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

Draft Programme 18/04/2026.

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Program at a Glance

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09:15-10:00	Lecture 2: Prof. Jim Uber	Lecture 2: Prof. Jim Uber				
10:00-10:30	Coffee Break	Coffee Break				
10:30–12:30	Parallel Sessions	**A1** Water Distribution Leakage Management I p. 4	**B1** Water Quality, Safety & Security I p. 5	**D1** Digital Water Infrastructure & Smart Technologies I p. 7	**G3** Interconnected Water-Energy Systems I p. 9	**A6** Asset Management p. 10
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08:30–09:15	Lecture 3: Prof. Phoebe Koundouri	Lecture 3: Prof. Phoebe Koundouri				
09:15-10:00	Lecture 4: Prof. Emily Berglund	Lecture 4: Prof. Emily Berglund				
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18:30-22:00	Dinner	Dinner				

21 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4	Room 5
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09:15-10:00	Plenary Panel	Plenary Panel				
10:00-10:30	Coffee Break	Coffee Break				
10:30–12:30	Parallel Sessions	**A7** Water Systems Resilience p. 45	**G4** Interconnected Water-Energy Systems II p. 46	**E1** Climate Resilience & Sustainability p. 48	**D3** Digital Water Infrastructure & Smart Technologies II p. 49	Battle of the Water Futures I
12:30–14:00	Lunch Break	Lunch Break				
14:00–16:00	Parallel Sessions	**A8** Water Distribution System Modelling, Transients and Intelligent Analysis p. 51	**G9** Trustworthy Artificial Intelligence in Water Systems II p. 53	**E2** Capacity Building, Training, Governance and Policy p. 54		Battle of the Water Futures II
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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
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 Dorofieiev	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 M. 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

Ahamed Ashiq	Queen's University
Xiaying Xin	Queen's University
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	The University of Glasgow
Vanessa Speight	The University of Sheffield
Cindy Smith	The 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
Frances 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 Urbanovičs*	Riga Technical University
Līva Kairiša	Water Systems and Biotechnology Institute, Riga Technical University
Jānis Rubulis	Water Systems and Biotechnology Institute, Riga Technical University
Tālis Juhna	Water Systems and Biotechnology Institute, Riga Technical University
Brigita Dejus	Water Systems and Biotechnology Institute, Riga Technical University
Alīna Neščerecka	Water Systems and Biotechnology Institute, Riga Technical University
Sandis Dejus	Water Systems and Biotechnology Institute, Riga Technical University

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12:00–12:15 **159**

Fate and Dynamics of Antimicrobial Resistance in Drinking Water Systems

Aswin A Nair	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 R. Abhijith*	Indian Institute of Technology Kanpur

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12:15–12:30 **242**

Impacts of Intermittent Water Supply on Biofilms

Vanessa Speight*	The University of Sheffield
Frances Slater	The University of Sheffield
Katherine Fish	The 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*	Instituto Superior Técnico, University of Lisbon
Dídia I.C. Covas	Instituto Superior Técnico, University of Lisbon
Nelson Carriço	ISEL- Instituto Politécnico de Lisboa
Ana Paula Falcão	Instituto Superior Técnico, University of 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

Miloš Milašinović*	Digital Water Engineering Lab, University of Belgrade - Faculty of Civil Engineering
Željko Vasilić	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 Dai*	The Hong Kong University of Science and Technology
Muhammad Waqar	The Hong Kong University of Science and Technology
Mohamed S. Ghidaoui	The 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 N.V.

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 Luísa 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 Salfety*	Technion – Israel Institute of Technology
Avi Ostfeld	Technion – Israel Institute of Technology

11:15–11:30 **111**

Optimal Pump Operation under Demand and Electricity Tariff Uncertainties

Gal Perelman*	Technion – Israel Institute of Technology
Kristina Korder*	Technische Universität Ilmenau
Elad Salomons	Technion – Israel Institute of Technology
Avi Ostfeld	Technion – Israel Institute of Technology
Pu Li	Technische Universität Ilmenau

11:30–11:45 **112**

Efficient MILP formulation for Design-Operation Optimization of Water and Energy Systems

Gal Perelman*	University of Haifa
Elad Salomons	University of Haifa

Mashor Housh	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
Blaž Korotaj	University of Zagreb Faculty of Electrical Engineering and Computing
Hrvoje Novak	University of Zagreb Faculty of Electrical Engineering and Computing
Tamara Hadjina	Končar - Digital
Mario Vašak	University of Zagreb Faculty of Electrical Engineering and Computing

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12:15–12:30 **253**

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

James G. Uber	Xylem Inc.
Ernesto Arandia-Perez	Xylem Inc.
Masud Rana	Xylem Inc.
Vito Gironda	Xylem Inc.
Sam Hatchett	Xylem Inc.
Elad Salomons*	Xylem Inc.

Asset Management A6

Regular Session

Date: 19 May 2026 **Time:** 10:30–12:30 **Room:** Room 5

10:30–10:45 **50**

Corrosion pit shape and the leak-to-burst interval of cast iron pipes

Edward John*	The University of Sheffield
Joby Boxall	The University of Sheffield
Richard Collins	The University of Sheffield
Elisabeth Bowman	The University of Sheffield
Luca Susmel	Sheffield Hallam University

10:45–11:00 **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

11:00–11:15 **83**

Identification of a Distribution Network Water Loss Model

Blaž Korotaj*	University of Zagreb Faculty of Electrical Engineering and Computing
Tamara Hadjina	Končar - Digital
Hrvoje Novak	University of Zagreb Faculty of Electrical Engineering and Computing
Nikola Hure	University of Zagreb Faculty of Electrical Engineering and Computing
Mario Vašak	University of Zagreb Faculty of Electrical Engineering and Computing

11:15–11:30 **129**

Sensitivity of Failure Modelling and Restoration of Water Distribution Networks to the Type of Pipe Damage

Diego Paez*	Computational Hydraulics Inc. (CHI)

11:30–11:45 **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

11:45–12:00 **195**

Strength Assessment of Degraded Asbestos Cement Pipes: Stress Distribution under Transversely Isotropic and Leaching Conditions

Narges Esfandiar*	KWR Water Research Institute
Bram Hillebrand	KWR Water Research Institute
Ralph Beuken	KWR Water Research Institute

12:00–12:15 **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

12:15–12:30 **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

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

14:15–14:30 **57**

Understanding the Acoustic Behaviour of Leaks in Pressurised Water Pipes

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

14:30–14:45 **65**

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

Yifan Huang*	The University of Texas at Austin
Lina Sela	The University of Texas at 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-Chust	Aqlara Ciclo Integral del Agua S.A
David Ayala-Cabrera	CWRR-School of Civil Engineering, University College Dublin

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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
Pascale Champagne	National Research Council

14:15–14:30 **20**

Effect of Nanobubble Exposure On the Structural Integrity of Extra-Cellular Polymeric Substances (EPS) in Drinking Water Biofilms

Ahamed Ashiq	Queen's University
Xiaying Xin	Queen's University
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 – Israel Institute of Technology
Vikrant Gupta	Guangdong Technion-Israel Institute of Technology
Gopinathan R. Abhijith	Indian Institute of Technology Kanpur
Avi Ostfeld	Technion – Israel Institute of Technology

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
Boguslawa 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 IV D2

Regular Session

Date: 19 May 2026 **Time:** 14:00–16:00 **Room:** Room 3

14:00–14:15 **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

14:15–14:30 **39**

Uncovering the Drivers of Greenhouse Gas Emissions in Wastewater Treatment Plants via a Data-Driven Causal Network

Chengyu He*	Tsinghua University
Shuming Liu	Tsinghua University

14:30–14:45 **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
Huizhe Cao	Harbin Institute of Technology
Shihua Qi	Heilongjiang Institute of Construction Technology
Ying Liu	Heilongjiang Institute of Construction Technology
Rutao Liu	Harbin Institute of Technology

14:45–15:00 **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

15:00–15:15 **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

15:15–15:30 **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 Düştegör	University of Groningen

15:30–15:45 **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

15:45–16:00 **248**

Insights from interpolating pressure transient metrics in water distribution networks

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

Software Tools, Modeling Engines and Platforms II — F2

Regular Session

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

14:00–14:15 **35**

A Coupled Stochastic-Hydraulic Framework for Quantitative Microbial Risk Assessment of Biofilm and Pathogen Interactions Within Drinking Water Distribution Systems

Mohamad Bostan*	The University of Sheffield
Vanessa Speight	The University of Sheffield
William Sloan	The University of Glasgow
Dinesh Bhandari	The University of Glasgow
Siming You	The University of Glasgow
Joby Boxall	The University of Sheffield

14:15–14:30 **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

14:30–14:45 **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 Sitzenfrei*	University of Innsbruck

14:45–15:00 **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

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15:00–15:15 **158**

A Spatio-Temporal Analytics Framework for Water Network Failure Diagnostics: The Case of Thessaloniki

J.S. Lioumbas*	Thessaloniki Water Supply and Sewerage Co. S.A.
C. Kotsampoidou	Thessaloniki Water Supply and Sewerage Co. S.A.
A. Christodolou	Thessaloniki Water Supply and Sewerage Co. S.A.
I. Kavouras	Thessaloniki Water Supply and Sewerage Co. S.A.

S. Lazaridis — Thessaloniki Water Supply and Sewerage Co. S.A.
A. Mentes — Thessaloniki Water Supply and Sewerage Co. S.A.

15:15–15:30 **160**

A Microbiological Model to Predict the Remaining Lifetime of Natural Rubber Rings in Transport Mains

Anurag Bhambhani* — KWR Water Research Institute
Djordje Mitrovic — KWR Water Research Institute
Mirjam Blokker — KWR Water Research Institute

15:30–15:45 **230**

Agent-Based Modelling of Consumer Behaviour During Drinking Water Contamination Events

Sotirios Paraskevopoulos* — Centre for Research & Technology Hellas (CERTH)
Stelios Vrachimis — KIOS Research and Innovation Center of Excellence, University of Cyprus
Marios Kyriakou — KIOS Research and Innovation Center of Excellence, University of Cyprus
Demetrios Eliades — KIOS Research and Innovation Center of Excellence, University of Cyprus
Patrick Smeets — KWR Water Research Institute
Ilias Gialampoukidis — Centre for Research & Technology Hellas (CERTH)
Marios M. Polycarpou — KIOS Research and Innovation Center of Excellence, University of Cyprus
Stefanos Vrochidis — Centre for Research & Technology Hellas (CERTH)
Gertjan Medema — KWR Water Research Institute

15:45–16:00 **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
Avi Ostfeld — Technion – Israel Institute of Technology
Gopinathan R. Abhijith* — Indian Institute of Technology Kanpur

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*	The University of Sheffield
Richard Collins	The University of Sheffield
Edward John	The University of Sheffield
Joby Boxall	The 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
Vegard Nilsen	Norwegian University of Life Sciences
Abbas Roozbahani	Norwegian University of Life Sciences

17:45–18:00 **175**

Predicting WDS Zonal Demands Using Deep Learning

Ehsan Roshani*	National Research Council of Canada
Pavel Popov	National Research Council of Canada

18:00–18:15 **191**

Probabilistic deep learning for short-term urban water demand forecasting

Soheil Khosravi	University of Waterloo / Amirkabir University of Technology

John Quilty*	University of Waterloo
Mohammad Sina Jahangir	Cornell University / McGill University
Rahim Barzegar	Université du Québec en Abitibi-Témiscamingue (UQAT)

Water Quality, Safety & Security III — B3

Regular Session

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

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
Sarah Jane Payne	Queen's University

16:45–17:00 **21**

Innovative Nanobubble Solutions for Microplastic-Biofilm Management in Drinking Water Distribution Systems

Ahamed Ashiq	Queen's University
Xiaying Xin	Queen's University
Yves Filion*	Queen's University

17:00–17:15 **55**

Data-driven Approaches for Understanding and Improving Mixing in Service Reservoirs

Killian Gleeson*	The University of Sheffield
Grigorios Kyritsakas	TU Delft
Stewart Husband	The University of Sheffield
Joby Boxall	The University of Sheffield

17:15–17:30 **56**

Exploring the Transferability of Empirical Discolouration Modelling in Trunk Mains

Stewart Husband*	The University of Sheffield
Joby Boxall	The University of Sheffield
Killian Gleeson	The University of Sheffield

17:30–17:45 **121**

Assessment of Innovative Approaches to Service Reservoir Ingress Monitoring

Jasper Wressell*	The University of Sheffield
Kirill V. Horoshenkov	The University of Sheffield
Joby Boxall	The University of Sheffield

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

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 M. 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 Malavasi	Politecnico di Milano
Mirjam Blokker*	KWR Water Research Institute

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 Auckland's Urban Drainage System

María A. González*	University of Auckland
Juana Herrán	University of Auckland
Jakobus E. van Zyl	University of Auckland
Theunis F.P. 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

17:30–17:45 **103**

Early Detection of Blockages in Urban Sewer Networks

Thi Hai Duong Ninh*	Adelaide University
Wei Zeng	Adelaide University
Martin Francis Lambert	Adelaide University
Nhu Cuong Do	Adelaide University

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

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 A Jabbar	Birmingham City University
Essa Shahra	Birmingham City University

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

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
Kate Baker	University of Exeter
Albert S. Chen	University of Exeter
Lydia Vamvakeridou-Lyroudia	University of Exeter / KWR Water B.V.
Arvid van Dam	KWR Water B.V.
Stefania Munaretto	KWR Water B.V.
Eloisa Vargiu	CETAQUA

16:45–17:00 **268**

Bridging Land and Sea through Digital Twins for Inland Waters: Reference Architecture and Synergies with EDITO and DestinE

Georgina Díez*	Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS)
Caterina Sarno	Engineering Ingegneria Informatica S.p.A.
Natalia Zamora	Barcelona Supercomputing Center-Centro Nacional de Supercomputación (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, Water Technology Centre
Joan Coines	Cetaqua, Water Technology Centre
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, Water Technology Centre
Eloisa Vargiu	Cetaqua, Water Technology Centre

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*	CERTH
Caterina Sarno	Engineering Ingegneria Informatica Spa
Simone De Rossi	Engineering Ingegneria Informatica Spa
Stefanos Vrochidis	CERTH

17:45–18:00 **273**

Leveraging Large Language Models for Requirements Mapping in Digital Twin Architectures for Inland Waters

Gerasimos Antzoulatos*	CERTH
Joan Coines	Cetaqua, Water Technology Centre
Miquel Sàrrias Montón	Water Technology Center
Stefanos Vrochidis	CERTH

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 Gavriel	PHOEBE Research and Innovation Ltd
Stelios Vrachimis	KIOS Research and Innovation Center of Excellence, University of Cyprus
Dimitrios Kouzapas	KIOS Research and Innovation Center of Excellence, University of Cyprus

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18:15–18:30 **281**

OpenKIWAS: Open Knowledge Inventory for Inland Water Systems

Dimitrios Kouzapas*	University of Cyprus

Georgina Diez Ventura	Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS)
Caterina Sarno	Engineering Ingegneria Informatica S.p.A.
Kate Baker	University of Exeter
Jessica Penny	University of Exeter
Franco M. Crivello	Cetaqua, Water Technology Centre
Gerasimos Antzoulatos	Centre for Research & Technology Hellas (CERTH)
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 Informatica S.p.A.
Eloisa Vargiu	Cetaqua, Water Technology Centre
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
Avi Ostfeld	Technion – Israel Institute of Technology

10:45–11:00 **45**

Pressure control optimization of real-word water distribution network in a multicriteria decision-making framework

Daniel Barros*	Federal University of Tocantins
Rui Gabriel Souza	Federal University of Minas Gerais (UFMG)
Gustavo Meirelles	Federal University of Minas Gerais (UFMG)
Bruno Brentan	Federal University of Minas Gerais (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*	University of Bordeaux
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 Sundararaman	Government College of Technology, Coimbatore
Satvika Dwaram	Indian Institute of Information Technology, Design and Manufacturing
Sri Hari Prasath Ramprasad	Indian Institute of Technology Madras
Mallikarjun Jamadarkhani	Indian Institute of Technology Madras
Venkata Prakash Nallamothula	Indian Institute of Technology Madras, and University of Birmingham
Varghese Kurian	University of Delaware
Sridharakumar Narasimhan*	Indian Institute of Technology Madras

12:00–12:15 **197**

Prediction of Hydraulic Transients and Design of Air Vessels Using Artificial Neural Networks

Debora Móller*	Federal University of Minas Gerais (UFMG)
Leandro Evangelista	Federal University of Minas Gerais (UFMG)
Bruno Brentan	Federal University of Minas Gerais (UFMG)
Gustavo Meirelles	Federal University of Minas Gerais (UFMG)

12:15–12:30 **202**

Optimal Pump Scheduling in WDNs: Assessing Tank Dynamics Discretisation via Direct Multiple Shooting

Katharina Henn	Technische Universität Darmstadt)*,Peter F. Pelz (Technische Universität Darmstadt

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*	Centre for Research & Technology Hellas (CERTH)
Prodromos Mouratidis	Centre for Research & Technology Hellas (CERTH)
Georgia Kougka	Centre for Research & Technology Hellas (CERTH)
Ilias Gialampoukidis	Centre for Research & Technology Hellas (CERTH)
Stefanos Vrochidis	Centre for Research & Technology Hellas (CERTH)
Ioannis Kompatsiaris	Centre for Research & Technology Hellas (CERTH)

10:45–11:00 78

Towards an AI-based EPANET-MSX Surrogate Model

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

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 Borić	Končar - Digital
Blaž Korotaj	University of Zagreb Faculty of Electrical Engineering and Computing
Nikola Hure	University of Zagreb Faculty of Electrical Engineering and Computing
Mario Vašak	University of Zagreb Faculty of Electrical Engineering and Computing

11:15–11:30 149

Modelling anti-microbial resistance in water networks

Shimon Komarovsky*	Technion – Israel Institute of Technology
Gopinathan R. Abhijith	Indian Institute of Technology Kanpur
Sriman Pankaj Boindala	Technion – Israel Institute of Technology
Benedikt M. Aumeier	Technical University of Munich
Amelie Steger	Technical University of Munich
Elad Salomons	Technion – Israel Institute of Technology

Jörg E. Drewes	Technical University of Munich
Avi Ostfeld	Technion – Israel Institute of Technology

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 Hellas (CERTH)
Dimitrios Valsamis	Centre for Research & Technology Hellas (CERTH)
Anastasia Moumtzidou	Centre for Research & Technology Hellas (CERTH)
Ilias Gialampoukidis	Centre for Research & Technology Hellas (CERTH)
Stefanos Vrochidis	Centre for Research & Technology Hellas (CERTH)
Ioannis Kompatsiaris	Centre for Research & Technology Hellas (CERTH)

11:45–12:00 **177**

AQUAMON: Advanced Quality Monitoring System of Water in Urban Areas

Emmanuel Raptis*	CERTH
Panagiotis Raptis	CERTH
Elias Kosmatopoulos	CERTH

12:00–12:15 **233**

Fusing Deep Learning and Remote Sensing Data to Estimate Non-Optically Active Water Quality Variables

Vasiliki Thomopoulou	National Technical University of Athens (NTUA)
Panagiotis Kossieris*	National Technical University of Athens Research Committee
George Bariamis	National Technical University of Athens (NTUA)
Konstantinos Peroulis	EYDAP S.A.
George Katsouras	EYDAP S.A.
Christos Makropoulos	National Technical University of Athens (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, University of Cyprus
Alexandros Papadopoulos	KIOS Research and Innovation Center of Excellence, University of Cyprus
Marios Kyriakou	KIOS Research and Innovation Center of Excellence, University of Cyprus
Stelios Vrachimis	KIOS Research and Innovation Center of Excellence, University of Cyprus
Demetrios Eliades	KIOS Research and Innovation Center of Excellence, University of Cyprus

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 - BarcelonaTech
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
Francisco Rivero	Universidad de los Andes
Sarai Díaz	Universidad de Castilla-La Mancha
Pedro L. Iglesias-Rey	Universidad Politécnica de Valencia
Juan Saldarriaga	Universidad de los Andes

11:00–11:15 **132**

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

Julián Diaz	Universidad de los Andes
Francisco Rivero	Universidad de los Andes
Diego Higuera	Universidad de los Andes
Viviana Chala	Universidad de los Andes
Juan Saldarriaga*	Universidad de los Andes

11:15–11:30 **168**

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

Sangjin Park*	Korea University
Hyeon Woo Jung	Korea University
Do Guen Yoo	The University of Suwon
Donghwi Jung	Korea University

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 Luísa 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 Savić	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 L. 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	Federal University of Minas Gerais (UFMG)
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 **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

11:00–11:15 **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

11:15–11:30 **137**

A Modular Agentic AI Framework for Hydraulic Modelling and Event Management in Water Distribution Systems

Tyler Trimble*	The University of Texas at Austin
Yifan Huang	The University of Texas at Austin
Gerardo Riaño-Briceño	Clique Systems
Lina Sela	The University of Texas at Austin

11:30–11:45 **161**

When Sensors Fail: Exploring Data Imputation and Model Resilience in Physics-Informed Digital Twins of Water Networks

Jordana Alaggio*	Federal University of Minas Gerais (UFMG)
Andrea Menapace	Free University of Bozen-Bolzano
Daniel Bezerra	Universidade Federal do Tocantins

Gustavo Meirelles	Federal University of Minas Gerais (UFMG)
Bruno Brentan	Federal University of Minas Gerais (UFMG)

11:45–12:00 **190**

Statistical and machine learning models with multi-source data for demand prediction in water distribution systems

Maria Fortunato*	Instituto Superior Técnico
João Caetano	Instituto Superior Técnico
Maria Quarta	Instituto Politécnico de Setúbal
Raquel Barreira	Instituto Politécnico de Setúbal
Conceição Amado	Instituto Superior Técnico
Nelson Carriço	Instituto Superior Técnico / Instituto Politécnico de Setúbal
Dídia I.C. Covas	Instituto Superior Técnico

12:00–12:15 **207**

System-Level Transfer Learning from Public Water Demand Datasets

Alessandro Toledo Salazar*	California State University
Jorge Pesantez	California State University
Gal Perelman	Technion – Israel Institute of Technology
Avi Ostfeld	Technion – Israel Institute of Technology

Industrial Session II G1

Special Session

Date: 20 May 2026 **Time:** 10:30–12:30 **Room:** Room 5

10:30–10:45 12

Leakage models: from laboratory scale to water distribution systems

Orazio Giustolisi*	Politecnico di Bari
Giulia Acconciaioco	Politecnico di Bari
Antonietta Simone	IDEA-RT s.r.l.
Giuseppina Messa	Politecnico di Bari
Luigi Berardi	Università degli Studi D'Annunzio / Informhydro s.r.l.
Gabriele Freni	Università degli Studi di Enna "Kore"

10:45–11:00 14

Topological domain analysis multi-source water network - Mediterranean

Liberato Bozzelli*	Politecnico di Bari
Antonietta Simone	IDEA-RT
Laura Enriquez	Politecnico di Bari
Daniele Biagio Laucelli	Politecnico di Bari
Juan Saldarriaga	Universidad de los Andes
Orazio Giustolisi	Politecnico di Bari / IDEA-RT

11:00–11:15 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

11:15–11:30 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"

11:30–11:45 17

Enhancing DMA Design throught 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

11:45–12:00 **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

12:00–12:15 **179**

DMA-Based Pressure Control through Model-Predictive Optimization for Leakage Reduction

Ernesto Arandia-Perez*	Xylem Inc.
Ernesto Arandia	Xylem Inc.
Greg Hendrickson	Xylem Inc.
Masud Rana	Xylem Inc.
James G. Uber	Xylem Inc.
Sam Hatchett	Xylem Inc.

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

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 Savić	KWR Water Research Institute

15:15–15:30 **156**

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

Chaerin Lee*	Korea University
Donghwi Jung*	Korea University

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

15:45–16:00 **264**

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

Giacomo Ferrarese	Politecnico di Milano
Gustavo Marini	Università degli Studi del Sannio
Nicola Fontana	Università degli Studi del Sannio
Virginia Rosa Coletta	CNR-IRSA
Umberto Fratino	Politecnico di Bari
Nicola Lamaddalena	Politecnico di Bari
Ivan Portoghese	CNR-IRSA
Stefano Malavasi	Politecnico di Milano
Stefano Mambretti	Politecnico di Milano
Davide Troiani	Politecnico di Milano
Alessandro Pagano*	Politecnico di Bari / CNR-IRSA

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* — Computational Hydraulics Inc. (CHI)

14:45–15:00 **144**

Real-Time Data Processing and Analysis Platform for Water Supply Systems

Nelson Carriço* — Instituto Politécnico de Setúbal / Instituto Superior Técnico / Instituto Superior de Engenharia de Lisboa

Dídia I.C. Covas — Instituto Superior Técnico

João Caetano — Instituto Superior Técnico

Bruno Ferreira — Instituto Politécnico de Setúbal

Conceição Amado — Instituto Superior Técnico

Raquel Barreira — Instituto Politécnico de Setúbal

Ana Mendes — Instituto Politécnico de Setúbal

Rui Madeira — Instituto Politécnico de Setúbal

Soraia de Almeida — Inframoura E.M.

Helena Ramos — Instituto Superior Técnico

15:00–15:15 **204**

Building Digital Twins for Small Water Distribution Systems: Application to a Rural Alaskan Community

Yifan Huang* — The University of Texas at Austin

Yeji Kim — The University of Texas at Austin

Matt Bartos — The University of Texas at Austin

Lina Sela — The University of Texas at Austin

15:15–15:30 **236**

An Integrated Monitoring System for Smart Water Networks Enhanced by Digital Twin Modelling

Costas Papadopoulos* — University of Cyprus

Marios Kyriakou — University of Cyprus

Stelios Vrachimis — University of Cyprus

Demetrios Eliades	University of Cyprus

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.
James G. 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
Jakobus E. 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 M. 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 R. Abhijith*	Indian Institute of Technology Kanpur

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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 Research and Innovation Center of Excellence, University of Cyprus
Kleanthis Malialis	KIOS Research and Innovation Center of Excellence, University of Cyprus
Konstantinos Fokianos	University of Cyprus
Marios M. Polycarpou	KIOS Research and Innovation Center of Excellence, University of Cyprus

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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 Politécnica de Valencia (Valencia Tech, Spain)
Juan G. Saldarriaga-Valderrama	CIACUA, Universidad de Los Andes
F. Javier Martinez-Solano	Universitat Politécnica 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
Anna Berg Samúelsdóttir	MATIS
Gareth Lewis	University of Exeter
Albert S. Chen	University of Exeter
Lydia Vamvakeridou-Lyroudia	University of Exeter / KWR Water Research Institute

14:15–14:30 **100**

A Machine Learning Approach to Modelling Drinking Water Biofilm Thickness

Konstantinos Glynis*	KWR Water Research Institute / Delft University of Technology
Mirjam Blokker	KWR Water Research Institute / Delft University of Technology
Zoran Kapelan	TU Delft
Dragan Savić	KWR Water Research Institute / 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*	Easy Global Market
Luc Gasser	Easy Global Market
Julien Fleury	Easy Global Market
Lupicinio Garcia Ortiz	Cetaqua, Water Technology Centre
Sara Espinosa	Cetaqua, Water Technology Centre

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
Franck Le Gall	Easy Global Market
Demetrios 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 Düştegör	University of Groningen
Guy Henckens	Aveco de Bondt
Alexander Lazovik	University of Groningen
Victoria Degeler	University of Amsterdam

Industrial Session I G2

Special Session

Date: 20 May 2026 **Time:** 14:00–16:00 **Room:** Room 5

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 Biagio Laucelli*	Politecnico di Bari
Lucia Vergine	Acquedotto Pugliese S.p.A.
Laura Enriquez	Politecnico di Bari
Gabriele Freni	Università degli Studi di Enna “Kore”
Orazio Giustolisi	IDEA Research Transfer

14:30–14:45 **25**

WDNetXL-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, INGEO
Juan Saldarriaga	Universidad de los Andes, CIACUA

14:45–15:00 **26**

Water Quality versus Asset Management

Lucia Vergine*	Politecnico di Bari / Acquedotto Pugliese S.p.A.
Laura Enriquez	Politecnico di Bari
Giuseppina Messa	Politecnico di Bari / Acquedotto Pugliese S.p.A.
Daniele Biagio Laucelli	Politecnico di Bari
Juan Saldarriaga	Universidad de los Andes
Orazio Giustolisi	Politecnico di Bari / IDEA-RT

15:00–15:15 **29**

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

Luigi Berardi*	Università degli Studi "G. d'Annunzio" 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" Chieti – Pescara
Liberato Bozzelli	Politecnico di Bari
Lucia Vergine	Politecnico di Bari
Luigi Berardi	Università degli Studi "G. d'Annunzio" Chieti – Pescara
Daniele Biagio 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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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*	The University of Texas at Austin
Lina Sela	The University of Texas at Austin

10:45–11:00 **74**

Hydraulic–Quality Coupled DMA Creation Using Graph Clustering and Particle Swarm Optimization

Daniel Bezerra*	Federal University of Tocantins
Jordana Alaggio	Federal University of Minas Gerais (UFMG)
Gustavo Meirelles	Federal University of Minas Gerais (UFMG)
Bruno Brentan	Federal University of Minas Gerais (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*	The University of Sheffield
Stewart Husband	The University of Sheffield
Joby Boxall	The 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 L. 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
Lina Sela	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)

Abiyyu 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*	The University of Sheffield
Mohamed Abdel-Aal	University of Exeter
Simon Tait	The 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	The 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
Demetrios Eliades	KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus
Mathaios Panteli	KIOS Research and Innovation Center of Excellence and Department of Electrical and Computer Engineering, University of Cyprus

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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
Conrad Landis	Athens University of Economics and Business
Anastasia Litina	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 Research
Daniele Anania	Eurac Research / Politecnico di Torino
Marco Cozzini	Eurac Research

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	Lehigh University
Faegheh Moazeni	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*	University of Exeter
Xiaoyu Yan	University of Exeter
Guangtao Fu	University of Exeter

10:45–11:00 **44**

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

Ludovica Palma*	Polytechnique Montréal
Catalina Ortiz	Polytechnique Montréal
Fatemeh Hatam	Polytechnique Montréal
Armando Di Nardo	Università della Campania "Luigi Vanvitelli"
Michèle Prévost	Polytechnique Montréal

11:00–11:15 **69**

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

Robert Sitzenfrei*	University of Innsbruck

11:15–11:30 **90**

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

Beatriz Gutierrez Caloir*	KWR Water Research Institute
Mirjam Blokker	KWR Water Research Institute / Delft University of Technology
Dragan Savić	KWR Water Research Institute / University of Belgrade / University of Exeter
Mat Collins	University of Exeter
Raziyeh Farmani	University of Exeter / University of Belgrade

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	National Technical University of Athens (NTUA)
Panagiotis Kossieris*	National Technical University of Athens Research Committee
Georgios Moraitis	National Technical University of Athens (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 L.S. Alobaidy*	The University of Sheffield
Duncan Thorne	South West Water
Joby Boxall	The University of Sheffield
Stewart Husband	The University of Sheffield

Digital Water Infrastructure & Smart Technologies II D3

Regular Session

Date: 21 May 2026 **Time:** 10:30–12:30 **Room:** Room 4

10:30–10:45 **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

10:45–11:00 **106**

IoT-Based Acoustic Tool for Sewer Blockage Detection

Thi Hai Duong Ninh*	Adelaide University
Duc Cong Hiep Nguyen	Adelaide University
Wei Zeng	Adelaide University
Martin Francis Lambert	Adelaide University
Nhu Cuong Do	Adelaide University

11:00–11:15 **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 Kuriyattil	Indian Institute of Technology Madras
Murali Nagarajan	Indian Institute of Technology Madras
Sridharakumar Narasimhan*	Indian Institute of Technology Madras

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11:15–11:30 **146**

A Kernel Density Estimation Framework for DMA-Level Leakage Detection: A First Application to an Italian Case Study

Chiara Cincotta*	University of Bologna
Michele Lombardi	University of Bologna
Antoine Bruneau	University of Bologna
Cristiana Bragalli	University of Bologna

11:30–11:45 **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

11:45–12:00 **181**

Real-time Anomaly Detection in Water Distribution Networks

Nelson Carriço*	Instituto Politécnico de Setúbal / Instituto Superior Técnico / Instituto Superior de Engenharia de Lisboa
Guilherme Gonçalves	Instituto Superior Técnico
Renato Moura	Instituto Politécnico de Setúbal
Diogo Oliveira	Instituto Politécnico de Setúbal
João Caetano	Instituto Superior Técnico
Dídia I.C. Covas	Instituto Superior Técnico

12:00–12:15 **219**

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

Xiaohan Chen*	University of Cyprus
Stelios Vrachimis	University of Cyprus
Marios M. Polycarpou	University of Cyprus

12:15–12:30 **241**

Hyperspectral Imaging and Machine Learning for Enhanced Detection of Water Contaminants

Lucia Perez-Oliva*	University of Oviedo
Marta Terrados-Cristos	University of Oviedo
Marina Diaz-Piloñeta	University of Oviedo
Cristian Cedillo-Gancedo	University of Oviedo
Javier Garcia-Gonzalez	University of Oviedo

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
Huizhe Cao	Harbin Institute of Technology
Wenyan Wu	Birmingham City University
Wei Qiu	Harbin Institute of Technology
Shihua Qi	Heilongjiang Institute of Construction Technology
Fangyuan Liu	Heilongjiang Institute of Construction Technology

14:30–14:45 **76**

Cognitive Decision Agents for the Management of Water Systems

Christos Michalopoulos*	KWR Water Research Institute / National Technical University of Athens (NTUA)
Christos Makropoulos	National Technical University of Athens (NTUA)
Dragan Savić	KWR Water Research Institute / 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 Leštáková	Technische Universität Darmstadt
Peter Pelz	Technische Universität Darmstadt

15:15–15:30 **222**

Characterization of transient mitigation actions applied in water distribution systems

Franco M. Crivello*	Water Technology Center
Jordi Meseguer Amela	Water Technology Center
Adria Domingo Domenech	Water Technology Center
Luis Navarro Perez de Ontiveros	Aquatec

15:30–15:45 **267**

Flowmeter Output Measurements for Rectangular Flow Input Sequences

Luisfilippo Lanza	Hemina spa
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 (UFMG)
Andrea Menapace	Eurac Research
Martin Oberascher	University of Innsbruck
Manuel Herrera	Newcastle University
Robert Sitzenfrei	University of Innsbruck

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 – Civil Engineering Research and Innovation for Sustainability, Instituto Superior Técnico, University of Lisbon

14:45–15:00 **135**

Detection and localization of leaks in water distribution networks using physics-informed neural networks and residual analysis

Henrique Dantas*	University of Campinas (UNICAMP)
Martin Oberascher	University of Innsbruck
Robert Sitzenfrei	University of Innsbruck
José Gilberto Dalfré Filho	University of Campinas (UNICAMP)

Bruno Brentan	Federal University of Minas Gerais (UFMG)

15:00–15:15 **145**

Implementation of Data Enabled Predictive Control for Optimal Operation of Urban Drainage Systems

Roni Penn	Technion-IIT
Avi Ostfeld*	Technion-IIT

15:15–15:30 **192**

Learning Beyond Calibration: Physics-Informed Neural Networks for Adaptive Hydraulic State Estimation

Andrea Menapace*	Eurac Research
Ariele Zanfei	AIaqua S.r.l.
João Caetano	Universidade de Lisboa
Dídia I.C. Covas	Universidade de Lisboa
Bruno Brentan	Federal University of Minas Gerais (UFMG)

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 Alves*	Federal University of Minas Gerais (UFMG)
Gustavo Meirelles	Federal University of Minas Gerais (UFMG)
Bruno Brentan	Federal University of Minas Gerais (UFMG)

Capacity Building, Training, Governance and Policy E2

Regular Session

Date: 21 May 2026 **Time:** 14:00–16:00 **Room:** Room 3

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Introducing Hydraulic Models to the Field Staff - Practical Experience

Philippe Beaujean*	Société wallonne des eaux
Bogumil Ulanicki	De Montfort University
Juliaan Plancke	SOFTEAU

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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 Research Center
Angelos Alamanos	Independent Researcher
Sofia Fratzi	Athens University of Economics and Business
Sotiris Georganas	London School of Economics and Political Science
Conrad Landis	Athens University of Economics and Business
Anastasia Litina	University of Macedonia
Lydia Papadaki*	Athena Research Center
Alina Velias	Athens University of Economics and Business
Phoebe Koundouri	Athens University of Economics and Business

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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	Athens University of Economics and Business
Panagiotis Samartzis	University of Macedonia
Nikitas Pittis	zDepartment of Banking and Financial Management, University of Piraeus,

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Training, research and dissemination in the water sector an essential collaboration between industry and university

Ramon Pérez*	Universitat Politècnica de Catalunya

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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 Exploitation
Jochen Deuerlein*	3S Consult GmbH
Armin Canzler	COS Geoinformatik GmbH & Co. KG
Andreas Korth	DVGW Technologiezentrum Wasser
Martin Sigle	Zweckverband Bodensee-Wasserversorgung
Andreas Wunsch	Fraunhofer Institute of Optronics, System Technologies and Image Exploitation
Tobias Martin	DVGW Technologiezentrum Wasser
Martin Wagner	DVGW Technologiezentrum Wasser

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