Special Issue

Advances in Geotechnical Engineering: Stability, Mechanics, and Modeling

Message from the Guest Editor

Geotechnical engineering is continuously evolving to address the growing challenges of infrastructure development under complex soil and environmental conditions. Advances in ground improvement techniques, deep foundations, and underground construction methods have greatly enhanced the design, stability, and performance of tunnels, excavations, embankments, dams, dikes, and other problematic soil structures. Meeting these challenges increasingly relies on innovative approaches, advanced numerical simulations, optimization strategies, and data-driven methods, including artificial intelligence and machine learning, to ensure both safety and efficiency in design.

Keywords

- geotechnical engineering
- underground structures and tunnels
- excavations and support systems
- deep foundations
- soil improvement and problematic soils
- slope stability and embankments
- dams and dikes
- offshore geotechnics
- mooring lines and anchoring systems
- soil–structure interaction
- cyclic and multidirectional loading
- optimization in geotechnical engineering
- numerical and data-driven modeling
- artificial intelligence and machine learning
- geotechnical monitoring

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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