عنوان مقاله:

An Experimental Examination of a Fuzzy Logic- Based DTC Scheme

محل انتشار:

دومین کنفرانس بین المللی الکترونیک قدرت و سیستم های درایو (سال: 1389)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Direct torque control (DTC) of an induction motor is a relatively simple scheme making rapid computations while requiring no speed sensors. It indicates low sensitivity to parameter variations as well. Accordingly, it has become a promising alternative to the classic vector control methods. This paper reports an experimental implementation of a DTC scheme. As one of the main characteristics of the conventional DTC is the torque ripple, the most of our efforts have been placed to reduce this ripple in practice. A fuzzy logic-based approach has been employed to achieve a better drive performance by varying the duty ratio of the selected voltage vector during each switching period according to the magnitude of the torque error and position of the stator flux. The main objective throughout the reported research project is to achieve an operational setup but not to propose a new theory. The effectiveness of the control method was verified by simulation using Simulink, and experimentally using TMS320F2812 DSP-controlled setup.

کلمات کلیدی:

Digital signal processor, direct torque control, pulse-width modulation