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Resilient and Robust Water Distribution Systems: State-of-the-Art and Research Challenges

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Message from the Guest Editors

During the last decade, the water distribution system (WDS) design, operation, and management paradigm has been shifted from probability-based reliability to a “resilience” scheme. WDS resilience is the system’s ability to gracefully degrade and promptly respond and recover from catastrophic failure events. Therefore, WDS resilience generally focuses on the system’s multiperiod performances under pre- and post-failure conditions, rather than focusing only on the failure consequence.

This Special Issue is intended to include papers addressing WDS resilience, especially those which introduce novel resilience-based design, operation, and management methodologies. While system resilience consists of the so-called 4Rs (robustness, redundancy, rapidity, and resourcefulness), novel design and operational methodologies should be developed for successfully guaranteeing systems’ pre- and post-failure performances.

We hope this Special Issue can (1) serve as a reference point from which readers review progress, recent trends, and emerging issues; and (2) shed light on the right future directions of WDS resilience studies.



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Special issue



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Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

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