Special Issue

Machine Learning Applications in Hydrology: Current Trends and Future Challenges

Message from the Guest Editors

Complex hydrological systems are characterized by processes and events whose dynamics depend on various direct and indirect factors. Due to the enormous advances in computational power, machine-learning algorithms have recently undergone substantial advancements in handling and processing complex and big data, which has sparked a surge in machine learning applications across all domains of hydrology. We invite researchers to contribute papers on the application of machine-learning methods together with big data to address critical issues in hydrology. We encourage papers on combining physics-based modelling of hydrological systems and machine learning. Potential topics for this Special Issue may include, but are not limited to, the following:

- Integrating scientific knowledge with machine learning for hydrological systems;
- Improving interpretability in machine learning approaches;
- Uncertainty quantification, propagation, and characterization in model networks;
- Developing benchmark data sets for machine learning applications in hydrology;
- Assembling multiple physics-based models via machine learning methods.

Guest Editors

Dr. Hao Chen
School of Earth System Science, Tianjin University, Tianjin 300072, China

Dr. Ning Nie
School of Geographic Sciences, East China Normal University, Shanghai 200241, China

Deadline for manuscript submissions

closed (30 April 2023)

About the Journal

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
Centre de Recherche sur la Biodiversité l'Environnement (CRBE) UMR CNRS/UPS/INPT/IRD, Centre National de la Recherche Scientifique (CNRS), University of Toulouse, Campus ENSAT, Auzeville Tolosane, Toulouse, France

Author Benefits

Open Access:
free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:
indexed within Scopus, SCIE (Web of Science), Ei Compendex, GEOBASE, GeoRef, PubAg, AGRIS, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:
JCR - Q2 (Water Resources) / CiteScore - Q1 (Aquatic Science)