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   Sommario/riassunto 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.