Special Issue

Multi-Scale Characterization and Numerical Modelling of Geo-Materials

Message from the Guest Editors

This Special Issue focuses on multi-scale characterization and numerical modelling of geo-materials, such as concrete, rock, rock-like composites, and cemented backfills. Topics of interest include, but are not limited to, the following:

- Multi-scale experimental characterization of geo-materials, including CT, SEM, NMR, XRD, DIC, acoustic methods, etc.;
- Image-based geometrical model reconstruction and digital material representations;
- Multi-scale modelling methods, including homogenization and upscaling techniques; hierarchical and concurrent multi-scale frameworks; RVE analysis; micro–macro transition models; and coupled discrete–continuum approaches;
- Numerical modelling techniques of geo-materials using FEM, DEM, SPH, XFEM, and other simulation platforms;
- Numerical simulation of failure, damage, creep, and permeability across scales;
- Coupled THMC (Thermal–Hydraulic–Mechanical–Chemical) processes in geo-materials;
- AI- or data-assisted modelling techniques for multi-scale systems.

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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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