Creating Color-coded Contours

NOTE: Color Filled Contours, introduced in TECHBASE version 2.70 largely replaces this procedure with automatic color coding contouring. **See"Technote: Color Contours"**

In the simplest application, the **TECHBASE** contouring programs will allow you to choose separate colors for the major and minor contour lines. Colors can also be assigned to specific groups of contours, and this **Technote** details two different techniques for customized color-coded contours.

Procedure:

You should first model your point data into a surface by running one of the TECHBASE modeling programs (e.g. *KRIGE*, *INVERSE*, *MINQ* or *TRIGRID*). Save the modeled data to a field in a CELL table.

Once your data has been gridded, you contour using *GRIDCONT*. To contour in multiple colors, you will run *GRIDCONT* in a series of steps, each time contouring on a subset of your elevations and by assigning a unique color to that subset.

For example, you might choose the color orange for the interval with a low value of 0 and a high value of 100. For the next interval of values between 101.01 and 200, you might change the contour color to red. *GRIDCONT* allows you to run multiple contour sets in the same session, so you will not need to exit the program after each interval set has been contoured.

Before you begin, determine the range of values in your modeled data field. The *SUMMARY* program can show you the range and mean of the field values. Take a moment to decide what intervals to draw and what color to assign to each interval set.

Start the *GRIDCONT* program, and in the *Contour*, *Field* menu, enter the name of the CELL table field that contains your modeled data. In the *Intervals* menu, choose the *Contour Interval*, and select the first *Low Contour Value* and *High Contour Value*. For the *Low Contour Value*, specify the starting contour value for this interval set.

In the *Line style* menu, select the *Color* for your major and minor contours. Finally *Contour*, and review your results by pressing F3. You should see the set of contours, all with the same color.

Exit from metafile review, and return to the *GRIDCONT* menus. In the *Intervals* option, choose the next *Contour Interval*, change the *Low Contour Value* and *High Contour Value* to reflect the next range that will contoured. In the *Line style* menu, select the new *Color* for your major and minor contours. Again *Contour*, and review your results by pressing F3. You should now see the previous contours, as well as the second set of contours in a different color.

Repeat until you have contoured the entire range of your data values.

Alternative procedure:

An alternative procedure involves saving the contour lines as polygons, assigning colors to sets of those polygons, and then plotting the polygons with the *POSTER* program.

Start the *GRIDCONT* program, and in the *Contour*, *Field* menu, enter the name of the CELL table field that contains your modeled data. In the *Intervals* option, choose your *Contour Interval*, then select a *Low Contour Value* and *High Contour Value* that will span the range of your data. For the *Low Contour Value*, specify a "nice" value such as 0. This will force *GRIDCONT* to create integer valued contours.

In the *Line style* menu, you do not need to specify a color for your major and/or minor contours, but you may do so if you wish. The *Write polygons* menu writes polygons directly to a disk file and not to the graphics screen.

Choose the *Write polygons* option. Enter an output *Filename*(e.g. *CONTOUR.POL*), respond NO to *Append?*, and *GRIDCONT* will write the contours as polygons to the file you specified. The elevation for each contour line will be stored as the polygon id.

Using the *DEFINE* program, create a 2D POLYGON table. In the new table, create a REAL, ACTUAL field for the polygon id (e.g. *poly_id*) and an INTEGER, ACTUAL field for color (e.g. *poly_color*). The *poly_id* field that is used is the polygon elevation written out by *GRIDCONT*.

Next run the *LOAD* program, load the polygon file into the new POLYGON table (for more information, see the **July, 1995 Technote** titled “Loading 2D and 3D polygon files into POLYGON tables”.) Make sure that no exceptions have occurred during the load, and if they have, check the output file for details and fix if necessary.

You next need to assign colors to your contour lines. Using an on-line editor, create a format file (e.g. *COLORS.FMT*) similar to the one below:

```
3       # green
poly_id  5600  >=  19  skip# if >= 5600, go to last line; if not, go to next line
4       # blue
poly_id  5500  >=  13  skip# if >= 5500, go to last line; if not, go to next line
5       # purple
poly_id  5400  >=  7  skip# if >= 5400, go to last line; if not, go to next line
6       # orange
poly_id 5300  >=  1  skip# if >= 5300, go to last line; if not, go to next line
7       # yellow
=  poly_color# store color in field poly_color
```

Run the *TBCALC* program to assign colors to the contour polygons. In the *Setup*, *Equation* menu, type: ***(f,filename.fmt)*****,** where **filename.fmt** (*COLORS.FMT* in the case) is the name of the previously created format file. Now *Calculate*. Make sure that no significant exceptions have occurred during calculation. If there are errors, check the output file for details and fix if necessary.

For the final step, use *POSTER* to plot your polygons. In the *Scaling* menu, enter the *Scale* and *Range*, and plot a *Grid* and *Border* if you wish. In the *Cell / Poly* option, go to the *Field menu*, and enter the **_nul** field from your CELL table as a *Value*. In the *Style* menu, enter the name of your color field from the POLYGON table. *Draw* and finally view the results.

> **Note:** this method allows significant flexibility for setting line colors and styles, but does not allow the lines to be labelled. Use the first method to label the lines.

See Also

Define(1tb), Load(1tb)
Poster(1gr), Gridcont(1gr)
Krige(1mo), Inverse(1mo), Ming(1mo), Polygrid(1mo), Trigrid(1mo), Trend(1mo)

