

International Hydrology Series



Floods in a Changing Climate

Extreme Precipitation

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Floods in a Changing Climate: Extreme Precipitation

Measurement, analysis, and modeling of extreme precipitation events linked to floods are vital in understanding the world's changing climate. This book examines and documents the impacts of climate change and climate variability on extreme precipitation events, providing methods for assessment of the trends in these events, and their impacts. It also provides a basis to develop procedures and guidelines for climate-adaptive hydrologic engineering. Topics covered include approaches for assessment of hydrometeorological floods, recent developments in hydrologic design for flood mitigation, and applications and limitations of improved precipitation forecasts, using information about internal modes of climate variability (teleconnections). State-of-the-art methodologies for precipitation analysis, estimation, and interpolation are included, and exercises for each chapter, supported by modeling software and computational tools available online at www.cambridge.org/teegavarapu, enable the reader to apply and engage with the innovative methods of assessment.

This is an important resource for academic researchers in the fields of hydrology, climate change, meteorology, environmental policy, and risk assessment, and will also be invaluable to professionals and policy-makers working in hazard mitigation, water resources engineering, and adaptation to weather and climate.

This volume is the first in a collection of four books within the International Hydrology Series on flood disaster management theory and practice within the context of anthropogenic climate change. The other books are:

- 2 - Floods in a Changing Climate: Hydrologic Modeling by P. P. Mujumdar and D. Nagesh Kumar
- 3 - Floods in a Changing Climate: Inundation Modeling by Giuliano Di Baldassarre
- 4 - Floods in a Changing Climate: Risk Management by Stodoban Simonovic



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