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Subject Response to reviewers

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Reviewer #1, Reviewer #2
Wind Energy Science

Dear Reviewers,

Thank you for agreeing once more to review our paper. We are glad to hear that most of your comments have been adequately addressed in our revised manuscript. In response to the remaining comments, we have made several additional changes to the paper. Attached to this document you will find our response to these points. All textual changes made to the paper are indicated in italic font. An additional document has been attached to our response that highlights all the changes made to the paper.

Yours sincerely,

Daniel van den Berg
Daan van der Hoek
Delphine De Tavernier
Jonas Gutknecht
Jan-Willem van Wingerden

Enclosure(s): Response to comments of Reviewer #1

Response to the comments of Reviewer #1

Dear Authors,

Thank you for addressing my comments. I think that your paper is clearer now and it is a nice contribution to the current research in wake mixing.

I just have a few, generally minor comments:

- With regards to the diff pdf file, in line 85 you write "where again a gain was found...": although correct grammatically, it sounds a bit confusing.
The sentence was changed to: *"..., where a gain was found when both dynamic yaw and the Helix method were active at certain phase offsets."*
- I understand that you could not quantify fatigue with the MoWiTo, however a sentence that addresses this could be inserted. For instance in the conclusions, when you mention that LES could be used to investigate turbulence intensity effects. It could also be used to assess fatigue (and to remove the intrusivity of the hexapod).
Thank you for the suggestion, we have added a sentence to the conclusion: *"Furthermore, these simulations also enable us to examine the effect of the control methods on fatigue loads, which was not feasible in this experiment."*
- With regards to the diff pdf file, in line 187 you specify how the phase difference is defined. Should the convection for positive/negative rotor yaw angle and positive/negative yaw moments be clarified here? I wonder if a sketch could support the text here.
To clarify the convention used to define the phase offset, we have added a new figure (Fig. 4) that shows the location of the Helix yaw and tilt moment and the corresponding yaw misalignment of two of the investigated cases.
- In figures 4, 5, 7, 8 some axes label say "Distance", some say "Distance in rotor diameters". It is not really clear distance from what, I guess it is the hub. I think you should replace these labels with x, y, z, using the coordinate system shown in Figure 3. In this case however, the coordinate system should be centered in the hub.
We have modified all the relevant figures to be consistent in the naming of the axes using the normalized x , y , and z values (i.e., x/D , y/D , and z/D) centered at the turbine hub.

- In figure 6, a different coordinate system is shown, which seems different from the one of Figure 3. Perhaps both could be centered in the hub? Otherwise it should be specified in the text.

We agree that this inconsistency can lead to confusion. The coordinate system is centered around the rotor plane of the turbine. We have added this to the description in Fig. 3: *"The origin of the coordinate system used in the experiment is defined at the center of the rotor plane."*

Furthermore, we moved the origin in Fig. 6 (now Fig. 7) to match this description. All figures now share the same coordinate system.