

A Strategy of Direct Power Control for PWM Rectifier Reducing Ripple in Instantaneous Power

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Abstract : Based on the analysis of basic direct torque control, a parallel master slave for four in-wheel permanent magnet synchronous motors (PMSM) fed by two three phase inverters used in electric vehicle is proposed in this paper. A conventional system with multi-inverter and multi-machine comprises a three phase inverter for each machine to be controlled. Another approach consists in using only one three-phase inverter to supply several permanent magnet synchronous machines. A modified direct torque control (DTC) algorithm is used for the control of the bi-machine traction system. Simulation results show that the proposed control strategy is well adapted for the synchronism of this system and provide good speed tracking performance.

Keywords : electric vehicle, multi-machine single-inverter system, multi-machine multi-inverter control, in-wheel motor, master-slave control

Conference Title : ICAEE 2018 : International Conference on Automobile and Electrical Engineering

Conference Location : Dublin, Ireland

Conference Dates : February 15-16, 2018