

Replies to Reviewers' comments on

"A method to derive Fourier-wavelet spectra for the characterization of global-scale waves in the mesosphere and lower thermosphere, and its Matlab and Python software (fourierwavelet v1.1)"

I am, again, thankful to the Reviewer, Dr. Jun-Ichi Yano, for the time and valuable comments. Please find below my response to individual comments.

RC1 (Dr. Jun-Ichi Yano)

[instead of] adding the materials on top of the existing materials, [better to try] to tidy up the text to make the main points straight. [...] the text, especially the introduction has become extremely verbose, full of very secondary, removable remarks.

[Response] I understand that the reviewer would write the introduction differently. However, I would like to keep the contents of the current introduction. For me, the current introduction contains all the information that is necessary to understand the subsequent sections. I could make it longer but it is difficult to make it shorter without losing some important information.

[it is essential] to state explicitly that the continuous wavelet has a fundamental limitation of providing more information than what are actually available under the Heisenberg's uncertainty principle.

[lack of it in the text is] extremely unfortunate, because this manuscript will just continue to promote existing very limited use of the wavelet methods in our community.

[Response] As suggested, it is explicitly stated in the revised manuscript that the continuous wavelet has an inherent problem. The following sentence has been added:

(lines 358-360) "One criticism against the continuous wavelet transform is that it provides more information than what is actually available under the Heisenberg's uncertainty principle (e.g., Yano and Jakubiak, 2016)."

[...] Torrence and Compo (1998) did not propose any original methodology for the wavelet analyses. [last revisions] introduce a new term "Torrence and Compo" technique. However, I was left puzzled what this technique is about. I believe that Mallat's textbook describes the continuous wavelet method more systematically than Torrence and Compo (1998). [...]

[Response] By "the Torrence and Compo technique is widely used", I meant their wavelet software. I admit that the text was not clear. So, in the revised manuscript, it has been made clear that I am talking about their wavelet software. The following change has been made:

From

“Their wavelet software including those in Matlab and Python are available from the website [<http://atoc.colorado.edu/research/wavelets/>]. The Torrence and Compo technique is widely used in atmospheric science due to its ease of use.”

To

(lines 147-149) “Their wavelet software including those in Matlab and Python are available from the website [<http://atoc.colorado.edu/research/wavelets/>], which are widely used in atmospheric science due to its ease of use.”