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Interactive comment on "Detection of ice mass based on the natural frequencies of wind turbine blade" *by* S. Gantasala et al.

Anonymous Referee #2

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The paper presents a method to detect ice mass based on natural frequencies of wind turbine blades. The proposed method is demonstrated to be capable of approximately detecting average ice mass accumulated along the blade.

The following comments are made to improve the quality of the paper.

* Abstract

The validation of the proposed FEA model should be mentioned

* Structural Model

a. More information (such as cross-sectional properties of the blade, number of beam elements and boundary conditions) on the modal analysis of NREL 5MW wind turbine blade should be given.

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Discussion paper

b. For 1st edgewise mode In Fig. 5, please explain why the difference in case of 12.1rpm is much higher than the difference in case of 0rpm.

* Artificial neural networks (ANN)

A more detailed flowchart of ANN should be given. What does "W" and "b" in Figure 8 denote?

* Results & Discussions

a. How the ten ice mass validation cases were chosen?

b. How long does it take to finish one case study using ANN model? Is it computationally efficient?

c. Please justify the choice of values of the No. of neurons and training data size in Table 3? If we use higher values of these parameters, will we get more accurate results?

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