

Review Comment

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Title: Three-year database of atmospheric measurements combined with associated operating parameters from a wind farm of 2MW turbines and rotor geometry

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General comment

This manuscript explains open database obtained by 3 years' measurement campaign in an onshore wind farm, which include wind speed/direction and turbulence components measured by cup and sonic anemometer, temperature measured by radiometer, SCADA data and blade shape obtained by 3D scan. This kind of database is very important for future research and will be contribute to industry. However, only introducing or explaining database is not enough for scientific journal paper. Although it's great effort and there are some interesting topics, it should be added more detail explanation about data quality, scientific insight, new findings etc.

In conclusion, a reviewer suggests MAJOR REVISION of this manuscript.

Specific comment

Clause/ Subclause	Line number	Comments
1	Overall	There is no literatures review. Although the authors quote 5 references, all these are not journal papers. Because this is research article, the authors should refer not only industry work but also journal paper. The authors should explain about previous researches, differences between previous researches and this manuscript etc.
	18-36	Although, the authors raise 4 originalities of present database, it is hard to understand the originality. "Operational Wind Turbine (SCADA) Data" already exists, as

		<p>the authors explained.</p> <p>“Measurement of Wind Properties”: Sonic anemometer is commonly used for boundary layer and turbulence structure research and open data might exist.</p> <p>“Expansion of the Database Applications” and “Future Benchmarking” are about future work and not explaining originality of database in this manuscript.</p> <p>The authors have to explain the originality of present database more clearly.</p>
	30	It is hard to understand the meaning of “same wind farm environment”. Is that same meaning of “same wind farm”?
	31	<p>“AERISwebsitehttp://...”</p> <p>Need space between website and the URL. It is suggested to put URL in brackets.</p>
1.1	42	Equivalent to 4D -> 3.8D
	Table 1	Longitude -1.9XXX°W is correct? Or typo of 1.9XXX°W or -1.9XXX°E?
2	Figure 2	It is suggested to align vertical axis of figure 2-(a) and 2-(b).
	Figure 3	Image resolution of figure 3-(a) and 3-(b) are bad. It should be replaced by higher ones. Also, figure should be quoted and explained in somewhere in main body.
	61-69	Flow distortion effect caused by met mast is important to evaluate reliability of wind measurement. At least, mounting direction of each anemometer should be mentioned. Adding figure of x-y planes, explanation of length of mounting booms, frequency of calibrations, standard or guidelines followed are preferable.

	69	The date when sonic anemometers were replaced should be explained.
	72	In general, 10-min statistics are used especially for turbulence parameters. Why the authors decided to compute 1-hour statistics? Need explanation.
	86-87	The authors say “Statistical convergence is not acceptable (i.e., [105° –150°]).”, however, the reasons are not clearly mentioned. Need explanation.
	88, 89	Is language “wake interactions” correct? Or is it just mean “wake effect”? If there is interaction, the author need to explain more details about the phenomena.
	89-90	Although the authors say “The footprint... less sensitive to altitude”. It is hard to understand if this sentence is correct only from figure 5. Add more explanation about the reason that the authors think so in text or figure.
3	101-102	“The vertical resolution of the profiles...” The explanations of altitudes such as “atmospheric boundary layer, lower free troposphere, etc.” are very ambiguous. It should be more clearly explained the relation of altitude and resolution as numeric.
4	Figure 8.	Add reference if this figure is already published as somehow (e.g. report, webpage etc.).
	Figure 8.	Caption is incorrect. It must be “(10) yaw bearing, (11) nacelle”.
	Table 2	“Nacelle height” should be “hub height”.

	Table 2	What does the meaning of "Average weight"? Also, "rotor without blades" is "hub" and "nacelle without rotor" is "nacelle", in general. Is there any reason that the authors call that way?
	114, Title	Title is "Description of the Wind Turbine" and seems explain about only wind turbine. However, main subject of this manuscript is database. It is suggested to change title as "Description of the SCADA data" or "Description of the Wind Turbine and SCADA data"
	120	Although the authors say that "All wind turbine are equipped SCADA...", the authors also say that "SCADA data from four of the six turbines are included ..." in line 12. It should be clearly explained that which turbines' SCADA data is available in present database.
	Table 2	It is suggested to add cut-in, rated and cut-out wind speeds, as general information.
	130	What does "azimuth error" mean here? Is that same meaning of "yaw misalignment"?
	129-131	The expression of this sentence is very ambiguous and not clear if data would be provided by present manuscript is corrected as black-box or couldn't correct due to lack of information. More clear explanation is needed.
	137,138	rotation -> rotational speed or rotational frequency
5	Figure 10, 11	Figure 11 is referred earlier than figure 10 in main text. The authors should reconsider the order of those figures.

5.1.1	158	Is “obscured by the mast” intent “obscured by the tower”? If so, it should be corrected.
	167、 216	Is “82% of the rotor diameter” correct? Or does it intent “82% of blade length”
	175	(see Figures 12a) and b) -> (see Figures 12a) and b))
	Figure 12	Image resolution of figure 12-(a), 12-(b) and 12-(c) are bad. It should be replaced by higher ones.
	155, 179	It is suggested to mentions about weather condition such as wind speed for day of scan work.
	192	mast -> tower
6/Abstract	Overall	It is difficult to understand originality, new findings etc. of this manuscript. The authors should reconsider of these clauses based on reviewer’s comments and its modification. Needless to say, general comment and some of comment on clause 1 are highly important.