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Induction Machine Bearing Failure Detection Using Advanced Signal Processing Methods

Authors : Abdelghani Chahmi

Abstract : This article examines the detection and localization of faults in electrical systems, particularly those using asynchronous machines. First, the process of failure will be characterized, relevant symptoms will be defined and based on those processes and symptoms, a model of those malfunctions will be obtained. Second, the development of the diagnosis of the machine will be shown. As studies of malfunctions in electrical systems could only rely on a small amount of experimental data, it has been essential to provide ourselves with simulation tools which allowed us to characterize the faulty behavior. Fault detection uses signal processing techniques in known operating phases.

Keywords : induction motor, modeling, bearing damage, airgap eccentricity, torque variation
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