Anomaly Detection for Equipment on Railway Vehicle Using Condition Monitoring Data

Toshihide YOKOUCHI Tatsuro TAKASHIGE Minoru KONDO

In recent years, some railway vehicles are equipped with condition monitoring devices, which constantly record the operating condition of railway vehicle equipment. Thus, we improve the reliability of train operation by learning the data and detecting abnormalities using machine learning. Condition monitoring data is recorded in time-series. Therefore, we propose an anomaly detection method for railway vehicle equipment using Long Short Term Memory (LSTM), which is a deep learning method suitable for learning time-series data. In this paper, we apply the proposed method to data recorded at diesel cars in operation. As a result, it is confirmed that the anomaly scores increase in case of abnormal data using the proposed method and that anomalies are detected in railway vehicle equipment.