

SCALAR CONTROL OF INDUCTION MOTOR USING SPIRAL VECTOR THEORY AND SVPWM

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Abstract

This paper presents scalar control of induction motor model using spiral vector theory and space vector pulse width modulation (SVPWM). Scalar control is due to magnitude variation of the control variables only. The spiral vector theory permits to establish the performance equations of the induction motor in function only one phase variables of the stator and rotor. This is called phase segregation method. The SVPWM is one of the most widely used techniques for motor and converter control. The SVPWM algorithm constructs the required voltage vector in the average sense by using active and zero voltage vectors. To validate the proposed method, the simulation has been carried out on v/f controlled induction motor drive by using MATLAB/SIMULINK and the results have been presented and compared with d-q model.

Keywords : d-q model, spiral vector theory, SVPWM