



MADRID

**inter.noise 2019**

June 16 - 19

NOISE CONTROL FOR A BETTER ENVIRONMENT

# **A study on dynamic characteristics test of anti-vibration material for shock and vibration reduction of railroad low vibration logistics system**

Hyosun Seo  
Young-chan Kim  
Kang-seok Jang

## **ABSTRACT**

In this study, dynamic characteristics test was performed for selecting anti-vibration material in order to reduce shock and vibration in a railroad freight cargo. The most important and essential factor of dynamic characteristics is damping capacity and natural frequency. Damping capacity improve performance for shock isolation and avoid amplification due to resonance. Lower natural frequency than dynamic force frequency improve vibration transmissibility performance. The damping capacity test was conducted by using universal test machine and calculated from the hysteresis diagram. Natural frequency test was conducted by impact modal test. The specimen materials were classified into elastic mats, elastic mounts, micro antivibration mounts, wire-mounts, and air-mounts. total 33 specimens were tested and the results were compared and evaluated. The dynamic characteristics of each material derived from this tests will be used as a design parameter for railroad low-vibration logistic system along with the results of durability test and low temperature fatigue test proceeding later.