Subject: Re: Error bars in ln-space with PLOTERROR
Posted by Anthony[1] on Tue, 04 Sep 2007 10:01:35 GMT
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On Sep 4, 2:09 am, wille...@gmail.com wrote:
> This is less an IDL question than a mathy one, but I've been banging
> my head on it for a while without a solution - thank god for
> newsgroups. I want to use PLOTERROR to give me a scatter plot in lin-
> log space, with error bars in the y-direction. The quantities I want
> to plot are x vs. ln(y), so I can't use the /ylog keyword (since that
> gives me base10 logarithms, which I don't want). I can't figure out,
> however, how to do proper error bars.
>
> Here's an example:
>
> ;;;;;
> pro ll_plot
>
> x = indgen(10)
> y = indgen(10)
> y_err = 1d-2 * indgen(10)
>
> ploterror, x, ln(y), ln(y_err)
>
> end
> ;;;;;
>
> In this case, PLOTERROR is plotting the y-values as ln(y) +/-
> ln(y_err), while I want it to plot ln(y +/- y_err). Using the above
> code gives error bars that are orders of magnitude larger than the
> true error (the problem actually gets worse with smaller error bars).
> Does anyone know of how to make PLOTERROR behave when plotting natural
> logs with error bars (or some blindingly obvious thing that I'm doing
> wrong)?
>
> Many thanks.

Hi,

The error bars will be asymmetric, so you probably need to do
something like this:

```
x = indgen(10)+1
y = indgen(10)+1
y_err = 0.9 * (indgen(10)+1)
plot, x, alog(y), yrange=[-3,3]
oploterror, x, alog(y), alog(y)-alog(y-y_err), /lobar
oploterror, x, alog(y), alog(y+y_err)-alog(y), /hibar
```