

Wind Energ. Sci. Discuss., author comment AC3
<https://doi.org/10.5194/wes-2021-156-AC3>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Reply on RC2

William J. Shaw et al.

Author comment on "Scientific challenges to characterizing the wind resource in the marine atmospheric boundary layer" by William J. Shaw et al., Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2021-156-AC3>, 2022

We thank the second reviewer for the constructive review and specific comments. We respond to the specific comments as follows (review comments in quotation marks; our responses immediately follow):

- "The authors described relations between dT (temperature - SST) and vertical wind speed profiles in Section 3. The wind profile can be definitely affected by SST. Meanwhile, strong winds (e.g., with tropical cyclones) can also decrease SST because of vertical convections in the sea surface. It could be worth adding a description mutuality and complexity of the relation."

The perspective the reviewer is suggesting is implicit in the coupled-model discussion in Section 5.2.2. To make it more clear, we will add the sentence "...Wu et al. 2020). Such coupled models explicitly account for SST evolution from ocean mixing driven by marine ABL winds. They..."

- "On page 2, line 47, I would prefer to move the annotation 1 to the reference list."

We added this as a footnote since it is a web address rather than citable, refereed literature. If the WES editors prefer, we will be happy to make the suggested change in the final version of the paper.

- "On page 6, line 159, the quote O'Neil 2012 is missing in the reference list."

We thank the reviewer for catching this. We will add the following citation to the bibliography and correct the spelling of the author's name:
O'Neill, L., Chelton, D. B., and Esbensen, S. K.: Covariability of surface wind and stress responses to sea surface temperature fronts, J. Clim. 25(17), 5916–5942, doi:10.1175/JCLI-D-11-00230.1, 2012

- "On page 7, Figure 2 would be more reader friendly if heading symbols (e.g., a), b),...) were used for figures, respectively."

We elected not to give the panels individual letters because all elements are common to both panels and there is no discussion in the manuscript that addresses either panel

individually. We felt that the addition of letters might therefore clutter the figure without assisting the reader.

- "On pages 11 and 14, Figures 3 and 5 would be better if heading symbols were used as same as below."

For Figure 3, we will change "zeta" in line 277 to be the symbol " ζ " to match the figure. We did not try to adjust the figure, since it is reproduced with permission from the Patton et al. article.

For Figure 5, it is not clear what symbols the reviewer is referring to, since the only symbol in the figure is "z" for height, and the text does not include additional symbols.

- "On page 17, lines 431 and 432, brackets should be changed from italic to normal fonts."

This change will be made.

- "On page 32, line 913, information of the article should be updated. It was published already.

We thank the reviewer for catching this. The citation will be changed to

Borvarán, D., Peña, A., and Gandoin, R.: Characterization of offshore vertical wind shear conditions in Southern New England, *Wind Energy*, 24(5), 465–480, doi:10.1002/we.2583, 2021.