Special Issue

Using Hydrological Modeling for Spatio-Temporal Analysis of Rainfall Signatures

Message from the Guest Editors

Rainfall signatures, encompassing the spatial and temporal distribution of precipitation events, are pivotal for understanding and managing water resources, agricultural planning, flood forecasting, and mitigating the impacts of climate variability. Hydrological modeling serves as a fundamental tool for analyzing these rainfall patterns, enabling the simulation of runoff processes, evapotranspiration, soil moisture dynamics, and watershed responses. Advances in hydrological modeling techniques, coupled with high-resolution spatial data and temporal datasets, have enhanced our ability to dissect complex rainfall signatures and their implications on hydrological systems. This Special Issue aims to compile cutting-edge research that leverages hydrological models to perform spatio-temporal analyses of rainfall signatures, addressing both methodological innovations and practical applications. We welcome the topics listed below and other scientific results related to this Special Issue:

- Development and enhancement of hydrological models;
- High-resolution spatial and temporal rainfall data assimilation;
- Impact of climate change on rainfall patterns;

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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

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