Response to reviewer #2

The answers to the interactive comments by reviewer #2 have been shared with the co-authors of the manuscript.

Reviewer #2

In the present manuscript the Impact of using an ensamble atmospheric forcing on a oil trajectory and wheathering model is studied.

I Found the paper well written and focused on a relevant argument on which it shed some light.

The paper does not clarify how much the approach can improve the solution, while it observes an increase of possible oil beaching (20 to 100 percent more than the deterministic solution). Anyway, i found that the paper deserves to be published.

Author

We thank the reviewer for the constructive and positive comments. In the revised manuscript, we will address the reviewer's main suggestion. Following also the suggestion from another reviewer, we will add information for some variables of the ensemble simulation.

Reviewer #2

I just suggest an inmprovement of section 2 with a more detailed description of the differences in the implementation of the ensamble vs deterministic simulation. In particular it is not clear to me the approach used in simulating with the ensamble solution. Is it used the "ensamble" averaged solution or the members of the ensamble are treated as single runs? In other words does the oil spill model is ran 50 times and then actually an ensamble oil spill trajectory and evolution of oil is considered? By reading "ensamble oil spill model" I would be induced to figure out an actual ensamble of trajectory, but it is unclear to me if Authors actually performed an ensamble of trajectory. In negative case, i.e. if authors just ran a "deterministic" oil spill by using the averaged solution of an ensamble atmospheric forcing, I would suggest to revise the text rewording sentences relative to "oil spill ensamble".

Author

We apologize for the confusion. The reviewer is correct to note that by reading the phrase *"ensemble oil spill model"* an ensemble of 50 simulations should be expected.

In this study, we have performed exactly what the reviewer anticipates, i.e., an ensemble of 50 simulations, where each oil spill member uses different atmospheric forcing obtained from the ECMWF ensemble prediction system.

We have not estimated the average of the atmospheric ensemble to force the oil spill model, because this would result to a "virtual" mean atmospheric forcing and the oil spill results would be less meaningful compared to the approach followed in this work.

We will revise the text in Section 2 to better clarify the ensemble approach.