

**NAME**

raster – Generate a .eps file containing a square raster plot of [x,y,z] data read from a file.

**SYNOPSIS**

`${HOME}/bin/exe/raster [inv] [3=xyz.data] [4=raster.eps]`

**DESCRIPTION**

If the program finds a command parameter "inv" it inverts the gray scale of the raster plot. If no input file is specified on the run command it prompts for a name and attaches the file. Then it reads the input file to determine the ranges of the data, figures out the scalings to use to fit the data into the raster plot, and zeros out the raster. Then it rewinds the input file (this is why the input must come from a file rather than a pipe) and rereads the file to accumulate cell values, using Knuth's recursion [1, p216] to update the mean data value in each cell. If no output file is specified on the run command it prompts for a name and attaches the file. Finally it writes postscript commands in the output file to produce the raster plot; these commands set the gray level of each cell, specify the coordinates and size of the cell, and call for the rectangle to be filled. In many applications it is necessary to compress the scale of the z data in order to produce a raster plot that has noticeable gradations of gray rather than only cells that are black and cells that are white.

**OPTIONS**

If "inv" is specified on the run command the gray scale is inverted. The input file, output file, or both can be specified on the run command as shown in the synopsis, in which case they are not prompted for.

**UNITS and FILES**

|   |  |
|---|--|
| 0 | error messages from this program, and from GETFIL which it invokes |
| 3 | input data; each line contains the x–y–z coordinates of a point    |
| 4 | output postscript  |
| 5 | filenames read by GETFIL   |

**DIAGNOSTICS**

If the data have zero range in any dimension, an error message is written and the program stops.

**AUTHOR**

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**REFERENCES**

[1] Knuth, Donald E., "The Art of Computer Programming: Volume 2, Seminumerical Algorithms," Addison-Wesley, 1981.