

October 31, 2019

Dear Prof. Meyers:

Following are our responses to the minor revisions requested by the two reviewers. Thank you again for the time and effort on your part as well as on the part of the WES staff and the reviewers.

Sincerely,



Sanjay R. Arwade
Professor

Reviewer 1:

We thank the reviewer for the pointer to the preferred reference on non-Gaussian winds and have included the following reference:

Schoettler, J., Reinke, N., Hölling, A., Whale, J., Peinke, J. and Hölling, M.: On the impact of non-Gaussian wind statistics on wind turbines – an experimental approach, *Wind Energ. Sci.*, 2, 1-13 doi: <https://doi.org/10.5194/wes-2-1-2017>, 2017

Reviewer 2:

Comment: In the manuscript it is mentioned (page 15) that

"This record was then subdivided into six ten-minute intervals and the maximum turbine response was extracted for each ten-minute interval. Table 3 summarizes the wind field characteristics for the full set of simulation cases, and the following table provide the average of the 6 maximum responses of the ten-minute simulation intervals"

what is the reason behind subdivinding the 1 hour simulation. Since the one hour simulation is produced with the same random seed, there are some correlation between 10 minutes blocks. Therefore the average of the extreme responses of the six blocks is affected. Possibly the average is not affected significantly but the standard deviation would be larger if these blocks were statistically independent.

Response: The reviewer is correct that the ten-minute simulations are not independent. However, due to the short time scales associated with the turbulence, and the absence of longer period wave loading, the effect of this correlation is negligible and outweighed by the advantage of providing some sense of the stochastic nature of the statistics. We have added an acknowledgement of this lack of independence:

“Subdividing a one-hour simulation into ten-minute intervals introduces a minor correlation between the ten-minute intervals, but since the time scales associated with turbulence are very small compared to the ten-minute analysis interval this effect is negligible. This procedure mitigates the need to allow transients to dissipate for each ten-minute simulation and provides the ability to estimate variability across simulations.”