

Leading-Edge in Computational Methods for Tunnelling and Underground Construction

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Message from the Guest Editors

This Special Issue is dedicated to the theme of computational methods for tunneling and underground construction. In addition to model tests and theoretical calculation, computational methods have become essential due to the rapid development of computer technology, which has been commonly used to find solutions to geotechnical problems in tunnelling and underground construction. Several computational methods, such as the finite difference method (FDM), finite element limit analysis (FELA), finite element method (FEM), boundary element method (BEM), discontinuous deformation analysis (DDA) method, discrete element method (DEM), particle flow method (PFM), etc. have been improved and employed to compute several problems for tunneling and underground constructions owing to the complexity of such engineering problems. Further, an actual physical counterpart can be established and reflected in numerical software such as ABAQUS, PLAXIS, OPTUM, MIDAS, and ANSYS, subsequently providing the optimal parameters for the design and construction of underground engineering.



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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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