

Abstract

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In Situ Balancing of a Rotor Supported on Dynamically coupled Supports Using Vibration Measurement

their life time, due to wear, maintenance,...etc. The procedure of in situ balancing, based on vibration measurement, is complicated when the carrying supports are dynamically coupled. In this paper a method of in Situ balancing of rotors is presented. This method is based on measuring amplitudes only, without phase measurement, of the vibrations at the bearings for different trial unbalance cases. These measured amplitudes are used for the determination of the dynamic coupling between the bearings; thus the rotor unbalance is determined. The paper represents theoretical proof of the suggested method and experimental verification for using this method. The experimental work shows a good agreement between the theoretical and experimental results.