Ann. Geophys. Discuss.,
https://doi.org/10.5194/angeo-2019-88-RC2, 2019

Annales Geophysicae Discussions

Interactive comment on "Air Density Induced Error on Wind Energy Estimation" *by* Aurore Dupré et al.

Anonymous Referee #2

Received and published: 29 July 2019

A. Air density affects the wind turbines power curve accuracy. IEC standard, WT power curves are calculated using a data reduction technique known as binning using IEC standard in which Air density correction is carried out before binning. Similar research on air density impact on power curve is already being carried out and published in the following articles 1. Pandit, RK, Infield, D, Carroll, J. Incorporating air density into a Gaussian process wind turbine power curve model for improving fitting accuracy. Wind Energy. 2019; 22: 302– 315. https://doi.org/10.1002/we.2285.

2. Bulaevskaya V, Wharton S, Clifton A, Qualley G, Miller WO. Wind power curve modeling in simple and complex terrain using statistical models. J. Renewable Sustainable Energy. 2015;7(1):013103. https://doi.org/10.1063/1.4904430

So novelty is doubtful.

B. As per the IEC standard, the air density correction shall be applied when the site

density differs from the standard value (1.225 kg/m3) by more than 0.05 kg/m3. Does your data include this in your research? and how it affects the power curve accuracy?

C. The author ignores the latest work carried out in the area of air density and power curve. Hence, work seems to be behind.

Therefore, based on the above comments, my recommendation is to reject the paper.

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