Special Issue

Recent Developments and Applications in Vehicle-Assisted Structural Health Monitoring for Infrastructures

Message from the Guest Editors

In recent decades, structural health monitoring (SHM) has become a critical area of focus, contributing significantly to the development of a sustainable society. The purpose of this Special Issue is to collect state-of-the-art developments and applications in vehicle-assisted SHM for infrastructures, with its scope including, but not limited to, the following topics:

- Infrastructural operational modal identification and analysis;
- Vehicle-assisted damage detection of infrastructures;
- Road roughness/railway irregularity estimation and monitoring using vehicle responses;
- Anomaly detection in vehicle-induced data based on machine/deep learning algorithms;
- Infrastructural health monitoring using vehicle-induced responses;
- Monitoring of bridge traffic load distribution;
- Application of unmanned aerial vehicles (UAVs) for structural health monitoring of infrastructures;
- Investigations of vehicle–structure interaction theories;
- Drive-by/fly-by infrastructural health monitoring using vehicles as moving sensors;
- Modal parameter identification of bridges from responses of passing vehicles;
- AI applications for direct/indirect bridge health monitoring;
- Crowdsensing for bridge condition assessment.

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

Editor-in-Chief

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