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# Modeling of Flow and Transport in Saturated and Unsaturated Porous Media

Guest Editors:

**Dr. Anis Younes**
Laboratoire d'Hydrologie et de Geochimie de Strasbourg, CNRS, UMR 7517, University of Strasbourg, 67081 Strasbourg, France

**Dr. Philippe Ackerer**
Laboratoire d'Hydrologie et de Geochimie de Strasbourg, CNRS, UMR 7517, University of Strasbourg, Strasbourg, France

**Dr. Marwan Fahs**
Institut Terre et Environnement de Strasbourg, Universit´e de Strasbourg, CNRS, ENGEES, UMR 7063, 67084 Strasbourg, France

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## Message from the Guest Editors

This Special Issue focuses on recent advances and future developments in the modeling of flow, mass and heat transfer in porous media. This includes, but is not limited to: saturated/unsaturated flow, multiphase flow, multicomponent reactive transport, heat transfer and coupled hydraulic, thermal, mechanical, chemical and biological processes.

All modeling steps (mathematical models, data assimilations, numerical methods, simulation, parallel computing, post-processing, validation, benchmarking, calibration, comparison against laboratory experiments, sensitivity and uncertainty analysis, field applications) are included.

- Extension of mathematical models for improving model realism
- Modeling and simulation studies for new physical insights
- Development and evaluation of models, new algorithms and numerical techniques
- Stochastic and probabilistic modeling
- Analytical and semi-analytical solutions, benchmarking issues
- Inverse problems and characterization of soil and aquifer properties
- Uncertainty and sensitivity analysis
- Lab experimental studies and comparison against numerical simulations
- Field applications of models, upscaling and calibration.

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## Editor-in-Chief

**Dr. Jean-Luc PROBST**
Laboratory of Functional Ecology and Environment, Centre National de la Recherche Scientifique (CNRS), University of Toulouse, Campus ENSAT, Auzeville Tolosane, France

## Message from the Editor-in-Chief

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## Contact Us

*Water* Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/water
water@mdpi.com
𝕏@Water_MDPI