Comment on essd-2021-352
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Community comment on "Towards improved analysis of short mesoscale sea level signals from satellite altimetry" by Yves Quilfen et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-352-CC3, 2022

First I congratulate the authors for this work. After using of EMD technique to denoise Significant wave height from altimeters, this work describes the implementation of such technique to improve sea level shorter mesoscale up to 30 km of wavelength. The methodology is clearly detailed and the application to 3 altimeters missions is successfully achieved. The spectral analysis clearly indicated the improvement of the power spectrum of sea level for small scale. the implementation of this technique seems easy to set with effort of explanation from the authors, however it is difficult to follow the process of threshhold, iterations and ensemble. When the authors say "ensemble" it means portion of the data ? I need to clarify this point because I am a bot confused with ensemble using external random perturbations. This work open a very interesting perspective of better estimate the geostrohic currents for smaller scale. It will be good if the author say few words, which can suggest how far this technique improve the estimate of geostrophic currents.

Overall the paper is well written and open very promising applications for wave-currents interactions.