Subject: Doing chi square and/or lognormal fits to 1D data?
Posted by swingnut on Sun, 23 Jul 2006 21:55:46 GMT
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I'm trying to analyze several collections of power law fits. Previous work implies that the constants and coefficients of these power laws are lognormal and that the exponents are chi square with 2 degrees of freedom. We haven't been able to get ahold of the person who did that previous work for over a year, but the new data I have looks like it follows the same pattern. It is possible that he did his analysis in Matlab, but really we have no idea what he used.

I've searched the web and combed through lots of libaries, usenet posts, webpages, etc, but as far as I can tell, no one has built what I need: drop-in IDL routines that would let me do lognormal and/or chi square fits to data. mpfit (and PAN) looked promising, but according to the documentation they require 2D data to fit to (i.e., they require X-Y pairs), whereas I only have 1D data (the Y half of each pair). I'm not trying to find a dependence on some value; rather, I am trying to find an approximation of the distribution these values could have been drawn from.

Do you all have any suggestions? I could kludge the lognormal analyses in SASS and just overplot a histogram of the data with a lognormal using the parameters it spits out. I'm ok with that for my work, but I'm trying to set up a system that is mostly automated for future students (e.g., my advisor's new student, who made it clear she is not a coder of any sort).

The chi square fit, well, there's plenty of routines to do a goodness-of-fit test, but I didn't find any at all, not even any references that this project or that project has code to do it. Has anyone heard of an IDL routine for this?

Thanks for the help.