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Backstepping Sliding Mode Control

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Abstract : This work treats the modeling and simulation of non-linear system behavior of an induction motor using backstepping sliding mode control. First, the direct field oriented control IM is derived. Then, a sliding for direct field oriented control is proposed to compensate the uncertainties, which occur in the control.Finally, the study of Backstepping sliding controls strategy of the induction motor drive. Our non linear system is simulated in MATLAB SIMULINK environment, the results obtained illustrate the efficiency of the proposed control with no overshoot, and the rising time is improved with good disturbances rejections comparing with the classical control law.

Keywords : induction motor, proportional-integral, sliding mode control, backstepping sliding mode control
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