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Application of Digital Twins and Artificial Intelligence Technology in Watershed Flood Disaster Warning and Control

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Message from the Guest Editors

Flood disasters are one of the top ten most severe natural disasters worldwide, causing significant destruction to human society and the economy. Artificial intelligence can improve the accuracy and timeliness of flood prediction and warning by analyzing large amounts of meteorological data, hydrological data, and terrain information. Therefore, introducing advanced technologies such as artificial intelligence and digital twins is crucial to enhance the capacity to respond effectively to flood disasters.

The theme of this Special Issue includes but is not limited to the following topics:

- (1) Research on short-term and medium-term prediction and warning techniques for extreme rainfall disasters based on artificial intelligence technology.
- (2) Research on hydrological forecasting models that couple artificial intelligence with physical mechanisms.
- (3) Research on meteorology-hydrology-hydraulics coupling for watershed flood risk warning techniques.
- (4) Research on dynamic deduction techniques for watershed flood disasters based on digital twin technology.
- (5) Research on emergency evacuation route optimization techniques for flood inundation processes.



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Special Issue



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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.

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