Subject: Re: CHISQR_CVF question. -RESOLVED
Posted by R.G. Stockwell on Thu, 20 Aug 2009 18:39:43 GMT

"R.G. Stockwell" <noemail87@please.com> wrote in message
news:h6jv18$4cf$1@aioe.org...
>
> "Craig Markwardt" <craig.markwardt@gmail.com> wrote in message
> news:cab41ca6-e1a4-4f73-851f-8b25ab0c1e58@k26g2000vbp.google groups.com...
> On Aug 19, 4:42 pm, "R.G. Stockwell" <noemai...@please.com> wrote:
>> "Paolo" <pgri...@gmail.com> wrote in message
 snip a lot

The upshot is, given a probablity level (or significance level) of 95%
or 0.95 (and degrees of freedom = 2 for 1D power spectra) then the
constant 95% signicicance level is given as follows:

cutoffs= CHISQR_CVF(1-siglevel, degreesoffreedom)
cutoffs = cutoffs*stddeviation^2/(2*length)

stddeviation is the standard deviation of the random time series.
Length is the number of points in the time series.

If you plot cutoff over your power spectrum that is the 95% level.
Therefore 5% of the points (remember to double it if you only have half the
spectrum)
will lie above that line, 95% below. You can input any siglevel you want.
Also, this is normalized to fit any power spectra, invariante to # of points
and
to the variance of the noise.

cheers,
bob

thanks for all the responses.

Subject: Re: CHISQR_CVF question. -RESOLVED
Posted by Craig Markwardt on Sat, 22 Aug 2009 17:57:17 GMT

On Aug 20, 2:39 pm, "R.G. Stockwell" <noemai...@please.com> wrote:
> "R.G. Stockwell" <noemai...@please.com> wrote in message
>
> news:h6jv18$4cf$1@aioe.org...
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>> "Craig Markwardt" <craig.markwa...@gmail.com> wrote in message
>> news:cab41ca6-e1a4-4f73-851f-8b25ab0c1e58@k26g2000vbp.google groups.com...
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A few comments...

> The upshot is, given a probablity level (or significance level) of 95%
> or 0.95 (and degrees of freedom = 2 for 1D power spectra) then the
> constant 95% signicicance level is given as follows:

You need to be explicit that you are using FFT(,-1) for your powers.

As I was trained,
  0.95 is the confidence level (what you call "siglevel")
  0.05 = 1-0.95 is the significance level

So if you measure a really high power, it's significant at a 10^{-8}
level or whatever, or equivalently, you can be 0.99999999 confident of
a detection.

> cutoffs= CHISQR_CVF(1-siglevel, degreesoffreedom)
> cutoffs = cutoffs*stddeviation^2/(2*length)
>
> stddeviation is the standard deviation of the random time series.
> Length is the number of points in the time series.
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> bob
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> thanks for all the responses.

Subject: Re: CHISQR_CVF question. -RESOLVED
Posted by R.G. Stockwell on Mon, 24 Aug 2009 23:18:36 GMT
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"Craig Markwardt" <craig.markwardt@gmail.com> wrote in message
 news:6e43ebfd-03e4-447a-80ed-e136a07d5732@o21g2000vbl.google groups.com...
On Aug 20, 2:39 pm, "R.G. Stockwell" <noemai...@please.com> wrote:
> "R.G. Stockwell" <noemai...@please.com> wrote in message
>
> news:h6jv18$4cf$1@aioe.org...
>
>> "Craig Markwardt" <craig.markwa...@gmail.com> wrote in message
>> news:cab41ca6-e1a4-4f73-851f-8b25ab0c1e58@k26g2000vbp.google groups.com...
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> or 0.95 (and degrees of freedom = 2 for 1D power spectra) then the
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> As I was trained,
>   0.95 is the confidence level (what you call "siglevel")
>   0.05 = 1-0.95 is the significance level
****

ok. I actually have heard it differently, with significance levels.
(i.e. the peak above 95% significance level) and confidence
intervals (plotting the +- range at which a peak has a 95% chance
of being in).

cheers,
bob