

Interactive comment on “Surrogate based aeroelastic design optimization of tip extensions on a modern 10MW wind turbine” by Thanasis Barlas et al.

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The authors would like to thank the reviewer for their time and greatly appreciate their feedback and suggestions to improve the article.

- L142-144: Implementing a smooth twist distribution (from a point further inboard the blade reference line) is expected to have a negligible effect on the load distribution in lifting-line type of codes. The load distributions are already smooth (Fig. 19) for NW and MIRAS where trailing vorticity gradients are taken into account. In CFD, the geometry would be by default smooth, and a good comparison with the lifting-line models has already been established:

Li, A., Pirrung, G., Madsen, H. A., Gaunaa, M., & Zahle, F. (2018). Fast trailed and bound vorticity modeling of swept wind turbine blades. *Journal of Physics: Conference Series*, 1037(6), [062012]. <https://doi.org/10.1088/1742-6596/1037/6/062012>

Li, A., Gaunaa, M., Pirrung, G. R., Ramos-García, N., & Horcas, S. G. (2020). The influence of the bound vortex on the aerodynamics of curved wind turbine blades. *Journal of Physics: Conference Series*, 1618(5), [052038]. <https://doi.org/10.1088/1742-6596/1618/5/052038>

- L143-144, L177-178: The placement of figures has been updated.
- Table1: Explanation text has been added to clarify the min/max values in the dotted lines in Fig1-2.
- L110,115,133: The sentences have been rephrased.
- L171: The sign of the pitch setting has been clarified in accordance with Table2.
- Table4: Caption text has been updated.
- L185: 'Fig' has been be added int the text
- L191: The sentence has been rephrased.

The changes will appear in the revised manuscript.

Interactive comment on *Wind Energ. Sci. Discuss.*, <https://doi.org/10.5194/wes-2020-108>, 2020.

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Discussion paper

