

**Noise and Vibration Mitigation for Rail
Transportation Systems: Proceedings of the 10th
International Workshop on Railway Noise**

Tatsuo Maeda, Pierre-Etienne Gautier, Carl E. Hanson,
Brian Hemsworth, James T. Nelson, Burkhard Schulte-
Werning, David Thompson and Paul de Vos (Editors)
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This book constitutes the refereed proceedings of the 10th International Workshop on Railway Noise (IWRN10), held in Nagahama, Japan, in October 2010. IWRN10 explored new advances in railway noise and other environmental problems. It brought together researchers from various areas of railway vibration and noise who addressed the state-of-the-art technology on theoretical models, and prediction tools on wheel and rail noise, squeal noise, structure-borne noise, aerodynamic noise, micro-pressure waves from tunnel portals, interior noise, and ground-borne vibrations.

This book is the latest reference available for any engineers or researchers working in the field of railway noise and vibration. The collection of 67 papers is organized as follows:

1. Prospects, legal regulation, and perception;
2. Wheel and rail noise;
3. Structure-borne noise and squeal noise;
4. Ground-borne vibration;
5. High-speed trains;

6. Interior noise and sound barriers;
7. Prediction, measurements, and monitoring;

The book has many simple illuminating figures, diagrams, and tables; well organized summaries; and practical tips on related subjects such as rail vehicle noise source identification using acoustical holography and noise reduction of trains using the operational transfer path analysis.

One of the appealing aspects to me is the treatment of vibration source localization. Ground-borne vibration from railway traffic is an increasing problem in urbanized areas. It is of great importance to identify the source(s) of vibration emitted along the railway track to reduce the transmission of rail vibration. One paper presented a theoretical model to calculate the power emitted into the sub-grade by a simple relationship between the dynamic force and acceleration. Once the power is available, the locations of track sections with high potential of vibration emission can be determined.

I strongly recommend this collection, which can be used as a valuable reference for practitioners of railway noise and vibration prediction and control.

*Hongan Xu
NVH Engineer
VOLVO Construction Equipment,
312 Volvo Way, Shippensburg, PA 17257
hongan.xu@volvo.com*