

High Performance Direct Torque Control for Induction Motor Drive Fed from Photovoltaic System

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Abstract : Direct Torque Control (DTC) is an AC drive control method especially designed to provide fast and robust responses. In this paper a progressive algorithm for direct torque control of three-phase induction drive system supplied by photovoltaic arrays using voltage source inverter to control motor torque and flux with maximum power point tracking at different level of insolation is presented. Experimental results of the new DTC method obtained by an experimental rapid prototype system for drives are presented. Simulation and experimental results confirm that the proposed system gives quick, robust torque and speed responses at constant switching frequencies.

Keywords : photovoltaic (PV) array, direct torque control (DTC), constant switching frequency, induction motor, maximum power point tracking (MPPT)

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