



## Comment on wes-2022-10

Anonymous Referee #2

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Referee comment on "Large-eddy Simulation of a Wind-turbine Array subjected to Active Yaw Control" by Mou Lin and Fernando Porté-Agel, Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2022-10-RC2>, 2022

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The manuscript provides a one-to-one comparison between large-eddy simulations and recent high-quality wind tunnel experiments that investigate the effects of active yaw control. The obtained agreement between experiments and simulations is excellent. Furthermore, the work is very relevant to the wind energy community. The manuscript itself can be improved, see below questions, suggestions, and remarks.

- Line 25: active yaw control is referred to as a novel strategy. However, as is also clear from the introduction, this approach has been around for a while.
- The manuscript uses ADM-std, ADM-BE, and ABL as abbreviations for the used turbine models. These terms are different than previous works from the group, which is somewhat confusing. Also, figure 10 uses the notation used in previous publications by the group, so the notation is not consistent throughout the manuscript. In any case, the notation of the used turbine model should be made consistent in the manuscript itself.
- Can you please provide a description of, or reference to, the tabulated lift and drag coefficients and turbine thrust coefficients used in the simulations.
- line 159:160: the resolution in turbine diameters is mentioned in filter width grid spacing. It seems that this should just be the grid spacing.
- The reference to the experimental data is incorrect. The Zong and Porte-Abel paper referenced their recent JFM and not the Renewable Energies paper that describes the corresponding experiments.
- line 196-199: could you include a graph confirming the discussion started there?
- Figure 11 is not referenced in the text directly. It is shortly discussed around line 215 in the 'turbulence intensity section,' although this figure does not show 'turbulence intensity.'
- line 240: the authors conclude ADM-BE is better than ALM. However, from figure 12, they seem to perform similarly, i.e. sometimes one, sometimes another model gives the best result.
- What are the exact data underlying the above statement, and is it significant with respect to uncertainties due to, for example, limited time averaging and the employed resolution?
- line 240 makes a comparison of ADM-BE and ALM. A statement follows that this is consistent with literature comparing ALM and ADM-std. This argumentation is not

consistent. Please revise accordingly.

— If necessary, update the abstract and conclusion with respect to the updated analysis on the ADM-BE and ALM comparison; see point above on line 240.