
Subject: gaussfit question

Posted by [mirko\[1\]](#) on Fri, 29 Oct 1999 07:00:00 GMT

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Hi!

I have a 2D dataset representing a surface (intensity plot of x-ray scattering data)
and i like to fit these data with GAUSS2DFIT() function which does not work.
So I tried to fit one line of the dataset wit GAUSSFIT which does not work either.

This it is confusing to me because other math computer programs have no problem with this simple curve.
Is there something I have to consider?

Cheers

Mirko

```
IDL> y=[52.0,52.7,56.0,60.9,65.40,71.40, 75.20,  
80.80,86.1,89.8,88.3,94.8,94.9,100.5,100.1,103.9,105.3,106.2 ,107.3,  
108.2,106.1,105.7,107.8,102.2,  
101.3,97.2,92.1,87.4,87.0,82.5,77.4,69.9,67.7, 62.1, 58.9, 53.4,53.8]  
IDL> x=findgen(37)  
IDL> yfit=gaussfit(x,y,a)  
% Compiled module: GAUSSFIT.  
% Compiled module: POLY_FIT.  
% Compiled module: CURVEFIT.  
% Program caused arithmetic error: Floating underflow
```

Subject: Re: gaussfit question

Posted by [mirko\[1\]](#) on Mon, 01 Nov 1999 08:00:00 GMT

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David Fanning wrote:

> Why don't you continue on a bit and see if you
> get the result you expect.

Yes I did. I have the feeling it was more or less my fault.
From my data it is clear that the centre of the gaussian should be somewhere in the middle between 0 an 36 which is not the case here for a[1].
Doing an 'oplot, x,yfit' gives a nice fit but not the right solution to the problem (fitting a gaussian).

```
IDL> y=[52.0,52.7,56.0,60.9,65.40,71.40, 75.20,
80.80,86.1,89.8,88.3,94.8,94.9,100.5,100.1,103.9,105.3,106.2 ,107.3,
108.2,106.1,105.7,107.8,102.2,
101.3,97.2,92.1,87.4,87.0,82.5,77.4,69.9,67.7, 62.1, 58.9, 53.4,53.8]
IDL> x=findgen(37)
IDL> yfit=gaussfit(x,y,a)
% Program caused arithmetic error: Floating underflow
IDL> print,a
-92.8950   38.7370   9.73786   48.4928
 4.97301 -0.0657729
```

Using the estimates keyword and removing the linear and quadratic term results in the proper solution.

```
IDL> yfit=gaussfit(x,y,a, nterms=4,estimates=[90.0,20.0,10.0,10.0])
IDL> print,a
 96.7115   18.2423   13.4573   10.8630
```

without ESTIMATES the starting values for the fit seem not close enough

```
IDL> yfit=gaussfit(x,y,a, nterms=4)
% Program caused arithmetic error: Floating underflow
IDL> print,a
-35.3286   35.3296   3.44060   89.3350
```

Therefore I think I have to supply estimates to GAUSS2DFIT() in the case I like to fit an surface because this routine uses GAUSSFIT().

Thanks for the help

Mirko

Subject: Re: gaussfit question
 Posted by [karri](#) on Mon, 01 Nov 1999 08:00:00 GMT
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I got tired about these "Your program has an arithmetic underflow"-messages and reported them to RSI. They will remove them from version 5.3.

You can see this error message by writing

```
a=fft(shift(complexarr(128),0))
```

The message is complete nonsense. Try writing this procedure:

```
pro t
  a=complexarr(128)
  a=shift(a,0)
  a=fft(a)
end
```

It will produce the same underflow error.

Now run it by typing it one line at a time.
Voila! No error message.

--

Regards,

Karri Kaksonen
