

## ***Interactive comment on “Changes in the strength and width of the Hadley circulation since 1871” by J. Liu et al.***

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It is an interesting contribution. The paper nicely illustrates the great potential of the 20CR (Twentieth century reanalysis) to study atmospheric processes over a much longer period than previously was feasible.

I do not comment the data analysis or the conclusions I think official reviewers will do this. However, I have some minor remarks regarding the structure of the paper and the figures. First of all, ‘Results’ chapter encloses discussion material as well. Hence I suggest renaming this section as ‘Results and Discussion’. In addition some primary data assessment (i.e. spectral analysis) is mentioned only in the ‘Conclusions’. I recommend presenting the spectral analysis also in the ‘Results and Discussion’ section. Ideally with detailed methodology, because to provide a statistically solid proof to verify

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the mentioned 'secular peak' from a 137yr long time series sounds to be particularly challenging. A figure to visualize these results would be also warmly welcomed.

Vertical axes of the plots in Fig 2 and Fig 4 lack title and dimension. I ask Authors to consider giving title and units to these axes. It might alleviate understanding of the meaning of these figures. (Although much easier to find out the unit and title of the horizontal axes, whose also lack this basic information, to add the title to these axes would also ease the readability of the figures.)

Finally, I realized a recurrent spelling mistake 'equatorward' should read 'equatorward' (e.g. p702, line 2 & 4)

Kind regards, Zoltan Kern

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Interactive comment on Clim. Past Discuss., 8, 695, 2012.

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