

Underestimation of strong wind speeds offshore in ERA5: evidence, discussion, and correction

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REVIEW

GENERAL COMMENTS

1. The writing style is extremely terse, and while each writer has their own style, I would encourage to add a bit more context to the storyline throughout the paper, since it becomes sometimes hard to follow since very little details are given, especially about a detailed interpretations of the plots shown and their implication.
2. Is it correct the results only consider neutral and unstable conditions? If so, this should be highlighted way more in the paper, and a “neutral and unstable conditions” specification should be added every time the main results from the study are discussed, potentially including the title.
3. ERA-5 has data at heights that can be directly compared with lidar observations. Why not including such a direct comparison to confirm the validity of your results, without the need of wind speed vertical extrapolation?

MINOR COMMENTS

1. L. 29: please explain “for design, slightly conservative values are typically desirable” in more detail
2. Fig. 2: what do the values of ‘landmask’ for ERA5 mean? Please clarify why values are not either 0 or 1 as one might expect.
3. In section 1.3, please specify which variables, at which height(s) are downloaded/considered from the models.
4. L. 125: have you checked your statement that “wind speeds larger than 15 and 20 m/s (where stable conditions are very rare)” at all sites?
5. Figures: you need to define all symbols, colors, abbreviations shown in the figure, legend, and title. If not needed, remove them.
6. L. 155: please provide more context when you start making comparisons about fetch. What are you referring to, how did you segregate the data, etc.

7. There are several grammar errors throughout the manuscript. One example: in the Fig. 8 caption: “length values” not “lengths values”. Please double check your grammar.
8. Figg. A1 and A2 are impossible to read – make all fonts larger.

TECHNICAL CORRECTIONS

1. L.16: do not capitalize “power”
2. L. 26-27, 29 and many more: parentheses not needed for these references
3. L. 66: “NWP” was already defined
4. L. 79: “FLS” was already defined
5. L. 119: the sentence is not grammatically correct
6. L. 133: comma missing after “i.e.”
7. L. 143: typo in “MOoD”
8. L. 157: a verb is missing in this sentence.
9. Fig. 6: do we need all the info in the title? If so, please explain what they are referring to, as no information is included in the caption or text.
10. L. 195: “at” instead of “are”?
11. L. 212: “latter” not “later”
12. L. 213: “leads” not “lead”, and “to a 60%” not “to 60%”
13. Copernicus requires you to list a DOI for all references that have one.
14. L. 297: “The analysis was carried out in MATLAB” is probably not needed since the code is not made available anyways.