



# **WDSA-CCWI 2026**

## **Program Booklet**

4th International Joint Conference on Water Distribution Systems Analysis  
and Computing and Control in the Water Industry

19–21 May 2026  
Paphos, Cyprus

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## Program at a Glance

### 19 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4
08:30–09:15	Plenary	Lecture 1: Prof. Barbara Hammer			
09:15–10:00	Plenary	Lecture 2: Prof. Jim Uber			
10:00–10:30	Coffee Break	Coffee Break			
10:30–12:30	Parallel Sessions 1	<b>A1</b> Water Distribution Leakage Management I p. 4	<b>B1</b> Water Quality, Safety & Security I p. 5	<b>D1</b> Digital Water Infrastructure & Smart Technologies I p. 7	<b>G3</b> Interconnected Water-Energy Systems I p. 8
12:30–14:00	Lunch Break	Lunch Break			
14:00–16:00	Parallel Sessions 2	<b>A2</b> Water Distribution Leakage Management II p. 10	<b>B2</b> Water Quality, Safety & Security II p. 11	<b>D3</b> Digital Water Infrastructure & Smart Technologies II p. 13	<b>G2</b> Industrial Session I p. 15
16:00–16:30	Coffee Break	Coffee Break			
16:30–18:30	Parallel Sessions 3	<b>A3</b> Demand Management p. 16	<b>B3</b> Water Quality, Safety & Security III p. 18	<b>C1</b> Urban Drainage, Stormwater & Wastewater Systems I p. 19	<b>G8</b> Leveraging Digital Twins to Deal with Climate Change p. 20

### 20 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4
08:30–09:15	Plenary	Lecture 3: Prof. Phoebe Koundouri			
09:15–10:00	Plenary	Lecture 4: Prof. Emily Berglund			
10:00–10:30	Coffee Break	Coffee Break			
10:30–12:30	Parallel Sessions 1	<b>A4</b> Water Systems Operations & Controls I p. 23	<b>G5</b> Earth Observation, AI and Digital Tools for Water Quality Management p. 24	<b>C2</b> Urban Drainage, Stormwater & Wastewater Systems II p. 27	<b>G6</b> Trustworthy Artificial Intelligence in Water Systems I p. 28
12:30–14:00	Lunch Break	Lunch Break			
14:00–16:00	Parallel Sessions 2	<b>A5</b> Water Systems Operations & Controls II p. 30	<b>F1</b> Software Tools, Modeling Engines and Platforms I p. 31	<b>D4</b> Digital Water Infrastructure & Smart Technologies III p. 33	<b>G7</b> ICT4WATER Cluster: Showcases from selected projects p. 34
16:00–16:30	Coffee Break	Coffee Break			
16:30–18:30	Parallel Sessions 3	<b>A6</b> Asset Management p. 36	<b>F2</b> Software Tools, Modeling Engines and Platforms II p. 38	<b>D2</b> Digital Water Infrastructure & Smart Technologies IV p. 39	<b>G1</b> Industrial Session II p. 41

**21 May 2026**

Time	Activity	Room 1	Room 2	Room 3	Room 4
08:30–09:15	Plenary	Lecture 5: Socrates Metaxas			
09:15–10:00	Plenary	Plenary Panel			
10:00–10:30	Coffee Break	Coffee Break			
10:30–12:30	Parallel Sessions 1	<b>A7</b> Water Systems Resilience p. 43	<b>G4</b> Interconnected Water-Energy Systems II p. 44	<b>E1</b> Climate Resilience & Sustainability p. 46	Battle of the Water Futures I
12:30–14:00	Lunch Break	Lunch Break			
14:00–16:00	Parallel Sessions 2	<b>A8</b> Water Distribution System Modelling, Transients and Intelligent Analysis p. 47	<b>G9</b> Trustworthy Artificial Intelligence in Water Systems II p. 48	<b>E2</b> Capacity Building, Training, Governance and Policy p. 49	Battle of the Water Futures II
16:00–16:30	Coffee Break	Coffee Break			
16:30–18:30	Parallel Sessions 3	Closing Ceremony			

## Detailed Technical Programme

19 May 2026

### Parallel Session 1

#### Water Distribution Leakage Management I

A1

Regular Session

**Date:** 19 May 2026 **Time:** 10:30–12:30 **Room:** Room 1

**10:30–10:45**

**28**

*Near Real-Time Leak Detection and Localisation Field Results for Small, Medium and Large Water Networks*

Alvin Chew*	Bentley Systems
Zheng Wu	Bentley Systems
Juen Wong	Bentley Systems
Rony Kalfarisi	Bentley Systems
Fred Cao	Bentley Systems
Meng Xue	Bentley Systems
Jocelyn Pok	Bentley Systems
Hsin Ting Su	Bentley Systems
Joeri Legierse	Evides Waterbedrijf
Robin Wortel	Evides Waterbedrijf

**10:45–11:00**

**89**

*Near Real-Time Anomaly Detection and Leak Localisation: Field Test Outcomes from a Large Water Utility in North America*

Alvin Chew*	Bentley Systems
Zheng Wu	Bentley Systems, Incorporated
Juen Wong	Bentley Systems
Jocelyn Pok	Bentley Systems
Meng Xue	Bentley Systems
Fred Cao	Bentley Systems
Rony Kalfarisi	Bentley Systems
Hsin Ting Su	Bentley Systems

**11:00–11:15**

**102**

*Real-Time Leak Detection and Localization in Water Distribution Networks via Mahalanobis Space Transformation*

Oleg Melnikov	National Technical University Kharkiv Polytechnic Institute
Yurii Dorofiev	National Technical University Kharkiv Polytechnic Institute
Yurii Shakhnovskiy	National Technical University Kharkiv Polytechnic Institute
Huy Truong	University of Groningen
Victoria Degeler*	University of Amsterdam

**11:15–11:30**

**139**

*Leak detection in intermittently operated water networks using physics informed machine learning.*

Nikhil Narayan	IIT Madras
Sumanth Srinivas Parthasarathy	IIT Madras
Sridharakumar Narasimhan*	IIT Madras

**11:30–11:45****224***Sensitivity analysis of model-based and data-driven leakage detection algorithms*

Ella Steins*	TU Berlin
Andrea Cominola	TU Berlin
Johannes Koslowski	Kompetenzzentrum Wasser Berlin

**11:45–12:00****225***A Real-World Benchmark Dataset for Leakage Detection based on Repairs Records*

Andreas Laos	University of Cyprus
Stelios Vrachimis*	University of Cyprus
Kleanthis Malialis	University of Cyprus
Marios Kyriakou	University of Cyprus
Demetrios Eliades	University of Cyprus
Marios Polycarpou	University of Cyprus

**12:00–12:15****257***Data-Driven and Model-Based Approach for Model Calibration and Leak Localization in Water Distribution Systems*

Angela Maldonado Alfaro*	California State University, Fresno
Carly Boyer	California State University, Fresno
Alessandro Toledo Salazar	California State University, Fresno
Fayzul Pasha	California State University, Fresno
Laura Gonzalez	Universidad de los Andes, Colombia
Jorge Pesantez	California State University, Fresno

**Water Quality, Safety & Security I****B1**

Regular Session

**Date:** 19 May 2026 **Time:** 10:30–12:30 **Room:** Room 2**10:30–10:45****9***Controlled laboratory trials to examine whether sulfamethoxazole will promote antimicrobial resistance in drinking water biofilms in PVC pipes*

Victoria Rilstone

BC Government

Yves Filion\*

Queen's University

Pascale Champagne

National Research Council

**10:45–11:00****19***Controlling Biofilm Growth Using Nanobubbles: How Fluid Velocity and Turbulence Affect Treatment Effectiveness in Drinking Water Distribution Systems*

Yves Filion\*

Queen's University

**11:00–11:15****32***Unravelling the Temperature-Dependent Growth of Legionella: A Quantitative Meta-Analysis for Accurate Risk Predictions*

Catalina Ortiz Blanco\*

Polytechnique Montréal

Fatemeh Hatam

Polytechnique Montréal

Hunter Quon

Arizona State University

Kerry Hamilton

Arizona State University

Michèle Prévost

Polytechnique Montréal

**11:15–11:30****92***Representative Conditions in Drinking Water Quality and Biofilm Studies*

Frances Slater\*

The University of Sheffield

Katherine Fish

The University of Sheffield

Sam Walsh

The University of Sheffield

Dinesh Bhandari

University of Glasgow

Vanessa Speight

The University of Sheffield

Cindy Smith

University of Glasgow

Joby Boxall

The University of Sheffield

**11:30–11:45****109***Impact of Residual Chlorine Concentration on Coliform Dynamics in Drinking Water Distribution Biofilms*

Katherine Fish\*

The University of Sheffield

Fran Slater

The University of Sheffield

Sam Walsh

The University of Sheffield

Vanessa Speight

The University of Sheffield

Cindy Smith

The University of Glasgow

Joby Boxall

The University of Sheffield

**11:45–12:00****140***Modelling r- and K-Strategist Dynamics in Drinking Water: Linking HNAC–LNAC Substrate Utilization to Biostability*

Valts Urbanovis*	Riga Technical University
Lva Kairia	Water Systems and Biotechnology Institute, Riga Technical University
Jnis Rubulis	Water Systems and Biotechnology Institute, Riga Technical University
Tlis Juhna	Water Systems and Biotechnology Institute, Riga Technical University
Brigita Dejus	Water Systems and Biotechnology Institute, Riga Technical University
Alna Neerecka	Water Systems and Biotechnology Institute, Riga Technical University
Sandis Dejus	Water Systems and Biotechnology Institute, Riga Technical University

**12:00–12:15****159***Fate and Dynamics of Antimicrobial Resistance in Drinking Water Systems*

A Nair Aswin	Indian Institute of Technology Kanpur
Muktesh Kumar Sahu	Indian Institute of Technology Kanpur
Saravanan Matheshwaran	Indian Institute of Technology Kanpur
Purnendu Bose	Indian Institute of Technology Kanpur
Gopinathan Abhijith*	Indian Institute of Technology Kanpur

**12:15–12:30****242***Impacts of Intermittent Water Supply on Biofilms*

Vanessa Speight*	University of Sheffield
Frances Slater	University of Sheffield
Katherine Fish	University of Sheffield

**Digital Water Infrastructure & Smart Technologies I****D1**

Regular Session

**Date:** 19 May 2026 **Time:** 10:30–12:30 **Room:** Room 3**10:30–10:45****72***iBWS: A Digital Twin Framework for Autonomous Building Water Quality and Hydraulic Management*

Juneseok Lee\*

Manhattan University

**10:45–11:00****85***Modern Water Control in the Era of Cloud Computing, Digital Transformation, and Cyber Threats*

Shaul Rom\*

Reali Technologies LTD.

**11:00–11:15****119***HydroBIM: Bridging Digital Design and Renewable Energy to an Urban Water Community*

Helena Ramos\*

IST, Univ Lisbon

**11:15–11:30****173***Calibration of Water Supply Systems with AMI Data*

Daniel Weintrob\*

University of Haifa

Mashor Housh

University of Haifa

**11:30–11:45****223***Fast and physically interpretable data assimilation to support digital twins of urban water systems*

Milo Milainovi\*

Digital Water Engineering Lab, University of Belgrade - Faculty of Civil Engineering

eljko Vasili

Digital Water Engineering Lab, University of Belgrade - Faculty of Civil Engineering

**11:45–12:00****227***Building a BIM–GIS Asset Model for Water Network Digital Twins: Deeds and Misdeeds*

Linhan DAT\*

Hong Kong University of Science and Technology

**12:00–12:15****228***Digital Twin based Commissioning for Large-Scale Automation Renewal in Drinking Water Treatment Infrastructure*

Abel Heinsbroek\*

Vitens NV

**12:15–12:30****259***Semantic Behavioural Autonomy for Intelligent Water Systems*

Dimitrios Kouzapas\*

University of Cyprus

Demetrios Eliades

University of Cyprus

**Interconnected Water-Energy Systems I****G3**

Special Session

**Date:** 19 May 2026 **Time:** 10:30–12:30 **Room:** Room 4**10:30–10:45****88***A forecast-informed pump operation policy model for proactive pumping decision-making*

Lang Zheng\*

The University of Melbourne

Wenyan Wu

The University of Melbourne

Angus Simpson

Adelaide University

Ye Wang

The University of Melbourne

**10:45–11:00****94***Real-time blind controllers for cost-efficient Water Supply Systems operation: a comparative study*

Manuel Garruço

University of Aveiro

Ana Reis\*

University of Aveiro

Marlene Brás

University of Aveiro

António Andrade-Campos

University of Aveiro

**11:00–11:15****99***Multi-Objective Optimization of Surge Control Devices in Water Distribution Systems*

orjuwan safety\*

the Technion

Avi ostfeld

the Technion

**11:15–11:30****111***Optimal Pump Operation under Demand and Electricity Tariff Uncertainties*

Gal Perelman\*

Technion

**11:30–11:45****112***Efficient MILP formulation for Design-Operation Optimization of Water and Energy Systems*

Gal Perelman\*

University of Haifa

**11:45–12:00****203***A Case Study on Scalability of Reinforcement Learning for Dynamic Pump Scheduling*

Alissa Müller\*

Bielefeld University

Paul Stahlhofen

Bielefeld University

André Artelt

Bielefeld University

Barbara Hammer

Bielefeld University

**12:00–12:15****246***Data-Driven Modelling of Short-Term Energy Consumption in Water Pumping Stations with Limited Flow Measurements*

Nikola Hure\*

University of Zagreb Faculty of Electrical Engineering and Computing

Bla Korotaj

University of Zagreb Faculty of Electrical Engineering and Computing

Hrvoje Novak

University of Zagreb Faculty of Electrical Engineering and Computing

Tamara Hadjina	Konar - Digital
Mario Vaak	University of Zagreb Faculty of Electrical Engineering and Computing

**12:15–12:30****253**

*Practical Development and Deployment of Capabilities to Reduce Energy Operational Costs in a Large Transmission Network*

james uber	xylem
ernesto arandia	xylem
masud rana	xylem
vito girona	xylem
sam hatchett	xylem
Elad Salomons*	xylem

**Parallel Session 2****Water Distribution Leakage Management II****A2**

Regular Session

**Date:** 19 May 2026 **Time:** 14:00–16:00 **Room:** Room 1**14:00–14:15****49**

*Validation of the zero-crossing rate feature to improve detection of leaks in noisy acoustic environments*

Edward John*	University of Sheffield
Yicheng Yu	University of Sheffield
Richard Collins	University of Sheffield
Mohammad Reza Shekofteh	University of Sheffield
Mohammadali Geranmehr	University of Sheffield
Joby Boxall	University of Sheffield

**14:15–14:30****57**

*Understanding the Acoustic Behaviour of Leaks in Pressurised Water Pipes*

Mohammad Reza Shekofteh*	University of Sheffield
Kirill Horoshenkov	University of Sheffield
Edward John	University of Sheffield
Joby Boxall	University of Sheffield

**14:30–14:45****65**

*Model-Free Leak Detection and Localization from Sparse Pressure Data and System Topology*

Yifan Huang*	UT Austin
Lina Sela	UT Austin

**14:45–15:00****114**

*Leak Detection and Localization in WSS: An ML-Based Framework for Timely Response*

Ana Luís Sousa*	University of Aveiro
Eugénio Rocha	University of Aveiro
António Andrade-Campos	University of Aveiro

**15:00–15:15****122***Hydraulic Slow Transient Modeling and Sensitivity Analysis for Leakage Detection*

Felipe Caro\*

INRAE

Olivier Piller

Université de Bordeaux

**15:15–15:30****189***Supervised Machine Supervised Machine Learning Techniques for Leak Detection in Urban Water Networks*

Elizabeth Pauline Alvarado\*

Universidade Federal do Paraná

Victor Henrique Alves Ribeiro

Pontifícia Universidade Católica do Paraná (PUC-PR)

Gilberto Reynoso Meza

Pontifícia Universidade Católica do Paraná (PUC-PR)

Cristovão Vicente Scapulatempo Fernandes

Universidade Federal do Paraná (UFPR)

**15:30–15:45****221***Prediction of Water Leaks Based on Pressure Variations From Previous Anomalous Events Using Intelligent Data Analysis*

Specioza Kimaryo\*

University College Dublin

Jorge Francés-Chus

Aqlara Ciclo Integral del Agua S.A

David Ayala-Cabrera

CWRR-School of Civil Engineering, University College Dublin

**15:45–16:00****277***Enhancing Inverse Transient Method Performance for Leak Detection in Viscoelastic Pipelines by Using a Differentiator-Smoother Filter*

Renzo Dusi

University of Brasilia

Alexandre Soares\*

University of Brasilia

Kleber Silva

University of Brasilia

**Water Quality, Safety & Security II****B2**

Regular Session

**Date:** 19 May 2026 **Time:** 14:00–16:00 **Room:** Room 2**14:00–14:15****11***Examining the antimicrobial resistance response of drinking water biofilms in PVC distribution pipes when exposed to ciprofloxacin*

Victoria Rilstone

BC Government

Yves Filion\*

Queen's University

**14:15–14:30****20***Effect of Nanobubble Exposure On the Structural Integrity of Extra-Cellular Polymeric Substances (EPS) in Drinking Water Biofilms*

Yves Filion\*

Queen's University

**14:30–14:45****117***How to Account for the Short-Term Variability of Water Age at Branched Dead Ends*

Juan Diego Carvajal Cruz

University of Castilla-La Mancha

Sarai Diaz Garcia\*

University of Castilla-La Mancha

Javier Gonzalez Perez

University of Castilla-La Mancha

**14:45–15:00****143***Integrating Physics - Informed Neural Networks and Ensemble Kalman Filtering for Adaptive Water Quality Modelling in Distribution Systems*

Raghad Shamaly\*

Technion

Vikrant Gupta

Guangdong Technion

Gopinathan Abhijith

IIT Kanpur

Avi Ostfeld

Technion

**15:00–15:15****174***Modeling the Formation of Trihalomethane Species in Water Distribution Systems*

Lindell Ormsbee\*

University of Kentucky

Hadley Burchett

University of Kentucky

Brent Vizanko

University of Kentucky

**15:15–15:30****196***Hybrid Reinforcement Learning and Genetic Algorithm Framework for Water Quality Sensor Placement in Water Distribution Networks*

Kegong Diao\*

De Montfort University

Hector Castro Duque

De Montfort University

Liujin Zheng

Guangdong Polytechnic of Environmental Protection Engineering

Xiaochang Huang

Guangdong Polytechnic of Environmental Protection Engineering

Qingnan Xu

Guangdong Polytechnic of Environmental Protection Engineering

Yifan Lin

Guangdong Polytechnic of Environmental Protection Engineering

Miaoting Cai	Guangdong Polytechnic of Environmental Protection Engineering
Teddy Belrain	Affinity Water Limited
Richard Beardsley	Affinity Water Limited
Boguslaw Zazula-Coetzee	Affinity Water Limited
Payal Kapadia	Affinity Water Limited
Lee Wright	Affinity Water Limited
Yessenia Pineda Barrientos	Affinity Water Limited
Bogumil Ulanicki	De Montfort University

**15:30–15:45****205***Impact of Solute Mixing Models on Optimal Booster Disinfection Scheduling*

Juliana Robles Rivera*	Institut National de la Recherche Scientifique - INRS
Reza Yousefian	Institut National de la Recherche Scientifique - INRS
Sriman Pankaj Boindala	Technion - Israel Institute of Technology
Sophie Duchesne	Institut National de la Recherche Scientifique - INRS
Avi Ostfeld	Technion - Israel Institute of Technology

**15:45–16:00****206***Experimental Analysis of Solute Mixing at Double-tee Junctions*

Juliana Robles Rivera*	Institut National de la Recherche Scientifique - INRS
Reza Yousefian	Institut National de la Recherche Scientifique - INRS
Sophie Duchesne	Institut National de la Recherche Scientifique - INRS

**Digital Water Infrastructure & Smart Technologies II****D3**

Regular Session

**Date:** 19 May 2026 **Time:** 14:00–16:00 **Room:** Room 3**14:00–14:15****79***Sensor placement for real-life water distribution networks ensuring observability under uncertainties*

Jarne van Gemert*	Eindhoven University of Technology
Valentina Breschi	Eindhoven University of Technology
Claudia Quintiliani	Brabant-Water
Doekle R. Yntema	Wetsus
Karel J. Keesman	Wageningen University
Mircea Lazar	Eindhoven University of Technology

**14:15–14:30****106***IoT-Based Acoustic Tool for Sewer Blockage Detection*

Thi Hai Duong Ninh*	University of Adelaide - ADELAIDE, SA
Duc Cong Hiep Nguyen	University of Adelaide
Wei Zeng	University of Adelaide
Martin Francis Lambert,	University of Adelaide
Nhu Cuong Do	University of Adelaide

**14:30–14:45****138***IoT-enabled Monitoring and Control of Water Distribution Network using free-spectrum communication*

SRI HARI PRASATH RAMPRASAD	Indian Institute Of Technology Madras
Rohit Raphael	Indian Institute of Technology Madras
Harish Babu	Indian Institute of Technology Madras
Srirag Kuriyatti	Indian Institute of Technology Madras
Murali Nagarajan	Indian Institute of Technology Madras
Sridharakumar Narasimhan*	Indian Institute Of Technology Madras

**14:45–15:00****146***A Kernel Density Estimation Framework for DMA-Level Leakage Detection: A First Application to an Italian Case Study*

Chiara Cincotta*	University of Bologna
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**15:00–15:15****147***Designing Practical Leakage Detection Software with Water Utilities: a Human-centered Approach*

Nikolai-Iraj Sanamrad	Technische Universitaet Berlin
Antoine Daurat	KWB - Kompetenzzentrum Wasser Berlin
Nick Langer	Technische Universitaet Berlin
Sophie Persigehl	Urban Impact Berlin GmbH
Ella Steins	Technische Universitaet Berlin
David Steffelbauer	Indigo Water FlexCo
Jonas Schorr	Urban Impact Berlin GmbH

Andrea Cominola\* Technische Universitaet Berlin

**15:15–15:30** **181**

*Real-time Anomaly Detection in Water Distribution Networks*

Nelson Carriço\* Polytechnic University of Setubal

**15:30–15:45** **219**

*A Sensor-Aware Framework for Contamination Isolation in Urban Water Distribution Networks*

Xiaohan Chen\* University of Cyprus

Stelios Vrachimis University of Cyprus

Marios Polycarpou University of Cyprus

**15:45–16:00** **241**

*Hyperspectral Imaging and Machine Learning for Enhanced Detection of Water Contaminants*

Lucia Perez Oliva\* University of Oviedo

### Industrial Session I

**G2**

Special Session

**Date:** 19 May 2026 **Time:** 14:00–16:00 **Room:** Room 4

**14:00–14:15** **22**

*Work Planning Strategy for Pipe Replacement through Digital Water Services*

Giuseppina Messa\* Politecnico di Bari

Giulia Acconciaioco Politecnico di Bari

Laura Enriquez Politecnico di Bari

Giancarlo Chiaia Consorzio UNING c.s.r.l.

Gennaro Ranieri Consorzio UNING c.s.r.l.

Orazio Giustolisi Politecnico di Bari

**14:15–14:30** **24**

*Analysis of the impact of asset management on water quality in drinking water networks*

Daniele Laucelli\* Politecnico di Bari

Lucia Vergine Acquedotto Pugliese SpA

Laura Enriquez Politecnico di Bari

Gabriele Freni Università degli Studi di Enna Kore

Orazio Giustolisi IDEA Research Transfer

**14:30–14:45** **25**

*WNetXL-GIS features to boost the digital transition in WDN management*

Laura Enriquez\* Politecnico di Bari

Giuseppina Messa Acquedotto Pugliese S.p.A.

Giulia Acconciaioco Politecnico di Bari, DICATECh

Lucia Vergine Acquedotto Pugliese S.p.A.

Giancarlo Chiaia CONSORZIO UNING c.s.r.l.

Luigi Berardi	Università degli Studi D'Annunzio, IN-GEO
Juan Saldarriaga	Universidad de los Andes, CIACUA

**14:45–15:00** **26**

*Water Quality versus Asset Management*

Lucia Vergine*	Politecnico di Bari
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**15:00–15:15** **29**

*Data valorisation through WDN geometric model building: the case of Acque Bresciane*

Luigi Berardi*	Univesity "G. d'Annunzio" of Chieti Pescara
Sonia Bozza	Acque Bresciane S.r.l. SB
Denise Paghera	Acque Bresciane S.r.l. SB
Simone Bardini	Acque Bresciane S.r.l. SB
Filippo Brunati	Acque Bresciane S.r.l. SB
Orazio Giustolisi	IDEA-RT s.r.l.

**15:15–15:30** **30**

*Efficient pipe replacement plans using Asset Management Support Indicator*

Simone Ripani*	Università degli Studi G. D'Annunzio
Liberato Bozzelli	Politecnico di Bari
Lucia Vergine	Politecnico di Bari
Luigi Berardi	Università degli Studi G. D'Annunzio
Daniele Laucelli	Politecnico di Bari
Juan Saldarriaga	Universidad de los Andes

**15:30–15:45** **70**

*Nationwide Patterns of Water Service Line Failures: Insights from 20 Years of U.S. Data*

Juneseok Lee*	Manhattan University
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### Parallel Session 3

**Demand Management****A3**

Regular Session

**Date:** 19 May 2026 **Time:** 16:30–18:30 **Room:** Room 1**16:30–16:45****8***Analysis of Hot and Cold Water Consumption of Residential Users Using High-resolution Data*

Filippo Mazzoni\*

University of Ferrara

Valentina Marsili

University of Ferrara

Stefano Alvisi

University of Ferrara

**16:45–17:00****52***Spatial Resolution of Demand Modelling in Water Distribution Networks*

Mohammadali Geranmehr\*

University of Sheffield

Richard Collins

University of Sheffield

Edward John

University of Sheffield

Joby Boxall

University of Sheffield

**17:00–17:15****58***Minimum Night Consumption in Water Distribution Networks as a Function of Aggregate Average User Outflows*

Carlo Giudicianni\*

Università degli Studi di Pavia

Filippo Mazzoni

Università degli Studi di Ferrara

Valentina Marsili

Università degli Studi di Ferrara

Stefano Alvisi

Università degli Studi di Ferrara

Enrico Creaco

Università degli Studi di Pavia

**17:15–17:30****107***A Scenario-Based Approach to Forecasting Peak Water Demand*

Anika Stelzl\*

Graz University of Technology

Daniela Fuchs-Hanusch

Graz University of Technology

**17:30–17:45****172***Recurrent Neural Networks for Short-Term Water Demand Forecasting: A Technical Review and Framework for Implementation*

Milna Mandusic\*

Norwegian University of Life Sciences, Faculty of Science and Technology (NMBU), Ås, Norway.

Vegard Nilsen

Norwegian University of Life Sciences, Faculty of Science and Technology (NMBU), Ås, Norway.

Abbas Roozbahani

Norwegian University of Life Sciences, Faculty of Science and Technology (NMBU), Ås, Norway.

**17:45–18:00****175***Predicting WDS Zonal Demands Using Deep Learning*

Ehsan Roshani\*

National Research Council of Canada

**18:00–18:15** **191**  
*Probabilistic deep learning for short-term urban water demand forecasting*  
 John Quilty\* University of Waterloo

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**Water Quality, Safety & Security III**

**B3**

Regular Session

**Date:** 19 May 2026 **Time:** 16:30–18:30 **Room:** Room 2

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**16:30–16:45** **10**  
*Field Investigation on the Effect of Coagulant Carry-Over on the Occurrence of Metals in the City of Calgary DWDS*  
 Nishana Ramsawak Queen's University  
 Yves Filion\* Queen's University

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**16:45–17:00** **21**  
*Innovative Nanobubble Solutions for Microplastic-Biofilm Management in Drinking Water Distribution Systems*  
 Yves Filion\* Queen's University

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**17:00–17:15** **55**  
*Data-driven Approaches for Understanding and Improving Mixing in Service Reservoirs*  
 Killian Gleeson\* University of Sheffield  
 Grigorios Kyritsakas TU Delft  
 Stewart Husband University of Sheffield  
 Joby Boxall University of Sheffield

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**17:15–17:30** **56**  
*Exploring the Transferability of Empirical Discolouration Modelling in Trunk Mains*  
 Stewart Husband\* University of Sheffield  
 Joby Boxall University of Sheffield  
 Killian Gleeson University of Sheffield

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**17:30–17:45** **121**  
*Assessment of Innovative Approaches to Service Reservoir Ingress Monitoring*  
 Jasper Wressell\* University of Sheffield

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**17:45–18:00** **218**  
*The Heat Strikes Back: Natural Convection Upstream of a Hot Water Heater*  
 Kevin Vargas\* Norwegian University of Science and Technology - NTNU  
 Mailen Skjervheim Norwegian University of Science and Technology - NTNU  
 Michael Waak SINTEF Community  
 Franz Tscheikner-Gratl Norwegian University of Science and Technology - NTNU  
 Marius Rokstad Norwegian University of Science and Technology - NTNU

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**18:00–18:15****235***Risk Assessment of Water Reservoir Systems via Monte Carlo Forecasting*

Yutian Wang\*

KIOS Research and Innovation Center of Excellence, University of Cyprus

Demetrios Eliades

KIOS Research and Innovation Center of Excellence, University of Cyprus

Marios polycarpou

KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus

**18:15–18:30****285***Self-Cleaning in DWDS under Variable Demand Patterns and Particle Densities*

Abazar Fathi

Politecnico di Milano

Giacomo Ferrarese

Politecnico di Milano

Stefano Malavsi

Politecnico di Milano

Mirjam Blokker\*

KWR

**Urban Drainage, Stormwater & Wastewater Systems I****C1**

Regular Session

**Date:** 19 May 2026 **Time:** 16:30–18:30 **Room:** Room 3**16:30–16:45****5***Defect-Level Analysis of Sewer Pipes in Aucklands Urban Drainage System*

Maria Gonzalez\*

University Of Auckland

Juana Herran

University Of Auckland

Jakobus van Zyl

University Of Auckland

Theunis Henning

University Of Auckland

**16:45–17:00****6***Smart Sewer Sensors and Field Responses: Operational Evidence Through Blockage and Spill Records from a Regional Sewer Network in Australia*

Benny Zuse Rousso\*

Deakin University

Travis Juffermans

Barwon Water

Michael Thomas

Barwon Water

James

Jinzhe) Gong (Deakin University)

**17:00–17:15****23***Factors influencing 28 types of defects in sewer systems*

Juana Herrán\*

University of Auckland

María A. González

University of Auckland

Jakobus E. van Zyl

University of Auckland

Theunis F.P. Henning

University of Auckland

**17:15–17:30****101***Sensor Placement in Urban Drainage Networks for Pipe Blockage Detection*

Mohammad Rajabi

university of innsbruck

Mohsen Hajibabaei	university of innsbruck
Robert Sitzenfrei*	university of innsbruck

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**17:30–17:45** **103**

*Early Detection of Blockages in Urban Sewer Networks*

Thi Hai Duong Ninh*	University of Adelaide - ADELAIDE, SA
Wei Zeng	University of Adelaide
Martin Francis Lambert	University of Adelaide
Nhu Cuong Do	University of Adelaide

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**17:45–18:00** **116**

*Efficient fine-tuning of Vision-Language Models for Sewer Defect Detection*

Riccardo Taormina*	Delft University of Technology
Job van der Werf	Delft University of Technology

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**18:00–18:15** **171**

*Event-based Smart CSO Monitoring Framework and Optimal Sensor Selection Using SWMM and Genetic Algorithm*

Lameea Khan*	Birmingham City University
Wenyan Wu	Birmingham City University
Waheb Abdullah	Birmingham City University
Essa Shahra	Birmingham City University
Lameea Khan	Birmingham City University

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**18:15–18:30** **194**

*Brown Objects in Water: Computer Vision Analysis of Gross Solids Transport in Sewer Pipes*

Tzu-An Lee	The University of Texas at Austin
Lina Sela*	The University of Texas at Austin

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**Leveraging Digital Twins to Deal with Climate Change****G8**

Special Session

**Date:** 19 May 2026 **Time:** 16:30–18:30 **Room:** Room 4**16:30–16:45****125***Recommendations for updating EU level directives of water policy and governance.*

Jessica Penny\*

University of Exeter

**16:45–17:00****268***Bridging Land and Sea through Digital Twins for Inland Waters: Reference Architecture and Synergies with ED-ITO and DestinE*

Georgina Díez\*

BSC - CNS

Caterina Sarno

Engineering Ingegneria Informatica  
S.p.A.

Natalia Zamora

BSC - CNS

Marzia Mammina

Engineering Ingegneria Informatica  
S.p.A.

Simone De Rossi

Engineering Ingegneria Informatica  
S.p.A.

Gianmarco Urbinati

Engineering Ingegneria Informatica  
S.p.A.**17:00–17:15****269***Engagement of stakeholders in the Digital Twin era: insights and experience from Water-Oriented Living Labs*

Andrea Rubini\*

Water Europe

Isabella Gervasio

Water Europe

Anais Baladah

Water Europe

**17:15–17:30****271***Co-Creation of Reference Use Cases in IDEATION: A Stakeholder-Driven Foundation for Inland Water Digital Twins*

Franco M. Crivello\*

CETAQUA

Joan Coines

CETAQUA

Jessica Penny

University of Exeter

Kate Baker

University of Exeter

Lydia Vamvakeridou-Lyroudia

University of Exeter

Albert S. Chen

University of Exeter

Miquel Sarrias

CETAQUA

Eloisa Vargiu

CETAQUA

**17:30–17:45****272***A Methodological Framework for the Technological Core Assessment of Digital Twin Systems in Inland Waters: A Use Case of Lake Vico*

GERASIMOS ANTZOULATOS\*

Centre For Research & Technology  
Hellas - Information Technologies Insti-  
tute

Caterina Sarno

Engineering Ingegneria Informatica  
Spa

Simone De Rossi	Engineering Ingegneria Informatica Spa
Stefanos Vrochidis	Centre For Research & Technology Hellas - Information Technologies Institute

**17:45–18:00****273***Leveraging Large Language Models for Requirements Mapping in Digital Twin Architectures for Inland Waters*

GERASIMOS ANTZOULATOS\*

Centre For Research &amp; Technology Hellas - Information Technologies Institute

Joan Coines

Cetaqua, Water Technology Center

Stefanos Vrochidis

Centre For Research &amp; Technology Hellas - Information Technologies Institute

**18:00–18:15****274***Multi AI Agent Orchestration for Cyber-Physical Security of Drinking Water Systems*

George Milis\*

PHOEBE Research and Innovation Ltd

Demetrios Eliades

KIOS Research and Innovation Center of Excellence, University of Cyprus

Demetrianos Gabriel

PHOEBE Research and Innovation Ltd

Stelios Vrachimis

KIOS Research and Innovation Center of Excellence, University of Cyprus

Dimitris Kouzapas

KIOS Research and Innovation Center of Excellence, University of Cyprus

**18:15–18:30****281***OpenKIWAS: Open Knowledge Inventory for Inland Water Systems*

Dimitrios Kouzapas\*

University of Cyprus

Georgina Diez Ventura

Barcelona Supercomputing Centre

Caterina Sarno

Engineering Ingegneria SpA

Kate Baker

University of Exeter

Jessica Penny

University of Exeter

Franco Manuel Crivello

Cetaqua

Gerasimos Antzoulatos

Centre for Research and Technology Hellas

Melissa Latella

Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici

Lydia Vamvakeridou-Lyroudia

University of Exeter

Albert S Chen

University of Exeter

Roberto Di Bernardo

Engineering Ingegneria SpA

Eloisa Vargiu

Cetaqua

Demetrios Eliades

University of Cyprus

**20 May 2026****Parallel Session 1****Water Systems Operations & Controls I****A4**

Regular Session

**Date:** 20 May 2026 **Time:** 10:30–12:30 **Room:** Room 1**10:30–10:45****40***Scaling DeePC With Genetic Algorithm Driven PRV Placement in Water Networks: From Exhaustive Search To Optimization*

Jason Davda\*

Technion - Israel Institute of Technology

**10:45–11:00****45***Pressure control optimization of real-world water distribution network in a multicriteria decision-making framework*

Daniel Barros\*

Federal University of Tocantins

Rui Gabriel Souza

UFMG

Gustavo Meirelles

UFMG

Bruno Brentan

UFMG

**11:00–11:15****46***Dynamic Modeling and Constrained Feedback Control in Water Distribution Networks: Case Study in a Peripheral Region of a Large Brazilian City*

Gabriel Amaral\*

University of Campinas (UNICAMP)

Luz Alvarez

University of Campinas (UNICAMP)

Edevar Junior

University of Campinas (UNICAMP)

**11:15–11:30****81***A Unified Framework for Remote Pressure Control: From Existence and Uniqueness to Cooperative Strategies*

Olivier PILLER\*

UBx

Jochen Deuerlein

3S Consult GmbH

Sylvan Elhay

Adelaide University

Angus Simpson

Adelaide University

**11:30–11:45****105***Data-Driven Robust Optimization of PRV Operation in Water Distribution Systems under Demand Uncertainty*

Lisa Hickl

Technische Universität Ilmenau

Kristina Korder\*

Technische Universität Ilmenau

Pu Li

Technische Universität Ilmenau

**11:45–12:00****142***Voice-Automated, Data-Driven Optimization Framework for Equitable Supply in Water Distribution Networks*

Harish Doneparthi

Indian Institute of Technology Madras

Saryu Sundararman

Government College of Technology,  
Coimbatore

Satvika Dwaram	Department of Artificial Intelligence and Data Science, Indian Institute of Information Technology, Design and Manufacturing, Kurnool
Sri Hari Prasath Ramprasad	Department of Chemical Engineering, Indian Institute of Technology Madras
Mallikarjun Jamadarkhani	Department of Data Science and Artificial Intelligence, Indian Institute of Technology Madras, Chennai
Venkata Prakash Nallamothula	Department of Data Science and Artificial Intelligence, Indian Institute of Technology Madras, Chennai and School of Computer Science, University of Birmingham, Birmingham, United Kingdom
Varghese Kurian	Department of Chemical and Biomolecular Engineering, University of Delaware, Newark
Sridharakumar Narasimhan*	Department of Data Science and Artificial Intelligence, Indian Institute of Technology Madras, Chennai

**12:00–12:15****197***Prediction of Hydraulic Transients and Design of Air Vessels Using Artificial Neural Networks*

Debora Móller*	Universidade Federal de Minas Gerais
Leandro Evangelista	Universidade Federal de Minas Gerais
Bruno Brentan	Universidade Federal de Minas Gerais
Gustavo Meirelles	Universidade Federal de Minas Gerais

**12:15–12:30****202***Optimal Pump Scheduling in WDNs: Assessing Tank Dynamics Discretisation via Direct Multiple Shooting*

Katharina Henn*	Technische Universität Darmstadt
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**Earth Observation, AI and Digital Tools for Water Quality Management****G5**

Special Session

**Date:** 20 May 2026 **Time:** 10:30–12:30 **Room:** Room 2**10:30–10:45****54***A Hybrid Digital Twin for Enhanced Water Treatment: Integrating Physics-Based Models, Machine Learning, and Explainable AI in Industrial Use Cases*

Grigorios Tzionis*	CERTH
Prodromos Mouratidis	CERTH
Georgia Kougka	CERTH
Ilias Gialampoukidis	CERTH
Stefanos Vrochidis	CERTH
Ioannis Kompatsiaris	CERTH

**10:45–11:00****78***Towards an AI-based EPANET-MSX Surrogate Model*

Janine Strotherm*	University of Bielefeld
Luca Hermes	University of Bielefeld
André Artelt	University of Bielefeld
Barbara Hammer	University of Bielefeld

**11:00–11:15****93***Uncertainty-Aware Short-Term Forecasting of Water Demand Using Data-Driven Models and Conformal Prediction*

Hrvoje Novak*	University of Zagreb Faculty of Electrical Engineering and Computing
Donata Bori	Konar - Digital
Bla Korotaj	University of Zagreb Faculty of Electrical Engineering and Computing
Nikola Hure	University of Zagreb Faculty of Electrical Engineering and Computing
Mario Vaak	University of Zagreb Faculty of Electrical Engineering and Computing

**11:15–11:30****149***Modelling anti-microbial resistance in water networks*

Shimon Komarovsky*	Technion
Abhijith Gopinathan R	Indian Institute of Technology Kanpur
Sriman Pankaj Boindala	Technion
Benedikt M. Aumeier	Technical University of Munich
Amelie Steger	Technical University of Munich
Elad Salomons	Technion
Jörg E. Drewes	Technical University of Munich
Avi Ostfeld	Technion

**11:30–11:45****152***Towards an EO-Driven Early-Warning Framework for Water-Quality Hazards Following Flood Events*

Vassilios Papaioannou*	Centre for Research & Technology
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Dimitrios Valsamis	Centre for Research & Technology
Anastasia MOUNTZIDOU	Centre for Research & Technology
Ilias GIALAMPOUKIDIS	Centre for Research & Technology
Stefanos VROCHIDIS	Centre for Research & Technology
Ioannis KOMPATSIARIS	Centre for Research & Technology

**11:45–12:00****177***AQUAMON: Advanced Quality Monitoring System of Water in Urban Areas*

Emmanuel Raptis	iti
Panagiotis Raptis*	iti
Elias Kosmatopoulos	iti
Ian D. Williams	School of Engineering, Faculty of Engineering and Physical Sciences, University of Southampton, Highfield Campus, Southampton, United Kingdom, SO17 1BJ
Hywel Morgan	Electronics and Computer Science, Faculty of Engineering and Physical Sciences, University of Southampton, Highfield Campus, Southampton, United Kingdom, SO17 1BJ
Katie Houlihan	School of Geography and Environmental Sciences, Faculty of Environmental and Life Sciences, University of Southampton, Highfield Campus, Southampton, United Kingdom, SO17 1BJ
Xiang Wang	Electronics and Computer Science, Faculty of Engineering and Physical Sciences, University of Southampton, Highfield Campus, Southampton, United Kingdom, SO17 1BJ
Athanasios Ch. Kapoutsis	iti

**12:00–12:15****233***Fusing Deep Learning and Remote Sensing Data to Estimate Non-Optically Active Water Quality Variables*

Vasiliki Thomopoulou	NTUA
PANAGIOTIS Kossieris*	National Technical University Of Athens Research Committee
George Bariamis	NTUA
Konstantinos Peroulis	EYDAP S.A.
George Katsouras	EYDAP S.A.
Christos Makropoulos	NTUA

**12:15–12:30****250***A Framework for Early Warning and Control of Disinfection By-Products in Water Distribution Networks using Digital Twins*

Pavlos Pavlou*	KIOS Research and Innovation Center of Excellence
Alexandros Papadopoulos	KIOS Research and Innovation Center of Excellence

Marios Kyriakou	KIOS Research and Innovation Center of Excellence
Stelios Vrachimis	KIOS Research and Innovation Center of Excellence
Demetrios Eliades	KIOS Research and Innovation Center of Excellence

## Urban Drainage, Stormwater & Wastewater Systems II

C2

Regular Session

**Date:** 20 May 2026 **Time:** 10:30–12:30 **Room:** Room 3

**10:30–10:45**

**33**

*Analysis of the implementation of pollution-based real-time control in urban drainage systems: A case study*

Luis Romero-Ben*	Universitat Politècnica de Catalunya
Bernat Joseph-Duran	CETaqua, Water Technology Centre
David Sunyer	Area of Resilience and Climate Change. Aquatec S.L.
Gabriela Cembrano	Institut de Robòtica i Informàtica Industrial (CSIC-UPC)
Jordi Meseguer	CETaqua, Water Technology Centre
Vicenç Puig	Supervision, Safety and Automatic Control Research Center (CS2AC) - UPC
Alejandro Carrasco	Development Innovation Area. Canal de Isabel II

**10:45–11:00**

**110**

*A review and methodological proposal for resilience assessment in urban drainage networks*

Viviana Chala*	Universidad de los Andes
Juan Saldarriaga	Universidad de los Andes
Sarai Díaz	Universidad de Castilla-La Mancha
Pedro Iglesias	Universidad Politécnica de Valencia

**11:00–11:15**

**132**

*Effects of Hydraulic Constraints on the Cost of Optimal Sewers Network Designs*

Juan Saldarriaga*	Universidad de los Andes
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**11:15–11:30**

**168**

*A Multi-Criteria Decision-Making Framework for Optimal Layout of Low Impact Development*

Sangjin Park*	Korea University
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**11:30–11:45**

**180**

*Synthetic Data Generation for Wastewater Digital Twin Calibration Using SUMO and Machine Learning*

Sara Mota*	University of Aveiro
António Andrade-Campos	University of Aveiro
Ana L. Reis	University of Aveiro
Ramon Vilanova	Universitat Autònoma de Barcelona

**11:45–12:00****212***Embedding Overflow Structures into Cost-Based Hydraulic Optimization of Urban Drainage Networks within the UTOPIA Framework*

Brayan Coy

Universidad de los Andes

Gabriela Bermúdez

Universidad de los Andes

Laura Gutiérrez

Universidad de los Andes

Juan Saldarriaga\*

Universidad de los Andes

**12:00–12:15****232***Towards Fast Flood Modelling Using Differentiable Cellular Automata*

Srijan Kumar Jha

Delft University of Technology

Riccardo Taormina\*

Delft University of Technology

Dragan Savic

KWR Water Research Institute

**12:15–12:30****260***A Net Zero Water model for urban communities: Assessing water availability for urban greening*

Jacob Ayars

University of Arizona

Dominic Boccelli

University of Arizona

Courtney Crosson

University of Arizona

Kevin Lansey\*

University of Arizona

**Trustworthy Artificial Intelligence in Water Systems I****G6**

Special Session

**Date:** 20 May 2026 **Time:** 10:30–12:30 **Room:** Room 4**10:30–10:45****48***Development of Best Practice Guidelines for Machine Learning Applications in Urban Water Infrastructure to Avoid Common Pitfalls*

Martin Oberascher\*

University of Innsbruck

Bruno Brentan

Universidade Federal de Minas Gerais

Andrea Menapace

Eurac Research

Manuel Herrera

Newcastle University

Guangtao Fu

University of Exeter

Riccardo Taormina

Delft University of Technology

Robert Sitzenfrei

University of Innsbruck

**10:45–11:00****95***Behaviorally and Attention-Informed Modeling of Daily Urban Water Demand*

Mohamad Zeidan\*

UBC

**11:00–11:15****98***Explainable Artificial Intelligence for Leakage Localisation in Water Distribution Networks*

Ines Mastouri

University of Innsbruck

Mohammad Rajabi

University of Innsbruck

Martin Oberascher

University of Innsbruck

Lilia Rejeb

University of tunis, ISG Tunis -  
SMART Lab

Robert Sitzenfrei\*

University of Innsbruck

**11:15–11:30****123***Beyond the Graph: An Introduction to Simplicial Complexes for Modelling Urban Water Systems*

Tetiana Starovoit

National Technical University of  
Ukraine

Manuel Herrera\*

Newcastle University

Carlo Giudicianni

Università Degli Studi di Pavia

Enrico Creaco

Università Degli Studi di Pavia

**11:30–11:45****137***A Modular Agentic AI Framework for Hydraulic Modelling and Event Management in Water Distribution Systems*

Tyler Trimble\*

University of Texas at Austin

Yifan Huang

University of Texas at Austin

Gerardo Riaño-Briceño

Clique Systems

Lina Sela

University of Texas at Austin

**11:45–12:00****161***When Sensors Fail: Exploring Data Imputation and Model Resilience in Physics-Informed Digital Twins of Water Networks*

Jordana Alaggio\*

Universidade Federal de Minas Gerais

Andrea Menapace	Free University of Bozen-Bolzano
Daniel Bezerra	Universidade Federal do Tocantins
Gustavo Meirelles	Universidade Federal de Minas Gerais
Bruno Brentan	Universidade Federal de Minas Gerais

**12:00–12:15****190***Statistical and machine learning models with multi-source data for demand prediction in water distribution systems*

Maria Fortunato*	CERIS, Instituto Superior Técnico
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**12:15–12:30****207***System-Level Transfer Learning from Public Water Demand Datasets*

Byron Alessandro Toledo Salazar*	California State University, Fresno
Gal Perelman	Technion-Israel Institute of Technology
Avi Ostfeld	Technion-Israel Institute of Technology
Jorge Pesantez	California State University, Fresno

**Parallel Session 2****Water Systems Operations & Controls II****A5**

Regular Session

**Date:** 20 May 2026 **Time:** 14:00–16:00 **Room:** Room 1**14:00–14:15****42***Optimizing Pressurized Irrigation Networks Under Demand Uncertainty*

Frederic Babonneau*	Kedge BS
Olivier Piller	INRAE
Denis Gilbert	INRAE
Jean-Philippe Vial	University of Geneva

**14:15–14:30****84***Advanced Geometric Analysis of Optimally Designed Water Distribution Networks under Increasing Population Density: Insights from Case Studies*

Juan Saldarriaga*	Universidad de los Andes
Felipe Rodríguez	Universidad de los Andes

**14:30–14:45****86***Enhanced NSGA-II with Dynamic Archive and Adaptive Search Strategies for Water Distribution Network Design*

Amirabbas Mottahedin*	University of Pavia
Carlo Giudicianni	University of Pavia
Enrico Creaco	University of Pavia
Maria Cunha	University of Coimbra

**14:45–15:00****134***A Citywide Integrated Framework for Optimal Design of Reclaimed Water Distribution Networks*

Mohsen Hajibabaei	University of Innsbruck
Robert Sitzenfrei*	University of Innsbruck

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**15:00–15:15** **148**

*A Graph-based Deep Reinforcement Learning Approach for Water Distribution Networks Design*

Lydia Tsiami*	KWR Water Research Institute
Luca Hermes	Bielefeld University
Alissa Müller	Bielefeld University
Barbara Hammer	Bielefeld University
Christos Makropoulos	National Technical University of Athens
Dragan Savic	KWR Water Research Institute

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**15:15–15:30** **156**

*Impact of Water Distribution Network Topology on Scenario-Based Water Infrastructure Planning*

Chaerin Lee*	Korea University
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**15:30–15:45** **186**

*Towards a framework for systematic, optimized design of resilient water allocation and transport infrastructure*

Karel Laarhoven*	KWR Water Research Institute
Joeri Willet	KWR Water Research Institute
Henk Krajenbrink	KWR Water Research Institute
Maria Lousada-Ferreira	KWR Water Research Institute
Ina Vertommen	KWR Water Research Institute
Peter van Thienen	KWR Water Research Institute
Andrew Segrave	KWR Water Research Institute

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**15:45–16:00** **264**

*On the use of numerical models to analyze pressurized irrigation systems through performance indicators*

Alessandro Pagano*	Politecnico di Bari
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**Software Tools, Modeling Engines and Platforms I****F1**

Regular Session

**Date:** 20 May 2026 **Time:** 14:00–16:00 **Room:** Room 2**14:00–14:15****47***EPANET-PLUS: A High-Performance Python Interface for EPANET and EPANET-MSX*

André Artelt\*

Bielefeld University

**14:15–14:30****67***A Methodology for Assessing the Functionality of Modelling Packages for Water Distribution Systems*

Philippe Beaujean\*

Société wallonne des eaux

Bogumil Ulanicki

De Montfort University

Juliaan Plancke

SOFTEAU

**14:30–14:45****128***Development of a Comprehensive Framework to Compute System Head Curves for Pump Selection in Open and Closed Water Distribution Systems*

Diego Paez\*

CHI

**14:45–15:00****144***RealTime Data Processing and Analysis Platform for Water Supply Systems*

Nelson Carriço\*

Polytechnic University of Setubal

**15:00–15:15****204***Building Digital Twins for Small Water Distribution Systems: Application to a Rural Alaskan Community*

Yifan Huang\*

UT Austin

Yeji Kim

UT Austin

Matt Bartos

UT Austin

Lina Sela

UT Austin

**15:15–15:30****236***An Integrated Monitoring System for Smart Water Networks Enhanced by Digital Twin Modelling*

Costas Papadopoulos\*

UCY

Marios Kyriakou

UCY

Stelios Vrachimis

UCY

Demetrios Eliades

UCY

**15:30–15:45****251***Building Disposable Hydraulic Models from Real Utility GIS: A Lens on How We Use and Think About Models*

Sam Hatchett\*

Xylem Inc

Cameron Devine

Xylem Inc

Jim Uber

Xylem Inc

**15:45–16:00****252***EPANET 2.3: Advancing Modelling in Water Distribution Systems Simulations*

Marios Kyriakou*	KIOS Research and Innovation Center of Excellence, University of Cyprus
Luke Butler	Iterating
Demetrios Eliades	KIOS Research and Innovation Center of Excellence, University of Cyprus
Sam Hatchett	Xylem Inc.
Abel Heinsbroek	Vitens N.V.
Oscar Vegas Niño	Aqualia
Lewis A. Rossman	OpenWaterAnalytics (OWA)
Elad Salomons	Optiwater
Alexander Sinske	GLS Consulting
Stelios Vrachimis	KIOS Research and Innovation Center of Excellence, University of Cyprus
Dennis Zanutto	KWR Water Research Institute
Kobus van Zyl	University of Auckland

### Digital Water Infrastructure & Smart Technologies III

D4

Regular Session

**Date:** 20 May 2026 **Time:** 14:00–16:00 **Room:** Room 3

**14:00–14:15**

77

*A Data-Driven Transfer Learning Framework for Sensor Fault Diagnosis in Water Distribution Networks*

jin li\*

university of Cyprus

Kleanthis Malialis

university of Cyprus

xiaohan chen

university of Cyprus

Marios Polycarpou

university of Cyprus

**14:15–14:30**

91

*Towards Data-Efficient Deep Learning for Acoustic Leak Detection in Water Distribution Systems*

Yipeng Wu\*

Tsinghua University

Shuming Liu

Tsinghua University

Zoran Kapelan

Delft University of Technology

**14:30–14:45**

154

*Leak Detection Model for Data-Scarce Water Distribution Systems*

Harsh Gupta

Indian Institute of Technology Kanpur

Swati Sirsant

Nirma University, Ahmedabad

Avi Ostfeld

Technion israel Institute of Technology

Gopinathan Abhijith\*

Indian Institute of Technology Kanpur

**14:45–15:00**

178

*Transferability of a Rupture Localization Method to a Scaled Water Distribution Network (E-NET)*

Sabrina Galbo\*

Politecnico di Milano

Gabriele Dorigo

Politecnico di Milano

Giacomo Ferrarese

Politecnico di Milano

Stefano Malavasi

Politecnico di Milano

**15:00–15:15****214***A Transformer-Based Approach to Leakage Detection and Localization in Water Distribution Networks*

Charalampos Shimillas\*

KIOS Center of Excellence, University of Cyprus

Kleanthis Malialis

KIOS Center of Excellence, University of Cyprus

Konstantinos Fokianos

University of Cyprus

Marios M. Polycarpou

KIOS Center of Excellence, University of Cyprus

**15:15–15:30****231***Water Quality Prediction using LSTM and XAI*

Rohit Raphael\*

Curtin University

Ranjan Sarukkalige

Curtin University

Sridharakumar Narasimhan

Indian Institute of Technology Madras

Himanshu Agrawal

Curtin University

**15:30–15:45****263***Can Generative AI Replace Doctoral Students in Urban Hydraulics?*

Pedro L. Iglesias Rey\*

Universitat Politècnica de Valencia (Valencia Tech, Spain)

Juan G. Saldarriaga-Valderrama

CIACUA, Universidad de Los Andes

F. Javier Martinez-Solano

Universitat Politècnica de Valencia (Valencia Tech, Spain)

**15:45–16:00****265***3D Ground-Penetrating Radar Models to Reconstruct the Evolution of Water Leaks in Water Distribution Systems*

David Ayala-Cabrera\*

CWRR-School of Civil Engineering, University College Dublin

Specioza Kimaryo

CWRR-School of Civil Engineering, University College Dublin

**ICT4WATER Cluster: Showcases from selected projects****G7**

Special Session

**Date:** 20 May 2026 **Time:** 14:00–16:00 **Room:** Room 4**14:00–14:15****96***NBS feasibility and suitability study with MCDA-GIS for the East Fjords of Iceland*

Jessica Penny\*

University of Exeter

**14:15–14:30****100***A Machine Learning Approach to Modelling Drinking Water Biofilm Thickness*

Konstantinos Glynis\*

KWR &amp; TU Delft

Mirjam Blokker

KWR &amp; TU Delft

Zoran Kapelan

TU Delft

Dragan Savi

KWR &amp; University of Exeter

**14:30–14:45****120***Reinforcement Learning for optimising the coagulation – flocculation process: A case study at Nieuwegein water pre-treatment plant*

Grigorios Kyritsakas\*

Delft University of Technology

Alex van der Helm

Waternet

Bas Jacobs

Waternet

Luuk Rietveld

Delft University of Technology

**14:45–15:00****124***Flexible Small-Scale Drinking Water Treatment Plant Design and Optimisation Tool*

Dirk Vries

KWR Water Research Institute

Grigorios Kyritsakas\*

Delft University of Technology

Nikolaos Pelekanos

National Technical University of Athens

Tavishi Guleria

KWR Water Research Institute

Panagiotis Kossieris

National Technical University of Athens

Iosif Spartalis

National Technical University of Athens

George Bariamis

National Technical University of Athens

Christos Makropoulos

National Technical University of Athens

Luuk Rietveld

Delft University of Technology

Lydia Vamvakeridou-Lyroudia

KWR Water Research Institute

**15:00–15:15****187***Democratizing Cross-Project Knowledge for Transforming Water Governance and Climate Resilience: an Agentic AI Ecosystem*

Edgar Rubión\*

Fundació Eurecat

Oriol Alàs

Fundació Eurecat

Ian Palacin

Fundació Eurecat

Iván Cester

Fundació Eurecat

**15:15–15:30****170**

*Leveraging Open Standards for Interoperable Water Resource Management: Showcasing MARCLAIMED's Integrated Decision Support Tool, and its cross-project applicability via the MARVIS virtual sensing tool*

Franck LE GALL\*

EGM

Luc Gasser

EGM

Julien Fleury

EGM

Lupicinio Garcia Ortiz

Cetaqua

Sara Espinosa

Cetaqua

**15:30–15:45****209**

*Dynamic Risk Management for Smart Water Systems*

Elena Koumaki\*

Department of Civil and Environmental Engineering, Imperial College London

Kyriakos Kandris

Department of Civil and Environmental Engineering, Imperial College London

George Milis

PHOEBE Research and Innovation Ltd

Joep van den Broeke

KWR Water Research Institute, Nieuwegein

Franck Le Gall

Easy Global Market

Demetris Eliades

KIOS Research and Innovation Center of Excellence, University of Cyprus

Evina Katsou

Department of Civil and Environmental Engineering, Imperial College London

**15:45–16:00****185**

*Network-Wide State Reconstruction for Urban Drainage Systems from Sparse Sensor Coverage*

Imane El Ghabi\*

University of Amsterdam

Revin Naufal Alief

University of Groningen

Dilek Dustegor

University of Groningen

Guy Henckens

Aveco de Bondt

Alexander Lazovik

University of Groningen

Victoria Degeler

University of Amsterdam

**Parallel Session 3**

**Asset Management****A6**

Regular Session

**Date:** 20 May 2026 **Time:** 16:30–18:30 **Room:** Room 1**16:30–16:45****50***Corrosion pit shape and the leak-to-burst interval of cast iron pipes*

Edward John\*

University of Sheffield

Joby Boxall

University of Sheffield

Richard Collins

University of Sheffield

Elisabeth Bowman

University of Sheffield

Luca Susmel

Sheffield Hallam University

**16:45–17:00****61***Field Evidence of a Standing Water Column Formation in Rural Water Supply Systems*

Tomer Shmaya\*

University of Toronto

Samantha Levalley

University of Toronto

David Meyer

University of Toronto

**17:00–17:15****83***Identification of a Distribution Network Water Loss Model*

Bla Korotaj\*

University of Zagreb Faculty of Electrical Engineering and Computing

Tamara Hadjina

Konar - Digital

Hrvoje Novak

University of Zagreb Faculty of Electrical Engineering and Computing

Nikola Hure

University of Zagreb Faculty of Electrical Engineering and Computing

Mario Vaak

University of Zagreb Faculty of Electrical Engineering and Computing

**17:15–17:30****129***Sensitivity of Failure Modelling and Restoration of Water Distribution Networks to the Type of Pipe Damage*

Diego Paez\*

CHI

**17:30–17:45****141***Fault Asset Detection for Water Distribution System Management*

Yejoon Chon\*

Korea University

Jae Hyuk Kim

Hannam University

Seungyub Lee

Hannam University

Donghwi Jung

Korea University

**17:45–18:00****195***Strength Assessment of Degraded Asbestos Cement Pipes: Stress Distribution under Transversely Isotropic and Leaching Conditions*

Narges Esfandiar\*

KWR Water Research Institute

**18:00–18:15****234***Balanced Random Forest for Pipe Failure Prediction Under Limited Inventory Data*

Giovanni Francesco Santonastaso\*

Università della Campania "Luigi Vanvitelli"

Armando Di Nardo

Università della Campania "Luigi Vanvitelli"

Angelo Leopardi

Università di Cassino e del Lazio Meridionale

**18:15–18:30****249***Analysis of Failures and Maintenance Strategies in Water Distribution Networks*

Cristian Cappello\*

Università degli Studi di Cassino e del Lazio Meridionale

Carla Tricarico

Università degli Studi di Cassino e del Lazio Meridionale

Rudy Gargano

Università degli Studi di Napoli Federico II

Angelo Leopardi

Università degli Studi di Cassino e del Lazio Meridionale

**Software Tools, Modeling Engines and Platforms II****F2**

Regular Session

**Date:** 20 May 2026 **Time:** 16:30–18:30 **Room:** Room 2**16:30–16:45****35***A Coupled Stochastic-Hydraulic Framework for Quantitative Microbial Risk Assessment of Biofilm and Pathogen Interactions Within Drinking Water Distribution Systems*

Mohamad Bostan\*

University of Sheffield

Vanessa Speight

University of Sheffield

William Sloan

University of Glasgow

Dinesh Bhandari

University of Glasgow

Siming You

University of Glasgow

Joby Boxall

University of Sheffield

**16:45–17:00****66***A new numerical approach for spectral frequency analysis of pressure dynamics within water distribution networks*

Paul Pasquet\*

IMFT – Institut de Mécanique des Fluides de Toulouse, UMR 5502 – CNRS / Toulouse INP / UT3

Franck Plouraboué

IMFT – Institut de Mécanique des Fluides de Toulouse, UMR 5502 – CNRS / Toulouse INP / UT3

**17:00–17:15****108***Multi-Layer Graph Network Representation for Failure Propagation in Road and Drainage Networks*

Mohammad Rajabi

university of innsbruck

Mohsen Hajibabaei

university of innsbruck

Guangtao Fu

university of Exeter

David Butler

university of Exeter

Robert Sitzenfreni\*

university of innsbruck

**17:15–17:30****151***AI-Enabled Water Distribution Network Management Using an LLM-Based Multi-Agent System*

Hemasree G R

Indian Institute of Technology, Madras

Glen Philip Sequeira

Indian Institute of Technology, Madras

Sam Mathew

Indian Institute of Technology, Madras

Sridharakumar Narasimhan\*

Indian Institute of Technology, Madras

**17:30–17:45****158***A Spatio-Temporal Analytics Framework for Water Network Failure Diagnostics: The Case of Thessaloniki*

Ioannis Lioumbas\*

Thessaloniki Water Supply and Sewerage Co. S.A.

**17:45–18:00****160***A Microbiological Model to Predict the Remaining Lifetime of Natural Rubber Rings in Transport Mains*

Anurag Bhambhani\*

KWR

**18:00–18:15****230***Agent-Based Modelling of Consumer Behaviour During Drinking Water Contamination Events*

Sotirios Paraskevopoulos\*

CERTH

Stelios Vrachimis

KIOS Research and Innovation Center of Excellence, University of Cyprus, Nicosia, Cyprus

Marios Kyriakou

KIOS Research and Innovation Center of Excellence, University of Cyprus, Nicosia, Cyprus

Demetrios Eliades

KIOS Research and Innovation Center of Excellence, University of Cyprus, Nicosia, Cyprus

Patrick Smeets

KWR Water Research Institute

Ilias Gialampoukidis

CERTH

Marios Polykarpou

KIOS Research and Innovation Center of Excellence, University of Cyprus, Nicosia, Cyprus

Stefanos Vrochidis

CERTH

Gertjan Medema

KWR Water Research Institute

**18:15–18:30****261***Hybrid Multi-Species Reactive Transport Models for Water Quality Predictions in Water Distribution Systems*

Vagisha Vagisha

Indian Institute of Technology Kanpur

Raghad Shamaly

Technion Israel Institute of Technology, Haifa, Israel

Avi Ostfeld

Technion Israel Institute of Technology, Haifa, Israel

Gopinathan Abhijith\*

Indian Institute of Technology Kanpur

**Digital Water Infrastructure & Smart Technologies IV****D2**

Regular Session

**Date:** 20 May 2026 **Time:** 16:30–18:30 **Room:** Room 3**16:30–16:45****34***Development of a DHW system model in Modelica to simulate energy use and legionella growth in German building Stock*

Daniel Schmitz*	RWTH Aachen University
Judith Schüring	RWTH Aachen University
Maximilian Schildt	RWTH Aachen University
Jérôme Frisch	RWTH Aachen University
Christoph van Treeck	RWTH Aachen University

**16:45–17:00****39***Uncovering the Drivers of Greenhouse Gas Emissions in Wastewater Treatment Plants via a Data-Driven Causal Network*

Chengyu He*	Tsinghua University
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**17:00–17:15****51***In-situ Verification Technique of Electromagnetic Flowmeters in Water Distribution Networks Based on Error Model and Global Sensitivity Analysis*

JinLiang Gao*	Harbin Institute of Technology
Yi He	Harbin Institute of Technology
Wenyan Wu	Birmingham City University

**17:15–17:30****75***Quasi-transient reduced-order model based on graph decomposition and real-time data assimilation*

Cheima Djemel*	INRAE
Olivier Piller	INRAE
Thierry Horsin	CNAM
Chloé Mimeau	CNAM
Iraj Mortazavi	CNAM

**17:30–17:45****97***Data-Driven Thermohydraulic Estimation of Service Pipe Lengths in Water Distribution Networks*

Mohammad Tolba*	Friedrich-Alexander University
Adithya Ramachandran	Friedrich-Alexander University
Sebastian Brandmayr	Stadtwerke Schrobenhausen
Henrik Christensen	Brønderslev Forsyning A/S
Andreas Maier	Friedrich-Alexander University
Siming Bayer	Friedrich-Alexander University

**17:45–18:00****167***Uncertainty-Aware Graph Neural Network Surrogates for Wastewater Digital Twins Using Conformal Prediction*

Revin Naufal Alief*	University of Groningen
Imane El Ghabi	University of Amsterdam

Guy Henckens	Aveco de Bondt
Victoria Degeler	University of Amsterdam
Alexander Lazovik	University of Groningen
Dilek Düteğör	University of Groningen

**18:00–18:15****193***The Relative Impact of Electricity Price and Water Demand Forecast Accuracy on Water Systems Operations*

Hani Ghamkhar	The University of Texas at Austin
Faegheh Moazeni	Lehigh University
Lina Sela*	The University of Texas at Austin

**18:15–18:30****248***Insights from interpolating pressure transient metrics in water distribution networks*

Carlos Jara-Arriagada*	Universidad de Aysén
Ivan Stoianov	Imperial College London

**Industrial Session II****G1**

Special Session

**Date:** 20 May 2026 **Time:** 16:30–18:30 **Room:** Room 4**16:30–16:45****12***Leakage models: from laboratory scale to water distribution systems*

Orazio Giustolisi*	Politecnico di Bari
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**16:45–17:00****14***Topological domain analysis multi-source water network - Mediterranean*

LIBERATO Bozzelli*	Politecnico di Bari
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**17:00–17:15****15***Assessment of water distribution network reliability through an innovative performance indicator and advanced hydraulic analysis*

Giuseppina Messa*	Politecnico di Bari
Liberato Bozzelli	Politecnico di Bari
Giulia Acconciaioco	Politecnico di Bari
Simone Ripani	Politecnico di Bari
Luigi Berardi	Università degli Studi D'Annunzio

**17:15–17:30****16***Two-Phase Leakage Detection Strategy Supported by DMAs: application to Valguarnera WDN*

Giulia Acconciaioco*	Politecnico di Bari
Giuseppina Messa	Politecnico di Bari
Simone Ripani	Politecnico di Bari
Antonietta Simone	IDEA-RT
Luigi Berardi	Università degli Studi D'Annunzio
Gabriele Freni	Università degli Studi di Enna Kore

**17:30–17:45****17***Enhancing DMA Design through the AMSI Performance Indicator*

Antonietta Simone\*

IDEA-RT

Liberato Bozzelli

Politecnico di Bari

Simone Ripani

Politecnico di Bari

Daniele Biagio laucelli

Politecnico di Bari

Orazio Giustolisi

Politecnico di Bari

**17:45–18:00****18***Impact of DMA Design on water quality in Water Distribution Networks*

Antonietta Simone\*

IDEA-RT

Simone Ripani

Politecnico di Bari

Lucia Vergine

Politecnico di Bari

Liberato Bozzelli

Politecnico di Bari

Orazio Giustolisi

Politecnico di Bari

**18:00–18:15****179***DMA-Based Pressure Control through Model-Predictive Optimization for Leakage Reduction*

Ernesto Arandia\*

Xylem Inc

**21 May 2026****Parallel Session 1****Water Systems Resilience****A7**

Regular Session

**Date:** 21 May 2026 **Time:** 10:30–12:30 **Room:** Room 1**10:30–10:45****64***Evaluating the Operational Resilience of Water Distribution Systems Under Cyberattacks*

Tyler Trimble\*

University of Texas at Austin

Lina Sela

University of Texas at Austin

**10:45–11:00****74***Hydraulic–Quality Coupled DMA Creation Using Graph Clustering and Particle Swarm Optimization*

Daniel Barros\*

Federal University of Tocantins

Jordana Alaggio

UFMG

Gustavo Meirelles

UFMG

Bruno Brentan

UFMG

**11:00–11:15****82***Automating the E-FAVOR Process for Burst Detection - An Industrial Case Study*

Bogumil Ulanicki\*

De Montfort University

Philippe Beaujean

SWDE

Juliaan Plancke

SOFTEAU

Denis DEVOS

SWDE

Kegong DIAO

De Montfort University

**11:15–11:30****104***Interval Estimation in Water Distribution Systems using Physics-Informed Graph Neural Networks.*

Inaam Ashraf\*

Bielefeld University

André Artelt

Bielefeld University

Barbara Hammer

Bielefeld University

**11:30–11:45****201***Spatiotemporal Analysis of Low-Turbidity Data to Assess Drinking Water Distribution System Performance*

Roman Tijsseling\*

University of Sheffield

Stewart Husband

University of Sheffield

Joby Boxall

University of Sheffield

**11:45–12:00****211***ARMA Models for Monitoring and Adaptive Control of Water Distribution Systems*

Kevin Logan\*

Technische Universität Darmstadt

Steffen Koppai

Technische Universität Darmstadt

Peter Pelz

Technische Universität Darmstadt

**12:00–12:15****245***Temporal Placement of Confirmatory Sampling Locations During a Contamination Event*

Camilo Salcedo

California Institute for Water Resources

Dominic Boccelli\*

University of Arizona

**12:15–12:30****131***Predicting Chlorine Evolution in Water Distribution Networks Using an Extended GNN-GRU Surrogate Model with Operational Dynamics*

Laura Gonzalez\*

Universidad de los Andes

Yesid Coy

Universidad de los Andes

Dominic L. Boccelli

University of Arizona

Zoran Kapelan

Delft University of Technology

Juan Saldarriaga

Universidad de los Andes

**Interconnected Water-Energy Systems II****G4**

Special Session

**Date:** 21 May 2026 **Time:** 10:30–12:30 **Room:** Room 2**10:30–10:45****130***Model Predictive Control for Reliable Demand Response Participation in Water Distribution Systems*

Adhithyan Sakthivelu\*

The University of Texas at Austin

Adhithyan Sakthivelu

The University of Texas at Austin

**10:45–11:00****150***Energy Efficiency Practices in Water Supply and Distribution: A Decade of Research (2015–2025)*

Abiyu Muhammad Irfan

Politecnico di Milano

Alessandra Neri

Politecnico di Milano

Aly-Joy Ulusoy\*

Imperial College London

**11:00–11:15****165***Sewer Heat Recovery Model for Heat Network Planning*

Alemtsehay Seyoum\*

University of Sheffield

Mohamed Abdel-Aal

University of Exeter

Simon Tait

University of Sheffield

David Singerton

Anglian Water

Jonathan Bampfield-Duggan

BMA (Business Modelling Applications)

Peter Dunlop

Anglian Water

Stefano Giacalone

BMA (Business Modelling Applications)

Kamalakar Reddy

BMA (Business Modelling Applications)

Alma Schellart

University of Sheffield

**11:15–11:30****176***Resilience Assessment of Interdependent Water-Power Systems to Weather-Induced Outages*

Javad Najafi\*

KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus, Nicosia, Cyprus

Demetris Eliades

KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus, Nicosia, Cyprus

Mathaios Panteli

KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus, Nicosia, Cyprus

**11:30–11:45****199***Science-driven, human-centric pathways for urban water security*

Ebun Akinsete

Athens University of Economics and Business

Angelos Alamanos\*

Independent Researcher

Sofia Fratzi

Athens University of Economics and Business

Sotiris Georganas

London School of Economics and Political Science

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Department of Economics, University of Macedonia

Lydia Papadaki

Athens University of Economics and Business

Alina Velias

Athens University of Economics and Business

Phoebe Koundouri

Athens University of Economics and Business

**11:45–12:00****215***Water to Energy for Heating and Cooling Networks: an Assessment Framework to Support Urban Decarbonisation*

Andrea Menapace\*

Eurac

**12:00–12:15****247***Coordinated State Estimation and Control of Water and Power Systems via Nonlinear Moving Horizon Estimation and Predictive Control*

Saskia Putri\*

Lehigh University

Daniela Vilacres

Lehigh University

Javad Khazaei

Lehigh University

Faegheh Moazeni

Lehigh University

**12:15–12:30****256***Predictive Control for Coupled Water–Energy Management in AI Data Centers*

Saskia Putri\*

Lehigh University

Javad Khazaei

Lehigh University

Xiaofan Wu  
Faegheh Moazeni

Lehigh University  
Lehigh University

## Climate Resilience & Sustainability

E1

Regular Session

**Date:** 21 May 2026 **Time:** 10:30–12:30 **Room:** Room 3

**10:30–10:45**

**13**

*The Environmental Burden and Disparities of Urban Water Supply Systems in England and Wales*

Jiarui Xi Xi\*

University of Exeter

**10:45–11:00**

**44**

*Do Cool Islands Safeguard Drinking Water? Insights From a Montreal Case Study*

Ludovica Palma\*

Polytechnique Montreal

Catalina Ortiz

Polytechnique Montreal

Fatemeh Hatam

Polytechnique Montreal

Armando Di Nardo

Università della Campania Luigi Vanvitelli

Michele Prevost

Polytechnique Montreal

**11:00–11:15**

**69**

*Mitigating Climate Change–Driven Temperature Rise in Water Distribution Networks Using Pipe Burial Depth*

Robert Sitzenfrei\*

University Innsbruck

**11:15–11:30**

**90**

*Assessing the Influence of Climatic and Soil Properties on Drinking Water Pipe Failures*

Beatriz Gutierrez Caloir\*

KWR Water B.V.

**11:30–11:45**

**163**

*Four Decades of Analysing Changes in NDVI: A Long-Term Remote Sensing Approach to Monitor Trends in Plant Phenology for Urban Water Management*

Franziska Kudaya\*

Graz University of Technology

Albert König

Graz University of Technology

Daniela Fuchs-Hanusch

Graz University of Technology

**11:45–12:00**

**237**

*Evaluation of Water Reuse Strategies in Eastern Attica under Socio-economic and Climate Change*

Eleni Bourika

National Technical University of Athens

Dionysios Nikolopoulos\*

National Technical University of Athens

Christos Makropoulos

National Technical University of Athens

**12:00–12:15**

**262**

*HYDRA: A Modular and Customisable Experimental Facility for Developing and Testing Smart Water Technologies*

Christos Makropoulos	NTUA
Panagiotis Kossieris*	National Technical University Of Athens Research Committee
Georgios Moraitis	NTUA

**12:15–12:30****255**

*A Topology-Driven Approach Applying CNT to Identify Zonal and Pipe-level Drinking Water Distribution System Discolouration Risk*

Linda Alobaidy\* University of Sheffield

**Parallel Session 2****Water Distribution System Modelling, Transients and Intelligent Analysis****A8**

Regular Session

**Date:** 21 May 2026 **Time:** 14:00–16:00 **Room:** Room 1**14:00–14:15****41**

*The Critical Role of Water Service Line Characteristics in the Amplification and Damping of User-induced Pressure Waves*

Valentina Marsili*	University of Ferrara
Debora Falocci	University of Perugia
Caterina Capponi	University of Perugia
Filippo Mazzoni	University of Ferrara
Stefano Alvisi	University of Ferrara
Bruno Brunone	University of Perugia
Silvia Meniconi	University of Perugia

**14:15–14:30****53**

*Bridging Steady-State and Transient Modelling: A Graph-Theoretic MKP Approach for Dynamic Simulation in Water Distribution Networks*

Yi He*	Harbin Institute of Technology
Jinliang Gao	Harbin Institute of Technology
Wenyan Wu	Birmingham City University

**14:30–14:45****76**

*Cognitive Decision Agents for the Management of Water Systems*

Christos Michalopoulos*	KWR / National Technical University of Athens (NTUA)
Christos Makropoulos	National Technical University of Athens (NTUA)
Dragan Savic	KWR / University of Exeter

**14:45–15:00****155**

*On composed ML architecture for the modelling of complex water supply systems*

José Cação*	University of Aveiro
Sara Mota	University of Aveiro
António Andrade-Campos	University of Aveiro

Ana Luísa Reis

University of Aveiro

**15:00–15:15****210***Applying the Elastic Water Column Model with Dynamic Elements to a Physical Test Rig*

Kevin Logan\*

Technische Universität Darmstadt

Michaela Letáková

Technische Universität Darmstadt

Peter Pelz

Technische Universität Darmstadt

**15:15–15:30****222***Characterization of transient mitigation actions applied in water distribution systems*

Franco Crivello\*

CETAQUA

**15:30–15:45****267***Flowmeter Output Measurements for Rectangular Flow Input Sequences*

Umberto Sanfilippo\*

Politecnico di Milano

**Trustworthy Artificial Intelligence in Water Systems II****G9**

Special Session

**Date:** 21 May 2026 **Time:** 14:00–16:00 **Room:** Room 2**14:00–14:15****31***Towards Trustworthy Water Demand Forecasting: A Graph Signal Processing Approach to Explainable AI*

Bruno Brentan\*

Federal University of Minas Gerais

**14:15–14:30****63***Physics-Informed Graph Neural Networks for Hydraulic Analysis of Water Distribution Networks*

xi wan\*

tsinghua university

Shuming Liu

Tsinghua university

**14:30–14:45****118***Nodal Consumption Calibration by Using Differentiable Surrogate Models of Water Distribution Networks*

João Caetano\*

CERIS

**14:45–15:00****135***Detection and localization of leaks in water distribution networks using physics-informed neural networks and residual analysis*

Henrique Dantas\*

Unicamp

Martin Oberascher

UIBK

Robert Sitzenfrei

UIBK

José Gilberto Dalfré Filho

Unicamp

Bruno Brentan

UFMG

**15:00–15:15****145***Implementation of Data Enabled Predictive Control for Optimal Operation of Urban Drainage Systems*

Avi Ostfeld\*

Technion-IIT

**15:15–15:30****192***Learning Beyond Calibration: Physics-Informed Neural Networks for Adaptive Hydraulic State Estimation*

Andrea Menapace\*

Eurac

Ariele Zanfei

AIAQUA

João Caetano

Universidade de Lisboa

Dídia Covas

Universidade de Lisboa

Bruno Brentan

Federal de Minas Gerais

**15:30–15:45****217***Rapid CSO Optioneering Using Deep Learning Surrogates and Multi-Objective Optimisation*

Sina Hesarkazzazi\*

Hazen and Sawyer

James Clarke

Hazen and Sawyer

Rafed Ali

Hazen and Sawyer

**15:45–16:00****238***Optimized operation of water distribution networks through predictive metamodeling*

Leandro Evangelista\*

Universidade Federal de Minas Gerais

Gustavo Meirelles

Universidade Federal de Minas Gerais

Bruno Brentan

Universidade Federal de Minas Gerais

**Capacity Building, Training, Governance and Policy****E2**

Regular Session

**Date:** 21 May 2026 **Time:** 14:00–16:00 **Room:** Room 3**14:00–14:15****68***Introducing Hydraulic Models to the Field Staff - Practical Experience*

Philippe Beaujean\*

Société wallonne des eaux

Bogumil Ulanicki

De Montfort University

Juliaan Plancke

SOFTEAU

**14:15–14:30****71***Professional Outlook as Market Indicator: Linking AWWA's State of the Water Industry to Water Sector Financial Performance*

Juneseok Lee\*

Manhattan University

**14:30–14:45****80***Serious Gaming as Tool for Operator Training and Community Engagement for Minimizing Disinfection By-Product Exposure*

Brent Vizanko

University of Kentucky

Adam Shelly

University of Kentucky

Lindell Ormsbee\*

University of Kentucky

**14:45–15:00****169***From behavioural insights to fair water pricing: Living Labs as a Nexus within the Social Impact Assessment Framework*

Ebun Akinsete

ATHENA RC

Sofia Fratzi

AUEB

Sotiris Georganas

London School of Economics and Political Science

Conrad Landis

AUEB

Anastasia Litina

University of Macedonia

Lydia PAPADAKI\*

ATHENA RC

Alina Velias

AUEB

Phoebe Koundouri

AUEB

**15:00–15:15****183***Exploring the Influence of Drinking Water Violations on Public Health Outcomes: Fixed-Effects Poisson Analysis of Texas Community Water Systems*

Gautam Kunwar

The University of Texas at Austin

Corwin Zigler

Brown University

Lina Sela\*

The University of Texas at Austin

**15:15–15:30****198***Comparative Ignorance as an Explanation of Ambiguity Aversion and Ellsberg Choices: A Survey with a New Proposal for Bayesian Training*

Konstantinos Georgalos\*

LANCASTER UNIVERSITY MANAGEMENT SCHOOL

Phoebe Koundouri	AUEB
Panagiotis Samartzis	University of Macedonia
Nikitas Pittis	zDepartment of Banking and Financial Management, University of Piraeus,

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**15:30–15:45****275***Training, research and dissemination in the water sector an essential collaboration between industry and university*

Ramon Pérez\*

UPC

**15:45–16:00****73***Digital tools and innovative cooperation models to increase the resilience of drinking water distribution systems*

Thomas Bernard

Fraunhofer Institute of Optronics, System  
Technologies and Image Exploita-  
tion

Jochen Deuerlein\*

3S Consult GmbH

Armin Canzler

COS Geoinformatik GmbH &amp; Co. KG

Andreas Korth

DVGW Technologiezentrum Wasser

Martin Sigle

Zweckverband Bodensee-  
Wasserversorgung

Andreas Wunsch

Fraunhofer Institute of Optronics, System  
Technologies and Image Exploita-  
tion

Tobias Martin

DVGW Technologiezentrum Wasser

Martin Wagner

DVGW Technologiezentrum Wasser

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