Subject: Re: Is there a way to plot with axis breaks in IDL?
Posted by mankoff on Fri, 02 Apr 2010 03:57:41 GMT

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On Apr 1, 8:28 pm, "fututre.keyboard" <future.keybo...@gmail.com>
wrote:
> I know this is rare when you need to do this kinda plot. But i'd
> appreciate a lot if someone can point me to the right direction.
> Thanks!
>
> BTW: here is an example of axis break plot from Originlab's
webpage.http://www.originlab.com/index.aspx?s=8&lm=114&a mp;pid=1020

Two plot commands with various combinations of POSITION and YSTYLE
keywords. Perhaps some use of the AXIS command. Then, PLOTS to draw
the four "/" symbols.

  -k.

Subject: Re: Is there a way to plot with axis breaks in IDL?
Posted by d.poreh on Fri, 02 Apr 2010 12:34:05 GMT

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On Apr 1, 7:57 pm, mankoff <mank...@gmail.com> wrote:
> On Apr 1, 8:28 pm, "fututre.keyboard" <future.keybo...@gmail.com>
> wrote:
>
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>> BTW: here is an example of axis break plot from Originlab's
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> Two plot commands with various combinations of POSITION and YSTYLE
> keywords. Perhaps some use of the AXIS command. Then, PLOTS to draw
> the four "/" symbols.
>
>   -k.

I am also very interested.
I think David could write an article about that!
Cheers
D.

Subject: Re: Is there a way to plot with axis breaks in IDL?
Posted by David Fanning on Fri, 02 Apr 2010 13:12:57 GMT

Dave Poreh writes:

> I am also very interested.
> I think David could write an article about that!

Or, somebody who needs the functionality can do it
and write it up, and I would publish it for them! :-)

I've made plots like this before. It is not particularly
difficult to do *a* plot. It is more difficult to write
this kind of functionality in a general way.

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: Is there a way to plot with axis breaks in IDL?
Posted by mankoff on Sat, 03 Apr 2010 18:21:03 GMT

On Apr 2, 6:12 am, David Fanning <n...@dfanning.com> wrote:
>
> I've made plots like this before. It is not particularly
> difficult to do *a* plot. It is more difficult to write
> this kind of functionality in a general way.
>

I think I just came up with a fairly generic implementation here:
 http://code.google.com/p/kdm-idl/source/browse/trunk/plotbre ak.pro

For example I was able to produce the following graphic (including
equivalent of OPLOT command) with the following two lines of code.
http://kenmankoff.com/tmp/plotbreak.png

 plotbreak, time, p, $

```
        position=pos, $
        xrange0=[0,1000], $
        xrange1=[1000,3000], $
        breakpct=66, $
        key0={ytitle:'Population (Phytoplankton)', $
            xtitle:'Time (days)', $
            xtickn:['0','20','40','60','80',' '],$
            title:'Predator v. Prey', $
            thick:2}, $
        key1={xtitle:'Time (days)', $
            yst:5,thick:2,$
            xtickn:['100','150','200','250','300'] }

 plotbreak, time, z, $
        position=pos, $
        breakpct=66, $
        xrange0=[0,1000], $
        xrange1=[1000,3000], $
        key0={NOERASE:1,color:253,thick:3,yst:5,xst:5}, $
        key1={color:253,thick:3,xst:5,$
            ytitle:'Population (Zooplankton)'}
```

A truly generic algorithm, which would be difficult, would be
recursive and let me specify BREAKPCT=[10,30,80,90,95] rather than
just as a single percentage (66% in the above example). It should also
be recursive in X and Y. That algorithm, when complete, could then
easily be used to draw, for example, a calendar with the weekends
(first and last column) thinner than the middle weekdays. I'll leave
that as an exercise to the reader.

  -k.

Subject: Re: Is there a way to plot with axis breaks in IDL?
Posted by mankoff on Wed, 07 Apr 2010 16:08:34 GMT
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On Apr 3, 11:21 am, mankoff <mank...@gmail.com> wrote:
> On Apr 2, 6:12 am, David Fanning <n...@dfanning.com> wrote:
>
>
>
>> I've made plots like this before. It is not particularly
>> difficult to do *a* plot. It is more difficult to write
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>   title:'Predator v. Prey', $
>   thick:2}, $
>   key1={xtitle:'Time (days)', $
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>
>   plotbreak, time, z, $
>   position=pos, $
>   breakpct=66, $
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> easily be used to draw, for example, a calendar with the weekends
> (first and last column) thinner than the middle weekdays. I'll leave
> that as an exercise to the reader.
>
>   -k.

Not sure if anyone has downloaded this but I found some bugs and fixed
them. I also changed key0 and key1 keywords to be _EXTRA_0 and
_EXTRA_1 to be more 'standard'.

Simpler examples of usage than originally provided, that I think
demonstrate generality, are:

x = dindgen(51)

IDL> plotbreak, x, exp(x)
IDL> plotbreak, x, exp(x), breakpct=10
IDL> plotbreak, x, exp(x), breakpct=90

IDL> plotbreak, x, exp(-x), breakpct=10
IDL> plotbreak, x, exp(-x), breakpct=90
IDL> plotbreak, x, exp(-x), breakpct=90, _EXTRA_1={xticks:1}

IDL> plotbreak, x, -exp(-x), breakpct=90, _EXTRA_1={xticks:1}
IDL> plotbreak, x, -exp(x), breakpct=10, _EXTRA_0={xticks:1}

And of course sine waves and random functions all appear to work well
with this algorithm.

I won't post further updates here. The program (and code library) have
RSS feeds if you are interested in more...

   -k.

Subject: Re: Is there a way to plot with axis breaks in IDL?
Posted by fututre.keyboard on Thu, 08 Apr 2010 07:33:48 GMT
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Thanks for the implementation. It takes only a little tweak to make
the plot useful. What I need to pay attention when tweaking are the
tick- related stuff. The other thing is that I have to suppress the x-
title/title and use xyouts to get a centered x-title/title. Although I
don't need to break up y-axis, I would imagine a hard time to xyouts y-
title in a usual orientation.

E

On Apr 3, 11:21 am, mankoff <mank...@gmail.com> wrote:
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>
>
>
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>               title:'Predator v. Prey', $
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>           key1={xtitle:'Time (days)', $
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>           key0={NOERASE:1,color:253,thick:3,yst:5,xst:5}, $
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```