

# 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.

The paper describes a Backstepping Control Design in conjunction with an EKF-based Sensorless Field-Oriented Control of an IPMSM. Suggestions and comments are as follows:

1. The paper sounds more like a technical description of the IPMSM control.
2. The introduction is too long, and there is too much well-known information about FOC, such as the 3f-2f-dq transformation, etc.
3. Unify the equation style (fonts, size, etc.)
4. The usage of the nonlinear control approach (such as Backstepping-BS) is not evident. What advantages do they have in contrast to the linear techniques such as the PID controller, which is a standard approach for electric drives?
5. How do you select free parameters in the BS approach eq.(16) and (22)?
6. The usage of the EKF is not clear. Do you try to estimate the enmeshment state variables or use them for state correction (smoothing/filtering).
7. The result discussion is missing.