

Interactive comment on “Benefits of sub-component over full-scale blade testing elaborated on a trailing edge bond line design validation” by Malo Rosemeier et al.

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The paper accurately defines some drawbacks of traditional, uni-axial full-scale testing like incorrect loading and materials not loaded to the same fraction of stress exposure. However, there are some points that should be addressed to strengthen the paper.

The paper only evaluates the traditional full-scale test, while more advanced methods are merely mentioned. The statement in the paper that the advanced methods only aim at minimizing over-loading of the structure is incorrect, the aim is to have a more correct loading. An in-depth comparison of the sub-component test to advanced full-scale testing methods like bi-axial, forced response tests is advised. In this it should

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be remembered that e.g. WMC in the Netherlands started with bi-axial testing already long time ago, but this was replaced by a uni-axial resonant fatigue test for practical reasons (time, money).

An inherent drawback of a sub-component test is that the selection of the critical regions and its loading and the design of the component set-up need to be done using the design models. This seems in conflict with the certification objective of the full-scale test: ‘to validate the assumptions made in the design models’. How to repair this drawback?

In case a full-scale test would be replaced by sub-component tests, which seems the advice in the conclusions, how many components would then be needed to be tested? The DTU10MW example already identifies 2 regions of interest for lead-lag loading, but there will be more. Will there then still be a time benefit?

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