Special Issue

Structural Vibration Analysis and Control in Civil Engineering

Message from the Guest Editors

The safety and resilience of civil engineering structures are continuously challenged by dynamic loading. To protect buildings, infrastructure, and urban communities, it is crucial to deepen our understanding of the dynamic behavior of structures, develop effective vibration control strategies, and mitigate the adverse effects of vibrations. This Special Issue aims to gather and disseminate innovative scientific research in structural vibration analysis and control. We welcome original research articles and review studies addressing the following topics:

- Dynamic response prediction of structures under various loading conditions;
- Seismic design and wind-induced vibrations in civil engineering structures;
- Measurement, spectral analysis, and energy distribution of ground vibrations;
- Attenuation laws for blast-induced and seismic vibrations;
- Active and passive vibration control systems for structural protection;
- Artificial intelligence methods for vibration prediction and control;
- Multidisciplinary approaches including experimental studies, numerical simulations, and theoretical analyses;
- Seismic vulnerability analysis and structural damage assessments.

Guest Editors

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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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