

14th International Conference on Hydroinformatics – HIC 2022

Water INFLUENCE – Water INFormatic soLUTIONS and opEN problems in the cycle from Clouds to ocEan

4-8 July 2022, Bucharest, Romania

CONFERENCE PROGRAMME

Monday, 4th of July, 2022

14:00-17:30 OPENING CEREMONY & PLENARY SESSION

Location: Amphitheatre “Radu Voinea”, University “Politehnica” of Bucharest – UPB

14:00-14:30 PARTICIPANTS’ REGISTRATION & WELCOME COFFEE (hall AN)

14:30-15:30 OPENING CEREMONY

Mihnea Costoiu	Rector of the University “Politehnica” of Bucharest
Radu Văcăreanu	Rector of the Technical University of Civil Engineering Bucharest
Tudor Prisecaru	Secretary of State – Ministry of Research, Innovation and Digitalization in Romania; Chair of the Senate of the University “Politehnica” of Bucharest
Gabriele Freni	IAHR Council member; Chair of IAHR/IWA Joint Technical Committee on Hydroinformatics
Kalanithy Vairavamoorthy	Executive Director of the International Water Association
Irina Munteanu	Deputy General Manager of <i>Apa Nova Bucharest</i> ; Chief Financial Officer at <i>Veolia Romania</i>
Cristian Erbașu	CEO of <i>Construcții ERBAȘU S.A.</i>
Andrei-Mugur Georgescu	Co-chair of HIC 2022 – Technical University of Civil Engineering Bucharest
Lăcrămioara Diana Robescu	Co-chair of HIC 2022 – University “Politehnica” of Bucharest
Florian Burnar	Chair of Partnership Association for European Funds and Projects – APPFE

15:30-16:00 COFFEE BREAK (hall AN)

16:00-17:30 PLENARY SESSION

<i>Clock time</i>	<i>Plenary Speaker</i>	<i>Title</i>
16:00	Kalanithy Vairavamoorthy IWA Executive Director	
16:30	Orazio Giustolisi Technical University of Bari, Italy	Digital Transformation in Water Distribution Networks: from Digital Twin to Digital Water Service concept
17:00	Anton Anton Technical University of Civil Engineering Bucharest, Romania	Digitization Path of Hydropower and Water Supply in Romania

18:30 **WELCOME RECEPTION at Restaurant Vanity**

Address: 315B Splaiul Independentei, Bucharest, <https://restaurantvanity.ro/contact/>

Tuesday, 5th of July, 2022

09:00-17:30 PARALLEL SESSIONS

Location: UPB Conference Centre (Central Library building), 2nd floor

Room 2.1

Sessions 1A; 1B; 1C; 1D

Room 2.2

Sessions 2A; 2B; 2C; 2D

Room 2.3

Sessions 3A; 3B; 3C; 3D

09:00-10:30 3 PARALLEL SESSIONS (Session 1A, Session 2A, Session 3A – detailed further)

10:30-11:00 COFFEE BREAK (UPB Conference Centre, 2nd floor's hall)

11:00-12:30 3 PARALLEL SESSIONS (Session 1B, Session 2B, Session 3B – detailed further)

12:30-14:00 LUNCH (UPB Conference Centre, 2nd floor's hall)

14:00-15:30 3 PARALLEL SESSIONS (Session 1C, Session 2C, Session 3C – detailed further)

15:30-16:00 COFFEE BREAK (UPB Conference Centre, 2nd floor's hall)

16:00-17:30 3 PARALLEL SESSIONS (Session 1D, Session 2D, Session 3D – detailed further)

SESSION 1A 09:00-10:30, Tuesday, 5th of July Room 2.1

Theme: Technologies for Water Management and Monitoring

Session Chairs: Anton Anton and Olivier Piller

Clock time	Paper ID	Authors	Paper title
09:00	9	Bruno Ferreira, André Antunes, Nelson Carriço and Dídía Covas	Comparison of Model-Based Techniques for Pipe Burst Location in Water Distribution Networks
09:18	15	Matthew Hayslep, Edward Keedwell, Raziye Farmani and Joshua Pocock	Understanding District Metered Area Level Leakage Using Explainable Machine Learning
09:36	31	Amin Minaei, Enrico Creaco and Robert Sittenfrei	A Multi-Utility and Dynamic Approach for the Upgrade of an Aged Water Distribution Network
09:54	40	Brett Snider, Albert Chen, Lydia Vamvakieridou-Lyroudia, Gareth Lewis and Dragan Savic	A Flexible, Leak Crew Focused Localization Model using a Maximum Coverage Search Area Algorithm
10:12	139	David Steffelbauer, Olivier Piller, Camille Chambon and Edo Abraham	Towards a Novel Multi-Purpose Simulation Software of Water Distribution Systems in Python

SESSION 2A 09:00-10:30, Tuesday, 5th of July Room 2.2

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Gabriele Freni and George P. Karatzas

Clock time	Paper ID	Authors	Paper title
09:00	70	Paguédame Game, Mingyan Wang, Philippe Audra and Philippe Gourbesville	Challenges & Solutions for Deterministic Hydraulic Modelling in Mediterranean Coastal Catchment. Application to the Lower Paillons River, Nice, France
09:18	52	Masoud Ghulami and Philippe Gourbesville	Groundwater Related Issues of a Deep Excavation Below the Water Table During the Construction Period
09:36	50	Paraskevas Diakopareskevas, Ioannis Trichakis, Chris Goumas, Emmanouil	Modeling the Groundwater Flow of a Coastal Mediterranean Region Aquifer Under Climate Change Scenarios

		Varouchakis, George P. Karatzas, Marco D'Oria and Valeria Todaro	
09:54	138	Kotaro Miyazaki, Tsuyoshi Hoshino, Keita Shimizu, Sourabh Shrivastava and Tomohito J. Yamada	Changes in Sediment Erosion Rate in the Azuma River Basin After the Hokkaido Eastern Iburi Earthquake in 2018
10:12	159	Amrita Gautam, Lars Ribbe and Sudan Panthi	Unveiling the Gamification Techniques in Youth-Led Participatory Sensing Model to Support Local Water Utilities in Improving Water Supply Management Facility: A Case of Pokhara Metropolitan City, Nepal

SESSION 3A 09:00-10:30, Tuesday, 5th of July Room 2.3

Theme: Big-Data, Knowledge and Water Data Management

Session Chairs: Barry Evans and Gabriel Racovițeanu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
09:00	45	Otto Chen, Barry Evans, Mehdi Khoury, Navonil Mustafee, Lydia Vamvakeridou-Lyroudia, Albert Chen, Slobodan Djordjevic and Dragan Savic	A Hybrid Modelling Framework for Industrial Symbiotic Water Cycle (F- SWC) Decision Support
09:18	128	Camelia Teau, Ioana Popescu, Constatin Florescu, Albert Constantin, Cristian Moisescu Ciocan and Valentin Vlaicu	Implementation of Water Related SDGs in Romania: Overview of Current and Future Challenges
09:36	142	Talat Kemal Satılmışoğlu and Huzur Keskin	Smart Water Chain: Immutable, Distributed and Decentralised Water Transaction Ledgers
09:54	76	Hao-Ming Hsu and Philippe Gourbesville	Introduction of Integrated Decision Support System for Flood Disaster Management
10:12	55	Philippe Gourbesville	Added Value of Deterministic Models in Decision Support Systems

SESSION 1B 11:00-12:30, Tuesday, 5th of July Room 2.1

Theme: Technologies for Water Management and Monitoring

Session Chairs: Raziye Farmani and Orazio Giustolisi

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	38	Débora Alves, Joaquim Blesa, Eric Duviella and Lala Rajaoarisoa	Topological Analysis of Water Distribution Networks for Optimal Leak Localization
11:18	85	Daniele Biagio Laucelli, Francesco Gino Ciliberti, Luigi Berardi and Orazio Giustolisi	Using WDN-Tailored Complex Network Centrality Metrics to Assess Isolation Valve System Reliability
11:36	86	Francesco Gino Ciliberti, Luigi Berardi, Daniele Biagio Laucelli and Orazio Giustolisi	WDN-tailored Complex Network Centrality Metrics for Water Distribution Networks Domain Analysis
11:54	16	Dondu Sarisen, Fayyaz Ali Memon and Raziye Farmani	Comparison of EPA-SWMM Based Approaches for Intermittent Water Distribution Network Simulation

12:12	14	Xi Wan, Raziye Farmani and Edward Keedwell	Online Leakage Detection System Based on Statistical Analysis for Water Distribution Networks
-------	-----------	--	---

SESSION 2B 11:00-12:30, Tuesday, 5th of July Room 2.2

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Philippe Gourbesville and Claudiu Patrascu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	12	Pablo Solán-Fustero, Adrian Navas-Montilla, José Luis Gracia Lozano and Pilar Garcia-Navarro	A POD-Based Reduced Order Model Applied to 1D Shallow Water Equations
11:18	51	Isabel Echeverribar Pérez, Sergio Martínez-Aranda, Javier Fernández-Pato, Reinaldo García, Pilar Brufau and Pilar García-Navarro	A Model for Computing Thermally-Driven Shallow Flows
11:36	72	Nicoleta Octavia Tanase, Ioana Rasuceanu and Corneliu Balan	Experimental and Numerical Investigations of the Jetting Regime
11:54	25	Sergio Martínez-Aranda, Javier Murillo and Pilar García-Navarro	Integration of the Resistance Force in 2D Numerical Models for Surface Flows
12:12	71	Stefan Dragos Gaitanaru, Iulian Iancu, Alexandru Dimache and Traian Ghibus	Groundwater Level Variability Analysis Using High Accuracy In-Situ Data

SESSION 3B 11:00-12:30, Tuesday, 5th of July Room 2.3

Theme: Big-Data, Knowledge and Water Data Management

Session Chairs: Antonietta Simone and Alexandru Nicolae Dimache

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	154	Abhinav Dengri and Tomohito Yamada	Analysis of Planetary Boundary Layer Feedbacks on the Multiple Equilibria of Continental Water Cycle
11:18	166	Jie Zhao, Tiejian Li and Jiaye Li	Study on Analysis Method of Atmospheric Water Resource and Its Utilization Potential in the Northern Qinghai-Tibet Plateau
11:36	143	Ion Popa, Sorin Perju, Alina-Mariana Bica-Popi and Andreea Moise	Consumption analysis in water supply networks for small localities in direct correlation with SR1343-1
11:54	141	Hamidreza Solaymani Osbooei	The Footprint of Climate and Land-Use Changes on Water Resources in Semi-Arid Area; Case Study Bakhtegan Basin in Iran
12:12	165	Alexandru Nicolae Dimache, Cornel Ilinca and Anghel Cristian-Gabriel	Methodology for Determining Hydromorphological Indicators for Rivers With Hydropower Uses

SESSION 1C 14:00-15:30, Tuesday, 5th of July Room 2.1

Theme: Digital Transformation of Urban Water Systems

Session Chairs: Sanda-Carmen Georgescu and Luigi Berardi

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	113	Jorj-Madalin Mihailovici, Valentin Zaharia, Catalin Ivanov-Jucan and Alexandru Neatu	Digital Journey of Apa Nova Bucharest: Past, Present and Future
14:18	84	Francesco Ciliberti, Luigi Berardi, Daniele Biagio Laucelli and Orazio Giustolisi	Digital Water Services Using Digital Twin Paradigm
14:36	148	Gareth Lewis, Lydia Vamvakeridou-Lyroudia, Albert Chen, Dragan Savic and Brett Snider	Developing Water Monitoring Solutions with Fiware: Defining, Creating, Populating, and Extending Digital Twins
14:54	171	Mohammad Shafi Arif, Peter Schade, Rainer Lehfeldt, Vikram Notay, Georg Carstens and Frank Kösters	From Simulation to Dissemination: Automation of Data and Metadata Management
15:12	83	Daniele Biagio Laucelli, Serena Spagnuolo, Antonio Rinaldi, Gianluca Perrone, Luigi Berardi and Orazio Giustolisi	A Complete Digital Water Experience to Support a Real Leakage Management Planning

SESSION 2C 14:00-15:30, Tuesday, 5th of July Room 2.2

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Cristina Sorana Ionescu and Frank Molkenhth

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	56	Philippe Gourbesville and Masoud Ghulami	Which Models for Extreme Flood Events in Mediterranean Catchments?
14:18	10	Manh Trinh and Frank Molkenhth	Projections of Flood Inundation in a Coastal Catchment Under the Impacts of Climate Change and Sea Level Rise
14:36	22	Thanh Huy Nguyen, Sophie Ricci, Andrea Piacentini, Christophe Fatras, Peter Kettig, Gwendoline Blanchet, Santiago Pena Luque and Simon Baillarin	Assimilation of SAR-Derived Flood Observations for Improving Fluvial Flood Forecast
14:54	79	Mingyan Wang, Paguédame Game and Philippe Gourbesville	Integrated Modelling Approach for Flood Forecasting in Small Mediterranean Catchment – Application to the Cagne Catchment, France
15:12	150	Theo Defontaine, Sophie Ricci, Corentin Lapeyre, Arthur Marchandise and Etienne Le Pape	Flood Forecasting with Machine Learning in a Scarce Data Layout

SESSION 3C 14:00-15:30, Tuesday, 5th of July Room 2.3

Theme: Big-Data, Knowledge and Water Data Management

Session Chairs: Bogdan Popa and Vlad-Florin Pirăianu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	59	Mehdi Khoury, Barry Evans, Otto Chen, Albert Chen, Lydia Vamvakieridou-Lyroudia, Dragan Savic, Slobodan Djordjevic and Navonil Mustafee	A Serious Game for Water in the Circular Economy
14:18	129	Ioana Popescu, Andreja Jonoski and Ann van Griensven	Water-ForCE: Results from a H2020 Copernicus Explorations for Water
14:36	126	Nicolae Marcoie, Daniel Toma, Valentin Boboc and Cătălin Dumitrel Bălan	Hydroinformatics Tools Used to Quantify the Impact of Urban Expansion on Water Bodies, in the Context of the Intensification of Extreme Phenomena (Bacau Urbanization Case Study)
14:54	68	Stefan Dragos Gaitanaru and Radu Constantin Gogu	Challenges and approaches for groundwater mapping in the urban areas
15:12	91	Attila Bibok and Paula Castellano	Multi-Objective Optimization of an Irrigation System Using a Real-Time Optimization Framework

SESSION 1D 16:00-17:30, Tuesday, 5th of July Room 2.1

Theme: Digital Approach in Water Engineering

Session Chairs: Daniele Biagio Laucelli and Andrei-Mugur Georgescu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
16:00	111	Ibrahim Demir	Next Generation Web-Based Digital Twin Systems for Hydrological Research and Education
16:18	61	Guoxuan Liu, Guangtao Fu and Dragan Savic	Short-Term Water Demand Forecasting Using Machine Learning
16:36	62	Kristina Wencki, Marcel Juschak and Harald Tarnowski	Exploring the Potential of Machine Learning and Association Analysis for Anomaly Detection in Water Supply Systems – Practical Evidence and Lessons Learned from a Swiss Case Study
16:54	172	Danillo Lange, Marc Ribalta, Lluís Echeverria Rovira and Joshua Pocock	Profiling Urban Water Consumption Using Autoencoders and Time-Series Clustering Techniques
17:12	92	Meagan Tobias, Gina Kittleson and Branko Kerkez	Adaptive Sampling of Urban Water Quality Using Machine Learning: An Application to Total Suspended Solids Estimation Using Acoustic Doppler Backscatter

SESSION 2D 16:00-17:30, Tuesday, 5th of July Room 2.2

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Diana Maria Bucur and Romeo Susan-Resiga

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
16:00	74	Paul Alexandru Danca, Florentina Bunea, Corina Babutanu, Adrian Nedelcu and Ionut Stelian Grecu	Study of the Flow Induced by an Axial Hydrokinetic Turbine
16:18	112	Romeo Susan-Resiga, Alin Ilie Bosioc and Adrian Stuparu	Enhanced Affinity Law for Centrifugal Pumps at Variable Speed
16:36	100	Petre-Ovidiu Ciuc, Remus Alexandru Mădulărea, Vlad-Florin Pîrăianu, Andrei-Mugur Georgescu and Sanda-Carmen Georgescu	Duty Points Dropdown Due to Cavitation in Variable Speed Driven Pumps Operating in Parallel
16:54	133	Olivian Savin, Carmen Badina, Julien Baroth, Sylvie Charbonnier, Renaud Pollier and Christophe Berenguer	Effect of Start and Stop Cycles on Hydropower Plants: Modeling the Deterioration of the Equipment to Evaluate the Cycling Cost
17:12	156	Adriana R. Rivera and Marcelo W. Heredia	Application of Delft3D Computational Model to Estimate the Influence of El Bala Run-of-the-River Dam on the Morphological Activity of Beni River, Bolivia

SESSION 3D 16:00-17:30, Tuesday, 5th of July Room 2.3

Theme: Technologies for Water Management and Monitoring

Session Chairs: Lăcrămioara Diana Robescu and Joby Boxall

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
16:00	23	Killian Gleeson, Stewart Husband, John Gaffney and Joby Boxall	Determining the Spatio-Temporal Relationship Between Water Quality Monitors in Drinking Water Distribution Systems
16:18	28	Grigorios Kyritsakas, Vanessa Speight and Joby Boxall	A Data-Driven Model for the Prediction of Chlorine Losses in Water Distribution Trunk Mains
16:36	24	Ehsan Kazemi, Grigorios Kyritsakas, Stewart Husband, Katrina Flavell, Vanessa Speight and Joby Boxall	Predicting Iron Exceedance Risk in Drinking Water Distribution Systems Using Machine Learning
16:54	64	Travis Dantzer, Brooke Mason and Branko Kerkez	Real-Time Control of Dissolved Oxygen in a Stormwater Network
17:12	94	Ernesto Martinez, Branko Kerkez, Krista Wigginton and Lutgarde Raskin	Adaptive Flushing of Building Drinking Water Taps Using Real-Time Oxidation-Reduction Potential and Temperature Signals

Wednesday, 6th of July, 2022

Location: UPB Conference Centre (2nd floor), Room 2.1

09:00-17:30 HIC SESSIONS 4A÷4D

- 09:00-10:30 **SESSION 4A** (detailed further)
- 10:30-11:00 **COFFEE BREAK** (UPB Conference Centre, 2nd floor's hall)
- 11:00-12:30 **SESSION 4B** (detailed further)
- 12:30-14:00 **LUNCH** (UPB Conference Centre, 2nd floor's hall)
- 14:00-15:30 **SESSION 4C** (detailed further)
- 15:30-16:00 **COFFEE BREAK** (UPB Conference Centre, 2nd floor's hall)
- 16:00-17:30 **SESSION 4D** (detailed further)

Location: UPB Conference Centre (2nd floor), Room 2.2

09:00-12:30 WETSKILLS-Romania 2022 FINALS and AWARDING CEREMONY

<https://wetskills.com/>; <https://wetskills.com/event/wetskills-romania-2022/>

- 09:00-10:30 **FINALS – Projects' presentation**
- 10:30-11:00 **COFFEE BREAK** (UPB Conference Centre, 2nd floor's hall)
- 11:00-12:30 **JURY DELIBERATION & AWARDING CEREMONY**
- 12:30-14:00 **LUNCH** (UPB Conference Centre, 2nd floor's hall)

Location: Amphitheatre “Radu Voinea” (room AN 010), UPB

09:00-17:30 WORKSHOP “Towards a Digital Water Sector” & EXHIBITION

- 09:00-10:30 **OPENING SPEECHES & SESSION I**
- 10:30-11:00 **COFFEE BREAK** (AN Hall, near the amphitheatre AN 010)
- 11:00-12:30 **SESSION II**
- 12:30-14:00 **LUNCH** (AN Hall, near the amphitheatre AN 010)
- 14:00-15:30 **SESSION III**
- 15:30-16:00 **COFFEE BREAK** (AN Hall, near the amphitheatre AN 010)
- 16:00-17:30 **SESSION IV, FINAL CONSIDERATIONS & CONCLUSIONS**

19:30 GALA DINNER at Restaurant “Casa Doina”

Address: 4 Kiseleff, Bucharest, web page: <https://www.casadoina.ro/?lang=EN>

SESSION 4A 09:00-10:30, Wednesday, 6th of July Room 2.1

Theme: **Hydraulic and Hydrological Modeling**

Session Chairs: Albert Chen and Radu Constantin Gogu

Clock time	Paper ID	Authors	Paper title
09:00	11	Husnain Tansar, Huan-Feng Duan and Ole Mark	Statistical Evaluation on Hydrologic Performance of Bioretention Design Parameters Under Different Rainfall Conditions
09:18	131	Maki Miyamoto and Tomohito Yamada	Points of Consideration on Identification of the Atmospheric Fronts Depicted on Weather Charts

09:36	157	Yuta Ohya and Tomohito Yamada	Characteristics of Line-Shaped RainBands Regarding Duration, Shape, and Rainfall Intensity in Northern Japan Using the Radar/Raingauge-Analyzed Precipitation Product
09:54	167	Giulia Failla, Marcella Lo Bianco, Gabriele Freni and Gaetano Beninati	Rainfall Variability Assessment in the Hydrological Catchment of Addis Ababa
10:12	54	Mario Morales-Hernández, Daniel Caviedes-Voullième and Ilhan Özgen-Xian	Exploring the Effects of Microtopography on Surface Flows at Very High-Resolution Catchments with the SERGHEI Model

SESSION 4B 11:00-12:30, Wednesday, 6th of July Room 2.1

Theme: **Water – Energy – Food Nexus**

Session Chairs: Carmen-Anca Safta and Andrei-Mugur Georgescu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	7	Sithmini Wijekoon, Izni Zahidi, Badronnisa Yusuf and Helmi Z. M. Shafri	Spatiotemporal Correlation and Multivariate Analysis between Vegetation Health, Terrestrial Water Storage and Precipitation
11:18	105	Petras Punys, Gitana Vyčienė, Linas Jurevičius and Andrius Balčiūnas	The HYPOSO Map – Potential Small Hydropower Sites in Selected African and Latin American Countries
11:36	175	Luc Albers, Johan Oost, Ioana Dobrescu, Mathijs van Eeuwijk	Water Management Through Data - A Case Study of Embedded Water in Agricultural Trade Between Romania and Hungary
11:54	95	Corina Giurgea, Carmen-Anca Safta, Mihaela Ordean and Ciprian Lupu	Resilience Concepts for Water Management System of an Urban Area Promoting the Events/Festivals
12:12	106	Sheau Ling Hsieh, Sheng Hsueh Yang, Der Ren Song, Jyh Hour Pan, Xi Jun Wang, Keh Chia Yeh and Cheng-Wei Li	Cutting Edge Technologies Based Disaster Forecasting & Prevention Infrastructure in Taiwan

SESSION 4C 14:00-15:30, Wednesday, 6th of July Room 2.1

Theme: **Big-Data, Knowledge and Water Data Management**

Session Chairs: Lydia Vamvakeridou-Lyroudia and Alexandru Marin

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	96	Carmen-Anca Safta, Valentin Nicolae Cococi, Constantin Călinoiu and Alexandru Marin	Performance of Water Valves Required by Water Supply Network Digitization Process
14:18	147	Gareth Lewis, Lydia Vamvakeridou-Lyroudia, Dragan Savic, Albert Chen and Brett Snider	Web-Based GIS for Simulation, And Visualisation: EPANET and Data-Rich Shapefile Formats
14:36	49	Alina Stanciu, Vasile Lucian Pavel, Daniel Toma and Cristina Mihaela Virlan Toma	Rehabilitation of the Water Supply Network of Timișoara City from Timiș County in Romania
14:54	132	María G. Castellón, Richard A. Pauloo, Ioana Popescu and José Fábrega	ONASP: A Web Application for Groundwater Data Visualization in Panama

15:12	47	Siddharth Seshan, Dirk Vries, Maarten van Duren, Alex van der Helm and Johann Poinapen	AI Based Validation of Wastewater Treatment Plant Sensor Data Using an Open Data Exchange Architecture
-------	----	--	--

SESSION 4D 16:00-17:30, Wednesday, 6th of July Room 2.1

Theme: **Technologies for Water Management and Monitoring**

Session Chairs: Philippe Gourbesville and Gareth Lewis

Clock time	Paper ID	Authors	Paper title
16:00	136	Daniel Muntean and Adriana Tokar	Reducing Operating Costs in District Heating Systems by Optimizing Functional Parameters. Comparative Studies
16:18	66	Jacquelyn Schmidt and Branko Kerkez	Reliable High-Resolution Hydrologic Sensor Data at Scale
16:36	29	Nsikak Mitchel Offiong, Fayyaz Ali Memon and Yulei Wu	Time Series Data Preparation for Failure Prediction in Smart Water Taps (SWT)
16:54	110	Ibrahim Demir, Yusuf Sermet and Marian Muste	A Web-Based Cyberinfrastructure for River Morphology Data Analytics and Exploration
17:12	114	Beyza Cikmaz, Enes Yildirim and Ibrahim Demir	Flood Risk Assessment and Quantification for Iowa Using Fuzzy Analytical Hierarchy Process

Thursday, 7th of July, 2022

10:00-11:00 MEETING of the IAHR/IWA Joint Committee on HYDROINFORMATICS

Location: UPB Conference Centre (2nd floor), Room 2.1

11:00-16:00 PARALLEL SESSIONS

Location: UPB Conference Centre (2nd floor), Rooms 2.1; 2.2; 2.3

Room 2.1

Sessions 5A; 5B

Room 2.2

Sessions 6A; 6B

Room 2.3

Sessions 7A; 7B

11:00-12:30 3 PARALLEL SESSIONS (Session 5A, Session 6A, Session 7A – detailed further)

12:30-14:00 LUNCH (Conference Centre, 2nd floor's hall)

14:00-15:30 3 PARALLEL SESSIONS (Session 5B, Session 6B, Session 7B – detailed further)

15:30-16:00 COFFEE BREAK (Conference Centre, 2nd floor's hall)

16:00-17:30 CLOSING CEREMONY

Location: Amphitheatre "Radu Voinea", UPB

SESSION 5A 11:00-12:30, Thursday, 7th of July Room 2.1

Theme: **Digital Transformation of Urban Water Systems**

Session Chairs: Cristiana Di Cristo and Orazio Giustolisi

Clock time	Paper ID	Authors	Paper title
11:00	37	Maria Conceição Cunha, Roberto Magini and Joao Marques	Design of water distribution networks for multiple demand scenarios using a multi-objective simulated annealing algorithm

11:18	77	Antonietta Simone, Alessandra Cesaro, Cristiana Di Cristo, Oreste Fecarotta and Maria Cristina Morani	Monitoring Planning for Urban Drainage Networks
11:36	101	Petre-Ovidiu Ciuc, Remus Alexandru Mădularea, Andrei-Mugur Georgescu and Sanda-Carmen Georgescu	Experimental Investigations on Classical versus Remote Control of Variable Speed Driven Pumps Operating in Parallel
11:54	88	Ariele Zanfei, Andrea Menapace and Maurizio Righetti	An Artificial Intelligence Approach for Managing Water Demand of Water Supply Systems
12:12	168	Ahmed Negm, Xiandong Ma and George Aggidis	Review of Leakage Detection in Water Distribution Networks

SESSION 6A 11:00-12:30, Thursday, 7th of July Room 2.2

Theme: Technologies for Water Management and Monitoring

Session Chairs: Albert Chen and Gabriele Freni

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	169	William Addison-Atkinson, Albert Chen, Fayyaz Memon, Jan Hofman and Mirjam Blokker	A Stochastic Sewer Model to Quantify Health Risks to Residents from Sewer Flooding with Quantitative Microbial Risk Assessment
11:18	75	Stefania Piazza, Mariacrosetta Sambito and Gabriele Freni	Analysis of Diffusion and Dispersion Processes in Water Distribution Networks Through the Use of the Péclet Number Threshold
11:36	65	Amir Hajjali and Lăcrămioara Diana Robescu	Assessment of Heavy Metals Removal in a Wastewater Treatment Using Aquatic Ferns
11:54	73	Mariacrosetta Sambito, Stefania Piazza and Gabriele Freni	Source Tracking in the Sewer Using Lagrangian Sensors
12:12	21	Yassine Belghaddar, Carole Delenne, Nanée Chahinian, Abderrahmane Seriai and Ahlame Begdouri	Parametrization of a Wastewater Hydraulic Model Under Incomplete Data Constraint

SESSION 7A 11:00-12:30, Thursday, 7th of July Room 2.3

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Daniela Elena Gogoase Nistoran and Dan Opruța

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
11:00	35	Daniela Elena Gogoase Nistoran, Ștefan-Mugur Simionescu, Gabriela Cîrciumaru Oprina and Rareș-Andrei Chihaia	Numerical Simulations of Flow Over a Side Weir for a Diversion Hydropower Plant
11:18	41	Shicheng Li, James Yang and Enmark Gustav	Air Entrainment and Transport in a Bottom Outlet Controlled by a Cylindrical Gate
11:36	36	Daniela Elena Gogoase Nistoran, Cristina Sorana Ionescu and Ștefan-Mugur Simionescu	Influence of Dam Break Scenarios and Modeling Parameters on Flood Maps. Case Study - Paltinu Dam, Romania

11:54	117	Syed Abbas Hussain Rizvi and Rabee Rustum	Impact of Orifice Size and Retention Time of Local Tanks on the Reliability and Pressure in the System
12:12	118	Syed Abbas Hussain Rizvi and Rabee Rustum	The Effects of COVID-19 on Water Demand Profile

SESSION 5B 14:00-15:30, Thursday, 7th of July Room 2.1

Theme: Digital Transformation of Urban Water Systems

Session Chairs: Daniele Biagio Laucelli and Sanda-Carmen Georgescu

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	174	Alexandru-Spiridon Milca, Georgiana Dunca and Livia Pitorac	Numerical Modelling of the Cooling Water System of a 106MW HPP Using EPANET
14:18	82	Laura Vanessa Enríquez Cruz, Juan Guillermo Saldarriaga, Luigi Berardi, Daniele Biagio Laucelli and Orazio Giustolisi	Using Artificial Intelligence Models to Support Water Quality Prediction in Water Distribution Networks
14:36	103	Vlad-Florin Pîrăianu, Nicoleta Octavia Tănase, Mihaela-Amalia Diminescu and Sanda-Carmen Georgescu	UPB's Dry Fountains: Hydraulic Analysis in EPANET
14:54	18	Marius-Alexandru Dobrea, Mihaela Vasluianu, Ana-Maria Sandu, Giorgian Neculoiu and Ramona Oana Flangea	Precision Irrigation System Photovoltaic Panels
15:12	53	Sara Patricia Ibarra-Zavaleta, Annie Poulin, Jean-Luc Martel, Simon Deslauriers, Gilles Rivard and Rosario Landgrave	ELISA a New GIS Based Tool for Locating Stormwater Control Measures in Urban Catchments

SESSION 6B 14:00-15:30, Thursday, 7th of July Room 2.2

Theme: Water – Energy Nexus

Session Chairs: Lăcrămioara Diana Robescu and Bogdan Popa

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	63	Linas Jurevičius and Raimundas Baublys	Using Remote Survey Methods for Ecologically Sustainable Water Management of the Large Hydropower Plant (HPP) Reservoir
14:18	93	Vuta Liana, Gabriela Elena Dumitran, Eliza Isabela Tica and Bogdan Popa	Carbon Footprint of Vidraru Hydropower Development
14:36	176	Lăcrămioara Diana Robescu, Cristina Țărcuș and Roxana Popescu	Assessment of Water Footprint for Different Wastewater Treatment Plant Configurations
14:54	121	Mihail Luca, Nicolae Marcoie, Alexandru-Lucian Luca and Daniel Toma	Simulation of Permanent Movement in Collectors Non-Standardized Sewerage
15:12	32	Oana-Carmen Niculescu-Faida, Adrian Ion Minea and Niculescu-Faida Adrian	A way to develop a micro-grid using a Siemens S7-1500 PLC

SESSION 7B 14:00-15:30, Thursday, 7th of July Room 2.3

Theme: Hydraulic and Hydrological Modeling

Session Chairs: Georgiana Dunca and Stefan Dragos Gaitanaru

<i>Clock time</i>	<i>Paper ID</i>	<i>Authors</i>	<i>Paper title</i>
14:00	158	Ramiz Beig Zali, Milad Latifi and Akbar Javadi	Predicting Mechanical Behavior of PVC-U Pipes Using Evolutionary Polynomial Regression (EPR)
14:18	127	Sourabh Shrivastava and Tomohito J. Yamada	Summer Monsoon Onset over Chao Phray River Basin and Its Teleconnection with Soil Moisture and ENSO
14:36	160	Hongyan Wei, Huojian Liu, Wengang Duan and Meng Chen	A Simple Well-Balanced Scheme for Shallow Water Flows Over Irregular Beds with Wet/Dry Front
14:54	144	Divyansh Rathore	Climate Change Impact Assessment on Ground Water Resources of Kurukshetra District
15:12	135	Tesfa Gebrie Andualem, Demelash Ademe Malede, Mesenbet Yibeltal and Sang Soo Lee	Review of Hydro-Climatic Variables in the Context of Climate Change

Friday, 8th of July, 2022

**09:00-14:00 TECHNICAL VISIT Apa Nova – Bucharest Water Company
Water Treatment Plant of Bucharest**