

## Special Issue

# Geothermal Reservoir Modeling: Emerging Techniques, Practical Applications and Modeling Challenges

### Message from the Guest Editor

This special issue will present cutting-edge advancements and critical reflections on the state of geothermal reservoir simulation. This Special Issue will focus on novel numerical, data-driven, and hybrid modeling techniques that enhance our ability to predict and optimize geothermal reservoir behavior across conventional, enhanced (EGS), and unconventional settings. Contributions will address subsurface characterization, coupled process modeling (e.g., THMC), uncertainty quantification, and the integration of field-scale data for model calibration and validation.

This Special Issue will also explore practical applications such as well placement optimization, thermal breakthrough prediction, sustainability assessments, and the role of reservoir modeling in hybrid geothermal systems and flexible power generation. Furthermore, it will examine current limitations, including those related to data sparsity, upscaling, and the approaches used. Contributions from related fields such as CO<sub>2</sub> plume geothermal, repurposing oil and gas reservoirs for geothermal energy, and machine learning for subsurface systems are also encouraged.

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### Guest Editor

Dr. Rita Esuru Okoroafor

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### Deadline for manuscript submissions

30 March 2026



## Water

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### Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

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### Editor-in-Chief

Dr. Jean-Luc PROBST

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