Subject: adding a colorbar legend to a contour plot?
Posted by haferman on Thu, 10 Oct 1996 07:00:00 GMT
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I've got datapoints (x,y,z) and I'm using IDL
to produce a contour plot of z at locations (x,y).

This is easy enough to do with IDL, but I don't see
in the manuals (we have the Version 3.6 manuals) how
I can add a colorbar legen to the contour plots.

I'm new to this newsgroup; is there a FAQ, or could
somone mail me a small snippet of code to perform this
task?

Thanks,

Jeff

Subject: Re: adding a colorbar legend to a contour plot?
Posted by davidf on Thu, 10 Oct 1996 07:00:00 GMT
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Jeff Haferman <haferman@audry.gsfc.nasa.gov> writes:

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> to produce a contour plot of z at locations (x,y).
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> I can add a colorbar legend to the contour plots.

Suppose you wanted to add a horizontal color bar over the top
of your contour plot. Here is one way to do it.

First, load some colors. Let's suppose you want 200 colors.

```
LOADCT, 5, NCOLORS=200
ncolors = 200
```

Next, leave some space at the top of your contour plot
for the color bar with the POSITION keyword. Like this:

```
CONTOUR, DIST(31, 41), NLEVELS=25, $
  C_COLORS=INDGEN(25)*8, POSITON=[0.15, 0.15, 0.95, 0.8]
```

Now, suppose you want the color bar to be the length of the

contour plot, and positioned above it. You might specify its
location like this:

```
loc = [0.15, 0.80, 0.95, 0.90]
```

I like to place my color bars in NORMAL coordinates, so that they
go into any sized window. (Most of my graphics windows are
resizeable these days.)

Now create a color bar. (For a vertical bar exchange the two
expressions on either side of the matrix multiplier.)

```
bar = BINDGEN(256) # REPLICATE(1B, 10)
```

Size the color bar for the current graphics window.

```
xsize = (loc(2) - loc(0)) * !D.X_VSIZE
ysize = (loc(3) - loc(1)) * !D.Y_VSIZE
bar = CONGRID(bar, CEIL(xsize), CEIL(ysize), /INTERP)
```

Scale the color bar to the number of colors you are using.

```
bar = BYTSCL(bar, TOP=ncolors-1)
```

Display the color bar in the window.

```
TV, bar, loc(0), loc(1), /NORMAL
```

Draw a box around the bar.

```
PLOTS, [loc(0), loc(0), loc(2), loc(2), loc(0)], $
   [loc(1), loc(3), loc(3), loc(1), loc(1)], /NORMAL
```

Now, you can add annotations to the bar as needed. Many people
use XYOUTS. I like to use the PLOT command to label the
color bar because this gives me tick marks, nice labels, etc.
It's up to you.

You can download a fancier version of this from my
anonymous ftp site. Use anonymous ftp to the machine
ftp.frii.com. Look in /pub/dfanning/outgoing/idl_examples
for the file colorbar.pro.

Note that this is only *one* way to produce color bars in IDL.
You will probably discover other code and ways if you poke
around at the various IDL sites.

Hope this gives you some ideas.

Cheers!

David

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David Fanning, Ph.D.
Phone: 970-221-0438
Fax: 970-221-4728
E-Mail: davidf@fortnet.org

Subject: Re: adding a colorbar legend to a contour plot?
Posted by on Mon, 14 Oct 1996 07:00:00 GMT
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Jeff Haferman wrote:
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> I'm new to this newsgroup; is there a FAQ, or could
> somone mail me a small snippet of code to perform this
> task?
>
> Thanks,
>
> Jeff

Hi Jeff,

I have the same problem of making a color-coded temperature map of a 2-dimmensional area. For this purpose I have writen a routine making a contour plot overlaying a color image ov the data (TVSCL). On the levt side a color bar is plotted. If you like you could have a copy of this.
It is pretty much independend and works even in a !p.multi environment. Besides you could have four x,y axes, postscript plots,..... But simply looking at the code will make you understand the way of producing color bars. Unfortunately it is not thoroughly documented, but you will understand.

Gunter
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Kargl Gï¿½nter Mailto: kargl@limar1.mpae.gwdg.de

Max-Planck Inst, f. Aeronomie Phone: ++49 5556 979 234
Max-Planck Str. 2 Fax:: ++49 5556 979 240
D- 37191 Katlenburg-Lindau
Germany