

Development to Reduce the Rolling Noise of Narrow-Gauge Wheels

Minoru SASAKURA Kiyoshi SATO

The noise caused by vehicle wheels rolling on conventional rails is becoming an essential problem in recent years. In this report, we introduce the results of an analysis regarding the noises as reduced and developed case studies. We carried out a model simulation to predict the sound power reductions under a condition where the thickness of wheel rim was modified, and another condition where damping materials were applied onto the wheel plates. The noise caused by corrugated narrow gauge wheels is normally intense to compare with that caused by conventional wheels. As a countermeasure therefore, we manufactured experimentally a simple soundproof cover applicable to the corrugated wheels, and examined and sought the effects of vibrations and noise levels through analysis and experiments.