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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:

- > 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.

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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