

## Review comments on revised manuscript for wes-2023-98

The authors have addressed the reviewers comments (except see last comment). The paper is recommended for publication after minor revisions:

**Reviewer (first review):** Line 145-152: This paragraph just states the blockage topic. But not how it plays into the challenges of calibration through SCADA data

**Author:** Blockage, when overlooked, can introduce additional complexities in SCADA data interpretation, especially in large wind farms. The blockage effect could adjust the observed wind speed and wind direction. For the specific wind farm in question, which is part of a large cluster, modeling the blockage would present significant challenges. Fortunately, we did not observe any indications of spatially varying wind directions attributable to blockage for this farm. However, considering the larger picture including neighbouring wind farms, blockage cannot be ignored. Therefore, we felt it was necessary to address this in our study.

**Reviewer:** Again, blockage could also occur from a single farm. Therefore the argument “we did not observe any indications of spatially varying wind directions attributable to blockage for this farm” should also be taken into the text.

**Reviewer (first review):** Line 171: What is prohibiting this type of analysis for binned observations?

**Author:** Binned analysis assumes balance: It is valid when the magnitude and frequency of overestimation are in balance with the frequency of underestimations. Otherwise, results can be skewed. Additionally, the volume of usable data becomes limited in binned observations, since even the downtime of a single turbine can introduce significant skewing.

**Reviewer:** This reasoning should also be reflected in the paper text.

**Reviewer (first review):** Figure 4 & 5: Can the authors provide a definition of the displayed metrics?

Which quantity was used for normalization?

**Author:** We have now added the Equations to the Figures

**Reviewer:** Technical suggestion: Because of the fraction you could put the definitions not in the figure caption but in the paper text where there is more space to introduce them.

**Reviewer (first review):** Section 4.2: It would be good if the subclusters can at least be described a bit more in their configuration. Furthermore, the discussion should also include the results from a baseline model that is not optimized for comparison.

**Author:** A Figure has been added that shows the coordinates of the wind turbines within the farm.

**Reviewer:** An answer to the second part of the comment was given to the other reviewer. The authors have decided against comparing their results to an uncalibrated/different model. In my opinion this is of critical importance in the future to benchmark the proposed method