Wind Energ. Sci. Discuss., referee comment RC1
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Comment on wes-2021-140

Anonymous Referee #1

Referee comment on "High-Reynolds-number wind turbine blade equipped with root spoilers – Part 1: Unsteady aerodynamic analysis using URANS simulations" by Thomas Potentier et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-140-RC1, 2022

The Authors performed an interesting study on the aerodynamic performance of a very thick airfoil equipped with a passive device to be adopted on the root region of a wind turbine. The results show the dramatic change in the airfoil performance in comparison with the smooth airfoil. The results are well presented, the paper is well written and the methodology is suitable for the purpose of the work. The novelty of the work relies on the high thickness of the studied airfoil, which is not commonly found in literature.

The Reviewer has the following comments:

- The abstract is very short and does not give a clear overview on the contents of the paper. In particular, it is not clear that the simulation is focused only on the 2D simulation of a thick airfoil of the root region of the blade. It is simply stated "A wind turbine blade equipped with root spoilers is analysed using 2D…" that is a too general sentence.
- The authors did not show a validation of the numerical model against experimental data. Since the thickness of the airfoil is definitely higher than the standard (it is almost a bluff body), the authors should provide some information regarding the accuracy of the proposed method.
- Which is the definition of the Strouhal adopted in the present case? Is it based on the blade chord or on the spoiler thickness?
- Which is the temporal resolution adopted for the unsteady calculations?