Environmental Science Water Research & Technology

ROYAL SOCIETY OF CHEMISTRY

Themed Issue:

Data-intensive water systems management and operation

Environmental Science: Water Research & Technology seeks your high-impact research for our upcoming Themed Issue on **Data-intensive water systems management and Operation**

Guest Edited by **Branko Kerkez** (University of Michigan, USA), **Kris Villez** (Oak Ridge National Laboratory, USA) and **Eveline Volcke** (Ghent University, Belgium)

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The water sector increasingly looks at intensified instrumentation, data collection and automation as tools for daily use. Still, a massive opportunity remains in fully embracing emerging methods and technologies such as artificial intelligence, data analytics, machine learning, low-cost sensor hardware, and edge and cloud computing. Indeed, sensing and automation technology has already infiltrated many facets of society today. As such, the time is ripe to evaluate the role of novel technologies for systems monitoring, diagnostics, and automation of aquatic processes and large-scale water systems. When leveraged, the water sector will do more with less.

In this special issue we seek to publish articles that report a significant advance in the theory, understanding, practice or application of emerging techniques and technologies, including:

- Instrumentation, including state-of-the-art sensors and novel sensor concepts
- Data analytics and machine learning
- Low-cost and energy-efficient hardware for computation, and automation
- Advances in decision support systems
- Real-time monitoring and control
- Autonomy & Automation
- Privacy and cybersecurity
- Integration of data-intensive techniques, such as scale, model-based tools for real-time operation and management

The reported studies should be rooted in applications across aquatic science and engineering, including but not limited to:

- Chemical and microbial contaminants
- Water distribution and wastewater collection
- Stormwater infrastructure, green and gray
- Potable reuse
- Residue management
- Watersheds
- Sustainability analysis and design
- Wastewater treatment & resource recovery
- Water policy and regulation
- Water technologies
- Water, sanitation and hygiene
- Water-energy nexus

All papers should report on significant advances in the design or use of data-intensive methodologies. We especially welcome studies that:

- Feature conclusions that are focused on the applied methodology and permit generalisation beyond the reported domain of application or case study
- Report on more than one application or case study
- Make use of data collected in pilot or full scale systems, by not solely relying on simulations or laboratory-scale experiments alone
- Feature open data or open software
- Embrace study replication and reproducibility by providing clear how-to steps, data, and code

Submissions due: 10th September 2021

All submitted manuscripts will undergo initial assessment and peer review as per the usual standards of the journal
Please quote "*EWData21*" in the "Comments to the Editor" section during the submission process.