Subject: Completing a Gaussian Fit
Posted by rpertaub@gmail.com on Wed, 12 Dec 2007 22:02:44 GMT
View Forum Message <> Reply to Message

Hello,
I have a problem I am not sure how to go about...more of a physics question maybe than IDL, but does not hurt to ask...

I have an image of a spot. The spot can be assumed to be fairly Gaussian, i.e bright in the middle and dissipating as radius increases. All is good. Except say now I have only part of the spot. (Say if radius is 30, I have only a spot of radius 5). How do I model a Gaussian based on only this information and nothing else? I have no idea the intensity at the std deviation point, or radius 15? Is it possible? How does IDL do Gaussian fit?
Thanks,RP

Subject: Re: Completing a Gaussian Fit
Posted by Bringfried Stecklum on Thu, 13 Dec 2007 09:21:33 GMT
View Forum Message <> Reply to Message

rpertaub@gmail.com wrote:
> Hello,
> I have a problem I am not sure how to go about...more of a physics
> question maybe than IDL, but does not hurt to ask...
>
> I have an image of a spot. The spot can be assumed to be fairly
> Gaussian, i.e bright in the middle and dissipating as radius
> increases. All is good. Except say now I have only part of the spot.
> (Say if radius is 30, I have only a spot of radius 5). How do I model
> a Gaussian based on only this information and nothing else? I have no
> idea the intensity at the std deviation point, or radius 15? Is it
> possible? How does IDL do Gaussian fit?
> Thanks,RP
This is fairly easy. You just need to apply a mask on your model image when computing the chisquare during the minimization, i.e. something like

```
mask=(object gt sigma*noise)
chisq=mask*(object-model)^2
```

Of course the model parameters will be more uncertain if the observed fraction of the Gaussian image becomes smaller. In other words, you need fairly high signal-to-noise to get meaningful results.

regards,

B. Stecklum