



water



Special Issue Reprint

Climate Change and Hydrological Processes

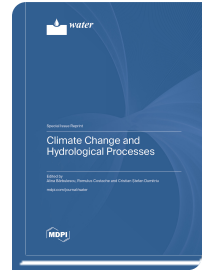
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Water is one of the essential elements sustaining human life and security. In recent years, the emergence and intensification of extreme climatic events have increasingly compromised water availability and quality, profoundly affecting people's well-being. Periods of drought have intensified water scarcity, while, conversely, rainfall has become more intense and frequent in various regions around the world. Within this evolving climatic context, the need to evaluate, forecast, and mitigate the occurrence and effects of extreme events has become a pressing priority—not only as a subject of scientific investigation but also as a matter of great importance for policymakers and decision-makers seeking to prevent or reduce their inherent impacts. Therefore, this reprint focuses on a range of interrelated topics, including the influence of climate change on water runoff processes, the projection of flash-flood susceptibility under different climate scenarios, and the variability of maximum river discharges in response to changing climatic conditions. It also addresses the impacts of climate change on the frequency and severity of droughts, the challenges of assessing risk and uncertainty in detecting drought events, and the need for both quantitative and qualitative analyses of extreme hydrological occurrences. Furthermore, it emphasizes the importance of evaluating hazards and risks in drought assessment, integrating environmental economics into flood and drought risk management, and modeling the complex relationships between climatic variables and hydrological processes.



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