Subject: Re: mpfit2dpeak and fitting an ellipse Posted by Craig Markwardt on Sun, 01 Jun 2008 14:26:11 GMT

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Kevin.Pallati@gmail.com writes:

> Hello.

>

- > I have a guick guestion regarding fitting routines. I will describe
- > the problem first.
- > I have an image with X,Y coordinates and I try to find an overdensity
- > of points
- > by smoothing out the image. I used mpfit2dpeak to fit the N number of
- > points
- > and I was able to find the center xcen and ycen that way. But the
- > mpfit2dpeak
- > assumes either a Gaussian, Lorentzian or Moffat function. The shape
- > that I am
- > looking for in the image is an ellipse so I was looking if there is an
- > available
- > program that fits a 2 dimensional ellipse but I could not find one.
- > Does anyone have any suggestions on how to handle this?

I'm also a little confused. If you have N discrete points, then I'm not sure it's appropriate to fit a 2D function, but rather to compute the simple centroid. But you also say that you compute the mean density (intensity), and in that case MPFIT2DPEAK might be more appropriate.

I also don't know exactly what you mean be a "2 dimensional ellipse." Perhaps you mean a flat-topped ellipsoidal disk? It really wouldn't be that difficult for you to modify the code to add such a function.

It might look something like this,

```
; Lorentzian Function function mpfit2dpeak_disk, x, y, p, tilt=tilt, symmetric=sym, _extra=extra u = mpfit2dpeak_u(x, y, p, tilt=keyword_set(tilt), symmetric=keyword_set(sym)) return, p[0] + p[1]*(u LT 1) end
```

The "u LT 1" part selects only the pixels that are within the bounds of the ellipse.

Happy fitting, Craig