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Feature Extraction and SOM for Bearing Fault Diagnosis

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Abstract : In this paper a method for fault diagnosis of rolling bearings is presented. It consists of two parts: vibration signal feature extraction and condition classification. The aim of the first step is the extraction of the relevant parameters; the proposed technique consists of preprocessing the bearing fault vibration signal using a combination of the signal's Kurtosis and discrete wavelet transform (DWT). The Self-organization Map (SOM) is used to accomplish the classification step and automate the fault diagnosis procedure. The results have shown feasibility and effectiveness of the proposed approach.

Keywords : Condition monitoring, Discrete wavelet transform, Fault Diagnosis, Kurtosis, Roller Bearing, Rotating machines, Self-organization Map, Vibration measurement.