Subject: help regarding curvefit
Posted by Krishnakumar M.A on Tue, 09 Dec 2014 06:56:28 GMT
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Hello All,

I am trying to use the curvefit algorithm in IDL for fitting my data with a function as given in the code below. It is peacefully fitting and giving me the result, but only one problem, it is doing only one iteration and giving the same A=[] value as the fitted result. I'm not able to figure out what went wrong, and I have used cuurvefit before and it worked well. Do anybody have any idea to solve this issue?

Any help is appreciated....

Thanks,
Krishnakumar

code:

```
 RO gfunct, X, A, F, pder


F = sqrt((!dpi^5.0 * A[0]^3.0) / (8 * x^5.0)) * exp( - (!dpi^2 * A[0]) / (4*x)) * 180.0

IF N_PARAMS() GE 1 THEN $ ; calculate the partial derivatives.....

pder = [!dpi^5.0 * A[0] / (8*x^5.0) * exp(-!dpi^2.0 * A[0] / (4*x)) * 180.0* (1.5 - !dpi^2.0 * A[0]/ (4*x))]


END

openr,1,"data.dat"
xpy=fltarr(3,301)
readf,1,xpy
x=reform(xpy[1,*])
y=reform(xpy[2,*])

A=[100.0]

weights = 1.0/y^2.0

 yfit=curvefit(x+10,y,weights,A,SIGMA,chisq=chisq,iter=it,fun ction_name='gfunct')
print,A,sigma,chisq,it
close,1

plot,x,yfit
oplot,x,y
```

end

Subject: Re: help regarding curvefit
Posted by Heinz Stege on Tue, 09 Dec 2014 08:54:46 GMT
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Hello Krishnakumar,

please doublecheck the partial derivative.

Your function is
  F(A) = const * G(A)
with
  const = 180 * SQRT(!dpi^5/(8*x^5))
So your partial derivative should be
  dF(A)/dA = const * dG(A)/dA
The SQRT seems to be missing in your derivative.

HTH, Heinz

Subject: Re: help regarding curvefit
Posted by Craig Markwardt on Tue, 09 Dec 2014 20:19:51 GMT
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On Tuesday, December 9, 2014 3:54:52 AM UTC-5, Heinz Stege wrote:
> please doublecheck the partial derivative.

That's why MPFIT now has a partial derivative checker for debugging. It's so hard to get right!

Craig

Subject: Re: help regarding curvefit
Posted by Krishnakumar M.A on Wed, 10 Dec 2014 07:34:54 GMT
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On Tuesday, December 9, 2014 2:24:52 PM UTC+5:30, Heinz Stege wrote:
> Hello Krishnakumar,
>
> please doublecheck the partial derivative.
>
> Your function is
> F(A) = const * G(A)
> with
> const = 180 * SQRT(!dpi^5/(8*x^5))

> So your partial derivative should be
> dF(A)/dA = const * dG(A)/dA
> The SQRT seems to be missing in your derivative.
>
> HTH, Heinz

Thanks Heinz. That was a silly mistake I did not notice.
Now the code is working.

Krishnakumar
