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Discussions

Interactive comment on "Synergy between satellite observations and model simulations during extreme events" *by* Anne Wiese et al.

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General Comments: In this work, first the authors present the validation, again in situ observations, of the results of the WAM wave model forced with different wind models with different spatial and temporal resolution for the North and Baltic Seas. Concluding that in this area the results of the WAM model are more precise when is forced with winds of lower temporal resolution. For later, using the previous model results, in order to demonstrate that the wind and wave satellite observations of the Sentinel 3 are more accurate near the coast than any other of the previous available satellite observations.

However, there are some points that in my opinion the authors should consider:

- The biggest effort of the work is in the validation of the results of the WAM wave

model, which is not reflected in the title or in the abstract of the work.

- On the other hand, in this validation different wind models are used, which are not sufficiently described and their differences and similarities are not listed (Example, if they incorporate or not assimilation of data, etc.), which is very important at the time of understand the differences in the subsequent wave results.

- Finally, mention the need to incorporate in the text the definition of the error statistics that have been used throughout the work (eg, SI)

I recommend minor revision before acceptance for publication.

Detailed comments:

1. The title could be "Synergy between WAM model simulation and Sentinel 3 observations during a extreme events"

2. With the same idea above, the abstract should be rewritten.

3. P5 Figure 1: Explain in text of the figure the three colors boxes

4. P5 line 11: There is an error in the directional resolution described

5. P6 table 2: I recommend use the same units for the spatial resolution of the different meteo models. The same along the text.

6. P8 lines 9-18: Change "ensemble" for "different model experiments" or "numerical tests"

7. P11 lines 9-13: The concept of "period of the peak" can be confusing in this context of results of wave models and it is more frequent to call it "storm duration"

8. P16, lines 9-10: Explain why do you think that using wave-atmosphere coupling models could you improved your results

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