

***Interactive comment on* “Brief communication: A fast vortex-based smearing correction for the actuator line” by Alexander R. Meyer Forsting et al.**

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In the paper, the authors study the impact of different techniques for the reduction of computational costs of an actuator line model on the aerodynamic force distribution along wind turbine rotor blades. The actuator line model was previously published by the authors, cf. reference Meyer Forsting et al., 2019a in the manuscript.

The paper is well written and of generally good quality. The paper is very short, matching the requirements for a brief communication. There are no unnecessary repetitions compared with the original publication, which is good. The results reveal a negligible effect on the aerodynamic force distribution while substantially reducing the computational costs. Hence, the add-on to the original formulation is of very high interest for

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the wind energy research community for further investigations of the aerodynamic and aeroelastic performance of wind turbines.

There are only two suggestions to the authors: i) The authors may additionally evaluate wind turbine models that are closer to the current state of the art considering slenderness and dynamics of the blades. Such a study could be part of a follow-up publication and does not necessarily need to be implemented in the present manuscript. The authors should revise the legend of Fig. 2, as it is hard to understand what is represented by the different curves.

Interactive comment on Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2019-67>, 2019.

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