

Abstract

This work consists in elaborating an automatic diagnosis system based on the artificial intelligence technique "Artificial Neural Network (ANN)" applied on the model of the Permanent Magnet Synchronous Machine (PMSM). This technique, by its capacities of generalization and memorization, gives a very efficient diagnosis tool. In the first part of this work, we have presented the PMSM modelling supplied in voltage; the numerical simulation allowed us to analyse the behaviour of the machine in normal and abnormal working regime. Then, we have applied the Back-propagation algorithm for the diagnosis of the shortcomings by using the Root Mean Square (RMS) of the measurable parameters as indicatory values of the shortcomings