Review of “Scaled testing of maximum-reserve active power control”

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The paper is well written and the goal of the study as well as the experimental setup are described in a comprehensible manner. We would ask the authors to elaborate more on the following points:

1. You show that wake steering improves the power tracking performance of the wind farm by increasing the power reserve. Once the power reserve is increased, one could be setting higher wind farm power references, which would probably lead to the same tracking issues as for the controllers without wake steering. Strictly speaking, CL+MR does not improve the tracking algorithm, but it ensures good power tracking in a wider range of operating conditions, i.e. for a wider range of power references. Please include this aspect to your discussion. Consider to elaborate on how your controller would perform when the demanded power is actually close to your “new” maximally available power in the wind farm that is achieved through wake-steering.
2. You use FLORIS for the open-loop part of your controller, which is a steady-state model. Can you discuss the involved time scales more – and how this steady-state assumption relates to the dynamic effects within your wind farm? Especially a discussion of the typical time scales in the wind direction time series (Fig. 5) in comparison to the wake propagation time is necessary.
3. You filter the fore-aft bending moments for the CL+LB strategy with a moving average filter of 1Hz. Can you discuss why you chose 1Hz and how it compares to the relevant dynamics?
4. Fig. 12: Please explain the power normalisation, i.e. with what it’s normalised. (You mention a normalized power and the units are %, but the variable is a sum of P_i. Please put the normalization factor on the x-axis label.) Please discuss the relevance of the last column.
5. In Fig. 20 you show that the normalized DEL of the CL + LB controller are the highest ones among the controllers for all three wind turbines. For WT1, you attribute this to more frequent pitch actuations. This seems a bit contradictory to Vali et al., 2019, regardless of the fact that you use $\Psi = 2.8°$, while Vali et al. use $\Psi = 0°$. Fig. 18 in Vali et al., 2019, shows that especially the downwind turbines in the wind farm experience significantly lower DEL compared to CL, for example. Please discuss this effect more, also considering your previous paper Tamaro et al., 2025b.
6. The optimisation problem (1) is solved with SQP offline and the results are presented in Fig. 10 and Fig. 11. Unfortunately, it is unclear whether the presented solution represents the global optimum or only a local one. Please explain this in the paper, i.e. explain how it was ensured that the global solution was found.
7. A related, but less important point: The fact that control inputs are not constrained in (1) probably means that the power reference was never set low enough for this to cause problems. You may consider mentioning this in the paper, either by adding constraints on control inputs in (1), or by mentioning that considered power references were always high enough and that the method might be adjusted for even lower values.

8. Please discuss how the model turbines' response time to yawing and to changes in the power reference compares to full-scale wind farms. If transients are not perfectly scaled, please discuss how this influences the validation of the control algorithm and its applicability in real wind farms.

Furthermore, we have the following minor comments:

9. Please add x-axis labels and finer temporal x-ticks on the zoomed insets in Fig. 21.
10. In Fig. 19, Fig. 25 and Fig. C1, please add the normalization factor on the y axis.
11. In Fig. 20 and Fig. 26, please add the normalization factor on the y axis. Please explain the definition of $\tilde{L}$.
12. Please add missing y-axis units in Fig. 17, Fig.18 and Fig. 24.
13. Line 230: should be "the open-loop scheduler is updated 100 times <u>slower</u>" instead of "faster"?