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## **Abstract:**

Vector control (VC) of an induction motor (IM) is generally implemented by applying a proportional and integral (PI) controller owing to its simple design technique. The performance of an IM deteriorates under the variations of load torque and parameters where the gains of a PI controller are kept constant. Therefore this paper presents a self-tuning PI (ST-PI) controller based on fuzzy logic control (FLC) theory for high performance of an IM. According to the pole placement technique, the gains of a PI controller are tuned by applying FLC. The effectiveness of the proposed fuzzy-logic-based ST-PI controller is demonstrated through simulation results. These clarify that the proposed ST-PI controller can provide better response than a conventional PI controller.

**Keywords:** Fuzzy Logic, Induction Motor, Self-tuning PI controller, Speed Control