

FAULT DETECTION AND DIAGNOSIS IN ROTATING MACHINERY BY VIBRATION MONITORING USING FFT AND WAVELET TECHNIQUES

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Abstract : Rotor unbalance is the most cause of machine vibration that reduces the life of the rotating machine. On the other hand, vibration monitoring is reported as an interesting technique for the rotating machinery condition diagnosis. This paper considers the Wavelet Transform (WT) and FFT of vibration signals for detect and diagnose of unbalance faults in rotating machinery. The fault condition and location of faults are success fully detected by WT-FFT for non-stationary vibration measurements obtained from accelerometer sensors. Experimental studies on the rotating machine include faulty rotor with different rotational speeds has been carried out in this paper. These experimental results confirm that WT-FFT serves as a good tool to online faults detection and diagnosis of rotating machines.

Keywords : Rotor unbalance, fault detection and diagnosis, Rotating machinery, WAVELET TECHNIQUES