



AHELP for CIAO 3.4

dmcontour

Context: [tools](#)

Jump to: [Description](#) [Example](#) [Parameters](#) [Bugs](#) [See Also](#)

Synopsis

Make contour regions from a 2-D image

Syntax

```
dmcontour infile levels outfile [verbose] [clobber] [kernel] [mode]
```

Description

'dmcontour' allows the user to generate a region file from a 2-dimensional image that can be used to subsequently filter their data from contour levels in an input image. A virtual image file created from a table file with dm syntax can be used.

The region filters are created such that they include the contour level and everything above it — including possibly other contour levels. Only closed contours will generate regions.

For best results users should smooth their image prior to running dmcontour. The actual region will be a polygon approximation to the contour.

If the input image has a physical coordinate system (e.g. a binned Chandra event file), the output is in the physical coordinates of the image. This makes using the file as a filter for event lists/tables, as well as images which have physical coordinates preserved, easy. If an image that doesn't have physical coordinates (e.g. an optical image) is used to define the contour levels, the output is in logical coordinates. It will be difficult to display these contours on anything other than another image which is congruent to the input image.

NB: The region fits file produced by dmcontour can be loaded into ds9 directly. However, if you find a display full of excluded regions, you may wish to make a simpler regions version by choosing only one level, e.g. "dmcopy regions.fits[contour_level=10] region10.fits".

Example

```
dmcontour in_image.fits "1,5,10,20" out_region.fits
```

Will read in the image, "in_image.fits" and create an output region file that has contour intervals for each of the specified levels.

The output region file will have region filters that will include everything > 1, everything > 5, everything > 10, and everything > 20.

The syntax to use this with another tool (for example to extract a histogram/spectrum) would be:

```
infile="my_file[sky=region(out_region.fits[contour_level=1])]"
```

This will filter the "sky" vector column in "my_file" with the contour level = 1 region in the file "out_region.fits"

Parameters

name	type	ftype	def	min	max	units	reqd
<u>infile</u>	file	input					yes
<u>levels</u>	string					image	yes
<u>outfile</u>	file	output					yes
<u>verbose</u>	integer		0	0	5		no
<u>clobber</u>	boolean		no				
<u>kernel</u>	string		fits	fits			

Detailed Parameter Descriptions

Parameter=infile (file required filetype=input)

Input file name.

The name of the input file. It can be a table with a DM virtual file specification that makes it into an image, eg "[bin ...]"

Parameter=levels (string required units=image)

The contour levels to define regions. Only closed contours will generate regions.

This parameter can either be a comma separated list of values or it can be a range of values. Do not include any spaces.

value1,value2,...,valueN	comma separated list of contour levels
value1:value2:value3	Generate intervals from value1 to value2 in steps of value3
:value2:value3	Generate intervals from min(data) to value2 in steps of value3
value1::value3	Generate intervals from value1 to max(data) in steps of value3.
::value3	Intervals from min(data) to max(data) in steps of value3

Parameter=outfile (file required filetype=output)

Output file name

The name of the output FITS region file.

Parameter=verbose (integer not required default=0 min=0 max=5)

Controls amount of information to print (0–5).

Parameter=clobber (boolean default=no)

Clobber output if it exists? [y/n]

Parameter=kernel (string default=fits min=fits)

Data Model kernel of output file.

Bugs

See the [bugs page for this tool](#) on the CIAO website for an up-to-date listing of known bugs.

See Also

concept

[subspace](#)

dm

[dmimages](#), [dmimfiltering](#), [dmregions](#)

gui

[firstlook](#), [prism](#)

tools

[dither region](#), [dmappend](#), [dmfilth](#), [dmimg2jpg](#), [dmimgcalc](#), [dmimghist](#), [dmimgpick](#), [dmimgthresh](#), [dmmakereg](#), [dmregrid](#), [get sky limits](#), [get src region](#), [tg create mask](#)



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URL:
<http://cxc.harvard.edu/ciao3.4/dmcontour.html>
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