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Interactive comment on "Hurricane eyewall winds and structural response of wind turbines" *by* Amber Kapoor et al.

Anonymous Referee #2

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One major comment I have with this version of the manuscript is the representation of a hurricane in a wind field generator such as FAST.

In general we need to generate many wind seeds to represent the stochastic nature of the wind when determining the maximum loading on the blade or on the tower. How many stochastic simulation have been carried out in FAST to represent this stochastic variation. In this case the maximum loads should be represented by the statistics, whether as the median value or as percentile.

When transferring the information of the simulated hurricane in LES to a simplified representation such as TurbSim, the non-stationary nature of the hurricane wind and coherence of the hurricane structure is lost. Furthermore, how many times were the hurricane wind simulated. If it were simulated only one time, then the statistical com-

parison is not really valid, as through more simulations the statistics will change as well. In order to make meaningful statistics and statements on the increased loading on the structure, it is necessary to run several simulations in order to capture the statistical variation of the inflow conditions and of the response of the wind turbine.

How accurate is the representation of the hurricane using LES, especiall the convective flow within the hurricane driven by the temperature gradients, sea surface temperature and air temperature. the vertical component of the wind speed may play a significant role for the loading, how well is this vertical component of the wind velocity captured by the model.

some minor comments can be found in the attached PDF file

Please also note the supplement to this comment:
https://www.wind-energ-sci-discuss.net/wes-2019-14/wes-2019-14-RC2-supplement.pdf

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