Wind Energ. Sci. Discuss., referee comment RC2
https://doi.org/10.5194/wes-2021-162-RC2, 2022

Comment on wes-2021-162

Anonymous Referee #2

Referee comment on "Experimental analysis of the effect of dynamic induction control on a wind turbine wake" by Daan van der Hoek et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-162-RC2, 2022

General Comments

This was a well done paper, clear writing, figures and paper structure. Believe the paper contributes very meaningfully to this area of research into dynamic axial control. The visualizations and physical explanations of the phenomena which enable DIC to increase energy available in the wake was very interesting to read and see.

Feel free to ignore this comment if it is not possible, but would a potential comparison be comparing the DIC results, to a change in the baseline controller such that it operates at the same steady Ct as the DIC controller as a supplement used in the paper of comparing to expectations from AD?

Do the authors have plans to test in a similar way the helix method of DIC?

Specific Comments

Introduction is complete and well establishes the relevant context for the paper

Page 5: Could you add a little more detail on the definition and meaning of the Strouhal number? Is 0.25 the theoretical value or an empirical selection? If empirical, is there a chance that a value selected using computer simulations might differ from a best choice for wind tunnels / field studies? (Reading ahead I see you do try a few so a little more initial context on this number would be helpful). Is there a theory as to which value should be best and why?

Page 11: How are you defining TI? Oscillation in the streamwise flow? Believe it could be an interesting comparison if making similar plots using stream-wise oscillations and cross-stream oscillations

Page 11: Fig 8: Would a difference row (as in Fig 7) be useful?

Page 16, section 3.4: If you were to look at similar visualizations as Fig 13 at Strouhal numbers where DIC was not effective, what would you see? Would this change in the leapfrogging behavior not occur? Or would it change in a less beneficial way?