

Simple Machine Diagnosis with Frequency Band of Abnormal Vibration

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Railway vehicles are equipped with many kinds of machines such as traction diesel engines and their failures sometimes lead to service disruptions and accidents. A vibration monitoring system is expected to prevent their failures by detecting their abnormalities at an early stage. In order to make an effectual action after abnormal vibration detection, it is necessary to make a root cause diagnosis. To address this issue, a simple diagnosis method is proposed in this paper. In the method, a measured vibration octave spectrum is divided into three frequency bands and abnormality detections are conducted for each spectrum to narrow down the root cause of the vibration. The effectiveness of the method is verified using vibration data acquired from the simulated abnormality tests of traction diesel engines.