

Fault Diagnosis of Squirrel-Cage Induction Motor by a Neural Network Multi-Models

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Abstract : In this paper we propose to study the faults diagnosis in squirrel-cage induction motor using MLP neural networks. We use neural healthy and faulty models of the behavior in order to detect and isolate some faults in machine. In the first part of this work, we have created a neural model for the healthy state using Matlab and a motor located in LGEB by acquiring data inputs and outputs of this engine. Then we detected the faults in the machine by residual generation. These residuals are not sufficient to isolate the existing faults. For this reason, we proposed additive neural networks to represent the faulty behaviors. From the analysis of these residuals and the choice of a threshold we propose a method capable of performing the detection and diagnosis of some faults in asynchronous machines with squirrel cage rotor.

Keywords : faults diagnosis, neural networks, multi-models, squirrel-cage induction motor

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