The authors presented an interesting study in particular in revealing new results that have not been published earlier. The manuscript is well designed in structure and clearly presented. To this reviewer, the manuscript is worth being published. However, there are few minor issues need to be further clarified or revised. Below, the issues are presented.

1. Page 5, line 15-17: Within these lines it is stated that Veer's turbulent wind model is chosen as baseline. However, as it is mentioned, it does not capture all physical details of real atmospheric wind. It would be informative to include the main advantage of this model compared to other models, which makes it an appropriate model for many cases.

2. Page 7, line 10-15: How the reduction in the number of frequencies is performed? That is based on what physical criterion?

3. Page 8, line 1: The grid is set to be 15 x 15 points over the rotor disc. Is there any experimental of theoretical justification for this number of points?

4. Page 11, line 19: The number of frequencies is set to be 10. What is the reason to choose this number? Does the change in the number affect the results? If not, it seems one can reduce the number of frequencies as low as possible.

5. Page 12, line 12: It would be more appropriate to replace figure 4 such that it is closer to the place where it is mentioned within the manuscript.

6. Page 12: It would be more informative to present figure 5 in larger size.

7. Page 12, line 16: It is stated that "the grid used here contains fewer points than usual grid for the analysis of a modern D=90 m rotor diameter wind turbine." What is the appropriate number of grid points for the abovementioned turbine (need to provide appropriate citation)? What is the justification for this decision in the study? Does the difference affect the results?

8. Page 15, line 2-10: based on what is stated within these lines, the figure shows good agreement of Veers' model with the results from Turbsim. However, the figure does not confirm the claim. In contrast, it presents that the Veers' model and increment model have better agreement in terms of trend and magnitude in comparison with the Turbsim results. At the end of the paragraph, it is claimed that the phase increment model represents the desire covariance. However, this conclusion is not clearly justified in particular based on what is presented in the figure.

9. Page 16, line 7-8: Is there any experimental or theoretical justification for choosing logarithmically spaced bin?

10. Page 18, line 15: It is stated that the comparison of the stochastic metrics was used to evaluate the model. Among the metrics, auto spectrum is also mentioned which is not presented within the manuscript.