DESIGN AND SIMULATION DIRECT TORQUE CONTROL FOR INDUCTION MOTOR USE SPACE VECTOR PULSE WIDTH MODULATION THREE PHASE THREE LEVEL INVERTER

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ABSTRACT

Direct Torque Control is one method of controller in induction motor that can control the flux and torque directly. However, output torque of Direct Torque Control there is a ripple happening, so there should be a method to reduce the ripple that occurred in response. One of method that can be developed is by using the DTC-three-level SVPWM inverter. In this final project input given is torque and flux references compared with the calculation of torque and flux produced estimator block. Error signal will be controlled by a proportional integral controller. Afterwards the control signals will be converted into three-phase voltage (a, b, c) which is the input of a three-level inverter SVPWM block. The simulation result of comparison in 10 hp induction motor without the burden of showing that the DTC three-level SVPWM, smaller starting current is 56.38 A (19.81% smaller than the classical DTC and 18.55% smaller than the two-level SVPWM DTC) and the working torque get larger, 5117 Nm.

Keywords : Direct Torque Control, SVPWM three-level, inverter