

## CONTOUR PLOT

### PURPOSE

Generates a contour plot.

### DESCRIPTION

A contour plot is a graphical technique for representing a 3-dimensional  $z = f(x,y)$  surface by plotting constant- $z$  "slices" (contours) on a 2-dimensional format. The contour plot is used heavily in geographic contouring, topography, and mapping.

### SYNTAX

CONTOUR PLOT <z> <x> <y> <z0> <SUBSET/EXCEPT/FOR qualification>

where <z> is the response (= dependent) variable;

<x> is one horizontal axis variable;

<y> is the other horizontal axis variable;

<z0> is the variable of desired contour values;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

### EXAMPLES

CONTOUR PLOT Z X Y Z0

CONTOUR PLOT Z X Y Z0 SUBSET DAY 6 TO 10

CONTOUR PLOT Z X Y Z0 SUBSET Z < 10

### NOTE

The contour command has the following limitations:

1. No contour level labels are automatically generated (you have to use the LEGEND command to provide your own).
2. There is no capability for color or pattern filling between contour levels.
3. The user must specify the desired contour levels (DATAPLOT will not automatically set any).
4. The CONTOUR PLOT command does not handle irregularly gridded data. Sometimes the data can be interpolated to form a grid. However, since there are many ways for the data to be irregular, there are various approaches to doing this type of interpolation. The best method to use depends on the particular data set. DATAPLOT currently supports one method for this type of interpolation. See the documentation for the 2D INTERPOLATION command for details.

### DEFAULT

None

### SYNONYMS

None

### RELATED COMMANDS

LINES	=	Sets the types for plot lines.
3D-PLOT	=	Generates a 3-d data or function plot.
PLOT	=	Generates a data or function plot.

### REFERENCE

The contouring code was adapted from code provided by David Behringer of NOAA/AOML. NOAA is the National Oceanic and Atmospheric Administration.

### APPLICATIONS

3-Dimensional Analysis

### IMPLEMENTATION DATE

88/9

## PROGRAM

```
LET X = SEQUENCE -4 1 4 FOR I = 1 1 81
LET Y = SEQUENCE -4 9 1 4
LET Z = X**2+Y**2-X*Y
LET Z0 = SEQUENCE 5 5 40
TITLE AUTOMATIC
CONTOUR PLOT Z X Y Z0
```

