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Structural Identification and Damage Evaluation by Integrating Physics-Based Models with Data

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Deadline for manuscript submissions:
closed (30 April 2023)

Message from the Guest Editors

Structural health monitoring (SHM) plays an important role in improving the safety and resilience of important structures and infrastructures.....The aim of this Special Issue is to present their latest research and practices in structural health monitoring, especially those encouraging the integration of physics-based models with data in structural identification and damage evaluation. Papers are solicited in, but not limited to, the following and related topics:

- Deterministic/stochastic FE model updating;
- Machine learning and deep learning for SHM;
- Physics-informed machine/deep learning for structural damage detection;
- Modeling of structural systems via physics-informed machine/deep learning;
- Integration of physics-based and data-science methods for fault diagnosis and failure prognosis;
- Hybrid modeling for structural identification and damage detection;
- Implementation of digital twin technology for strucutral identfication and simulation;
- Structural identificaiton and simulation by data assimilation.....

For further reading, please follow the link to the Special Issue Website at:
https://www.mdpi.com/journal/buildings/special_issues/Models_Data

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Special Issue

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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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