Torque Analysis of Faulty SRM using FEA-TFR Approach

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Abstract

This paper presents an analysis of effects of dynamic air-gap eccentricity on the performances of a 6/4 Switched Reluctance Machine (SRM) through finite element analysis (FEA) based on a FEMM package associated to MATLAB/SIMULINK package software. Among the various Time-Frequency methods used for detection of defects, the Time-Frequency Representation (TFR) is an appropriate tool to detect the mechanical failures through the torque analysis by allowing a better representation independent from the type of fault. Simulation results of healthy and faulty cases are discussed and illustrate the effectiveness of the proposed approach.

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