Subject: Re: Explain Contour Plot to Me
Posted by Michael Galloy on Fri, 09 Sep 2011 20:49:24 GMT
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On 9/9/11 2:34 PM, Michael Galloy wrote:
> On 9/9/11 1:39 PM, David Fanning wrote:
>> Folks,
>>
>> OK, forget labeling the color bar. I can live without
>> that.
>>
>> I would consider the week a triumph if someone could just
>> explain to me, like I was a 10 year old child, how to
>> use the IDL 8.1 contour function to produce a contour
>> plot with four colors of my choosing. The colors will
>> be used like this:
>>
>> Data between 0.00 and 0.25 should be red.
>> Data between 0.25 and 0.50 should be blue.
>> Data between 0.50 and 0.75 should be green.
>> Data between 0.75 and 1.00 should be yellow.
>>
>> Here is the program I am trying to run, using some
>> ideas from Mark Piper's program from yesterday.
>> You see two different ways of trying to get the
>> Colorbar() colors right. One of which actually
>> works. But neither of the Contour() plots have
>> the right colors. The Coyote Graphics plot at the
>> end is what I am trying to achieve.
>>
>> PRO ContourTest
>>
>> ; Create a simple, random dataset for contouring:
>> data = RANDOMU(-3L, 9, 9)
>> LoadCT, 0
>> TVLCT, 255, 0, 0, 0
>> TVLCT, 0, 0, 255, 1
>> TVLCT, 0, 255, 0, 2
>> TVLCT, 255, 255, 0, 3
>> TVLCT, rr, gg, bb, /GET
>>
>> rgb = Transpose([[rr[0:3]],[gg[0:3]],[bb[0:3]]])
>> Help, rgb
>> rgb = Congrid(rgb, 3, 256)
>>
>> levels =[0.0, 0.25, 0.5, 0.75]
>>
>> ; Contour function try 1.

```
>>  w1 = Window(DIMENSIONS=[500, 400])
>>  ctr=contour(data, /CURRENT, C_VALUE=levels, $
>>  POSITION=[0.1, 0.1, 0.9, 0.8], /FILL, $
>>  RGB_TABLE=rgb, $
>>  AXIS_STYLE=2)
>>  names = String(levels,FORMAT='(F0.2)')
>>
>>  cb = Colorbar(TARGET=ctr, $
>>  POSITION=[0.1, 0.85, 0.9, 0.9])
>>
>>  rgb = Transpose([[rr[0:3]],[gg[0:3]],[bb[0:3]]])
>>  Help, rgb
>>
>>  ; Contour function try 2.
>>  w2 = Window(DIMENSIONS=[500, 400])
>>  ctr=contour(data, /CURRENT, C_VALUE=levels, $
>>  POSITION=[0.1, 0.1, 0.9, 0.8], /FILL, $
>>  RGB_TABLE=rgb, RGB_INDICES=Indgen(4), $
>>  AXIS_STYLE=2)
>>  names = String(levels,FORMAT='(F0.2)')
>>
>>  cb = Colorbar(TARGET=ctr, $
>>  POSITION=[0.1, 0.85, 0.9, 0.9])
>>
>>  ; Coyote graphics.
>>  cgWindow, WXSize=500, WYSize=400
>>  cgContour, data, LEVELS=levels, C_COLORS=Indgen(4), $
>>  POSITION=[0.1, 0.1, 0.9, 0.8], /FILL, /ADDCMD
>>  cgColorBar, NCOLORS=4, RANGE=[0,1], FORMAT='(F0.2)', $
>>  DIVISIONS=4, /FIT, /ADDCMD
>>  END
>>
>>  If you can get this to me before Nadal beats Roddick,
>>  you will get bonus credit, which can be used to ask
>>  function graphics questions at some time in the future. ;-)
>>
>>  Cheers,
>>
>>  David
>
>  I had to expand the 4 colors into a full 256 color table with 257
>  contour levels to make the color bar display correctly.
>
>  There are definite oddities in how things have to be given to CONTOUR
>  and COLORBAR. For example, I can get the correct contour colors with a 4
>  color color table, but the color bar then displays as the 4 colors
>  followed by the rest of the grey scale. Also, I have to give CONTOUR the
>  RGB_INDICES vector, even though from the docs it looks like I'm just
```

> giving it the default value.
>
> Anyway, this works for me, I hope this doesn't crash your computer.
>
>
> pro contourtest
> compile_opt strictarr
>
> ; create a simple, random dataset for contouring
> data = randomu(-3l, 9, 9)
>
> loadct, 0
> tvlct, 255, 0, 0, 0
> tvlct, 0, 0, 255, 1
> tvlct, 0, 255, 0, 2
> tvlct, 255, 255, 0, 3
> tvlct, rgb, /get
>
> rgb = congrid(rgb[0:3, *], 256, 3)
> levels = findgen(257) / 256.
>
> w = window(dimensions=[500, 400])
> ctr = contour(data, /current, c_value=levels, $
> position=[0.1, 0.1, 0.9, 0.8], /fill, $
> rgb_table=rgb, rgb_indices=indgen(256), $
> axis_style=2)
>
> cb = colorbar(target=ctr, position=[0.1, 0.85, 0.9, 0.9])
> end
>

Another oddity is what happens when I try to resize this graphic.

Mike
--
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