

Re: test difference Kurtosis and skewness

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- *From:* "Klaus" <ks@xxxxxxxxxxxxxxxxxxx>
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In my last post there was a small mistiness, it should be:

Depending on the location I have between 300–1000 measurement pairs (were pair revers to model/satellite meas. which are taken at the the same time).

Klaus

Klaus wrote:

Ok, my problem is follwing:

I have to assimilate satellite derived soil moisture measurements into a numerical weather prediction model. The problem is that the satellite derived measurements can differ significantly from the model. For example they can have a different absolute value or a different dynamic range. So if I simply feed the satellite meas. without correction into the model, they might mess up the whole model. A possible solution to this problem is to match the CDF of the satellite meas. to the CDF of the corresponding model parameter. So far the CDF matching was done by a 3rd order polynomial which corrected the mean, variance skewness and kurtosis. But I have (visually) observed that the skewness/kurtosis are in most cases quite similiar anyway so I only would need to correct the mean and variance. Of course it would be nice to underpin this observation with some statistical evidence, espacially considering that I have to run this CDF matching for thousands of points.

By the way both CDFs are from samples. Depending on the location I have between 300–1000 measurements (taken at the same time). The mean and the variance of the two CDFs can be quite different, the difference in Kurtosis and Skewness are small.

Klaus

David Jones wrote:

Klaus wrote:

Re: test difference Kurtosis and skewness

Yes I can calculate them. My actual problem is that I have to match the CDF of one distribution to the other. Before I do this cdf matching I want to know which moments I have to match, i.e. which moments are significantly different.

Klaus

Eric B wrote:

If I have two distributions,
how can I test if their
kurtosis and
skewness are different?

Why do you need to test ? Can't you just calculate them and compare

?

Eric B.

You need to be more specific. From what you have said there are 3 possibilities for your distributions:

- (i) both are theoretical (population) distributions;
- (ii) one relates to a sample you have from an unknown distribution and the other is a theoretical (population) distribution;
- (iii) both relate to a samples you have from two (possibly different) unknown distributions.

Indications of sample size and context (ie. why?) are also likely to be useful. Have you tried a graphical approach?

David Jones