

Interactive comment on “Aero-elastic Wind Turbine Design with Active Flaps for AEP Maximization” by Michael K. McWilliam et al.

Michael K. McWilliam et al.

mimc@dtu.dk

Received and published: 1 February 2018

In response to "The co-design has a much higher flap deflection angle. I'm wondering if this results in larger drag as well?": _____

Yes, the larger flap angle would increase drag. By the fact that the optimization is choosing large deflections, shows that the load alleviation benefit out-weigh the drag penalty.

In response to "Also, if the flaps were also used for load reduction, and thus varied around this mean angle, would this large mean angle potentially cause issues because the total flap deflection would be quite large?": _____

The flaps in this case are only used in a quasi-steady way in below rated power operation. Any added load alleviation features will be added in above rated conditions, so there should be no issue with superimposed large flap angles.

Revisions to the manuscript: _____

- In page 9 line 20, it is already mentioned that large flap deflection causes increased drag.

- On page 5 line 11, we mention that the angle was based on a low-passed filtered wind. We will elaborate and state that the flap actuation was quite slow. Furthermore we will comment that that fast flap actuation for fatigue reduction would occur at above rated conditions, where the quasi-static occurs below rated conditions, thus, these two applications do not occur simultaneously.

Interactive comment on Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2017-50>, 2017.

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Discussion paper

