

SIMULATION OF A SPACE VECTOR PWM CONTROLLER FOR A THREE-LEVEL VOLTAGE-FED INVERTER MOTOR DRIVE

ABSTRACT :

Multilevel voltage-fed inverters with space vector pulse width modulation strategy are gained importance in high power high performance industrial drive applications. This thesis proposes a new simplified space vector PWM method for a three-level inverter fed induction motor drive. The three-level inverter has a large number of switching states compared to a two-level inverter. In the proposed scheme, three-level space vector PWM inverter is easily implemented as conventional two-level space vector PWM inverter. Therefore, the proposed method can also be applied to multilevel inverters. In this work, a three-level inverter using space vector modulation strategy has been modeled and simulated. Simulation results are presented for various operation conditions using R-L load and motor load to verify the system model.

This work presents the detailed comparison of the proposed scheme and presented both experimentally and simulation. The simulation results is obtained by using MATLAB/SIMULINK shows that the superior performance of the proposed scheme.