Abnormality Detection for Auxiliary Drive Shafts on Diesel Cars Using Vibration Condition Monitoring

Minoru KONDO Tatsuro TAKASHIGE

There are many kinds of rotating machines mounted on railway vehicles such as traction motors, generators, and traction gears. The failures of them sometimes lead to service disruptions and accidents. Therefore, it is important to detect their abnormalities at an early stage and prevent their failures. In general, vibration monitoring is an effective abnormality detection method for rotating machines. However, the vibration of the machines is complicated interfered by vehicle vibration and varied operation status. To address this issue, the authors have proposed an abnormality detection method using vibration octave spectra and machine learning. In order to verify the proposed method, engine tests are conducted using auxiliary drive shaft with two simulated abnormalities. The test results show that the proposed method can detect and distinguish between the simulated abnormalities.