Subject: Re: Help in Astronomy /curvefitting
Posted by Jeremy Bailin on Sat, 11 May 2013 16:11:39 GMT
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On 5/11/13 7:10 AM, mrugankakashyap@gmail.com wrote:
> I'm a 4th year B.Tech student doing an astronomy project based on HERSCHEL data. I have hit a wall in IDL programming.
>
> I have 3 images of the same pixel grid size which have to be fitted in a user defined function. I have to use a chi squared approximation to get the values of the unknown parameters of the function. Then I have to plot contour maps of the unknown parameters separately. How do I do he above steps ?
>
> I have been trying different fuctions for the last 3 months to no avail. I would be glad if you could help.
>

Many of us are big fans of Craig Markwardt's curve fitting routines:

http://www.physics.wisc.edu/~craigm/idl/fitting.html

-Jeremy.

Subject: Re: Help in Astronomy /curvefitting
Posted by Craig Markwardt on Sun, 12 May 2013 07:43:35 GMT
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On Saturday, May 11, 2013 8:10:27 AM UTC-4, mrugank...@gmail.com wrote:
> I'm a 4th year B.Tech student doing an astronomy project based on HERSCHEL data. I have hit a wall in IDL programming.
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> I have been trying different fuctions for the last 3 months to no avail. I would be glad if you could help.

Here are several questions that I don't really need to see the answers to, but may help you understand what you need to answer for yourself.

You say you have been trying different functions. So you can choose whatever function you want? Does it need to be motivated by the physics of the problem?

Do you know what function you will use? Is it a gaussian? Lorentzian?

Do you know how you will judge goodness of fit? People will often say "chi-square," but you should be able to what the data variable is and what the error variable is. And, if you have three images, will they be fit jointly, or separately?

Do you understand what the variables are? The "independent" variables are probably the coordinates of each pixel, but which coordinates? RA/Dec? Do you know how to compute the coordinates? Also, the parameters. Do you understand each of the parameters that your function depends on?

Craig
