Special Issue Reprint

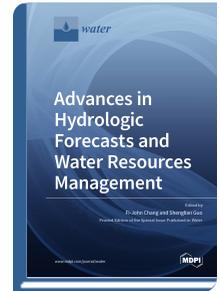## Advances in Hydrologic Forecasts and Water Resources Management

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mdpi.com/books/pdfview/book/2725

The impacts of climate change on water resource management, as well as increasingly severe natural disasters over the last decades, have caught global attention. Reliable and accurate hydrological forecasts are essential for efficient water resource management and the mitigation of natural disasters. While the notorious nonlinear hydrological processes make accurate forecasts a very challenging task, it requires advanced techniques to build accurate forecast models and reliable management systems. One of the newest techniques for modeling complex systems is artificial intelligence (AI). AI can replicate the way humans learn and has great capability to efficiently extract crucial information from large amounts of data to solve complex problems. The fourteen research papers published in this Special Issue contribute significantly to the uncertainty assessment of operational hydrologic forecasting under changing environmental conditions and the promotion of water resources management by using the latest advanced techniques, such as AI techniques. The fourteen contributions across four major research areas: (1) machine learning approaches to hydrologic forecasting; (2) uncertainty analysis and assessment on hydrological modeling under changing environments; (3) AI techniques for optimizing multi-objective reservoir operation; (4) adaption strategies of extreme hydrological events for hazard mitigation. The papers published in this issue will not only advance water sciences but also help policymakers to achieve more sustainable and effective water resource management.

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