

Special Issue

Global Rainfall-Runoff Modelling

Message from the Guest Editors

Rainfall-runoff processes are the core of the global water cycle, linking atmospheric precipitation to surface/groundwater runoff and underpinning critical applications such as flood forecasting, drought mitigation and water resource planning. The goal of this Special Issue is to collect papers (original research articles and review papers) to provide insights into the latest advances in global rainfall-runoff modelling, including uncertainty quantification under non-stationary conditions, model adaptation to human-induced and climatic changes and innovative applications in large river basins or ungauged regions. This aligns with the journal's scope of advancing hydrological science and its practical implications for global water management. This Special Issue will welcome manuscripts that link the following themes:

- Non-stationary rainfall-runoff simulation under climate change and human activities
- Parameterization and validation of global-scale models in ungauged basins
- Integration of AI and remote-sensing data in rainfall-runoff modelling
- Uncertainty quantification for extreme event prediction
- Cross-basin comparison of hydrological responses to global environmental changes

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About the Journal

Message from the Editor-in-Chief

Hydrology is the study of the waters of the Earth. Hydrology has close ties with hydraulics, hydrogeology and the multiple sciences that study the atmosphere, the land surface, the soil and the subsoil, and ranges from complex problems of risk, forecasting and optimization of water resources to interactions with ecological, urban, social and economic systems. The purpose of *Hydrology* is then to provide a journal where research results and real-world problems can be presented and discussed in order to bridge the traditional gaps between the academic world and the professionals and decision makers. Therefore, *Hydrology*, invites authors to submit their original theoretical, field, experimental, and numerical studies on hydrology with strong emphasis on multidisciplinary approaches and interdisciplinary topics, which cross the typical boundaries of our science.

Editor-in-Chief

Prof. Dr. Ezio Todini

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Author Benefits

High Visibility:

indexed within Scopus, ESCI (Web of Science), PubAg, GeoRef, and other databases.

Journal Rank:

JCR - Q2 (Water Resources) / CiteScore - Q1
(Oceanography)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.9 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).