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Ocean Science
Discussions

Interactive comment on "Spectral signatures of the tropical Pacific dynamics from model and altimetry: A focus on the meso/submesoscale range" *by* Michel Tchilibou et al.

Anonymous Referee #2

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Comments on Spectral signatures of the tropical Pacific dynamics from model and altimetry: A focus on the meso/submesoscale range by Michel Tchilibou Michel Tchilibou, Lionel Gourdeau, Rosemary Morrow, Guillaume Serazin, Bughsin Djath, Florent Lyard

The scientific goal of the paper is to explain the reason why the observed SSH wave number spectra exhibit flatter slopes in the tropics. The dynamical waves the authors address for generating these flat slopes are internal tides and waves. They use high resolution numerical models with and without internal tides and waves to infer that the latter waves are responsible for the flattening below the 200km length scales. They

compare the slopes obtained with observed satellite SSH data. Conclusions are relevant, spectral slopes tend to match the satellite observed slopes (Figure 10).

With some modifications, I recomment the paper to be published in Ocean Science journal.

Major comment: The paper deals with model descriptions and a large part deals with technical issues to access correct filtered SSH wave number spectra for model and satellite datas. Most of the paper deals with these technical issues and makes the paper hard to read. Simplyifying those technical issues would enlighten the paper greatly. The discussion around all those different types of filtering shoud be transfered to an appendix.

Suggestion: The dynamical discussions could be improved if scaled equations are added to the text to exhibit the importance of the different types of waves present and the linear or nonlinear behaviour of the processes acting at different length and time scale.

Minor comment: Figure 1 anotations are hard to read.

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