

Abstract

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Artificial neural network control of vector controlled induction motor

This paper presents a study for an indirect vector control of induction motor which can be operated over a wide speed range, including low speed, with rapid, accurate torque control and good momentary overload capabilities. Also, the use of artificial neural network, ANN is proposed to emulate the function of Indirect-Field- Oriented-Control (IFOC), to perform the critical function of synchronous speed estimation internally, transformation from three-phase ABC currents to two-phase d-q synchronous frame currents and transformation from twophase d-q synchronous frame voltages to three-phase ABC voltages during both constant torque and constant power regions, also for motor reversing and braking modes.