

Special Issue

Intelligent Prediction and Performance Optimization for Deep Underground Resource Excavation Process

Message from the Guest Editors

Specific research areas include, but are not limited to, the following:

- Study of macro- and micro-scale fracture and damage characteristics of rocks under cyclic dynamic loading conditions.
- Investigation of macro- and micro-scale fracture and damage characteristics of cutting tools and metallic materials under cyclic dynamic loading conditions.
- Analysis of cutting force, surface temperature, surface stress/strain distribution, and wear characteristics during the interaction between cutting tools and rocks.
- Development of interaction mapping models between cutting parameters of heavy rock tunneling machine tools and the dynamic physical and mechanical properties of rocks.
- Numerical simulation and optimization of cutting parameters during coal and rock tunneling processes.
- Dynamics analysis and optimization techniques for tunneling machine cutting tools.
- Modeling studies on the impact fracture and damage of rocks and metallic materials.
- Intelligent monitoring and prediction of tool wear states based on deep learning.
- Adaptive optimization systems for cutting parameters of tunneling machines based on reinforcement learning.

Guest Editors

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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.

Editor-in-Chief

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