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Ocean Science Discussions
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Interactive comment on "Revisiting Tropical Instability Wave Variability in the Atlantic Ocean using SODA reanalysis" *by* Hatsue Takanaca de Decco et al.

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Dear Editorial Board,

We would like to thank you for considering our manuscript entitled: "REVISITING TROPICAL INSTABILITY WAVE VARIABILITY IN THE ATLANTIC OCEAN USING SODA REANALYSIS", for publication in Ocean Science. Please, find in the following our detailed response to the comments and suggestions of Reviewers, point by point.

The most important change in this version was the modification of figures 2, 9 and 11. This change was a recommendation made by Reviewer #2, which we agreed that

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Discussion paper

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would improve the comprehension of the discussion in the text. Minor changes were made in the Introduction.

We are very glad with the revision process of Ocean Science and we thank you for this opportunity!

Please, find attached the letter for the Reviewers.

All of our best,

The authors. **********
Response to Reviewer #2:

Comment #1: "This is a scholarly and interesting paper about the seasonal energetic of Tropical Instability Waves in the SODA product. The authors start with a thorough background review of the subject and continue with a novel directionally-filtered analysis of a well-know data assimilation product, which has not been analyzed in this context for the Atlantic before, compared with satellite SST. They then investigate the mechanisms of generation by evaluating the barotropic, Kelvin-Helmholtz and baroclinic instability processes that control the dynamic fields in SODA. The results reveal the dominance of barotropic instability with baroclinic conversion driving energy back in the tropical mean flow. The paper is well-written and the results are convincing." Reply #1: Thank you for your interest and comments! Your contribution had a great value to us.

Comment #2: "1) Feedbacks of the atmosphere on the TIW's can be important, as determined with a coupled model by Seo et al., 2007: Feedback of Tropical Instability Wave-induced atmospheric variability onto the ocean. J. Climate, 20, 5842-5855." Reply #2: Yes, ok, this important reference was included in the literature review in the Introduction of the reviewed manuscript version.

Comment #3: "Figs. 2, 9 e 11: Please use log scales for the energy of TIWs to show the spectral content more clearly. Also, plot them with low frequency on the left, which

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is conventional." Reply #3: Thank you for noticing this. We have altered these 3 figures and it is really clearer. Please, see the modified figures in the reviewed manuscript version.

Comment #9: ""Evidence" is singular, not plural. "Evidences" is not a word." Reply #9: Ok, thank you for your attention. This error was corrected.

Please also note the supplement to this comment:
http://www.ocean-sci-discuss.net/os-2016-84/os-2016-84-SC2-supplement.pdf

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Interactive comment on Ocean Sci. Discuss., doi:10.5194/os-2016-84, 2016.

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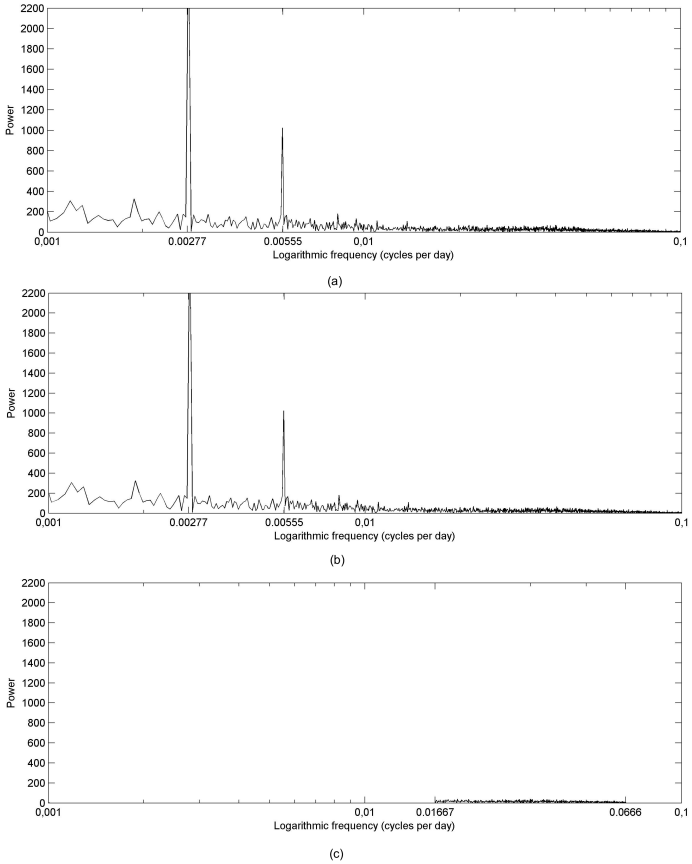

Fig. 1. figure 2

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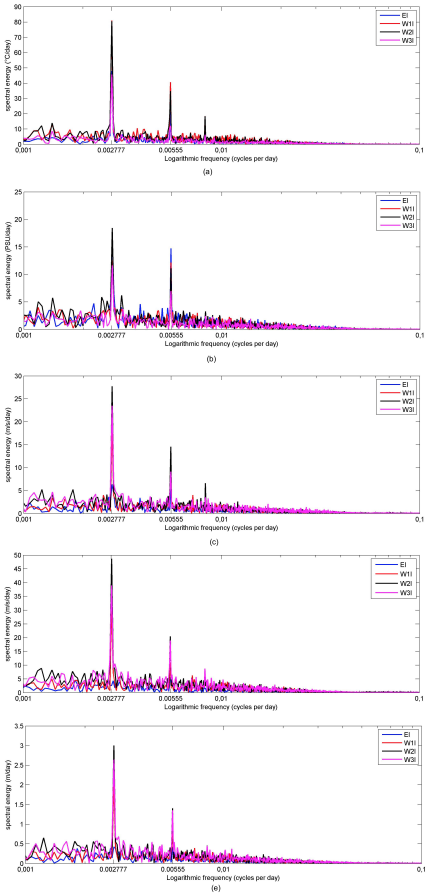

Fig. 2. figure 9

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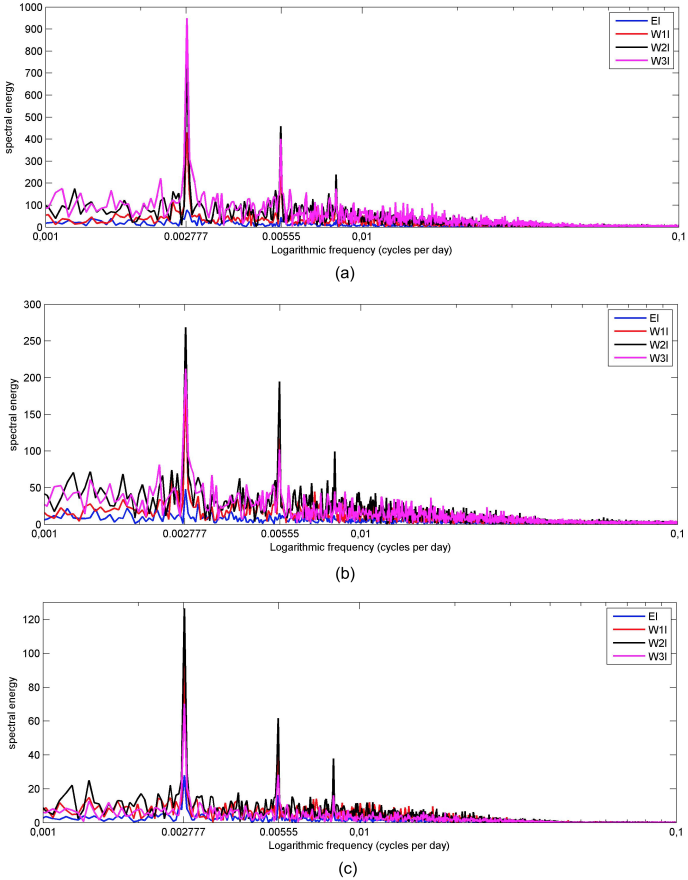

Fig. 3. figure 11

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