Abstract

In this paper, Induction Motors (IM) are widely used in the industrial application due to a high power/weight ratio, high reliability and low cost. A Space Vector PWM (SVPWM) is utilized for PWM controlling scheme. The performance of both the speed and torque is promoted by a modified PI controller and V/F scalar control. A scalar control is a simple method and it's operated to control the magnitude of the control quantities in constant speed application. V/F scalar control has been implemented and compared with the PI controller. The simulation results showed that Indirect Field oriented control (IFOC) induction motor drive employ decoupling of the stator current components which produces torque and flux. The complete mathematical model of the system is described and simulated in MATLAB/SIMULINK. The simulation results provides a smooth speed response and high performance under various dynamic operations.


Index Terms

Computer Science

Control Systems
Keywords

Induction motor, SVPWM, PI-Controller, V/F