Subject: routine for geometric mean regression
Posted by john.b.miller on Fri, 30 Nov 2001 21:40:02 GMT
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I've searched the various online libraries to no avail...
Does anyone know of or have a geometric mean regression routine?

I have the routine 'fitexy.pro' and am aware of the IDL version of
ODRpack. These do what I need (fit a line with errors in y AND x), but
I'd like to compare these with the geometric mean approach.

Thanks

Subject: Re: routine for geometric mean regression
Posted by Wayne Landsman on Mon, 03 Dec 2001 05:47:54 GMT
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John Miller wrote:

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>
> I have the routine 'fitexy.pro' and am aware of the IDL version of
> ODRpack. These do what I need (fit a line with errors in y AND x), but
> I'd like to compare these with the geometric mean approach.

If I understand what you mean by "geometric mean" correctly, then the
following 3 lines of IDL should do it. I assume you have data (X,Y)
with corresponding error bars SIGX and SIGY

```
resulty = linfit(x,y,sdev = sigy)          ;Fit Y vs. X  using Y error
bars
resultx = linfit(y,x,sdev = sigx)          ;Fit X vs. Y using X error
bars
slope = sqrt(resulty[1]/resultx[1])    ;Take geometric mean of two slope
determinations
```

But, as you note, the correct way to fit a straight line with errors in
both coordinates is given by the procedure
http://idlastro.gsfc.nasa.gov/ftp/pro/math/fitexy.pro

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