

Review: *JHTDB-wind: a web-accessible large-eddy simulation database of a wind farm with virtual sensor querying*

General Comments

This paper documents the model numerics and configuration for a database of LES of simulated wind farms in conventionally neutral conditions. The paper outlines the model that is used, how the simulations are set up, the assumptions that are made, and describes the output. Useful code is provided for querying the database. The simulation process appears valid and the dataset could prove to be very useful to the broad wind energy community.

I feel that this is a very well-written paper and clearly organized. I think this dataset is very helpful for the community and wish it luck in its acceptance and use for a large variety of applications. I appreciate the authors mentioning that other scientists within the community would have made other choices in the model setup and do believe that their setup is valid and justifiable. I have my reservations about the applicability of neutral stability but recognize the importance of simplicity for generalizable use.

I attempted to run the associated jupyter notebooks from the SciServer website but was unable to download the data (the command “getData” was initiated but did not progress). Thus, I was unable to verify the data on my end.

With all that said, **I recommend that the paper be accepted with only minor revisions / suggestions.**

Major Revisions

None

Minor Revisions

- The names, JHTDB and JHTDB-wind, are very close and line 39-40 had me thinking that the database being introduced had already been used in peer-reviewed publications over 400 times. While changing the name is probably too much to ask, clarifying in the sentence on 39-40 would probably be helpful to readers. Further, “JHTDB-DNS” is introduced on line 58. I imagine this is referring to the JHTDB dataset, but again - please make this clear to readers.
- I had missed it in the text and was searching for the boundary layer height of the simulation once it reached its quasi-steady state and eventually found the line where it references Figure 2. Two thoughts (feel free to disregard): PBL Height is often referred to as z_i in meteorology and from what I have seen in wind energy research so you may

consider changing that here so it is more searchable, and justifying that the domain size and Rayleigh damping layer are sufficiently positioned. For example, I believe neutral conditions should have domain spans that are greater than $\sim 3z_i$, and the damping layer should be just greater than $\sim 1.2z_i$. Both of these conditions appear to be met, but I had my doubts and had to dig into the paper to find it. It may just be helpful to be upfront with it to justify that the model is set up well.

- Figure 4, 5 - why are the temperature deviations positive ($2.0 \pm 0.02^\circ \text{K}$)? How are these calculated? I see this mentioned now in Figure 10's caption... this is probably not the place for defining how the field is calculated. Please move this up to where Figure 4 is being introduced.

Technical Suggestions

- The citations in the introduction have some issues (e.g., citation following a period on line 30, citation following a citation on line 31, etc.). Please carefully review the manuscript.