Subject: constraining parameters in multi-Gaussian 1D fitting
Posted by Jess on Mon, 05 Sep 2005 02:36:45 GMT
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Hi,

I am attempting to do multi-Gaussian fitting of 1D profiles using Craig Markwardt's mpfitfun, and the simple multi_gauss script kindly offered in earlier advice to Ben Tupper on non-interactive multi Gaussian fitting. I believe I should be able to make it work, as for each profile I know the number of gaussians involved, 3-parameter Gaussians are sufficient, and each of those parameters are fixed or heavily constrained. I am using a starting parameter array P of size P = fltarr(n_gauss), and parinfo to apply my constraints.

One constraint I am unable yet to do is: I = would like to be able to tie the peak flux of the Gaussians such that the peak flux of last Gaussian is always greater than that of the first Gaussian.
I tried using
```
parinfo((n_gauss-1)*3).tied = 'GT P[0]'
```

However the tied structure of parinfo doesn't seem to be meant to accept operators like GT,LT, etc. The alternative is to use the limits structure and saying that the lower limit of peakflux on last gaussian must be greater than upper limit of peak flux on first gaussian with:
```
parinfo((n_gauss-1)*3).limited(0) = 1
parinfo((n_gauss-1)*3).limits(0) = parinfo(0).limits(1)
```

However this requires assigning rather tight bounds to P[0] which I really dont know well. Is there a smarter way I can do this using 'tied' or another structure in parinfo?

Thanks,
Jess