

Interactive comment on “A Systematic Approach to Offshore Wind Turbine Jacket Pre-Design and Optimization: Geometry, Cost, and Surrogate Structural Code Check Models” by Jan Häfele et al.

Jan Häfele et al.

j.haefele@isd.uni-hannover.de

Received and published: 20 July 2018

We appreciate the second reviewer's comments that are addressed in the following.

- *“The novelty/contribution of the paper is unclear and should be highlighted in the introductory section.”*

The introduction section is reformulated in the revised version, i.e., the main innovation is explicitly stated now. This was already mentioned in the comments of the first reviewer. Together with the response in author comment AC2, we believe

C1

that this resolves the issue.

- *“Please justify the values used for jacket model parameter boundaries in Table 1.”*

Basis for the choice of these parameters was the OC4-jacket. This very important reference was indeed missing and has been to the revised version.

- *“Please elaborate how the soil is modelled in the model to take account of the soil-structure interaction.”*

A brief description, how the soil-structure interaction approach works, has been added to the corresponding section.

- *“Please justify the choice of S-N curve used in the study.”*

Fatigue checks are only performed for tubular joints, S-N-curve DNV-T. The paragraph was slightly reformulated to resolve this issue.

- *“Please provide the references for values of wind and current speeds as well as the values for significant wave height in Table 3”*

The reference was missing and has been added.

- *“Please justify why normal distribution is used for all cost model parameters.”*

This is a scientific example. Therefore, normal distributions are used to consider uncertainty to a certain extent. We cannot prove that the assumption of normally distributed cost values is correct, but we believe that the example is easily transferable to any other distribution of unit costs.

- *“Please justify the values of standard deviation in Table 5.”*

This is similar to the previous point. The given values are determined by expert knowledge and there is no reference. Based on expert knowledge, we tried to define an example where the scatter of cost units is in a realistic dimension, which shows in the values of standard deviation (for instance, material price is

C2

supposed to be constant, while transport and installation costs vary strongly). To resolve this and the previous point, we have modified the example section slightly to clarify this point.

We have attached a revised document that includes all changes to this response and hope that all issues are resolved in this way.

Please also note the supplement to this comment:

<https://www.wind-energy-sci-discuss.net/wes-2018-39/wes-2018-39-AC2-supplement.pdf>

Interactive comment on Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2018-39>, 2018.