
Subject: Re: very simple but weird problem with CONTOUR
Posted by [David Fanning](#) on Sat, 01 Sep 2012 18:41:50 GMT
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mxsfong2012@gmail.com writes:

> I ran into a very simple but weird problem with CONTOUR. In the below example, everything was fine if I used "max_value=1". But when I changed it to "max_value=0.5", I had nothing but a black window. What is wrong? Am I missing anything here? I am using IDL Version 7.0.4, Mac OS X (darwin x86_64 m64)

>
> Thanks for any advices!
>
> example codes:
>
> X=findgen(6)/5.*2.-1.
> Y=X
> Z=randomu(1001L, 6,6)
>
> xrange=[-1,1]
> yrange=[-1,1]
> clevels=[1, 50, 100, 150, 200, 254]
> levels=[0, 0.2, 0.4, 0.6, 0.8, 1.0]
> loadct, 39
>
> plot, xrange, yrange, position=[0.1, 0.1, 0.9, 0.9], xstyle=5, ystyle=5, /nodata, /noerase
> contour, Z, X, Y, position=[0.1, 0.9, 0.1, 0.9], levels=levels, c_colors=clevels, /fill,
/overplot, \$
> xrange=xrange, yrange=yrange, xstyle=5, ystyle=5, xtitle="", ytitle="", max_value=0.5

If your maximum level is 0.5, and your first contour is going to be drawn at 1.0, then all you can expect to see is the background (black) of your contour plot. :-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: very simple but weird problem with CONTOUR

Posted by [mxfong2012](#) on Sat, 01 Sep 2012 20:25:03 GMT

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Thanks, David, for your response! I am sorry that I don't get it. What did you mean by "your first contour is going to be drawn at 1.0"? In my example, I have 6 levels ranging from 0 to 1. By setting max_value=0.5, my intention was to draw the contours only at the levels of 0, 0.2, and 0.4. Please forgive the newbie question, as most of my research is on numerical calculations, and didn't have many experiences on IDL plotting.

Subject: Re: very simple but weird problem with CONTOUR

Posted by [Phillip Bitzer](#) on Sat, 01 Sep 2012 21:32:39 GMT

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Keep in mind this snippet from IDL help:

Data points with values above this value are ignored (i.e., treated as missing data) when contouring. Cells containing one or more corners with values above MAX_VALUE will have no contours drawn through them.

Increasing 6 to a larger number (say, 60) will yield *something* using the original snippet (but I would check your position keyword in the call to contour :-))

Alternatively, try using /CELL_FILL instead of /FILL. You should get *something* then as well.

You might try clamping the array z (by using contour, z < 0.5, x, y, ...), but this may not be exactly what you want either.

While I'm here, let me recommend using Coyote's cgContour instead. No 'LoadCt' commands necessary in this case.

Subject: Re: very simple but weird problem with CONTOUR

Posted by [David Fanning](#) on Sat, 01 Sep 2012 22:20:57 GMT

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mxfong2012@gmail.com writes:

> Thanks, David, for your response! I am sorry that I don't get it. What did you mean by "your first contour

> is going to be drawn at 1.0"? In my example, I have 6 levels ranging from 0 to 1. By setting max_value=0.5, my intention was to draw the contours only at the levels of 0, 0.2, and 0.4. Please forgive the newbie question, as most of my research is on numerical calculations, and didn't have many experiences on IDL plotting.

My apologies. I was heading out the door and confused the c_levels

variable with the levels variable. Sorry.

Basically, I wouldn't be using the MAX_VALUE keyword with a contour plot, because "missing values" will be ignored by the contour algorithm. The result is always unpredictable, and rarely what you had in mind. If you want to contour only the first three contours, then just pass the first three contours to the LEVELS keyword.

And, if I were new to IDL, I'd be using Coyote Graphics routines, rather than the normal IDL direct graphics routines. Things will make a good deal more sense to you. :-)

http://www.idlcoyote.com/graphics_tips/coyote_graphics.php

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

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Subject: Re: very simple but weird problem with CONTOUR

Posted by [mxfong2012](#) on Sat, 01 Sep 2012 23:25:40 GMT

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Thanks a lot, David and Phillip!

I didn't recognize that there was a difference between /cell_fill and /fill options. I then made experiments using the combination of /cell_fill and NaN, and my problem was solved. I will also look into David's routine library.

Thanks, and have a wonderful holiday weekend!
