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Advances in Soil-Structure Interaction for Building Structures

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Deadline for manuscript submissions:
31 December 2024

Message from the Guest Editors

The soil-structure interaction (SSI) is one of the most important and complex issues in civil engineering, and it has drawn many scholars' attention in recent decades. The soil and structure, which have different physical and mechanical properties, are analyzed as a whole with their deformation satisfying the compatibility conditions. SSI changes the stress/strain state of the soil and structure to some degree, and thus affects the safety and stability of the building's engineering. The study of SSI requires the use of interdisciplinary knowledge including soil mechanics, structural mechanics, foundation engineering, mathematics and computer technology. Overall, further understanding SSI can provide both a theoretical basis and practical methods for the design, construction, operation and maintenance of civil engineering structures.

The main aim of this Special Issue is to introduce new cutting-edge theory and approaches to the study of SSI:

- Laboratory and in situ tests on SSI;
- Contact surface constitutive theory;
- Multiscale numerical simulation of SSI;
- Advanced computational method of SSI;
- Application of new theory and approach to practical engineering.

mdpi.com/si/202761

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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