



climate



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Application of Climatic Data in Hydrologic Models

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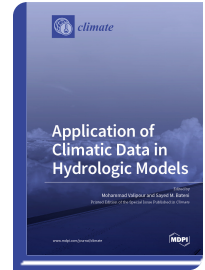
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Over the past few decades, global warming and climate change have impacted the hydrologic cycle. Many models have been developed to simulate hydrologic processes. Obtaining accurate climatic data on local/meso, and global scales is essential for the realistic simulation of hydrologic processes. However, the limited availability of climatic data often poses a challenge to hydrologic modeling efforts. Hydrologic science is currently undergoing a revolution in which the field is being transformed by the multitude of newly available data streams. Historically, hydrologic models that have been developed to answer basic questions about the rainfall–runoff relationship, surface water, and groundwater storage/fluxes, land–atmosphere interactions, have been optimized for previously data-limited conditions. With the advent of remote sensing technologies and increased computational resources, the environment for water cycle researchers has fundamentally changed to one where there is now a flood of spatially distributed and time-dependent data. The bias in the climatic data is propagated through models and can yield estimation errors. Therefore, the bias in climatic data should be removed before their use in hydrologic models. Climatic data have been a core component of the science of hydrology. Their intrinsic role in understanding and managing water resources and developing sound water policies dictates their vital importance. This book aims to present recent advances concerning climatic data and their applications in hydrologic models.



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