

Comment on essd-2022-29

Anonymous Referee #2

Referee comment on "HomogWS-se: a century-long homogenized dataset of near-surface wind speed observations since 1925 rescued in Sweden" by Chunlüe Zhou et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-29-RC2>, 2022

The paper entitled " HomogWS-se: A century-long homogenized dataset of near-surface wind speed observations since 1925 rescued in Sweden" deals with an interesting topic that can be certainly of interest for the audience of ESSD journal.

However, in my opinion, the current version of the manuscript is lacking in some details and analysis and should be reconsidered for publication after a major revision. As a general comment, the manuscript is well organized and the English language is fine, although minor spell check are required.

Below the authors can find a list of specific comments:

- The abstract is a bit long. Please reduce its size and avoid the use of acronyms. Moreover, some methodological details can be removed or shortened.
- In the Section 2.1, the authors should provide more details about the raw data, as well as a more comprehensive description of the study area from geographical and climatic points of view. As an example, they miss important details about the time resolution of the data and about the data availability of each station. Probably, the latter information can be indirectly deduced from Figure 5, but specific details are required.
- At line 125, please justify the choice of 10 days as threshold to exclude or retain a determined month from a time series. I think that this is a very low threshold.
- It is not clear if the considered anemometric data consist only of wind speed

observations or also of wind direction measurements. Please clarify this point.

- In the Section 2.3, please provide more details about the homogenization processes. Did you consider only one time series consisting of monthly anomalies? Did you evaluate the possible impact of seasonality?

- About the monthly anomalies, what is reference climatological period? Did you consider the 1925-2021 period or a more standard benchmark, such as the 1981-2010 time interval?

- Another "dark point" concerns the reanalysis data used as a reference series. I suggest to describe the processing of these data in more detail. Did you extract from the reanalysis immediately the monthly wind speed anomalies or, for example, the U and V data? Please provide more details.

- I suggest to spend more words about the causes of the inhomogeneity found in the investigated wind speed series. What is the impact of the change in instrument type? There are many differences between the old mechanical anemometers and the more recent ultrasonic devices, just to introduce a possible discussion about this topic.

- Finally, the authors mentioned a good correlation with NAO index, but they did not prove and document this interesting result with a figure or a table.

Best regards.