
Subject: Confidence Bands

Posted by [tbov89](#) on Mon, 25 Jul 2011 15:00:38 GMT

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I'm wanting to plot the confidence bands (68% and 95%) to go along with a polynomial fit I have. I have tried the yband keyword in poly_fit but it does not seem to work how I expect it to. Here's my code

PRO POLYTEST

```
x1=findgen(500)/10
y1=100+0.6*x1+0.1*x1^2+20*randomn(seed, n_elements(x1))
y1_err=y1*0.1

fit=poly_fit(x1, y1, 2, MEASURE_ERRORS=y_err, YBAND=yband, YFIT=yfit)
yupper68=yfit+yband
ylower68=yfit-yband

plot, x1, y1, psym=symcat(16), symsize=0.4
oplot, x1, yfit, color=cgcolor('red3'), thick=5
oplot, x1, yupper68, color=cgcolor('blu4'), thick=3
oplot, x1, ylower68, color=cgcolor('blu4'), thick=3
```

END

According to the poly_fit documentation, this should get the 1 standard-deviation errors (yupper68 and ylower68) however they barely depart from the fit.

I found what I'm looking for here:

http://idlastro.gsfc.nasa.gov/idl_html_help/IMSL_MULTIREGRES.S.html#wp974539
but the IMSL features are not included in my license. Is there a way to make this work for poly_fit or something else?
