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Considering Core Loss and Stray Load Loss”, Trends in Electrical Engineering (STM Journals), Vol. 4, Issue 2, pp. 1-12, 2014.

Abstract:

This paper focuses on a Matlab/Simulink model of a squirrel-cage induction motor with consideration of core loss and stray load loss. This model is based on some mathematical expressions and also described through an equivalent circuit including core loss and stray load loss. The model of induction motor has been developed based on the state space equations in a synchronously rotating reference frame, where core loss and stray load losses were taken under consideration. The developed model allows testing the performance of an induction motor in different operating conditions and the performance of different designed control systems to control speed, flux and torque of an induction motor. The designed model has been tested for several operating conditions through the simulation in Matlab/Simulink environment.

Keywords: Induction motor, machine modeling, core loss, stray load, field-oriented control, vector control