A review of “Review on Near-Surface Meteorological Variations Induced by Wind Turbines” by Boumendil et al. submitted to the journal Wind Energy Science

This manuscript provides a review of the work done on near-surface meteorological effects induced by windfarms in the past two decades. This is a comprehensive review covering field and satellite observations as well as numerical simulations from mesoscale and LES models. The manuscript is very easy to read. I particularly liked the tables in the results section that provides a great visual summary of impacts of wind farms as well as the excellent analysis of vertical transport in turbine wakes in Section 4.3.

Major comments

- This paper focuses only on surface meteorology. There are a number of papers that also look at rainfall. Including those studies would make this particular paper truly comprehensive.

- Siedersleben et al, 2018 did some aircraft measurements in offshore wind farms. To the best of my knowledge, this is the only observation over offshore wind farms. This should be included to make the review more comprehensive.

- Another interesting study is the Hasager et al. 2013, Wind farm wake: The Horns Rev photo case. It is not a classical meteorological observation based study but it uses an aerial photo to study wind farm wakes. I feel this unique study could also be a part of this paper.

Minor comments

- Fig. 1: Baydia Roy → Baidya Roy
- Line 130: What is order in which references are cited? Alphabetical or date? Smith et al., 2013; Adkins and Sescu, 2017; Baidya Roy, 2011
- Line 278: fiel → field
- Fig 9: Instable → Unstable
- Section 4.7: Wu et al., https://doi.org/10.1016/j.scib.2023.10.016 will be a useful addition