

Storm- and Wastewater Informatics

1-day conference - 17 March 2014 - Technical University of Denmark



Out of sight, out of mind, out of control – is this how urban drainage systems should work?

Storm- and Wastewater Informatics (SWI) is a strategic Danish research project with an overall aim to close the knowledge gaps within prediction and control of current and future conditions in integrated urban drainage systems. Major outputs are components of an intelligent real-time decision support system, following a drop of water from the cloud, throughout the sewer-wastewater treatment system and into the receiving waters. After six years of research (2008-13) and a 30 mio DKK investment, the above question is answered with a big “NO”!

“Real time forecasting, optimization and control represent important opportunities to improve the performance of integrated sewer- wastewater treatment systems, in response to new and stricter legal requirements, increased public demand for clean water, and the need to adapt to climate change.”

The conference will present some of the most significant findings from the project, both in terms of research and practical applicability. It also brings in perspectives from abroad and will end with a session looking in the crystal ball to see what will be required and what may become possible in the future within the field. Some of the main questions to be answered at the conference are:

- How long into the future can we forecast rain based on radar measurements?
- How can measurements improve on-line model results?
- Can we use information about forecast uncertainty to improve operation and control of the systems?
- How well can we measure and predict water quality and health hazards in sewers?
- How can research institutes, private companies and public utilities work together?
- Can the water industry link into activities on smart grids and smart cities?
- What are the needs for further developments in the field?
- How can PhD students contribute to increased innovation in the water sector?

The SWI project is partially funded by the Danish Council for Strategic Research, Programme Commission on Sustainable Energy and Environment. The triple-helix project consortium includes the Technical University of Denmark (DTU Environment, DTU Compute and DTU Chemical Engineering), Aalborg University, the Danish Meteorological Institute, two internationally oriented software and technology providers (DHI and Krüger) and 3 of the largest Danish utility companies (HOFOR, Vores Rens and Aarhus Vand). The project educates a range of PhD students and postdoctoral researchers. You will meet some of these as well as other researchers and professionals at the conference.



Venue:

Technical University of Denmark
Anker Engelunds Vej 1
Building 101A
Meeting room 1
2800 Kgs.Lyngby

Conference fee: 1000 DKK
Conference dinner: 300 DKK

Contact: Anitha K. Sharma akush@env.dtu.dk Peter S. Mikkelsen psmi@env.dtu.dk



Registration: www.conferencemanager.dk/SWI

Homepage: www.swi.env.dtu.dk



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Programme (subject to minor changes)

09:30-10:00 Arrival and Breakfast

10:00-12:45 Science from the SWI Project

10:00-10:10 *Welcome and introduction*

Prof. **Peter Steen Mikkelsen** and Project Coordinator **Anitha K. Sharma**, DTU Environment

10:10-10:30 *Experiences with a triple-helix project organization involving research institutes, private companies and public utilities, the SWI story*

Project Coordinator **Anitha K. Sharma**, DTU Environment

10:30-11:00 Weather radars, rain gauges and distrometers – when to use what for forecasting rainfall?
Assoc. Prof. **Michael Rasmussen**, Aalborg University

11:00-11:15 Break (15 min)

11:15-11:45 Models and measurements - data assimilation tools for forecasting states in the integrated sewer-wastewater treatment system

Prof. **Peter Steen Mikkelsen**, DTU Environment

11:45-12:15 Dynamic overflow risk assessment (DORA) for optimization of integrated real time control
Innovation Manager **Morten Grum**, Krüger, Veolia Water Solutions and Technologies

12:15-12:45 Sensors for surrogate measurement of TSS and dissolved COD in urban drainage systems
Prof. **Jean-Luc Bertrand-Krajewski**, INSA-Lyon, France

12.45-14.15 Lunch and Poster session

14:15-15:25 Experiences from the practical water world

14:15-14:35 Integrated real time control of the Copenhagen urban drainage system
Project leader **Jesper Thyme**, HOFOR

14:35-14:55 Wet weather control of wastewater treatment plants based on radar predictions
Head of development **Dines Thornberg**, Vores Rens

14:55-15:25 Real time control and warning system for urban areas and receiving waters: What is going on in Europe (PREPARED Project) and Experiences from Århus, Denmark
Specialist **Lisbeth Birch Pedersen**, DHI

15:25-15:40 Break (15 min)

15:40-16:40 Looking to other sectors and into the future

15:40-16:00 Smart grids, smart cities and how this relates to water
Prof. **Henrik Madsen**, DTU Compute

16:00-16:20 Point of view on how the results can be used in future water management
Waste Water Program Director **Bruno Tisserand**, Veolia Environment and EUREAU

16.20-16.40 Looking in the crystal ball to predict the future – discussion
Facilitated by **Peter Steen Mikkelsen** and **Michael Rasmussen**

16.40-18.00 Poster session, drinks and networking

18.00 Dinner (requires separate registration)

