Neuro-Speed Controller of Five Phase Induction Motor Driven Using Direct Torque Control Strategy

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Abstract: In this paper, performances of five-phase induction motor controlled with direct torque control strategy are studied. In order to perform the control system, a speed controller based on artificial neural network is designed. Power required motor is ensured via two levels voltage source inverter. Five-phase induction machine modeling and their control are defined and described. The proposed scheme control is simulated using Matlab/Simulink software in four quadrant operation. Simulation results have been illustrated and he improves significantly behavior and dynamic response, mainly, of the speed response, quick electromagnetic torque and the rate of stator flux due to the proposed neuro-speed controller design.

Keywords: Neuro-speed controller, five-phase induction motor, direct torque control, control performance.

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