Interactive comment on "Hybrid adaptive control for variable-speed variable-pitch wind energy systems using general regression neural network" *by* Xiuxing Yin

Anonymous Referee #2

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The concept that is presented is to let a GRNN decide a pitch angle set point which is then smoothed, compared to the current demanded pitch angle and a new set point is handed to the system.

Based on the paper I cannot judge whether this approach has any merit.

Apart from the remarks of the other reviewer, I can add the following points: 1) the literature reviewed is not only 'dated' but also very narrow in its application, not including any more general control oriented literature. 2) the introduction should focus more on the actual, common state of the art and explain why the common state of the art approach is chosen. 3) Examining the presented controller behavior in somewhat

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more detail, in figures 6(a) to (d) one can see that the reference controller is behaving very oddly, especially near t=125 s, where the rotor speeds up for no apparent reason, the wind is not increasing yet and the torque is approximately flat. This leads me to conclude that the reference controller is either tuned very poorly or implemented badly. Similarly the power of the reference controller in full load seems to be very irregular. The GRNN shows mildly better behavior but would be by definition outperformed by a conventional controller using constant power control. The problem seems to be the rotorspeed, which must vary strongly (but is not presented) with a fairly high frequency, the cause of which is unclear. 4) throughout the paper there are claims that the new approach is better(e.g. in the introduction, "much faster, more accurate and effective", but I find no substantial proof that this is indeed the case.

All in all, the underlying work may have merit, but the authors do not present this in a way that this is plausible.

Interactive comment on Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2018-19, 2018.