

Wind Energ. Sci. Discuss., referee comment RC2  
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## RC2

Anonymous Referee #2

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Referee comment on "New methods to improve the vertical extrapolation of near-surface offshore wind speeds" by Mike Optis et al., Wind Energ. Sci. Discuss.,  
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Review of "New methods to improve the vertical extrapolation of near-surface offshore wind speeds" by Mike Optis, Nicola Bodini, Mithu Debnath, and Paula Doubrawa.

The article considers improved characterization of offshore wind resource observations. The study is comparing the conventional logarithmic profile method against three novel approaches; a long-term stability correction, a single-column model, and a machine learning methodology. The result shows very promising results and that the machine-learning model significantly outperforms all other models.

The article is well written and structured. It does describe the three methodologies used well and include a good discussion of the result ending up in a conclusion.

The article could benefit from an extended introduction to what is novel in the work presented. Three "novel" approaches are presented but it is not very clear what is new contributions and what is existing novel methods that are used for comparison. Perhaps the method name "DTU model" created this confusion. A short introduction to chapter 3 might be a suitable place to add it.

The discussion about the result in figure 4 is rather short and could benefit from increased clarity. It is perhaps also not needed information depending on previous question? The extended introduction with clarity on new contributions will probably solve this.

A comment and discussion of the accuracy of the data used for comparison would also be suitable.

Overall, the result is very interesting and clear. I recommend a publication after a minor revision according to the comments given here.

Best regards