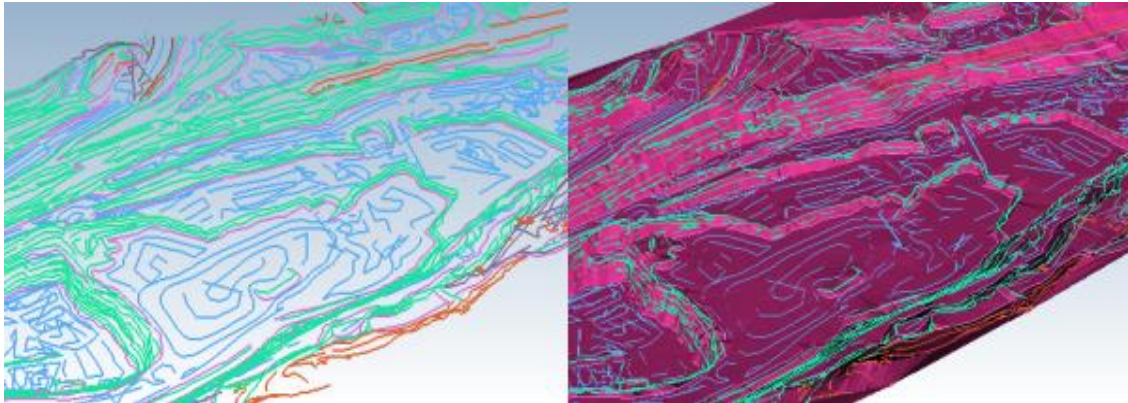


Errors using inadequate data are much less than those using no data at all.

Charles Babbage

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The BasRock site contains 8 freeware software packages for download from [here](#). The latest software in development are currently also available at no cost:

- [Trajec3D](#) - a three-dimensional rigid body dynamics rock fall analysis program.
- [GEM4D](#) - a 3D "drag-and-drop" DXF-visualiser that focus on the needs of Geotechnical Engineers.
- [PhotoCoreLog](#) - image preparation and automatic recording of core logging measurements from photos.
- **Profu** - started development on Probability of Undercutting (Cumulative Frequency Analysis) software.

## New stuff: Progress to manual

The main additions from the last newsletter were made to GEM4D and Trajec3D. A new version of PhotoCoreLog was also made available, but mostly consisted of optimisations and bug fixes. Profu (**P**robability **o**f **U**ndercutting) development started, but is currently focused on the development of base components.

### GEM4D

1. Manual, interactive manipulation of data, with a grid that has both sorting and filtering capabilities.
2. Reading support for Open Inventor IV-files which allows the importing of Voxler outputs into GEM4D, from where it could be saved to DXF and transferred to mine design packages.
3. Automatically combine visible objects before creating surfaces and volumes with Delaunay2D and Delaunay3D respectively, which substantially simplifies the creation of triangulations(see image above).
4. Poly dip angles for colouring polygons are now manually calculated and work correctly on all hardware.

### Trajec3D

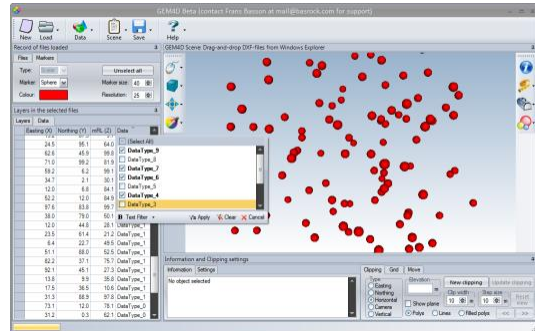
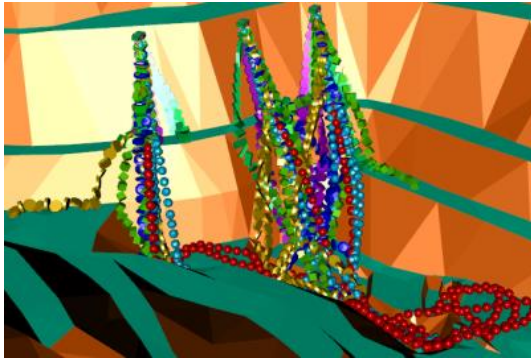
1. Multiple fall bodies can now be simultaneously released with a single mouse click to accelerate probabilistic analysis.

2. Sections now also cut the Material 2 pit shells.

## GEM4D: Shaping your data

GEM4D now loads data to a grid where it can be edited, sorted, and filtered across multiple columns similar to Excel. Only the filtered information is displayed in the scene, and can be exported as data files, or DXF-triangulations. Multiple marker shapes are available, and they can be coloured and sized.

The basis for data management is now established, but still limited. Currently, the imported data has to consist of four columns: Easting (X), Northing (Y), mRL (Z), and Data (for filtering). Data sets are currently limited to ~15000 points, but that will change soon. See my [blog](#) for more details.



## Trajec3D: Falling apart in multiples

The button below was added to the list of fall body shapes, and allows the selection of multiple simultaneous fall bodies.

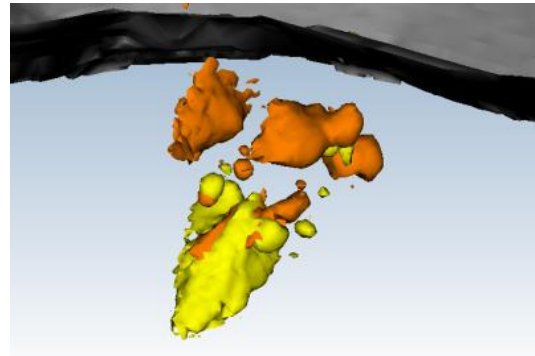


The update for multiple simultaneous fall bodies was reasonably large, as the fall body creation logic had to be changed. This change impacted on large segments of the code, so please let me know if Trajec3D misbehaves, although the new code was thoroughly tested.

## GEM4D: Unlocking Voxler

[Voxler](#) (\$500) is a powerful software package for visualising data relationships, and has the ability to create [iso-surfaces](#). These triangulations can unfortunately only be exported as [Open Inventor IV-files](#), which very few packages support. I previously wrote an IV-importer for personal use, and this was integrated into GEM4D.

Voxler IV-files can thus be loaded into GEM4D with other relevant information, and exported as DXF-files to mine design packages as displayed in the image to the right.



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