

# Wavelet Transform And Envelope Detection For Gear Fault Diagnosis .A Comparative Study

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**Abstract :** On-line vibration monitoring of Rotary Machines is a fundamental axis of development and industrial research. Its purpose is to provide knowledge about the working condition of machines at each moment without stopping the production line. This method allows avoiding the production losses related to breakdowns and reducing overall maintenance costs. Bearing fault diagnosis is important in vibration monitoring of any rotating machine. Early fault detection in machineries can save millions of dollars in emergency maintenance cost. This paper presents the comparison results of Fault diagnosis Techniques of gear fault using two methods: Envelope Detection (ED) and Wavelet Transform (WT) using Morlet Wavelet. The comparative study is applied to real vibratory signals.

**Keywords :** Vibration analysis, Fault Diagnosis, Wavelet Transform (WT), Envelope Detection (ED)