

Interactive comment on “RADAR-Derived Precipitation Climatology for Wind Turbine Blade Leading Edge Erosion” by Frederick Letson et al.

Anonymous Referee #2

Received and published: 17 October 2019

The paper by Letson et al. presents an interesting study on an emerging research field related to wind energy. It is of high value for readers of WES. The methodology is presented in a clear way. The results are discussed at a high level with many papers cited within the cross-cutting field. The results are novel. The conclusion summarizes in outstanding way the many learnings and perspectives for further research. The paper is recommended for publication.

Minor edits

P.1, line 26. Would the repair cost be different between on- and offshore wind farms? Please clarify.

P. 2, line 38. Another challenge than age alone could be US East Coast wind farms.

C1

Please elaborate.

P. 3, Figure 1. As also suggested by Reviewer 1, the naming of radar stations is confusing. The naming could for simplicity be the state names (ID, TX, IL, WI, MI and NY) as you selected only one radar station in each state. For clarity, the full station names could be given once. You have selected a wind farm within a radius of roughly 60 km from each radar station. Would it be possible to add circles of this dimension at each station in the map?

P. 5, line 1. Hourly precipitation rate (N1P). Did you average to 1 hour or is the data in the database 1-hour data?

P. 5, line 8. Is the NCR maybe Normalized Composite Reflectivity?

P. 5, line 20. Is the spatial mean based on 5-minute and 6-minute values, then averaged to hourly?

P. 6, line 4, m-4. Do not use italic.

P. 6, line 14, would smaller be more correct than small?

P.6, line 16, ...the slope of the with hydrometeor diameter.. I wonder if “with” is a good formulation here

P. 6, line 16...is considerably shallower than... Would it be more clear to say nearly constant?

Figures 3 to 7. The graphics are good but can be improved. Please use capital letter at the legends at all axis.

Fig. 4, upper panel. You show values at 0 mm/hour. Is this indicating all events with no precipitation (or from >0 but smaller than 5 mm/hour). Please clarify. Add simplified station names.

Fig. 5 and Fig. 7. Add simplified station names.

C2

Fig. 6, Add simplified stations names near each of the colored markers, if possible.

Page 9. The discussion of the mean wind speed for all cases at six stations from three information sources and in addition wind speed for rainy cases for six stations from one source. It is a bit confusing. A table summarizing the relevant numbers could be easier for readers to follow the discussion.

P.6 line 7 and P. 16, line 2 you write 'conservative'. I am in doubt what you mean in this context. Please clarify.

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