Subject: Re: t-testing in IDL
Posted by mmiller3 on Thu, 24 Jan 2008 14:52:40 GMT
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>>>> > "mariamalene" == mariamalene <mariamalene@hotmail.com> writes:

> I have two sample data sets with 20 years of 12 months
> simulations in a lon/lat grid of 128 x 64. ,
> i.e. 2x(20,12,128,64). I would like to find the difference
> between the two simulations and find out which differences
> that are significant at a 95% level. I have calculated the
> annual average of my 20-year simulation, and also the
> standard- deviation, but how do I perfom the t-test? I have
> looked at the tm_test but haven't figured out how to apply
> it on my 4-D approach..

I'm not entirely clear on what you want to do, but I'll take a shot.

If you have two data sets, A and B, and you want to test the hypothesis that the means are the same, you can use tm_test as in tm_test(A,B). It the data sets are paired, meaning A[i] is correlated with B[i], you can use tm_test(A,B,/paired) to test the hypothesis that the mean difference is zero. I suspect that this might be what you want. If you want to test the hypothesis that the mean difference is zero and that the difference does not have a spatial dependence, you could use a mixed effect model.

If you are going to do stats, I'd suggest you use a statistics package, such as R (www.r-project.org) instead of IDL. For example, if a t-test is to be useful, your data must be normally distributed. That is very easy to test with R, and relatively easy to test with IDL, but once you get beyond very basic statistics, you'll get beyond IDL's build-in capabilities. There are relatively easy to use mixed effects modeling tools in R.

Mike

P.S. For the record: this posting should not be taken as an opinion against IDL, which I love/hate and use constantly. It's just that R, which I love/hate and use constantly, has a different set of strenghts and weaknesses. Give me grep, awk, python, IDL and R and an emacs to run it all in and I can shoot myself in the other foot every time!

P.P.S. Getting even more off topic: this list needs to be updated: http://burks.bton.ac.uk/burks/language/shoot.htm