

Interactive comment on “Control design, implementation and evaluation for an in-field 500 kW wind turbine with a fixed-displacement hydraulic drivetrain” by Sebastiaan Paul Mulders et al.

Anonymous Referee #4

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The research in the paper is original, well conceived, and of interest to the readers of this journal. The other reviewers have done a good job in providing a detailed review.

I only have one comment. The reviews advocate maximizing the torque coefficient rather than maximizing the power coefficient for this particular case. They further demonstrate that this provide more energy for the system considered since hydraulic components in this particular case are more efficient at higher torque and lower speed.

It is important to point out that while the torque coefficient optimizing approach is ad-

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vantageous in this particular case, it is not true in general. The overall efficiency of a hydraulic pump or motor is the product of the mechanical efficiency and the volumetric efficiency. Depending on the particulars of the unit and its operating conditions, either of these might be dominant. A truly rigorous approach would be to optimize the system power coefficient with all losses included. This would work for any case.

In their final version the authors must clearly state that the torque coefficient optimization approach they advocate is true in this case, but is not true in general.

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