UDM 2025

13th Urban Drainage Modelling Conference

15-19 September Innsbruck, Austria

universität innsbruck

IWA the international water association

IAHR AIRH International Association for Hydro-Environment Engineering and Research

Hosted by Spain Water and IWHR, China

INNS' BRUCK

PROGRAMME

	Monday 15th September	Tuesday 16th September	Wednesday 17th September	Thursday 18th September	Friday 19th September
Morning	Workshops (see p. 10)	Presentations (see p. 14)	Presentations (see p. 20)	Presentations (see p. 30)	Tour (see p. 34 & 35)
Afternoon	Workshops (see p. 10)	Presentations (see p. 15 & 16)	Presentations (see p. 21 & 22)	Presentations (see p. 31)	
Evening	Welcome drink (see p. 11)		Poster Presentations (see p. 24 - 27)	Social Dinner (see p. 32 & 33)	

Welcome to the 13th Urban Drainage Modelling Conference in Innsbruck, Austria!

You can find all the information also on our homepage:
www.udm2025.org

INDEX

Welcome to the 13th Urban Drainage Modelling Conference

Dear Participants,

On behalf of the organizing committee, it is our great pleasure to welcome you to Innsbruck and to the University of Innsbruck for the 13th Urban Drainage Modelling Conference (UDM). We are delighted that you have joined us here in the heart of the Alps, where science, culture, and nature meet. We hope you will enjoy not only the stimulating conference sessions but also the unique atmosphere of Innsbruck and its surroundings, which offer a wealth of opportunities to explore and relax beyond the conference halls.

The 13th Urban Drainage Modelling Conference is co-organized with the International Working Group on Data and Models, a working group of the IWA / IAHR Joint Committee on Urban Drainage. This year's conference has brought together an impressive international community: we received 244 submissions from authors representing 52 countries. From these, 141 contributions were selected for oral presentations and 88 for poster presentations, ensuring a diverse and high-quality program. We are also proud to present three outstanding keynote speakers who will inspire discussion and broaden perspectives on the future of urban drainage and water management.

We are confident that the combination of excellent scientific presentations, lively discussions, and engaging social events will make this conference a rewarding experience for all. None of this would be possible without the generous support of our sponsors, to whom we extend our sincere gratitude.

We thank you for being part of the 13th Urban Drainage Modelling Conference and wish you an inspiring and enjoyable time in Innsbruck.

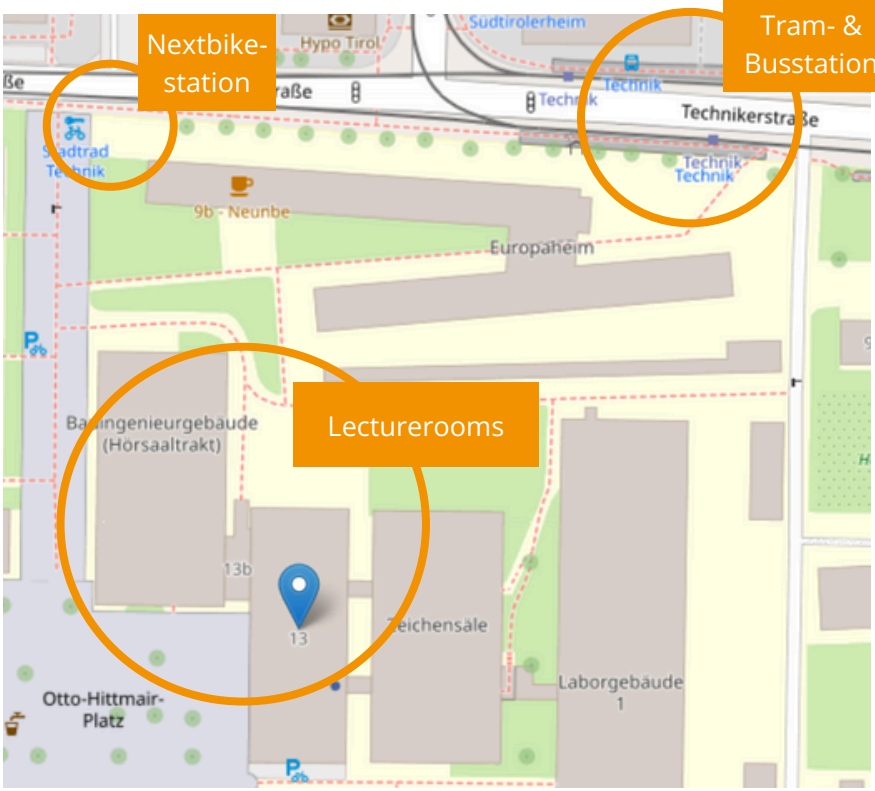
With warm regards,
The Organizing Committee
Manfred Kleidorfer, Robert Sitzenfrei, Wolfgang Rauch, Beatrix Huter




PRACTICAL INFORMATION

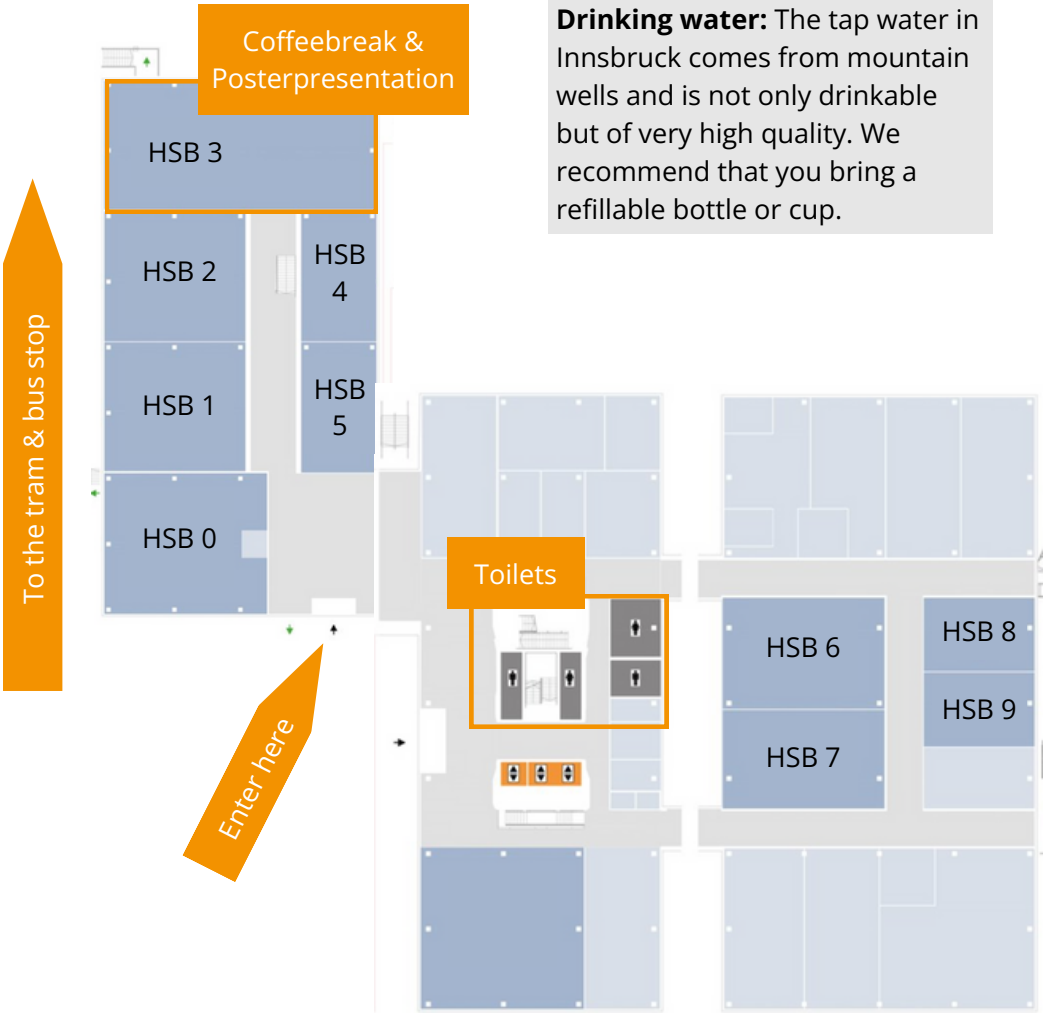
Venue: Our conference will take place in the lecture halls of the Technological Campus. The address is Technikerstrasse 13, 6020 Innsbruck. You can get there by bike, taxi, Uber or bus / tram. If you are taking public transportation, your destination is “Innsbruck Technik”. From the city center, take the bus lines K or T, or the tram lines 2 or 5. You can find information about the public transportation routes on Google Maps, the “VVT” app, or by scanning the QR code on the right.

Wi-Fi: If your mobile devices are already linked to an Eduroam network, you can access the University of Innsbruck's Eduroam network without taking additional steps. Otherwise, there will be guest Wi-Fi information available at the registration desk.



Relevant places: By scanning the QR-code on the right side or here, you can find an overview of all the places that are relevant during the UDM.

Drinking water: The tap water in Innsbruck comes from mountain wells and is not only drinkable but of very high quality. We recommend that you bring a refillable bottle or cup.



KEYNOTES

Building Resilience in Urban Drainage Systems

David Butler is Co-Director of the Centre for Water Systems and Professor of Water Engineering at the University of Exeter, UK where he is an internationally recognised researcher, teacher, manager and consultant in the water sector. He is a chartered civil engineer and a fellow of the Royal Academy of Engineering, the Institution of Civil Engineers, the Chartered Institution of Water and Environmental Management, and the International Water Association. He is also a trustee of the Westcountry Rivers Trust. David is an expert in urban water management and with specialisms including sewerage, urban drainage, flooding, rainwater harvesting and reuse, sustainability and resilience, water-energy interactions and digital systems. He has published widely with 250 journal papers, key texts (including "Urban Drainage", and a 5th edition recently published) and several best-practice and policy reports. He is co-founder and emeritus editor-in-chief of the Urban Water Journal and former chair of the Joint IAHR/IWA Committee on Urban Drainage.

From Publish to Perish: A Comedy of the Scientific Publishing World

Professor Ana Deletic is Executive Dean of the Faculty of Engineering at Queensland University of Technology (QUT), Brisbane. An internationally recognised expert in sustainable urban water management, she has pioneered nature-based stormwater treatment systems now adopted worldwide.

She has held senior leadership roles at UNSW Sydney and Monash University, and is a Fellow of the Australian Academy of Technological Sciences and Engineering and Engineers Australia. A recipient of the Victoria Prize for Science and Innovation, Professor Deletic has published extensively and leads a large, multidisciplinary research group.

As Editor-in-Chief of Water Research, one of the world's leading journals in the field, she is deeply engaged with the future of scholarly communication. Her keynote will explore the evolution of scientific publishing, the challenges of balancing quality and quantity, and the opportunities and risks posed by new technologies such as AI.

Keynote AI for Urban Drainage Systems: Recent Advances and Real-World Applications

Dr. Riccardo Taormina is an Associate Professor at Delft University of Technology (TU Delft), specializing in the digitalization of the water sector with a strong focus on artificial intelligence (AI) applications. He has led and contributed to numerous projects aimed at developing AI-driven solutions for water resources and infrastructure management. His research spans a wide range of topics, including AI models for water networks, spatiotemporal flood modelling, computer vision for freshwater quality assessment and sewer asset management. He is particularly interested in bridging fundamental AI advancements—such as graph neural networks, self-supervised learning, and large language models—with real-world challenges in the water domain, with the goal of building trustworthy and impactful solutions. At TU Delft, Dr. Taormina also teaches AI to MSc students in the Faculty of Civil Engineering and Geosciences, helping to train the next generation of engineers in the integration of data-driven methods with domain expertise.

PROGRAMME

Monday, 15.9.2025
WORKSHOPS

Time	Room / Chair	What
8:30 - 16:30	HSB 6, Vincent Pons	**Workshop 1:** Addressing climate change in urban drainage using climate data and communication to the public
8:30 - 12:00	HSB 1, Franz Tscheikner-Gratl	**Workshop 2:** Autonomous robotic inspection and monitoring and the implications for the urban drainage modelling community
8:30 - 12:00	HSB 4, Stefan Kroll	**Workshop 3:** Parameter estimation for hydraulic urban drainage models - a virtual ring test
8:30 - 12:00	HSB 2, Wolfgang Rauch	**Workshop 4:** Influent Flowrate Generators for System Design in Urban Drainage Modelling using Open Data Sources.
12:00 - 13:00		**Lunchbreak**
13:00 - 16:30	HSB 1	JCUD Meeting: Public meeting of the IWA / IAHR Joint Committee on Urban Drainage
13:00 - 16:30	HSB 2, Matthew David Bartos	**Workshop 5:** Real-time Control Data Potluck
13:00 - 16:30	HSB 9, Jose Anta	**Workshop 6:** How a Collaborative Research Infrastructure Network Benefits Urban Drainage Modellers
13:00 - 16:30	HSB 4, Namrata Karki	**Workshop 7:** Open-Source GIS for water management: Giswater demo workshop for water management projects

Monday, 15.9.2025 **WELCOME DRINK**

17:00 - 20:00

Ágnes-Heller-Haus (Innrain 52a)


© Birgit Pichler

Following the informative workshops on Monday there will be a welcome reception at the new Ágnes-Heller House on the central campus of the University of Innsbruck. The Ágnes-Heller House is a new building that offers a modern learning atmosphere and spacious, modern architecture. If the weather permits, we will have the welcome drink on the rooftop terrace, where you can enjoy stunning views of the surrounding mountains and the River Inn.

How to Get There:
Take tram 2 or 5 from the Technological Campus and exit at the “Innsbruck Klinik / Universität” station. It is a short walk from there. You can also rent a Nextbike; there is a station close by. It takes approximately 15-20 minutes to cycle from the conference venue to the Ágnes-Heller House.

Tuesday, 16.9.2025 - **PRESENTATIONS**

Time	Room / Chair	What
8:00 - 9:00	Foyer	**Registration**
9:00 - 9:30	HSB 0	**Opening Session**
9:30 - 10:30	HSB 0, David Butler	**Keynote:** Building Resilience in Urban Drainage Systems
10:30 - 11:00	HSB 3	**Break & Poster Display**
11:00 - 12:30	HSB 0, 1, 2	**Parallel Sessions 1-2**
12:30 - 14:00	HSB 3	**Lunch & Poster Display**
14:00 - 15:30	HSB 0, 1, 2	**Parallel Sessions 1-3**
15:30 - 16:15	HSB 3	**Break**
16:15-17:45	HSB 0, 1, 2	**Parallel Sessions 1-4**
17:45 - 19:00	HSB 4, João P. Leitão & Ico Broekhuizen	**IWGDM Meeting:** Meeting of the international working group on data and models

Tuesday, 16.9.2025 - **PRESENTATIONS**

11:00 - 12:30, Parallel Sessions 1-2

- 1-2-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 1
  - *Location: HSB 0*
  - *Chair: Virginia Stovin & Snigdha Dev Roy*
- 1-2-2: Flood modelling 1
  - *Location: HSB 1*
  - *Chair: João P. Leitão & Marzia Acquilino*
- 1-2-3: Water quality 1
  - *Location: HSB 2*
  - *Chair: Katharina Teuber & Manuel Regueiro-Picallo*

14:00 - 15:30, Parallel Sessions 1-3

- 1-3-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 2
  - *Location: HSB 0*
  - *Chair: Max Maurer & Bryn Elizabeth Reynolds*
- 1-3-2: Flood modelling 2
  - *Location: HSB 1*
  - *Chair: Albert Chen & Martina Hauser*
- 1-3-3: Water quality 2
  - *Location: HSB 2*
  - *Chair: Kefeng Zhang & Pierre Lechevallier*

16:15 - 17:45, Parallel Sessions 1-4

- 1-4-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 3
  - *Location: HSB 0*
  - *Chair: Tone Muthanna & Simon De-Ville*
- 1-4-2: Flood modelling 3
  - *Location: HSB 1*
  - *Chair: Sara De Toffol & Marzia Acquilino*
- 1-4-3: Asset Management
  - *Location: HSB 2*
  - *Chair: Franz Tscheikner-Gratl & Emma Madeleine Girot*

Tuesday, 16.9.2025 - **PRESENTATIONS**

11:00 - 12:30, Parallel Sessions 1-2

SES 1-2-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 1

Ort: **HSB0**
Chair: **Virginia Stovin**
Chair: **Snigdha Dev Roy**

11:00 - 11:15

Process-driven continuous infiltration and evapotranspiration model for green wall systems

Kefeng Zhang, Kaixuan Wan, Veljko Prodanovic

11:15 - 11:30

Simulation of evapotranspiration in green stormwater infrastructure using a hydrological model: seasonal and annual evaluations of different configurations

Ahmeda Assann OUEDRAOGO, Emmanuel BERTHIER, Jérémie SAGE, Marie-Christine GROMAIRE

11:30 - 11:45

Impacts of climatological variability on Evapotranspiration: A Sensitivity Analysis for Urban Drainage Applications

Komal Jabeen, Marie Christine Gromaire, Anna Palla

11:45 - 12:00

Stormwater Modelling Coupled to Field Monitored Storm Data – Lessons Learned

Robert Traver, Amanda Hess, Gerald Zaremba

12:00 - 12:15

Investigating temporal dynamics in the hydrological performance of blue-green infrastructure (BGI)

Prabhat Joshi, Max Maurer, João P Leitão

12:15 - 12:30

Unveiling the hydrologic climate resilience of Blue Green Infrastructure: Do we have our design/modelling numbers right?

Luis Angel Sañudo-Fontaneda, William Frederick Hunt, Kátia Fernandes, Jared Bowden

SES 1-2-2: Flood modelling 1

Ort: **HSB1**
Chair: **João P. Leitão**
Chair: **Marzia Acquilino**

11:00 - 11:15

Hybrid modelling for real-time urban pluvial flood mapping

Daan Buekenhout, Patrick Willems, Ricardo Reinoso-Rondinel

11:15 - 11:30

Wall of Waters: Identification of realistic worst-case scenarios for extreme rainstorms and simulation of hazard attributes of resulting flash floods

Eva Paton, Boney Joseph, Reinhard Hinkelmann, Franziska Tügel

11:30 - 11:45

Comparing Simplified Urban Pluvial Flood Inundation methods in an Interactive Tool with an Agent-based Model for Event Management

Diego Novoa Vazquez, Pablo Simon Arbelaez Vargas, Bjoern Helm, Peter Krebs

11:45 - 12:00

Dynamic CA-ffé in Austria: Fast flood modelling in alpine regions

Martina Hauser, Nikolaus Rauch, Maziar Gholami Korzani, Ana Deletic, Manfred Kleidorfer

SES 1-2-3: Water quality 1

Ort: **HSB2**
Chair: **Katharina Teuber**
Chair: **Manuel Regueiro-Picallo**

11:00 - 11:15

All models are wrong - more or less! Added value of model calibration for dry and wet weather in Munich

Holger Hoppe, Daniela Böckmann, Ehsan Rabiei, Dieter Sitzmann, Stefan Braunschmidt, Tobias Knödlseder

11:15 - 11:30

Real-Time Wastewater Pollution Data: Overcoming Challenges in Optical Spectroscopy

Pierre Lechevallier, Annelies Postelmans, Wouter Saeys, Jörg Rieckermann

11:30 - 11:45

A Blind Dive into the Unknown: Water Quality without Metadata

Vincent Pons, Kefeng Zhang, Luca Vezzaro, Helene Österlund, Tone Merete Muthanna, Viviane Furrer, Lena Mutzner

11:45 - 12:00

Optimization of sampling regimes to monitor runoff events

Tameremariyam Dawit Belachew, Niels De Vleeschouwer, Sacha Gobevn, Arnout Roukaerts, Matej Radinja, Daan Renders, Neil Van den Broeck, Evi Vinck, Birgit De Bock, Stijn Van Hoey

12:00 - 12:15

Modeling residual chlorine and disinfection by-products (DBPs) dynamics in urban sewers during COVID-19 disinfection practices: A comparative analysis of process-based and data-driven approaches

Xuhao Wang, Chunyan Wang, Yi Liu

12:15 - 12:30

Learnings from the Pandemic - Wastewater Based Epidemiology in Austria and the USA

Hannes Schenk, Wolfgang Rauch

Tuesday, 16.9.2025 - **PRESENTATIONS**

14:00 - 15:30, Parallel Sessions 1-3

SES 1-3-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 2

Ort: **HSB0**
Chair: **Max Maurer**
Chair: **Bryn Elizabeth Reynolds**

14:00 - 14:15

Modelling bioretention systems: does physical-based mean robust?

Tinghao HUANG, Jérémie Sage, Didier Técher, Marie-Christine Gromaire

14:15 - 14:30

Does Improved Site Scale Modeling of Bioretention Translate to Better Estimating Watershed Scale Benefits?

Ghada Diab, Ryan Winston, Jon Hathaway

14:30 - 14:45

From fragmented data to long-term BGI management models

Emma Madeleine Girot, Mahdi Bahrami, Bardia Roghani, Marius Møller Rokstad, Franz Tscheikner-Gratl, Franck Taillandier, Corinne Curt, Frédéric Cherqui

14:45 - 15:00

Modelling green roof hydrologic performances for past and future climate in eight cities around the world

Jean-Luc Bertrand-Krajewski, Solène Barbera, Guillemette Duval, Lôide Angelini Sobrinha, Vincent Pons, Jérémie Bonneau, Jean-Christophe Grimard

15:00 - 15:15

Performance of blue-green infrastructure under different current and future European climate conditions

Fabian Funke, Birgitta Hörnschemeyer, Emma Girot, Jeremie Bonneau, Vincent Pons, Mahdi Bahrami, Paul Schütz, Omar Al Masalmah, Ekaterina Andrusenko, Bardia Roghani, Manfred Kleidorfer

15:15 - 15:30

Performance Evaluation of a Sustainable Urban Drainage System for Highly Urbanized Areas

James Li, Celia Fan, Fabio Muraro, Simon Tait, Darko Joksimovic

SES 1-3-2: Flood Modelling 2

Ort: **HSB1**
Chair: **Albert Chen**
Chair: **Martina Hauser**

14:00 - 14:15

Development and Application of 2D Urban Flood Analysis Model Incorporating Rainfall-Runoff Processes at Watershed Scale

Eun Taek Shin, Kang Been Kim, Sung Won Park, Chang Geun Song

14:15 - 14:30

Dual-tiered Flood Risk Assessment of Sewage Treatment Facility Using Two-Dimensional Hydrodynamic Model

Taesoo Eum, Jeonghu Lee, Changgeun Song

14:30 - 14:45

Development and Implementation of a Real-Time Flood Model for Urban Risk Management

Celia Ortega Flores, Antonio Lastra de la Rubia, Jaime Botello Herranz, Mónica Ortega Castro

14:45 - 15:00

Modelling and Planning Strategies for Storage-Discharge Balance to Enhance Pluvial Flood Resilience in Flat and Sloping Areas

Shiyang Chen, Fabian Funke, Guangqi Liu, Frans van de Ven, Xiaowen Cheng, Reinder Brolsma, Chris Zevenbergen, Manfred Kleidorfer, Wolfgang Rauch

15:00 - 15:15

Modelling compound flooding in coastal urban environments: the Western Costa del Sol (Spain) Case Study

Patricia Molina López, Beniamino Russo, Felice D'Alessandro

15:15 - 15:30

Tight coupling of groundwater and sewer models for compound flood modelling in coastal urban areas

Valentina Prigiobbe, Joseph Hughes, Kalle Jahn, Mahla Tajari, Amrutha Suresh, Banu Bayraktar, Liv Herdman, Kristina Masterson

SES 1-3-3: Water quality 2

Ort: **HSB2**
Chair: **Kefeng Zhang**
Chair: **Pierre Lechevallier**

14:00 - 14:15

Characterization of sources of microbiological contamination in the Seine River during the Paris Olympics 2024 using inverse modeling

Yoann Cartier, Thomas Einfalt, Arthur Guillot-Legoff, Rémi Carmigniani, David Métivier, Paul Kennouche, Brigitte Vinçon-Leite

14:15 - 14:30

Towards an Integrated Monitoring and Modelling Approach for Particle-Bound Contaminants in Urbanised Catchments

Karen Lorena Rojas Gomez, J. Benisch, B. Helm, D. Borchardt, P. Krebs

14:30 - 14:45

Localized Sediment Resuspension (LSR) model: An Approach to Address Spatial Source Variability in TSS Modeling for CSO Discharges

Vasileios Chrysochoidis, Günter Gruber, Thomas Hofer, Peter Steen Mikkelsen, Luca Vezzaro

14:45 - 15:00

Urban-scale modeling of biocides emitted in runoff from building façades

Rim Saad, Marie-Christine Gromaire, Adèle Bressy, Katia Chancibault, Ghassan Chebbo

15:00 - 15:15

Prediction of nitrate in different catchments using domain adaptation for regression method

Mehran Janmohammadi, Baiqian Shi, David McCarthy

15:15 - 15:30

Predicting the Removal of Organic Micropollutants in Real Time Control biofilter: Data-Driven Approaches Using Surrogates and Operational Parameters

Jiadong Zhang, Veljko Prodanovic, Denis M. O'Carroll, Kefeng Zhang

Tuesday, 16.9.2025 - **PRESENTATIONS**

16:15 - 17:45, Parallel Sessions 1-4

SES 1-4-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 3

Ort: **HSB0**
Chair: Tone Muthanna
Chair: Simon De-Ville

16:15 - 16:30

Data-Driven Prediction of Blue-Green Infrastructure (BGI) Performance

Musfiqur Rhaman, Virginia Smith, Xun Jiao, Peleg Kremer, Bridget Wadzuk, Ruixuan Wang

16:30 - 16:45

The hydraulic response of urban drainage networks equipped with green roofs

Erica Orsi, Luca Palmiero, Gaetano Crispino, Corrado Gisonni

16:45 - 17:00

Development and testing of a conceptional tree pit model to predict frequency of waterlogging and water stress

Albert Wilhelm König, Markus Pichler, Vaughn Grey, Chris Szota, Dirk Muschalla

17:00 - 17:15

Assessing hydrological behaviours of Sustainable Drainage Systems with the Town Energy Balance Model

Yangzi QIU, José Manuel TUNQUI NEIRA, Katia CHANCIBAULT, Marie-Christine GROMAIRE, Ghassan CHEBBO

17:15 - 17:30

Staged implementation prioritization system for maximizing NBS benefits

Kerta Kõiv, Ivar Annus, Nils Kändler, Murel Truu, Katrin Kaur

17:30 - 17:45

Model-based investigation of Blue-Green Infrastructure – Case Study in a Pilot Model Area in Astana, Kazakhstan.

Katharina Fuchs, Lothar Fuchs

SES 1-4-2: Flood Modelling 3

Ort: **HSB1**
Chair: Sara De Toffol
Chair: Marzia Acquilino

16:15 - 16:30

Intelligent Flood Risk Management in Jeju Island: Grid-Based AI Prediction and Assessment

Hyeontae Moon, Kyung-Tak Kim, Gilho Kim

16:30 - 16:45

Graph-theoretical representation of impact propagation in urban stormwater networks

Mohsen Hajibabaei, Mohammad Rajabi, Guangtao Fu, David Butler, Robert Sitzenfrei

16:45 - 17:00

A Novel Data-Driven Approach for the Dynamic Prediction of Maximum Flood Inundation Considering Pump Station Failures

Sebastian Ramsauer, Felix Schmid, Jorge Leandro, Georg Johann, Daniela Falter, Hannah Eckers

17:00 - 17:15

Evaluating Urban Flooding and Economic Losses in 332 Chinese Cities under Future Climate Scenarios

Ruyi Li, Xin Dong

17:15 - 17:30

Resilience Assessment of Environmental Systems Under Flood Impacts

Yi-Siou Yang, Hao-Che Ho

17:30 - 17:45

Drainage system obstructions in real time simulation and its impacts on urban floods modelling

Paula Morais Magalhães, Laís Brilhante da Cunha, Matheus Sousa, Marcelo Miguez

SES 1-4-3: Asset Management

Ort: **HSB2**
Chair: Franz Tscheikner-Gratl
Chair: Emma Madeleine Girot

16:15 - 16:30

An advanced failure probability model for pressure mains

Jeroen Langeveld

16:30 - 16:45

Evaluating and Modelling Hydraulic Effects Resulting from Wipe Blockages in Sewer Systems

Darko Joksimovic, Katayoun Kargar

16:45 - 17:00

Self-supervised learning approach for automatic sewer defect detection

Tugba Yildizli, Tianlong Jia, Jeroen Langeveld, Riccardo Taormina

17:00 - 17:15

Defect Evolution in Sewer Pipes: Enhancing Deterioration Models

Lukas Guericke, Antoine Daurat, Hauke Sonnenberg, Nicolas Caradot, David Steffelbauer, Ofek Aloni, Barak Fishbain, Eran Friedler, Daniel Sauter, Alexander Ringe, Frédéric Cherqui

17:15 - 17:30

Application of a predictive machine-learning model to forecast sewer's pipes condition. A case study in Lausanne, Switzerland

Francesco Del Punta, Hauke Sonnenberg, Antoine Daurat, Yoann Sadowski, Frederic Cherqui, Nicolas Caradot

17:30 - 17:45

Graph Neural Networks and Random Forests for Report-Based Failure Prediction in Sewage Pipes

Ofek Aloni, Eran Friedler, Daniel Sauter, Lukas Guericke, Nicolas Caradot, Barak Fishbain

Tuesday, 16.9.2025 - **PRESENTATIONS**

NOTES

Wednesday, 17.9.2025 - **PRESENTATIONS**

Time	Room / Chair	What
8:00 - 8:45	Foyer	**Registration**
8:45 - 9:45	HSB 0, Ana Deletic	**Keynote:** From Publish to Perish: A Comedy of the Scientific Publishing World
9:45 - 10:30	HSB 3	**Break**
10:30 - 12:00	HSB 0, 1, 2	**Parallel Sessions 2-2**
12:00 - 13:30	HSB 3	**Lunch & Poster Display**
13:30 - 15:00	HSB 0, 1, 2	**Parallel Sessions 2-3**
15:00 - 15:45	HSB 3	**Break**
15:45 - 17:15	HSB 0, 1, 2	**Parallel Sessions 2-4**
17:15 - 20:00	HSB 3	**Poster Presentation with drinks and snacks**

Wednesday, 17.9.2025 - **PRESENTATIONS**

10:30 - 12:00, Parallel Sessions 2-2

- 2-2-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 4
  - *Location: HSB 0*
  - *Chair: Bridget Wadzuk & Job Augustijn van der Werf*
- 2-2-2: Digital twins
  - *Location: HSB 1*
  - *Chair: Dirk Muschalla & Nicole Arnaud de Aguiar*
- 2-2-3: CSO
  - *Location: HSB 2*
  - *Chair: Alma Schellart & Markus Pichler*

13:30 - 15:00, Parallel Sessions 2-3

- 2-3-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 5
  - *Location: HSB 0*
  - *Chair: Christian Scheid & Erica Orsi*
- 2-3-2: Decision support and integrated planning
  - *Location: HSB 1*
  - *Chair: Jean-Luc Bertrand-Krajewski & Karen Lorena Rojas Gomez*
- 2-3-3: RTC 1
  - *Location: HSB 2*
  - *Chair: Baiqian Shi & Komal Jabeen*

15:45 - 17:15, Parallel Sessions 2-4

- 2-4-1: Urban Rainfall
  - *Location: HSB 0*
  - *Chair: Thomas Einfalt & Elise Verstraeten*
- 2-4-2: Model development and model performance
  - *Location: HSB 1*
  - *Chair: Nils Kändler & Margherita Evangelisti*
- 2-4-3: RTC 2
  - *Location: HSB 2*
  - *Chair: Manfred Schütze & Sabuj Chandra Biswas*

Wednesday, 17.9.2025 - **PRESENTATIONS**

10:30 - 12:00, Parallel Sessions 2-2

SES 2-2-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 4

Ort: **HSB0**
Chair: **Bridget Wadzuk**
Chair: **Job Augustijn van der Werf**

10:30 - 10:45

Can Blue-Green Infrastructure Used For Stormwater Management Mitigate Urban Heat?

Giovan Battista Cavadini, Gabriele Manoli, Lauren M. Cook

10:45 - 11:00

Integrated modelling of multi-purpose adaptation measures to optimise water management and mitigate flood, drought and heat risks

Yannick Back, Martina Hauser, Fabian Funke, Jaya Kelvin, Alrun Jasper-Tönnies, Georg Leitinger, Manfred Kleidorfer

11:00 - 11:15

Multi-objective Optimization of Nature-based Solutions

Shengnan Yang, Matej Radinja, Nataša Atanasova

11:15 - 11:30

Development of a Platform for Green Infrastructure Simulation and Optimization

Dietmar Siegele, Julius Emig, Elias Niederwieser

11:30 - 11:45

Framework for Planning Nature-Based Solutions to Meet Long-term Catchment Scale Pluvial Flood Mitigation Targets

Wenhui Wu, Maziar Gholami Korzani, Behzad Jamali, Lucy Marshall, Ana Deletic, Kefeng Zhang

11:45 - 12:00

Modelling water balance and cooling effects of different urban areas under impacts of climate change

Chau Huynh Thi Ngoc, Fabian Funke, Veronika Grimme, Manfred Kleidorfer

SES 2-2-2: Digital twins

Ort: **HSB1**
Chair: **Dirk Muschalla**
Chair: **NICOLE ARNAUD DE AGUIAR**

10:30 - 10:45

Automated set-up of a Digital Twin Model of the sewer system of Hannover/Germany

Manfred Schütze, Christian Hübner, Stefanie Maßmann, Sara De Toffol, Barbara Krauß, Michael Pabst, Jens Alex

10:45 - 11:00

Insight into the digital twin of Hannover: real-time modelling of flooded areas

Alrun Jasper-Tönnies, Bruno Castro, Thomas Einfalt, Melissa Pimiento Castañeda, Erik Ristenpart, Alida Reinsch

11:00 - 11:15

FURBAS ¬- Development and implementation of an efficient and user-friendly model chain for early warning of urban flash floods in Hanover, Germany

Simon Berkhahn, Insa Neuweiler, Lothar Fuchs, Stefan Krämer, Robert Sämann

11:15 - 11:30

Digital Twins of Urban Drainage Systems: innovative data assimilation algorithm for continuous state update

Miloš Milašinović, Željko Vasilić, Damjan Ivetić

11:30 - 11:45

Urban drainage system design in a coastal lowlands city using a multilayer quasi-2D modeling - Case Study of Maricá, Brazil

Laís Brilhante da Cunha, Antonio Krishnamurti Beleño de Oliveira, Osvaldo Moura Rezende

SES 2-2-3: CSO

Ort: **HSB2**
Chair: **Alma Schellart**
Chair: **Markus Pichler**

10:30 - 10:45

CSOptim: Assessing and Improving the Operation of Combined Sewer Overflow Structures

Karim Sedki, Yannic Brüning, Ulrich Dittmer

10:45 - 11:00

Comparison of combined and separate sewer networks for cities with hot and dry climates using AHP method

Mehdi Bouri, Amin Ebrahim Bakhshipour, Ulrich Dittmer, Ali Haghighi

11:00 - 11:15

Modelling the adoption of combined sewer overflow monitoring technology in Switzerland

Samuel Friedemann Derwort, Liliane Manny, Juan Pablo Carbajal, Manuel Fischer, Jörg Rieckermann

11:15 - 11:30

Preventing Sewer System Overflows Through State Machine-Controlled Storage Tanks

Wellington T. Martins, Moisés T. da Silva, Mario A. P. Ramirez, Sebastian F. Reinecke, Thiago A. M. Euzébio

11:30 - 11:45

A Block-Level, Data-Reduced Method for Urban Drainage Modeling

Daneish Despot, Snigdha Dev Roy, Maria-Chiara Lippera, Ganbaatar Khurelbaatar, Jan Friesen

Wednesday, 17.9.2025 - **PRESENTATIONS**

13:30 - 15:00, Parallel Sessions 2-3

SES 2-3-1: Modelling of Blue-Green Infrastructure / NBS / SUDS / LID 5

Ort: **HSB0**
Chair: **Christian Scheid**
Chair: **Erica Orsi**

13:30 - 13:45

Quantifying the Impact of Natural Based Solutions and Sustainable Urban Drainage Systems on Combined Sewer Overflows - A Case Study of a Catchment in Southwest England

Zhanqiie Peng, Ben Jackson, Mandy Robinson, Jess Kitch, Marwa Waly, Diego Panici, Peter Melville-Shreeve, Luara Shears, Lauren Isbister, David Smith, David Baldock, Richard Brazier

13:45 - 14:00

Modelling of Three Permeable Car Parks with SWMM model

Lucie Varnede, David Ramier, Marie-Christine Gromaire, Pierre Georgel

14:00 - 14:15

A modelling framework for demand-oriented irrigation control using SWMM and SWMM-UrbanEVA

Birgitta Hörnschemeyer, Alexander Giesen, Mathias Uhl, Malte Henrichs

14:15 - 14:30

Modelling assessment of Bioretention Zones using GIS and SWMM

Nestor Alonso Mancipe-Munoz, Diana Catalina Beltran-Huertas, Maria Fernanda Riano-Neira, Estiveen Rodriguez-Quintero, John Alexander Sandoval-Barrera

14:30 - 14:45

A New Hydraulic Conductivity Function for LID Percolation Modelling in SWMM

Simon De-Ville, Shuxin Ren, Virginia Stovin

14:45 - 15:00

Analyzing the hydrological behaviour of bioretention cells: insights from field data and SWMM modelling

Laura Milena Solarte Moncayo, Juan Esteban Ossa Ossa, Mathieu Levasseur, Sophie Duchesne, Geneviève Pelletier, Andrés Torres

SES 2-3-2: Decision support and integrated planning

Ort: **HSB1**
Chair: **Jean-Luc Bertrand-Krajewski**
Chair: **Karen Lorena Rojas Gomez**

13:30 - 13:45

Integrated environmental monitoring towards the development of a decision support system for the urban canals of Padua, Italy

Alex Faccin, Aurora Voltolina, Giovanni Marco Carrer, Dario Smania, Luca Palmeri, Luca Vezzaro, Luca Carniello, Alberto Barausse

13:45 - 14:00

Planning Decision Support System for the Transition to Circular and Green Scaled Urban Water System

Nicole Arnaud, Josep Pueyo-Ros, Marta Verdaguer, Manuel Poch

14:00 - 14:15

An Excel-based Tool to Support Decisions on the Selection of Outflow Devices for Blue Roofs using Historical Maximum Rain Events

Camillo Bosco, Stian Bruaset, Elhadi Abdalla, Gema Raspati, Noëlie Maurin, Rita Ugarelli, Edvard Sivertsen

14:15 - 14:30

Multi-criteria decision analysis for a value-focused evaluation of blue-green infrastructure options in urban environments

Sebastian Schär, Judit Lienert, Lauren M. Cook

14:30 - 14:45

Development of a Multi-Objective Optimal Design Framework for Integrated Green-Grey Infrastructure

Hyeon Woo Jung, Donghwi Jung

SES 2-3-3: RTC 1

Ort: **HSB2**
Chair: **Baiqian Shi**
Chair: **Komal Jabeen**

13:30 - 13:45

Development and implementation of a large-scale Real Time Control system in Rotterdam

Jeroen Langeveld, erik liefting, jeroen schoester, gaby van ineveld

13:45 - 14:00

Systematic Sensor Uncertainty in Real-Time Control

Job Augustijn van der Werf, James Shucksmith, Will Shepherd, Katherine Parkinson, Juan Esteban Ossa Ossa, Andrés Felipe Cortés Moreno, Alma Schellart

14:00 - 14:15

Comparing Real-Time Control Approaches for Rainwater Harvesting Systems

Nandan Hara Shetty, Mark Wang, Robert Elliott, Patricia Culligan

14:15 - 14:30

Large-scale 1D/2D coupled model for the Barcelona Metropolitan area: development and data-gap filling methods

Alex de la Cruz Coronas, Beniamino Russo, Daniel Yubero

14:30 - 14:45

Forecast and Real-Time-Control for the Sewer System of Warsaw, Poland

Robert Sämann, Patrick Schönfeld, Lothar Fuchs, Thomas Beeneken, Paweł Pęczek, Bartosz Zaborski

14:45 - 15:00

Model-predictive control of drainage tunnel pumping reduces urban flooding and ensures energy savings

Khwanjira Phumphid, Matthew David Bartos

Wednesday, 17.9.2025 - **PRESENTATIONS**

15:45 - 17:15, Parallel Sessions 2-4

SES 2-4-1: Urban Rainfall
Ort: **HSB0**
Chair: **Thomas Einfalt**
Chair: **Elise Verstraeten**

15:45 - 16:00

Radar long term event time series for hydrodynamic discharge modelling

Stefan Krämer, Daniel Fitzner-Pukade, Hanna Leberke, Helge Günther, Martin Lindenberg, Fabian Friese, Sebastian Würfel

16:00 - 16:15

The effect of minimum inter-event dry period definition for storm event identification and SuDS hydrological performance evaluation

Virginia Stovin, Shuxin Ren, Simon De-Ville

16:15 - 16:30

Convection permitting climate models and Urban Drainage systems: Analysis and recommendations

Vincent Pons, Jérémie Bonneau, Katia Chancibault, Margherita Evangelisti, Fabian Funke, Ico Broekhuizen

16:30 - 16:45

Benefits of using raw commercial microwave links data on urban runoff prediction

Ying Song, Martin Fencl, Vojtech Bares

16:45 - 17:00

Investigating Urban Drainage System Robustness Using Multi-Storm Design Approach

Spyros Pritsis, Marius Møller Rokstad, Francois Clemens-Meyer, Franz Tscheikner-Gratl

17:00 - 17:15

Valuing high density sensing on local watercourses: reflections on extreme rainfall responses at a UK lead local flood authority

Lorna Devenish, Mike Gibson, Peter Melville-Shreeve, Sharon Russell-Verma, Chris Sweetapple

SES 2-4-2: Model development and model performance
Ort: **HSB1**
Chair: **Nils Kändler**
Chair: **Margherita Evangelisti**

15:45 - 16:00

Progress and plans for the SWMM5+ project

Ben R. Hodges, Sazzad Sharior

16:00 - 16:15

Effective GPU use on a 1D-2D model for real-time flood prediction

Yuichi Nagano, Yukinobu Oda

16:15 - 16:30

Improving Hydraulic Capacity with Inlet Modifications to Box Culverts Using Numerical Modelling

Maria Dorothea Giliomee, Ione Loots, Marco van Dijk

16:30 - 16:45

Estimation of Geyser Potential at Network Scale using SWMM

Abdulmuttalib M. Lokhandwala, Yichen Tao, Vitor G. Geller, Daniel B. Wright, Jose G. Vasconcelos, Ben R. Hodges

16:45 - 17:00

Numerical Analysis for the Hydraulic Safety Evaluation of Different Types of Manhole Fall Prevention Frames

Su Min Song, Dong Hyun Kim, Moonhyung Park, Seung Oh Lee

17:00 - 17:15

Modelling and implementation of a modified floodgate in SWMM for simulation-based optimization of a sewer network

Jose Antonio Simancas Suárez, Henning Oeltze

SES 2-4-3: RTC 2
Ort: **HSB2**
Chair: **Manfred Schütze**
Chair: **Sabuj Chandra Biswas**

15:45 - 16:00

Methodology for Choosing Optimal Parameters for Real-time MPC in Urban Drainage Systems

Rodrigo da Silva Gesser, Sabuj Biswas, Holger Voos, Georges Schutz, Alex Cornelissen

16:00 - 16:15

Real-Time Control as the Unifying Element in Urban Water Systems – Implications on Modelling Practices

Andrés Felipe Cortés Moreno, Jeroen Langeveld, Job Augustijn van der Werf

16:15 - 16:30

Implementation of a Real-Time decision support system to reduce pollutant load- discharges in Madrid combined sewer system based on off-line and real time modelling

David Sunyer, Ángel Villanueva, Antonio Lastra, Alejandro Carrasco, Jordi Meseguer, Bernat Joseph-Duran, Gabriela Cembrano, Luis Romero, Vicenç Puig, Joaquin Suárez, Juan Alfredo Jácome, Abraham Martínez

16:30 - 16:45

Simple Algorithms to Enable Edge Computing for Imaged-based Water Depth Measurement and Illicit Discharge Detection

Stephen Catsamas, Miao Wang, Baiqian Shi, Edward Tiernan, Elizabeth Fassman-Beck, David McCarthy

16:45 - 17:00

Detecting illicit discharges in storm drains using distributed network of low-cost, IoT sensors

Edward Tiernan, Jerod Gray, Duy Nguyen, Baiqian Shi, Miao Wang, Jian Peng, David McCarthy, Elizabeth Fassman-Beck

17:00 - 17:15

Developing a Low-Cost IoT-Based Hydrological Monitoring Network for Urban Stormwater Management and Managed Aquifer Recharge

Nompumelelo Mnisi, John Okedi

Wednesday, 17.9.2025 - **PRESENTATIONS**

NOTES

Wednesday, 17.9.2025 - **POSTER SESSION**

17:15-20:00, HSB 3 (with snacks & drinks)

1. **Advances and challenges in modelling and prediction of urban flooding: a comprehensive review on recent progresses**
   Linmei Nie, Peng Wang, Xinwei Sun, Pingju Li

2. **Performance Analysis of Storm Sewer Network Simplify and Grid Resolution by Basin Scale**
   Hyung-Jun Kim, Sang-Bo Sim

3. **Challenges in Modelling Urban Catchments: Integrating Surface Runoff and CSO Response**
   Vladislav Dmitrievich Dukhovskoy, Claire Walsh, Vassilis Glenis, Jaime Amezaga, Chris Jones

4. **A graph-based approach for structural resilience assessment in urban drainage networks**
   Mohammad Rajabi, Mohsen Hajibabaei, Aun Dastgir, Robert Sitzenfrei

5. **Neural networks for the simulation of pluvial urban flooding**
   Anton Jakob Sørensen, Roberto Bentivoglio, Allan Peter Engsig-Karup, Peter Steen Mikkelsen, Riccardo Taormina, Karsten Arnbjerg-Nielsen, Roland Löwe

6. **Implementation of infiltration in surface runoff models during short heavy rainfall events**
   Jannis Valldorf, Svenja Kemper, Andreas Schlenkhoff

7. **Integrated modelling solutions for data-driven holistic management of urban water quality – the Urban M2O digital tools**
   Luca Vezzaro, Henrik Dissing, Heiko Kinzel, Estanislao Pujades-Garnes, Matteo Nicolini, Davide Russo, Zanello Francesca, Wolfgang Rauch

8. **Impact of Intense Convective Storms on Urban Drainage Systems in Turin: Integrating Meteorological Data and Predictive Modelling**
   Edoardo Burzio, Roberto Cremonini, Renzo Bechini, Valentina Campana, Elisa Brussolo

9. **Evaluation of SuDS Device-scale Alternative Modelling Methods in SWMM**
   Shuxin Ren, Simon De-Ville, Virginia Stovin

10. **Development of Climate Crisis Adaptation Measures for Sewage Treatment Plant in Jeju Island (South Korea)**
    Jinkeun Kim

11. **Development of an Optimal Pump Operation Strategy for Multifunctional Deep Tunnel Systems**
    Kyoungwon Min, Gyumin Lee, Dongkyu Kim, Doosun Kang

12. **Improving Streamflow Prediction Accuracy based on Rainfall-Runoff Correlation Analysis**
    Dongkyu Kim, Minhyuk Kang, Kyoungwon Min, Gyumin Lee, Doosun Kang

13. **Analysis of Fixed-Time Synchronization by Rainfall Runoff Method**
    Sang-Bo Sim, Hyung-Jun Kim

14. **Instrumentation and modelling of stormwater trees to determine their hydrological performance in a future climate**
    Rémi COMBEAUX, Frédéric Cherqui, Katharina Tondera, Laurent Lassabatère, Jérémie Bonneau

15. **From Data to Decisions: Enhancing Climate Adaptation with Optimized Groundwater Monitoring Systems**
    Ronja Forchhammer Mathiasen, Theis Raaschou Andersen, Michael R. Rasmussen

16. **Urban flood prediction and mapping using Machine Learning and Deep Learning**
    Jasmina Moskovljević, Anja Ranđelović, Milan Stojković, Veljko Prodanović

17. **Statistical analysis of wastewater drivers in all large treatment plants of England**
    Robin Maes-Prior, Barnaby Dobson, Ana Mijic

18. **Impact of sensors accuracy in the detection of illicit discharges in sewers: comparison of fixed and floating Lagrangian sensors**
    Gabriele Freni, Mariacrocetta Sambito

19. **Flooding in urban areas: improving risk mitigation through rain-on-grid modelling**
    Giuseppina Brigandi, José Javier Serrano Chano, Giuseppe Tito Aronica

20. **Estimating Climate Change-Induced Trends in CSO Volume and Flooding using an Ensemble of Precipitation Predictions**
    Markus Pichler, Stefan Reinstaller, Dirk Muschalla

21. **Parameterisation and validation of the CleanCityCover tool to assess source areas of urban diffuse pollution for case study areas in Aarhus, Denmark**
    Boney Joseph, Nasrin Haacke, Emil Jespersen, Carlos Alberto Arias, Eva Paton

22. **Towards smarter stormwater management: Challenges, opportunities and insights from a UK case study**
    Chris Sweetapple, Anna Hastings, Peter Melville-Shreeve

23. **Challenges in data collection for load-based real time control with acoustic multifrequency backscattering sensors - experiences from the ENTfrachtEN project**
    Thorsten Schmitz, Sebastian Kerger, Frank Rüsing

Wednesday, 17.9.2025 - **POSTER SESSION**

17:15-20:00, HSB 3 (with snacks & drinks)

24. **The Application of CNN and Virtual Gauges**
Han Jun Lee

25. **Utilising incomplete datasets for management of urban drainage**
William James (Will) Shepherd, Simon J Tait

26. **Successes and Challenges of Building a Large-Scale Collection System Model in Canada**
Hong Zhu

27. **Advanced Digital Technologies for Sustainable Urban Water Management in South Tyrol**
Cinzia Slongo, Dietmar Siegele, Dominik T. Matt

28. **Advanced Forecasting and Sensorization for Sustainable Urban Drainage Management: The DREINCAM Approach**
Antonio Lastra de la Rubia, Celia Ortega Flores, Jaime Botello Herranz, Mónica Ortega Castro

29. **The stormwater quality and quantity implications of transforming detention ponds into multi-purpose facilities in Cape Town**
Sange Sakwe, Neil P Armitage

30. **Optimization of SUD installations in the Genoa urban drainage system considering the community's call for action through participatory mapping**
Enrico Creaco, Ilaria Gnecco, Carlo Giudicianni, Stefano Boilini, Shaahin Nazarpour, Maria Cristina Lobascio, Anna Palla

31. **Monitoring and modelling of shallow groundwater dynamics and interaction with sewer systems**
Søren Thorndahl, Niels Claes, Per Møldrup

32. **An Integrated Assessment of Urban Drainage System Performance and Risk in Built-Up Areas**
ZHENG YANG, YANG ZHAO, XIANG LIN, HAO LIU, PAN YAN, WEI LIU, WU CHE

33. **Extreme weather exposure assessment of low impact development technologies through climate modelling and index creation**
Miguel Enrico Robles, Yugyeong Oh, Marvin John Uy, Lee-Hyung Kim

34. **Benchmarking small-scale pumped-hydro schemes that have potential for flood management benefits**
Ben Orriss

35. **DRAIN PROJECT: An Integrated Urban Drainage Model with IBER SWMM in QGIS**
Esteban Sañudo, Orlando García-Feal, Luis Cea, Jerónimo Puertas, Marcos Sanz-Ramos, Ernest Bladé i Castellet, Xavier Torret, Maria Guzmán, Namrata Karki, Pablo Marques, Narcís Pi, Antonio Pablo Romero

36. **Comparative Evaluation of two Modeling Approaches of Urban Flooding in Ottawa, Canada**
Ali Zoghi, Bryn Elizabeth Reynolds, Ryan Cooke, Muhammad Naveed Khaliq, Jennifer Drake

37. **Exploring the Potential for Machine Learning-Based Flow Predictions in Sewer Systems**
Flemming Albers, Birgitta Hörnschemeyer, Malte Henrichs

38. **Under the Surface: Terrain and 2D Hydraulic Model Development of a Constructed Stormwater Wetland**
Bridget Wadzuk, Blake Cary

39. **Adapting an urban square to climate change by optimizing the water balance with Blue-Green Infrastructure**
Veronika Grimme, Manfred Kleidorfer, Yannick Back, Fabian Funke

40. **Real-Time Disaggregation of Total Domestic Water Consumption into four Major End Uses**
Sabuj Chandra Biswas, Rodrigo da Silva Gesser, Holger Voos, Georges Schutz, Alex Cornelissen

41. **Monitoring the hydrologic performance of four experimental green roofs : preliminary analysis of 28 months of data**
Jean-Luc Bertrand-Krawieski, Laura Martins Masso, Stéphane Vacherie, Richard Poncet, Jean-Christophe Grimard, Hervé Perier-Camby, Jérémie Bonneau

42. **Understanding and improving the functioning of stormwater nature-based solutions under climate extremes – Towards a unified modeling framework for the GreenStorm project**
Emmanuel Berthier, Ahmeda Assan Ouédraogo, Jérémie Sage, Konstantinos Soulis, Ico Broekhuizen, Anna Palla, Marie-Christine Gromaire

43. **Evaluating the treatment of polluted stormwater by retention ponds in Cape Town, South Africa**
Jessica Reimers, Neil P Armitage

44. **Performance evaluation of a correlation-based spectroscopic method for ammonia equivalents in sewers and WWTP influents**
Nicolas Neuenhofer, Pierre Lechevallier, Jörg Rieckermann

45. **Experimental modelling of a stormwater gully pot: Hydrodynamic evaluation**
MohammadMahdi Noroozi, Ekaterina Sokolova, Isak Jonsson, Ann-Margret Strömvall, Mia Bondelind

46. **Block-based planning to retain stormwater in urban catchments**
Maria Chiara Lippera, Snigdha Dev Roy, Ganbaatar Khurelbaatar, Daneish Despot, Jan Friesen

Wednesday, 17.9.2025 - **POSTER SESSION**

17:15-20:00, HSB 3 (with snacks & drinks)

47. **Statistical Properties of Distributed Flooding Caused by Culvert Capacity Exceedance**
Berina Mina Kilicarslan, Omid Emamjomehzadeh, Omar Wani

48. **AN INTEGRATED URBAN FLOODING MODEL: DIALOGUE WITH OTHER DOMAINS FOR ENHANCED CLIMATE ADAPTATION. THE KNOWING PROJECT**
Jesús Soler Martín, Andres Crocianelli, Montserrat Martinez, Virginia Domingo, Jackson Tellez

49. **Assessing the sensitivity of pluvial flood modelling to the topographic description of Urban Areas**
Marzia Acquilino, Ilaria Gnecco, Giorgio Boni

50. **Fast Nature-based Solutions condition assessment through indirect plant monitoring**
Veljko Prodanovic, Irena Todorovic, Anja Randelovic, Marko Mihailovic, Jérémie Bonneau, Frederic Cherqui

51. **Automated Algorithm for Network Elevation Repair in Urban Drainage System Models**
Zeljko Vasilic, Milos Stanic, Damjan Ivetic, Milos Milasinovic

52. **Validation of build-up/wash-off quality models with continuous turbidity data**
Evi Vinck, Matej Radinja, Neil van der Broeck, Margherita Evangelisti, Vittorio Di Federico, Arnout Roukaerts, Stijn Van Hoey, Niels De Vleeschouwer, Sacha Gobeyn, Birgit De Bock

53. **MODELS AND METHODS TO ANALYZE NBS PERFORMANCE IN THE FIELD OF URBAN DRAINAGE. THE NATALIE PROJECT**
Jesús Soler Martín, Beniamino Russo, Albert S. Chen, Jess Penny, Sotiria Baki, Dan Barbulescu

54. **Quantification and transferability of decentralised Nature-based Solutions' effects for pluvial flood mitigation**
Jonas Neumann, Christian Scheid, Ulrich Dittmer

55. **Signal analysis for receiving water quality led local real time control**
Gareth Cotton, Alma Schellart, Sonja Ostojin, Simon Tait, James Shucksmith

56. **Impact of high-resolution rainfall spatial and temporal dynamics on combined sewer overflows in Brussels, Belgium**
Elise Verstraeten, Boud Verbeiren, Diego Nève, Ann Van Griensven, Lesley De Cruz

57. **Design and operation of urban drainage and sanitation networks with the integrated use of geographic information system QGIS, PostgreSQL, PostGIS and Giswater in combination with SWMM**
Xavier Torret, Sergio Muñoz Hoya, Josep Lluis Sala, Albert Bofill, Edgar Fusté, Sergi Maspons, Maria Guzmán, Namrata Karki, Abel Garcia

58. **Quantifying Resilience Improvement Efficiency in Hydraulic Engineering: A Carbon Footprint-Based Model**
Jing-Lun Huang, Hao-Che Ho

59. **Assessment of permeable pavement clogging in the lab. Do we need new standards for it?**
Juan Naves, Marcel Goerke, Thomas Brüggemann, Iain Naismith, Joaquín Suárez, Angélic V. Goya, Jose Anta

60. **BoSL Board: A Low-Power, Low-Cost IoT Platform for Environmental Monitoring and Control**
Baiqian Shi, Stephen Catsamas, Miao Wang, Corrie Thirkell, Canwei Pang, Wenchang Zhu, Peter Kolotelo, David McCarthy

61. **Modelling transportation of pollutants in urban drainage systems**
Elhadi Mohsen Hassan Abdalla, Linmei Nie, Randi Margrete Aamodt, Edvard Sivertsen

62. **Identification and quantification of pollutant loads discharged to the Mediterranean Sea through urban drainage systems**
Yonatan Zohar, Yael Gilboa, Eran Friedler

63. **Quantitative Flood Risk Assessment in the Oncheon Stream Basin: Fatality Estimation and Risk Analysis Using HEC-RAS 1D and HEC-LifeSim**
Kang Been Kim, Eun Taek Shin, Dong Hwi Kim, Chang Geun Song

64. **Applicability of the EPA-SWMM bioretention module to simulate the hydrological performance of experimental stormwater trees**
Samih Yehia Chebbo, Jeremie Sage, Martin Seidl

65. **Rainfall data assimilation for urban drainage design storm identification (with uncertainty)**
Giulia Failla, Mariacrocetta Sambito, Gabriele Freni

66. **Hydrological and Hydraulic disconnection model to mitigate CSO discharges**
Violeta-Alexandra Montoya-Coronado, Damien Tedoldi, Helene Castebrunet, Pascal Molle, Gislain Lipeme Kouyi

67. **Analysing the robustness of a geoanalytical method for linking base wastewater flows with sanitary sewer system model**
Ivar Annus, Nils Kändler, Katrin Kaur

68. **Modelling the hydrological performance of stormwater ponds using observed water level data**
Bryn E. Reynolds, Jane Gao, Jennifer Drake

Wednesday, 17.9.2025 - **POSTER SESSION**

17:15-20:00, HSB 3 (with snacks & drinks)

69. **Modular CFD Solver for Hydrogen Sulfide and Oxygen Transport: Implementation in OpenFOAM 11**
Katharina Teuber, Abhinav Dixit, Reinhard Hinkelmann

70. **Understanding the uncertainty in the discharge capacity estimation of the round crested side weirs in UDS**
Damjan Ivetić, Željko Vasilić, Robert Ljubičić, Miloš Milašinović

71. **Statistical approaches for Regionalisation and Interpolation of intense precipitation for climate resilience in South Tyrol**
Cinzia Slongo, Dietmar Siegele, Dominik T. Matt

72. **Reducing pluvial flood risk in rapidly evolving areas: strategic planning for uncertain futures**
Fabrizia Fappiano, M Maurer, João Paulo Leitão

73. **Simplified 1D Model of Barcelona's Drainage Network for CSO Assessment and Corrective Measure Design by using Giswater in combination with SWMM.**
Aljendro Ortiz, Óscar Esbrí, María José Velasco, Xavier Torret, David Cano, Namrata Karki, Abel García

74. **Novel methodology for development of city scale hydrological-hydraulic models: from subcatchment delineation to calibration**
Nicole Arnaud, Josep Pueyo-Ros, Shengnan Yang, Nataša Atanasova, Matej Radinja

75. **Low-cost non-contact multispectral sensor for urban water quality monitoring**
Wenchang Zhu, Baiqian Shi, Pierre Lechevallier, Ana Deletic, David McCarthy

76. **Water balance simulation and storage tank size optimization of irrigated green roofs**
Björn Helm, Diego Novoa, Karen Rojas, Luisa Fraaß, Irene Lohaus, Peter Krebs

77. **Experimental study on transport and retention dynamics of macroplastics in gully pots**
Qusai Khaled, Antonio Moreno-Rodenas, Manuel Requeiro-Picallo, Francois Clemens-Meyer, Shreedhar Maskey, Daniel Valero

78. **Optimized and Real-Time Control of an Integrated Urban Drainage System: Drainage Network, WWTP, and River**
Meiyu Luo, Qian Liang, Hantao Wang, Yang Ping, Yuan Yao, Yang Gu, Jiping Jiang

79. **Rainfall downscaling for climate change impact analysis at a city scale**
Katia Chancibault, Florian Betou, Xenia Stavropulos-Laffaille, Anne Ruas, Hervé Andrieu, Eric Gaume

80. **Evaluating the Effectiveness of Retrofitting Simple and Smart Sustainable Drainage Systems at the Household Scale**
Ridita Nebula Hossain, Neil Sewell, Ally Potts, Raziyeh Farmani, Lorna Devenish, Solomon Sunday Oyelere, Peter Meliville-Shreeve

81. **Evaluating Green Roof Retrofitting as a Stormwater Management Strategy in a Brazilian Urban Watershed**
Thiago Masaharu Osawa, Fabio Ferreira Nogueira, Stephanie C. M. Gonzaga, Fernando G. Silva, Sabrina D. Miranda, Brenda Chaves Coelho Leite, Jose Rodolfo Scarati Martins

82. **Looking under the canopy: Modelling how urban trees contribute to runoff reduction in cities**
Ali Eslami, Nora Van Cauwenbergh, Nahad Rezazadeh Helmi, Ann van Griensven

83. **Balancing Climate Adaptation and Urban Water Demand in Dutch Cities**
Ekaterina Andrusenko, Job Augustijn van der Werf, Jan Peter van der Hoek, Jeroen Langeveld

84. **Towards the assessment of pollution-based real-time control potential of sewer systems**
Sebastian Kerger, Thomas Wintgens

85. **Modelling tray-based modular blue-roof systems by using EPA-SWMM**
Aurora Gullotta, Leonardo Bayas-Jiménez, Alberto Campisano

86. **Development of an innovative approach for modelling urban surface flow during stormwater events**
Leonardo Bayas-Jiménez, Aurora Gullotta, Alberto Campisano

87. **Bias-correcting rainfall timeseries from convection permitting climate models**
Trang Nguyen, Andreas Dietzel, Patricio Velasquez, Lauren Cook

88. **Cost-efficiency of integrating network separation and source control solutions to reduce combined sewer overflows**
Helieh Abasi, Sophie Duchesne, Geneviève Pelletier, Arman Rokhzadi

Thursday, 18.9.2025 - **PRESENTATIONS**

Time	Room / Chair	What
8:00 - 8:45	Foyer	**Registration**
8:45 - 9:45	HSB 0, Riccardo Taormina	**Keynote:** AI for Urban Drainage Systems: Recent Advances and Real-World Applications
9:45 - 10:30	HSB 3	**Break**
10:30 - 12:00	HSB 0, 1, 2	**Parallel Sessions 3-2**
12:00 - 13:30	HSB 3	**Lunch & Poster Display**
13:30 - 15:00	HSB 0, 1, 2	**Parallel Sessions 3-3**
15:00 - 15:45	HSB 3	**Break**
15:45 - 16:30	HSB 0	**Closing:** Reflections & Announcements

Thursday, 18.9.2025 - **PRESENTATIONS**

10:30 - 12:00, Parallel Sessions 3-2

- 3-2-1: Artificial Intelligence machine learning 1
  - *Location: HSB 0*
  - *Chair: Eran Friedler & Namrata Karki*
- 3-2-2: Model applications and development 1
  - *Location: HSB 1*
  - *Chair: Ivar Annus & Svenja Kemper*
- 3-2-3: Uncertainties and model performance
  - *Location: HSB 2*
  - *Chair: Ico Broekhuizen & Frederic Cherqui*

13:30 - 15:00, Parallel Sessions 3-3

- 3-3-1: Artificial Intelligence machine learning 2
  - *Location: HSB 0*
  - *Chair: Pete Melville-Shreeve & Sebastian Ramsauer*
- 3-3-2: Model applications and development 2
  - *Location: HSB 1*
  - *Chair: Martin Fencl & Jeroen Langeveld*
- 3-3-3: Combat
  - *Location: HSB 2*
  - *Chair: Martin Oberascher & Robert Sitzenfrei*

Thursday, 18.9.2025 - **PRESENTATIONS**

10:30 - 12:00, Parallel Sessions 3-2

SES 3-2-1: Artificial Intelligence machine learning 1

Ort: **HSB0**
Chair: **Eran Friedler**
Chair: **Namrata Karki**

10:30 - 10:45

The AI-enabled Researcher: Contemporary Tools for Urban Drainage Research

Farzan Zeinali, Chris Sweetapple, Anna Hastings, Peter Melville-Shreeve

10:45 - 11:00

Enhancing Explainability in Machine Learning for Urban Drainage: Physic-Leveraged vs. Data-Driven Approaches

Martin Oberascher, Amin E. Bakhshipour, Karim Sedki, Sina Hesarkazzazi, Abbas Haghshenas, Ulrich Dittmer, Ali Haghighi, Robert Sitzenfrei

11:00 - 11:15

Water level prediction in urban drainage systems using explainable deep learning models

Seith N. Mugume, Dorothy Pamela Adeke

11:15 - 11:30

Machine-learning forecast model for predicting annual water consumption in budget estimation for urban drainage system management

Michael Trojer, Martin Oberascher, Bernhard Zit, Robert Sitzenfrei

11:30 - 11:45

A probabilistic framework for urban wastewater flow forecasting

Mohsen Rezaee, Peter Melville-Shreeve, Hussein Rappel

11:45 - 12:00

Deep Graph Neural Networks for SWMM Metamodeling: Impact of Network Depth on Performance in a Sloping Drainage System

Alexander Garzón, Zoran Kapelan, Jeroen Langeveld, Riccardo Taormina

SES 3-2-2: Model applications and development 1

Ort: **HSB1**
Chair: **Ivar Annus**
Chair: **Svenja Kemper**

10:30 - 10:45

Automated GIS-based methodology for high-fidelity urban stormwater catchment delineation

Nils Kändler, Ivar Annus, Murel Truu

10:45 - 11:00

Fast urban drainage model generator using global open data sources

Thibaud Maruejouls, Simon Delmas, Abdelghani Zaid, Ginestet Philippe, Marcello Serrao, Wolfgang Rauch

11:00 - 11:15

MODEL-BASED SELECTION OF SOIL MOISTURE MEASUREMENT POINTS FOR CALIBRATION OF URBAN DRAINAGE MODELS

Marco Manetti, Ico Broekhuizen, Maria Viklander

11:15 - 11:30

Flood Resilience Assessment of Urban Drainage Systems: A Graph Theory Perspective

Mohammad Rajabi, Mohsen Hajibabaei, Robert Sitzenfrei

11:30 - 11:45

Urban Pluvial Flood Risk Assessment in Porto: A Multi-Criteria Spatial Analysis Considering Physical and Social Factors

Pedro Campos Fernandes, Joana Silveira Teixeira

11:45 - 12:00

Graph-Based Model for Efficient Data Retrieval in Incomplete Stormwater Networks

Mohsen Hajibabaei, Sina Hesarkazzazi, Robert Sitzenfrei

SES 3-2-3: Uncertainties and model performance

Ort: **HSB2**
Chair: **Ico Broekhuizen**
Chair: **Frederic Cherqui**

10:30 - 10:45

Long-term monitoring of sediment accumulation in gully pots using thermal analysis

Manuel Requeiro-Picallo, Simon Bloem, Christian Ebi, Jörg Rieckermann

10:45 - 11:00

Out of bounds: system structural uncertainty under extreme events

Margherita Evangelisti, Vincent Pons, Merethe Strømberg, Spyros Pritsis, Vittorio Di Federico, Marco Maglionico

11:00 - 11:15

Designing urban drainage structures in times of uncertainty

Karsten Arnbjerg-Nielsen, Hjalte Jomo Danielsen sørup, Søren Thorndahl

11:15 - 11:30

Transferability of calibrated parameter sets across nested urban catchments

Emmanuel Kassim Bangura, Ico Broekhuizen, Tone Muthanna, Maria Viklander

11:30 - 11:45

Urban hydrological modelling in a developing country with spatially varied rainfall

Ione Loots, Jeff Colin Smithers, Thomas Rodding Kjeldsen

11:45 - 12:00

Sewer Network Tracing to Support Model Calibration and Validation

Ian Guymer, Virginia Stovin, Will Shepherd, Ole Mark

Thursday, 18.9.2025 - **PRESENTATIONS**

13:30 - 15:00, Parallel Sessions 3-2

SES 3-3-1: Artificial Intelligence machine learning 2

Ort: **HSB0**
Chair: **Pete Melville-Shreeve**
Chair: **Sebastian Ramsauer**

13:30 - 13:45

Comparison between single and multi-objective strategies for urban drainage model optimization using genetic algorithms: A case study of Badalona Urban drainage network

Namrata Karki, Vicente Cesar de Medina Iglesias

13:45 - 14:00

Digital Twins of Urban Drainage Systems: ML-assisted algorithm for processing sensor data

Luka Vinokić, Miloš Milašinović, Željko Vasilić, Damjan Ivetić, Milan Stojković, Veljko Prodanović

14:00 - 14:15

Diffusion-based Time Series Forecasting for Sewerage Systems

Nicholas Andrea Pearson, Francesca Cairoli, Luca Bortolussi, Davide Russo, Francesca Zanello

14:15 - 14:30

Development of a generic machine learning model for flowrate generation in catchments using a global database.

Karim Claudio, Thibaud Maruejouls, Marcello Serrao, Abdelghani Zaid, Philippe Ginestet, Wolfgang Rauch

14:30 - 14:45

Superiority of Deep Reinforcement Learning in Urban Drainage System Real-time Control

Zhenyu Huang, Yiming Wang, Xin Dong

14:45 - 15:00

HR-PIGNN A High Resolution Prediction Method for Urban Drainage Network: Combining Graph Neural Networks and Discrete Form Physics Informed Neural Networks

Yizhou Qian, Xin Dong

SES 3-3-2: Model applications and development 2

Ort: **HSB1**
Chair: **Martin Fencl**
Chair: **Jeroen Langeveld**

13:30 - 13:45

Deep learning methods for city-agnostic public health forecasts from wastewater-based epidemiological data

Jean-David Therrien, Simon Halle, Thomas Maere, Patrick Dallaire, Peter A Vanrolleghem

13:45 - 14:00

Volumetric Urban Drainage Clarification Optimization with CFD-ML

Haochen Li, John Joseph Sansalone

14:00 - 14:15

3D numerical modelling of interception efficiency of grate inlets with supercritical surface flow conditions

Svenja Kemper, Andreas Schlenkhoff

14:15 - 14:30

Maximising heat recovery in the sewer network

Sepideh Zandhaghighi, Mohamad Abdel-Aal, David Butler

14:30 - 14:45

Future Performance of Coastal Drainage Systems under Climate Uncertainty: A Sensitivity Analysis

Sara Roth, Sofia Dahl, Salar Haghighatafshar

14:45 - 15:00

Modelling impact of WSUD stormwater treatment on faecal contamination levels within an urban estuary

Dusan Jovanovic, David McCarthy

SES 3-3-3: Combat

Ort: **HSB2**
Chair: **Martin Oberascher**
Chair: **Robert Sitzenfrei**

13:30 - 13:45

Combat of Retrofitting Urban Drainage Networks with Nature-Based Solutions

Martin Oberascher, Fabian Funke, Rahul Satish, Mohammad Rajabi, Aun Dastgir, Amin Minaei, Yannick Back, Shiyang Chen, Martina Hauser, Mohsen Hajibabaei, Chau Huynh Thi Ngoc, Joao Paulo Leitao, Wolfgang Rauch, Manfred Kleidorfer, Robert Sitzenfrei

13:45 - 13:57

Multi-step methodology for optimizing NBS locations in urban drainage systems

Enrico Creaco

13:57 - 14:09

Few large or several small? Comparing different BGI implementation schemes for optimal benefits

Giovan Battista Cavadini, Matthew McGauley, Prabhat Joshi

14:09 - 14:21

Seeding and biasing genetic algorithms

E. Andrusenko, A.F. Cortés Moreno, A. Garzón, L. González, A. Mittal, J. A. van der Werf, T. Yildizli

14:21 - 14:33

Allocation of Nature-Based Solutions Using Benefit-Cost Ratios and Spatial Flow Metrics

Markus Pichler, Albert König, Cajetan Beutle

14:33 - 14:45

Cost-Effective LID Deployment Optimization: A Hybrid Approach Combining Sequential and Simultaneous Multi-Objective Methods

Amin Ebrahim Bakhshipour, Kayhan Jafari, Ulrich Dittmer, Ali Haghighi

14:45 - 14:57

An engineering-led approach to multi-criteria NBS placement

Mohsen Rezaee, Seyed Ghasem Razavi, Azade Norouzi Parei

Thursday, 18.9.2025 - **CONFERENCE DINNER**

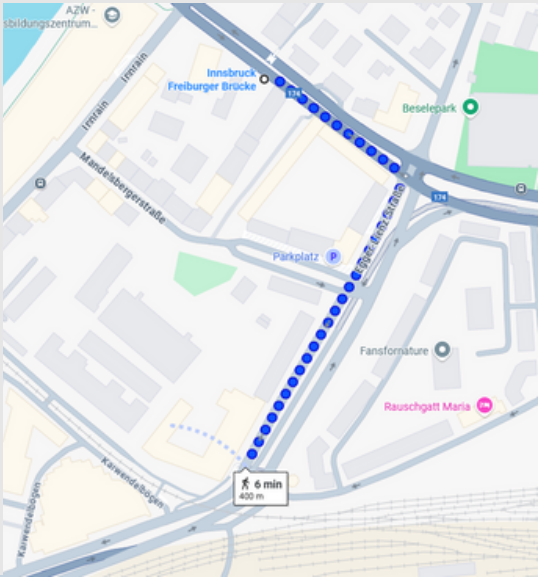
18:00 - 24:00

Glorious Bastards Restaurant & Bar
(Egger-Lienz-Straße 118)

Join us for the Social Dinner at Glorious Bastards Innsbruck. This evening will be a highlight of the event, offering the chance to connect with colleagues in a relaxed and inspiring atmosphere.

With its stylish setting and excellent cuisine, Glorious Bastards is the perfect venue to conclude a week of scientific exchange. We look forward to sharing good food, engaging conversation, and a memorable night together in Innsbruck.

<u>How to Get There:</u>
Take public transportation to the "Innsbruck, Freiburger Brücke" station. From there, it is a short walk. You can also walk from the city center. Depending on your exact location, walking takes between 20 and 30 minutes.



To help you get back to your accommodation after dinner, we have organized a private bus that will take you to the main train station or the "Marktplatz" every 30 minutes, starting at 22:00

© Daniel Ritzberger

© Daniel Ritzberger

Friday, 19.9.2025 - **TOURS**

On Friday, you will have the opportunity to either visit the Viktor Franz Hess House on the Nordkette or experience the excitement of the Bergisel Ski Jump. Please note that both tours require separate registration and are not covered by the conference fee!

Bergisel Ski Jump Experience: A Thrilling Glimpse into the World of Skiing


© Bergisel BetriebsgesellschaftmbH


© Bergisel BetriebsgesellschaftmbH

Join us for an exciting tour at the iconic Bergisel Ski Jump! The day begins with an arrival at Bergisel, where you'll have the opportunity to explore the Bergisel Stadium, including a live ski jumping demonstration. You'll be split into smaller groups for a more personalized experience.
Experience the thrill of watching the live ski jump, with a guided sports tour led by professional ski jumpers. The tour lasts around one hour and offers insights into the world of ski jumping. For those who prefer to relax, enjoy the stunning views from the Bergisel Sky Restaurant with a cup of coffee and a slice of cake, while observing the live jumps.
If you're feeling adventurous, you can also take a turn on the "Zitterbalken", a unique experience where you can test your balance and nerves. Please note, due to time constraints, the Zitterbalken experience may be limited to a smaller group, with the rest enjoying the restaurant's spectacular views

Hafelekar Tour: A Journey into Alpine Science and Stunning Views

Join us for a scenic after-conference tour in Innsbruck! We will meet in the city center and take the cable car up to Hafelekar, situated at an elevation of 2,334 meters. Once at the top, we'll visit the historical Hafelekar research station, where groundbreaking scientific history was made.
In 1931, Professor Victor Franz Hess (1883–1964) founded the world's first high-altitude laboratory here, dedicated to the study of cosmic rays. Innsbruck, with its university and the Nordkette cable car, provided the perfect conditions for this pioneering scientific work.
This tour offers a unique opportunity to explore both the stunning Alpine landscape and a site of scientific significance, with breathtaking views from the mountain peaks. As we enter an alpine environment, please bring good shoes, appropriate and warm clothing, and wind and rain protection, depending on the weather

Meetingpoints

Bergisel Ski Jump:
We will meet at **9:50** at the **"Innsbruck Bergisel" station**.
From there, we will walk to the ski jump together.
Please note that it is a steep, 15-minute walk, so wear comfortable shoes!

Hafelekar:
The meeting point is at **9:00** at the **Hungerburgbahn station "Altstadt"**.
Please note that we will be in alpine environment! Bring warm, windproof, and rainproof clothing and comfortable shoes.

Keep an eye on our homepage **www.udm2025.org** for a recap, photos and final updates!

We thank our sponsors for their support!