

Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on **essd-2021-463**

Anonymous Referee #1

Referee comment on "Combined high-resolution rainfall and wind data collected for 3 months on a wind farm 110 km southeast of Paris (France)" by Auguste Gires et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-463-RC1>, 2022

This paper describes a dataset of very high resolution wind and rainfall data collected at a wind farm location in central France. A thorough description of the measurement site and equipment is given, followed by details of the data collected and some analysis on the potential limitations of the instruments when measuring at high frequencies.

From what I can see the data is complete and well documented on the zenodo repository. The inclusion of the python scripts and quick looks are a very useful addition for those wishing to quickly explore the data. I would comment that having to download the whole 9.7GB of data at once is an issue that may inhibit the use of the data to those who do not need everything. You comment in the manuscript that the large raw data files would only be needed by an expert user. Future datasets could be potentially be grouped by beginner and expert data users to improve accessibility of the data, and potentially improve the uptake of it's use.

At present although I believe the dataset to be complete and well documented the manuscript quality is currently not high enough for publication. This could be improved by implementing the following comments.

Main comments:

- It would be helpful to mention the location of the wind turbine in the title and abstract of the paper as knowledge of the climatic region the turbine is located in would be very useful for those wanting to use the dataset. The time period the data is collected for would also be useful in the abstract.
- Throughout the text there are numerous spelling and grammar errors which made it quite difficult to interpret the key messages. I would suggest a thorough proof read of the document to pick up on these. A number are highlighted in the minor comments

below.

- Ending the manuscript with a summary section of the data and details of some potential use cases would be helpful. Are there other applications as well as for the wind industry where these observations could be useful? How is this dataset better than others mentioned in the discussion that are already available?
- From what you say in Line 22, can you demonstrate in this paper how the rain rate impacts the conversion to wind power in this paper? This would further highlight the usefulness of these measurements. Adding a section demonstrating this would significantly increase the value of the paper.
- Within section 2.5 can you put the measurement period into more context. In terms of wind energy generation is there a large seasonal cycle at this location? And do you know what point in the cycle this is, and whether it is a particularly high/low wind year based on the large scale circulation conditions? Can you also comment on why there are large differences between the disdrometers and the stations?
- I would remove the database structure from Section 3. Similarly for the bullet points in line 180-196 and 230-260. Alternatively this could all be moved to a supplement or changed to tables of variables available.

Minor comments.

- Consider editing the spelling and/or grammar in lines 11, 13, 21, 31-33, 45, 75, 95, 115, 119, 124, 128, 207, 288, 299-301, 330.
- Lines 15-19 Where are the previous studies that have looked at rain rates around wind turbines based? The climatic region that the wind turbines are in will be important for this relationship and would be worth commenting on (for example whether all in tropical or extra-tropical regions).
- Line 29: Can you comment on the complexity of the atmospheric boundary layer and how that will impact the wind turbines?
- Line 42: Can you give the dates of the measurement period?
- Line 52: Figure 3 is mentioned before Figure 2.
- Figure 2: are there photo credits required here for the publication of the images?
- Figure 3: Can you include what the different colours mean in the caption. You could also possibly include the prevailing wind direction for some context and comment in the text on if it is influenced by local orography.
- Line 73, define U_L
- Line 88 'Built-in' rather than 'Build-in'.
- Line 94: What does OTT stand for?
- Line 103: Check the display of drop size distribution information. The mixture of italics and normal font is confusing.
- Section 3: You oscillate between the use of database and data base, please check for consistency.
- Section 3.6 can you give an indication on how long the python code takes to run?
- Line 343: Three month, rather than two month field campaign.

