Abstract
In this paper, sensor drift compensation of vector control of induction motor using neural network is presented. An induction motor is controlled based on vector control. The sensors sense the primary feedback signals for the feedback control system which is processed by the controller. Any fault in the sensors cause incorrect measurements of feedback signals due to malfunction in sensor circuit elements which affects the system performance. Hence, sensor fault compensation or drift compensation is important for an electric drive. Analysis of sensor drift compensation in motor drives is done using neural networks. The feedback signals from the phase current sensors are given as the neural network input. The neural network then performs the auto-associative mapping of these signals so that its output is an estimate of the sensed signals. Since the Auto-associative neural network exploits the physical and analytical redundancy, whenever a sensor starts to drift, the drift is compensated at the output, and the performance of the drive system is barely affected.

Reference


Index Terms
Key words

Auto Associative Neural Network (AANN)
Induction Motor
Vector control
Sensor Drift Compensation