Special Issue

Hydroclimatic Extremes: Modeling, Forecasting, and Assessment

Message from the Guest Editor

Hydroclimatic extremes such as floods, droughts, and compound hot dry events are intensifying under anthropogenic climate change, posing severe threats to water security, ecosystem resilience, infrastructure integrity, and human wellbeing worldwide. A comprehensive understanding of the drivers, spatial temporal dynamics, and cascading impacts of these extremes is essential for developing robust adaptation, mitigation, and early warning systems.

This Special Issue seeks to assemble high quality original research and critical reviews on the modeling, forecasting, and impact assessment of hydroclimatic extremes. Aligned with the journal's focus on climate variability, extreme event analysis, and resilience, it aims to foster interdisciplinary collaboration and advance science-based solutions that inform water management and policy decisions.

Contributions may address process-based and statistical modeling; uncertainty quantification and bias correction; compound and multi-hazard event analysis; advanced forecasting methods leveraging data assimilation and machine learning; downscaling and projection evaluation; and the design of early warning or decision support tools.

Guest Editor

Dr. Parisa Hosseinzadehtalaei

Faculty of Sciences, Department of Physics and Astronomy, Universiteit Gent, Ghent, Belgium

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Climate
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
climate@mdpi.com

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Message from the Editor-in-Chief

Editor-in-Chief

Dr. Timothy G. F. Kittel
Institute of Arctic and Alpine Research, University of Colorado Boulder, Boulder, CO 80309-0450, USA

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 21.6 days after submission; acceptance to publication is undertaken in 3.9 days (median values for papers published in this journal in the first half of 2025).