

Interactive comment on “Extreme Sea Levels in the Baltic Sea under Climate Change Scenarios. Part 1: Model Validation and Sensitivity” by Christian Dieterich et al.

Anonymous Referee #1

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General comments

This paper describes results from a large number of climate simulations for the Baltic Sea. The writing standard is good, however I found it rather difficult to keep track of which set of tests were being discussed at a particular time due to the large number of different experiments that are being presented.

Additionally there are a number of references to events and datasets which are not properly introduced or explained for an unfamiliar reader.

C1

Specific comments

Page 1 line 20 - What is “Backafloeden”? This should be either removed, or explained.

Page 4 line 31 - Which storm surge model is being referred to here?

Page 7 Table 2 and related text - what is “ORAS4”?

Page 9 line 14 - What is the “WISKI network”?

Figures

Figure 1: The text labels are quite difficult to read here. It would be better if they were moved to be over the plain land rather than over the busy contours. This is often not easy to do, but alternatively they could be plotted with a semi-transparent background which may help. I am also not clear which experiments were used to calculate the ensemble mean—is it just the ones from Table 1?

Figures 2–8: These figures are all very similar to each other and it is not easy to tell at a glance what is being included in each one — it would be helpful to have an overview of what sensitivity it is showing (for example “Sensitivity tests using different RCMs”, “Sensitivity tests using different ocean boundary conditions” etc). Additionally it would also be much clearer if the station names were included as titles on each subplot rather than only mentioned in the caption text, particularly since they are not included in the captions on Figures 4 and 5 so we have to keep going back to Figure 3 to see which station is which.

Is there a reason that Figures 3–6 show only 3 stations but the others show 9?

Figure 8: The black line (observation 99.9

C2

Technical corrections

- Page 4 line 5: emphasize -> emphasis
- Page 23 line 17: differently that -> differently to/from/than (I am not sure which is most grammatically correct, I would probably use *to*)

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2019-65>, 2019.