Review of: "Backstepping Control Design in Conjunction with an EKF-based Sensorless Field-Oriented Control of an IPMSM"

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Potential competing interests: No potential competing interests to declare.

A back-stepping sensorless control algorithm based on the extended Kalman filter is proposed in this paper. Simulation results are used to verify the performance of the proposed scheme. Please find my comments below:

1. How the nonlinearities of the motor (saturation effect on Ld and Lq inductances) will impact the accuracy of the proposed controller?
2. Analyzing the performance of the proposed controller under parameter uncertainties and variations can be done to show the robustness of the controller.
3. I suggest validating the 4-quadrant operation of the proposed controller using simulations.
4. Comparing the approximate microcontroller computation time for the proposed method with that of other well-known methods in the literature can provide more insights to the reader.
5. Validating the proposed controller with experimental tests can add more value to the paper.
6. I think the paper can be squeezed to be shorter in length. I do not think it is necessary to present the details related to Park/Clarke transformations, vector control, etc. These fundamentals should be already known to the reader.