











The 2022 International Symposium on **Ecohydraulics**

October 10-14, 2022 | Nanjing, China



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Welcome Message

On behalf of the International Association for Hydro-Environment Engineering and Research and the local organizing committee, we cordially invite you to the 14th International Symposium on Ecohydraulics that will be held from October 10th to 14th 2022 in Nanjing, China, an ancient capital of ten dynasties in Chinese history, boasting numerous historic sites, splendid cultural heritages, beautiful cityscape and sceneries.



Ecohydraulics is a rapidly developing inter-discipline of ecology and hydraulics brought about by the ever-growing concern of aquatic and riparian ecology. Since its first edition in 1994, the International Symposia on Ecohydraulics (ISE) have provided platforms for scientists and engineers worldwide to discuss cutting-edge scientific progress, compare and evaluate state-of-the-art technical methods, and recommend them to the end-users.

ISE 2022 covers a wide spectrum of topics related to ecohydraulics in theory and in practice, including the hydrological, hydraulic, morphodynamic, structural, ecological, biological, and technical aspects of the discipline. Five high-profile keynote speeches will be presented. We are expecting you to present at the symposium and share the latest advancement of your research with the international scientific community. Special issues on Journal of Ecohydraulics, International Journal of Sediment Research, Ecohydrology, and Environmental Science & Ecotechnology focusing on this conference will be published. Traditionally, ISE features an ECoENet pre-conference workshop which helps early career researchers working in ecohydraulics find opportunities and overcome challenges. Starting from the current edition, ISE plans to provide an interactive lecture for a helpful technical tool applied in one of these three topics: (1) fieldwork, (2) lab experiments, and (3) numerical simulations, and rotate among them in the future.

Jianyun Zhang

Yangtze Institute for Conservation & Development, China Nanjing Hydraulic Research Institute, China

Welcome Message

Local Organizing Committee

Conference Chair

Jianyun Zhang (Yangtze Institute for Conservation & Development; Nanjing Hydraulic Research Institute, China)

Chief Executive

Hongwu Tang (Hohai University, China)

Hongwei Fang (Tsinghua University, China)

Secretary General

Qiuwen Chen (Yangtze Institute for Conservation & Development; Nanjing Hydraulic

Research Institute, China)

Xudong Fu (Tsinghua University, China)

Jinhai Zheng (Hohai University, China)

Shiqiang Wu (Nanjing Hydraulic Research Institute, China)

Gaohu Sun (IAHR Beijing Office; China Institute for Water Resources and Hydropower

Research, China)

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Chunhui Lu (Yangtze Institute for Conservation and Development; Hohai University, China)

Yuqing Lin (Nanjing Hydraulic Research Institute, China)

Members

Jindong Cai (IAHR Beijing Office; China Institute for Water Resources and Hydropower Research, China)

Liuming Hu (Nanjing Hydraulic Research Institute, China)

Ruiyu Wang (Tsinghua University, China)

Zi Wu (Tsinghua University, China)

International Scientific Committee

Chairs

Joseph Lee (IAHR, Macau University of Science and Technology, China)

Peter Goodwin (University of Maryland, USA)

Roger Falconer (Cardiff University, UK)

Vladimir Nikora (Unveristy of Aberdeen, UK)

Gregory Pasternack (University of California at Davis, USA)

Past and current members and advisors of IAHR Ecohydraulics Committee Leadership Team:

Ana Adeva Bustos (ECOeNET, NTNU, Norway)

Angus Webb (University of Melbourne, Australia)

Arthur Mynett (NESCO-IHE & Delft University of Technology, the Netherlands)

Bettina Bockelmann-Evans (Cardiff University, UK)

Byungwoong Choi (Yonsei University, South Korea)

Hervé Capra (IRSTEA Lyon, France)

Chris Katopodis (Katopodis Ecohydraulics Ltd, Canada)

Claudio Meier (University of Memphis, USA)

Christopher Hauer (Boku, Austria)

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Choi Sung-Uk (Yonsei University, South Korea)

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Diego García de Jalón (Technical University of Madrid, Spain)

Ellis Penning (Deltares, the Netherlands)

Emilio Politti (University of Trento, Italy)

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Gregory Egger (Karlsruhe Institute of Technology, Germany)

Gregory Pasternack (University of California at Davis, USA)

Harm Duel (Deltares, the Netherlands)

Helmut Mader (Boku Vienna, Austria)

Hyoseop Woo (Gwangju Institute of Science and Technology, South Korea)

lan Jowett (National Institute of Water and Atmospheric Research Limited, Hamilton, New Zealand)

Jing Peng (China Institute of Water Resources and Hydropower Research, China)

Klaus Jorde (KJ Consult, Austria)

Marie-Pierre Gosselin (Norwegian Institute for Nature Research, Norway)

Markus Noack (University of Stuttgart, Germany)

Martin Wilkes (Coventry University, UK)

Mengzhen Xu (Tsinghua University, China)

Michael Stewardson (University of Melbourne, Australia)

Morten Stickler (University of South-Eastern Norway, Norway)

Nicolas Lamouroux (IRSTEA Lyon, France)

Natasa Smolar-Zvanut (Institute for Water of the Republic of Slovenia, Republic of Slovenia)

Paul Kemp (University of Southampton, UK)

Piotr Parasiewicz (S. Sakowicz Inland Fisheries Institute, Poland)

Rafael Tinoco (University of Illinois at Urbana-Champaign, USA)

Rohan Benjankar (Southern Illinois University Edwardsville, USA)

Robert T. Milhous (Midcontinent Ecological Science Center, Biological Resources Division,

US Geological Survey, USA)

Roser Casas-Mulet (Water Research Institute, Cardiff University, UK)

Samhee Lee (Korea Institute of Construction Technology, Korea)

Shinji Fukuda (Tokyo University of Agriculture and Technology, Japan)

Sung-Uk Choi (Yonsei University, South Korea)

Tetsuro Tsujimoto (Department of Geo-Encironmental Engineering, Nagoya University, Japan)

Thomas B. Hardy (Texas State University, USA)

Valerie Ouellet (University of Birmingham, UK)

Wengen Liao (General Institute of Water Resources and Hydropower Planning and Design, Ministry of Water Resources, Beijing, China)

Xiaodong Qu (China Institute of Water Resources and Hydropower Research, China) Yann Le Coarer (INRAE, UR RECOVER, France)

Guideline for participants

Online participants

Session chairs and presenters

Zoom meeting linkage will be sent via email!

Other Participants



Click here or scan code

to enter the conference rooms. There are

7 conference rooms. The pre-conference workshop ECoENet is in **ECoENet**. The opening ceremony, closing ceremony, and the keynote speeches are in **Main track**. Presentations are categorized in **5 groups: S1:** Hydrologic aspect of ecohydraulics; **S2:** Hydraulic aspect of ecohydraulics; **S3:** Ecohydraulics on micro-scale, **S4:** Ecohydraulics on macro-scale, **S5:** Applied Technology in Ecohydraulics. Each group includes 8-10 sessions. Each sessions includes 3-5 presentations. Please locate your presentation in the session lists.

Due to the current pandemics in China, the symposium will be held online. This makes poster presentation impractical. All participants are requested to make an oral presentation. An oral presentation is composed of 12 min presentation +3 min Q&A. Speakers should use English for the presentations.

Offline participants:

If you want to attend the symposium onsite, please contact Prof. Lu Chunhui, Hohai University (clu@hhu.edu.cn) for information of lodging and epidemics-related issues.

Conference Venue: Hohai University, 1 Xikang Road, Nanjing, China

Opening ceremony: Meeting Room 108 at the Wen Tian Guan, Hohai University

Link to the map of the venue: https://s.yicode.org.cn/4xwlua



Wen Tian Guan (闻天馆)in Hohai University

Closing ceremony: Meeting Room 202 at the Yangtze Institute for Conservation &

Development (Xin Xi Guan), 1 Xikang Road

Link to the map of the venue: https://s.yicode.org.cn/ysdiiv

Technical Session Group S1: Meeting Room 107 at the Yangtze Institute for Conservation & Development (Xin Xi Guan), 1 Xikang Road

Technical Session Group S2: Meeting Room 202 at the Yangtze Institute for Conservation & Development (Xin Xi Guan), 1 Xikang Road

Technical Session Group S3: Meeting Room 212 at the Yangtze Institute for Conservation & Development (Xin Xi Guan), 1 Xikang Road

Technical Session Group S4: Meeting Room 310 at the Yangtze Institute for Conservation & Development (Xin Xi Guan), 1 Xikang Road

Technical Session Group S5: Meeting Room 406 at the Yangtze Institute for Conservation & Development (Xin Xi Guan), 1 Xikang Road

Accommodation:

Hohai International Conference Center & Hotel (Nanjing Juanheng Hotel) is located at 1 Xikang Road, Gulou District, Nanjing, next to Hohai University. It is located in the downtown of Nanjing. It takes just a 10 minutes' drive to Xinjiekou Business Center, 20 minutes to Nanjing Railway Station and Nanjing South Railway Station, and 50 minutes to Nanjing Lukou International

Airport. The excellent position makes it an ideal lodging place for business, academic, and sightseeing travelers.

The total area of the hotel is about 35,000 m². The hotel has 340 guest rooms of all types, including suite, deluxe room, superior room, standard room, etc. It features various types of conference rooms, full-time cafeteria, restaurants, banquet hall, and complete entertainment facilities. It is a multi-function hotel providing catering, accommodation, conference, tourism reception, education and training, international exchange services and other services.





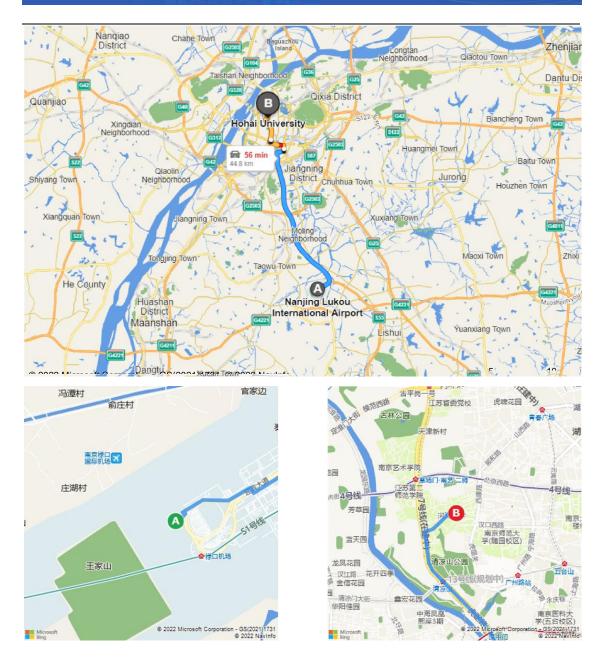




Transportation to the Venue & Hotel

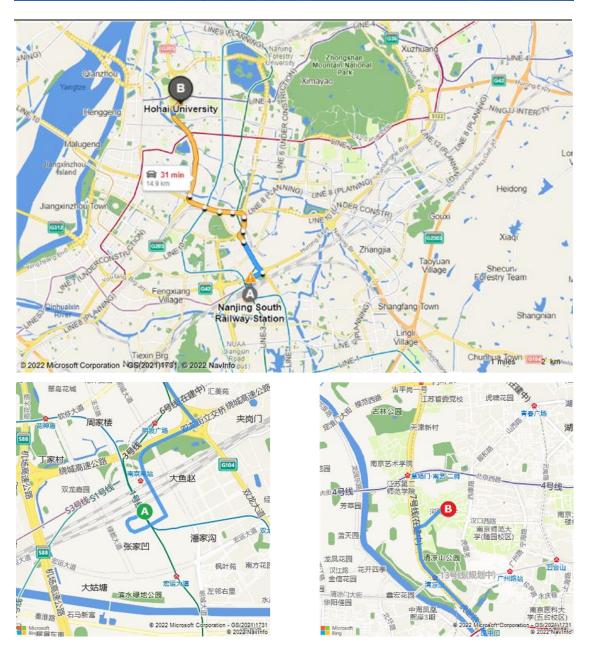
1. From Nanjing Lukou International Airport

The venue is 45km from Nanjing Lukou International Airport. It costs about ¥ 100 by taxi to go to the venue from the airport To reach the venue by public transportation, take Metro Line S1 from the airport to Nanjing South Railway Station (南京南站), change to Metro Line 1 to Gulou Station (鼓楼站), and change to Metro Line 4 to Caochangmen Station (南艺·二师·草场门站). Then take a 13min walk and get to Gate 2 of Hohai University.



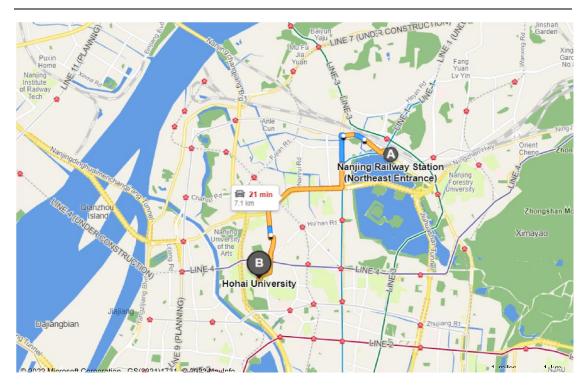
2. From Nanjing South Railway Station

The venue is 14km from Nanjing South Railway Station (南京南站). It costs about ¥ 40 to go to the venue by taxi from Nanjing South Railway Station. To reach the venue by public transportation, take Metro Line 1 from Nanjing South Railway Station (南京南站) to Gulou Station (鼓楼站), then change to Metro Line 4 to Caochangmen Station (南艺·二师·草场门站). Then take a 13min walk and get to Gate 2 of Hohai University.



3. From Nanjing Railway Station

The venue is 10km from Nanjing Railway Station (南京站). It costs about ¥26 to go to the venue by taxi from Nanjing Railway Station. To reach the venue by public transportation, take Metro Line 1 from Nanjing Railway Station (南京站) to Gulou Station (鼓楼站), change to Metro Line 4 to Caochangmen Station (南艺·二师·草场门站). Then take a 13min walk and get to Gate 2 of Hohai University.







Program at a Glance

Note: This is an overview of the programs. The exact time of each session may be slightly earlier or later than shown in the table. Please refer to the List of Oral Presentations for the exact time of your presentation. All times here are **Beijing Time (+8)**. Please convert it to the time zone of your place.

Time	Oct. 10th	Oct. 11th	Oct. 12th	Oct. 13th
09:00-10:00	Onsite	Opening		
10:00-11:00	Registration & CNC-IAHS Ecohydrology Annual	Keynote 1	S1-4, S2-3, S3- 3, S4-3, S5-3	S2-7, S3-6, S4-7
11:00-12:00	Symposium	Keynote 2	S2-4, S3-4, S4-4,	S3-7, S4-8
12:00-14:00		Lunch		
14:00-15:00	Registration	Keynote 3	Keynote 4	Keynote 5
15:00-16:00	14:30-18:00 Training Course (ECoENet)	S1-1, S2-1, S3-1, S4-1, S5-1	S1-5, S2-5, S4- 5, S5-4	S1-8, S2-8, S3-8, S4-9, S5-7
16:00-17:00		S2-2, S5-2	S1-6, S2-6, S3- 5, S4-6, S5-5,	S2-9, S3-9, S4-10, S5-8
17:00-18:00		S1-2, S3-2, S4-2	S5-6	Closing
18:00-22:00	Dinner			
22:00-23:00		S1-3	S1-7	

Presentations are categorized in **5 groups: S1:** Hydrologic aspect of ecohydraulics; **S2:** Hydraulic aspect of ecohydraulics; **S3:** Ecohydraulics on micro-scale, **S4:** Ecohydraulics on macro-scale, **S5:** Applied Technology in Ecohydraulics. Each group includes 8-10 sessions. Each sessions includes 3-5 presentations. Please locate your presentation in the session lists.

Program at a Glance

Theme	Hydrology	Hydraulics	Micro-scale	Macro-scale	Technology
9:00-10:00			Opening Ceremo	ony	
10:00-11:00		Ke	ynote 1, Evelyn	Habit	
11:00-12:00		ŀ	Keynote 2, Jinre	n Ni	
Lunch					
14:00-15:00		Key	ynote 3, Thibault	Datry	
15:00-16:00	S1-1	S2-1	S3-1	S4-1	S5-1
16:00-17:00		S2-2			S5-2
17:00-18:00	S1-2		S3-2	S4-2	
Dinner					
22:00-23:15	S1-3				

Oct 12 th					
Theme	Hydrology	Hydraulics	Micro-scale	Macro-scale	Technology
9:00-10:00					
10:00-11:00	S1-4	S2-3	S3-3	S4-3	S5-3
11:00-12:00		S2-4	S3-4	S4-4	
Lunch					
14:00-15:00		Ke	ynote 4, Brian D	. Fath	
15:00-16:00	S1-5	S2-5		S4-5	S5-4
16:00-17:00	S1-6	S2-6	S3-5	S4-6	S5-5
17:00-18:00					S5-6
Dinner					
22:00-23:00	S1-7				

Oct 13 th					
Theme	Hydrology	Hydraulics	Micro-scale	Macro-scale	Technology
9:00-10:00					
10:00-11:00		S2-7	S3-6	S4-7	
11:00-12:00			S3-7	S4-8	
Lunch					
14:00-15:00		Key	note 5, Taylor M	laavara	
15:00-16:00	S1-8	S2-8	S3-8	S4-9	S5-7
16:00-17:00		S2-9	S3-9	S4-10	S5-8
17:00-18:00			Closing Ceremo	ony	

Pre-conference Workshop

ECoENEt workshop supported by YICODE and ECoENet

YICODE will support a one-day workshop for ECoENet oriented to Yangtze ecohydraulic research activities and relevant subjects. ECoNNet is an international research consisting of research students and early career researchers (ECRs) working within Ecohydraulics and the wider river sciences. ECoENet aims to help ECRs find opportunities and overcome challenges as they begin their careers. We have placed emphasis on holding workshops where we involve ECRs in brainstorming sessions focused on identifying opportunities and challenges, either from their individual experiences or following ideas provoked by keynotes from established researchers. ECoENet aims to develop platform to help ECRs find opportunities and overcome challenges they identified by providing tools and resources. Through our close association with the ecohydraulics and wider river science communities, our members can have a real impact on the future direction of river science for the benefit of academic knowledge and environmental management outcomes. The findings of our first workshop at the International Symposium on Ecohydraulics (ISE 2016) identified that ECRs need to develop their careers on an international scale in a way that crosses traditional disciplinary boundaries.

Opening Ceremony

Opening Ceremony Speech



Oct 11th 9:00-9:15

Prof. Gregory Pasternack

University of California at Davis

Title of Speech:

Ecohydraulics Community: Past and Future

Personal Profile:

Gregory Pasternack is a professor of hydrology at University of California at Davis. He received M.S. in Environmental Water Resource Engineering at University of California, Berkeley, and Ph.D. in Geography and Environmental Engineering at Johns Hopkins University. His research interests include geomorphic and hydrologic characterization of the impacts of historic and modern human activities on watershed and estuarine processes, river restoration, watershed-estuarine interactions on multiple time scales, and wetland restoration. His career goal is to help society manage and restore hydrogeomorphic processes in support of enhanced ecosystem functioning. To reach this goal, his team adopts a combination of measures including (i) basic physical and ecological science to understand how the naturally complex landscape works, (ii) development of methods and software for designing more natural, functional environments, and (iii) technology transfer to get concepts, methods, and results into the hands of practitioners, regulators, and stakeholders. He is the current president of the Committee on Ecohydraulics of IAHR. The orientation of the committee consists in close collaborations with other international associations working in the field of aquatic ecosystems, in setting up speciality working groups on specific themes, and in working on state-of-the-art papers, monographs, guidelines for "end users". The general aims are to bring specialists together in order to discuss, compare and evaluate methods in these fields, and to propose with recommendations for the end-users.

Plenary talk 1



Oct. 11th 10:00-11:00

Prof. Evelyn Habit

Universidad de Concepción, Chile

Title of the Speech:

Past, present and future connectivity of Chilean Andean Rivers: implications for fish conservation

Abstract:

Connectivity plays a crucial role in maintaining the structural and functional attributes of river networks and their biota. A proper understanding of the drivers affecting river connectivity, and thus, fish dynamics, requires consideration of both historical and contemporary processes. This information in turn provides evidence of how fish are likely to respond to future landscape changes. Here, I summarize results of our research using a multitemporal approach to examine the consequences of riverine connectivity alteration. In the past, events like the rise of the southern Andes and the Quaternary glacial cycles shaped riverine landscapes, influencing river connectivity, and affecting the phylogeographic and biogeographic patterns of its fish fauna. More recently, the global hydropower boom is acting as one of the main drivers of changes in connectivity (fragmentation), with significant effects on the diversity of riverine biota. In this talk, I present several examples of native Chilean species and how past and present river connectivity changes have affected their genetic composition, population and metapopulation structure, assemblage composition and beta diversity. Finally, I discuss implications for conserving a valuable endemic set of species for the future expected loss of connectivity.

Personal Profile:

Evelyn Habit is a fish biologist. She is a full professor at the Faculty of Environmental Science of Universidad de Concepción in Chile. Chile is a long, narrow country stretching over 6000 km on the western edge of South America. The country is between Andes on the east and the Pacific on the west. It is on an active continental margin, featured by a young mountain belt, a magmatic belt, large areas of glaciers, and very active earthquakes and volcano eruptions. One of Evelyn Habit's research specialties is the roles of volcano eruption, glacier activity, and orogeny on fish ecosystem. Her research focus is on freshwater fish ecology and management. She addresses questions related to human activities as drivers of the status of freshwater fish populations and communities, emphasizing the conservation of Chilean native species. She is interested in unravelling the effects of multiple stressors on riverine watersheds studying responses at different ecological levels and spatial and temporal scales. She is particularly interested in

understanding the impacts of invasive species, flow regime alterations, physical connectivity changes and climate change in Andean and Patagonian river watersheds.

Plenary talk 2



Oct. 11th 11:00-12:00

Prof. Jinren Ni

Peking University, China

Title of the Speech:

Research of river sustainability using all material flux indices in river ecosystems

Personal Profile:

Jinren Ni is a river scientist at Department of Environmental Engineering of Peking University. His research interests include river sustainability, water treatment, and sediment transport. He has published more than 200 peer-reviewed papers and has been awarded more than 50 patents. He serves on editorial boards of seven international journals. He has been one of the founding directors of Institute of Environmental Engineering, Department of Environmental Engineering, Key Laboratory of Water and Sediment Sciences (Ministry of Education), National Metrology Certification Laboratory of Environmental Engineering at Peking University, and Beijing Engineering Technology Research Center for Advanced Wastewater Treatment. He put forward the idea of all material fluxes in river ecosystems, which provides insights into the interaction among various biotic and abiotic materials (e.g. water, sediment, natural organic matter, pollutants) transported by rivers. He led a team to survey and monitor all material fluxes in the Yellow River, the Yangtze River, the Lancang River (Mekong River), and the Nu River (Salween River) to quantify the effects of human activities such as irrigation, dam building, and pollution on river ecosystems. In the spatial direction, hydraulic and ecological processes in the hyporheic zone have been paid attention to; in the temporal direction, changes in river patterns and transformation of river functions have been taken notice of.

Plenary talk 3 Oct. 11th 14:00-15:00

Prof. Thibault Datry

French National Research Institute for Agriculture, Food and the Environment, Lyon, France



Title of the Speech:

Intermittent rivers and ephemeral streams: a challenge for freshwater science

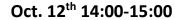
Abstract:

For several centuries, freshwater research has focused on perennial rivers and streams which flow all year round. However, those which don't, because they cease to flow or dry up completely at some stage in space and time, (hereafter intermittent rivers and ephemeral streams, IRES), are a very recent addition to the field, although they comprise more than half of the global river network and dominate in many areas, including Mediterranean regions. Concepts that have guided studies of biological communities and biogeochemical fluxes, and material exchange between rivers and the atmosphere, land, ocean and groundwater presume perennial flow and continuous hydrological connectivity. In IRES, the loss of hydrological continuity affects virtually all ecological processes, including the evolution, dispersal and habitat selection of aquatic and terrestrial species. In this keynote, I will discuss the challenges that IRES pose to river sciences and present why advancing IRES research is needed for improving the management of river networks in the Anthropocene era.

Personal Profile:

Thibault Datry is a freshwater scientist at INRAE (French National Research Institute for Agriculture, Food and the Environment) leading the EcoFlowS lab in Lyon, France. His research focuses on the ecology of rivers and hyporheic zones, with particular emphasis on intermittent rivers and ephemeral streams. He has passion for understanding the effects of natural and anthropogenic changes on community and ecosystem processes at multiple scales and translating it into tools and guidelines for water managers. He is developing international research programs at the global scale, while his primary study area primarily includes lotic and lentic ecosystems in France, New Zealand and Bolivia, where he has active collaborations and frequent visits. In the past 15 years, he has published over 100 peer-reviewed papers related to stream and groundwater ecology and edited with two colleagues (and friends) the first book on the science and management of intermittent rivers and ephemeral streams. He serves on editorial boards of four international journals, organized two Special Issues and more than twenty Special Sessions on intermittent river ecology management at international conferences.

Plenary talk 4



Prof. Brian D. Fath

Towson University, Maryland, USA



Conbiotic gradient formation in soils and drainage basins: evidence of win-win ecological interactions



Abstract:

The earth is a living planet and life processes influence all aspects of it. In this presentation, we introduce the concept of conbiota (with life) to replace the antiquated and reductionistic term abiota (without life). These conbiotic interactions often result in synergistic outcomes that improve both the life and environment relations. Soil formation is one of the best examples, through ecological succession, of improving conditions that further life processes. We question how humans can learn from nature to design and develop, evolve and inform, more synergistic and sustainable socio-ecological relations.

Personal Profile:

Brian D. Fath is a Professor in the Department of Biological Sciences at Towson University (Maryland, USA). He has published over 180 research papers, reports, and book chapters on environmental systems modeling. His research focuses on sustainability science, which is a critically important area that encompasses a broad range of research interests including ecosystem services, biodiversity, natural resources, human cultures, and specific environments. He uses network analysis to investigate thermodynamic sustainability indicators. These indicators are often referred to as ecological goal functions, which are used to describe the direction of development that ecosystem properties such as energy or exergy flow, biomass production, or respiration undergo during succession. These metrics help understand the overall behavior and health of that system and its response due to perturbations. A main advantage of using network analysis is the ability to view the ecosystem as a connected web of interactions. He prefers to regard it as a more holistic approach because it considers the behavior of individual compartments as embedded in a larger network of interactions. He is also interested in how ecosystems interact with human systems and vice versa. Integrated environmental assessment is an interdisciplinary and social process linking knowledge and action in public policy aimed at identifying and analyzing interactions of natural and human processes which determine both the current and future states of environmental quality.

Plenary talk 5



Oct. 13th 14:00-15:00

Prof. Taylor Maavara

University of Leeds, UK

Title of the Speech:

Carbon cycling in inland waters

Personal Profile:

Taylor Maavara is a research scientist in the School of Geography at the University of Leeds. She is an aquatic biogeochemist, studying a range of perturbations to nutrient and carbon cycles in inland and near-coastal waters, including river damming and climate change. She received her PhD in 2017 from the University of Waterloo in Canada, where she studied the impacts of river damming on global biogeochemical cycles in rivers, reservoirs and coastal zones, including nitrogen, phosphorus, carbon and silicon. She completed her postdoctoral fellowships at Lawrence Berkeley National Laboratory in California, studying the impacts of climate change on high altitude river network nitrogen cycling, and at Yale University in Connecticut studying carbon cycling and greenhouse gas emissions in large river networks. She is both a field researcher and modeler, with a particular expertise on developing novel scaling techniques to quantify watershed- to global-scale anthropogenic impacts and feedbacks. Lately, she is interested in quantifying the mechanisms driving greenhouse gas emissions from inland waters by building high spatiotemporal resolution models of entire river networks. At Leeds, she is also working to understand whether dam management can be used advantageously to mitigate changes to river nutrient cycles and greenhouse gas emissions.

Closing Ceremony

Closing Ceremony Speech





Oct 13th 17:00-17:15

Prof. Valérie Ouellet

Prof. André St-Hilaire

Title of Speech:

ISE2024: Quebec City, Canada eagerly awaits your arrival!

The next edition of International Symposium on Ecohydraulics will be held in 2024 in Quebec City, Canada. Prof. Valérie Ouellet and Prof. André St-Hilaire are invited to give a talk about ISE 2024.

Abstract:

ISE2024 will be held in Québec City, Canada. Québec City was founded in 1608, and is a UNESCO Heritage Site. Our city is known for its historic charm and unique architecture, with over 400 years of French history and culture. The downtown core is unique, with a blend of French and British architectures, scenic viewpoints and breathtaking views of the famous and majestic St. Lawrence River. It is thus an ideal site to host our conference. In addition to the usual research themes that are part of every ISE conference (e.g., hydraulic modelling, fish passage, morphodynamics, habitat modelling, etc.) sessions related to the use of citizen science and traditional knowledge, remote sensing, fish habitat and hydropower will be held. Please join us in 2024!

Personal Profiles:

Valérie Ouellet is a Diadromous Species Scientist working in NOAA Fisheries. She works on understanding how different environmental variables, such as water temperature and flow, affect the habitat and physiology of key fish species. She aims to understand how aquatic ecosystems are changing to inform on restoration strategies and aquatic resources management, especially in the context of human-impacted systems and climate change. She is now focussing on diadromous fish, their interactions, and how the changes in marine and freshwater ecosystems affect their productivity.

Dr. André St-Hilaire is a professor in Hydrology at INRS, Université du Québec in Québec City. He is a member of the Hydroclimatic Statistics Research Group at that same university.

Closing Ceremony

He holds a BSc in Physics and Oceanography from Royal Roads Military College (BC), a Masters of Applied Sciences in estuarine hydrodynamics from Université de Moncton and a PhD in Water Science from INRS. His current research focuses on environmental hydrology, with an emphasis on hydrological extremes as well as hydrological, habitat and water quality modelling with recent developments in water temperature and river sediment.

Session ID	Contents
Keynote 1	Title: Past, present and future connectivity of Chilean Andean Rivers: implications for fish conservation Speaker: Evelyn Habit
Keynote 2	Title: Research of river sustainability using all material flux indices in river ecosystems Speaker: Jinren Ni
Keynote 3	Title: Intermittent rivers and ephemeral streams: a challenge for freshwater science Speaker: Thibault Datry
Keynote 4	Title: Conbiotic gradient formation in soils and drainage basins: evidence of win-win ecological interactions Speaker: Brian D. Fath
Keynote 5	Title: Carbon cycling in inland waters Speaker: Taylor Maavara

Session ID	Contents
Session 1-1	Title: Special Session: Integrating Ecohydraulics and Ecohydrology in Environmental Flow Assessment and implementation (1) Conveners: Francisco Martinez-Capel, Universitat Politècnica de
(S1-1)	València, Spain; Shinji Fukuda, Tokyo University of Agriculture and Technology, Japan; Michael McClain, IHE Delft Institute for Water Education, the Netherlands; Daniele Tonina, University of Idaho, USA
Session 1-2	Title: Environmental Flow (1)
(S1-2)	Chair: Silvia Quadroni, University of Insubria, Italy
	Title: Special Session: Integrating Ecohydraulics and Ecohydrology in Environmental Flow Assessment and Implementation (2)
Session 1-3 (S1-3)	Conveners: Francisco Martinez-Capel, Universitat Politècnica de València, Spain; Shinji Fukuda, Tokyo University of Agriculture and Technology, Japan; Michael McClain, IHE Delft Institute for Water Education, the Netherlands; Daniele Tonina, University of Idaho, USA
	Title: Special Session: Sustainability of Ecology and Hydrology of Floodplain Lake Systems of the Large River Basins under Rapidly Changing Climatic and Social Dimensions
Session 1-4 (S1-4)	Conveners: Giri R Kattel, Nanjing University of Information Science and Technology, Nanjing, China; University of Melbourne, Melbourne, Australia; Zhiguo Yu, Nanjing University of Information Science and Technology, Nanjing, China; Hong Yang, University of Reading, Reading, United Kingdom
Session 1-5	Title: Environmental Flow (2)
(S1-5)	Chair: Lotta Blaskovicova, Slovak Hydrometeorological Institute, Slovakia
Session 1-6	Title: Hydropeaking
(S1-6)	Chair: Daniel Hayes, University of Natural Resources and Life Sciences, Austria
	Title: Special Session: Hydrological Connectivity of River Ecosystems
Session 1-7 (S1-7)	Conveners: Shanghong Zhang, North China Electric Power University, Beijing, China; Silke Wieprecht, University of Stuttgart, Stuttgart, Germany; Yujun Yi, Beijing Normal University, Beijing, China; Sebastian Schwindt, University of Stuttgart, Stuttgart, Germany; Jin Zhang, Yantai University, Yantai, China

Session 1-8 (S1-8)	Title: Effect of Climate Change on Ecology Chair: Francisco Martinez Capel, Universitat Politècnica de València, Spain
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Session 2-1 (S2-1)	Title: Sediment-Ecology Interaction Chair: Xiongdong Zhou, Tsinghua University, China
Session 2-2 (S2-2)	Title: Land Surface Process and Environmental Changes (1) Chair: Ruiyu Wang, Tsinghua University, China
Session 2-3 (S2-3)	Title: Land Surface Process and Environmental Changes (2) Chair: Qing Feng, Yellow River Institute of Hydraulic Research, China
Session 2-4 (S2-4)	Title: Special Session: Ecohydraulics of Hyporheic Zone in River, Estuarine and Coastal Sediments (1) Conveners: Alessandra Marzadri, University of Trento, Italy; James Stegen, Pacific Northwest National Laboratory, USA; Xiaobing Chen, Hohai University, China; Daniele Tonina, University of Idaho, USA
Session 2-5 (S2-5)	Title: Special Session: Ecohydraulics of Hyporheic Zone in River, Estuarine and Coastal Sediments (2) Conveners: Alessandra Marzadri, University of Trento, Italy; James Stegen, Pacific Northwest National Laboratory, USA; Xiaobing Chen, Hohai University, China; Daniele Tonina, University of Idaho, USA
Session 2-6 (S2-6)	Title: Effect of Organism on Flow (1) Chair: Yi Rong, The Hong Kong Polytechnic University, China
Session 2-7 (S2-7)	Title: Effect of Organism on Flow (2) Chair: Zhan Hu, Sun Yat-Sen University, China
Session 2-8 (S2-8)	Title: Special Session: Ecohydraulics of Hyporheic Zone in River, Estuarine and Coastal Sediments (3) Conveners: Alessandra Marzadri, University of Trento, Italy; James Stegen, Pacific Northwest National Laboratory, USA; Xiaobing Chen, Hohai University, China; Daniele Tonina, University

	of Idaho, USA
Session 2-9	Title: Plastic Particles
(S2-9)	Chair: Xinjie Wang, Beijing Normal University, China
Session ID	Contents
Session 3-1	Title: Effect of Flow Condition on Organism
(S3-1)	Chair: Yujun Yi, Beijing Normal University, China
Session 3-2	Title: Fish Passage (1)
(S3-2)	Chair: Jeffrey Tuhtan, Tallinn University of Technology, Estland
	Title: Turbulence-Organism Interaction
Session 3-3 (S3-3)	Chair: Rafael Tinoco, University of Illinois At Urbana Champaign, USA
	Title: Fish Passage (2)
Session 3-4	Chair: Paul Franklin, National Institute of Water and Atmospheric
(S3-4)	Research, New Zealand
Cassian 2.5	Title: Fish Passage (3)
Session 3-5 (S3-5)	Chair: Helmut Mader, University of Natural Resources and Life Sciences, Austria
	Title: Special Session: Physical, Chemical, and Biological Aspects of Transport Processes in Aquatic Ecosystems (1)
Session 3-6 (S3-6)	Conveners: Zi Wu, Tsinghua University, Beijing, China; Marwan Hassan, The University of British Columbia, Vancouver, Canada; Li Zeng, China Institute of Water Resources and Hydropower Research, Beijing, China; Ping Wang, Beijing Forestry University, Beijing, China
	Title: Special Session: Physical, Chemical, and Biological Aspects of Transport Processes in Aquatic Ecosystems (2)
Session 3-7 (S3-7)	Conveners: Zi Wu, Tsinghua University, Beijing, China; Marwan Hassan, The University of British Columbia, Vancouver, Canada; Li Zeng, China Institute of Water Resources and Hydropower Research, Beijing, China; Ping Wang, Beijing Forestry University, Beijing, China

Session 3-8 (S3-8)	Title: Special Session: Physical, Chemical, and Biological Aspects of Transport Processes in Aquatic Ecosystems (3) Conveners: Zi Wu, Tsinghua University, Beijing, China; Marwan Hassan, The University of British Columbia, Vancouver, Canada; Li Zeng, China Institute of Water Resources and Hydropower Research, Beijing, China; Ping Wang, Beijing Forestry University, Beijing, China
Session 3-9 (S3-9)	Title: Fish Passage (4) Chair: Marie Pierre Gosselin, Norwegian Institute for Nature Research, Norway
Session ID	Contents
Session 4-1 (S4-1)	Title: Management and Restoration of River Channel and Riparian Zone (1) Chair: Giuseppe Francesco Cesare Lama, University of Napoli Federico II, Italy
Session 4-2 (S4-2)	Title: Management and Restoration of River Channel and Riparian Zone (2) Chair: Paolo Vezza, Politecnico di Torino, Italy
Session 4-3 (S4-3)	Title: Wetland Management and Restoration Chair: Shan He, Changjiang River Scientific Research Institute, China
Session 4-4 (S4-4)	Title: Sustainable Design in Ecohydraulics Chair: Gregory Pasternack, University of California, U.S.A.
Session 4-5 (S4-5)	Title: Aquatic Ecology and Water Health (1) Chair: Jiahao Zhang, Tsinghua University, China
Session 4-6 (S4-6)	Title: Coastal and Estuarine Ecohydraulics Chair: Yue Zhu, University of Nottingham Ningbo, China
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Session 4-8 (S4-8)	Title: Eco-Environmental Impact of High Dam and Large Reservoir Chair: Martin Hunt, Manitoba Hydro-Electric Board, Canada
Session 4-9 (S4-9)	Title: Risk Reduction in Ecosystem Chair: Kazuaki Ohtsuki, University of Yamanashi, Japan
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Session ID	Contents
Session 5-1 (S5-1)	Title: Remote Sensing Chair: Frederic de Schaetzen, ETH Zürich, Switzerland
Session 5-2 (S5-2)	Title: Ecohydraulics Modelling on Various Scales Chair: Matthias Schneider, SJE Ecohydraulic Engineering GmbH, Germany
Session 5-3 (S5-3)	Title: Genomics and Bioinformatics Chair: Sakiko Yaegashi, University of Yamanashi, Japan
Session 5-4 (S5-4)	Title: Experimental Ecohydraulics (1) Chair: Ingo Schnauder, Technische Universität Wien, Austria
Session 5-5 (S5-5)	Title: Experimental Ecohydraulics (2) Chair: Katharina Bensing, Technical University of Darmstadt, Germany
Session 5-6 (S5-6)	Title: Habitat Modelling of Concerned Species Chair: Hannah Schwedhelm, Technical University Munich, Germany
Session 5-7 (S5-7)	Title: Novel Software Applied in Ecohydraulics Chair: Araceli Martín Candilejo, Polytechnical University of Madrid, Spain

Session Name	S1-1: Special Session: Integrating Ecohydraulics and Ecohydrology in Environmental Flow Assessment and implementation (1)
Conveners	Francisco Martinez-Capel, Shinji Fukuda, Michael McClain, Daniele Tonina

Time	ID	Title	Presenter
15:00	S1-1-1	Habitat suitability-based effective number as a tool for assessing fish species diversity	Akihiro Tanaka
15:15	S1-1-2	2D hydrodynamic modeling for fish habitat assessment of two competing freshwater fish in the Yagawa River	Takahiko Kawasaki
15:30	S1-1-3	Development of a population dynamics model for dark chub (<i>candidia temminckii</i>) in a small springfed river using habitat suitability	Taichi Jibiki
15:45	S1-1-4	Defining environmental flows for India using the habitat simulation model, MesoHABSIM	Piotr Parasiewitz

Chair Silvia Quadroni

Time	ID	Title	Presenter
17:00	S1-2-1	Evaluation of future climate and potential impact on streamflow in the upper Oti River Basin of northern Togo	Batablinlè Lamboni
17:15	S1-2-2	Development of scientific approaches for environment flows assessment in Ukraine	Viacheslav Manukalo
17:30	S1-2-3	Towards an upgrading of minimum flows: the ecological effects of summer low flows in a regulated lowland river	Silvia Quadroni
17:45	S1-2-4	Hydrodynamic preferences of Chinese sturgeon in the spawning sites of Yangtze River: effects of in-stream hydraulic structures	Xuan Ban

Session Name Conveners		S1-3: Special Session: Integrating Ecohydraulics and Ecohydrology in Environmental Flow Assessment and implementation (2) Francisco Martinez-Capel, Shinji Fukuda, Michael McClain, Daniele Tonina			
Time	ID	Title	Presenter		
22:00	S1-3-1	Integrated modelling and monitoring of e-flows regulation in a Swiss Alpine river	Caponi Francesco		
22:15	S1-3-2	Flood events as restoration tools	Jhoselyn Milagros Aramburu Paucar		
22:30	S1-3-3	IHA analyzes and environmental flow in the upper Paraná fluvial macrosystem (PR-MS-Brazil)	Jose Antonio Arenas Ibarra		
22:45	S1-3-4	Environmental flow regime prescription transfer along a river basin	Rui Rivaes		

Session Name S2-1: Sediment-ecology Interaction

Chair Xiongdong Zhou

Time	ID	Title	Presenter
15:00	S2-1-1	The impact of land reclamation on ecosystem under a highly energetic coastal circulation with massive macro-vortices	Chang He
15:15	S2-1-2	Impact of hydropeaking on spawning substrate of fish	Ishwar Joshi
15:30	S2-1-3	Impacts of environmental factors on dynamics of particulate organic carbon adsorption on sediments	Yuyang Wu
15:45	S2-1-4	Effects of bottom shear stress on sediment resuspension and concomitant diffusion of nitrogen and phosphorus: a case study of Chaohu Lake	Lei Wu

Session Name	S2-2: Land	Surface	Process	and	Environmental
	Changes (1)				
Chair	Ruiyu Wang				

Time	ID	Title	Presenter
16:00	S2-2-1	Preliminary theoretical analysis of morphologic features of alpine glaciers and ice caps	Ruiyu Wang
16:15	S2-2-2	Recurrence of flood and sediment yield of historical heavy rain on underlying surface in different periods	Wenxing Lv
16:30	S2-2-3	Carbon export from permafrost catchments of the Qinghai-Tibet Plateau	Chunlin Song
16:45	S2-2-4	Effects of hydrological processes on surface and subsurface nitrogen losses from purple soil slopes	Meixiang Xie

Session Name S3-1: Effect of Flow Condition on Organism

Chair Yujun Yi

Time	ID	Title	Presenter
15:00	S3-1-1	Benchmarking 3D CFD for studies on turbulent flow around fish shaped bodies	Ali Hassan Khan
15:15	S3-1-2	Negative effects of parasite exposure and variable thermal stress on brown trout (Salmo trutta) under future climatic and hydropower production scenarios	Roser Casas- Mulet
15:30	S3-1-3	Movement behavior during simulated hydropeaking - an imaging-based tracking approach	Robert Naudascher
15:45	S3-1-4	Development of PIV-based techniques for measurements of instantaneous drag and fish-flow energy exchanges	Miriam Castagna
16:00	S3-1-5	Investigation on the impact of underwater noise from ships in the upper Yangtze River	Hongbo Du

Session Name	S3-2: Fish Passage	(1)	
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Time	ID	Title	Presenter
17:00	S3-2-1	Smart fish counter for monitoring species, size, migration behaviour and environmental conditions	Jeffrey Tuhtan
17:15	S3-2-2	Fish swimming performance: effect of flume length and different fatigue definitions	Muhammad Usama Ashraf
17:30	S3-2-3	The RETERO project: 3R motivated risk assessment methods for downstream fish passage through hydraulic structures	Stefan Hoerner
17:45	S3-2-4	Experimental study of turbulent flow in a vertical double slot fishway: influence of flow discharge and slope	Anne Fleur Lejeune

Session Name S4-1: Management and Restoration of River Channel and Riparian Zone (1)

Chair Giuseppe Francesco Cesare Lama

Time	ID	Title	Presenter
15:00	S4-1-1	Restoration of channel meandering using current deflectors	Yuan Pi
15:15	S4-1-2	Research on natural fish habitat restoration techniques in pool-riffles	Huan Lin
15:30	S4-1-3	Evaluating the effects of heat transfer in riparian vegetation canopy on vegetated flows' hydrodynamic	Giuseppe Francesco Cesare Lama
15:45	S4-1-4	Optimal regulation of river ecology based on coupling simulation of water quantity and water quality	Wenqi Wang

16:00	S4-1-5	Integration of environmental fluvial assessment with flooding analysis for restoration of urban rivers' systems	José-Luis Molina
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Session Name S4-2: Management and Restoration of River Channel and Riparian Zone (2)

Chair Paolo Vezza

Time	ID	Title	Presenter
17:00	S4-2-1	Extending meso-scale habitat models to temporary rivers: possible approaches and software applications	Paolo Vezza
17:15	S4-2-2	Morphological quality and macroinvertebrate diversity of the gravel-bed Shiting River Sichuan after the 2008 Wenchuan Earthquake	Songyi Li
17:30	S4-2-3	Quantity analysis the channel habitat quality using an ecohydraulic model	Yike Li
17:45	S4-2-4	What drives the plant distribution in the riparian zone of the Three Gorges Reservoir, China	Shanze Li

Session Name S5-1: Remote Sensing

Chair Frederic de Schaetzen

Time	ID	Title	Presenter
15:00	S5-1-1	Using Airborne LiDAR Bathymetry-aided transfer learning method in riverine land cover classification	Shijun Pan
15:15	S5-1-2	Using cameras to study drift patterns – RODI: Riverine Organism Drift Imager	Frederic de Schaetzen
15:30	S5-1-3	Preliminary application of instance segmentation for monitoring diurnal activity of freshwater fish	Wataru Ishikawa
15:45	S5-1-4	Testing of UAV surveys for the mapping and monitoring of freshwater pearl mussel populations in Norway	Marie Gosselin

Session Name		S5-2: Ecohydraulics Modelling on Various Scales		
Chair		Matthias Schneider		
Time	ID	Title	Presenter	
16:00	S5-2-1	Utilization of computational intelligence approaches to estimate the flow coefficient of labyrinth weir	Faris Belaabed	
16:15	S5-2-2	Investigation of canoeing impact on fish by use of habitat modeling	Matthias Schneider	
16:30	S5-2-3	Simulation of flow around collocated bridge piers with pile cap	Mohammad Tavakol Sadrabadi	
16:45	S5-2-4	Study on water environment simulation and prediction in Sanhekou Reservoir area	Naihao Tan	
17:00	S5-2-5	Hydraulic impact on fish migration in Sariakandhi Fish Pass of Bangladesh	Bijoy Kumar Ghosh	

Session Name S1-4: Special Session: Sustainability of Ecology and Hydrology of Floodplain Lake Systems of the Large River Basins under Rapidly Changing Climatic and Social Dimensions

Conveners Giri R Kattel, Zhiguo Yu, Hong Yang

Time	ID	Title	Presenter
10:00	S1-4-1	Responses of microbial communities to varying terminal electron acceptors in peatlands and the production of CH ₄ and CO ₂	Sadaf Shabbir
10:15	S1-4-2	How resilient are waterways of Asian Himalayas? finding adaptive measures for future sustainability	Giri Kattel
10:30	S1-4-3	Resilience of lacustrine phytoplankton community to the short-term river-to-lake water diversion	Jiangyu Dai
10:45	S1-4-4	Floodplain reconnection for salmonid habitat restoration in California, USA	Mark Tompkins

Session Name S1-5: Environmental Flow (2)

Chair Lotta Blaskovicova

Time	ID	Title	Presenter
15:00	S1-5-1	Environmental flow assessment for a green small hydropower plant using hydraulic-habitat modelling with a focus on the benthic macroinvertebrate community	Shuyi Hu
15:15	S1-5-2	How seasonal variation of streamflow affects aquatic macroinvertebrate communities	Wei Liu
15:30	S1-5-3	Low-flow data analysis as an input for e-flow limits selection in Slovakia	Lotta Blaskovicova
15:45	S1-5-4	Assessing environmental flow in a river basin of eastern India	Smaranika Mahapatra

Session Name		S1-6: Hydropeaking	
Chair		Daniel Hayes	
Time	ID	Title	Presenter
16:00	S1-6-1	Fish Escaping Routes – FiER: Modelling escaping routes for fish larvae under rapid flow changes during hydropeaking	Luiz G M Silva
16:15	S1-6-2	Effects of artificial flow reduction on stranding of larval nase (Chondrostoma nasus L.) under experimental conditions	Simon Fuehrer
16:30	S1-6-3	Application of the Building Block Approach to generating a natural flow regime in a regulated river	Sung-Uk Choi
16:45	S1-6-4	Hydropeaking in Himalayan Rivers associated effect on aquatic life, flood management and sediment transport	Siba Sen
17:00	S1-6-5	Ecohydraulic experiments with cyprinid larvae in a nature-like outdoor facility – first insights from hydropeaking trials to quantify fish stranding at different gravel bar setups	Daniel Hayes

Session Name
S1-7: Special Session: Hydrological Connectivity of River Ecosystems
Conveners: Shanghong Zhang, Silke Wieprecht, Yujun Yi, Sebastian Schwindt, Jin Zhang

22:30 S1-7-2 Characteristics of macroinvertebrates in the upper Yellow River Basin How a barrage and spur dikes affect megalobrama terminalis spawning sites at the Xiyan Yang Beijiang River (China) 22:45 S1-7-4 Hydrological connectivity promotes coalescence of bacterial communities in a floodplain Hydrological connectivity in the upper Parana Hydrological connectivity in the upper Parana S1-7-5 fluvial macrosystem: Influence of upstream dams Antonio	Time	ID	Title	Presenter
22:15 S1-7-2 characteristics of macroinvertebrates in the upper Yellow River Basin How a barrage and spur dikes affect megalobrama terminalis spawning sites at the Beijiang River (China) 22:45 S1-7-4 Hydrological connectivity promotes coalescence of bacterial communities in a floodplain Hydrological connectivity in the upper Parana Hydrological connectivity in the upper Parana S1-7-5 fluvial macrosystem: Influence of upstream dams Antonio	22:00	S1-7-1	•	
22:30 S1-7-3 megalobrama terminalis spawning sites at the Beijiang River (China) 22:45 S1-7-4 Hydrological connectivity promotes coalescence of bacterial communities in a floodplain Pan Hydrological connectivity in the upper Parana 3:00 S1-7-5 fluvial macrosystem: Influence of upstream dams Antonio	22:15	S1-7-2	characteristics of macroinvertebrates in the	Xiongdong Zhou
of bacterial communities in a floodplain Hydrological connectivity in the upper Parana Jose 23:00 S1-7-5 fluvial macrosystem: Influence of upstream dams Antonio	22:30	S1-7-3	megalobrama terminalis spawning sites at the	Xiyan Yang
23:00 S1-7-5 fluvial macrosystem: Influence of upstream dams Antonio	22:45	S1-7-4		
(100.120.0)	23:00	S1-7-5		

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Session Name		S2-3: Land Surface Process and Environmental Changes (2)		
Chair		Qing Feng		
Time	ID	Title	Presenter	
10:00	S2-3-1	Modeling the influence of sea level rise on the turbidity maximum of the Qiantang Estuary	Dongfeng Xie	
10:15	S2-3-2	A review of sediment reduction benefits of soil and water conservation measures in China	Jingjing Xu	
10:30	S2-3-3	Experimental study on the maximum possible scouring depth in Baotou reach of the Yellow River	Qing Feng	
Session	Name	S2-4: Special Session: Ecohydraulics of Zone in River, Estuarine and Coastal Sedin		
Conver	iers	Alessandra Marzadri, James Stegen, Xiao Daniele Tonina	bing Chen,	
Time	ID	Title	Presenter	
11:00	S2-4-1	Characteristic of groundwater-surface water interaction and function degradation of hyporheic zone in karst springs	Fang Guo	
11:15	S2-4-2	Nitrous oxide emissions under low flow conditions in streams	Daniele Tonina	
11:30	S2-4-3	Determination of the streambed hydraulic conductivity across an entire stream network	Jie Yin	
11:45	S2-4-4	Impacts of drying on hyporheic zone biogeochemistry	James Stegen	

Session Name		S2-5: Special Session: Ecohydraulics of Zone in River, Estuarine and Coastal Sedim	- ·
Conveners		Alessandra Marzadri, James Stegen, Xiao Daniele Tonina	bing Chen,
Time	ID	Title	Presenter
15:00	S2-5-1	Effect of vegetation cover on hyporheic velocity and phosphorus removal in a pool-riffle sequence	Fazele Kabiri
15:15	S2-5-2	Effect of bank slope and ambient groundwater discharge on hyporheic transport and biogeochemical reactions in a compound channel	Jiaming Liu
15:30	S2-5-3	Numerical modeling of hyporheic exchange induced by submerged rigid vegetation	Xiaobing Chen
15:45	S2-5-4	The role of hyporheic processes on climate change	Alessandra Marzadri

Name	S2-6: Effect of Organism on Flow (1)	
	Yi Rong	
ID	Title	Presenter
S2-6-1	On the initiation and evolution of von Karman vortex behind rectangular vegetation canopies with different aspect ratios and densities	Yuanheng Zhang
S2-6-2	Effects of riparian plant roots on bank erosion process of Tarim River based on BSTEM model	Ruize Tang
S2-6-3	Effect of vegetation on mass transport in compound channels	Yi Rong
S2-6-4	Diffusion characteristic of floating particles in vegetated open channel flow	Xiaoguang Liu
	S2-6-1 S2-6-2 S2-6-3	Yi Rong D Title On the initiation and evolution of von Karman vortex behind rectangular vegetation canopies with different aspect ratios and densities Effects of riparian plant roots on bank erosion process of Tarim River based on BSTEM model Effect of vegetation on mass transport in compound channels Diffusion characteristic of floating particles in

Session Name

Chair

Session Name		S3-3: Turbulence-Organism Interaction	
Chair		Rafael Tinoco	
Time	ID	Title	Presenter
10:00	S3-3-1	Variations in turbulence integral scales around instream boulders and implications for fish habitat	Amir Golpira
10:15	S3-3-2	Experimental investigation of turbulent characteristics in hydraulic jump with vegetated bottom	Rongfu Ning
10:30	S3-3-3	Characterizing surface gas transfer driven by turbulence from submerged vegetation-wave interactions	Rafael Tinoco
10:45	S3-3-4	Effects of flow turbulence and nitrogen nutrients on the growth of scenedesmu quadricanda	Yafei Cui

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Time	ID	Title	Presenter
11:00	S3-4-1	Monitoring of fish passage built in the Rivers of Nepal: A case study of Andhi Khola Project	Kamal Prasad Pandey
11:15	S3-4-2	Actions to restore fish passage in New Zealand: From science to policy and back again	Paul Franklin
11:30	S3-4-3	Optimising spoiler baffle arrangement for promoting small-bodied fish passage through culverts	Dipendra Magaju
11:45	S3-4-4	YOLOv5 analysis for juvenile Ayu detection in underwater images of fishway	Shijun Pan

S3-4: Fish Passage (2)

Paul Franklin

Session Name		S3-5: Fish Passage (3)	
Chair		Helmut Mader	
Time	ID	Title	Presenter
16:00	S3-5-1	Smart Fishways: sensorization of fishways for autonomous assessment and management of their performance	Juan Francesco Fuentes- Perez
16:15	S3-5-2	Schooling behaviour of <i>telestes muticellus</i> under different flow velocities	Gloria Mozzi
16:30	S3-5-3	Turbulent eddies as potential migration obstacles in fishway constructions	Marcio Roth
16:45	S3-5-4	Evaluation of key stimuli, in particular light, acoustics and temperature, influencing fish migration into fishpasses	Helmut Mader

Session Name Chair		S4-3: Wetland Management and Restoration Shan He		
Time	ID	Title	Presenter	
10:00	S4-3-1	Post-processing of reservoir releases to support real-time reservoir operation and its effects on downstream hydrological alterations	Shan He	
10:15	S4-3-2	Application for technology of ecological interception pre-reservoir in the confluence of river and lake	Yimin Zhang	
10:30	S4-3-3	Characterization of the hydrogeological behavior of high andean peatlands – three case studies in the Bolivian Altiplano	Hugo Soliz Flores	
10:45	S4-3-4	The effects of anthropogenic structures on the ecohydraulic characteristics for <i>mortonagrion hirosei</i> habitating in estuarine wetland	Gwowen Hwang	

Session	n Name	S4-4: Sustainable Design in Ecohydraulics		
Chair		Gregory Pasternack		
Time	ID	Title	Presenter	
11:00	S4-4-1	Assessment of sustainable design of Shafique Haor and Sonamoral Haor wetlands FCD/FCDI project against flash flood in greater Sylhet area	Rifat Jahan	
11:15	S4-4-2	From reservoir greenhouse gas emissions to hydropower carbon footprint: methodology, and advances	Zhe Li	
11:30	S4-4-3	River Architect: baseline-condition and alternative-design assessment software to promote sustainability of eco-physical river systems	Gregory Pasternack	
11:45	S4-4-4	Green infrastructures performance evaluation towards management of water quality: a case study	Qian Yu	

Session Name S4-5: Aquatic Ecology and Water Health (1)

Chair Jiahao Zhang

Time	ID	Title	Presenter
15:00	S4-5-1	Seasonal pattern of zooplankton communities and the effect of hydraulic regulation on zooplankton biomass in the regulating lake of the South-to-North Water Diversion Project	Ruolan Yu
15:15	S4-5-2	Water diversion not to blame for phosphorus enrichment in Taihu Lake	Zhiyuan Wang
15:30	S4-5-3	Characterization and sources apportionment of overflow pollution in urban separate stormwater systems inappropriately connected with sewage	Yuxuan Zhou

DNA

15:45	S4-5-4	Study on the density, hydroststic setting veocity and locomotion of biomphalaria straminea	Fengyang Min
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Session Name		S4-6: Coastal and Estuarine Ecohydraulics		
Chair		Yue Zhu		
Time	ID	Title	Presenter	
16:00	S4-6-1	Hydrodynamic and water quality modeling of coastal water based on Delft3D model	Yue Zhu	
16:15	S4-6-2	Impact of seasonality runoff variations on tidal current limit in the lower Yangtze River	Qiancheng Xie	
16:30	S4-6-3	Velocity profile formula based on wave-induced multi-source oscillatory energy propagation mode	Qianlu Xiao	
16:45	S4-6-4	The role of wave-induced drift in seed dispersal	Junqing Ren	
Session	n Name	S5-3: Genomics and Bioinformatics		
Chair		Sakiko Yaegashi		
Time	ID	Title	Presenter	
10:00	S5-3-1	Challenges of monitoring invasive mussels with environmental DNA	Yao Yang	
10:15	S5-3-2	Investigating the fish diversity in the upper reaches of Yangtze River based by environment DNA metabarcoding	Li Wang	
10:30	S5-3-3	Investigation of a method for surveying aquatic insects using DNA barcoding of environmental	Sakiko Yaegashi	

Yaegashi

16:15

S5-5-2

10:45 S5-3-4	A proposal for a method for evaluating the ecological benefits of green infrastructure as Eco-DRR using environmental DNA	Noriko Uchida
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Session Name		S5-4: Experimental Ecohydraulics (1)	
Chair		Ingo Schnauder	
Time	ID	Title	Presenter
15:00	S5-4-1	Flow and morphology around trees installed in rivers: do we need a stem attached?	Ingo Schnauder
15:15	S5-4-2	Apply novel optical and acoustic instruments for long-term and high-frequency morphodynamics observation on a mangrove tidal flat	Tianping Xu
15:30	S5-4-3	Impact of Shishamo spawning sites in Azuma river, Hokkaido under the various flow and high concentration silt conditions	Tomoko Kyuka
15:45	S5-4-4	Study on flow sensors arrangement optimization based on the mobile flow measuring devices	Yi Zhou
Session	Name	S5-5: Experimental Ecohydraulics (2)	
Chair		Katharina Bensing	
Time	ID	Title	Presenter
16:00	S5-5-1	Experimental study on turbulent characteristics of flow around a t-shaped spur dike in bend	Liyuan Zhang

Experimental study on flow characteristics in a bend with multistage spur dike

Haonan

Zhang

16:30	S5-5-3	Application of a fish-shaped probe at an angled rack: introducing the fish sensory sonde (FSS)	Katharina Bensing
16:45	S5-5-4	Shallow flow field induced by large horizontal coherent structures in squeeze ecological systems	S.H Truong

Session Name		S5-6: Habitat Modelling of Concerned Species		
Chair		Hannah Schwedhelm		
Time	ID	Title	Presenter	
17:00	S5-6-1	Resources management strategy of <i>gymnocypris przewalskii</i> (naked carp) in Qinghai Lake based on matrix population model	Chubin Weng	
17:15	S5-6-2	Spatial and temporal change in the epilithic community in the Shiting River in Sichuan Province,China	Min Liu	
17:30	S5-6-3	Meso or Micro : A comparative analysis of two habitat modelling approaches	Hannah Schwedhelm	
17:45	S5-6-4	Using soil hydraulic properties for an efficient starch potato irrigation management	Jan Lukas Wenzel	

Session Name		S1-8: Effect of Climate Change on Ecology	
Chair		Francisco Martinez Capel	
Time	ID	Title	Presenter
15:00	S1-8-1	Climate change adaptation in a Mediterranean river basin based on eco-engineering decision scaling	Francisco Martinez Capel
15:15	S1-8-2	The hydraulic habitat suitability of the Ganga River dolphin under anthropogenic influence	Gaurav Sonkar
15:30	S1-8-3	Modeling the climate change effects on habitat availability in Alpine watercourses	Erica Vassoney
15:45	S1-8-4	Drought impacts on water use and quality: a challenge for potable and irrigation water in the summer of 2022	Elena Carcano
16:00	S1-8-5	Conserving stream fishes with changing climate: assessing river hydrology and habitat suitability in Lancang River, China	Qianqian Wang
Session	Name	S2-7: Effect of Organism on Flow (2)	
Chair		Zhan Hu	
Time	ID	Title	Presenter
10:00	S2-7-1	Flow resistance caused by golden mussel (<i>limnoperna fortunei</i>) biofouling in East River Water Source Project	Jiahao Zhang
10:15	S2-7-2	Indirect wave dissipation mechanism in submerged vegetation canopies with accompanying currents	Zhan Hu
10:30	S2-7-3	Vegetation deformation under the action of open channel flow	Jiangyu Wang
10:45	S2-7-4	Influence of riparian emergent rigid vegetation on hydrodynamic characteristics of compound channel	Youzhi Hao
11:00	S2-7-5	Application of foliar hydrogen peroxide concentration as an environmental stress indicator to evaluate the plant species distribution in the riparian zone	Takashi Asaeda

Session Name		S2-8: Special session: Ecohydraulics of Zone in River, Estuarine and Coastal Sedim	• •
Conveners:		Alessandra Marzadri, James Stegen, Xiaobing Chen, Daniele Tonina	
Time	ID	Title	Presenter
15:00	S2-8-1	Lateral carbon transport during surface water- groundwater interaction at an onshore aquacultural farm	Xuan Yu
15:15	S2-8-2	Riverine groundwater discharge estimation in a dynamic river corridor using 222Rn	Fu Liao
15:30	S2-8-3	Solute transport in the hyporheic zone	Ekkehard Holzbecher

Session Name		S2-9: Plastic Particles	
Chair		Xinjie Wang	
Time	ID	Title	Presenter
16:00	S2-9-1	Effect mechanism of suspended sediment on the settling of plastic particles in natural waters	Xinjie Wang
16:15	S2-9-2	Laboratory analysis of plastic particle transport in vegetated patches	Daniele Martuscelli
16:30	S2-9-3	Macroplastics mobility into hyporheic zone: preliminary laboratory experiments	Mirco Mancini

Session Name		S3-6: Special Session: Physical, Chemical, and Biological Aspects of Transport Processes in Aquatic Ecosystems (1)	
Conver	ners	Zi Wu, Marwan Hassan, Li Zeng, Ping Wan	g
Time	ID	Title	Presenter
10:00	S3-6-1	Bio-mineral flocculation of fine-grained cohesive sediments and microalgae in estuaries	Xiaoteng Shen
10:15	S3-6-2	Land-to-Ocean flux of water, sediment and nutrients in the Changjiang River continuum	Leicheng Guo
10:30	S3-6-3	Environmental transport of gyrotactic microorganisms in an open-channel flow	Guangmiao Li
10:45	S3-6-4	Biofilms as the "ecosystem engineers": the microbiological mediation of intertidal sediment behavior	Xindi Chen
Session	n Name	S3-7: Special Session: Physical, Cher Biological Aspects of Transport Processes Ecosystems (2)	
Conver	ners	Zi Wu, Marwan Hassan, Li Zeng, Ping Wan	g
Time	ID	Title	Presenter
11:00	S3-7-1	Simulating the fate of faecal bacteria in estuarine and coastal waters based on a fractionated sediment transport model	Chen Yang
11:15	S3-7-2	Optical and molecular signatures of sedimentary organic matter in the Three Gorges Reservoir: Spatial dynamics and carbon cycling implications	Kai Wang
11:30	S3-7-3	Modeling velocity and shear stress profiles for the ecological channel with floating vegetation	Jiao Zhang

Session Name		S3-8: Special Session: Physical, Chemical, and Biological Aspects of Transport Processes in Aquatic Ecosystems (3)		
Conveners		Zi Wu; Marwan Hassan; Li Zeng; Ping Wang		
Time	ID	Title	Presenter	
15:00	S3-8-1	Gyrotactic trapping of micro-swimmers in simple shear flows: a study directly from the fundamental Smoluchowski equation	Bohan Wang	
15:15	S3-8-2	Laboratory experiments on rheological effects of exopolymers on particle sinking in seawater	Magdalena Mrokowska	
15:30	S3-8-3	Comparison of absorption capacity through open channels with different irreversible-boundary types	Huilin Wang	
15:45	S3-8-4	Vegetation-driven drag variation and sediment transport in shallow nonuniform flow	Yonggang Zhang	
Session Name		S3-9: Fish Passage (4)		
Chair		Marie Pierre Gosselin		
Time	ID	Title	Presenter	
16:00	S3-9-1	An experimental study of the behavioral response of fish to flow changes in a near-natural environment	Han Liu	
16:15	S3-9-2	Numerical simulation of a slanted fishway with protruding boulders	Dian Luo	
16:30	S3-9-3	A novel approach to mitigate fish downstream migration at hydropower plants	Franz Geiger	
16:45	S3-9-4	Upstream fish passage solutions: is the answer one-size-fit-all or made-to-measure?	John Nestler	

Session Name		S4-7: Aquatic Ecology and Water Health (2)		
Chair		Hamed Khorasani		
Time	ID	Title	Presenter	
10:00	S4-7-1	Combination of logistic and modified monod functions to study <i>microcystis aeruginosa</i> growth stimulated by fish feed	Suiliang Huang	
10:15	S4-7-2	Modeling harmful algal blooms in Lake Ontario by inclusion of algal ecology and nutrient dynamics	Hamed Khorasani	
10:30	S4-7-3	Study on meticulous management targets for water health of typical mountainous river basin based on classification of water bodies	Xiaogang Tian	
10:45	S4-7-4	Zooplankton module indicates top-down effects on eutrophication: Implications for lake restoration by biomanipulation	Yuhong Zhou	
Session	Name	S4-8: Eco-Environmental Impact of High	n Dam and	
Ch a i u		Laura Dacamusiu		
Chair		Large Reservoir Martin Hunt		
Time	ID	G	Presenter	
	ID S4-8-1	Martin Hunt	Presenter Yaqi Luo	
Time		Martin Hunt Title Impact of hydropower development on fish		
Time 11:00	S4-8-1	Martin Hunt Title Impact of hydropower development on fish habitat in the lower Yalutsangpo River River water temperature forecasting using a	Yaqi Luo Yuankun	

Session Name		S4-9: Risk Reduction in Ecosystem		
Chair		Kazuaki Ohtsuki		
Time	ID	Title	Presenter	
15:00	S4-9-1	Occurrence, distribution and ecological risk of antibiotics in wastewater treatment plants around Luoma Lake, China	Yuanyuan Liu	
15:15	S4-9-2	Experimental study on transportation and accumulation of driftwoods during a large flood	Shingo Otaka	
15:30	S4-9-3	Evaluation of the impact of drainage channel improvement associated with agricultural land development on flood flow in the small valley wetland (Yatsu) landscape	Kazuaki Ohtsuki	
15:45	S4-9-4	Ecological risk assessment of toxic metals in water of Perai river, Malaysia	Muhammad Fitri Mohd Akhir	
Session Name				
	I Walle	S4-10: Eco-Environmental Impact of Huma	n Activities	
Chair	i Name	S4-10: Eco-Environmental Impact of Huma Na Zhao	n Activities	
Chair Time	ID	·	n Activities Presenter	
		Na Zhao		
Time	ID	Na Zhao Title Current situation and Countermeasures of water ecological environment protection in Sichuan	Presenter Sulan	
Time 16:00	ID S4-10-1	Na Zhao Title Current situation and Countermeasures of water ecological environment protection in Sichuan Province Perfluoroalkyl acids (PFAAs) in the tailwater of the waste water treatment plants (WWTPs) around a shallow lake: distribution, removal, and	Presenter Sulan Zhang	

Session Name		S5-7: Novel Software Applied in Ecohydraulics		
Chair		Araceli Martín Candilejo		
Time	ID	Title	Presenter	
15:00	S5-7-1	Application of the Convex Hyperbola Charts to minimise the energy consumption of a pumping station in a real case in Spain	Araceli Martín Candilejo	
15:15	S5-7-3	Concurring indications of HSI and HMID for assessing the success of river restoration actions	Maximilian Kunz	
15:30	S5-7-4	Towards understanding fish behavior near an angled rack: an approach for fish tracing using open-source software	Ianina Kopecki	
Session Name		S5-8: Data-driven and knowledge based modelling		
Chair		Richard Hedger		
Chair Time	ID	Richard Hedger Title	Presenter	
	ID S5-8-1		Presenter Shicheng Li	
Time		Title An improved deep learning model for suspended		
Time 16:00	S5-8-1	Title An improved deep learning model for suspended sediment forecast Development of transient habitat modelling for	Shicheng Li Sengdavanh Thepphachan	
Time 16:00 16:15	\$5-8-1 \$5-8-2	Title An improved deep learning model for suspended sediment forecast Development of transient habitat modelling for macrozoobentho in restored stream Development of a real-time bird species	Shicheng Li Sengdavanh Thepphachan h Takuma	