

DIAGNOSIS OF ROTOR FAULT USING NEURO-FUZZY INFERENCE SYSTEM

Hichem MERABET, Tahar Bahi, DRICI Djalel, Noura Halem, Khouloud BEDOUD

Abstract: The three-phase induction machine (IM) has a large importance and it is widely used as electromechanical system device, and because of their; robustness, reliability, and simple design with the well developed technologies. In spite of all cited advantages, the induction machines are susceptible to various types of electrical and mechanical faults that can lead easily to excessive downtimes, which can lead to huge losses in terms of maintenance and production. This work presents a reliable approach for diagnosis and detection of broken bar faults in induction machine. The detection of faults is based on monitoring of the stator current signal. Also the calculation of relative energy value for each level of signal decomposition is determined by using package wavelet, and this method will be useful as data input of Adaptive Neuro-Fuzzy Inference System (ANFIS). In the ANFIS approach the adaptive Neuro-Fuzzy inference system is able to identify the rotor of induction machine state with high precision. This method is applied by using the MATLAB®/Simulink software.

Keywords : Induction machine, Neuro-Fuzzy inference system., Induction Machine