Abstract
Direct torque control (DTC) is a new method of induction motor control. The key issue of the DTC is the strategy of selecting proper stator voltage vectors to force stator flux and developed torque within a prescribed band. Due to the nature of hysteresis control adopted in DTC, there is no difference in control action between a larger torque error and a small one. It is better to divide the torque error into different intervals and give different control voltages for each of them. To deal with this issue a fuzzy controller has been introduced. But, because the number
of rules is too high some problems arise and the speed of fuzzy reasoning will be affected. In this paper, a comparison between a new fuzzy direct-torque control (DTFC) with space vector modulation (SVM) is done. The principle and a tuning procedure of the fuzzy direct torque control scheme are discussed. The simulation results, which illustrate the performance of the proposed control scheme in comparison with the fuzzy hysteresis connected of DTC scheme are given.

Reference

4. J. R G Schonfield,“Direct torque control-DTC”, ABB Industrial Systems Ltd.

Index Terms

Computer Science

Communications

Key words

Induction machine

Direct torque control

Fuzzy logic

Space vector modulation