

Wind Energ. Sci. Discuss., referee comment RC1
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Comment on wes-2022-51

Anonymous Referee #1

Referee comment on "Progress in the validation of rotor aerodynamic codes using field data" by Koen Boorsma et al., Wind Energ. Sci. Discuss.,
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The chosen validation data were at a relatively high induction larger than 1/3. For induction factors lower than 0.3 the results when using uncorrected 2-D airfoil data normally give very good results compared to measurements. It would be nice if at least one case with a lower induction was included. The not perfect match for the loads shown in Figure 3 could be due to the 3-D correction of the airfoil data or for the BEM codes and the empirical Glauert correction. In Figure 11 some synthesized airfoil data are shown that indicate a quite different stall behavior than the prescribed ones used in the airfoil data dependent codes. Since the inflow angle and chordwise pressure distributions were measured at a few spanwise sections in the Danaero experiment it could be nice to see how this fit with the prescribed airfoil data.

What is exactly meant on page 13 with the sentence, "these compressible solvers reveal a different suction level causing the integral loads to improve for the fine mesh"

It is nice to see how the fully blade resolved codes give quite similar results ☺☺☺

In Figure 6 it would be nice to know what tip loss model was used for the BEM and perhaps also a discussion on how the decambering effect can affect the way that loads decrease when approaching the blade tip.

The paper use the Danaero data, but suddenly in the conclusion the New Mexico data are mentioned and the challenges to reproduce those. A more elaborate discussion of this is missing.

The paper is well written, but the quality of the Figures should be improved, since it is not always so easy to see the details. Also are the airfoil sections in Figure 4 a and b upside down, meaning that the suction side is the lower one ? If, yes, then it is inconsistent with the pressure plots.