

Discover!

“*Discovering Topography Today!*”

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Discover supplements the mapping capabilities of the LI Contour, LANDIMPROVE, and LANDRAIN programs. *Discover* is designed to EXPLORE the features of triangulated surface models for the purpose of better analysis of drainage, slope and elevation. It contains several new mapping tools and 3-D viewing controls. The 3-D viewing controls provide advanced 3-D viewing functions which offer the user rapid and complete 3-D control, all in addition to the usual 2-D viewing. The Surface Analyzer Editor provides the capability for localized flow pattern, slope, watershed and contour analysis.

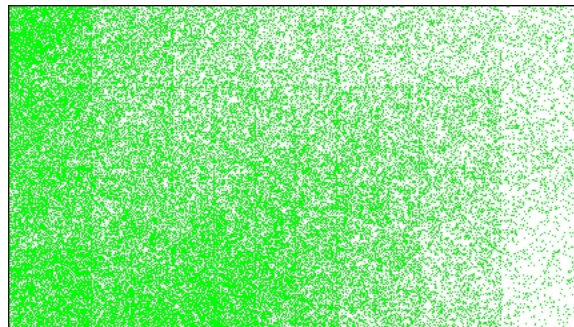
Four major activities can be enhanced by using *Discover*:

1. Performance of population or density studies.
2. Performance of slope and slope area analysis.
3. Performance of drainage and watershed analysis.
4. Exploration of 3-Dimensional images.

These are only four major activities we have identified for which the use of *Discover* can yield major benefits. There are, no doubt, several other uses for *Discover's* unique capabilities. A further discussion of each of *Discover's* new features follows.

Density Diagrams

The Density Diagram is an interesting type of map that provides visual or graphic information about elevation differences, (or any z coordinate of x,y,z data) or slope zones. *Discover's* Density Diagram, based on elevation, displays a greater concentration of dots (or fill pattern) in areas of higher elevation. The Density Diagram, based on slope zones, displays a progressively higher pattern fill as the zone slope increases. *Discover* also has the ability to reverse the normal pattern to show greater density in areas of lower z values or those with less slope.

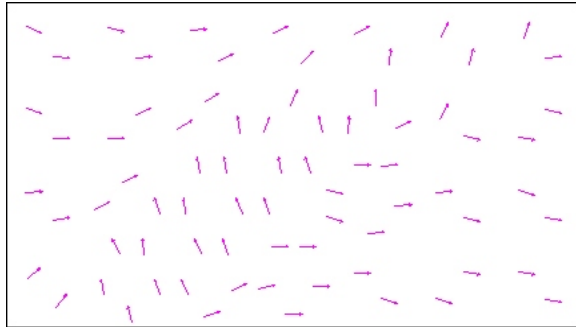


Elevation Density Diagram

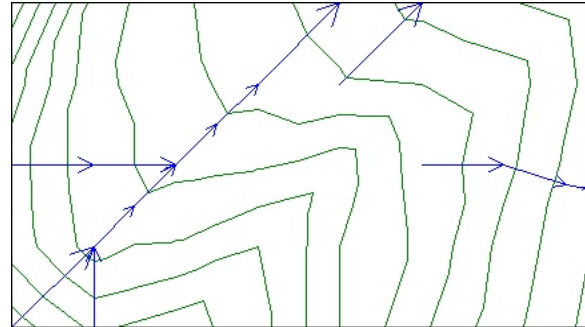
The z coordinate can represent other types of physical data, in which case this map can also be used for population densities, chemical application concentrations, etc.

Drainage and Watershed Analysis

Discover has two types of maps that aid the drainage specialist; the Down Slope Diagram and the Flow Path Diagram. The Down Slope Diagram displays the maximum down slope vector for each triangle of the surface model, thus showing the flow pattern over the surface. Alternatively, the vectors can be displayed at the data points or according to a grid pattern.



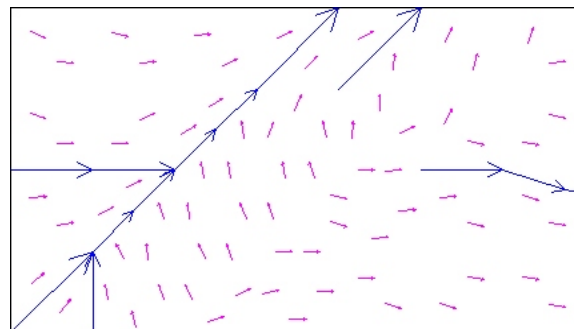
Down Slope Diagram



Flow Path, 1 ft Contours

The Flow Path Diagram displays water flow concentrations on the triangulated surface model. The ridges, or divides, can also be displayed to supplement the flow concentrations. Additionally, the user can elect to show the watersheds of each of the data points defining the flow concentration paths.

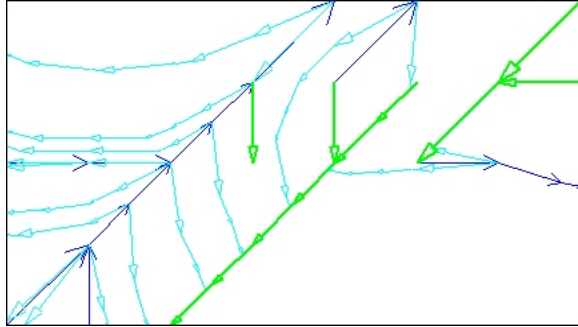
The Down Slope Diagram and the Flow Path Diagram (drains, ridges and watersheds) provide, individually and/or collectively, the essential information for determining drainage areas, flow patterns, and other drainage information.



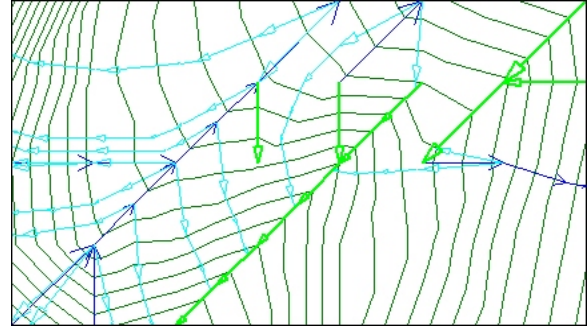
Flow Path, Down Slope

Furthermore, within *Discover's* Surface Analyzer, *localized or individualized* flow patterns can also be investigated, in 2-D or 3-D. Water drop(s) can be placed at any location on the surface and *Discover* will trace its flow path. This is a very powerful feature which allows you to explore, or *Discover*, individual flow patterns.

Also, from within the Analyzer, the reverse flow path(s) (up slope) can be implemented from any location. Combined with the ridges and the surface border, these enclose the watershed drainage area of a point, or points, which could be the end location(s) of a dam or levee, for example. Special contour lines can be traced from any elevation to show waterlines etc.



Flow Path, Ridges, Watershed



Flow Path, Ridges, Watershed and Contours

Finally, the Analyzer's enhanced Length command enables you to select the points required to designate the boundary of a watershed or water surface and determine its area. The same Length command allows you to determine slope and slope zone information for one or more triangles.

3-Dimensional Images

The normal 3-D capabilities of LI Contour, LANDIMPROVE, and LANDRAIN are greatly enhanced in *Discover*. A primary addition is a feature called the 3-D Animator. The 3-D Animator enables every parameter of the normal 3-D viewing to be easily and continuously altered automatically or manually, all according to user defined steps or increments. With these special functions, you can readily and easily determine the most effective 3-D viewing perspective.

3-Dimensional viewing is an often overlooked tool. Many questions can be answered by simply gaining a proper 3-D viewing perspective of a surface. People who have difficulty with 3-D images due to the complexity of determining the optimum viewing perspective, sizing on the screen, etc., will love *Discover's* 3-D Animator. The 3-D Animator simplifies changing the 3-D viewing parameters and immediately redraws the resulting view of the surface model.

Conclusion

Discover is a powerful and exciting collection of our *Discovery* tools. The unique capabilities of *Discover* allow it to be utilized by many disciplines, including civil and agricultural engineering, surveying, drainage engineering, soil science and many others.

We strongly encourage you to become aware of all the capabilities of *Discover*. A good understanding of what *Discover* can provide will enable you to evaluate its usefulness for your work. Using your imagination, you will *Discover* still more ways to utilize these new tools. Each new method of viewing or analyzing data can make your work easier and more productive.

Join today, those professionals who have already put *Discover* to work!

Discover's Capabilities Include:

Production of the Density Diagram, Down Slope Diagram, and Flow Path Diagram (including ridges and watersheds).

Ability to trace the flow path of a single drop of water at any location on the surface or multiple drops (rain) over the entire surface. Multiple water drops may start on a grid, data points, or at the center of each triangle.

Ability to determine and calculate watershed and waterline areas for any location on the surface.

Expanded 3-D viewing controls for rapid 3-D zoom functions and easy 3-D viewpoint placement.

Added text output including average elevation and slope zone analysis.

Discover Version 6.0

Price: \$50.00

Demonstration version available, free of charge.

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