



**UDM
2018**

11TH INTERNATIONAL CONFERENCE ON URBAN DRAINAGE MODELLING



PROGRAMME

23-26 SEPTEMBER 2018 | PALERMO, ITALY



Conference Organizers/Supporters



Conference Sponsors



Conference is being held under the auspices of



Welcome words

Dear Colleagues,

welcome to the 11th International Conference on Urban Drainage Modelling (UDM2018). The University of Palermo is proud to host this important event which we do hope will enable you to share your research with an international research community and to engage in discussion about the pressing issues on urban drainage.

The conference is organized/supported by four outstanding scientific societies working in the water sector: the International Water Association (IWA), the International Association for Hydro-Environment Engineering and Research (IAHR), the Environmental and Water Resources Engineering | ASCE, the International Environmental Modelling and Software Society (iEMSs).

The conference has nine main topics related to urban drainage (i.e., Drainage and impact mitigation; Frontiers in urban drainage; Receiving water quality; Rainfall in urban areas; Urban hydrologic and hydraulic processes; Tools, techniques and analysis in urban drainage modelling including real-time control; Modelling interactions and integrated systems; Transport and sewer processes including micropollutants and pathogens and Water management, society and climate change) and for each of them a keynote by a referral researcher will be presented. Specifically, the keynotes will be held by the following professors, whose contributions are highly inspiring: Jean-Luc Bertrand-Krajewski (France), David Butler (United Kingdom), Steven Chapra (United States), Ana Deletic (Australia), Anthony Jakeman (Australia), Gustaf Olsson (Sweden), Wolfgang Rauch (Australia), Peter A. Vanrolleghem (Canada).

A total of 300 extended abstracts have been submitted. Each of these was assessed by at least three members of the scientific committee. Overall, 250 extended abstracts have been selected for presentation at the conference, with over 200 oral presentations and around 50 posters. This also involved a detailed review with suggestions for the improvement of the abstracts that may be considered for post-event publication in selected journals. This strict selection was guided by the desire to maintain an high quality of the presented papers. The review process involved nearly 60 individuals who shared their expertise and time, thus providing an invaluable contribution to the scientific and technical excellence papers

The conference has also an intensive social program with one special event per day. This structure was decided with the final idea to foster networking and enjoy the conference favoring a stimulating and pleasant atmosphere.

On behalf of Palermo's University, I do hope that your participation in the conference will give you an opportunity to explore the rest of Italy, to savor its diverse and rich mixture of ethnic traditions, culture, cuisine and religious sites.

We realize that all of you made quite an effort to come, contribute and participate and we feel honored.

The success of the meeting is now in your hands.

Welcome to Palermo.

Giorgio Mannina
Chair of the 11th International Conference
on Urban Drainage Modelling

Program at a glance

	1st Day - 23 Sep 2018	2nd Day - 24 Sep 2018	3rd Day - 25 Sep 2018	4th Day - 26 Sep 2018	
8.30					8.30
9.00		Registration 08.30 - 09.30 (Bldg. 19)			9.00
9.15			Data and Models Working Group Meeting 09.00 - 10.00 (Bldg. 19)	Keynote - W. Rauch (Austria) 09.00 - 09.40 Plenary Hall (Bldg. 7)	9.15
9.30					9.30
9.40		Parallel Platform Session I 09.30 - 10.30 Sessions: A1-B1-C1-D1 (Bldg. 19)	Discussion (9.40-9.55) Transition - Bldg. 7 → Bldg. 19	Discussion (9.40-9.55) Transition - Bldg. 7 → Bldg. 19	9.40
10.00			Parallel Platform Session IV 10.00 - 11.00 Sessions: A4-B4-C4-D4 (Bldg. 19)	Parallel Platform Session VII 10.00 - 11.00 Sessions: A7-B7-C7-D7 (Bldg. 19)	10.00
10.15					10.15
10.30		Coffee break 10.30 - 11.00			10.30
10.45					10.45
11.00					11.00
11.15		Parallel Platform Session II 11.00 - 12.00 Sessions: A2-B2-C2-D2 (Bldg. 19)	Coffee break 11.00 - 11.30	Coffee break 11.00 - 11.30	11.15
11.30			Keynote - A. Deletic (Australia) 11.30 - 12.10 Plenary Hall (Bldg. 7)	Keynote - J.L. Bertrand-Krajewski (France) 11.30 - 12.10 Plenary Hall (Bldg. 7)	11.30
11.45					11.45
12.00			Discussion (12.10-12.25) Transition - Bldg. 7 → Bldg. 19	Discussion (12.10-12.25) Transition - Bldg. 7 → Bldg. 19	12.00
12.10		Lunch 12.00 - 13.00			12.10
12.30			Parallel Platform Session V 12.30 - 13.30 Sessions: A5-B5-C5-D5 (Bldg. 19)	Parallel Platform Session VIII 12.30 - 13.30 Sessions: A8-B8-C8-D8 (Bldg. 19)	12.30
12.45					12.45
13.00					13.00
13.15		Parallel Platform Session III 13.00 - 14.00 Sessions: A3-B3-C3-D3 (Bldg. 19)			13.15
13.30			Lunch 13.30 - 14.30	Lunch 13.30 - 14.30 Meeting of Data and Models Working Group (Room 9)	13.30
13.45		Session Change			13.45
14.00					14.00
14.10		Flash Poster Session I 14.10 - 15.10 Sessions: F1-F2-F3-F4 (Bldg. 19)	Keynote - A. Jakeman (Australia) 14.30 - 15.10 Plenary Hall (Bldg. 7)	Keynote - P. Vanrolleghem (Canada) 14.30 - 15.10 Plenary Hall (Bldg. 7)	14.10
14.30					14.30
14.45			Discussion (15.10-15.25) Transition - Bldg. 7 → Bldg. 19	Discussion (15.10-15.25) Transition - Bldg. 7 → Bldg. 19	14.45
15.00		Transfer to The Royal Palace Palazzo dei Normanni	Parallel Platform Session VI 15.30 - 16.30 Sessions: A6-B6-C6-D6 (Bldg. 19)	Parallel Platform Session IX 15.30 - 16.30 Sessions: A9-B9-C9-D9 (Bldg. 19)	15.00
15.10					15.10
15.30					15.30
15.45					15.45
16.00		Open Ceremony 16.00 - 17.00 Sala Gialla "Piersanti Mattarella"	Coffee break 16.30 - 17.00	Coffee break 16.30 - 17.00	16.00
16.15					16.15
16.30					16.30
16.45					16.45
17.00					17.00
17.15		Keynote - D. Butler (United Kingdom) 17.00 - 17.30	Flash Poster Session II 17.00 - 18.00 Sessions: F5-F6-F7-F8 (Bldg. 19)	Poster Session 17.00 - 17.30 (Bldg. 19)	17.15
17.30					17.30
17.45		Discussion (17.30-17.45)		Closing Ceremony & YR Award 17.30 - 18.00 Plenary Hall (Bldg. 7)	17.45
18.00		Coffee break 17.45 - 18.15			18.00
18.15					18.15
18.45		Keynote - G. Olsson (Sweden) 18.15 - 18.45			18.45
19.00		Keynote - S. Chapra (USA) 18.45 - 19.15			19.00
19.15					19.15
19.30	Registration open 19.00 - 20.00	Discussion & IWA Ads (19.15-19.30)			19.30
20.00	Meet & greet get together The large courtyard of the Theatines Convent 19.30 - 23.00	Welcome Cocktail Foyer and Gardens of the Royal Palace "Palazzo dei Normanni" 19.30 - 21.30	Light sicilian dinner The Botanic Garden 19.30 - 23.00	Gala Dinner Teatro Massimo Opera House 19.30 - 23.30	20.00
20.15					20.15
21.30					21.30
23.00					23.00
23.30					23.30

Scientific Programme Committee

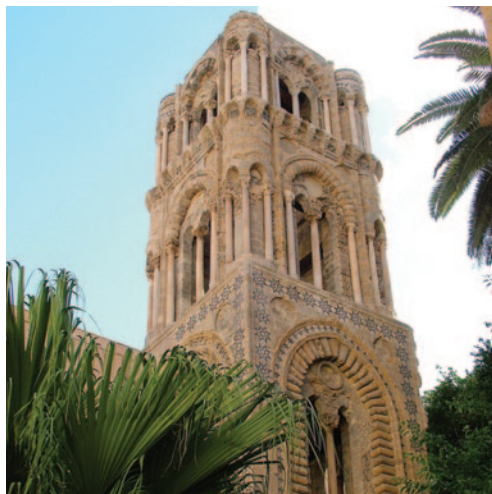
Giorgio Mannina, Italy– Conference Chair

Dan Ames, USA
Karsten Arnbjerg-Nielsen, Denmark
Giuseppe Aronica, Italy
Richard Ashley, UK
Simon Beecham, Australia
Vincenzo Belgiorno, Italy
Lorenzo Benedetti, Croatia
Jean-Luc Bertrand-Krajewski, France
David Butler, UK
Alberto Campisano, Italy
Pierluigi Claps, Italy
Francois Clemens, The Netherlands
Ana Deletić, Australia
Slobodan Djordjevic, UK
Thomas Einfalt, Germany
Raymond A. Ferrara, USA
Tim Fletcher, Australia
Lothar Fuchs, Germany
Haifeng Jia, China
Ivana Kabelkova, Czech Republic
Manfred Kleidorfer, Austria
Jeroen Langeveld, The Netherlands
Yanchen Liu, China
Jacek Makinia, Poland
Cedo Maksimovic, UK
Jiri Marsalek, Canada
David McCarthy, Australia
Peter Steen Mikkelsen, Denmark

Dirk Mushalla, Austria
Fumiyuki Nakajima, Japan
Patrizia Piro, Italy
Francesco Pirozzi, Italy
Wolfgang Rauch, Austria
Jorg Rieckermann, Switzerland
Gilles Rivard, Canada
Juan Pablo Rodriguez, Colombia
Ignasi Rodriguez-Roda, Spain
Takashi Sakakibara, Japan
John Sansalone, USA
Manfred Schuetze, Germany
Keshab Sharma, Australia
Robert Sitzenfrei, Austria
Virginia Stovin, UK
Geoff Syme, Australia
Simon Tait, UK
Soren Thorndahl, Denmark
Peter A. Vanrolleghem, Canada
Gaspere Viviani, Italy
Jes Vollertsen, Denmark
Patrick Willems, Belgium
Mariachiara Zanetti, Italy

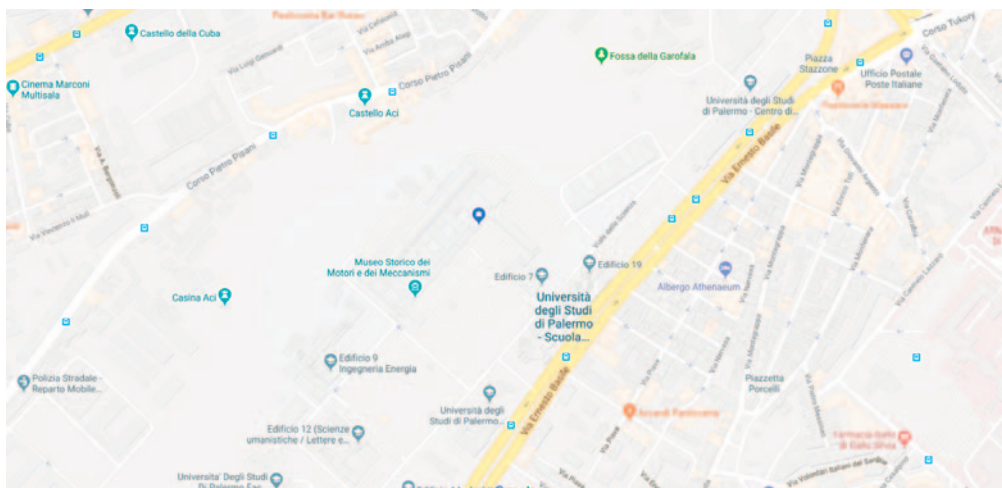
Organizing committee

Angela Candela, Italy
Giovanni B. Ferreri, Italy
Goffredo La Loggia, Italy
Enrico Napoli, Italy
Michele Torregrossa, Italy
Gaspere Viviani, Italy



Conference Venue

The UDM sessions will be held at the modern Conference building located in within the University of Palermo's Campus. The opening session will be held at the Royal Palace (Palazzo dei Normanni) which is the venue of the Sicilian Parliament. The parallel sessions will be at the Palermo University's Campus which is very close to the city center and is easy to be reach; the main entrance to Campus is just a few meters from the underground station and is also reached by the urban bus service. The University of Palermo's Campus is located within the Park d'Orléans. The park was built in the early nineteenth century as a reserve d'Orléans Palace, which currently houses the Presidency of the Sicilian Region. It is also an experimental catchment with measuring (quality and quantity) of an area of 10 ha stations.



Location of the Event - Palermo

Palermo, the capital city of Sicily, is located in the heart of the Mediterranean sea. Built and grown over the course of centuries, Palermo conveys a range of diverse cultures and traditions, from the Phoenicians to the Romans, Arabs, Normans and Spanish-French people, until the recent unification within the Italian kingdom. Nestled in La Conca d'Oro (the golden shell) and roughly embraced by Monte Pellegrino and Capo Zafferano, Palermo was declared “the most beautifully situated town in the world” by Oscar Wilde – rightly, in many people's eyes. In front of the conference venue, the Foro Italico, a sea side marina walk populated by Palermo citizens, which separates the city center from the sea side, reaching the gate of the city harbour the third largest commercial harbour in Italy. Here you can enjoy a walk, eating ... and, as some of you may have already experienced... these are just the “starters”.



Social Programme

Sunday 23 September - The courtyard of the Theatines Convent

The large courtyard of the ancient Theatines Convent (17th century), today the School of Legal and Economic Sciences of the University of Palermo, with refreshing drinks and some typical Sicilian delicacies.

The welcome venue is in the Palermo historic center close to Quattro Canti, officially known as “Piazza Vigliena”, a Baroque square which is at the crossing of the two principal streets in Palermo, the “Via Maqueda” and the “Corso Vittorio Emanuele”, and recognized as one of the first major examples of town planning in Europe.



Monday 24 September - The Royal Palace

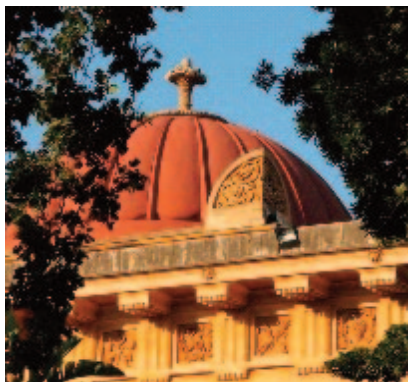
The Palazzo dei Normanni, the Royal Palace of Palermo, was the seat of the Kings of Sicily during the Norman domination. The building is the oldest royal residence in Europe, the home of the rulers of the Kingdom of Sicily and imperial seat with Frederick II and Conrad IV the Svevian. The palace stands in what is the highest point of the ancient center of the city, just above the first Punic settlements, whose remains can still be found in the basement. The palace is today the seat of the Sicilian Parliament and Sicilian Regional Assembly. The Sicilian Parliament is the oldest in the world (jointly, with Island and orl iland Fare Oer). Indeed, the first meeting (assise) was convened by the King Ruggero in 1130.



Social Programme

Tuesday 25 September - Botanic garden

The Botanic Garden was founded by the University of Palermo in 1789. The garden is the largest in Europe. The study of botany originally started and developed in Botanical Garden until 1795, the year the garden had its official opening. Today the Botanical Garden covers an area of 10 hectares, thanks to the enlargements undertaken in 1906. As Villa Giulia, a public garden built at the end of 18th century, the Botanical Garden includes attractive statues, bas-reliefs and other interesting features. Over its 200 years of history, this garden has played an important role in the study and distribution of endless different species of tropical and subtropical flora in Sicily, Europe and throughout the Mediterranean region.



Wednesday 26 September - Teatro Massimo

The opera house was designed and overseen by the Italian architect Giovan Battista Filippo Basile, who was well known in Sicily for his previous cathedral restoration design in the city of Acireale, as well as garden and villa designs in the city of Palermo and Caltagirone. The Teatro Massimo is the largest theatre in Italy (and the third largest opera house in Europe). Realized in the late-Renaissance style, the auditorium was planned for 3,000 people, but, in its current format, it seats 1,350, with 7 tiers of boxes rising up around an inclined stage, and shaped in the typical horseshoe style.



Social Programme

Wednesday 26 September - Pompeian Hall

The Pompeian hall is a very special room of circular shape of Teatro Massimo. It was originally thought as a smoking room and exclusively reserved for the nobles. It is also called Echo Room for its perfect acoustics: the effect produced speaking inside it goes more and more increasing as you get closer to the center.



Keynote Speakers



Prof. Jean-Luc Bertrand-Krajewski - INSA, France

Jean-Luc Bertrand-Krajewski is professor at the Civil Engineering and Urban Planning Department at the National Institute for Applied Sciences (INSA) Lyon, France. He is director of Laboratoire Déchets, Eaux, Environnement, Pollutions - Laboratory on Wastes, Water, Environment and Pollution at INSA, Lyon. His main research topics are related to urban hydrology and urban water systems.



Prof. David Butler - University of Exeter, UK

David Butler is professor of Water Engineering at the University of Exeter, UK. He has over 30 years experience as an internationally-leading researcher, teacher and consultant in the water sector. At Exeter, he is a Director of the Centre for Water Systems, formerly Associate Dean for Research in the College of Engineering, Mathematics & Physical Sciences. His main research topics are related to urban water management.



Prof. Steven Chapra - Tufts University, USA

Steven Chapra is professor at the Department of Civil and Environmental Engineering, Tufts University. His general research interests focus on surface water-quality modeling and advanced computer applications in environmental engineering. He has developed several environmentally-oriented software packages, including QUAL2K and LAKE2K, which are widely used for river and lake water-quality modeling.



Prof. Ana Deletic - University of New South Wales, Australia

Ana Deletic is professor and Pro Vice-Chancellor at the University of New South Wales, Sydney, Australia. She has played pivotal roles on several state, national and international advisory committees. She received the Victoria Prize for Science and Innovation (Physical Sciences). Her main research topics are related to urban hydrology and urban water systems, field monitoring and metrology.



Prof. Anthony Jakeman - Australian National University

Anthony Jakeman is Professor at The Australian National University and Director of the Integrated Catchment Assessment and Management Centre. His research interests focus on mathematics and hydrological modelling, integrated assessment methods, decision support systems. Jakeman is on the highly cited researcher list by Thomson Reuters (top 1% in Computer Science), 2015. In 2016 he was elected Fellow of the American Geophysical Union.

Keynote Speakers



Prof. Gustaf Olsson, Lund University – Sweden

Gustaf Olsson is Professor Emeritus at Lund University, Sweden since 2006. He has devoted his research to control and automation in water systems, electrical power and process industries. He has served in various positions within the International Water Association (Director, Honorary member). He has received the Lund University pedagogical award for “distinguished achievements in the education”. In 2014 he has been appointed Distinguished Fellow of the International Water Association.



Prof. Wolfgang Rauch - University of Innsbruck, Austria

Wolfgang Rauch is professor for urban water management at the University Innsbruck. In his research, he has focused on the development and analysis of integrated drainage system models as well as on numerical aspects in model and software development. Wolfgang Rauch is an active member of the international community and served e.g. as chairman of the JCUD and of the IWA Program Committee. He is currently editor in chief of the journal WS&T.



Prof. Peter A. Vanrolleghem - Laval University, Canada

Peter Vanrolleghem is full professor at the Civil and Water Engineering Department of Université Laval, Canada. Since 2006 he holds the Canada Research Chair on Water Quality Modelling, allowing him to start up the modelEAU research group at Université Laval in Quebec City, Canada. His research topics focus on modeling, monitoring and control of water systems, using mathematical models to better understand urban wastewater systems.





PROGRAMME

23-26 SEPTEMBER 2018



UDM2018 23-26 SEP | PALERMO - ITALY

SEPTEMBER 24 (MONDAY)					
	09:30-10:30	11:00-12:00	13:00-14:00	14:10-15:10	17:00-17:30
PARALLEL #1 ROOM 9	A1: Infiltration processes Moderator Elizabeth Fassman-Beck	A2: Rainfall harvesting and smart systems Moderator David Butler	A3: Resilience and green infrastructure Moderator Karsten Ambjerg-Nielsen	F1: Drainage and impact mitigation Moderator Luca Vezzaro	
PARALLEL #2 ROOM 10	B1: Receiving water quality modelling Moderator Jeroen Langeveld	B2: Stormwater Control and uncertainty Moderator Ana Deletic	B3: Hydrodynamic for quality control Moderator Ilaria Gneco	F2: Frontiers in urban drainage Moderator Manfred Kleidorfer	Keynote#1 David Butler
PARALLEL #3 ROOM 11	C1: Integrated modelling and stormwater control Moderator Yandhen Liu	C2: Green Infrastructure modelling Moderator Christian Berretta	C3: From quantity to quality issues for LD modelling Moderator Mathias Uhl	F3: Rainfall Moderator Seren Thorndahl	Keynote#2 Gustaf Olsson
PARALLEL #4 ROOM 12	D1: Frontiers in urban drainage Moderator Manfred Schuetze	D2: Stormwater management and monitoring Moderator Peter M. Bach	D3: Flooding and risk modelling Moderator Slobodan Djordjevic	F4: Urban Hydrology Moderator Lothar Fuchs	Moderators Ana Deletic and Mariachiara Zanetti
UDM TOPICS:	1. Drainage and Impact Mitigation	2. Frontiers in urban drainage	3. Receiving water body	4. Rainfall	5. Urban Hydrology & Flooding
	7. Interaction and integrated systems	8. Transport and sewer processes	9. Urban water management		6. Tools, techniques and analysis

Day 1	Sunday 23 September 2018	
19:00-19:30	Registration open (Theatines Convent - Via Maqueda 172)	
19:30-23:00	Meet & greet get together	
Day 2	Monday 24 September 2018	
08:30-09:30	Registration (Bldg. 19 - Viale delle Scienze)	
09:30-10:30	Parallel Platform Session I A1-B1-C1-D1 (Bldg. 19)	
09:30-10:30 Room 9	A1: Infiltration processes (Moderator: Elizabeth Fassman-Beck)	
09:30-9:45	Salar Haghighatafshar - <i>A physically-based model for mesoscale SuDS – an alternative to large-scale simulations</i> Salar Haghighatafshar and Magnus Larson	
09:45-10:00	Christoph Brepols - <i>Model-Based Sewer Network Control - Practical Experiences</i> Christoph Brepols	
10:00-10:15	Ignacio Andrés-Doménech - <i>Nitrogen in infiltrated water from pervious pavements under different rainfall regimes and pollution build-up levels</i> Carmen Hernandez-Crespo, Miriam Fernandez-Gonzalvo, Miguel Martin and Ignacio Andres-Domenech	
10:15-10:30	Jeremie Bonneau - <i>Where does infiltrated stormwater go? Interactions with vegetation and sub-surface anthropogenic features</i> Jeremie Bonneau, Tim D. Fletcher, Justin F. Costelloe, Matthew J. Burns, Robert B James and Peter J Poelsma	
09:30-10:30 Room 10	B1: Receiving water quality modelling (Moderator: Jeroen Langeveld)	
09:30-9:45	Deborah Panepinto - <i>Analysis of the Po River Environmental Compatibility</i> Deborah Panepinto, Mariachiara Zanetti, Eugenio Lorenzi and Margherita Deceglia	
09:45-10:00	Antonio Manuel Moreno Rodenas - <i>Parametric inference in large water quality river systems</i> Antonio M. Moreno Rodenas, Jeroen Langeveld and Francois Clemens	
10:00-10:15	Mia Bondelind - <i>Transport of Traffic-Related Microplastic Particles in Receiving Water</i> Mia Bondelind, Ailinh Nguyen, Ekaterina Sokolova and Karin Björklund	
10:15-10:30	Liliane Manny - <i>Policy Analysis for Better Protection of Receiving Waters during Wet Weather</i> Liliane Manny, Manuel Fischer and Jörg Rieckermann	
09:30-10:30 Room 11	C1: Integrated modelling and stormwater control (Moderator: Yanchen Liu)	
09:30-9:45	Claudia Campusano Garcia - <i>Implementing sustainable sanitation in an integrated Model – A straightforward approach for long-term simulation</i> Claudia Campusano Garcia and Inka Kaufmann Alves	

9:45-10:00	Olivia Bailey - <i>Developing a Stochastic Sewer Input Model to Support Sewer Design Under Water Conservation Measures</i> Olivia Bailey, Jan Hofman, Tom Arnot, Zoran Kapelan, Mirjam Blokker and Jan Vreeburg
10:00-10:15	Nahad Rezazadeh Helmi - <i>Developing a new modelling tool to allocate Low Impact Development practices in a cost optimized method</i> Nahad Rezazadeh Helmi, Boud Verbeiren, Mohamad El Hattab, Ana Mijic and Willy Bauwens
10:15-10:30	Matthew J Burns - <i>Understanding the impacts of stormwater control measures at the streetscape scale</i> Matthew Burns, Tim Fletcher, Peter Poelsma, Robert James, Joshphar Kunapo and Tim Craig
09:30-10:30 Room 12	D1: Frontiers in urban drainage (Moderator: Manfred Schütze)
09:30-09:45	Peter A. Vanrolleghem - <i>Frontiers in Urban Drainage - How will Ubiquitous Sensing Change Urban Drainage Management?</i> Jörg Rieckermann, Frank Blumensaat, João Paulo Leitão, Christoph Ort, Andreas Scheidegger, Peter A. Vanrolleghem and Kris Villez
09:45-10:00	James Shucksmith - <i>Understanding Pollutant Transport in Urban Floodwater for Health Impact Assessment using a Physical Scale Model</i> James Shucksmith, Matteo Rubinato, Ricardo Martins, Georges Kesserwani, Jorge Leandro and Slobodan Djordjevic
10:00-10:15	Maria Pinto - <i>Holistic Water Cycle Management in Priority Growth Area in Sydney's West by Managing the Water Cycle Strategies of Individual Precincts</i> Maria Pinto
10:15-10:30	Constantin Radu Gogu - <i>Interaction between City Subsurface Infrastructure and Groundwater</i> Constantin Radu Gogu, Mohamed Amine Boukhemacha, Dragos Gaitanaru and Irina Moraru
10:30-11:00	Coffee break
11:00-12:00	Parallel Platform Session II A2-B2-C2-D2 (Bldg. 19 - Viale delle Scienze)
11:00-12:00 Room 9	A2: Rainfall harvesting and smart systems (Moderator: David Butler)
11:00-11:15	Xiaowen Liu - <i>The rainfall interception performance of urban tree canopy in Beijing, China</i> Xiaowen Liu and Qing Chang
11:15-11:30	Peter Melville-Shreeve - <i>Quantifying Long-term Benefits of Multi-Purpose Rainwater Management Systems</i> Peter Melville-Shreeve and David Butler
11:30-11:45	Rodrigo Santos - <i>Study for the proper management of rainwater withing the Mexican Water Technology Institute</i> Rodrigo Santos-Tellez, Oscar Llaguno Guilberto, Manuel Rodriguez Varela and Manuel Figueroa Mendiola
11:45-12:00	Antonio Lastra - <i>Development of a smart system for the operation of a complex sanitation system. A study case: Madrid</i> Antonio Lastra, Monica Ortega, Alejandro Pinilla, Joaquin Suarez, Jerónimo Puertas, Jose Anta and Xavier Falcó

11:00-12:00
Room 10**B2: Stormwater Control and uncertainty (Moderator: Ana Deletic)**

11:00-11:15

Nils Kändler - *Controlling Stormwater Runoff from Impermeable Areas by Using Smart Inlets*

Nils Kändler, Ivar Annus, Anatoli Vassiljev, Raido Puust and Katrin Kaur

11:15-11:30

Matej Radinja - *Multi-criteria Evaluation of Sustainable Urban Drainage Systems*

Matej Radinja, Joaquim Comas, Lluís Corominas and Nataša Atanasova

11:30-11:45

Elizabeth Fassman-Beck, Ph.D. - *Exploring Uncertainty in Uncalibrated Bioretention Models*

Elizabeth Fassman-Beck and Firas Saleh

11:45-12:00

Anja Randelović - *Assessing uncertainty of a biofilter micropollutant transport model MPIRe*

Anja Randelovic, Kefeng Zhang, David McCarthy and Ana Deletic

11:00-12:00
Room 11**C2: Green Infrastructure modelling (Moderator: Christian Berretta)**

11:00-11:15

Camilla Tuomela - *Modelling Stormwater Pollutant Reduction with LID Scenarios in SWMM*

Camilla Tuomela, Daniel Jato-Espino, Nora Sillanpää and Harri Koivusalo

11:15-11:30

Ilaria Gnecco - *Enhancing the Retention Performance of a Small Urban Catchment by Green Roofs*

Anna Palla, Ilaria Gnecco and Paolo La Barbera

11:30-11:45

Marina Batalini de Macedo - *LID quantity and quality efficiencies in a subtropical urban catchment*

Cesar Do Lago, Marina de Macedo and Eduardo Mendiondo

11:45-12:00

Juan Pablo Rodríguez Sánchez - *A prioritization tool for SUDS planning in large cities by coupling an Urban Drainage Model with Mixed Integer Linear Programming*

Maria Narine Torres Cajiao, Zhenduo Zhu and Juan Pablo Rodriguez Sanchez

11:00-12:00
Room 12**D2: Stormwater management and monitoring (Moderator: Peter M. Bach)**

11:00-11:15

Ditte Reinholdt Jensen - *Early stage planning tools for stormwater quantity and quality management in Denmark and China*

Ditte Marie Reinholdt Jensen, Sara Maria Lerer, Luca Vezzaro, Hjalte Jomo Danielsen Sørup, Karsten Arnbjerg-Nielsen, Xuyong Li and Peter Steen Mikkelsen

11:15-11:30


Scott Struck - *Modelling for Integrated Stormwater Management of the Renfrew Neighbourhood: A Pilot Study*

Scott Struck, Marc Leisenring, Lucas Nguyen, David Seeliger, Bert van Duin, Pablo Lopez Hernandez and Joshua Cantone

11:30-11:45

Takuma Kiyosu - *Study on Realization of Storm Water Sewerage with Water Level Monitoring by the Use of Inundation Simulation*

Takuma Kiyosu, Kaoru Kariya, Isao Ideta and Hidekazu Matsuoka

Day 2	Monday 24 September 2018	 UDM 2018
11:45-12:00	Karl-Erich Lindenschmidt - <i>Interfacing stakeholder involvement into a surface water-quality modelling system for water management and policy development</i> Karl-Erich Lindenschmidt, Eric Akomeah, Helen Baulch, Lisa Boyer, John-Mark Davies, Elmira Hassanzadeh, Luis Morales Marin, Graham Strickert and Michelle Wauchope	
12:00-13:00	Lunch	
13:00-14:00	Parallel Platform Session III A3-B3-C3-D3 (Bldg. 19 - Viale delle Scienze)	
13:00-14:00 Room 9	A3: Resilience and Green infrastructure (Moderator: Karsten Arnbjerg-Nielsen)	
13:00-13:15	Tanveer Adyel - <i>Shifts of Resilience and Recovery of Aquatic Metabolism in Stormwater Green Infrastructure</i> Tanveer Adyel	
13:15-13:30	David Ramier - <i>FAVEUR- A Simple Model for Design Extensive Green Roofs</i> David Ramier, Emmanuel Berthier and Bernard de Gouvello	
13:30-13:45	Varnede Lucie - <i>Modelling of Green Permeable Car Park Water Retention</i> Lucie Varnède, David Ramier, Pierre Georgel and Marie-Christine Gromaire	
13:45-14:00	Dazhen Zhang - <i>Resilience and its relation to system structure of combined sewer systems: virtual case study based on stochastic generation</i> Dazhen Zhang, Xin Dong and Siyu Zeng	
13:00-14:00 Room 10	B3: Hydrodynamic for quality control (Moderator: Ilaria Gnecco)	
13:00-13:15	Manuel Regueiro Picallo - <i>Flume test facility for the study of sediment transport in sewer pipes with raw wastewater</i> Tanveer Adyel	
13:15-13:30	Tree Sn Chan - <i>Flow Features of an Unstable Tangential Vortex Intake</i> Shu Ning Chan, Q.S. Qiao and J.H.W. Lee	
13:30-13:45	John Sansalone - <i>Can a surface overflow model predict particulate matter separation of unit operations?</i> Subba-Srikanth Pathapati and John Sansalone	
13:45-14:00	Dhruv Mehta - <i>Numerical and CFD-based modelling of concentrated domestic slurry in turbulent flow through circular pipes</i> Dhruv Mehta, Adithya Krishnan Thota Radhakrishnan, Jules van Lier and Francois Clemens	
13:00-14:00 Room 11	C3: From quantity to quality issues for LID modelling (Moderator: Mathias Uhl)	
13:00-13:15	Ambika Khadka - <i>The Effects of LID-based Urban Designs on Water Balance</i> Ambika Khadka, Teemu Kokkonen, Elisa Lähde, Tero Niemi, Nora Sillanpää and Harri Koivusalo	
13:15-13:30	Virginia Stovin - <i>Seasonal variations in green roof hydrology</i> Simon De-Ville and Virginia Stovin	

13:30-13:45	Thomas Larm - <i>Modelling different types of stormwater treatment facilities considering irreducible concentrations</i> Thomas Larm and Anna Wahlsten
13:45-14:00	Christian Berretta - <i>Dissolved phosphorus treatment in stormwater biofilters enhanced with media amendments</i> Andrea Aiello, Christian Berretta and Martin Tillotson
13:00-14:00 Room 12	D3: Flooding and risk modelling (Moderator: Slobodan Djordjevic)
13:00-13:15	Søren Thorndahl - <i>Influence of flood water contribution from multiple sources in extreme event statistics of urban flooding</i> Søren Thorndahl, Damian Murla-Tuyls, Rasmus Vest Nielsen, Marc Schleiss and Jonas Olsson
13:15-13:30	Giovanna Grossi - <i>Flood risk mitigation in a Mediterranean Urban Area: the case study of Rossano Scalo (CS – Calabria, Italy)</i> Patrizia Piro, Mario Maiolo, Vito Cataldo Talarico, Salvatore Falco, Gennaro Nigro, Michèle Pezzagno, Filippo Carlo Pavesi, Francesca Berteni and Giovanna Grossi
13:30-13:45	Juan Naves - <i>Use of a 2D shallow waters model to assess the physical model topography obtained with a low cost photogrammetric technique</i> Juan Naves, Jose Anta, Jerónimo Puertas, Manuel Regueiro-Picallo, Joaquín Suarez and Esteban Sañudo
13:45-14:00	Matthew Moy de Vitry - <i>Calibrating urban flood models with qualitative probabilistic flooding information extracted from CCTV footage</i> Matthew Moy de Vitry, Simon Kramer, Kris Villez, Jan Dirk Wegner and Joao P Leitao
14:00-14:10	Session Change
14:10-15:10	Flash poster - Session I F1-F2-F3-F4 (Bldg. 19 - Viale delle Scienze)
14:10-15:10 Room 9	F1: Drainage and impact mitigation (Moderator: Luca Vezzaro)
14:10-14:13	David McCarthy - <i>Model Testing and Laboratory Validation of Real-Time Control Strategy for Stormwater Biofilters</i> Pengfei Shen, Ana Deletic and David McCarthy
14:13-14:16	Siyu Zeng - <i>A Method to Identify Key Sub-catchments for LID Placement based on Monte Carlo Sampling</i> Hao Guo, Siyu Zeng and Xin Dong
14:16-14:19	Ashley Wright - <i>Assessing stakeholder receptivity to flood mitigation adaptation pathways</i> Jashley Wright, Dwinanti Marthanty, Christoph Brodnik and Christian Urich
14:19-14:21	Zhangjie Peng - <i>Internal fluctuations in green roof substrate moisture content during a storm event</i> Zhangjie Peng and Virginia Stovin
14:21-14:24	Eero Assmuth - <i>Impact of biochar on treatment performance of roadside sand filters – field monitoring and geochemical modelling</i> Eero Assmuth, Nora Sillanpää, Laura Wendling and Harri Koivusalo

14:24-14:27 **Snezana Gavric** - *Modelling long-term retention of conservative particulate metals (Cu, Pb, Zn) by grass swales using soil chemistry data*
Snežana Gavrić, Thomas Larm, Heléne Österlund, Jiri Marsalek, Anna Wahlsten and Maria Viklander

14:27-14:30 **Mohamad El Hattab** - *Adaptation of SuDS Modelling Complexity to End-Use Application*
Mohamad El Hattab and Ana Mijic

14:30-14:33 **Kerry Rhodes and Vanessa Greaves** - *Water Recycling Long Term Plan for Managing Growth Risk*
Kerry Rhodes and Vanessa Greaves

14:10-15:10 Room 10 **F2: Frontiers in urban drainage (Moderator: Manfred Kleidorfer)**

14:10-14:13 **Jiri Prochazka** - *Swinging self-cleaning screen bars the Tube Hobas CSO Chamber, their physical properties and design*
Jiri Prochazka, Jaroslav Pollert and Ondrej Svanda

14:13-14:16 **Alexandra Finotti** - *Modelling bioretention systems*
Alexandra Finotti and Marie Christine Gromaire

14:16-14:19 **Martina Zelenakova** - *Surface Runoff in Urban Area – Case Study*
Martina Zeleňáková, Zuzana Vranayová, Adam Repel and Daniela Kaposztasová

14:19-14:21 **Rocco Palmitessa** - *Urban Tunnel Systems for Conveyance and Storage of Storm- and Wastewater: Features, Classification, and Modelling*
Rocco Palmitessa, Morten Borup and Peter Steen Mikkelsen

14:21-14:24 **Mark Randall** - *Continuous SWMM modelling of LID infrastructure in the Upper Qing Catchment, Beijing*
Mark Randall and Marina Bergen Jensen

14:24-14:27 **Ondrej Svanda** - *Development of Screening Methods for Secondary Settling Tanks Monitoring and Optimization*
Ondřej Švanda, Jaroslav Pollert and Iva Johanidesová

14:27-14:30 **Maria Fernanda Nóbrega dos Santos** - *Exploring the Use of Low Impact Development Strategies in a Low-Income Settlement in São Carlos, Brazil*
Maria Fernanda Nóbrega Dos Santos, Anaí Floriano Vasconcelos and Ademir Paceli Barbassa

14:10-15:10 Room 11 **F3: Rainfall (Moderator: Søren Thorndahl)**

14:10-14:13 **Christoffer Bang Andersen** - *Investigation of Impacts of Spatial Variability and Motion of Rainfall in Urban Drainage Modelling*
Christoffer B. Andersen and Søren Thorndahl

14:13-14:16 **Jonas W. Pedersen** - *Performance of High-Resolution Numerical Weather Predictions with a Rapid Updating Cycle for Urban Runoff Forecasting*
Jonas Wied Pedersen, Luca Vezzaro, Henrik Vedel, Henrik Madsen and Peter Steen Mikkelsen

14:16-14:19 **Tanja Vonach** - *Rain Gauge vs. Radar Measurements - Modelling an Extreme Rain Event with High Spatial Variability*
Tanja Vonach, Thomas Einfalt, Wolfgang Rauch and Manfred Kleidorfer

14:19-14:21	Maciej Mrowiec - <i>Influence of dynamic properties of rainfall on urban drainage infrastructure</i> Maciej Mrowiec, Ewa Ociepa and Robert Malmur
14:21-14:24	Tala Kanso - <i>Hydrological Modelling of a Road-side Vegetated Filter Strip: Validation of a Coupled Two Dimensional Overland Flow Model</i> Tala Kanso, Marie-Christine Gromaire, David Ramier and Ghassan Chebbo
14:24-14:27	Cecilie Thrysoe - <i>Importance of Subdivision Resolution of Surrogate Models for Emulating Catchment Response and Surcharge</i> Cecilie Thrysoe, Morten Borup and Karsten Arnbjerg-Nielsen
14:27-14:30	Andrew Bailey - <i>The Use of an Autocorrelation Function to Determine Urban Hydrological Catchment Characteristics</i> Andrew Bailey, Alma Schellart and Simon Tait
14:30-14:33	Xin Dong - <i>Assessing cost-effectiveness of different system structural characteristics in enhancing resilience of urban drainage systems</i> Zhiwei Xu, Yinan Zhao, Xin Dong and Pengfei Du
14:10-15:10 Room 12	F4: Urban hydrology (Moderator: Lothar Fuchs)
14:10-14:13	Marcelo Miguez - <i>Multilayer Modelling as a Supporting Tool for Flood Diagnosis and Drainage System Design</i> Marcelo Gomes Miguez, Fernanda Dias Radesca, Aline Pires Veról, Matheus Martins de Sousa and Laurent Feu Grancer Silva Oliveira
14:13-14:16	Johannes Leimgruber - <i>Sensitivity of water balance components to green roof parameters</i> Johannes Leimgruber, Gerald Krebs and Dirk Muschalla
14:16-14:19	Nina Voßwinkel - <i>Transport capability of intake vortices at horizontal intake structures</i> Nina Voßwinkel, Andreas Schlenkhoff, Jörg Steinhardt and Rainer Mohn
14:19-14:21	Yanchen Liu - <i>Uncertainty analysis of pollutant-hydrograph model in assessing in-flow and infiltration of sanitary sewer system</i> Yanchen Liu
14:21-14:24	Boris Richter - <i>Integration of green areas into a suburban flood model</i> Boris Richter, Christine Stapel and Jens Tränckner
14:24-14:27	Matheus Sousa - <i>How important is the Physical interpretation and the role of the model user in urban flooding simulation?</i> Matheus Sousa, Marcelo Miguez, Antonio de Oliveira and Bianca Maria Da Silva
14:27-14:30	Osvaldo Rezende - <i>Urban Floods Resilience Assessment Framework</i> Beatriz Franco, Antonio de Oliveira, Ana Caroline Jacob and Marcelo Miguez
14:30-14:33	Adithya - <i>Challenge of Transport: Exploring the Limit of Gravity Sewers to Transport Concentrated Domestic Slurries</i> Adithya Krishnan Thota Radhakrishnan, Jeroen Langeveld, Jules van Lier and Francois Clemens

15:10-16:00 **Transfer to The Royal Palace - Palazzo dei Normanni**

16:00-17:00 **Open Ceremony - Sala Gialla "Piersanti Mattarella"**

Greetings from the Authorities

On. Prof. Roberto Lagalla

Regional Councillor for educational training; Delegate of the President of Sicilian Region

On. Prof. Lorenzo Fioramonti

Secretary of the Ministry of Education, Research and University

On. Prof. Leoluca Orlando

Mayor of the Town of Palermo

Prof. Fabrizio Micari

16:00-16:45 *Rector of Palermo University*

Prof. Maurizio Carta

President of the Polytechnic School - Palermo University

Prof. David McCarthy

Chair of the International Working Group on Data & Models (IWA)

Prof. Jeroen Langeveld

Chair of the IWA/IAHR Joint Committee on Urban Drainage

Prof. Gaspare Viviani

Chair of the GITISA

Welcome Address

16:45-17:00 **Prof. Giorgio Mannina**

Chair of the UDM Conference

17:00-19:30 **From rainwater harvesting to river water quality**
Moderators: Ana Deletic & MariaChiara Zanetti

Keynote **David Butler**

From Rainwater Harvesting to Rainwater Management Systems

17:00-17:30 Discussion

17:30-17:45 **Coffe break**

Keynote **Gustaf Olsson**

18:15-18:45 *Controlling Urban Drainage Systems*

Keynote **Steven C. Chapra**

18:45-19:15 *Advances in river water quality modelling & management: where we come from, where we are, and where we're going?*

19:15-19:30 Discussion and launch of a new IWA book and Journal

19:30-21:30 **Welcome Cocktail Foyer and Gardens - Royal Palace - Palazzo dei Normanni**



SEPTEMBER 25 (TUESDAY)									
PARALLEL #1 ROOM 9	09:00-10:00		10:00-11:00	11:30-12:10	12:30-13:30	14:30-15:10	15:30-16:30	17:00-18:00	
		A4: Rainfall harvesting and climate chance <i>Moderator</i> Virginia Stovin			A5: Advanced tools in urban drainage <i>Moderator</i> Luca Vezzaro		A6: Advanced flood modelling <i>Moderator</i> Lothar Fuchs	F5: Integrated Urban Drainage modelling <i>Moderator</i> Wolfgang Rauch	
PARALLEL #2 ROOM 10		B4: Advances in rainfall modelling <i>Moderator</i> Søren Thorndahl			B5: In sewer processes <i>Moderator</i> Jean-Luc Bertrand-Krajewski		B6: New Tools and techniques <i>Moderator</i> Dusan Prodanovic	F6: Tools and techniques <i>Moderator</i> Manfred Schuetze	
		C4: Advances in real time control and overflow mitigation <i>Moderator</i> Manfred Kleidorfer			C5: Flood and risk modelling <i>Moderator</i> Dirk Muschalla		C6: Advances in water quality modelling <i>Moderator</i> Richard Ashley	F7: Drainage and Impact mitigation <i>Moderator</i> David Butler	
PARALLEL #3 ROOM 11	Data and Models Working Group Meeting								
PARALLEL #4 ROOM 12		D4: Advanced tools for urban drainage modelling <i>Moderator</i> Juan Pablo Rodriguez Sánchez			D5: Green Infrastructure modelling <i>Moderator</i> John Sansalone		D6: Micropollutants modelling <i>Moderator</i> Alma Schellart	F8: Water Management <i>Moderator</i> Bares Vojtech	
UDM TOPICS:		1. Drainage and Impact Mitigation	2. Frontiers in urban drainage	3. Receiving water body	4. Rainfall		5. Urban Hydrology & Flooding	6. Tools, techniques and analysis	
	7. Interaction and Integrated systems	8. Transport and sewer processes	9. Urban water management						

Day 3	Tuesday 25 September 2018	
09:00-10:00	Bldg. 19 (Viale delle Scienze)	
09:00-10:00	Moderators: David MacCarty & Manfred Kleidorfer	
09:00-10:00	<i>Meeting of Data and Models Working Group</i>	
10:00-11:00	Parallel Platform Session IV A4-B4-C4-D4 (Bldg. 19 - Viale delle Scienze)	
10:00-11:00 Room 9	A4: Rainfall harvesting and climate chance (Moderator: Virginia Stovin)	
10:00-10:15	Alan Lu - <i>A Generator-Disaggregation Approach for Evaluating Climate Change Impact on Urban Drainage</i> CWei Lu and Xiaosheng Qin	
10:15-10:30	Sangaralingam Ahilan - <i>The influence of household rainwater harvesting system design on water supply and stormwater management efficiency</i> Sangaralingam Ahilan, Peter Melville-Shreeve, Zoran Kapelan and David Butler	
10:30-10:45	Hossein Tabari - <i>Anomalous Extreme Rainfall Variability Over Europe — Interaction Between Climate Variability and Climate Change</i> Hossein Tabari and Patrick Willems	
10:45-11:00	Pierfabrizio Puntorieri - <i>Flash floods in urban areas: case studies in Reggio Calabria (Italy)</i> Marcello De Franco, Marianna Minniti, Rosa Versaci, Giandomenico Foti, Caterina Canale and Pierfabrizio Puntorieri	
10:00-11:00- Room 10	B4: Advances in rainfall modelling (Moderator: Søren Thorndahl)	
10:00-10:15	Julian David Reyes Silva - <i>Automatic calibration approach for multiple rain events in SWMM using Latin Hypercube Sampling</i> Benjamin Wagner, Julian David Reyes Silva, Christian Förster, Jakob Benisch, Björn Helm and Peter Krebs	
10:15-10:30	Tero Niemi - <i>Automated Approach for Rainfall-Runoff Model Generation</i> Tero Niemi, Gerald Krebs and Teemu Kokkonen	
10:30-10:45	John Tyner - <i>Type II (and Atlas 14) Storm Distribution Assumptions Yield Massive Over-estimates of Rainfall Intensity</i> John Tyner and Daniel Yoder	
10:45-11:00	Sara Simona Cipolla - <i>Sewer flow prediction at a large urban scale: influence of radar rainfall spatial resolution</i> Sara Simona Cipolla, Giulia Paola Di Ventura, Marco Maglionico, Pier Paolo Alberoni and Attilio Castellarin	

10:00-11:00
 Room 11

C4: Advances in real time control and overflow mitigation
(Moderator: Manfred Kleidorfer)

10:00-10:15 **Nuno Simoes** - *Real-time CSO spill control using existing in-sewer storage*
 Nuno Simoes, Luis Girao, Lucas Maluf, Will Shepherd, Sonja Ostojin, Alfeu Sá Marques, Stephen Mounce, Pete Skipworth, Simon Tait and João Paulo Leitão

10:15-10:30 **Luca Vezzaro** - *System-Wide Real Time Control Strategies for Overflow Volume Reduction - Extrapolating Annual Performance Indicators*
 Luca Vezzaro

10:30-10:45 **John Okedi** - *Benefits of Real Time Control for Catchment Scale Stormwater Harvesting in Cape Town, South Africa*
 John Okedi and Neil Armitage

10:45-11:00 **Kristyna Soukupova** - *Assessment of Separation Efficiency of Reconstructed Combined Sewer Overflow in Debr (Czech Republic)*
 Kristyna Soukupova, Jana Nabelkova, Jaroslav Pollert and Petr Chmatal

 10:00-11:00
 Room 12

D4: Advanced tools for urban drainage modelling
(Moderator: Juan Pablo Rodríguez Sánchez)

10:00-10:15 **Jaroslav Pastorek** - *Commercial Microwave Links in Urban Drainage Modelling: On Deriving Precipitation Estimates for Various Link Lengths*
 Jaroslav Pastorek, Martin Fencl, Jörg Rieckermann and Vojtěch Bareš

10:15-10:30 **Yi Hong** - *Efficient calibration and validation of physical stormwater quality modelling by meta-model based approach*
 Yi Hong, Qinzhuo Liao, Céline Bonhomme and Ghassan Chebbo

10:30-10:45 **Rasmus Nielsen** - *Sensitivity Analysis of an Integrated Urban Flood Model*
 Rasmus Nielsen and Søren Thorndahl

10:45-11:00 **Anaí Vasconcelos** - *Modeling Infiltration Wells in SWMM and Comparing Its Performance with a Real-Scale Well*
 Anaí Floriano Vasconcelos, Thays Santos Ferreira, Maria Fernanda Nóbrega Dos Santos and Ademir Paceli Barbassa

 11:00-11:30 **Coffee break**

 11:30-12:25 **Plenary Hall - Bldg. 7 - Viale delle Scienze**

 11:30-12:25 **Moderators: Jean-Luc Bertrand-Krajewski & Manfred Kleidorfer**

11:30-12:10 **Keynote Ana Deletic**
Modelling to support the planning of sustainable urban water systems

 12:10-12:25 **Discussion**

 12:25-12:30 **Session Transition: Bldg. 7 ---> Bldg. 19**

12:30-13:30 **Parallel Platform Session V**
A5-B5-C5-D5 (Bldg. 19 - Viale delle Scienze)

 12:30-13:30
 Room 9

A5: Advanced tools in urban drainage (Moderator: Luca Vezzaro)

12:30-12:45 **Karen Finney** - *Automatic Discretization and Parameterization of watersheds using a digital elevation model*
 Karen Finney, Rob James, Nandana Perera and Tiehong Xiao

12:45-13:00	Kefeng Zhang - <i>Testing of new stormwater pollution build-up algorithms informed by genetic programming approach</i> Kefeng Zhang, Peter Bach, David McCarthy and Ana Deletic
13:00-13:15	Baiqian 'Luke' Shi - <i>Should we account for unexpected sources in improving the prediction of urban stormwater quality?</i> Baiqian Shi, Anna Lintern, Peter Bach, Kefeng Zhang, Rhys Coleman, Leon Metzeling, David McCarthy and Ana Deletic
13:15-13:30	Julie Skrydstrup - <i>How do we make our models relevant for decision-makers?</i> Julie Skrydstrup, Herle Mo Madsen, Roland Löwe, Henrik Thorén and Karsten Arnbjerg-Nielsen
12:30-13:30 Room 10	B5: In sewer processes (Moderator: Jean-Luc Bertrand-Krajewski)
12:30-12:45	Berislav Tomicic - <i>Dynamic Modelling and Comparison of H2S Mitigation Strategies</i> Berislav Tomicic, Morten Just Kjølby and Mikkel Holmen Andersen
12:45-13:00	Frits Rooyackers - <i>Numerical Modeling of Biogenic Sulfide Corrosion in Concrete Sewer Pipes</i> Frits Rooyackers, Emanuela Bosco, Akke Suiker and Francois Clemens
13:00-13:15	Feng Jiang - <i>Evaluation of hydrogen sulphide formation in a mega-sized tunnel sewer system: experimental and modelling Investigations</i> Zhensheng Liang, Jianliang Sun and Feng Jiang
13:15-13:30	Madhu K Murali - <i>Developing and Validating a Model to Assess Sewer Solids Issues from Changing Wastewater Inflows and Concentration</i> Madhu K Murali, Matthew R Hipsey, Anas Ghadouani and Zhiguo Yuan
12:30-13:30 Room 11	C5: Flood and risk modelling (Moderator: Dirk Muschalla)
12:30-12:45	Katya Pyatkova - <i>Modelling Road Transport Congestion Due to Flooding</i> Katya Pyatkova, Albert S. Chen, David Butler and Slobodan Djordjevic
12:45-13:00	Stefan Leitner - <i>Integrated urban flash flood risk assessment</i> Leitner Stefan, Roman Maier, Axel Sauer, Cornelia Jöbstl, Regine Ortlepp, Rudolf Hornich and Dirk Muschalla
13:00-13:15	Sutapa Bhattacharjee - <i>Urban Flood Risk Modelling using Geospatial Tools for Bhubaneswar City, India</i> Sutapa Bhattacharjee, Pramod Kumar, Praveen Kumar Thakur and Kshama Gupta
13:15-13:30	Michael Jeskulke - <i>Determination of pluvial flood hazards for critical infrastructures and buildings</i> Michael Jeskulke, André Liebscher, Holger Hoppe and Theo G. Schmitt
12:30-13:30 Room 12	D5: Green Infrastructure modelling (Moderator: John Sansalone)
12:30-12:45	Yang Yang - <i>Hydrologic performance simulation of green infrastructures: why data-driven modelling can be useful?</i> Yang Yang and Ting Fong May Chui

Day 3		Tuesday 25 September 2018	
12:45-13:00		Vladimír Hamouz - <i>Modelling of Green and Grey Roofs in Cold Climates using EPA's Storm Water Management Model</i> Vladimír Hamouz and Tone Muthanna	
13:00-13:15		Veljko Prodanovic - <i>Hydrology of Green Walls: Factor Assessment and Water Balance Modelling</i> Veljko Prodanovic, Ankun Wang and Ana Deletic	
13:15-13:30		Olivier Cortier - <i>Quantifying Benefits of Permeable Pavement on Surface Runoff, an Agent-Based-Model with NetLogo</i> Olivier Cortier, Mohamed Boutouil and Olivier Maquaire	
13:30-14:30		Lunch	
14:30-15:25		Plenary Hall - Bldg. 7 - Viale delle Scienze	
14:30-15:25		Moderators: Wolfgang Rauch & David MacCarty	
14:30-15:10		Keynote Anthony Jackman <i>Uncertainty in environmental water quality modelling: where do we stand?</i>	
15:10-15:25		Discussion	
15:25-15:30		Session Transition: Bldg. 7 ---> Bldg. 19	
15:30-16:30		Parallel Platform Session VI A6-B6-C6-D6 (Bldg. 19 - Viale delle Scienze)	
15:30-16:30	Room 9	A6: Advanced flood modelling (Moderator: Lothar Fuchs)	
15:30-15:45		Seungsoo Lee - <i>Integrated 1D/2D Urban Inundation Modelling with Refined Grid and OpenMP Parallelization</i> Seungsoo Lee	
15:45-16:00		Daniel Jato-Espino - <i>Multiple regression analysis as a comprehensive tool to model flood hazard in sewersheds</i> Daniel Jato-Espino, Nora Sillanpää, Ignacio Andrés-Doménech and Jorge Rodriguez-Hernandez	
16:00-16:15		Ben Hodges - <i>A new Saint-Venant solver for SWMM</i> Ben R. Hodges, Frank Liu and A. Charles Rowney	
16:15-16:30		Nelly Peyron - <i>Long wave oscillations in a canal explained by a dynamic (PC)SWMM model</i> Nelly Peyron and William James	
15:30-16:30	Room 10	B6: New Tools and techniques (Moderator: Dusan Prodanovic)	
15:30-15:45		Mahmood Mahmoodian - <i>Emulation of a Detailed Urban Drainage Simulator to Be Applied For Short-Term Predictions</i> Mahmood Mahmoodian, J. A. Torres-Matallana, Ulrich Leopold, Georges Schutz and Francois Clemens	
15:45-16:00		Nadia Lund - <i>Using the Ensemble Kalman Filter to update a fast surrogate model for flow forecasting</i> Nadia Lund, Maurizio Mazzoleni, Henrik Madsen, Ole Mark, Peter Steen Mikkelsen, Dimitri Solomatine and Morten Borup	

Bernat Joseph-Duran - *Comparison of Volume-based and Pollution-based Model-Predictive Controllers for Combined Sewer Network Regulation*

16:00-16:15

Bernat Joseph-Duran, Thibaud Maruejols, Duy Khiem Ly, Jordi Meseguer and Gabriela Cembrano

Amin E. Bakhshipour - *A graph-theory based algorithm to generate decentralized urban drainage layouts*

16:15-16:30

Amin E. Bakhshipour, Milad Bakhshizadeh, Ulrich Dittmer, Wolfgang Nowak and Ali Haghighi

 15:30-16:30
 Room 11

C6: Advances in water quality modelling (Moderator: Richard Ashley)
Julia M. Ledergerber - *Experimental design to support water quality modelling of sewer systems*

15:30-15:45

Julia Margrit Ledergerber, Thibaud Maruéjols and Peter A. Vanrolleghem

Tiku Tanyimboh - *Active Control of Combined Sewer Systems Based on Flow and Water Quality*

15:45-16:00

Tiku Tanyimboh

Afshin Sadeghikhah - *Modelling of heavy metals and PAHs concentration in urban stormwater runoff*

16:00-16:15

Afshin Sadeghikhah, Jin Zhang and Peter Krebs

Frank Blumensaat - *Digitalization meets reality – Concept and Experiences from long-term wireless data collection with 50+ sewer monitors*

16:15-16:30

Frank Blumensaat, Andreas Scheidegger, Christian Ebi, Simon Dicht, Fabian Schaltegger, Andreas Rüst, Uwe Schmitt and Max Maurer

 15:30-16:30
 Room 12

D6: Micropollutants modelling (Moderator: Alma Schellart)
Remy Schilperoort - *Illicit Connections and Antibiotic Resistant Bacteria in Urban Surface Water: What is Their Relation?*

15:30-15:45

Remy Schilperoort, Hetty Blaak, Heike Schmitt, Arjo Hof, Joan Meijerink, Bert Palsma and Jeroen Langeveld

Riccardo Delli Compagni - *Conceptual Modeling of Micropollutant Fate in Sewer Systems – A GIS-Based Approach to Define Model Structure*

15:45-16:00

Riccardo Delli Compagni, Fabio Polesel, Kerstin Johanna Felicitas von Borries, Zhen Zhang, Andrea Turolla, Manuela Antonelli and Luca Vezzaro

Tanguy Pouzol - *A Dynamic Pharmaceuticals Loads Source Generator*

16:00-16:15

Tanguy Pouzol, Jean-Luc Bertrand-Krajewski and Yves Levi

Maria Viklander - *Estimation of Faecal Indicator Bacteria in Stormwater by Multiple Regression Modelling and Microbial Partitioning to Solids*

16:15-16:30

Helen Galfi, Heléne Österlund, Jiri Marsalek and Maria Viklander

16:30-17:00

Coffee break

17:00-18:00

Flash poster - Session II
F5-F6-F7-F8 (Bldg. 19 - Viale delle Scienze)

17:00-18:00
Room 9**F5: Integrated Urban Drainage modelling (Moderator: Luca Vezzaro)**

17:00-17:03

Sina Borzooei - *Impact evaluation of Wet-weather Events on Influent Flow and Loadings of a Water Resource Recovery Facility*

Sina Borzooei, Ramesh Teegavarapu, Soroush Abolfathi, Youri Amerlinck, Ingmar Nopens and Maria Chiara Zanetti

17:03-17:06

Justine Henonin - *An integrated model to develop and optimize wet weather strategies for river water quality in Odense (DK)*

Justine Henonin, Lorenzo Benedetti, Annette Brink-Kjær, Elliot Gill, Peter Rasch, Per Hallager and Per Henrik Nielsen

17:06-17:09

Lauri Harilainen - *Estimating flows in urban creeks – two case studies in Finland*

Lauri Harilainen, Perttu Hyöty, Tiina Okkonen and Adam Lunden-Morris

17:09-17:12

Stavropoulos-Laffaille Xenia - *Coupling Urban Water and Energy Budgets with TEB-Hydro: Case Study on the French Catchment Pin Sec*

Xenia Stavropoulos-Laffaille, Katia Chancibault, Hervé Andrieu, Aude Lemonsu and Valéry Masson

17:12-17:15

Svenja Kemper - *Calculation of the hydraulic capacity of grate inlets with super-critical surface flow and unsurcharged drainage flow conditions*

Svenja Kemper and Andreas Schlenkhoff

17:15-17:18

Irene Scheperboer - *Numerical soil model for analysing sewer pipe-soil interactions*

Irene Scheperboer, Akke Suiker, Emanuela Bosco and Francois Clemens

17:18-17:21

Anneke Döring - *Generation of artificial rain sewer networks using spatial data*

Anneke Döring and Insa Neuweiler

17:00-18:00
Room 10**F6: Tools and techniques (Moderator: Manfred Schütze)**

17:00-17:03

Leena Sänkiäho - *SWMM Model Data Management and Development Using FME Software*

Leena Sänkiäho

17:03-17:06

Ico Broekhuizen - *Selection of calibration events for modelling green urban drainage*

Ico Broekhuizen, Günther Leonhardt, Jiri Marsalek and Maria Viklander

17:06-17:09

Khiem Ly - *Potential of Using Mass-Volume Curve for Water Quality-based Real Time Control*

Duy Khiem Ly, Thibaud Maruéjols, Guillaume Binet and Jean-Luc Bertrand-Krajewski

17:09-17:12

Marie-Ève Jean - *Conceptual Framework for Integrating Real-Time Control and Source Control Solutions for CSO Frequency Control*

Marie-Ève Jean, Sophie Duchesne, Geneviève Pelletier and Martin Pleau

17:12-17:15

Morten Borup - *Robust model for estimating pump characteristics and sewer flows from pumping station data*

Martin Fencil, Morten Grum, Morten Borup and Peter Steen Mikkelsen

17:15-17:18	Sanit Wongs - <i>Urban Flooding and Adaptation to Climate Change in Sukhumvit Area, Bangkok, Thailand</i> Sanit Wongs, Varameth Vichiensan, Napaporn Piamsa-Nga and Shinichiro Nakamura
17:18-17:21	Maria Elisa - <i>Hydrological Modelling and Detention Ponds Evaluation at Paranoa Lake - Brazil</i> Fernanda Pereira Souza, Maria Elisa Leite Costa and Sergio Koide
17:00-18:00 Room 11	F7: Drainage and Impact mitigation (Moderator: David Butler)
17:00-17:03	Philipp Baum - <i>The effect of pollutant loading in different particle size fractions to the pollutant loads of urban stormwater runoff</i> Philipp Baum and Ulrich Dittmer
17:03-17:06	Ali Alouache - <i>Just Suspended Speed for Solid Particle Transport in Torus Reactor</i> Ali Alouache, Ammar Selatnia, Farid Halet, Abdelouahab Lefkir, Housseem Eddine Sayah and Boubekeur Nadjemi
17:06-17:09	Legaire Pinedo Ortiz de Mendivil - <i>Numerical Unsaturated Flow Model of Railway Drainage Systems</i> Legaire Pinedo Ortiz de Mendivil, Christian Berretta and Andrew Sleight
17:09-17:12	Marlène Rio - <i>Characterization of the Dynamics of Microbiological and Chemical Contaminants in an Urban Catchment in South of France: From Field Data Collection to Modelling</i> Marlène Rio, Marie-George Tournoud, Christian Salles, Chrystelle Bancon-Montigny, Patrick Monfort, Claire Rodier, Mylène Toubiana and Pierre Marchand
17:12-17:15	Sezar Gülbaz - <i>A Water Quality-Quantity Model for Avcılar Campus of Istanbul University Incorporating LID Implementation</i> Sezar Gülbaz, Abdulsamed Yıldırım and Cevza Melek Kazezyılmaz-Alhan
17:15-17:18	Zolal Ayazpour - <i>Combined Sewer Flow Prediction Using Hybrid Wavelet Artificial Neural Network Model</i> Zolal Ayazpour, Amin E. Bakhshipour and Ulrich Dittmer
17:18-17:21	Patrizia Piro - <i>Mitigation of Urban Surface Runoff through LID solutions: Case study in Mediterranean Area</i> Francesca Principato, Aldo Pedro Ferrante, Ferdinando Frega, Manuela Bartolo and Patrizia Piro
17:00-18:00 Room 12	F8: Water Management (Moderator: Bares Vojtech)
17:00-17:03	Zuzana Vranayová - <i>Percolation of Water from Surface Runoff – Case Studies</i> Martina Zeleňáková, Petr Hlušík, Gabriel Markovič, Gabriela Hudáková and Ladislav Tometz
17:03-17:06	Nathalie Hernandez - <i>Optimizing SVM model as predicting model for sewer pipes in the two main cities in Colombia</i> Nathalie Hernandez, Nicolas Caradot, Hauke Sonnenberg, Pascale Rouault and Andres Torres
17:06-17:09	Katerina Donevska - <i>Climate Change Impact on Water Supply Demands: Case Study of the City of Skopje</i> Katerina Donevska and Angelco Panov

17:09-17:12	Hans Korving - <i>Impacts of in-sewer defects on human health risks compared with impacts of climate change</i> Hans Korving and Marco Van Bijnen
17:12-17:15	Alberto Pistocchi - <i>Combined sewer overflow management: proof-of-concept of a screening level model for regional scale appraisal of measures</i> Alberto Pistocchi and Chiara Dorati
17:15-17:18	Iman Alharsha - <i>An assessment of per capita water consumption in Sirte, Libya</i> Iman Alharsha, Fayyaz Memon and Raziye Farmani
17:18-17:21	Steffen Davidsen - <i>Applying Socioeconomic Optimisation on Blue-Green Climate Adaptation Projects in an Urban Catchment</i> Steffen Davidsen, Thomas Kruse, Trine Stausgaard Munk and Karsten Arnbjerg-Nielsen
19:30-22:30	Light sicilian dinner - The Botanic Garden (Via Lincoln 2)



SEPTEMBER 26 (WEDNESDAY)						
	09:00-09:40	10:00-11:00	11:30-12:10	12:30-13:30	14:30-15:10	15:30-16:30
PARALLEL #1 ROOM 9		A7: Sewer particle transport Moderator Mathias Uhl		A8: Sewer leakages and RTC Moderator David McCarthy		A9: Water management, society and smart control Moderator Steven Chapra
PARALLEL #2 ROOM 10		B7: Frontiers in urban drainage Moderator Lorenzo Benedetti	Keynote#7 Jean-Luc Bertrand-Krajewski	B8: Green infrastructures and decentralised systems Moderator Neil Armitage	Keynote#8 Peter Vanrolleghem	B9: New methods and tools Moderator Dirk Muschalla
PARALLEL #3 ROOM 11	Keynote#6 Wolfgang Rauch Moderators: Steven Chapra & Manfred Schuetze	C7: Flood and damage modelling Moderator Bares Vojtech	Moderators: Gustaf Olsson & Jeroen Langeveld	C8: Sewer sediments and CFD Moderator Thomas Einfalt	Moderators: Richard Ashley & Anthony Jackman	C9: New frontiers in urban drainage Moderator Gaspare Viviani
PARALLEL #4 ROOM 12		D7: Precipitation and rainfall harvesting Moderator Malte Henrichs		D8: Integrated urban drainage modelling Moderator Karl-Erich Lindenschmidt		D9: Sewer maintenance Moderator Patrizia Piro
Room: Seminari C	1st Workshop organized by the IWA-TG on MBR modelling and control: Are we ready for establishing the basis for moving towards standardised MBR modelling?					
UDM TOPICS:	1. Drainage and Impact Mitigation	2. Frontiers in urban drainage	3. Receiving water body	4. Rainfall	5. Urban Hydrology & Flooding	6. Tools, techniques and analysis
	7. Interaction and integrated systems	8. Transport and sewer processes	9. Urban water management			

Day 4	Wednesday 26 September 2018	 UDM 2018
09:00-09:55	Plenary Hall - Bldg. 7 - Viale delle Scienze	
09:00-09:55	Moderators: Steven Chapra & Manfred Schütze	
09:00-09:40	Keynote Wolfgang Rauch <i>Frontiers in integrated modelling</i>	
09:40-09:55	Discussion	
09:55-10:00	Session Transition: Bldg.7 ---> Bldg. 19	
10:00-11:00	Parallel Platform Session VII A7-B7-C7-D7 (Bldg. 19 - Viale delle Scienze)	
10:00-11:00 Room 9	A7: Sewer particle transport (Moderator: Mathias Uhl)	
10:00-10:15	Abigail Legge - <i>Modelling of Food Waste Disposer particle transport through a sewer network</i> Abigail Legge, Andy Nichols, Simon Tait, Henriette Jensen and Richard Ashley	
10:15-10:30	Robert Sämman - <i>Forecasting pollution transport in drainage water</i> Robert Sämman, Insa Neuweiler and Thomas Graf	
10:30-10:45	Santiago Sandoval - <i>Revisiting conceptual stormwater quality models by alternative linear and non-linear formulations: an event-based approach</i> Santiago Sandoval and Jean-Luc Bertrand-Krajewski	
10:45-11:00	Tamara Fernández-Arévalo - <i>Model based assessment of sanitation systems for the integrated management of industrial discharges</i> Luis Miguel García, Jesús Antonio Pelegino, Luis Sancho, Alberto Ciriza, Monica Gutiérrez and Támara Fernández-Arévalo	
10:00-11:00 Room 10	B7: Frontiers in urban drainage (Moderator: Lorenzo Benedetti)	
10:00-10:15	Milos Milasinovic - <i>Cellular Automata Approach for 2D pollution transport modelling in urban groundwater</i> Milos Milasinovic, Anja Randelovic, Nenad Jacimovic and Dusan Prodanovic	
10:15-10:30	Alma Schellart - <i>QUICS: how to deal with “fake” news in integrated models?</i> Franz Tscheikner-Gratl, Vasilis Bellos, Alma Schellart, Jeroen Langeveld, Francois Clemens, Gerard Heuvelink, Lorenzo Benedetti, Miguel Angel Rico-Ramirez, Rita F. Carvalho, Lutz Breuer, James Shucksmith and Simon Tait	
10:30-10:45	Oriol Gutierrez - <i>Longer pipes or smaller treatment plants? Impacts of connecting neighbouring sewer systems considering construction, detrimental emissions and its control strategies</i> Lluís Corominas, Sadurni Morera and Oriol Gutierrez	
10:45-11:00	Rosa De Santis - <i>Visual Risk Communication of Urban Flooding in 3D Environments based on Terrestrial Laser Scanning</i> Rosa De Santis, Francesco Macchione, Pierfranco Costabile and Carmelina Costanzo	

10:00-11:00
Room 11**C7: Flood and damage modelling (Moderator: Bares Vojtech)**

10:00-10:15

Lena Simperler - *Analysing the cause of urban pluvial flooding in a hillside settlement*

Lena Simperler, Florian Kretschmer and Thomas Ertl

10:15-10:30

Paul A. DeBarry - *Implementation of GIS and Hydrologic/Hydraulic Modeling for Integrated Floodplain/Stormwater Management*

Paul De Barry, Gerald Longenecker and Ryan Burrows

10:30-10:45

Masaru Morita - *Flood Damage Estimation Quantifying Uncertainty in Inundation Damage Statistics for Urban Drainage Risk Management*

Masaru Morita and Yeou Kounq Tung

10:45-11:00

Behzad Jamali - *Caffe – a Cellular Automata Fast Flood Evaluation Model*

Behzad Jamali, Luke Cunningham, Peter M. Bach and Ana Deletic

10:00-11:00
Room 12**D7: Precipitation and rainfall harvesting (Moderator: Malte Henrichs)**

10:00-10:15

Anna Bachmann - *Using Precipitation and Combined Sewer Overflow Data for Predicting Hygienic Contaminations in Bathing Waters – A Data Analysis*

Anna Bachmann-Machnik, Ulrich Dittmer and Annika Schönfeld

10:15-10:30

Thomas Einfalt - *Coordinated Precipitation Evaluation of Damage-Producing Events: First Steps*

Thomas Einfalt, Marc Scheibel and Sascha Hinsken

10:30-10:45

Paola Aldana - *Integrated hydraulic and hydrological modeling of a constructed wetland for storm water management*

Paola Andrea Aldana González, Néstor Alonso Mancipe Muñoz and Andres Eduardo Torres Abello

10:45-11:00

Sara Corvaro - *Rainwater harvesting system efficiency and economic assessment for different residential building typologies*

Sara Corvaro

11:00-11:30

Coffee break

11:30-12:25

Plenary Hall - Bldg. 7 - Viale delle Scienze

11:30-12:25

Moderators: Gustaf Olsson & Jeroen Langeveld

11:30-12:10

Keynote Jean-Luc Bertrand-Krajewski

Frontiers in water quality and quantity processes in sewers: monitoring and modelling

12:10-12:25

Discussion

12:25-12:30

Session Transition: Bldg.7 ---> Bldg. 19

12:30-13:30

Parallel Platform Session V
A8-B8-C8-D8 (Bldg. 19 - Viale delle Scienze)

12:30-13:30
Room 9**A8: Sewer leakages and RTC (Moderator: David McCarthy)**

12:30-12:45

Bram Stegeman - *Detection of exfiltration in sewer systems with tracers*

Bram Stegeman, Jeroen Langeveld, Thom Bogaard and François Clemens

12:45-13:00	Aaron Peche - <i>Modeling storm water pipe leakage: transient vs. steady-state groundwater flow</i> Aaron Peche, Thomas Graf, Jacob Kidmose, Heidi Christiansen Barlebo, Lothar Fuchs, Insa Neuweiler
13:00-13:15	Simon Berkhahn - <i>Real-time water level prediction based on artificial neural networks</i> Simon Berkhahn, Insa Neuweiler and Lothar Fuchs
13:15-13:30	Manfred Schüetze - <i>Distributed Sewer System RTC in Öhringen – On the Way to the Internet of Things</i> Manfred Schuetze, Nico Suchold and Horst Geiger
12:30-13:30 Room 10	B8: Green infrastructures and decentralised systems (Moderator: Neil Armitage)
12:30-12:45	Martijn Kuller - <i>Supporting the needs and necessity for urban green stormwater infrastructure – a novel planning-support system</i> Martijn Kuller, Peter Bach, Simon Roberts, Dale Browne and Ana Deletic
12:45-13:00	Martin Oberascher - <i>Smart Rain Barrels: Advanced LID management through measurement and control</i> Martin Oberascher, Jonatan Zischg, Stefania Anna Palermo, Carolina Kinzel, Wolfgang Rauch and Robert Sitzenfrie
13:00-13:15	Richard Ashley - <i>Uncertainties in estimating the economic benefits from blue and green stormwater infrastructure</i> Richard Ashley, Berry Gersonius, Horton Bruce, Chris Digman and Paul Shaffer
13:15-13:30	Adam C. Castonguay - <i>Modelling strategies to enable the uptake of decentralised water treatment technologies</i> Adam Charette-Castonguay, Md Sayed Iftekhar, Christian Ulrich and Ana Deletic
12:30-13:30 Room 11	C8: Sewer sediments and CFD (Moderator: Thomas Einfalt)
12:30-12:45	Dominik Leutnant - <i>Using Mass-Volume-Curves to Assess the Empirical Pollutant Modelling Concept</i> Dominik Leutnant, Dirk Muschalla and Mathias Uhl
12:45-13:00	Maike Wietbüscher - <i>The efficiency of storm water sedimentation tanks for fine particles in urban run-off</i> Maike Wietbüscher, Nina Voßwinkel and Rainer Mohn
13:00-13:15	Katharina Teuber - <i>Multiphase CFD-Simulation of Transport Phenomena in Sewer Systems</i> Katharina Teuber, Tabea Broecker, Shibashish D. Jaydev, Gebregziabher M. Goitom, Maria Sielaff, Daneish Despot, Dietmar Stephan, Matthias Barjenbruch and Reinhard
13:15-13:30	Gislain Lipeme Kouyi - <i>Valuable outcomes in urban hydrology deriving from CFD modelling approach</i> Lipeme Kouyi Gislain
12:30-13:30 Room 12	D8: Integrated urban drainage modelling (Moderator: Karl-Erich Lindenschmidt)
12:30-12:45	Lisha Guo - <i>Conceptualizing the sewage collection system for integrated sewer-WWTP modelling and optimization</i> Lisha Guo, Sovanna Tik, Julia Ledergerber, Domenico Santoro, Elsayed Elbeshbishy and Peter Vanrolleghem

Day 4	Wednesday 26 September 2018 
12:45-13:00	Roland Löwe - <i>Impacts of urban development on urban water management at varying spatial and temporal scales</i> Roland Löwe, Michael Mair, Agnethe N. Pedersen, Wolfgang Rauch, Manfred Kleidorfer and Karsten Arnbjerg-Nielsen
13:00-13:15	Mathias Riechel - <i>Relevance Of Different CSO Outlets For Bathing Water Quality In A River System</i> Mathias Riechel, Wolfgang Seis, Andreas Matzinger, Erika Pawlowsky-Reusing and Pascale Rouault
13:15-13:30	Laura Barone - <i>Measuring and modelling the nutrients residual load from the combined sewer of the eastern shore of Lake Iseo</i> Laura Barone, Marco Pilotti, Manuel Murgioni, Giulia Valerio, Steven C. Chapra, Matteo Balistrocchi and Luca Milanese
13:30-14:30 Lunch - Meeting of the Working Group on Data and Models (Room 9)	
14:30-15:25 Plenary Hall - Bldg. 7 - Viale delle Scienze	
14:30-15:25 Moderators: Anthony Jackman & Richard Ashley	
14:30-15:10	Keynote Peter A. Vanrolleghem <i>Advances in modelling particle transport in urban storm- and wastewater systems</i>
15:10-15:25	Discussion
15:25-15:30 Session Transition: Bldg.7 ---> Bldg. 19	
15:30-16:30 Parallel Platform Session IX A9-B9-C9-D9 (Bldg. 19 - Viale delle Scienze)	
15:30-16:30 Room 9	A9: Water management, society and smart control (Moderator: Steven Chapra)
15:30-15:45	Boud Verbeiren - <i>FloodCitiSense: Early Warning Service For Urban Pluvial Floods For And By Citizens and City Authorities</i> Boud Verbeiren, Solomon Dagnachew Seyoum, Ihab Lubbad, Patrick Willems, Tian Xin, Marie-Claire ten Veldhuis, Christian Onof, Li-Pen Wang, Susana Ochoa-Rodriguez, Carina Veeckman, Michelle Boonen, Linda See, Dominique Nalpas, Barry O'Brien and Andy Johnston
15:45-16:00	James Webber - <i>Evaluating city scale surface water management using a rapid assessment framework in Melbourne, Australia</i> James Webber, Matt Burns, Guangtao Fu, David Butler and Tim Fletcher
16:00-16:15	Malte Henrichs - <i>Model based estimation of a natural water balance as reference for planning in urban areas</i> Malte Henrichs, Isabel Scherer, Mathias Uhl, Andreas Steinbrich, Hannes Leistert, Markus Weiler and Tobias Schuetz
16:15-16:30	Stefania Anna Palermo - <i>Parameter Sensitivity of a Microscale Hydrodynamic Model for Smart Water Control</i> Stefania Anna Palermo, Jonatan Zischg, Robert Sitzenfrei, Wolfgang Rauch and Patrizia Piro
15:30-16:30 Room 10	B9: New methods and tools (Moderator: Dirk Muschalla)
15:30-15:45	Yao Hu - <i>A Data-driven Method to Modeling Flows Across Combined Sewer Systems</i> Yao Hu and Branko Kerkez

Day 4	Wednesday 26 September 2018	
15:45-16:00	Jeff Sadler - <i>Leveraging Open Source Software and Parallel Computing for Model Predictive Control Simulation of Urban Drainage Systems using EPA-SWMM5 and Python</i> Jeffrey Sadler, Jonathan Goodall, Madhur Behl and Mohamed Morsy	
16:00-16:15	Peter M. Bach - <i>Virtual Reality in Water Sensitive Urban Design – new data and insight or just playful participation?</i> Peter Bach, Hannah Bragge and Meead Saberi	
16:15-16:30	Damjan Ivetic - <i>Electro-Magnetic Velocity meters: Assessment of the (Missing) Technical Parameters</i> Damjan Ivetic, Dusan Prodanovic and Luka Stojadinovic	
15:30-16:30 Room 11	C9: New frontiers in urban drainage (Moderator: Gaspare Viviani)	
15:30-15:45	Joao P. Leitao - <i>Modelling overland flow from local inflows in “almost no-time” using Self-Organizing Maps</i> João P. Leitão, Mohamed Zaghloul and Vahid Moosavi	
15:45-16:00	David Sample - <i>Water Quality Characterization of Irrigation and Storm Runoff for a Nursery</i> Mohammad Nayeb Yazdi, David Sample, Durelle Scott and James Owen	
16:00-16:15	Steve Adkins - <i>Wastewater System Ventilation – a Friend or Adversary?</i> Steve Adkins, Slobodan Djordjević and Dragan Savić	
16:15-16:30	Ting Liu - <i>Sewer-groundwater Interaction in Urban Coastal Areas</i> Frank Blumensaat, Andreas Scheidegger, Christian Ebi, Simon Dicht, Fabian Schaltegger, Ting Liu, Maryam Beheshti, Xin Su and Valentina Prigiobbe	
15:30-16:30 Room 12	D9: Sewer maintenace (Moderator: Patrizia Piro)	
15:30-15:45	Matthijs Rietveld - <i>From unknown to uncertain: A statistical model on gully pot silting</i> Matthijs Rietveld, Jeroen Langeveld, Nadia Mobron and Francois Clemens	
15:45-16:00	Tone Merete Muthanna - <i>Remobilization of Sediments in Gully Pots During High Intensity Precipitation Events</i> Tone Merete Muthanna and Maria Viklander	
16:00-16:15	Alla Abbas - <i>Improving the hydraulic integrity to separate the sewer system in hilly regions using a new manhole design</i> Alaa Abbas, Iacopo Carnacina, Felicite Ruddock, Rafid Alkhaddar, Glynn Rothwell and Robert Andoh	
16:15-16:30	Alberto Campisano - <i>Validation of an unsteady flow numerical model for sediment transport induced by flushing operation in combined sewers</i> Gashin Shahsavari, Alberto Campisano, Carlo Modica and Gilles Arnaud-Fassetta	
16:30-17:00	Coffee break	

17:00-17:30

Poster Session (Bldg. 19 - Viale delle Scienze)

- P.1 *Redesign of water quality network for the urban river "Salitre" in Bogotá, Colombia, using an artificial neural network*
Carlos Peña-Guzmán, Paula Balaguera, Natalia Hernandez and Ronal Sierra
- P.2 *Use of shrimp-shell for adsorption of metals present surface runoff*
Aline Schuck Rech, Julio Rech, Jakcemara Caprario, Fabiane Tasca and Alexandra Finotti
- P.3 *Temporal Pattern Analysis of Rainstorm Events for Supporting Rainfall Design in a Tropical City*
Changhyun Jun, Xiaosheng Qin and Wei Lu
- P.4 *Flood Risk Management in an Urban Area by Applying LID Techniques*
Hamed Ghafghazi, Beatrice Dionisi and Antonio Zarlenga
- P.5 *Influence of drainage network and compensatory techniques on urban flooding susceptibility*
Jakcemara Caprario, Aline Rech, Fabiane Tasca and Alexandra Finotti
- P.6 *Green infrastructure and storage unit combinations for mitigating peak flows in drainage systems*
Yang Yang and Ting Fong May Chui
- P.7 *Frontiers in urban drainage - An analysis of a Water Quality Recovery Program Plan in a developing country*
Fabiane Tasca, Camila Silva, Maria Lima and Alexandra Finotti
- P.8 *A data analysis and modelling approach to understand the role of urbanization features on the hydrological regime*
Guido Petrucci, Kevin De Bondt and Philippe Claeys
- P.9 *Selection of the Best Water Supply Scenario for Urban Demand based on the Risk Analysis in Decision-Making Model*
Reza Javidi Sabbaghian and Amir Pouyan Nejadhashemi
- P.10 *An Alternative Model Calibration Strategy for Watersheds Lacking Proper Data Records: Case Study of Riohacha, Colombia*
Antonio de Oliveira, Marcelo Miguez, Osvaldo Rezende, Matheus Sousa and Ianic Lourenço
- P.11 *Effect of Aged Pipe Roughness's on Urban Flooding: Results from Sensitivity Tests with SWMM Model*
Marinne Gourcerol, Mathieu Lepot, Antonio Moreno Rodenas and Francois H.L.R. Clemens
- P.12 *Modelling study on the impacts of BMPs at Riacho Fundo (Brasília, Brazil)*
Vitor Camuzi, Maria Costa, Arthur Schleicher, Jeferson Costa and Sergio Koide
- P.13 *Advanced modelling of surface drainage systems drainage systems in reducing pluvial flood risk in urban areas*
Dario Rappazzo and Giuseppe Aronica
- P.14 *Preliminary analysis about the effects on the SPI values computed from different best-fit probability models in two Italian regions*
Claudio Mineo, Benedetta Moccia, Federico Lombardo, Fabio Russo and Francesco Napolitano
- P.15 *Use of retention basin for flood mitigation and urban requalification in Mesquita, Brazil*
Osvaldo Rezende, Matheus Sousa, Ana Caroline Jacob, Luiza Ribeiro, Antonio de Oliveira, Marcelo Miguez and Cícero Arrais

- P.16 *Impact of urbanization (trends) on hydrological behaviour of Belo Horizonte watersheds (Brazil)*
Martin Seidl, Luiz Palmier, Guide Petrucci and Nilo Nascimento
- P.17 *Energy Assessment of Seawater Toilet Flushing in Qatar*
Hamish R. Mackey, Saad Hafiz and Sami G. Al Ghamdi
- P.18 *Modelling climate changes impacts in a subtropical urban drainage*
Cesar Do Lago, Marina de Macedo and Eduardo Mendiondo
- P.19 *Spatiotemporal modelling of sediment-related blockages in the sewer system of Bogotá (Colombia)*
Eliana Soriano Pulido, Carlos Valencia Arboleda and Juan Pablo Rodríguez Sánchez
- P.20 *URBAN STORMWATER MONITORING AND MODELLING AT THE RIACHO FUNDO SUB-BASIN, BRASÍLIA – DF*
Thays Mitsuko Tsuji, Maria Elisa Leite Costa and Sergio Koide
- P.21 *Overall Rate Kinetics Model of Chlorine Demand in Urban Drainage*
Joshua Dickenson and John Sansalone
- P.22 *Urban Flood Management Based on Ensemble Precipitation Forecasts*
Thomas Einfalt, Sandra Hellmers and Alrun Jasper-Tönnies
- P.23 *Heavy metals in wash-off from facade and road surface*
Wang Zhenyu, Afshin Sadeghikhah, Jin Zhang and Peter Krebs
- P.24 *Hybrid Filtration System for Treatment of Stormwater Runoff*
Junho Lee, Seungho Yang and Song Daehyun
- P.25 *Stormwater Runoff Treatment Filtration System and Backwashing System*
Junho Lee, Myungjin Lee and Seungho Yang
- P.26 *Performance analysis of low impact development (LID) practices for the management of surface runoff: Applying the sponge city concept to a campus area*
Wenyu Yang, Kurt Brueggemann, Kiwanuka David Seguya, Afshin Sadeghikhah, Jin Zhang and Peter Krebs
- P.27 *Heavy metals potential removal efficiency of permeable pavement*
Michele Turco, Giuseppe Brunetti, Michele Porti, Giovanna Grossi, Mario Maiolo and Patrizia Piro
- P.28 *Modelling of storm precipitation*
Vitaly Ilinich, Alexander Belolubtcev, Alessandro Cavalli, Ilyyas Veliev and Maxim Lapushkin
- P.29 *An integrated approach for assessing the impact of urban stormwater discharge on the fecal contamination in a recreational lake near Paris*
Yi Hong, Chenlu Li, Bruno Lemaire, Frederic Soullignac, José Rodolfo Scarati Martins, Adelaïde Roguet, Françoise Lucas and Brigitte Vincon Leite
- P.30 *GESTOR: a new tool for the proactive management of sewer systems*
Oriol Gutierrez, Lluís Corominas, Silvia Busquets, Lluís Bosch, Javier Garcia-Garcia, Pedro Jose Martinez, Oscar Macias, Isabel Tormos, Jose Guillermo Berlanga, Narcis Pi, Agustí-Pere Figueres and Oscar Soria

- P.31 *Virtual modelling of city defence from spring flood with help of water reservoir*
Vitaly Ilinich, Alex Perminov and Fidanna Khairullina
- P.32 *Modelling runoff in watershed without calibration using PCSWMM*
Daniela Carvalho, Maria Elisa Costa, Jeferson Da Costa and Sergio Koide
- P.33 *Partitioning of metals in urban drainage from paved source area catchments*
Ilaria Gnecco, Anna Palla and John Sansalone
- P.34 *Modelling Urban Drainage in Taquari – Federal District in Brazil*
Tamara Silva, Maria Elisa Leite and Conceição De Maria Albuquerque
- P.35 *Evaluation of urban flooding hazard through the application of Bayesian Modelling Ensemble*
Gabriele Freni and Vincenza Notaro
- P.36 *Urban Flood Area Delimitation using Reverse Water Local Flow Paths*
Sergio Rosim, João Ricardo de Freitas Oliveira, Monica De Martino, Alfonso Quarati and Alexandre Copertino Jardim
- P.37 *Comparison of cost benefits of new installation and retrofitted rainwater harvesting systems for commercial buildings*
Nor Hafizi Md Lani, Achmad Syafiuddin and Zulkifli Yusop
- P.38 *Promoting Successful Urban Watershed Restoration through Enhanced Bioretention Cell Modelling*
Whitney Lisenbee, Jon Hathaway and Ryan Winston
- P.39 *Study on the Evaluation Methods for Drainage System of Ancient Buildings*
Jun Li, Shaoqin Zhang and Shan Wu
- P.40 *Mathematical modelling of in-sewer processes as a tool for sewer system design*
Giorgio Mannina, Paolo Calabrò, Gaspare Viviani
- P.41 *Wastewater modification processes in a stabilization reservoir: a new mathematical model*
Giorgio Mannina, Gaspare Viviani and Steven C. Chapra
- P.42 *Multiregression analysis of the kinetic constants in ephemeral rivers: the case study of the Oreto river*
Angela Candela, Giorgio Mannina and Gaspare Viviani
- P.43 *Uncertainty Propagation In Integrated Urban Water Quality Modelling*
Giorgio Mannina
- P.44 *Rainwater reuse in urban areas: a mathematical model and a long-term modelling approach*
Gabriele Freni, Giorgio Mannina, Michele Torregrossa e Gaspare Viviani
- P.45 *Long term efficiency analysis of infiltration trenches subjected to clogging*
Gabriele Freni, Giorgio Mannina

17:30-18:00 **Closing Ceremony & YR Award - Plenary Hall (Bldg. 7 - Viale delle Scienze)**

19:30-23:30 **Gala dinner - Teatro Massimo Opera House (Piazza Verdi)**

Contacts

e-mail: info@udm2018.it

Conference website: www.udm2018.org



UDM2018

23-26 SEP | PALERMO - ITALY

Supported by:



University of Palermo

