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Interactive comment on "Year-to-year correlation, record length, and overconfidence in wind resource assessment" *by* Nicola Bodini et al.

Anonymous Referee #2

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This paper used a 62-year wind dataset from Canada to investigate the ability to predict P50 and P90 wind speed values for a 20 year period using different numbers of reference years. This is a very interesting topic and worthy of publication in WES.

The paper was well structured, and overall presents it work quite well. There are a few questions / comments I have that I think would help the reader better understand the work and provide a clearer presentation of some of the ideas.

1. The first time reading the abstract I had a bit of a hard time understanding the results and how the ranges should be interpreted. After reading the paper this became more clear, but I think it would help the article to clean up the abstract a bit. For example, the line "Errors of estimates made from the control sequences always decline with record length; the central half of the stations' exceedances falls within ranges of 44–55 %

(P50) and 85–95 % (P90) for 42-year estimates." is just stating that your method of predicting P50 and P90 works when using the control sequences, which perhaps does not need to be explained in such detail in the abstract.

Pg. 1 Line 23: You mention you sidestep the instrumental and model factors. It was unclear to me how this was done at this point in the paper. Later it is clear this was done using Wan et al.'s dataset, which homogenized the data, but I think it would be good to mention this earlier.

Pg. 2 Line 63: I think you should mention that they are monthly averaged wind speeds here.

Pg. 3 Lines 28-35: You mention using annual averages to avoid seasonal effects, but you then null missing months. There should be a discussion about the distribution of missing months across the year. In Canada, one could imagine that there are more missing data in the winter than the summer due to the climate, but how this might impact the data is significant. Additionally, information about how the missing years relate to the validation 20-year period compared to the fitting 42-year period may also be of interest to the reader.

Pg. 5 Lines 80-82 & figures 6 & 10: The Binomial distribution is a discrete distribution, yet you mention that the exceedances take values outside of that distribution due to your weighting and plot smooth curves on the plots mentioned above. While this shouldn't influence your findings you should correct it to properly represent the distribution.

Pg 8 Lines 8-11: This seems to be one of the most significant conclusions of your report, yet is not stated as clearly in section 4 or in the abstract. I would recommend adding it in at least one of those places as it is quite important for the resource assessment community.

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