Abnormality Detection and Diagnosis for Diesel Railcar by a Vibration Monitoring Method

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Driving devices such as diesel engines and transmissions, have a potential of raising transport disorders when they are under abnormal conditions. Therefore, we are developing a condition monitoring system (CMS) by means of which we can detect abnormal vibrations and diagnose the differences in failures of driving devices to inspect them before under that conditions. In the CMS, vibration data is analyzed with octave-band analysis and a machine learning algorithm based on nearest-neighbor analysis. In this paper, we present a running test with a diesel railcar which has a diesel engine under abnormal conditions, and the result of the validation of abnormality detection and diagnosis by the CMS.