
Subject: Re: mean and stdev w/ errors

Posted by [Craig Markwardt](#) on Tue, 25 May 2010 20:00:52 GMT

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On May 25, 1:07 pm, Gray <grayliketheco...@gmail.com> wrote:

> Hi all,

>

> I have a set of observations and errors associated with them. I'd

> like to calculate the mean and standard deviation of this sample,

> taking the errors into account. Does anyone have a routine that does

> this? Thanks!

I don't have a routine to do this. But for Gaussian statistics, it's pretty simple.

; VALUE - sample values

; SIGMA - sample uncertainties (gaussian statistics)

; AVG_VALUE - output weighted mean value

; AVG_SIGMA - output standard error of weighted mean

pro weighted_mean, value, sigma, avg_value, avg_sigma

 wts = 1/sigma^2

 totwts = total(wts)

 avg_value = total(wts*value) / totwts

 avg_sigma = 1/sqrt(totwts)

end
