

INDIRECT VECTOR CONTROLLED INDUCTION MOTOR DRIVE WITH GAIN TUNED FUZZY LOGIC BASED INTELLIGENT CONTROLLER

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Abstract

The indirect vector controlled induction motor (IM) drive involves decoupling of the stator current into torque and flux producing components. This paper proposes the implementation of a fuzzy logic control scheme applied to a two d-q current components model of an induction motor. An intelligent based on Fuzzy Logic controller is developed with the help of knowledge rule base for efficient control. The performance of Fuzzy Logic Controller is compared with that of the PI Controller in terms of the settling time and dynamic response to sudden load changes. The harmonic pattern of the output current is evaluated for both fixed gain proportional integral controller and the Fuzzy Logic based controller. The performance of the IM drive has been analyzed under steady state and transient conditions. Simulation results of both the controllers are presented for comparison

Keywords: Indirect Vector Control (IVC), PI Controller, Gain Tuned Fuzzy Logic Controller (GTFLC)