

Special Issue on
**Contribution of Pore-Scale Approach to
Macroscale Geofluids Modelling in Porous
Media**

CALL FOR PAPERS

Understanding the fundamental mechanisms of fluid flows and reactive transport in natural systems is a major challenge for several fields of Earth sciences (e.g., hydrology, soil science, and volcanology) and geo/environmental engineering (CO₂ sequestration, NAPLS contamination, geothermal energy oil, and gas reservoir exploitation).

The hierarchical structures of natural system (e.g., heterogeneity of geological formations) and the different behavior of single-phase and multiphase fluids at the pore scale coupled with the nonlinearity of underlying reactive processes necessitate us to investigate these aspects at the scale at which they physically occur, the scale of pore and fractures.

Recent improvements in pore-scale computational modelling together with the development of noninvasive microscopic imaging technology and the latest microfluidics technics are allowing the vast field of porous and fractured media research to benefit from major advances due to (1) an improved understanding and description of pore-scale mechanisms and (2) the ability of thinking in terms of coupled processes.

We invite investigators to contribute high-quality original research articles as well as review articles including experimental, theoretical, and numerical contributions that highlight the importance of multiphysics pore-scale investigation for improving our understanding of evolving natural media.

Potential topics include but are not limited to the following:

- ▶ Single-phase and multiphase flow and multicomponent modelling of coupled processes (biological, chemical, thermal, mechanical, and geophysical)
- ▶ Pore-scale/microscale and microfluidics experiments
- ▶ 3D digital models and pore network modelling
- ▶ Innovative pore-scale application fields
- ▶ Novel approaches for modelling reactive flows
- ▶ Non-Newtonian fluids in permeable media
- ▶ Uncertainty quantification, multiscale methods, and upscaling techniques from pore scale to continuum scale

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/geofluids/cpamg/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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