Subject: Re: error estimates (a little off-topic maybe)
Posted by wmconnolley on Thu, 03 Oct 2002 20:16:53 GMT
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src <src@umzog.ulo.ucl.ac.uk> wrote:
> What I'd like to do is measure the amplitude (and estimate the error) of a
> peak in a Fourier transform. Now I could fit the peak with a Gaussian
> function, and if I use CurveFit, it will give me an error estimate too.
> The problem is, the error estimate is dependent on on the number of points
> fitted, as one might expect with such routines. Since I wish to perform a
> hypothesis test later, I could get the outcome I want just be increasing
> the number of frequency points in the Fourier transform, so that the error
> is small and my hypothesis is accepted.

Well, I've always measured the height of my peaks by how high the peaks are
(I'm being serious here). It's not clear you're justified in fitting curves
through them (this is in datasets with, say, a few hundred points: perhaps
if you had thousands and lots of detail in the peaks it would be
different).

The error est you'd get from curvefit would bear no resemblance to the
"true" statistical error estimates you could do, I think. You can do
naive error ests by, say, cutting the data into 2 halves and repeating the
analysis. Or you can do the full multi-taper spectral analysis - I used to
be vaguely familiar with that. I could point you to a book, if interested.

-W.

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