

Interactive comment on “Computational Analysis of High Lift Generating Airfoils for Diffuser Augmented Wind Turbines” by Aniruddha Deepak Paranjape et al.

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As authors, we appreciate the time and effort you have taken to review the paper. We have considered all the concerns that have been pointed out and have made efforts to incorporate the changes in our revised manuscript.

1. "It may be premature to consider optimization of airfoil choice using rather high end computational methods on a configuration that is relatively remote from a realistic design configuration which would have an axisymmetric structure, optimized loading and wake rotation".

C1

The authors understand the reviewer's concerns. Although there is a significant amount of literature employing the use of high-fidelity numerical modeling techniques applied to DAWTs, there is no preliminary analysis that may help practitioners and potential manufacturers design diffusers with commonly available airfoil geometries. The paper is a step in that particular direction.

2. "In the penultimate sentence of Section 3.4, it is mentioned that “a constant duct thrust coefficient is maintained . . .” Please state the value chosen for C_t ."

The information relevant to the coefficient of thrust has perhaps been insufficiently highlighted. A thrust coefficient of $C_t = 0.767$ was fixed in the case of our study. This value was obtained from the experiments carried out by Dighe et al. (On the effects of the shape of the duct for ducted wind turbines). This information has now been sufficiently highlighted throughout the paper.

3. Size of the duct is a cost factor and therefore it may be best to compare always at fixed area ratio although I would concede that it is worth knowing the variation with angle and area ratio

The comparisons of the airfoils have been made within a particular family keeping the area ratios fixed at a particular angle of attack. For example: All the NACA airfoils have been compared to each other at 14° . However, the authors understand what the reviewer is hinting at, and the relevant information can be incorporated into the new manuscript.

4. I recommend presenting the velocity values in Table 1 with the same number of significant figures (3 would surely be enough?) and making Table 3 consistent.

The new manuscript incorporates the suggestions made by the reviewer.

C2