

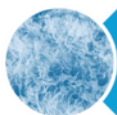
IWA DIPCON2026

PRELIMINARY AGENDA

23rd International Conference on Diffuse Pollution & Eutrophication

November 24 – 27, 2026

TU Wien, Vienna, Austria



Tuesday, November 24

**12:00pm -
4:30pm**

YWP Workshop

Location: **Meeting room ADEG**

**3:00pm -
4:30pm**

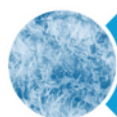
IWA DIPCON Management Committee meeting

Location: **Library-Meeting room AA0258**

**5:00pm -
9:30pm**

Welcome reception

Location: **TUtheSky**



Wednesday, November 25



8:30am - 9:00am	Registration Location: Prechtlsaal	
9:00am - 9:15am	Welcome & Opening Remarks Location: Prechtlsaal Chair: Ottavia Zoboli	
9:15am - 10:45am	Keynote presentations Location: Prechtlsaal Chair: Ottavia Zoboli 9:15am - 10:00am Key Water Ecology Issues and Management Progress in the Yangtze River Basin <u>Lijing Wang</u> Chinese Research Academy of Environmental Sciences, China	
	10:00am - 10:45am Monitoring, modelling and management of nutrients and trace contaminants in the Danube River Basin – past, present and future challenges <u>Matthias Zessner</u> TU Wien, Austria	
10:45am - 11:15am	Coffee break Location: Prechtlsaal	
11:15am - 12:30pm	Innovative Technologies and Materials for Water Treatment and Resource Management (ORALS) Location: Boecklsaal Chair: Ferdi Hellweger 11:15am - 11:30am Geo-electrical sensing of biochar colloids for in-situ groundwater remediation in sand flow-through columns <u>Ahmad Ameen</u> , Brenda Miseh Agidi, Adrian Mellage Hydrogeology, Civil and Environmental Engineering, University of Kassel, Kassel 34125, Germany.	Advancing Nature-Based Solutions for Diffuse Pollution: From Global Evidence to Site-Specific Applications (ORALS) Location: Prechtlsaal Chair: Marla Maniquiz-Redillas 11:15am - 11:30am Modelling PFAS fate and transport and risk assessment at riverbank filtration sites: case study in the Upper Danube Basin <u>Ali A. A. Obeid</u> ^{1,6} , Thomas J. Oudega ^{2,6} , Gijs Janssen ³ , Peter Vermeulen ³ , Devanshi Pathak ³ , Margaret E. Stevenson ^{1,6} , Zsuzsanna Nagy-Kovács ⁴ , Balázs László ⁴ , Regina Sommer ^{5,6} , Gerhard Lindner ^{1,5,6} , Ottavia Zoboli ² , Matthias Zessner ^{2,6} , Julia Derx ^{1,6} 1: Institute of Hydraulic Engineering and Water Resources Management, TU Wien, Vienna, Austria; 2: Institute for Water Quality and Resource Management, TU Wien, Vienna, Austria; 3: Deltares. Boussinesqweg 1, Delft, the Netherlands; 4: Budapest Waterworks Ltd, Váci út 23–27, 1134, Budapest, Hungary; 5: Medical University Vienna, Institute for Hygiene and Applied Immunology, Water Hygiene, Austria; 6: Interuniversity Cooperation Centre for Water and Health (ICC Water & Health), Vienna, Austria
	11:30am - 11:45am Case studies on the treatment of acid mine drainage in the Philippines <u>Aileen Orbecido</u> , Joshua Pocaan De La Salle University, Philippines	
	11:45am - 12:00pm Inhibition of Biofilm Growth on Films with 20 µm Riblet Height Across Bacterial, Fungal, and Algal Microorganisms <u>Shahd Wehbe</u> ¹ , Patrick Arthofer ¹ , Dieter Nees ² , Christoph Feichtinger ³ , Claudia Hledik ¹ 1: University of Natural Resources and Life Sciences (BOKU), Vienna Austria; 2: Joanneum Research Forschungsgesellschaft mbH, Graz Austria; 3: Bionic Surface Technologies (BST), Graz Austria	11:30am - 11:45am Internal Dynamics of Organic Contaminants in Bioretention Systems: Insights from Temporarily Retained Water <u>Angélica Goya-Heredia</u> , Alfredo Jácome, Jose Anta, Xavier Del Puerto, Joaquín Suárez University of A Coruña, Spain

12:00pm - 12:15pm**Decentralized microalgae–DHS treatment for nutrient discharge control and wastewater reuse in a coastal arid region****Sota Kabasawa¹, Takahiro Watari², Maria Kaltsidi³, Nayareth Gonzalez³, Juan Manuel³, Henry Cameron³, Jazmín Bazaes³, Claudia Sepúlveda³, Masashi Hatamoto², Carlos Riquelme³, Takashi Yamaguchi^{1,2}****1:** Department of Science of Technology Innovation, Nagaoka University of Technology, Japan; **2:** Department of Civil and Environmental Engineering, Nagaoka University of Technology, Japan; **3:** Centro de Bioinnovación Antofagasta (CBIA), University of Antofagasta, Chile**12:15pm - 12:30pm****Electrocoagulation versus Chemical Coagulation for dexamethasone removal from Livestock Wastewater: A Comparative Performance Study****Aya Ramadan^{1,2}, Geneviève Feuillade², Younes Abouliatim¹, Virginie Pallier², Gibert-Vilas Mâxim², Bouchaib Gourich^{1,3}****1:** Laboratory of Process and Environmental Materials Engineering, Higher School of Technology, Hassan II University of Casablanca, Morocco; **2:** Water and Environment Laboratory, University of Limoges, France; **3:** International Water Research Institute (IWRI), Mohammed VI Polytechnic University, Ben Guerir, Morocco**11:45am - 12:00pm****Development and Design of a Sediment–Drainage–Infiltration Hybrid System for Runoff Reduction and Sediment Control in Erosion-Prone Catchments****Karen Bañas^{1,2}, Micaela Maurel Guyamin¹, Julius Richel Manlutac¹, Marla Maniquiz-Redillas¹****1:** De La Salle University, Philippines; **2:** Catanduanes State University, Philippines**12:00pm - 12:15pm****Performance Evaluation of a Nature-Based Bio-Undercatcher System Under Extreme Climate Condition****Joseph Raniel Bienes^{1,2}, Julius Richel Manlutac¹, Natasha Sabine de los Santos¹, Jayrah Padilla-Rufon¹, Marla Maniquiz-Redillas¹****1:** Department of Civil Engineering, EcoHydrology & Nature-Based Solutions (EcoHydro-NBS, Center for Engineering and Sustainable Development Research (CESDR), De La Salle University, 2401 Taft Ave, Malate, Manila, 1004, Philippines; **2:** Engineering Sciences Department, College of Engineering, Polytechnic University of the Philippines, Anonast St., Sta. Mesa, Manila, 1016, Philippines**12:15pm - 12:30pm****Evidence of the performance of different NBS (and best management practices) on reducing diffuse pollution from agricultural production: worldwide systematic mapping & Norwegian perspective.****Dominika Krzeminska¹, Anne-Grete Buseth Blankenberg¹, Jian Liu¹, Remegio Confesor^{2,1}****1:** Norwegian Institute of Bioeconomy Research (NIBIO), Norway; **2:** National Center for Water Quality Research, Heidelberg University, Ohio**12:30pm - 1:30pm****Lunch break****Location: Prechtlsaal****1:30pm - 3:00pm****Advancing Lake Eutrophication Management: Monitoring, Modeling, and Forecasting (ORALS)****Location: Boecklsaal****Chair: Yonghui Song****1:30pm - 1:45pm****Spatial and Seasonal Variability of Water Quality, Nutrients, and Cyanobacteria in Egirdir Lake: Implications for Eutrophication and Drinking Water Quality****Meltem Kacikoc¹, Eda Boyacioglu¹, Filiz Dadaser-Celik²****1:** Suleyman Demirel University, Turkey; **2:** Erciyes University, Turkey**1:45pm - 2:00pm****Mechanistic modelling of cyanobacteria ecology and cyanotoxin production in Lake Mendota****Pablo Barrancos-Garrigós, Ferdi Hellweger****TU Berlin, Germany****From Data to Decisions: Tools and Strategies for Water Security and Pollution Control (ORALS)****Location: Prechtlsaal****Chair: Fumiyuki Nakajima****1:30pm - 1:45pm****Revealing the Cost of Water Quality Degradation: A Travel Cost and Substitute Site Approach in an Urban Lake of Central Chile****Carlos Zamorano Catalán¹, Yassine Mimouni¹, Roberto Urrutia², Jean-François Delière¹****1:** Université de Liège, Belgium; **2:** University of Concepcion, Chile**1:45pm - 2:00pm****Source Apportionment and Discharge Limit Determination of Nitrogen and Phosphorus in Yangze River estuary and Hangzhou Bay, China****Kun LEI¹, Jiayu Peng¹, Jingqiu Jiang¹, Bo Zhou²****1:** Chinese Research Academy of Environmental Sciences, China; **2:** College of Environmental Science and Engineering, Ocean University of China, Qingdao, China

	2:00pm - 2:15pm Improving Chlorophyll-a Forecasting in the eutrophic lake by using ensemble data assimilation Xiaoyu Liu^{1,2}, Lijing Wang¹, Yong Liu² 1: Chinese Research Academy of Environmental Sciences, Beijing, China; 2: Peking university, Beijing, China	2:00pm - 2:15pm IDENTIFYING BEST MANAGEMENT OPTIONS FOR ASHEBEKA CATCHMENT WITHIN A WATER SAFETY PLAN FRAMEWORK, CENTRAL ETHIOPIA Getachew Meka^{1,2}, Bezatu Mengiste¹, Tena Alamirew¹ 1: Addis Ababa University, Ethiopia; 2: Hawassa University, College of Medicine and Health Sciences
	2:15pm - 2:30pm Spatial and temporal Sentinel-2 analysis to determine spatial trophic state hotspots and temporal peaks – application for Brates Lake, Romania Malte Zamzow¹, Andreas Matzinger¹, Stefan Petrea² 1: Kompetenzzentrum Wasser Berlin, Germany; 2: Dunarea de Jos University	2:15pm - 2:30pm Development of a Water Budget Model for the Anatolian Side of Istanbul using the Water Evaluation and Planning (WEAP) Tool Cevza Melek Kazezyilmaz-Alhan, Kebir Emre Saraçoğlu, İsmail Bilal Peker, Sezar Gülbaz, Uğur Boyraz, Mustafa Emirhan Tellioğlu, Muhammet Vefa Urçar, Abdülbaki Hacı Istanbul University-Cerrahpasa, Turkey
	2:30pm - 2:45pm Eutrophic Reservoir Management and Future Water Quality Projections: The Case of Liyutan Reservoir, Taiwan Chi-Feng Chen¹, Jen-Yang Lin¹, Shyh-Fang Kang² 1: National Taipei University of Technology, Taiwan; 2: Tamkang University, Taiwan	2:30pm - 2:45pm Assessing national preparedness for implementing revised EU water legislation in the Danube River Basin: Results of a multi-country stakeholder assessment Renata Kaps, Ottavia Zoboli TU Wien, Austria
	2:45pm - 3:00pm An integrated monitoring and management approach for eutrophicated aquatic ecosystems: a case study of Lake Altmühl Peter Flödl, Hemma Smolka, Finn Schöler, Christoph Hauer Universität für Bodenkultur Wien, Austria	2:45pm - 3:00pm The Tethys Database Network – An Open-Source, Multi-Compartment Infrastructure and Toolset for Quality-Assured Concentration Data in River Basin Management Severin Osten, Steffen Kittlaus, Ottavia Zoboli TU Wien, Austria
3:00pm - 3:30pm	Coffee break Location: Prechtlsaal	
3:30pm - 5:30pm	Advanced Treatment Technologies for Emerging Contaminants, Wastewater and Resource Recovery (POSTERS) Location: Boecklsaal Chair: Matthias Zessner Carrier-allocation and directional-shifts decouple genetic risk factors from microbial community turnover during pharmaceutical wastewater treatment Muyu Li Key Laboratory of Environmental Remediation and Ecological Health, Ministry of Industry and Information Technology, School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing 210094, China Degradation of steroid androgen in aqueous solution by gamma ray and thermal activation persulfate processes Libing Chu Tsinghua University, China	Diffuse Pollution: Monitoring, Modeling, and Management (POSTERS) Location: Prechtlsaal Chair: Ottavia Zoboli A Catchment-Scale Monitoring Concept Supporting Source-Oriented Assessment of Heavy Metal Contamination in the Ishëm River Basin, Albania Viola Bakillari¹, Xhuljo Sema¹, Fatos Huqi¹, Vjola Saliaga¹, Eugen Skura¹, Irena Duka¹, Ferdi Brahushi¹, Fatbardh Sallaku¹, Ilir Kristo¹, Klajdi Sotiri³, Alexander Pressl², Thomas Ertl², Stephan Fuchs⁴, Seit Shallari¹ 1: Department of Environment and Natural Resources, Faculty of Agriculture and Environment, Agricultural University of Tirana, Tirana, Albania; 2: Department of Water, Atmosphere and Environment, Institute of Sanitary Engineering and Water Pollution Control, Vienna, Austria; 3: Limknow GmbH & Co KG, Karlsruhe, Germany; 4: Department of Aquatic Environmental Engineering, Institute for Water and Environment – Water Quality Management, Karlsruhe Institute of Technology, Karlsruhe, Germany

Long-Term Evaluation of Pump and Fertilize for Reducing Nitrate Infiltration and Groundwater Contamination: A Four-Year Pilot-Scale Study

Yuhoon Yeum¹, Jeongyong Lee², Kyungi Han³

1: Korea University, Republic of Korea; 2: Woowon ENG Co., Ltd., Republic of Korea; 3: Korea National University of Transportation, Republic of Korea

Aeration and manure recirculation reshape microbial communities and reduce methane emissions from swine manure storage

Ali Ashraf Joolaei, Masoud Makian, Mohamadali Mohit, Gyeongcheol Kim, Md Rakib Parvez, Sun Yoon, Hyeongjun Ra, Sungmo Kang, Yujin Lee, Dong-Hoon Kim
Inha University, Republic of Korea

Transformation of the Liquid Fecal Sludge into Reusable Distilled and Drinkable Water through the Omni Processor Plant at Rohingya Camps in Bangladesh.

Md Mezanur Rahman

ADB, Bangladesh Resident Mission (BRM)

Performance and Characterization of Foam Removal from Power Plant Discharge Cooling Water Using Ultrasonic Cavitation

Woong-Gil Hong¹, Heepil Lee¹, Won Gyung Lee², Sung Hwan Kang², Mun Jin Jang², Jae-Woon Nah¹

1: CHEONGSOO E&S INC., C&C TRI, Suncheon 57997, South Korea; 2: KOREA SOUTH-EAST POWER CO., Yeosu power generation Division, Yeosu 59613, South Korea

Enhanced Anaerobic Sulfamate Degradation through Microbial Adaptation and Enrichment

Julian Fränkel, Patrick Arthofer, Thomas Ertl, Claudia Hledik

BOKU University, Institute of Sanitary Engineering and Water Pollution Control

Nature-Inspired Thin Film Composite Polyamide Membranes for Mitigation of Diffuse Pharmaceutical Pollution in Treated Wastewater Effluents

Viktor Kochkodan, Yehia Manawi, Shima El-Malah, Khaled Mahmoud

Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, QF, Doha, Qatar

From WWTP to Diffuse Emissions: Emission Pathways Define Sampling Requirements for Accurate Annual Riverine Load Estimation

Nikolaus Weber, Matthias Zessner, Ottavia Zoboli

TU Wien, Austria

Integrating Sediment Quality and Area of Influence Dynamics into Bathing Water Safety Plans: Evidence from the PNC ACeS Project

Roberta De Angelis, Andrea Tornambè, Arianna Orasi, Luisa Bergamin, Iolanda Lisi, Patrizia Borrello, Emanuela Spada, Elena Romano

ISPRA, Italy

Influence of diffuse pollution sources in the Dyje River basin and its potential changes under climate change

Miloš Rozkošný, Kateřina Sovová, Hana Zvěřinová Mlejnková

TGM Water Research Institute, p.r.i., Czech Republic

An integrated approach to assessing diffuse sediment and phosphorus inputs into surface water using modelling, remote sensing and water quality monitoring

Vincent Idel¹, Nikolaus Weber¹, Melanie Maxwald², Elisabeth Lauss³, Laura Prischl⁴, Gerold Hepp⁵, Christine Weinberger², Matthias Zessner¹

1: Institute for Water Quality and Resource Management, TU Wien; 2: wpa Beratende Ingenieure; 3: blattfisch e.U.; 4: European Environment Agency; 5: Federal Ministry of Housing, Arts, Culture, Media and Sport

SPATIAL DYNAMICS OF WATER QUALITY AND LAND USE INTERACTIONS IN THE ASHEBEKA RIVER, ETHIOPIA

Getachew Meka^{1,2}, Bezatu Mengiste¹, Tena Alamirew¹

1: Addis Ababa University, Ethiopia; 2: Hawassa University, College of Medicine and Health Sciences

Investigation of Sediment and Road Runoff Contaminants for Filter Media Design in Nature-Based Green Stormwater Infrastructure

Jayson Cayetano, Marla Maniquiz-Redillas

Department of Civil Engineering, EcoHydrology & Nature-Based Solutions (EcoHydro-NBS), Center for Engineering and Sustainable Development Research (CESDR), De La Salle University, 2401 Taft Ave, Malate, Manila, 1004, Philippines

Nanofiltration membrane based on carbide-derived carbon for PFOS removal from treated sewage effluents

Yehia Manawi, Viktor Kchkodan
QEERI/Hamad Bin Khalifa University, Qatar

Machine-learning-guided bio-Fenton SBR operation for reducing antibiotic and nutrient loads in wastewater effluents

Chenyang Lin, Tong Shen, Yutaka Sakakibara, Yoshihiko Inagaki
Waseda University, Japan

AC/SC – Back in black: Removal of Critical Emerging Contaminants from Water using Spent Coffee Activated Carbon

Inga Block, Andreas Taubert
University Potsdam, Germany

Substrate-Specific Methanogenic Conversion of Organic Acids Assisted by Magnetite-Coated Granular Activated Carbon and Microbial Electrolysis Cells

Ji-Hye Ahn, Jung-Sup Lee, Waris Khan, Eun-Sol Kim, Yeo-Myeong Yun
Department of Environmental Engineering, Chungbuk National University, Republic of Korea

Advanced performance of Microbial Electrosynthesis via Nano Zero Valent Iron/graphitic carbon nitrid coated carbon felt

Noor Al Balushi¹, Zahra Al Hasani², Abdullah Al-Mamun²
1: Sultan Qaboos University, Oman; 2: King Fahd University of Petroleum and Minerals

Reducing Methane Emissions in Sewer Pipelines via Dynamic pH Shock

Hyeonjun Ra, Masoud Makian, Mohamadali Mohit, Gyeongcheol Kim, Sungmo Kang, Yujin Lee, Sun Yoon, Dong-Hoon Kim
Inha Univ., Korea, Republic of (South Korea)

Effects of Nitrate on Methanogenesis Establishment during Anaerobic Digestion of Swine Manure

Byung-kyu Ahn, Tae-Hoon Kim, Yun Ju Jeon, Seon Ae Jang, Yeo-Myeong Yun
Chungbuk National University, Korea, Republic of Korea

Potential of Native Riparian Plant Salix gracilistyla for Heavy Metal Phytoremediation in Contaminated Soils

Yohan Lee, Keumchul Yang
Kongju National University, Republic of Korea

Assessing Nitrogen Sources and Dynamics in Groundwater on an Uplifted Coral Island in Japan

Makoto Saiki¹, Hirotsugu Arai¹, Ken'ichi Osaka^{1,2}, Keisuke Koba^{1,3}, Kentaro Hayashi¹
1: Research institute for Humanity and Nature, Japan; 2: Faculty of Environmental Science, University of Shiga Prefecture; 3: Center for Ecological Research, Kyoto University

Multi-Objective Evaluation of Nature-based Solutions in Data Scarce Regions Considering Localized Environmental Factors and Ecosystem Services

Sergi Garbanzos, Marla Maniquiz-Redillas
De La Salle University, Philippines

Evaluating Uncertainty in River Water Quality Index (WQI) Assessment using Monte Carlo Simulation to Support River Basin Management

John Kristoffer Lorenzo^{1,2}, Sergi Garbanzos¹, Marla Maniquiz-Redillas¹
1: De La Salle University, Philippines; 2: National University, Philippines

Leaching and Adsorption Behavior of Flame Retardants Associated with Plastic Waste in the Marine Environment of Japan

Hinata Mikuni¹, Tetsuya Takikawa¹, Satoshi Akiyama², Yuki Tsujimura², Kazushi Noro³, Takashi Amagai¹
1: University of Shizuoka, Japan; 2: Agriculture and Fisheries, Osaka Prefecture; 3: National Institute for Environmental Studies

Multi-Criteria Selection of Priority Trace Contaminants for Long-Term Transnational Emission Inventories in the Danube River Basin

Elsa Lavinia Eder, Matthias Zessner, Ottavia Zoboli
TU Wien, Austria

Runoff Management in Urban and Peri-Urban Land Use under Climate Extremes using Green-Grey Ratio Approach

Rizelle Angela Koch, Marla Maniquiz-Redillas
1Department of Civil Engineering, EcoHydrology & Nature-Based Solutions (EcoHydro-NBS), Center for Engineering and Sustainable Development Research (CESDR), De La

Prediction of Methane Emission in a Lab-Scale Sewer Reactor Using Easily Measurable Water Quality Parameters

Sun Yoon, Dong-Hoon Kim, Masoud Makian, Mohamadali Mohit, Gyeongcheol Kim, Hyeongjun Ra, Sungmo Kang, Yujin Lee

Inha university, Korea, Republic of (South Korea)

Wastewater treatment in the presence of non-steroidal anti-inflammatory drugs under Feammox conditions

Heylin González¹, Carolina Rodríguez², Macarena González², Daniela Rojas², Christian González³, Cesar Huilñir⁴, Jennyfer Serrano⁵, Eduardo Leiva^{1,2}

1: Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica de Chile.; 2: Departamento de Química Inorgánica, Pontificia Universidad Católica de Chile.; 3: Escuela de Obras Civiles, Universidad Diego Portales.; 4: Facultad de Ingeniería y Ciencias Aplicadas, Universidad de los Andes.; 5: Escuela de Biotecnología, Universidad Mayor.

Enhancing Methane Production from Sewage Sludge in Oman: The Synergistic Effect of Biochar and Nanoscale Zero-Valent Iron (nZVI) Additives

Zahra Al Hasani, Zeinab Yavari, Noor Al Balushi, Salah Jelali, Ghazi Al-Rawas, Jamal Al-Sabahi

Sultan Qaboos University, Oman

Machine Learning-Integrated Decision-Support Framework for Monitoring, Modelling and Management of Nutrient Emissions Using Sulfur-Siderite Reactive Fillers

Jia-Min Xu^{1,2}, Hao-Yi Cheng¹

1: State Key Laboratory of Urban-rural Water Resources and Environment, School of Eco-Environment, Harbin Institute of Technology Shenzhen, Shenzhen, 518055, China; 2: UNSW Water Research Centre, School of Civil and Environmental Engineering, The University of New South Wales, Sydney, New South Wales, 2052, Australia

Occurrence and Treatment of Boron in Desalination Plants : Case Study in Korea

Hyojeon Kim, Jihye Kim, Jiwon Park

K-water, Republic of Korea

Bridging laboratory and field evaluation of soil carbon removal using U-Scottron: A technical standards-based approach

Dong Jun Kim, Heungsun Kim, Sangrae Kim

Korea Conformity Laboratories, Republic of Korea

Salle University, 2401 Taft Ave, Malate, Manila, 1004, Philippines

Microbial Transformations Related to Iron and Nitrogen Cycling in Patagonian Wetlands and Their Potential for Feammox-Driven Nitrogen Removal

Heylin Gonzales¹, **Sofía Zelada⁵**, Carolina Rodríguez², Macarena González², Daniela Rojas², Sabina Lemunao³, Alejandro Salazar³, Jennyfer Serrano⁴, Eduardo Leiva^{1,2}

1: Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica de Chile; 2: Departamento de Química, Pontificia Universidad Católica de Chile; 3: Estación Patagonia de Investigaciones Interdisciplinarias, Pontificia Universidad Católica de Chile.; 4: Escuela de Biotecnología, Universidad Mayor; 5: Departamento de Ingeniería Química y Bioprocesos, Pontificia Universidad Católica de Chile

Optimization of Retention-Detention and Treatment Performance using Agro-Industrial Waste-Based Biofilters

Natasha Sabine de los Santos¹, Joseph Raniel Bienes^{1,2}, Jayrah Padilla-Rufon¹, Julius Richel Manlutac¹, Marla Maniquiz-Redillas¹

1: Department of Civil Engineering, EcoHydrology & Nature-Based Solutions (EcoHydro-NBS), Center for Engineering and Sustainable Development Research (CESDR), De La Salle University Manila; 2: Engineering Sciences Department, College of Engineering, Polytechnic University of the Philippines, Anonast St., Sta. Mesa, Manila, 1016, Philippines

Machine learning-based prediction of the impacts of climate and environmental change on river water quality

Chia-Ling Chang¹, Wen-Yun Fu², Shien-Tsung Chen³

1: Feng Chia University; 2: National Cheng Kung University; 3: National Cheng Kung University

Heavy Metal Accumulation and Transfer Characteristics of Vegetation and Soil in Low Impact Development Systems Treating Urban Stormwater Runoff

Gahyun Lee, Yugyeong Oh, Leehyung Kim

Department of Civil and Environmental Engineering, Kongju National University, Republic of Korea

Reconstructing PAHs Time Series in Surface Waters through Multi-scale Data Fusion and Machine-Learning Techniques

Ziyong Zhao¹, Korbinian Kaetzl¹, Peter Krebs¹, Jin Zhang²

1: Chair of Urban Water Management, TU Dreden, Germany; 2: School of Geography, South China Normal University, China

U-Ecotron: A Controlled Urban Extreme-Climate Platform for Evidence-Based Performance Verification of Diffuse Pollution Control Technologies under the Climate–Pollution Nexus

Heungsun Kim, Dong Jun Kim, Sangrae Kim
KCL(Korea Conformity Laboratories), Korea, Republic of (South Korea)

Integrated Optimization of Groundwater Pumping Using SWAT-MODFLOW for Sustainable Water Supply in a Coastal Watershed

Seoyeon Jang, Diane Pamela Palmero, Soyeon Jin, Sang Il Lee, Beomju Kim, Yunhee Kim, Jaeyoung Seo, Joo-Hyon Kang
Dongguk University, Korea, Republic of Korea

Occurrence of Cyanuric Acid in Private Swimming Pools and Its Potential Release into the Environment

Claudia Hledik, Roman Neunteufel
BOKU University, Institute of Sanitary Engineering and Water Pollution Control

A Microbial Biodiversity-Based Framework for Assessing Constructed Wetland Regulating Functions under Seasonal Environmental Variability

Marvin John Uy, Miguel Enrico Robles, Yugyeong Oh, Cloie Chie Mueca, Lee-Hyung Kim
Department of Civil and Environmental Engineering, Kongju National University, Republic of Korea

Biodiversity decrease of culturable bacteria in the Mura River sediments: potential association with diffuse sources of environmental contamination

Matej Kristan Mirković, Snježana Kazazić, Tomislav Kralj, Damir Valić, Zoran Kiralj, Dušica Vujaklija, **Zrinka Dragun**
Institut Ruđer Bošković, Croatia

Occurrence, removal and ecological risk assessment of antibiotics in rural domestic wastewater treatment systems of China

Hongliang Wang
Chinese Research Academy of Environmental Sciences, China

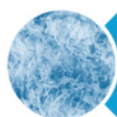
Towards a Data Driven Decision Framework for Discharge Permits in the Danish Water Sector

Rasmus Dyrmosø Nørregaard, Rikke Andersen Lindeque
DHI, Denmark

Tracing Microplastics along the Drinking Water Supply Chain: A Case Study from Haryana, India

Deepali Sharma
Central University of Haryana, Mahendergarh, India, India

7:00pm - 11:00pm **Gala Dinner**
Location: **City Hall**



Thursday, November 26



9:00am - 10:30am

Advancing Integrated Stormwater Management: From Green Infrastructure to Ecosystem Health (ORALS)Location: **Boecklsaal**Chair: **Cevza Melek Kazezyilmaz-Alhan**

9:00am - 9:15am

Diversity of Macroinvertebrates in Urban Rivers via environmental DNA**Suna Ekin Kali¹**, **Heléne Österlund¹**, **Maria Viklander¹**, **Ishi Buffam²**, **Godecke Blecken¹**

1: Urban Water Engineering, Department of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, Luleå, Sweden; 2: Department of Landscape Architecture, Planning and Management, Swedish University of Agricultural Sciences, Alnarp, Sweden

9:15am - 9:30am

Upstream strategies and source control for reducing urban micropollutant loads transported with stormwater**Alexandra Müller**, **Haoyu Wei**, **Maria Viklander**, **Helene Österlund**

Luleå University of Technology, Sweden

9:30am - 9:45am

Are stormwater LID technologies truly effective for climate adaptation and mitigation?**Md Tashdedul Haque**, **Lee Hyung Kim**

Kongju National University, Republic of Korea

9:45am - 10:00am

Evaluating Blue-Green Networks for Urban OECM Planning: Indicator Development and Campus-Scale Performance Assessment**Cloie Chie Mueca**, **Miguel Enrico Robles**, **Lee Hyung Kim**

Department of Civil and Environmental Engineering, Kongju National University, Cheonan, Chungnam-do, Republic of Korea

10:00am - 10:15am

Linking Climate-Driven Diffuse Pollution Responses and Hydrothermal Resilience Using Explainable AI for Adaptive Green Stormwater Infrastructure Design**Miguel Enrico Robles**, **Yugyeong Oh**, **Lee-Hyung Kim**

Kongju National University, Republic of Korea

10:15am - 10:30am

The RainS-TECH Project: An Integrated Nature-Based Green Stormwater Infrastructure Framework for Diffuse Pollution Management across Pre- to Post-Developed Catchments**Marla Maniquiz-Redillas****Watershed-Scale Modeling for Diffuse Pollution Source Apportionment and Management (ORALS)**Location: **Prechtlsaal**Chair: **Xiaoyan Wang**

9:00am - 9:15am

Modeling Diffuse Sediment Emissions under Climate Change in a Semi-Arid Reservoir Basin**Enosh Monga¹**, **Filiz Dadaser-Celik²**

1: South-Eastern Finland University of Applied Sciences; 2: Erciyes University, Turkey

9:15am - 9:30am

Source apportionment and delivery processes of nitrogen and phosphorus in a Semi-arid and semi-humid watershed using a coupled SWAT-SPARROW framework: A case study of the chaohe river basin, China**Liming Yan**, **Xiaoyan Wang**, **Liangxu Hu**, **Ziyi Tian**

Capital Normal University, China

9:30am - 9:45am

Emissions from source to sea: modelling of multiple substances for policy-oriented river basin management**Sibren Loos**, **Jos van Gils**, **Gerard Pijcke**, **Hélène Boisgontier**, **Bregje Brinkmann**, **Albrecht Weerts**

Stichting Deltares, The Netherlands

9:45am - 10:00am

Impacts of Climate Change and Management Scenarios on Emissions, Loads, and Concentrations of Nitrogen and Phosphorus in the Oder River**Markus Venohr**, **Anna Oprei**

IGB-Berlin, Germany

10:00am - 10:15am

Modelling PFAS Emission Pathways in the Danube River Basin**Zsolt Jolánkai**, **Máté K. Kardos**, **Vivien Poto**, **Tímea Lajko**, **Adrienne Clement**

Budapest University of Technology and Economics, Hungary

10:15am - 10:30am

PFAS Futures: Scenario-Based Assessment of Emissions under Climate Change in the Upper Danube Basin**Meigi Liu¹**, **Steffen Kittlaus^{1,2}**, **Ottavia Zoboli¹**, **Matthias Zessner¹**

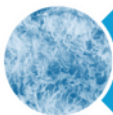
1: Institute for Water Quality and Resource Management, TU Wien, Vienna, Austria; 2: Environmental Agency Austria, Vienna, Austria

	Department of Civil Engineering, EcoHydrology & Nature-Based Solutions (EcoHydro-NBS), Center for Engineering and Sustainable Development Research (CESDR), De La Salle University, 2401 Taft Ave, Malate, Manila, 1004, Philippines	
10:30am - 11:00am	Coffee break Location: Prechtlsaal	
11:00am - 12:30pm	Microplastics in Urban and Agricultural Environments: Sources, Interactions, and Solutions (ORALS) Location: Boecklsaal Chair: Sheeraz Ahmed Memon 11:00am - 11:15am Microplastics: Street Dust to Urban Control Measures Jejal Bathi, Nishat Tasnim, Mithu Chanda University of Tennessee at Chattanooga, United States of America 11:15am - 11:30am Ecotoxicity and physicochemical characteristics of plastic-like particles in highway road dust fractionated by electrostatic separator Kahori Nishida, Soyoung Lee, Kyoshiro Hiki, Tomohiro Tobino, Fumiyuki Nakajima The University of Tokyo, Japan 11:30am - 11:45am Environmental Transformation of Microplastics via UV Aging and Biofilm Formation and Its Influence on Pb²⁺ Adsorption under Aquatic Conditions Vijaykumar Sekar, Baranidharan Sundaram National Institute of Technology Andhra Pradesh, India 11:45am - 12:00pm Riverine Microplastic Monitoring by high-resolution infrared hyperspectral imaging : case study in Korea and Thailand Sion Kim¹, Ampira Charoensaeng², Sutha Khaodhiar², Seoktae Kang¹ 1: Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Korea; 2: Department of Environmental Engineering, Chulalongkorn University, Bangkok, Thailand 12:00pm - 12:15pm Detection of Microplastics in Barley (<i>Hordeum vulgare</i> L.) and Biochar-Mediated Mitigation in Agricultural Soils Nishita Narwal University of Western Australia, Australia 12:15pm - 12:30pm Coexistence of Microplastics with Heavy Metals in Agricultural Soils: Impacts on Metal Behavior, Microbial Communities, and Ameliorations Morteza Nazaripour, Ahmadreza Khatamgooya, Ashiqur Rahman, Hamed Heidari, Shams Razzak Rothee, Setareh Cheshmekhezr, Eakalak Khan University of Nevada, Las Vegas, United States of America	Nutrient and Sediment Management: From Source Identification to Load Reduction Targets (ORALS) Location: Prechtlsaal Chair: Markus Venohr 11:00am - 11:15am Identifying Nonlinear Relationships and Landscape Thresholds Between Landscape Patterns and Total Nitrogen Loads of a watershed: A Machine Learning Approach Xiaoyan Wang, Chengkun Ning Capital Normal University, China 11:15am - 11:30am Mapping anthropogenic nutrient metabolism hotspots to purification service capacity in a river-connected lake basin Chenning Deng¹, Linzi Li¹, Chaozheng Zhang², Rui Xu¹, Zeqian Zhang¹, Jianglong Cui¹, Xin Xu¹ 1: Chinese Research Academy of Environmental Sciences, China; 2: Hunan Agricultural University, China 11:30am - 11:45am Load Reduction Targets nutrients; methodology en application in the Netherlands to support implementation of the ND and WFD Peter Schipper, Yanjiao Mi-Gegotek, Wieneke Savonije, Mattijs Hehenkamp, Piet Groenendijk, Erwin Boekel. van Wageningen University & Research, Netherlands, The 11:45am - 12:00pm From Pixels to Policy: Remote Sensing and Fine-Sediment Monitoring for Targeted Phosphorus and Erosion Management in Agricultural Catchments – Insights from the ERWINN Project Melanie Maxwald¹, Christine Weinberger¹, Max Kuderna¹, Matthias Zessner², Nikolaus Weber², Sarah Höfler³, Elisabeth Lauss³ 1: wpa – Beratende Ingenieure, Lackierergasse 1, 1090 Vienna, Austria; 2: Institute for Water Quality and Resource Management, TU Wien, 1040 Vienna, Austria; 3: blattfisch e.u. - Consultants in Aquatic Ecology and Engineering, Leopold-Spitzer-Straße 26, 4600 Wels, Austria 12:00pm - 12:15pm Digital Monitoring of Sediment Dynamics at the River–Coastal Interface Using Satellite Remote Sensing and Hydrological Analysis: A Case Study of the Coruh Stream (Batumi, Georgia) Rayan Nas, Anil Olgac Department of Water and Environment, Yüksel Proje Inc. Ankara, 06610, Türkiye

		12:15pm - 12:30pm Coupling models for assessing surface-groundwater nitrate pollution in a semi-arid region Valentina Urrea Vargas^{1,2}, Laura del Val Alonso¹, Paula Rodríguez Escales² 1: Eurecat Centre Tecnològic, Spain; 2: Universitat Politècnica de Catalunya
12:30pm - 1:30pm	Lunch break Location: PrechtIsaal	
1:30pm - 3:00pm	Natural and Constructed Wetlands: Performance, Services, and Emerging Risks (ORALS) Location: BoeckIsaal Chair: Leehyung Kim 1:30pm - 1:45pm Distribution, Bioavailability, and Ecological Risk Assessment of Trace Metals in the Subtropical Freshwater Wetland (Baraila Taal) Bihar, India Alvia Aslam, Avinash Dass, Rajesh Kumar Ranjan Central University of South Bihar, India 1:45pm - 2:00pm Use of Water Treatment Sludge as a Substrate in Constructed Wetlands for Greywater Treatment Shubhani Sharma, M Mansoor Ahammed sardar vallabhbhai national institute of technology, India 2:00pm - 2:15pm The use of abandoned horizontal flow constructed wetland to treat combined sewer overflow Jan Vymazal Czech University of Life Sciences Prague, Czech Republic 2:15pm - 2:30pm Assessment of Diffuse Pollution Removal Efficiency and Ecosystem Services of Small Retention Reservoirs with Wetland Zones in Agricultural Landscapes Miloš Rozkošný¹, Alena Košťálová², Hana Hudcová¹, Petr Kupec² 1: TGM Water Research Institute, p.r.i., Czech Republic; 2: Mendel University in Brno, Faculty of Forestry and Wood Technology, Czech Republic 2:30pm - 2:45pm Groundwater Quality Degradation and Its Cascading Consequences for Aquatic Biodiversity and Climate Resilience in the Indus Basin, Sindh, Pakistan Sheeraz Ahmed Memon, Waheed Ali Khokhar Mehran University of Engineering & Technology, Pakistan	Emerging Contaminants Across Compartments: Occurrence, Fate, and Risk (ORALS) Location: PrechtIsaal Chair: Puangrat Kaewlom 1:30pm - 1:45pm Assessing PFAS Occurrence, Sources, and Pathways in a Terminal Lake Krishna Pagilla University of Nevada Reno, United States of America 1:45pm - 2:00pm Simulating PFAS Exposure to Humans by Scenario-Based Bayesian Modelling: a case study in the Upper Danube catchment Thomas James Oudega^{1,3}, Meiqi Liu¹, Ali Obeid^{2,3}, Julia Derx^{2,3}, Claudia Gundacker⁴, Jörg Krampe¹, Ottavia Zoboli¹, Matthias Zessner^{1,3} 1: Institute for Water Quality and Resource Management, TU Wien, Austria; 2: Institute of Hydraulic Engineering and Water Resources Management, TU Wien, Austria; 3: Interuniversity Cooperation Centre for Water and Health (ICC Water & Health), www.waterandhealth.at; 4: Institute of Medical Genetics, Medical University of Vienna, Austria 2:00pm - 2:15pm A Risk-Based Framework for Pesticide Selection to Improve Water Quality Outcomes in Agricultural Catchments Ryan Turner^{1,2,3}, Cath Neelamraju^{1,2,3}, Hannah Mitchell^{1,3} 1: Reef Catchments Science Partnership, School of the Environment, The University of Queensland, Brisbane, Queensland, Australia.; 2: Department of the Environment, Tourism, Science and Innovation, Brisbane, Queensland, Australia.; 3: Catchment Water Quality Alliance, QLD, Australia. 2:15pm - 2:30pm Concentration trends and concentration-discharge relationships of major pesticides used in the cut-flower sector Stefanie Lutz¹, Sarah Stadelmaier^{1,2} 1: Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands; 2: RPTU University Kaiserslautern-Landau 2:30pm - 2:45pm Metal accumulation, microplastic occurrence and oxidative stress responses in farmed and wild mussels from the Adriatic Sea

	2:45pm - 3:00pm Assessing the Potential Development of Antibiotic Resistance Genes in a Constructed Wetland Treating Livestock Wastewater Effluent <u>Yugyeong Oh</u>, Miguel Enrico Robles, Leehyung Kim Kongju National University, Republic of Korea	Tatjana Mijošek Pavin, Davor Merkaš, Martina Ugrinović, Sara Šariri, Vlatka Filipović Marijić Ruđer Bošković Institute, Zagreb, Croatia 2:45pm - 3:00pm Study of the fate of veterinary pharmaceuticals from faeces to soils during an equine castration procedure <u>Ibrahim El Abbadi</u>, Virginie Pallier, Marília Camotti Bastos, Geneviève Feuillade University of Limoges, E2Lim, UR 24133, 16 rue Atlantis, 87068 Limoges Cedex, France
3:00pm - 3:30pm	Coffee break Location: PrechtIsaal	
3:30pm - 5:00pm	Data-Driven Water Quality Assessment: From Traditional Indices to Machine Learning (ORALS) Location: BoeckIsaal Chair: Jejal Bathi 3:30pm - 3:45pm Integrated Assessment of Water Quality and Trophic Status of an Artificial Campus Lake Using WQI and Carlson's Trophic State Index <u>Rafidah Hamdan</u>¹, Muhammad Hafiq Afifi Azman¹, Azzahra Dalvi², Siti Nor Hidayah Ariffin³ 1: Universiti Tun Hussein Onn Malaysia (UTHM), Malaysia; 2: Universitas Andalas, Padang, Indonesia; 3: Universiti Teknologi Malaysia (UTM), Malaysia 3:45pm - 4:00pm ASSESSMENT OF THE PHYSICOCHEMICAL PARAMETERS OF OGBESE RIVER, ONDO STATE, NIGERIA <u>Josephine Edward</u>, Funmilayo Ayeni Ekiti State University, Nigeria 4:00pm - 4:15pm SPATIAL VARIATIONS IN PHYSICOCHEMICAL WATER QUALITY: RESILIENCE MECHANISMS IN THE ATHI RIVER BASIN, KENYA <u>Vincent Anaboro Ogbonna</u> University of Port Harcourt, Nigeria 4:15pm - 4:30pm Evaluating interpretable statistical models for predicting nutrients in surface waters in a scarce tropical data context <u>Luis Quesada</u>^{1,2}, Christian Birkel^{2,3}, Tayler Clarke^{2,5}, Helga Madrigal¹, Alicia Fonseca¹, Ingo Wehrtmann^{4,5} 1: National University of Costa Rica, Costa Rica; 2: Universidad de Costa Rica; 3: Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany; 4: Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), Universidad de Costa Rica, San José, Costa Rica; 5: Editorial Universitaria, Universidad del Valle de Guatemala, Ciudad de Guatemala, Guatemala	Balancing Agriculture and Water Quality: Nutrients, Pesticides, and Irrigation Practices (ORALS) Location: PrechtIsaal Chair: Eakalak Khan 3:30pm - 3:45pm Construction and Demonstration of a Whole-Process Technology System for Agricultural Non-Point Source Pollution Prevention and Control in the Yangtze and Yellow River Basins <u>Yonghui Song</u>^{1,2,3}, Jian Zhao^{1,3}, Congyu Hou^{1,3}, Haixia Liu^{1,3}, Jing Bai^{1,3}, Lijing Wang^{1,2} 1: a. State Key Laboratory of Environmental Criteria and Risk Assessment, Chinese Research Academy of Environmental Sciences, 100012 Beijing, China; 2: b. National Joint Research Center for Yangtze River Conservation, Ministry of Ecology and Environment of China, 100012 Beijing, China; 3: c. Institute of Water Ecology and Environment, Chinese Research Academy of Environmental Sciences, 100012 Beijing, China 3:45pm - 4:00pm Balancing Food production and Water Security: Integrated Nutrient Management and Nature Based solutions for Agricultural Non-Point Source Pollution Control in Uganda's Lake Victoria Basin. <u>Atim Proscovia</u> Lyra Water and irrigation Technologies, Uganda 4:00pm - 4:15pm From Regulatory Action to Environmental Legacy: Persistent Pesticide Contamination in Water and Food Systems of Thailand Following Chemical Bans <u>Puangrat Kaewlom</u>¹, Patchimaporn Udomkun^{1,2}, Thirasant Boonupara³, Thidarat Rupngam^{1,2} 1: Department of Environmental Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, 50200, Thailand; 2: Office of Research Administration, Chiang Mai University, Chiang Mai, 50200, Thailand; 3: Living Soil Co., Ltd., Chiang Mai, Thailand 4:15pm - 4:30pm From monitoring to management: a framework for addressing diffuse pesticide emissions in the Great Barrier Reef catchment area <u>Cath Neelamraju</u>^{1,2,5}, Reinier Mann^{2,4,5}, Zoe Bainbridge^{3,5}, Eloise Wilson^{1,2,5}, Angela Marsh^{1,2,5}, Nattapat Attagad^{1,5},

	4:30pm - 4:45pm Machine Learning-Based Data Imputation and EWQI Water Quality Classification Using Long-Term Monitoring Data from the Danube River Thomas Edward Bladen¹, Hulya Boyacioglu² 1: Dokuz Eylul University, Graduate School of Natural and Applied Sciences, Izmir, 35390, Türkiye; 2: Dokuz Eylul University, Department of Environmental Engineering, Izmir, 35390, Türkiye	Hannah Mitchell^{1,5}, David Orr^{2,5}, Kylee Welk^{2,5}, Hayley Kaminski^{2,5}, Ben Woodward^{2,5}, Ryan Turner^{1,2,5} 1: Reef Catchments Science Partnership, School of the Environment, The University of Queensland, Brisbane, Queensland, Australia.; 2: Department of the Environment, Tourism, Science and Innovation, Brisbane, Queensland, Australia.; 3: TropWATER, James Cook University, Townsville, Queensland, Australia.; 4: Sustainable Minerals Institute, The University of Queensland, Brisbane, Queensland, Australia.; 5: Catchment Water Quality Alliance, QLD, Australia.
	4:45pm - 5:00pm Predicting Micropollutant Concentrations in River Networks Using a Dual-Directed Graph Convolutional Network: A Framework for Monitoring Network Optimization Diane Pamela Palmero, Seoyeon Jang, Joo Hyon Kang Dongguk University, Republic of Korea	4:30pm - 4:45pm Investigation of a Multi-Stage Rainwater Harvesting System with Drip Irrigation for Roof Runoff Management Justine Rey Macalalad, Julius Richel Manlutac, Mario De Leon, Renan Ma Tanhueco, Marla Maniquiz-Redillas De La Salle University, Philippines 4:45pm - 5:00pm Comparative Evaluation of Different Irrigation Practices in Sunflower Production through Life Cycle Assessment with Crop Growth Modeling Mehmet Can Guclu¹, Busra Cicekalan¹, Huseyin Guven¹, Ismail Koyuncu^{1,2}, Mustafa Evren Ersahin^{1,2}, Hale Ozgun^{1,2} 1: Istanbul Technical University, Civil Engineering Faculty, Department of Environmental Engineering, Maslak, Istanbul 34469, Türkiye; 2: National Research Center on Membrane Technologies, Istanbul Technical University, Maslak, Istanbul 34469, Türkiye
5:00pm - 5:15pm	Technical break	
5:15pm - 6:00pm	Closing session Location: PrechtIsaal	



Friday, November 27



Technical Tours

Technical Tour No.1 (Petronell)

Riverbank and membrane
filtration drinking water
treatment plant
Petronell-Carnuntum

9 am – 3 pm
max. 20 persons

Technical Tour No.2 (Traisen)

Hydropower and large-scale
river renaturation

8:30 am – 5:30 pm
max. 25 persons