Special Issue

Revolutionizing Hydraulic Fracturing with Machine Learning and Data-Driven Approaches

Message from the Guest Editors

This Special Issue seeks to explore the transformative potential of machine learning (ML) and data-driven methodologies in revolutionizing hydraulic fracturing. By leveraging vast datasets from field operations, seismic monitoring, and laboratory experiments, ML techniques offer unprecedented opportunities to enhance fracture prediction, real-time decision-making, and environmental sustainability. This Special Issue aims to bring together cutting-edge research that bridges the gap between data science and hydraulic fracturing engineering. Topics of interest include, but are not limited to:

- Predictive modeling of fracture propagation and reservoir responses
- Real-time monitoring and optimization of fracturing operations
- Data-driven approaches for reducing environmental impacts
- Integration of ML with geomechanical and fluid flow simulations
- Uncertainty quantification and risk assessment in fracturing design
- Case studies showcasing successful ML applications in field operations

We invite researchers and industry experts to contribute original research, reviews, and case studies. Join us in shaping the future of energy extraction through innovation and collaboration.

Guest Editors

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Deadline for manuscript submissions

15 November 2025

Water

an Open Access Journal by MDPI

Impact Factor 3.0
CiteScore 6.0

mdpi.com/si/234273

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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.

Editor-in-Chief

Dr. Jean-Luc PROBST
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