Wind Energ. Sci. Discuss., referee comment RC3
https://doi.org/10.5194/wes-2021-145-RC3, 2022

Comment on wes-2021-145

Anonymous Referee #3

Referee comment on "A new base of wind turbine noise measurement data and its application for a systematic validation of sound propagation models" by Susanne Könecke et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-145-RC3, 2022

The overall impression about this paper is positive. The paper represents an important step in the search for suitable data and procedures to compare measurements and model results. The main problem, however, is the selection of suitable measurement data together with all the conditions that are decisive for the generation and propagation of the sound.

The short term variability of meteorological parameters (e.g. wind speed, wind direction, that are part of low frequency turbulent motion) and heterogeneous ground properties is difficult to handle. This may lead to high variance in measured sound data and is difficult to compare to 'regular' model data. This variability is not discussed in detail. E.G. how it was determined the absence of a low level jet by mast measurements to 100m height? How the averaging of meteo and accoustic data affect the comparison of data? Which time range would be recommended (1min,, 5 min, 10 min) ?

Here, the surprisingly good agreement between the model and the measurement gives rise to doubts about the selection of the cases examined. Normally, comparisons of measurement results with very similar conditions often show higher differences. Nevertheless, the results of this paper should be regarded as a first step how to proceed, about input parameters and comparison between measurements and model results.

It is still unclear how a wind turbine should be represented in a sound propagation model. The method chosen here with three alternative sources is one of many possibilities, but there is no evidence that this is the best possible.

The wide range of literature is presented, what may help any reader to advance how to proceed with measurements and comparison to model efforts.