
Subject: Help: Weighted quadratic fitting under IDL?
Posted by [bgibson](#) on Tue, 14 Mar 2000 08:00:00 GMT
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This may be a highly trivial question, but it's one I'm having problems dealing with under IDL. Perhaps I'm simply missing something obvious .. regardless, I'd be indebted if someone could help me out. Heck, I'll even throw in a nice acknowledgement in my next paper, if someone could point me to a simple solution, or provide the requisite few lines of code!

Anyways ... here it is ... the equation of interest is of the form:

$$V_{\max} - 5 \log(v) = a[m15 - 1.1] + b[m15 - 1.1]^2 + c$$

I have a data file with $V_{\max}$, v , and $m15$ for a set of objects (about 40 of them), with uncertainties on each value.

Having read those entries in, what I want to do is fit the above functional form, deriving a , b , and c , as well as their associated uncertainties (i.e. $a \pm \text{sig}(a)$, $b \pm \text{sig}(b)$, and $c \pm \text{sig}(c)$), and the final dispersion (and maybe reduced chi-squared) of the best fit quadratic.

Now .. I can see various routines which get me part-way there, but they either only provide a, b , and c without uncertainties, or only provide the uncertainties for a linear fit (e.g. `fitxy`). Basically what I'd like is a quadratic version of `fitxy` (i.e., sigmas on all returned coefficients+ dispersion of fit+reduced chi-square).

Obviously there is a nice way to do this without doing Monte Carlo simulations, but anyone who could save me a few hours of hacking code would become my instant hero(ine). Anyone?

Cheers,
Brad

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