

Wind Energ. Sci. Discuss., referee comment RC1
<https://doi.org/10.5194/wes-2021-139-RC1>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.



Comment on wes-2021-139

Anonymous Referee #1

Referee comment on "Applying a Random Time Mapping to Mann modelled turbulence for the generation of intermittent wind fields" by Khaled Yassin et al., Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2021-139-RC1>, 2022

This manuscript presents a time-mapped Mann model to derive a synthetic wind field model. Wind field modeling plays an important role in wind energy studies. In general, it is an interesting topic.

1) The writing needs significant improvement. Please use scientific expressions in the manuscript.

2) There are some state-of-the-art field investigations on the influence of turbulence on the wind turbine structural response. Please discuss your results with the field measurement results.

3) line 100: Please provide more information on how to choose the two points. Any restrictions about the distance between these two points.

4) Fig.1: please add error bars on the measurement results since you have 500-time series samples for analysis.

5) Sec 2.2 & Sec 2.3: please make it more concise.

6) Fig. 8: The curves are shifted vertically for visualization. Please provide more detailed information.

7) Why did you select 10% as the turbulence intensity level?

8) Why did you choose a fixed pitch and fixed speed wind turbine for the simulation? Most current utility-scale wind turbines are variable speed and variable pitch regulated.

9) The mean wind speed in Table 3 is extremely high (20 m). In most wind farms, the annual average wind speed won't exceed 12 m/s. Please explain and also add cases with lower speeds.

10) Please add wind shear as well in the FAST simulations as well. It may have a larger impact on the turbine structural response than turbulence.

11) Please add more statistic information about 500 sample datasets in the Appendix, including but not limited to wind direction, wind speed, turbulence level.