

Authors' second response to reviewer 2

We thank the reviewer for taking the time to review the paper. We also thank the editor team for their time and patience throughout the review process. We would like to emphasize that the missing reply was not out of negligence and that we respect how the review process increased the quality and readability of the paper. The reason that we did not provide a reply earlier is that most of our following replies are redundant and almost identical to our replies to the reviewer the first time. Here are our responses written in green to each comment.

The authors response is shown in green.

General comments:

Although this paper presents an interesting and innovative study, which I think deserves publication, the presentation of the study falls through. The authors fail to take the feedback in the previous round properly into account. In particular on the two following issues:

We thank the reviewer for his opinion about the novelty and the innovative topic. We are sorry if the reviewer did not feel that our replies met his expectations, as we worked hard to cover all the points they brought up in the earlier round of review.

- Both reviewers recommended to shorten and focus the paper in the previous round. However, this comment has not been taken into account.

In the first review, the reviewer said the paper was well written, but some sections were hard to follow. Hence, the authors have attempted to condense the information to increase the readability of the study, especially for the section the reviewer mentioned in the first feedback.

The reviewer specifically mentioned section 2.3 in the following quote:

"The description of the mooring system database in sec 2.3 is very detailed, and quite confusing. I understand that the concepts of "mooring system watch circle" is described in a previous paper, but it would be helpful if the concept was described better in the current paper."

Therefore, we restructured the entire 2.3 section as recommended by the reviewer in the revised manuscript and added Figure 6 in the revised version for the watch circles to increase clarity.

We realized that the paper was long while writing it, and we kept it as short as we could. We even decided not to add some sections to avoid making it longer. We believe removing any of the current sections takes away from the paper's goal and its structure. The paper mainly aims to show three main points:

- The results of the relocating FWF layout design using steady-state wake models (Gaussian wake model in FLORIS) and static tools for mooring

systems (using MoorPy). This can only be done through a quick introduction of the method and the results obtained at each step. Showing only the final results when using steady-state tools will add ambiguity to the paper, make it dependent on our previous work, and cannot be read as a standalone paper.

- The dynamic results of the same relocating FWF using OpenFAST and FAST.Farm.
- The comparison between the steady state results and the dynamic results.

Removing any of the sections of the paper will take away from the paper's integrity and our ability to fully present these three points. However, we decreased the details in section 2.3 and made it shorter.

In short, the authors had to choose between clarity and concision, and in some cases, one affected the other

- On the research methodology: The study compares a soft mooring system with passive layout adjustment to a stiff mooring system that has no adjustment. In my opinion, this is an unfair comparison. The conclusions would have had more value if they were compared to a soft system that is not designed to contribute to optimize power production.

This issue was addressed in the previous response. The current paper presents a new innovative way for floating wind farm layout design and optimization. Therefore, we needed a benchmark that is accepted and currently used by both the research community and industry. Our benchmark for comparison needs to meet the current state-of-the-art design requirements; otherwise, the credibility of our results is highly compromised. We have updated the text: "The baseline mooring system design follows the current state-of-the-art mooring system design recommendations, and hence, it is valid to use it as a benchmark in this study."