Manuscript Number: WES-2025-99

Title: Enhanced approach to match damage-equivalent loads in rotor blade fatigue testing

General Comments: Overall, the manuscript well written. The introduction covers the background and literature review of relevant topic areas related to the research. The description, comparison and proposed methodology to define fatigue test loads are thoroughly discussed with sound conclusions. However, a few minor clarifications and corrections could enhance the manuscript.

Specific Comments:

Comment	Line	Comment
1	80	Please include a discussion of who should be interested in this research.
2	84	Figure 1 identifies, and the text briefly describes the load time series processing paths. However, none of the nomenclature (i.e. abbreviations, variables, symbols, subscripts) in Figure 1 are described. To aid the reader, please define all terms used in Figure 1 in the Section 2 text or include a nomenclature section at the beginning of the manuscript.
3	186	The manuscript states " … and $p_{ws,j}, p_{ws,j}, p_{DLC,j}$ … " The second instance of $p_{ws,j}$ should be $p_{yaw,j}$.
4	199-200	The manuscript states "… only two cases when they are proportional: (I) When … or (case 2.1) When …". Please clarify if "case 2.1" refers to the processing path 2.1 or is it the second case of proportionality and therefore should be labeled as "(II)".
5	242, 244	The test case assumes the blade material to be only uniax CFRP and GFRP. However, the IEA 22MW Reference Wind Turbine (RWT) blade contains uniax CFRP and uniax, biax, and triax GFRP, as well as medium density foam. Please clarify how the correct blade cross sectional stiffness was maintained using only uniax CFRP and GFRP. Also, while the IEA 22MW RWT does not include adhesive joints, please comment on the lack of adhesive joints in the test case and proposed methodology to define fatigue test loads.
6	283	The manuscript states "… may also be exceeded when using different material properties or different CLD-formulations." This is a good statement and appears to partially address the concern in Comment 5 regarding simplification of material choices in the test case.
7	301, 306	Please identify and describe the optimization methodology executed.
8	309	The manuscript statement "… evaluated by evaluation the test loads …" is not grammatically correct. Please correct. Possible corrections are "… evaluated by evaluation of the test loads …", "… evaluated by evaluating the test loads …", or rewriting the statement to "… determined by evaluation the test loads …".

9	359	The future research areas should also discuss the limitations of the proposed methodologies and future research needed to address issues resulting from the combination of research assumptions (in Section 2.1), material simplification (in Section 3) and assumptions of negligibility (in Appendices A1 and A2).
10	393	The manuscript states "… zero in the in extensional …". The second "in" is not required.