

## ***Interactive comment on “Comparison of HiL Control Methods for Wind Turbine System Test Benches” by Lennard Kaven et al.***

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This article presents the application of HiL for drivetrain testing in onshore wind turbines. The article is well-structured and topic is of interest. Here are my suggestions to improve the paper quality: -Title: please add “drivetrain” to the title. -Apart from the inertia and stiffness which are considered by the 3-mass model, there are “external excitations” in particular “tower shadow” or “blade passing frequency” (often shown as 1P, 3P, 6P,...). How authors have modelled them? I would expect to see some peaks less than 1 Hz for 3P (with rated speed of 17.5 rpm, the 3P would be 0.85 Hz) which could be seen in Fig. 6 if it is modelled. -Abstract: some of the abbreviation are not defined (IE, MRC) in the abstract. -Fig 1: please clarify what are “measured signals” in this figure. -Introduction: authors can extend the introduction by referring to several

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works on the HiL application in wind industry, for example for offshore turbines. HiL has been used in testing the offshore wind turbines. Please also extend the literature review for the control methods used in this paper – specially refer to their applications in other fields. -Page 3 (65) “As a reference, we use the 3-mass oscillator model of a WT drive train, and for HiL controller synthesis the 3-mass oscillator model of a STB drive train parameterized as by Leisten et al. (2019b).” Please mention the main features of the WT and drivetrain used as reference case in this study. -Fig 6: please discuss the results more in details, specially why the results for each method differs to others. - Please consider including a nomenclature listing all abbreviations.

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