
Subject: Scientific Notation on Log Plots

Posted by [boswell](#) on Tue, 06 Feb 1996 08:00:00 GMT

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I've got a bizarre formatting problem going on with IDL V4.0.1 on an Alpha VMS machine. When I make a plot with the /ylog keyword, my plot comes out with neatly labelled scientific notation on the y axis. The notation actually has a number, followed by an asterisk, followed by a 10, and finally with an actual superscript number for the exponent. But I need to take control of the format using, for example, the ytickformat keyword. Only problem: the format reverts to normal FORTRAN-style formatting, with a nn.nE+mm style. In other words, the default neat exponential format goes away.

Is there any way to control the formatting of the default scientific notation?

Jonathan Boswell
FDA/CDRH

Subject: Re: Scientific Notation on Log Plots

Posted by [zawodny](#) on Thu, 08 Feb 1996 08:00:00 GMT

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In article <1996Feb7.204257.12075@pinet.aip.org> boswell@pinet.aip.org (jonathan_boswell) writes:

> [zawodny@arbd0.larc.nasa.gov](#) (Joseph M Zawodny) writes:

> : Try using some variant of this function with YTICKFORMAT. I use this to

> : get "even" powers of ten, but you can hack it to give 2.3×10^3 or whatever.

>

> [snip]

>

> Thanks Joe. Your routine is very clever. However did you figure out what
> parameters to give it?

>

> For those of you who don't know about it, the YTICKFORMAT keyword can take
> not only a format specifier, such as "(F9.0)", but also a function name.

> Apparently IDL then calls the function repeatedly when labelling the axis.

You do not need to give it any parameters, IDL sees the string stored in the YTICKFORMAT keyword and calls that function with the proper parameters automatically for each and every tickmark it is going to label on that axis. When you write your function, you have to use the proper parameter list that is defined in the IDL manuals somewhere. Just copy mine - it works!

In order to make my LOGTICK function work for fractional powers of ten you will have to recreate the mantissa from the decimal portion of the log10 of the tick value.

```
logval = log10(tickvalue)
exponent = strtrim(fix(logval),2)
mantissa = strtrim(string(10.^(logval mod 1.),form='(f3.2)'),2)
newtick = mantissa+'*10!'+exponent+'!n'
```

I know the variables I use here are not the same ones as in the function I posted earlier, but you can figure it out for yourself.

Have fun,

--

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Subject: Re: Scientific Notation

Posted by [David Fanning](#) on Mon, 08 Sep 2008 23:25:15 GMT

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Jeff writes:

```
> have a trouble with a very large number... Comments are welcome!!!
>
> I have the following data subset:
>
> lat, long, data
> -24.2 -56.3 234.4
> -24.1 -56.2 456.5
> -24.2 -56.2 NaN
> -24.5 -56.3 232.4
> -24.7 -52.3 NaN
> ....
> I need to fill the NaN cells with 1.70171e38. I'm doing this:
>
> index = where(finite(temp, /nan), count)
> if count ne 0 then temp[index] = 1.70141e38
>
> It works fine. Then I'm exporting it to an ascii file (using
> output_to_ascii_doit) and I got:
>
> -24.2 -56.3 234.4
> -24.1 -56.2 456.5
> -24.2 -56.2 *****
> -24.5 -56.3 232.4
> -24.7 -52.3 *****
> ....
>
```

> How can I write this right number (1.70171e38) correctly?

Pass OUTPUT_TO_ASCII_DOIT the correct output format. That is to say, something other than the F6.1 you appear to be using. You will need something with enough width to accommodate this number.

Cheers,

David

P.S. I don't know OUTPUT_TO_ASCII_DOIT, but presumably you can pass it some kind of a format, perhaps via a FORMAT keyword.

--

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.")
