General comments:

"Near wake behavior of an asymmetric wind turbine rotor" discusses the effects of rotor asymmetry on the tip vortex behavior and velocity in the wake. The main novelty lies in the investigation of the impact of inflow turbulence and its contribution to wake recovery relative to that from the rotor asymmetry, which is a crucial question that must be addressed to justify further investigation of asymmetric rotors. However, I have some concerns about the numerical methodology used to obtain the results, particularly the resolution of the simulations. Please see below for specific comments.

Specific comments:

1. My primary concern about the results presented here is the observed merging of the vortices (e.g., Fig. 5). As discussed by Ramos-García et al. (2023), vortex merging has not been observed experimentally and is likely due to insufficient mesh resolution in the simulations. The experimentally measured vortex core shed from the rotor blades is very thin, making it difficult to capture accurately using LES. In experiments (e.g., Quaranta et al. 2019; Abraham and Leweke 2023), the tip vortices do not merge, and separate helices are still observed after leapfrogging. In the results presented here, the tip vortices merge after leapfrogging, forming a new stable vortex system. It is therefore unsurprising that the current results show wake mixing is not enhanced after leapfrogging occurs and that rotor asymmetry has no significant impact on wake recovery. However, this merging behavior is likely a numerical artifact, and casts doubts on the subsequent analyses.
2. The novelty of the discussion about tip vortex trajectories and the 2D point vortex model is not clear to me. The vortex trajectories and instability growth rate and eigenvectors for an asymmetric two-bladed rotor have been presented in previous studies (e.g., Selçuk et al. 2018, Quaranta et al. 2019, Delbende et al. 2021). The 2D point vortex model was also presented in Abraham et al. (2023) for any number of vortices. Please clarify the differences between the current results and those obtained in the previous studies.
3. Page 1, lines 16-17: Lundquist et al. (2018) refers to wind farm wakes, not individual turbine wakes. Individual turbine wakes tend to persist ~10 rotor diameters downstream (e.g., Porté-Agel et al. 2020).
4. Page 21, lines 399-402: Lignarolo et al. (2015) also triggered the zero-wavenumber perturbation using a small difference in blade pitch angle between the two blades. Although, I agree that the reason for the sudden increase in kinetic energy flux that they observed is still unclear.

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