Subject: Re: How to find the confidence interval of a variable data at 95% or 66%?
Posted by Craig Markwardt on Tue, 19 Aug 2014 03:35:29 GMT
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On Monday, August 18, 2014 3:07:30 PM UTC-5, Madhavan Bomidi wrote:
> Dear All,
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>
> I have a few clarifications regarding finding the confidence interval (CI) of a variable data. As referred to the Fisher Z Transformation method, I find some clarity missing:
http://www.idlcoyote.com/code_tips/ccconf.php
>
>
>
> 1. "The number 1.96 comes from a table of critical values for normalized distributions for 95% CI". Can any one say what will be this value for 66% CI? When I referred to Shen and Lu paper, I find that this factor 1.96 is defined by z(1-alpha/2) = 100*(1-alpha/2). It was mentioned that alpha = 0.05 for 95% CI, but I could not understand how 1.96 is obtained. Can anyone clarify?

It's in the Shen and Lu paper. z is the 100*(1-alpha/2) percentage point of the standard normal distribution. Examples,

```
IDL> print, gauss_cvf((1 - 0.95d)/2)
      1.9599637
IDL> print, gauss_cvf((1 - 0.99d)/2)
      2.5758293
```

> 2. Can I find the CI on any variable parameter, say, variance of a data array, instead of correlation coefficient? If it is acceptable, then following the above link, I define as below:

The confidence interval of a variable depends on the statistical distribution of the variable. In the correlation coefficient example, the variable has a Fisher-z distribution.

For another type of variable, such as variance of a data array, you must first describe the statistical properties of the data array. Most likely it will not be a Fisher-z distribution, and there may not be any known distribution.

CM