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Interactive comment on "Modern methods for investigating the stability of a pitching floating platform wind turbine" *by* Matthew Lennie et al.

Matthew Lennie et al.

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Dear Reviewers,

Thank you for the detailed review of my paper. It was helpful.

Referee 1 -Numerical details were given in tabular form on page 6. These were chosen after a sensitivity study. The papers from Marten et al in the reference list have a good discussion about the effects of each of the settings. In this paper we are not trying to validate for standard wind turbine simulations that has already been done in previous literature. I didn't want to go into a long discussion in this paper about the simulation settings. -High Fidelity LES wasn't used in any of the papers used as a baseline, I searched literature and didn't find anything suitable. I do understand your point and have addressed it briefly. There is no distinct "truth" just a comparison with other

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Discussion paper

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simulation methods all with problems of their own. -I have included a new paragraph to explain the difference between the results. I have been a bit more critical in the new version. -It would be great to run a realistic case with a controller, but this would be a whole study in itself. I just wanted to demonstrate the method and in what context it can be used. The case was chosen deliberately to exaggerate the damping effects so that the readers can understand what is going on.

Referee 2 I understand the criticism of being bit short on some topics of validation that is the downside of trying to achieve so much. For the validation of the instantaneous damping method. I am relying on Bowles and Corkes more detailed analysis for validation. In my experience of using Bowles and Corke method for airfoil data, the error created through non-sinusoidal response doesn't seem to be significant even in cases with dynamic stall vorticies. Call it Proof by analogy, but I believe that the small diversions from sinusoidal thrust will not be a problem. The verification via the two methods whos <3% error which I think is acceptable. - I have now included a short discussion of the results - I have been more critical on the results this time. -(copy)It would be great to run a realistic case with a controller, but this would be a whole study in itself. I just wanted to demonstrate the method and in what context it can be used. The case was chosen deliberately to exaggerate the damping effects so that the readers can understand what is going on. -The difference between the two values IAD and CAD is described in the derivation. - The instantaneous damping is shown in Figure 7

Technical Corrections.

- I have updated the graphs with different line styles. I have checked the PDF now on 4 different PDF readers. If there is still a problem with legend titles etc.. Please be very specific as to the problem so I can fix it. -I fixed the subscript errors in the derivation and checked for missing tildes. -The spelling and grammar errors noted have been checked.

Please also note the supplement to this comment:

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http://www.wind-energ-sci-discuss.net/wes-2016-52/wes-2016-52-AC1-supplement.pdf

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