Subject: Re: Creating colour-coded plots of spectra
Posted by pgrigis on Fri, 31 Jul 2009 14:38:24 GMT
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On Jul 31, 4:54 am, Jimmy <jimmyb...@gmail.com> wrote:
> Hi there,
>
> I have a large amount of line plots of x-ray spectra (looking a little
> bit like this one -http://www.jaxa.jp/press/2005/08/img/20050817_suzaku_pic02- e.gif
>). I'd like to convert them into something a bit more user friendly- a
> colour coded spectral plot (looking rather like
this-http://swepam.lanl.gov/Figures/Figure08.JPG), with intensity shown by
> different colour values. This plot also makes it easy to see how
> intensities of a particular energy (y-axis) change with time (x-axis).
>
> Has anyone heard of a program that will do this for me? Its possibly
> I'm being dense, and don't know the correct term to google for. If
> there's nothing out there I have an inkling (a faint one!) on how to
> do it myself, but no doubt someone has done it better than I could?
>
> Thanks!
> Jimmy

Hi Jimmy,

if you are happy with linear scale for the x and y axis,
any of the numerous program to plot images with axes will
do, but if it matters to you to have log scales as in the
Ulysses plots, I suggest to use

http://hea-www.cfa.harvard.edu/~pgrigis/idl_stuff/pg_plotima ge.pro

Example of usage:

pg_plotimage,dist(512,512),findgen(512),findgen(512)/10+1,/y log,/
xstyle,/ystyle

Ciao,
Paolo

Subject: Re: Creating colour-coded plots of spectra
Posted by jimmybobs on Mon, 03 Aug 2009 07:35:52 GMT
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> Hi Jimmy,
>

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> any of the numerous program to plot images with axes will
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> Example of usage:
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> pg_plotimage,dist(512,512),findgen(512),findgen(512)/10+1,/y log,/
> xstyle,/ystyle
>
> Ciao,
> Paolo

Hi,

Thanks for the advice! I will need to put log scales in, so that sounds like it'll be very useful.

However (and this is my fault for not being clear) I'm not really at that stage yet- I'm still trying to convert a line spectral plot into a colour coded image, prior to plotting it. I basically have an array with a range of values in representing an 8 second piece of data, then a load of zeros, then another load of data, then zeros, etc... for an hour or so. When plotting this prints out as many, many spectra all in a line, and I'm trying to get idl to display them vertically and in color (as in the Ulysses plots).

It may be that I need to write something to do this (I'm thinking something that bins the data accoring to its value, then assigns it a color based on intensity...) but as I've seen these plots around and the seem fairly standard I was hoping someone might know of function or program to do it for me- with my IDL skills it's likely to take a fair bit of time/cursing!

Thanks,
Jimmy

Subject: Re: Creating colour-coded plots of spectra
Posted by David Fanning on Mon, 03 Aug 2009 12:24:23 GMT
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Jimmy writes:

> However (and this is my fault for not being clear) I'm not really at
> that stage yet- I'm still trying to convert a line spectral plot into

> a colour coded image, prior to plotting it. I basically have an array
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> color based on intensity...) but as I've seen these plots around and
> the seem fairly standard I was hoping someone might know of function
> or program to do it for me- with my IDL skills it's likely to take a
> fair bit of time/cursing!

It sounds to me like you need to use REFORM to
turn your 1D array into a 2D array, and then use
BYTSCL to convert your data into something you
can display with TV. I think the "program" you
are looking for is at most 3 or 4 lines long. :-)

Cheers,

David

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

Subject: Re: Creating colour-coded plots of spectra
Posted by pgrigis on Mon, 03 Aug 2009 14:30:48 GMT
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Jimmy wrote:
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>>
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>>
>> Example of usage:
>>

>> pg_plotimage,dist(512,512),findgen(512),findgen(512)/10+1,/y log,/
>> xstyle,/ystyle
>>
>> Ciao,
>> Paolo
>
> Hi,
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> color based on intensity...) but as I've seen these plots around and
> the seem fairly standard I was hoping someone might know of function
> or program to do it for me- with my IDL skills it's likely to take a
> fair bit of time/cursing!

Hi, the format you describe seems a bit strange,
but assuming that your data really look like this,
this code should get you started (but please try
to understand every step of the code before you
try to apply something like that to your data).

```
IDL> a=[1,2,3,0,0,0,4,4,2,0,0,0,1,1,1,0,0,0,1,2,5]
IDL> ind=where(a NE 0)
IDL> b=reform(a[ind],3,4)
IDL> print,b
      1       2       3
      4       4       2
      1       1       1
      1       2       5
```

Ciao,
Paolo

>
> Thanks,

> Jimmy