Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by Balt on Mon, 30 May 2011 23:54:17 GMT
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I think I may have found the solution: Clip the colour palette like
this:

cgLoadCT, 20, RGB_Table=pal, CLIP=[0, max(data)/max_temp*255]

- max_temp contains the maximum temperature in any of the data sets.
- data is a vector containing the temperatures for the current plot.

Does that make sense or is this a "it works by chance"?

Cheers

- Balt

On May 31, 9:30 am, Balt <bindermue...@gmail.com> wrote:
> Hi all,
>
> I have 3 x 3 cgContour plots on one page. I would like the colour
> scale in each of the plots to be the same to facilitate inter-plot
> comparison of the data (and to only require one color bar also). I
> know the min/max values for all datasets, so I was hoping there's a
> simple way to tell cgContour that for plot X, expand the colour scale
> to include the supplied min/max values. That however appears not
> possible. Am I missing something?
>
> Cheers
>
> - Balt

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by David Fanning on Tue, 31 May 2011 00:31:08 GMT
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Balt writes:

> I think I may have found the solution: Clip the colour palette like
> this:
>
> cgLoadCT, 20, RGB_Table=pal, CLIP=[0, max(data)/max_temp*255]
>
> - max_temp contains the maximum temperature in any of the data sets.

> - data is a vector containing the temperatures for the current plot.
>
> Does that make sense or is this a "it works by chance"?

It is a "work by chance" solution. I have color bars with
"out of bounds" colors added to them. Maybe I'll just add
them to cgColorbar. :-)

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: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by Balt on Tue, 31 May 2011 02:20:58 GMT
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Well, since by clipping to less than the max value I'm always going to
be below the max color palette entry, out of bounds should not be a
condition that ever occurs?

Chees

- Balt

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by manodeep@gmail.com on Tue, 31 May 2011 03:25:40 GMT
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On May 30, 9:20 pm, Balt <bindermue...@gmail.com> wrote:
> Well, since by clipping to less than the max value I'm always going to
> be below the max color palette entry, out of bounds should not be a
> condition that ever occurs?
>
> Chees
>

> - Balt

The way I have done it in the past is by getting the global (min,max)
of all the data sets. The global min corresponds to color 0 and the
global max to color 255. Now you have to scale the individual data
sets:

```
Ncolors = 255
data_color_range = (data_max-data_min)/(global_max-
global_min)*Ncolors
data_color_max   = (data_max/global_max*Ncolors) < Ncolors
data_color_min   = (data_color_max - data_color_range) > 0
data = byte(scale_vector(data,data_color_min,data_color_max))
```

...rinse, repeat for each data set.

The colorbar can then plotted as usual ranging from global_min to
global_max in data space and 0-Ncolors in color space.

Cheers,
Manodeep

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by David Fanning on Tue, 31 May 2011 04:03:53 GMT
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Balt writes:

> Well, since by clipping to less than the max value I'm always going to
> be below the max color palette entry, out of bounds should not be a
> condition that ever occurs?

Sorry, I guess I miss understood what you were trying
to do. Is this the kind of thing you are trying to do?

```
data = cgDemoData(2)
data1 = Scale_Vector(data, 400, 1500)
data2 = Scale_Vector(data, 0, 900)
data3 = Scale_Vector(data, 250, 1350)

levels = Indgen(16)*100
cgLoadCT, 33, NColors=16, Bottom=1
c_colors = Indgen(16) + 1
cgDisplay, 900, 300
!P.Multi=[0,3,1]
ymargin = !Y.OMargin
```

```
!Y.OMargin=[3,10]
cgContour, data1, Levels=levels, C_Color=c_colors, /Fill, $
   XStyle=1, YStyle=1
cgContour, data2, Levels=levels, C_Color=c_colors, /Fill, $
   XStyle=1, YStyle=1
cgContour, data3, Levels=levels, C_Color=c_colors, /Fill, $
   XStyle=1, YStyle=1
cgColorbar, NColors=16, Bottom=1, RANGE=[Min(data), Max(data)], $
   Divisions=16, position = [0.25, 0.85, 0.75, 0.89]
!P.Multi=0
!Y.OMargin = ymargin
END
```

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: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by Balt on Tue, 31 May 2011 21:16:28 GMT
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Hi David,

That's exactly what I was looking for, thanks! Brilliant idea also to
include a demo data set to explain concepts and ideas in your library.

Cheers

- Balt

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by siumtesfai on Thu, 10 Apr 2014 20:42:26 GMT
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On Tuesday, May 31, 2011 12:03:53 AM UTC-4, David Fanning wrote:
> Balt writes:
>
>> Well, since by clipping to less than the max value I'm always going to

>> be below the max color palette entry, out of bounds should not be a
>> condition that ever occurs?
>
> Sorry, I guess I miss understood what you were trying
> to do. Is this the kind of thing you are trying to do?
>
> data = cgDemoData(2)
> data1 = Scale_Vector(data, 400, 1500)
> data2 = Scale_Vector(data, 0, 900)
> data3 = Scale_Vector(data, 250, 1350)
>
> levels = Indgen(16)*100
> cgLoadCT, 33, NColors=16, Bottom=1
> c_colors = Indgen(16) + 1
> cgDisplay, 900, 300
> !P.Multi=[0,3,1]
> ymargin = !Y.OMargin
> !Y.OMargin=[3,10]
> cgContour, data1, Levels=levels, C_Color=c_colors, /Fill, $
> XStyle=1, YStyle=1
> cgContour, data2, Levels=levels, C_Color=c_colors, /Fill, $
> XStyle=1, YStyle=1
> cgContour, data3, Levels=levels, C_Color=c_colors, /Fill, $
> XStyle=1, YStyle=1
> cgColorbar, NColors=16, Bottom=1, RANGE=[Min(data), Max(data)], $
> Divisions=16, position = [0.25, 0.85, 0.75, 0.89]
> !P.Multi=0
> !Y.OMargin = ymargin
> END
>
> 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.")

Hell David,

The above code for contour plot will not work when you have data that ranges between negative and positive . It works the above code when all your data have positive value.

What would you be your advice or suggestion on that.

Best regards

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by Phillip Bitzer on Thu, 10 Apr 2014 20:51:10 GMT
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On Thursday, April 10, 2014 3:42:26 PM UTC-5, IDL Beginner wrote:
>
>
> Hell David,
>
>
>
> The above code for contour plot will not work when you have data that ranges between negative and positive . It works the above code when all your data have positive value.
>
>

Well, I'm not David, but you need to set the levels appropriately. This line:

levels = Indgen(16)*100

produces levels of 0, 100, ..., 1500. You should change that to something more appropriate for your data.

And, if you change the number of levels (here, 16) you'll need to change a few things in the rest of the code too.

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by David Fanning on Thu, 10 Apr 2014 21:02:43 GMT
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IDL Beginner writes:

> The above code for contour plot will not work when you have data that ranges between negative and positive . It works the above code when all your data have positive value.
>
> What would you be your advice or suggestion on that.

My best advice would be to not use other people's code unless you
understand it. Rather, I would spend 15-20 minutes with your data and
the cgContour documentation, reading about the various keywords and what
they are used for. Start with the very simplest contour plot:

```
cgContour, data
```

Then, read and add keywords to see what they do. Once you have an

understanding of how things work, it will be simple for you to
understand why these commands aren't "working" with negative data.

Cheers,

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

Subject: Re: How to plot multiple cgContour plots using the same colour levels (but containing differing data)
Posted by siumtesfai on Fri, 11 Apr 2014 18:44:53 GMT
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On Thursday, April 10, 2014 5:02:43 PM UTC-4, David Fanning wrote:
> IDL Beginner writes:
>
>
>
>> The above code for contour plot will not work when you have data that ranges between negative and positive . It works the above code when all your data have positive value.
>
>>
>
>> What would you be your advice or suggestion on that.
>
>
>
> My best advice would be to not use other people's code unless you
>
> understand it. Rather, I would spend 15-20 minutes with your data and
>
> the cgContour documentation, reading about the various keywords and what
>
> they are used for. Start with the very simplest contour plot:
>
>
>
> cgContour, data
>
>
>
> Then, read and add keywords to see what they do. Once you have an
>

> understanding of how things work, it will be simple for you to
>
> understand why these commands aren't "working" with negative data.
>
>
>
> Cheers,
>
>
>
> David
>
> --
>
> David Fanning, Ph.D.
>
> Fanning Software Consulting, Inc.
>
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
>
> Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Ok, I did my homework and it has to do with the combination of levles and step.

Thanks
