

## ***Interactive comment on “Development of new strategies for optimized structural monitoring of wind farms: description of the experimental field” by João Pacheco et al.***

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Received and published: 6 April 2020

The authors thank the comments. We have considered the feedback in the revised manuscript. Each comment is further addressed below.

- Comment 1: p.2, l.48: "a few number of easy to install sensors" - "a few number" does not read good. - Response: In the project a very extensive instrumentation will be deployed in order evaluate different monitoring layout alternatives, but the final goal it to propose a minimal optimized monitoring layout based on reduced number of sensors that can be easily installed.

C1

- Comment 2: p.4 the phrase "of variable height in section" is unclear same sentence: "boltedconnections" - mistype Please check the consistency using a space between the value and the unit: "12m/s" but "20 m/s", also "100 m diameter rotor" but "height of 95m" - Response: The hub is placed at a height of 95 m and is supported by a steel tower, with a hollow circular cross-section with variable diameter and thickness, composed of four segments that are connected by bolted connections. In the revised document, it will be consistently used a space between the value and the unit: 12 m/s, 95 m.

- Comment 3: p.4, l.83: "since the main purpose is to simulate the dynamic behaviour of the tower". The main purpose of what? Of the entire project or of the numerical model? If the authors mean the entire project, it would be necessary to reflect this somewhere in the introduction. - Response: The main purpose of the numerical model.

- Comment 4: p.7, l.124 "the harmonic frequencies associated with to rotor operation" -> two rotor operations? - Response: "the harmonic frequencies associated with the rotor operation (W, 3W, 6W, ...)"

- Comment 5: p.7, fig.8a: It is hard to see if there are "blue" peaks behind the red ones for the 1st and 2nd tower modes - Response: There is a blue peak for the 1st tower mode, but for the 2nd one there isn't. Under non-operating conditions, the peak pairs associated with the first two tower mode pairs clearly stand out. In operating conditions, additional peaks associated with the rotor rotation frequency appear. The peaks associated with the second pair of bending modes become much more diffuse, which makes their tracking over time quite challenging.

- Comment 6: p.8, l.150: what is a MEM accelerometer? Do you mean MEMS accelerometers? - Response: It is a typo that was repeated several times, we meant MEMS (micro electromechanical systems). This will be corrected in the revised manuscript.

- Comment 7: p.16, fig.20. What are the units of the vertical axes? - Response: These

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are normalized power spectra, so without units.

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Interactive comment on Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2020-45>, 2020.