import.

The **Variograms** dialog will be displayed next. The location of the origin, or centroid, of the ellipse can be placed based on the values in this dialog. By default, the project settings are used for the origin coordinates. The **numbers of subdivisions** refers to the number of triangles that will be created in the ellipsoid and the more subdivisions there are, then the smoother the ellipsoid will be. By default, there are 20 sub-divisions along the major axis and 10 along the minor axis. Click on **OK** and the ellipsoid(s) geometry object will then be created using the same name as the variogram parameter file.

The **Data Manager | Import** menu.

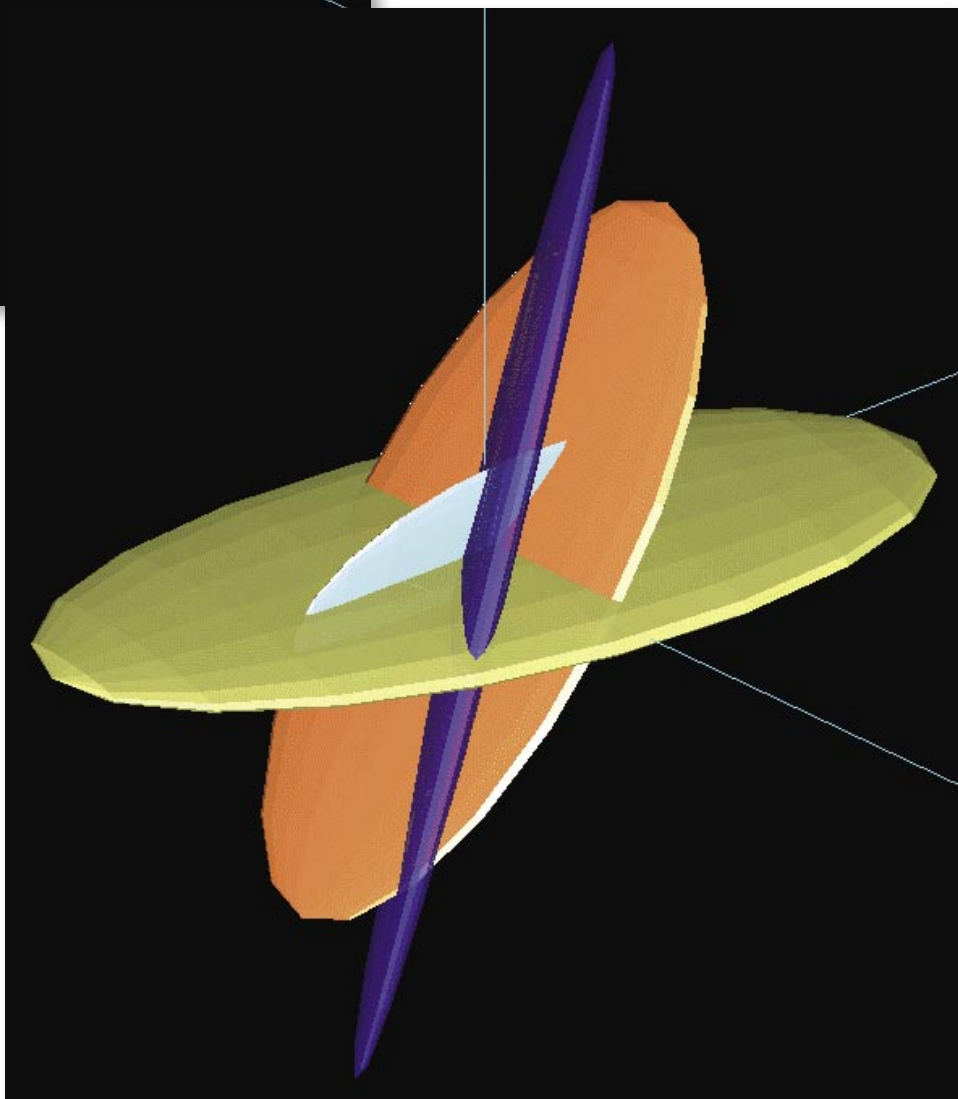
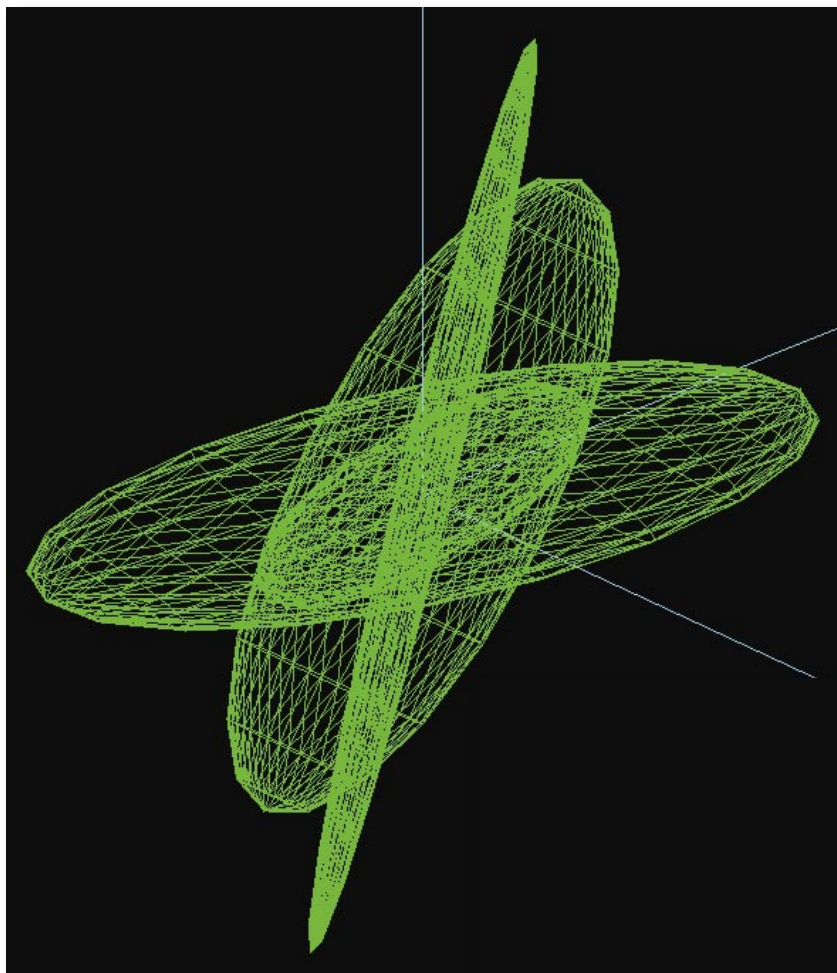
All of the information in the variogram parameter is imported into one MineSight® geometry object (MSR File). If there are multiple variograms defined in the variogram parameter, then they're all elements within one geometry object. The individual elements (variograms) within this geometry object can each be attributed differently in order to control the color and visibility.



The **Variograms** dialog.

(continued on page 9)

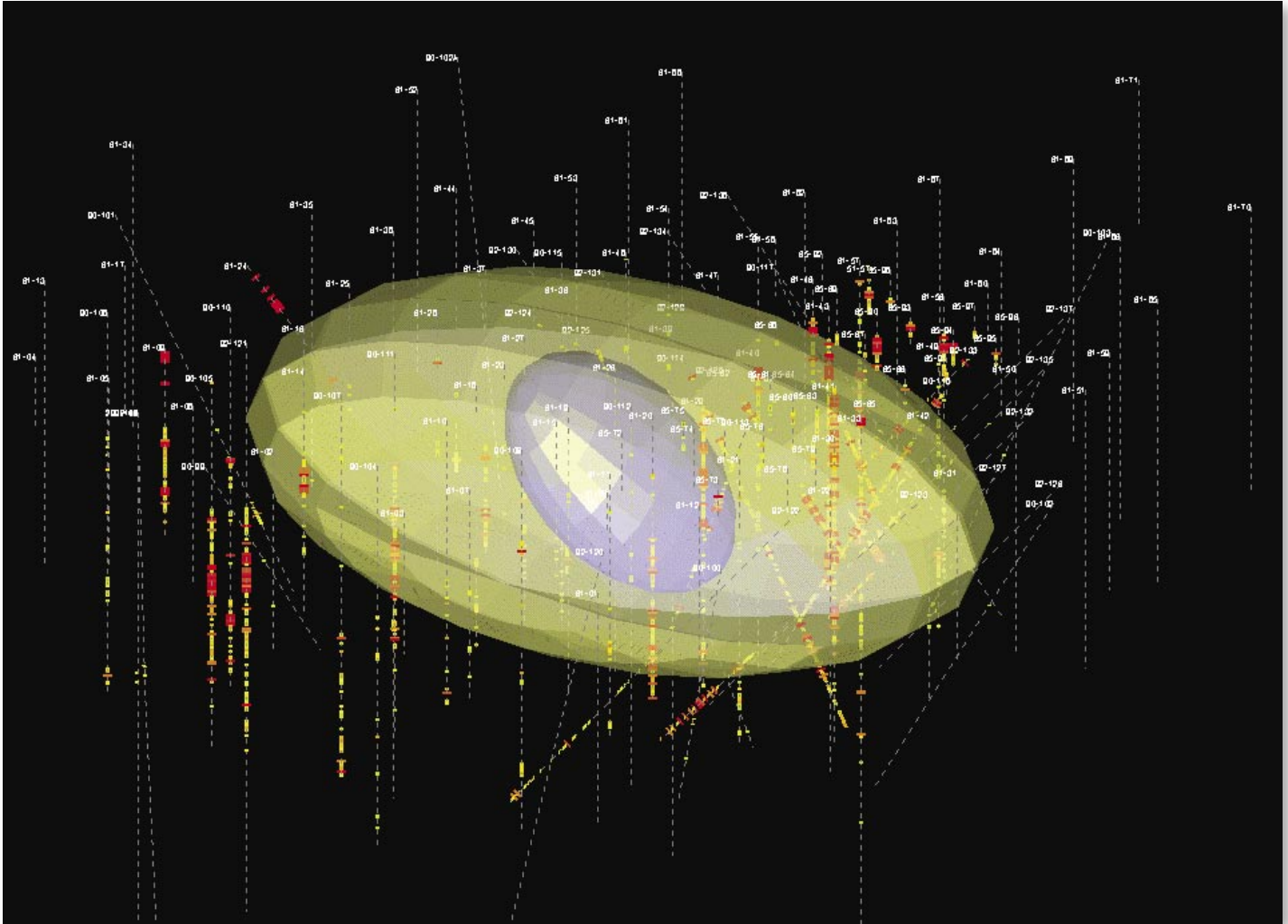
(Floating Ellipsoid Display in MineSight® 3-D continued from page 8)



Ellipse Examples: Variogram ellipses imported from the example variogram parameter file are displayed in the viewer. Illustrated on the left is the data displayed as it was imported. There are multiple variograms, as elements, in one geometry object. Shown on the right, is the same geometry object but, each ellipse in the object has been attributed differently in order to control the visibility.

(continued on page 10)

(Floating Ellipsoid Display in MineSight® 3-D continued from page 9)



Variogram ellipsoids displayed with a drillhole view to graphically illustrate sample variability in the deposit.

This new option is available in MineSight® 3-D v.3.40, which is available for you to download from MINTEC's FTP site, ftp.mintec.com.

Announcing Mini-Seminars in South America!

Chile

Antofagasta, Chile
Jun. 16, 2005
Location TBA
Registration
Deadline: Jun. 2, 2005

Peru

Arequipa, Peru
Sept. 16-17, 2005
Location TBA
Registration
Deadline: Sept. 2, 2005

Brazil

Belo Horizonte, Brazil
Sept. 23, 2005
Location TBA
Registration
Deadline: Sept. 2, 2005

Make plans now to attend one of these informative seminars!