

Abstract :

The diagnosis of the dynamic eccentricity faults based on the old analysis techniques, such as the motor current signature analysis (MCSA), suffers from some difficulties and the exactness of those techniques is related to the load, healthy conditions and the ability to maintain a constant speed during the data acquisition process. To overcome this problem, the analysis of the stator current waveform using the discrete wavelet transform has been investigated and a method for the diagnosis of dynamic eccentricity for the induction machine has been presented. It is based on the analysis of the stator current, using the MCSA and the discrete wavelet transform (DWT), in order to extract the different related frequencies and the different energies stored in each level obtained by DWT. The performance offered by using the DWT is the ability to provide an ideal differentiation between the healthy and the eccentric machine.