Subject: Re: chisq value
Posted by on Mon, 16 Sep 2013 06:16:01 GMT
View Forum Message <> Reply to Message

On 2013-09-16 07:11, sid wrote:
> Hello everyone,
> I am trying to understand what is the chisq keyword means in the routine,
> poly_fit,
> svdfit
> linfit
>
> So I took a simple example, x=[1,2,3,4],y=[1,2,3,4]
> when I give
> p=poly_fit(x,y,1,chisq=c)
> c= 1.14631e-30
> p=svdfit(x,y,2,chisq=c)
> c= 2.86139e-13
> p=linfit(x,y,chisqr=c)
> c=0.00000
>
> for poly_fit and linfit the definition of chisq is the same
> "Set this keyword to a named variable that will contain the value of the unreduced chi-square goodness-of-fit statistic"
>
> But the chisq values are different in both these cases even though the inputvalues given are same.

You example data makes a "prefect" fit, so the chisq values are mostly
numerical precision errors. If you choose data that do not fit perfectly
to a straight line, the results make more sense:

```
IDL> x=[1,2,3,4]
IDL> y=[1.1,2.0,3.3,3.9]
IDL> p=poly_fit(x,y,1,chisq=c)
IDL> print,c
    0.0830000
IDL> p=svdfit(x,y,2,chisq=c)
IDL> print,c
    0.0830001
IDL> p=linfit(x,y,chisqr=c)
IDL> print,c
    0.0829998
```

> Could anyone please let me know what this chisq fit actually means.

Try this:

```
IDL> p=linfit(x,y,chisqr=c,yfit=yfit)
IDL> print,yfit
      1.12000      2.09000      3.06000      4.03000
IDL> print,total((y-yfit)^2)
    0.0829998
```
