

THE ART OF MEASURING LOW FREQUENCY VIBRATION

INNOVATIVE METHODS TO RECORD VIBRATION READINGS BELOW 0.1 HZ

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ABSTRACT

Vibration readings on components that move extremely slow have been difficult to record and measure. Machine Condition Monitoring requires innovative techniques to measure those influences in order to detect, diagnose and implement necessary corrections in modern predictive maintenance programs and monitoring concepts. Low frequency vibration relative to the centre of the earth plays a tremendous role and describes an important parameter in the analysis of Wind Turbine conditions. Rotor blades deform and tilt during operation with higher loads due to increased wind speeds. These movements and vibrations need to be recorded in relation to the centre of the earth. Until now cameras were mainly used to monitor those movements but state-of-the-art hybrid-sensor technology allows integrating these readings in Condition Monitoring Software platforms.