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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.

Malo Rosemeier et al.

malo.rosemeier@iwes.fraunhofer.de

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Thank you very much for taking the time to review our manuscript and giving us your feedback. In the following, please, find our responses (R) to your comments (C):

C "The second and third comments about the literature review on sub-component testing should be addressed. The title of the paper is on sub-component testing but the paper lacks a rigorous literature review on this subject. The authors should improve the literature review so that a wide spectrum of the readers, specially the ones who are less familiar with the novel concept of the sub-component

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Discussion paper

testing get engaged. Although the authors discussed a very specific type of sub-component in their study, they should still include an exhaustive literature review and discuss the other methods that have been developed so far and elaborate on their advantages and shortcomings (at least look at the works by JF Mandell, F. Sayer, D. Zarouchas, ME Asl and G fernandez)."

R As already mentioned in the previous comment (AC3), the proposed references deal with generic elements and details, such as beam specimens, and not with blade substructures. According to DNVGL guideline 2015, we consider a rotor blade substructure as a full scale blade sub-component, which is a cut-out part of the real blade. Since the whole work deals with sub-components in the sense of cut-out blade parts, we see no necessity to mislead the reader with a literature review on element and detail testing. To the authors' knowledge, the corresponding available literature is limited. To further highlight the means of SCT, we have added a further reference by Kühlmeier (2006). The intention of this paper is not to give a review of all levels of the testing pyramid but rather focus on the comparison of the top of the pyramid (FST) with the next lower level (SCT).

C "The fifth comment (supporting of the finding for sub-component testing) has not been addressed effectively. The authors have discussed the FFST and its respective stress ratios and testing time in detail, however, the SCT part lacks a rigorous discussion."

R As already mentioned in the previous comment (AC3), simulation results on SCT compared to FST, as well as the general idea of the SCT concept are shown in reference Rosemeier et al. (2016). Based on the findings in Rosemeier et al. (2016) it is assumed that the SCT concept is applicable to replicate any load direction vector. Furthermore, the implementation of such testing scenarios is highlighted on p. 3, l. 9: "The position of the two joints within the cross-sectional plane can be chosen arbitrarily, which makes it possible to introduce any load

combination and distribution of lead-lag and flap-wise loading.“ For clarification, the idea of the testing scenario was repeated on p. 10, l. 6 (diff_06_04.pdf) and referenced again.

Please also note the supplement to this comment:
https://www.wind-energ-sci-discuss.net/wes-2017-35/wes-2017-35-AC5-supplement.pdf

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