

This manuscript presents a comparison between a free-wake vortex model (CACTUS) and stereoscopic PIV measurements for a scaled X-Rotor, with analysis covering both baseline and pitched-blade cases. The study offers insight into wake development and 3D flow structures introduced by blade coning. However, it lacks sufficient validation and verification of CACTUS, especially in terms of its ability to predict aerodynamic loads. Most discrepancies between simulation and experiment are attributed to the vortex core size, without adequately exploring other potential causes.

1. Choosing not to include the flow-curvature (virtual camber) effect to "avoid complicating error attribution" is questionable—excluding a known aerodynamic influence makes it harder, not easier, to understand discrepancies. A practical alternative would be to preprocess the airfoil polars by incorporating the effective camber caused by flow curvature under typical VAWT conditions. These adjusted polars could be used as CACTUS input, offering insight into the impact of virtual camber without modifying the code itself.
2. The authors attribute wake discrepancies—particularly at $X/D = 0.43$ —to the vortex core size, supported by a reference to an actuator line method (ALM) study. While there is a conceptual similarity between force smearing in ALM and vortex core effects in lifting-line theory, the two methods are fundamentally different, and this comparison is not directly applicable. Concluding that the discrepancies stem from vortex convection assumes the aerodynamic loads are accurate—something not demonstrated in the paper. The brief mention of uncertainties due to airfoil polars is more relevant and deserves further exploration before focusing solely on the vortex core.
3. In the pitched case, where discrepancies grow more significant, the authors again attribute the issue to the vortex model while overlooking the potential role of load misrepresentation, such as inaccurate polars. This is a missed opportunity for a more balanced analysis.
4. Finally, the sentence in the abstract—"Results indicate that CACTUS effectively replicates the flowfield within the rotor volume and the very near wake when no pitch offsets are applied"—overstates the level of agreement. While results align with experiments in some areas, noticeable discrepancies remain. A more measured phrasing would better reflect the findings.

Based on these concerns, I recommend **major revision** before the manuscript can be considered for publication.