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Advances in Inverse Problem Applications in Structural Health Monitoring

Guest Editors:

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Deadline for manuscript submissions:
closed (10 June 2024)

Message from the Guest Editors

This Special Issue focuses on the latest advancements in inverse problem formulation of structural health monitoring problems. The advancement in this field is expected to lay the foundation for ground-breaking technologies to maintain civil and mechanical structures. We are looking forward to papers that suggest new ideas on three main fronts:

Forward Problem: Robust Structural Modeling; Quick Structural Simulation; Sampling-Based Modeling; Experiment-Based Modeling.

Problem Formulation: Damage Formulation and Damage Indicators; Sensing Strategy; Design Variables complexity; Structural complexity.

Inverse Problem Solving: Robust Optimization Formulation; Dedicated Inverse Problem-Solving Strategies; Real-Time Solutions; Solutions for Portable Computing.

We are looking forward to applications related, but not limited to the following topics:

- Damage Identification in Composite and Noncomposite Material Structures;
- Structural Health Monitoring in Masonry;
- Computer-Aided Design and Simulations;
- Probabilistic Modeling...

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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.

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