Subject: MPFITFUN multiple variable
Posted by bjy512 on Thu, 24 Aug 2017 02:10:33 GMT

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I am working with the modis data with pm10 concentration and other lots of meteorological varibales and to get a regression equations, i am using mpfitfun function as i could make my own equations.

However, there are big problems in the results. (1) too big CHI-SQUARE (2) too small correlation coefficient and (3) I DON'T KNOW WHAT TO DOOOOOOO!!!!

so if you know how to fix this, please help me... i am literally fixing this over weeks......

belows are my code

<result>

```
Iter     12   CHI-SQUARE =       55324548.          DOF = 28008
    P(0) =              38.9913
    P(1) =             0.379677
    P(2) =            -0.738418
    P(3) =            -0.325880
    P(4) =          -0.00822390
    P(5) =              274.202
       38.991277      0.37967665     -0.73841789     -0.32587978   -0.0082238981
       274.20198
% Compiled module: CORRELATE.
      0.38668333
```

```
jacobian=dblarr(5,number)
 jacobian=[transpose(aot),transpose(ww),transpose(temp1),tran
spose(rr),transpose(hpbla)]





p=[38.44,0.25,-0.7,-0.33,0.,300]
weights=replicate(0.5,5,number)
err=replicate(0,number)

weights(0,*)=0.01
weights(1,*)=0.5
weights(2,*)=0.01
weights(3,*)=0.01
weights(4,*)=0.01

s={x1:0.0d,x2:0.0d,x3:0.0d,x4:0.0d,x5:0.0d}
s=replicate(s,number)
```

```
123        s.x1=aot
124        s.x2=ww
125        s.x3=temp1
126        s.x4=rr
127        s.x5=hpbla
128
129        myfunc='p[5] + p[0]*x[0,*] + p[1]*x[1,*]+p[2]*x[2,*]+p[3]*x[3,*]+p[4]*x[4,*]'
130         result=mpfitexpr(myfunc,jacobian,pm,p,err=err,weight=weights )
131        print,result
132
133        est_pm=dblarr(number)
134
135        for i=0, number-1 do begin
136               est_pm(i)=result(5)+result(0)*jacobian[0,i]+result(1)*jacobi
an[1,i]+result(2)*jacobian[2,i]+    result(3)*jacobian[3,i]+result(4)*jacobian[4,i]
137        endfor
```

Subject: Re: MPFITFUN multiple variable
Posted by Markus Schmassmann on Thu, 24 Aug 2017 09:45:46 GMT
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On 08/24/2017 04:10 AM, Juyeon Bae wrote:
> 130   result=mpfitexpr(myfunc,jacobian,pm,p,err=err,weight=weights)
might it be your syntax is wrong?

extract form mpfitexpr.pro:
> ;   parms = MPFITEXPR(MYFUNCT, XVAL, YVAL, ERR, start_parms, ...)
> ; KEYWORD PARAMETERS:
> ;   WEIGHTS - Array of weights to be used in calculating the
> ;   chi-squared value. If WEIGHTS is specified then the ERR
> ;   parameter is ignored. [...]

Subject: Re: MPFITFUN multiple variable
Posted by Craig Markwardt on Fri, 25 Aug 2017 14:23:24 GMT
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On Wednesday, August 23, 2017 at 10:10:36 PM UTC-4, Juyeon Bae wrote:
> However, there are big problems in the results. (1) too big CHI-SQUARE (2) too small correlation coefficient and (3) I DON'T KNOW WHAT TO DOOOOOOO!!!!

As Markus points hints at... "Too big chi-square" means either that the fit is of poor quality; OR the weights are not assigned correctly. Both of those questions are scientific questions you have to ask yourself; we can't really help you.

If the fit quality looks really good, then that means you are over-weighting your data. If the fit quality looks bad, then you need to develop a better model of the data.

Craig