



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

19 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4	Room 5
08:30–09:15	Lecture 1: Prof. Barbara Hammer	Lecture 1: Prof. Barbara Hammer				
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
12:30–14:00	Coffee Break	Coffee Break				
14:00–16:00	Parallel Sessions	A2 Water Distribution Leakage Management II p. 12	B2 Water Quality, Safety & Security II p. 13	D2 Digital Water Infrastructure & Smart Technologies IV p. 15	F2 Software Tools, Modeling Engines and Platforms II p. 17	
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20 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4	Room 5
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				
10:00–10:30	Coffee Break	Coffee Break				
10:30–12:30	Parallel Sessions	A4 Water Systems Operations & Controls I p. 27	G5 Earth Observation, AI and Digital Tools for Water Quality Management p. 28	C2 Urban Drainage, Stormwater & Wastewater Systems II p. 31	G6 Trustworthy Artificial Intelligence in Water Systems I p. 32	G1 Industrial Session II p. 34
12:30–14:00	Lunch Break	Lunch Break				
14:00–16:00	Parallel Sessions	A5 Water Systems Operations & Controls II p. 36	F1 Software Tools, Modeling Engines and Platforms I p. 37	D4 Digital Water Infrastructure & Smart Technologies III p. 39	G7 ICT4WATER Cluster: Showcases from selected projects p. 41	G2 Industrial Session I p. 43
16:30–18:30	Social event	Social event				
18:30–22:00	Dinner	Dinner				

21 May 2026

Time	Activity	Room 1	Room 2	Room 3	Room 4	Room 5
08:30–09:15	Lecture 5: Socrates Metaxas	Lecture 5: Socrates Metaxas				
09:15–10:00	Plenary Panel	Plenary Panel				
10:00–10:30	Coffee Break	Coffee Break				
10:30–12:30	Parallel Ses- sions	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 Ses- sions	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
16:00–16:30	Closing Cere- mony	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

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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

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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

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

Oleg Melnikov	National Technical University “Kharkiv Polytechnic Institute”
Yurii Dorofeiev	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

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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*

Līva Kairiša

Jānis Rubulis

Tālis Juhna

Brigita Dejus

Alīna Neščerecka

Sandis Dejus

Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

Water Systems and Biotechnology Institute, Riga Technical University

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

Aswin A Nair

Muktesh Kumar Sahu

Saravanan Matheshwaran

Purnendu Bose

Gopinathan R. Abhijith*

Indian Institute of Technology Kanpur

Indian Institute of Technology Kanpur

Indian Institute of Technology Kanpur

Indian Institute of Technology Kanpur

Indian Institute of Technology Kanpur

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

Vanessa Speight*

Frances Slater

Katherine Fish

The University of Sheffield

The University of Sheffield

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
<i>iBWS: A Digital Twin Framework for Autonomous Building Water Quality and Hydraulic Management</i>		
Juneseok Lee*		Manhattan University
10:45–11:00		85
<i>Modern Water Control in the Era of Cloud Computing, Digital Transformation, and Cyber Threats</i>		
Shaul Rom*		Reali Technologies Ltd.
11:00–11:15		119
<i>HydroBIM: Bridging Digital Design and Renewable Energy to an Urban Water Community</i>		
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
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<i>Calibration of Water Supply Systems with AMI Data</i>		
Daniel Weintrob*		University of Haifa
Mashor Housh		University of Haifa
11:30–11:45		223
<i>Fast and physically interpretable data assimilation to support digital twins of urban water systems</i>		
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
<i>Building a BIM–GIS Asset Model for Water Network Digital Twins: Deeds and Misdeeds</i>		
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
<i>Digital Twin based Commissioning for Large-Scale Automation Renewal in Drinking Water Treatment Infrastructure</i>		
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

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 Girona

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
<i>Corrosion pit shape and the leak-to-burst interval of cast iron pipes</i>	
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
<i>Field Evidence of a Standing Water Column Formation in Rural Water Supply Systems</i>	
Tomer Shmaya*	University of Toronto
Samantha Levalley	University of Toronto
David Meyer	University of Toronto
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<i>Identification of a Distribution Network Water Loss Model</i>	
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
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<i>Sensitivity of Failure Modelling and Restoration of Water Distribution Networks to the Type of Pipe Damage</i>	
Diego Paez*	Computational Hydraulics Inc. (CHI)
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<i>Fault Asset Detection for Water Distribution System Management</i>	
Yejoon Chon*	Korea University
Jae Hyuk Kim	Hannam University
Seungyub Lee	Hannam University
Donghwi Jung	Korea University
11:45–12:00	195
<i>Strength Assessment of Degraded Asbestos Cement Pipes: Stress Distribution under Transversely Isotropic and Leaching Conditions</i>	
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
<i>Leak Detection and Localization in WSS: An ML-Based Framework for Timely Response</i>	
Ana Luís Sousa*	University of Aveiro
Eugénio Rocha	University of Aveiro
António Andrade-Campos	University of Aveiro
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15:00–15:15	122
<i>Hydraulic Slow Transient Modeling and Sensitivity Analysis for Leakage Detection</i>	
Felipe Caro*	INRAE
Olivier Piller	Université de Bordeaux
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<i>Supervised Machine Supervised Machine Learning Techniques for Leak Detection in Urban Water Networks</i>	
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)
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15:30–15:45	221
<i>Prediction of Water Leaks Based on Pressure Variations From Previous Anomalous Events Using Intelligent Data Analysis</i>	
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
<hr/>	
15:45–16:00	277
<i>Enhancing Inverse Transient Method Performance for Leak Detection in Viscoelastic Pipelines by Using a Differentiator-Smoother Filter</i>	
Renzo Dusi	University of Brasilia
Alexandre Soares*	University of Brasilia
Kleber Silva	University of Brasilia
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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

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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 Düşteğör

University of Groningen

15:30–15:45

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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

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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

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. Kotsampidou

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. Mentas	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
<i>Analysis of Hot and Cold Water Consumption of Residential Users Using High-resolution Data</i>	
Filippo Mazzoni*	University of Ferrara
Valentina Marsili	University of Ferrara
Stefano Alvisi	University of Ferrara
16:45–17:00	52
<i>Spatial Resolution of Demand Modelling in Water Distribution Networks</i>	
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
<i>Minimum Night Consumption in Water Distribution Networks as a Function of Aggregate Average User Outflows</i>	
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
<i>A Scenario-Based Approach to Forecasting Peak Water Demand</i>	
Anika Stelzl*	Graz University of Technology
Daniela Fuchs-Hanusch	Graz University of Technology
17:30–17:45	172
<i>Recurrent Neural Networks for Short-Term Water Demand Forecasting: A Technical Review and Framework for Implementation</i>	
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
<i>Predicting WDS Zonal Demands Using Deep Learning</i>	
Ehsan Roshani*	National Research Council of Canada
Pavel Popov	National Research Council of Canada
18:00–18:15	191
<i>Probabilistic deep learning for short-term urban water demand forecasting</i>	
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
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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 Vamvakieridou-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 ED-ITO 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

18:15–18:30**281**

OpenKIWAS: Open Knowledge Inventory for Inland Water Systems

Dimitrios Kouzapas*	University of Cyprus
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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 Hel- las (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-world 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 Tech- nology, 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 Darm- stadt)*, Peter F. Pelz (Technische Uni- versität 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*

Centre for Research & Technology Hel-
las (CERTH)

Prodromos Mouratidis

Centre for Research & Technology Hel-
las (CERTH)

Georgia Kougka

Centre for Research & Technology Hel-
las (CERTH)

Ilias Gialampoukidis

Centre for Research & Technology Hel-
las (CERTH)

Stefanos Vrochidis

Centre for Research & Technology Hel-
las (CERTH)

Ioannis Kompatsiaris

Centre for Research & Technology Hel-
las (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 Electri-
cal Engineering and Computing

Donata Borić

Končar - Digital

Blaž Korotaj

University of Zagreb Faculty of Electri-
cal Engineering and Computing

Nikola Hure

University of Zagreb Faculty of Electri-
cal Engineering and Computing

Mario Vašak

University of Zagreb Faculty of Electri-
cal Engineering and Computing**11:15–11:30****149***Modelling anti-microbial resistance in water networks*

Shimon Komarovsky*

Technion – Israel Institute of Technol-
ogy

Gopinathan R. Abhijith

Indian Institute of Technology Kanpur

Sriman Pankaj Boindala

Technion – Israel Institute of Technol-
ogy

Benedikt M. Aumeier

Technical University of Munich

Amelie Steger

Technical University of Munich

Elad Salomons

Technion – Israel Institute of Technol-
ogy

Jörg E. Drewes
Avi Ostfeld

Technical University of Munich
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 Moutzidou

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 In-
dustrial (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 Technol- ogy
Avi Ostfeld	Technion – Israel Institute of Technol- ogy

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 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

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
<i>A Citywide Integrated Framework for Optimal Design of Reclaimed Water Distribution Networks</i>	
Mohsen Hajibabaei	University of Innsbruck
Robert Sitzenfrei*	University of Innsbruck
<hr/>	
15:00–15:15	148
<i>A Graph-based Deep Reinforcement Learning Approach for Water Distribution Networks Design</i>	
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
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15:15–15:30	156
<i>Impact of Water Distribution Network Topology on Scenario-Based Water Infrastructure Planning</i>	
Chaerin Lee*	Korea University
Donghwi Jung*	Korea University
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15:30–15:45	186
<i>Towards a framework for systematic, optimized design of resilient water allocation and transport infrastructure</i>	
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
<i>On the use of numerical models to analyze pressurized irrigation systems through performance indicators</i>	
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
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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*

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

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

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

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 / Uni-
versity 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 Düşteğör	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***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, INGEO
Juan Saldarriaga	Universidad de los Andes, CIACUA

14:45–15:00	26
<i>Water Quality versus Asset Management</i>	
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
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15:00–15:15	29
<i>Data valorisation through WDN geometric model building: the case of Acque Bresciane</i>	
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.
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15:15–15:30	30
<i>Efficient pipe replacement plans using Asset Management Support Indicator</i>	
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
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15:30–15:45	70
<i>Nationwide Patterns of Water Service Line Failures: Insights from 20 Years of U.S. Data</i>	
Juneseok Lee*	Manhattan University
<hr/>	

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

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 Sitzenfreni*	University of Innsbruck
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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

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
Jonas Schorr
Andrea Cominola*

Indigo Water FlexCo
Urban Impact Berlin GmbH
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
Peter Pelz

Technische Universität Darmstadt
Technische Universität Darmstadt

15:15–15:30

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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

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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

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Physics-Informed Graph Neural Networks for Hydraulic Analysis of Water Distribution Networks

Xi Wan*

Tsinghua University

Shuming Liu

Tsinghua University

14:30–14:45

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Nodal Consumption Calibration by Using Differentiable Surrogate Models of Water Distribution Networks

João Caetano*

CERIS – Civil Engineering Research
and Innovation for Sustainability, In-
stituto Superior Técnico, University of
Lisbon

14:45–15:00

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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**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 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

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 MAN-
AGEMENT 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,**15:30–15:45****275**

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

Ramon Pérez*

Universitat Politècnica de Catalunya

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, Sys-
tem Technologies and Image Exploita-
tion

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, Sys-
tem Technologies and Image Exploita-
tion

Tobias Martin

DVGW Technologiezentrum Wasser

Martin Wagner

DVGW Technologiezentrum Wasser

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