

Comment on wes-2022-93

Anonymous Referee #1

Referee comment on "Population-based structural health monitoring: homogeneous offshore wind model development" by Innes Murdo Black et al., Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2022-93-RC1>, 2022

This paper proposes a domain adaptation model for population-based structural health monitoring in an offshore wind farm. The idea is to predict the fatigue damage equivalent moments in the jacket support structure of a wind turbine based on the trained machine learning model on another wind turbine in the same wind farm. The proposed idea is novel. However, there are several issues in the paper that should be addressed:

- The text is quite confusing for the reader to capture the idea of the proposed method because there are several unclear sentences and a large number of grammatical errors and typos throughout the paper.
- The paper may not be well organized. For example, why is the data description included in subsection 2.1? The organization of the article is needed.
- There is no literature review in the introduction section to state the novelty and advantage of this work over the previous research studies, e.g.,
<https://doi.org/10.1016/j.renene.2021.01.143>,
<https://doi.org/10.1016/j.renene.2020.10.121>,
<https://doi.org/10.1016/j.ymssp.2021.108519>, <https://doi.org/10.3390/en15020558>,
<https://doi.org/10.1016/j.renene.2022.07.117>.
- The motivation for the study should be further emphasized. In particular, the contribution should be highlighted in the introduction and conclusion sections.
- The reference style is not consistent throughout the text, as well as the numbering of figures and tables (table 3.1 in line 71, figure 3 in line 195, and figure 4 in line 199, for example)
- The description on the train and test data should be provided. For example, what percentage of source and target domains data is used for training and testing the models?
- In your domain adaptation model, how do you consider the wind turbine position in the wind farm? Because based on different positions, different severity of loads may be imposed on wind turbines; hence, the trained machine learning model on a wind turbine may not give promising results in another wind turbine.