Wind Energ. Sci. Discuss., author comment AC2
https://doi.org/10.5194/wes-2021-53-AC2, 2021

Reply on RC2

Tingna Wang et al.

Author comment on "On sensor optimisation for structural health monitoring robust to environmental variations" by Tingna Wang et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-53-AC2, 2021

Yes, it can. The aim of this study is to establish a general framework to consider a certain environmental effect in the design process of a sensor system. After the sensor system is put into use, the healthy state data should be collected at different temperatures for a period of time firstly. Then, the continuously collected data can be used for robust feature extraction using the methods mentioned in the article. The time interval for extracting features should be set according to the regulations of the project. In addition, the algorithm used for damage identification can be adjusted according to specific requirements.

Yes, it is. A set of healthy state measurements with frequency variations caused by temperatures can be used as a baseline to extract features. In fact, it is possible to remove temperature (or other benign) effects, even without temperature measurements. There is a very large body of work on this topic – data normalisation. However, this paper looks at a more fundamental problem; if the sensor network delivers robust data, there is much less work upstream in removing temperature effects etc.

Please also note the supplement to this comment:
https://wes.copernicus.org/preprints/wes-2021-53/wes-2021-53-AC2-supplement.pdf