

Interactive comment on “Ocean Forecasting: From Regional to Coastal Scales” by Emil V. Stanev et al.

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Answers on “Ocean Forecasting: From Regional to Coastal Scales” by Emil V. Stanev et al.

Anonymous Referee #3

We are grateful to reviewer for the appreciation of some parts of our work and his constructive comments, which we answer point-by-point.

The manuscript contains a lot of information (from Data assimilation to tides, wave – current interactions estuarine and search & rescue applications) which in most situations is not well structured/organized and sometimes becomes quite confusing for the reader.

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Discussion paper



Authors: In the revised manuscript substantial restructuring has been done. We explain better the links between individual parts of paper and, removed sub-sections 4.1 and 4.4, moved sub-section 4.5 into section 3 and explained why; reordered the remaining part of section 4 starting with coupled wave-circulation modelling, changed the titles of some sub-sections.

Moreover no mention at all for the effect of atmospheric forcing in coastal forecasting is given. I think a whole subsection should be devoted to this important for coastal applications aspect. Along this line air-sea interaction and issues related to wave current interactions (for example the momentum and energy surface boundary condition) should be discussed in more detail.

Authors: There are some reasons not to devote one separate section to the atmospheric forcing. In the revised manuscript, we rather add some references to studies on this subject carried out in the past (Backhaus, 1989; Skogen et al., 2011, Dangendor et al., 2014). Another argument for this follows the suggestions to keep this manuscript more focused. The third one was to demonstrate novel developments, and we consider the issue about shallow-water tides as one such issue. In the revised paper we integrated the issue of atmospheric forcing with the novel development of coupled wave-current modelling. Additionally a more detailed presentation on the coupling method is given.

I think that the authors should concentrate on mostly 2-3 topics (for example data assimilation of HF Radar or satellite/in-situ SST data on the coastal scale and wave – current interactions) instead of overwhelming the reader with excessive material which is not complete (for example in section 4.6 where the important topic of wave – current interactions is involved/discussed the reader is just referred the paper by Staneva et al., 2015 for the scientific approach & discussion) and cannot be easily digested.

Authors:

1. In the revised manuscript we provide more coherent and complete presentation of

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the material.

2. Section 4.6 has been reshaped in lines with what referee suggested.

In this sense, I propose a major revision of the present manuscript with drastic restructuring and focusing on a much more limited list of topics related to coastal forecasting.

Authors: As said above, we restructured the paper, removed parts (which are not so closely related to the coastal forecasting) and re-focused, as suggested by referee. To our understanding all aspects considered in the resubmitted paper are linked to coastal forecasting, and we hope that we expressed this in a more convincing way now.

-The title of the manuscript should contain the toponym "German Bight". I agree with the new title proposed by the anonymous referee #1

Authors: The title has been changed as suggested by referee#1: "Ocean Forecasting for the German Bight: From Regional to Coastal Scales".

-Section 3.1: The approach proposed to overcome the situation where the assimilation degrades the model results due to hf perturbations, is never presented explicitly in this paper.

Authors: We present this issue in the revised manuscript.

-Section 3.3: what do we see in fig. 5b? The analysis RMSE? If yes I would prefer to judge the performance of the assimilation system by checking the forecast RMSE.

Authors: Fig 5 has been changed and more extensive analysis presented.

In any case a more in depth analysis of the results is needed in order to understand the impact of OSTIA and in-situ observations.

Authors: We extend this analysis in the revised manuscript commenting also on the high resolution radiometer data.

-Section 4.4 can be omitted. I do not understand its role in this manuscript.

Authors: We omitted this section.

-Section 4.6: more in depth presentation and analysis of the results is needed.

Authors: We substantially revised this part presenting in more detail the coupled model and the analysis of simulations.

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