

SPN 10

2022 GRAZ, AUSTRIA

CONFERENCE ON SEWER PROCESSES AND NETWORKS

24–26 August 2022, Graz, Austria

> www.spn10.com



10th CONFERENCE ON SEWER PROCESSES AND NETWORKS

The International Conference on Sewer Processes and Networks (SPN) is held every 3rd year by the Sewer Systems and Processes Working Group under the IWA specialist group on Urban Drainage (Joint IAHR/IWA).

This year, from 24th to 26th of August 2022, we are happy to host the 10th edition of the International Conference on Sewer Processes and Networks in Graz, Austria at Graz University of Technology.

HOSTS

Graz University of Technology
Institute of Urban Water Management
and Landscape Water Engineering

TOPICS

- Sewer system impacts
- In-sewer processes
- Design and operational issues
- Monitoring and associated technologies
- Emerging issues and new technologies related to sewers

WORKSHOPS

[Workshop 1: CoUDlabs Metrology Toolbox](#)
23.08.2022, 3:00 pm – 5:00 pm

The CoUDlabs Metrology Toolbox is a toolbox developed within the European project Co-UDlabs and includes applications related to metrology in urban drainage. The workshop aims to inform about the project and introduce the participants to the toolbox. For more information, please visit our website.

[Workshop 2: Data and Models](#)
23.08.2022, 5:00 pm – 7:00 pm

The Data and Models workshop offers a platform for discussion and knowledge exchange within the topics of model and data management. Methods for both will be proposed.

[Workshop 3: YWP-Social Event](#)
25.08.2022, 8:30 pm

The IWA Young Water Professionals will be hosting a Pub-Quiz Thursday night.



TECHNICAL TOURS

Participants will be offered the opportunity to visit Graz' Central Storage Tunnel (CST) – an 8.4 km long storage tunnel built to significantly reduce the pollution loads spilled into the river Mur during CSO events. It collects the combined sewage from 20 CSOs and has a total storage capacity of 94 000 m³.

Tours are offered on:

- Tuesday, 23.08.2022, 1:00 pm – 3:00 pm
- Tuesday, 23.08.2022, 3:00 pm – 5:00 pm
- Friday, 26.08.2022, 3:00 pm – 5:00 pm

WORKING GROUP MEETINGS

The two working groups "Sewer Systems and Processes" and "Metrology" will host Meetings open to everyone on Wednesday, 24.08.2022:

- 5:00 – 5:30 pm:
Sewer Systems and Processes
- 5:30 – 6:00 pm: Metrology



Markus Kaiser, Graz

A big "thank you" to our sponsors:





ksch - AdobeStock

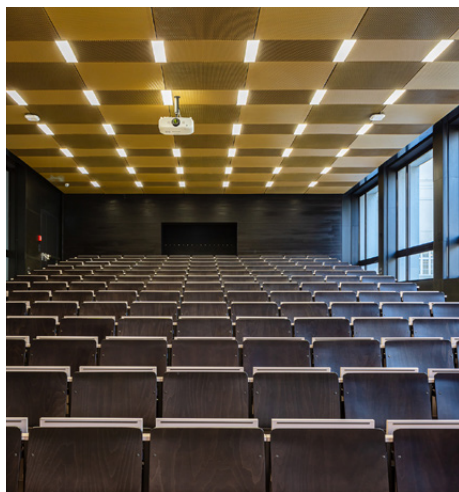
TRIP TO THE SOUTH STYRIAN WINE ROAD

For participants who have the time to stay for Saturday and would like to see a bit more of beautiful Styria, we are going to organize a trip to the South Styrian Wine Road. The program will include a short hike, a stay in local “Buschenschanken” (roughly: wine taverns) and the discussion of topics of rural water management.

Costs for this event are not included in the conference fee and will amount to a public transport ticket and the individual costs for food and drinks.



Markus - AdobeStock



Markus Kaiser, Graz

PROGRAMME

Tuesday, 23 August 2022

1:00 pm	Technical Tour 1: Technical Tours Central Storage Tunnel 1 Location: Lecture Hall BMT Chair: Gruber, Guenter
3:00 pm	Technical Tour 2: Technical Tours Central Storage Tunnel 2 Location: Lecture Hall BMT Chair: Gruber, Guenter * * * Workshop 1: Workshop CoUDlabs Metrology Toolbox Location: Seminar room BMTEG038 Chair: Bertrand-Krajewski, Jean-Luc
5:00 pm – 7:00 pm	Workshop 2: Workshop Data and Models Location: Seminar room BMTEG038 Chair: König, Albert Wilhelm
7:30 pm – 11:30 pm	Social Event 1: Icebreaker Location: TU Graz Rooftop cafeteria

Wednesday, 24 August 2022

8:00 am	Registration 1: Registration and Welcome Coffee Location: Foyer BMT
8:50 am	Plenary 1: Opening Ceremony Location: Lecture Hall BMT Chair: Muschalla, Dirk
9:10 am	Plenary 2: In-Sewer Processes 1 – H2S Location: Lecture Hall BMT Chair: Friedler, Eran <ul style="list-style-type: none">▪ Hydrogen sulfide control in force mains by in-situ electrochemical generation of dissolved ferrous iron Nielsen, Asbjørn Haaning▪ Implementation of Sewer Ventilation and Process Modelling for Corrosion Control Romero-Flores, Adrian▪ Novel methodology for detecting blockages in waste water networks inspired by phase portrait principles Hamilton, Ben
10:20 am	Break 1: Coffee Break , Location: Foyer BMT
10:50 am	Plenary 3: Emerging Issues and New Technologies 1 – SARS-CoV 2 Location: Lecture Hall BMT Chair: Ertl, Thomas Walter <ul style="list-style-type: none">▪ Evaluation of sampling strategies for upstream sampling for SARS-CoV-2 RNA König, Albert Wilhelm▪ SARS-CoV 2 adsorption and desorption capacity of passive samplers for wastewater surveillance Schang, Christelle▪ Developing an open-source, relational data model for recording SARS- CoV-2 signals across multiple sewersheds Therrien, Jean-David
12:00 pm	Plenary 4: Flash Presentations Part 1 Location: Lecture Hall BMT Chair: Muschalla, Dirk <ul style="list-style-type: none">▪ Water quality modelling with rhodamine WT dye using EPA WASP in an urban drain in Thane, India Gupta, Kapi▪ Sewage monitoring to reveal population health and environmental habits – H2020 SCOREWATER PROJECT Barcelona pilot Wagner, Christoph▪ Effects of sewage sampling strategy on the representativeness of grab samples for conductivity and turbidity Watanabe, Ryuichi▪ Comparing Subwatershed Delineation Methods for New York City Parks in ArcGIS Arc Hydro Shetty, Nandan Hara▪ How to get from geodata to sewer models in SWMM by open source Schilling, Jannik/Tränckner, Jens

	<ul style="list-style-type: none"> ▪ Evaluating the Performance of a Local Real Time Control Project for Flood Risk Reduction in Burton, UK Rabab, Saba ▪ Coupling DSM-flux technology and Node biosensor for BOD monitoring in CSO Lipeme, Gislain
12:30 pm	Lunch Break 1: Lunch Break – Buffet , Location: Foyer BMT
1:30 pm	Plenary 5: Monitoring and Associated Technologies 1 – Measurement Methods Location: Lecture Hall BMT Chair: Bertrand-Krajewski, Jean-Luc <ul style="list-style-type: none"> ▪ Towards non-contact pollution monitoring in sewers with hyperspectral imaging Lechevallier, Pierre ▪ On-site measurement of organic micropollutants with transportable HRMS platform at combined sewer overflows Furrer, Viviane ▪ Deployment of a non-invasive optical monitoring system in wastewater pumping stations Moreno-Rodenas, Antonio ▪ Characterisation and development of a novel low-cost radar velocity and depth sensor Catsamas, Stephen
3:00 pm	Break 2: Coffee Break , Location: Foyer BMT
3:30 pm	Plenary 6: Design and Operation 1 – Sewer Inspection Location: Lecture Hall BMT Chair: Vollertsen, Jes <ul style="list-style-type: none"> ▪ Defect Assessment of Sewer Pipes Based on CCTV Inspections Tizmaghz, Zahra ▪ Application of the sewer drone in inspection of large sewers and special structures Tong, Sqi ▪ A stepwise approach to search for illicit connections in the storm sewers of Berlin: using EC and DTS Schilperoort, Remy ▪ Quick 3D scans from the surface for pipeline inspections based on electrical tomography Tuominen, Pekka
5:00 pm	Working Group 1: Sewer Systems and Processes Working Group Meeting Location: Seminar room BMTEG038 Chair: Vollertsen, Jes/Muschalla, Dirk
5:30 pm – 6:00 pm	Working Group 2: Metrology Working Group Meeting Location: Seminar room BMTEG038 Chair: Clemens, Francois
6:30 pm	Social Event 2: Champagne Reception Location: Restaurant Schlossberg
7:30 pm – 10:30	Social Event 3: Conference Gala Dinner Location: Restaurant Schlossberg

Thursday, 25 August 2022

8:00 am	Registration 2: Registration and Welcome Coffee Location: Foyer BMT
8:50 am	Plenary 7: Emerging Issues and New Technologies 2 – Approaches and Techniques Location: Lecture Hall BMT Chair: Kleidorfer, Manfred <ul style="list-style-type: none">▪ Future of Food Waste Disposers: what is the potential for energy recovery at wastewater treatment plants? Nichols, Andy▪ Experimental evaluation of the storm water control performance of a modular blue roof in Mediterranean climate. Campisano, Alberto▪ From household inflows to the WRRF: modelling thermal-hydraulic dynamics with a hybrid framework Figueroa, Alejandro▪ An offline oil-grit separator for trapping oil spills in a storm sewer system Li, James
10:20 am	Break 3: Coffee Break Location: Foyer BMT
10:50 am	Plenary 8: Emerging Issues and New Technologies 3 – SARS-CoV 2 Location: Lecture Hall BMT Chair: Joksimovic, Darko <ul style="list-style-type: none">▪ Whole campus wastewater surveillance of SARS-CoV-2 for COVID-19 outbreak management Friedler, Eran▪ Wastewater based epidemiology: deriving Omicron shedding rates from sewer data langeveld, jeroen▪ Passive Sampling for Sewage Surveillance: A review Karamati Niaragh, Elnaz
12:00 pm	Plenary 9: Flash Presentations – Part 2 Location: Lecture Hall BMT Chair: Tait, Simon <ul style="list-style-type: none">▪ Transforming the Combined Sewers to Separate – Case Helsinki Sänkiah, Leena▪ Automatic generation and design of realistic sewer networks based on open access data Reyes-Silva, Julian David▪ (Sub-)Catchment delineation with different levels of geographical data: which effects on combined sewer overflow modelling? Montoya-Coronado, Violeta A.▪ Development of BANPOL model for water quality predictions in urban sewer system SEO, DONGIL▪ Forensic Sewer Process Modelling – Anticipating a Terrorist Attack Ward, Matthew

	<ul style="list-style-type: none"> ▪ Spacio-temporal and multivariate calibration of an integrated urban wastewater model Mendes, Fernanda ▪ Better understanding in-sewer processes with on-site continuous mass spectrometric analysis of sewer gases Zhu, Mengqi
12:30 pm	Lunch Break 2: Lunch Break – Buffet Location: Foyer BMT
1:30 pm	Plenary 10: Monitoring and Associated Technologies 2 – Data and Uncertainties Location: Lecture Hall BMT Chair: Clemens, Francois <ul style="list-style-type: none"> ▪ Machine learning to improve understanding of pipe failures Kazemi, Ehsan ▪ Using centrality measures, network cross k-function and geographically weighted regression as decision support for operational issues and redesigning sewers Okwori, Emmanuel ▪ Image Based Quantification of Solids Transport and Transformation Processes in Sewer Pipes Zohar, Yonatan ▪ How reusable are your data? - Towards truly FAIR open data for urban drainage Rieckermann, Jörg
3:00 pm	Break 4: Coffee Break Location: Foyer BMT
3:30 pm	Plenary 11: In-Sewer Processes 2 – H2S Location: Lecture Hall BMT Chair: Penn, Roni <ul style="list-style-type: none"> ▪ H2S control through an original channel Lipeme, Gislain ▪ Liquid H2S Online Measurement for Optimized Sewer System Insights and H2S Control Inizan, Marie ▪ Continuous measurement of dissolved sulphide in sewers Vollertsen, Esther
4:40 pm – 6:00 pm	Poster Session Location: Foyer BMT
7:00 pm – 8:00 pm	Social Event 4: Guided City Tour Location: Meeting Point Guided City Tour

Friday, 26 August 2022

8:00 am	Registration 3: Registration and Welcome Coffee Location: Foyer BMT
8:50 am	Plenary 12: In-Sewer Processes 3 – Sediments Location: Lecture Hall BMT Chair: Gupta, Kapil <ul style="list-style-type: none">▪ Improving sediment monitoring strategies based on SWMM-HEAT and temperature sensors Regueiro-Picallo, Manuel▪ Validation of sediment transport models in a stormwater network using high-resolution turbidity data Rojas-Gomez, Karen Lorena▪ First flush assumptions in pollution management for separate stormwater systems: debunking a classical urban (drainage) myth Vezzaro, Luca▪ New approach for condition-based sewer inspection combined with demand-based sewer cleaning assisted through innovative tools Ertl, Thomas Walter
10:20 am	Coffee 5: Coffee Break Location: Foyer BMT
10:50 am	Plenary 13: Sewer-System Impacts 1 – CSOs Location: Lecture Hall BMT Chair: Langeveld, Jeroen <ul style="list-style-type: none">▪ Verification of the Effectiveness of HydroSpin (WSCD) Tagne, Abel▪ HAPPy to Control: A Heuristic And Predictive Policy for RTC van der Werf, Job Augustijn▪ How do you sample annual pollution loads at sewer overflows and outlets during rainy weather? Gruber, Guenter▪ Bacteroides community fingerprints for SourceTracker: a powerful tool to track sewage contamination in recreational water Palacios, Yussi M.
12:20 pm	Lunch Break 3: Lunch Break – Buffet Location: Foyer BMT
1:20 pm	Plenary 14: Monitoring and Associated Technologies 3 – New Concepts Location: Lecture Hall BMT Chair: Djordjević, Slobodan <ul style="list-style-type: none">▪ An innovative, low-cost, small MAD-AS sampler for wastewater sampling in the sewage network WANG, MIAO▪ On dirty water and cheap video: Real-time flow measurements derived from camera footage using an Open-Source ecosystem Tscheikner-Gratl, Franz▪ Molecular analysis of soil and water from urban flood sites to identify seasonal changes in health risk from microbial communities Shucksmith, James

2:30 pm	Closing Ceremony Location: Lecture Hall BMT Chair: Muschalla, Dirk
3:00 pm – 5:00 pm	Technical Tour 3: Technical Tours Central Storage Tunnel 3 Location: Field trip Chair: Gruber, Guenter

Saturday, 27 August 2022

10:00 – 19:00	Social Event 5: Trip to the South Styrian Wine Road Chair: König, Albert Wilhelm
---------------------	--





CONFERENCE ON SEWER PROCESSES AND NETWORKS

24–26 August 2022, Graz, Austria

- ① Lecture Hall BMT
- ② Meeting Point City Tour
- ③ Restaurant SCHLOSSBERG

CONTACT

Institute of Urban Water Management and
Landscape Water Engineering
Graz University of Technology
> spn10@sww.tugraz.at

SPN10
2022 GRAZ, AUSTRIA