Abnormality Detection in a Contaminated Diesel Engine by a Vibration Monitoring Method

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Railway traction machines are essential parts for a train to run. Therefore, we are developing a condition monitoring system (CMS) that detects the failures of the machines in the early stage to prevent transport disorders. The CMS observes the vibrations of a machine and detects abnormal vibrations with a machine learning algorithm that is based on nearest-neighbor analysis. In this paper, we present an improvement of the algorithm and the result of a contamination test with a traction diesel engine, which was conducted to verify the performance of the CMS. The test result shows that the abnormal vibrations due to the contamination are clearly detected with the CMS.