Subject: Re: Contour: difference between IDL 8.0 and IDL 8.4
Posted by burkina on Fri, 17 Feb 2017 17:14:44 GMT
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On Friday, 17 February 2017 17:45:59 UTC+1, burkina wrote:
> On Friday, 17 February 2017 16:30:47 UTC+1, Jim P wrote:
>> On Friday, February 17, 2017 at 2:55:48 AM UTC-7, burkina wrote:
>>> On Thursday, 16 February 2017 12:59:39 UTC+1, burkina wrote:
>>>> Ciao,
>>>>
>>>> I've upgraded from IDL 8.0 to IDL 8.4, and found a strange difference in the behaviour of CONTOUR.
>>>>
>>>> Here's a simple test:
>>>>
>>>> data = RANDOMU(seed, 9, 9)
>>>> smooth = CONTOUR(MIN_CURVE_SURF(data), TITLE='Smoothed', RGB_TABLE=1, /FILL, c_value=[0, 0.2, 0.3, 0.5])
>>>>
>>>> If you launch it in IDL 8.0, you get what you (more or less) expect: three filled contours, while the outer part is the white transparent background. I need to include the '0' level, otherwise the inner contour is left blank (BTW, I find it odd, and it is the same for IDL 8.4).
>>>>
>>>> On the other hand, if you launch it in IDL 8.4, there's a big difference: also the outer part is filled! Of course, I can give and explicit white color to it, but it's not the same, because it is not treated as a completely transparent background. So, when you put a contour above another, in IDL 8.0 everything is fine, because the outer part is completely transparent, while in IDL 8.4, you see also this outer part. Using 'max_value=0.5' is not an equivalent solution.
>>>>
>>>> What changed between 8.0 and 8.4? How can I revert to the 8.0 behaviour? I basically want to draw three filled contours, and leave the white transparent background in the rest of the image.
>>>>
>>>> Thanks,
>>>>
>>>> Stefano
>>>
>>> Hi,
>>>
>>> just to be more specific, this is a plot I had in IDL 8.0:
>>>
>>> https://img42.com/MOnas
>>>
>>> and this is what I get (exactly with the same code) in IDL 8.4:
>>>
>>> https://img42.com/KSkRc
>>>
>>> As you can see, in the latter the background of the reddish contour plot is still visible,

because it's indeed a filled contour level, while in IDL 8.0 it is simply background. How can I get rid of it?
>>>
>>> Something clearly changed after IDL 8.0, I hope there's some kind of switch/parameter that I don't understand that can be set to have the old behaviour. I even thought about reconstructing the contour levels polygons, and then fill them, but, apparently, there's no way to get the polygons in function graphics (!?).
>>>
>>> Thanks,
>>>
>>> Stefano
>>>
>>> P.S. I had a chance to test this code on IDL 8.2, and it behaves like 8.4.
>>
>> I don't have a specific solution, but here are a couple things to investigate.
>>
>> According to the docs for the CONTOUR function, http://www.harrisgeospatial.com/docs/CONTOUR.html, a number of keywords were added in IDL 8.2 that may address this. These include BACKGROUND_COLOR and BACKGROUND_TRANSPARENCY, and probably changed the default behaviors.
>>
>> Comparing the contour properties in 8.0 versus later versions may help, as well, e.g.,
>>
>> IDL> print, smooth
>>
>> For example, the "c_color" property represented a color table index in 8.0 [0, 47, 73, 125], while in later versions c_color contains RGB triplets, [[0, 0, 13], [0, 13, 141], ...].
>
> Dear Jim,
>
> thank you for your reply.
>
> As for the new keywords, BACKGROUND_COLOR and BACKGROUND_TRANSPARENCY, they have no effect in my case, because they simply change the background color and transparency (as expected), but my problem is that in 8.2+ that part is not background, but a filled contour!
>
> On the other hand, I had a look at the contour properties, as you suggested, and it seems to me that there are two main differences.
>
> 1. IDL 8.0: N_LEVELS = 4 -- IDL 8.4: N_LEVELS = 0
>
> If I include a n_levels=3 keyword in the command line, nothing changes for IDL 8.4 (as expected, the c_values are dominant), while in IDL 8.0 the c_values are ignored (which is not what I would expect). I don't know how this could affect my issue
>
> 2. As you correctly pointed out, c_color is different. So I changed the keyword in
>

> c_value=[level_0,level_1, level_2, level_3], c_color=['blue', 'green', 'red']
>
> which still reproduces the issue I'm trying to solve, but it seems to me easier to interpret. And here's a hint:
>
> IDL 8.0: print, smooth.c_color
>
> 0 0 255
> 0 127 0
> 255 0 0
>
> IDL8.4: print, smooth.c_color
>
> 0 0 255
> 0 127 0
> 255 0 0
> 0 0 255
> 0 127 0
>
> There are indeed two further colors defined! I think this is why the contours are filled also outside. No matter if I define less colors, alway n+1 colors are stored in c_color (repeated cyclically). So how can I delete these two colors and have only background after the first three contours?
>
> Further ideas?
>
> In any case, I found the fill contour implementation in IDL counter-intuitive, because it seems to me that it actually fills the outside of the contour, not the inside...
>
> Thanks,
>
> Stefano

As a further test, I re-define c_color after the plot:

print, c2.c_color

help, c2.c_color

c2.c_color=[[0,0, 255],[0 ,127 , 0],[255, 0 , 0]]

print, c2.c_color

help, c2.c_color

But, although now I only have three colors as in IDL8.0, nothing changes in the plot:

0 0 255

```
  0 127   0
255   0   0
  0   0 255
  0 127   0
<Expression>    BYTE      = Array[3, 5]
  0  0 255
  0 127   0
255   0   0
<Expression>    BYTE      = Array[3, 3]
```