

If your experiment needs a statistician, you need a better experiment.
Ernest Rutherford

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BasRock Software for Geotechs

Newsletter

June 2013

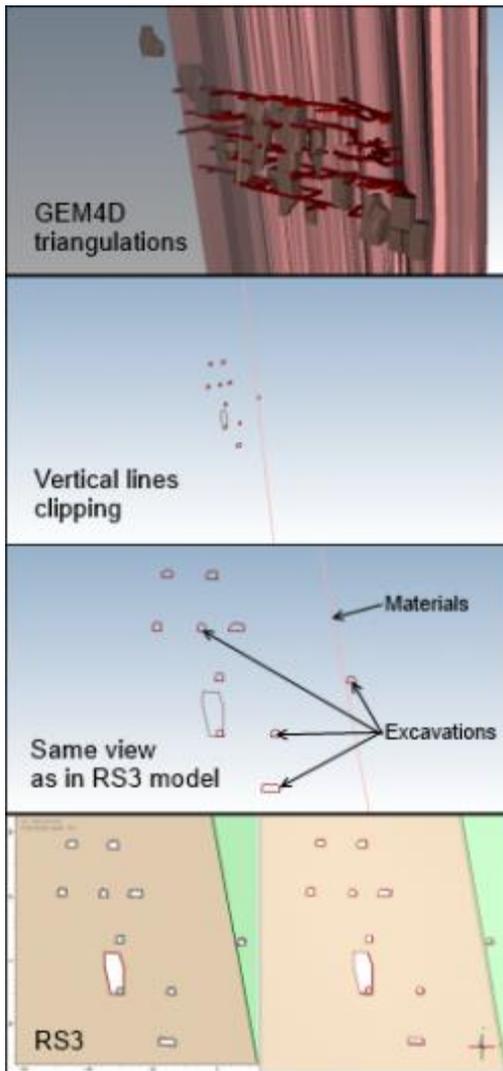


What's new? - GEM4D now supports Rocscience DXF sections

The focus of this newsletter will be the DXF section support added to GEM4D for RS3, Phase2, Slide and Examine. All the rotations, translations, layer naming, and DXF format specifications are automatically done. The following functionality additions were made over the past month:

1. GEM4D now supports DXF sections for the Rocscience software packages RS3 Beta, Phase2, Slide and Examine. All the transformations and file formatting are automatically done and the selected layers recognised when loaded.
2. Polygons can be subdivided to produce smaller triangulations for higher resolution data colour mapping. This is in preparation of upcoming data presentation routines, but can also be used to increase the accuracy of Trajec3D simulations.
3. An elevation histogram was added to the Trajec3D charts and allows for some basic statistical analyses of the final fall body rest positions.
4. Spurious bounces occasionally occur in rigid body analysis. Removing the paths with "Delete - Hide meshes of a single path" is temporary, but deleting the fall body with "Delete - Delete a single fall body" will now permanently remove all information associated with the fall body.

For more details on Points 2 to 4, visit my blog <http://www.basrock.com/page2.htm>. All 10 BasRock software packages still remain free of charge from <http://www.basrock.com>.



Rocscience - DXF requirements

Transferring DXF-information from CAD-packages to Rocscience software is not trivial for a number of reasons.

1. The AutoCAD DXF-format is not standardised due to many versions and interpretations.
2. Even slight exporter and importer differences cause errors or lost attributes.
3. Rocscience have specific requirements:
 - only load LINE and POLYLINE entities;
 - only recognise specific layer names;
 - correct assignment of entities to layers;
 - adjacent lines converted to continuous polylines;
 - some layers require closed polylines;
 - rotate the section to the XY-plane;
 - translate the section to the origin;
 - compliance with the AutoCAD specification.

GEM4D - DXF exporting steps

Step 1 Name the layers

Select the layer by left clicking on the layer in "Layers in the selected files" tab, then right click to show the drop-down boxes with available layers for each Rocscience package. The naming of layers can be done with the triangulations, and any section afterwards will retain the layer name. The layer names are also preserved when saving the triangulations file with "Save => Save Default AutoCAD DXF-file".

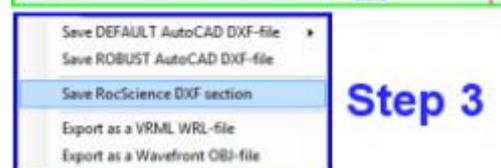
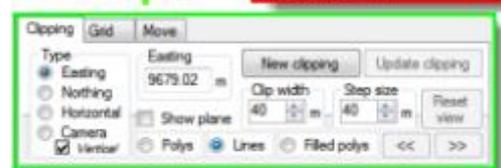
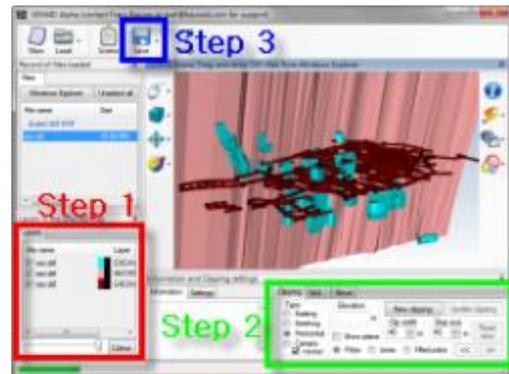
Step 2 Create a clipping

Create the required clipping of the scene using the "Clipping" tab at the bottom right. Make sure to select a vertical section such as "Easting", "Northing" or "Camera Vertical" and also to select the "Lines" clipping.

Step 3 Save Rocscience DXF section

The "Save Rocscience DXF section" is only active with a vertical lines clipping as explained in Step 2. Two files are automatically saved of the opposite views of the section, make sure to provide different names for the two files.

Let me know if you experience difficulty by providing the Rocscience software name, the DXF-file, and a short error report.



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