

2024

YOUNG SCHOLAR FORUM on High-Quality River Basin Development

IAHR Ecohydraulic Forum

Program Book

Jan. 28th - 31st 2024

Lijiang · China

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Welcome Message



On behalf of the Committee on Ecohydraulics of the International Association for Hydro-Environment Engineering and Research, we are pleased to invite you to the Ecohydraulics forum - 2024 Young Scholar Forum on High-Quality River Basin Development, which will be held from January 28 to 31, 2024 in Lijiang, Yunnan Province, China. This forum is to provide platforms for scientists and young professionals worldwide to discuss cutting-edge scientific progress, and to promote knowledge sharing on high-quality development and natural based solution for river basin.

Ecohydraulics is a rapidly developing inter-discipline science studying the hydrodynamic factors that affect the survival and reproduction of aquatic organisms and the activities of aquatic organisms that affect hydraulics and water quality, given rise by the ever-growing concern of aquatic and riparian ecology. The forum will have keynote speeches and discussions that look into the future of Ecohydraulics. Specifically, we will have a gathering of chief editors of international scientific journals on the relevant fields of Ecohydraulics. The forum will also include intensive contribution from young professionals.

Lijiang, where the forum will be held, is an ideal site to study Ecohydraulics. It is located where the raging flow of the Yangtze River cut through the snowy peaks of the Hengduan Mountains. The World Natural Heritage - Three Parallel Rivers are located close to Lijiang. A wide variety of landscapes leads to a high diversity of fauna and flora. Moreover, the immense differences in temperature and elevation from valleys to mountains give rise to insular environments for many species, further increasing the biodiversity of the area.

The Local Organizing Committee will arrange a two-day technical tour in the vicinity of Lijiang. We will visit the dry-hot gorge of the Jinsha River (the upper reaches of the Yangtze River) to experience high quality hydropower development supported by the nature-based solutions. We will also take a trip to the Snow Mountain to enjoy the diverse landscape and ecosystem of snow peaks, meadows, forests, lakes, and mountainous rivers.

Xudong Fu

Department of Hydraulic Engineering, Tsinghua University

Nujiang Station of Rural Revitalization Center, Tsinghua University

Forum Information



Forum Organizers

Hosted by

Department of Hydraulic Engineering, Tsinghua University

Nujiang Station of Rural Revitalization Center, Tsinghua University

State Key Laboratory of Hydrosience and Engineering

Key Laboratory of Hydrosphere Sciences of the Ministry of Water Resources

T+Z Technology Review, Tsinghua University

International Association for Hydro-Environment Engineering & Research (IAHR)

IAHR Ecohydraulics Committee

IAHR China Chapter

IAHR Tsinghua YPN

Journal of Ecohydraulics Editorial Board

Co-hosted by

Beijing Normal University

Hohai University

Wuhan University

Sichuan University

China Institute of Water Resources and Hydropower Research

Nanjing Hydraulic Research Institute

Advisory Committee

Chuhan Zhang (Tsinghua University)

Guangqian Wang (Tsinghua University)

Peng Cui (Institute of Geographic Sciences and Natural Resources Research, CAS)

Jinren Ni (Peking University)

Shaoyong Kang (China Agricultural University)

Chunhong Hu (China Institute of Water Resources and Hydropower Research)

Hongwu Tang (Hohai University)

Zongliang Zhang (PowerChina)

Forum Information



Guozhu Yang (Nujiang State Committee)

Xuan Tan (China Huadian Corporation)

Deyu Zhong (Tsinghua University)

Local Organizing Committee

Chair

Xudong Fu

Deputy Chairs

Danxun Li, Jianshi Zhao, Xiaoli Liu

Secretary General

Mengzhen Xu

Members

Xirao Jiacao, Duruo Huang, Zhiyi Xu, Xiongdong Zhou, Kaiyue Shan, Ruiyu Wang, Xin Zheng, Chao Qin, Aoran Sun, Shiruo Hu, Qi Yang, Jin Zhang, Qizhuo Yang, Zihui Wang, Mao Xu, Zifu Zhang, Leifang Li, Senchang Hu

International Scientific Committee

Joseph Hun-wei Lee (Macau University of Science and Technology, Macau SAR, China)

Philippe Gourbesville (Université Côte d'Azur, France)

Michele Mossa (Technical University of Bari, Italy)

Takashi Asaeda (Saitama University, Japan)

Danny Reible (Texas Tech University, USA)

Daniele Tonina (University of Idaho, USA)

Francisco Martinez Capel (Universitat Politècnica de València, Spain)

Xiping Yu (Southern University of Science and Technology, China)

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

Qiuwen Chen (Nanjing Hydraulic Research Institute, China)

Qihua Ran (Hohai University, China)

Yuefei Huang (Tsinghua University, China)

Yujun Yi (Beijing Normal University, China)

Forum Information

Pan Liu (Wuhan University, China)

Chunhui Lu (Hohai University, China)

Huanfeng Duan (Hong Kong Polytechnic University, Hong Kong SAR, China)

Goh Hui Weng (Universiti Sains Malaysia, Malaysia)

Jindong Cai (IAHR Beijing Office, China)

Ruidong An (Sichuan University, China)

Ir. Woo Soo Wei (Tanahasia Consulting Engineers Sdn Bhd, Malaysia)

Pavisorn Chuenchum (Chulalongkorn University, Thailand)

Dongdong Shao (Beijing Normal University, China)

Saiyu Yuan (Hohai University, China)

Zhiwei Li (Wuhan University, China)

Xindi Chen (Hohai University, China)

Honglei Tang (Kunming University of Science and Technology, China)

Lu Chang (Beijing Normal University, China)

Manjie Li (Tsinghua Shenzhen International Graduate School, China)

Jinyi Zhao (Tsinghua University, China)

Gregory Pasternack (University of California, USA)

Donatella Termini (University of Palermo, Italy)

Jeffrey Tuhtan (Tallinn University of Technology, Estonia)

Davide Vanzo (ETH Zurich, Switzerland)

Andrés Vargas Luna (Pontificia Universidad Javeriana, Colombia)

Binbin Wang (University of Missouri, USA)

Venue & Accommodation

Zhonghe Great Wall Jinlian International Hotel (中合长城金联国际饭店) is located at 518 North Shangri-La Avenue, Old Town District, Lijiang Prefecture, China (云南省丽江市古城区束河街道香格里拉大道北段 518 号). It is a five-star hotel in the northern part of the Old Town District. It is 2.8km to the Shuhe Old Town, 3.7 km to the Dayan Old Town, and 2.3 km to Black Dragon Pond. The hotel features a 700m² conference hall with modern video and audio equipment, making it an ideal place to hold international conferences. It has amenities including bar, dining halls, business center, full time cafeteria, a fitness center, and a swimming pool.

Forum Information



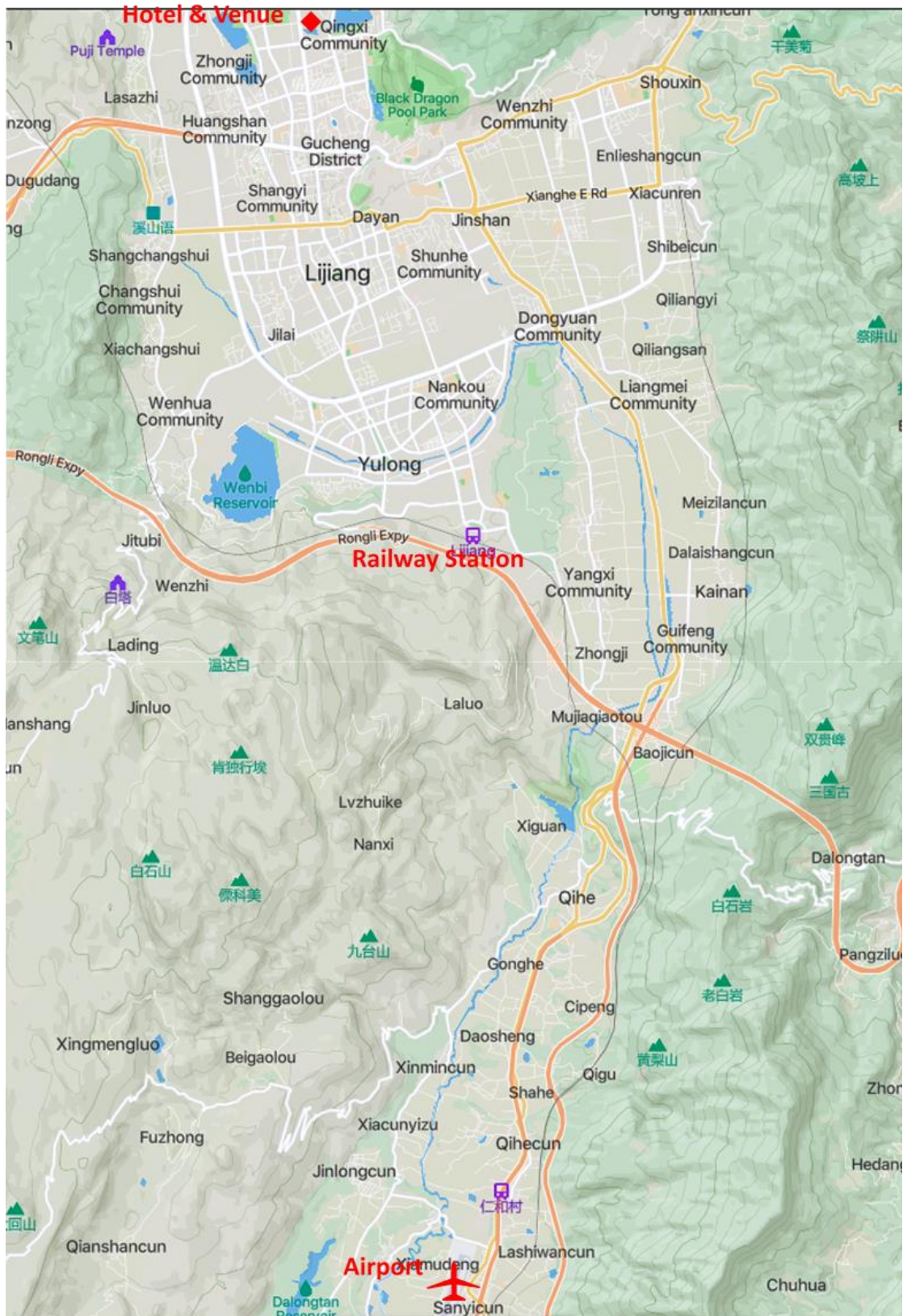
Transportation to the Venue & Hotel

The hotel is 33 km from the Sanyi International Airport of Lijiang. We offer free pickup service. Please contact Dr. Qin Chao:

Cell phone number: +86-15191443182

E-mail: glqinchao@126.com

Forum Information



Session Information

S1: Ecohydraulics Committee Networking - Local Challenges and Global Co-operation

In this meeting, we will discuss and work together on emerging challenges in the research and practice of ecohydraulics in different continents, and how a global network can aid early careers in solving these challenges and thereby making further progress in their careers. During the meeting, we will report on our activities, collect feedback, and sketch some action directions for the future.

All conference participants completing their conference registration and hotel check-ins are cordially invited to engage in a complimentary ice break networking session held in the rest zone of the conference lobby.

Where: The reception of the hotel, coffee/bar zone

When: Sunday 28th January 2024, 10:30-12:00 (Beijing time, UTC+8).

Who: Ecohydraulics Committee Leadership members, advisory committee members, and all interested in Ecohydraulics

What: The event is structured as follows:

- 1- Introductory part from IAHR Ecohydraulics Committee
- 2- Audience Poll (Icebreak activity)
- 3- Keynote: Ecohydraulics emerging challenges/trends
- 4- Plenary synthesis and discussion
- 5- Turnover, final communication

S2: Young Scholar Innovative Achievement Exhibition

Young scholars present the latest progress of their researches on high-quality river basin development in the innovative achievement exhibition with posters.

The poster presentations are categorized into three themes:

Theme 1: Ecology and Environment

Theme 2: River Basin Economy

Theme 3: Green Energy

Participants who choose to present their works with posters are also invited to give an oral presentation on the Young Scholar Forum at 13:30-16:30 on Jan 29th. (S7, S8, and S9)

Where: Meeting Room S2/S3 (二楼风味厅)

When: Sunday 28th January 2024, 13:30-15:20 (Beijing time, UTC+8)

Who: Young Scholars and Evaluation Panelists

Session Information

S3: Journal Editors' Workshop

One of the objectives of the 2024 Ecohydraulics Forum is to improve the accessibility of worldwide researchers of ecohydraulics to the academic journals in this field, both as contributor and reader. Academic journal is the major media for specialists and researchers to discuss, compare and evaluate scientific methods, and propose state-of-the-art theories and technologies to the end-users. A few renowned chief editors of international academic journals will give talks.

Where: Meeting Room S2/S3 (二楼风味厅)

Online participants please join Zoom Meeting at:

<https://us02web.zoom.us/j/83619645271?pwd=c0UvK0xGMHBoUWNyRUJJQ0hBMzhqZz09>

Meeting ID: 836 1964 5271

Passcode: 115144

When: Sunday 28th January 2024, 15:40-18:00 (Beijing time, UTC+8)

Who: Editorial board members of different journals. All participants are welcome

What: Prof. Saiyu Yuan and Prof. Philippe Gourbesville will chair the following events.

- 1- Presentations by invited speakers from the journal editorial board:
Takashi Asaeda, Huangfeng Duan
- 2- A session dedicated to discussing current issues related to the Journal of Ecohydraulics.
- 3- An introduction to the Wikipedia article of 'Ecohydraulics':
Joseph Hun-wei Lee
- 4- A discussion focusing on developing and enhancing the Wikipedia article of 'Ecohydraulics'.

S4: Undergraduate Session on “Global Water Issues”

Water is the paramount strategic resource of the twenty-first century, playing a fundamental role in human survival, environmental enhancement, and economic development. In the context of global warming, water is critical for the existence of life and central to our quality of life. Centered around the themes of ecological environment, watershed economy, and emerging energy sources, we have orchestrated "The Undergraduate Forum of Global Water Issues" to tackle diverse water-related challenges. Our aim is to foster understanding, establish consensus, and actively contribute to the establishment of a community of human destiny.

Freshmen from the Department of Hydraulic Engineering, and the Xingjian College Tsinghua University, and freshmen and sophomores from Hohai University, Wuhan University, Northwest A&F University, China University of Geosciences Beijing and China Agricultural University will give presentations based on experimental study and literature review. The presentations will be on four themes: water hazards, water ecology, water resources, and water management.

Where: Meeting Room S4 (一楼大会议室)

When: Sunday 28th January 2024, 13:30-15:20 and 15:40-18:00 (Beijing time, UTC+8)

Session Information

13:30-14:20 Theme 1: Water hazards

14:35-15:20 Theme 2: Water management

15:40-16:50 Theme 3: Water ecology

17:05-18:00 Theme 4: Water resources

Who: All participants of the forum

What: Each student will have five minutes to do the presentation. Each theme's presentation will last for 50-60 minutes. The judges of the evaluation panel will score each student's presentation on a score sheet.

S5: Opening Ceremony

Where: Main Hall (一楼大宴会厅)

When: Sunday 29th January 2024, 9:00 to 9:30 (Beijing time, UTC+8)

Who: All participants of the forum

What: The event is structured as follows:

- 1- Welcoming Message from the host of open ceremony, Xudong Fu
- 2- Opening Ceremony speeches: Zongliang Zhang, Guozhu Yang, Deyu Zhong, Wenqi Peng

S6: Keynote Speeches

Where: Main Hall (一楼大宴会厅)

When: Sunday 29th January 2024, 9:30 to 12:00 (Beijing time, UTC+8)

Who: All participants of the forum

What: Speeches from the keynote speakers (in sequential order), Joseph Hun-wei Lee, Qiuwen Chen, Philippe Gourbesville, Pan Liu, Danny Reible, Yujun Yi, Michele Mossa (video).

S7-S9 Oral Sessions of Young Scholar Forum on High-Quality River Basin Development

The 2024 Tsinghua University Young Scholar Forum on High-Quality River Basin Development provides a platform for young scholars to present their works to promote high-quality river basin development.

The oral sessions of the forum consists of three themes: ecology and environment, river basin economy, and green energy. All participants of oral sessions are also invited to participate in the innovative achievement exhibition, and present their works with posters.

Session Information

In each sub-session, one first prize, two second prizes and three third prizes will be awarded to outstanding presentations. Outstanding physical demonstrations of innovative works will also be awarded.

Where: Meeting Room S7 (一楼吉祥厅), S8 (一楼丽水厅), S9 (一楼东巴厅)

Online participants of **S7** Ecology and Environment please join the Zoom Meeting at:

<https://us02web.zoom.us/j/83573232384?pwd=MDBUako5TGtXWndWZDZUN2l0WlVWdz09>

Meeting ID: 835 7323 2384

Passcode: 500239

Online participants of **S9** Green Energy please join the Zoom Meeting for at:

<https://us02web.zoom.us/j/82872399767?pwd=UDlYYzBPTEluYmljeXhINS8vWGRTZz09>

Meeting ID: 828 7239 9767

Passcode: 916628

When: Sunday 29th January 2024, 13:30 to 16:30 (Beijing time, UTC+8)

Who: All participants of the forum

What: Two invited talks by experts will be given in each session. Each young scholar has 8 minutes to present his or her work. The evaluation panel members will score the young scholars' presentation. Outstanding presentations will be awarded in the closing ceremony.

S10 Closing Ceremony

Where: Main Hall (一楼大宴会厅)

When: Sunday 29th January 2024, 17:00-18:00 (Beijing time, UTC+8)

Who: All participants of the forum

What: The event is structured as follows:

- 1- Xiping Yu: Suggestions for Young Scholars
- 2- Mengzhen Xu: Summary of the forum and future perspectives
- 3- Outstanding undergraduates and young scholars will be awarded
- 4- Initiative for High-Quality River Basin Development will be proposed

Program at a Glance

Note: This is an overview of the programs. The exact time of each session may be slightly different from that 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 (UTC+8). Please convert it to the time zone of your place.

Time	Jan 27 th	Jan 28 th		Jan 29 th	Jan 30 th	Jan 31 st
09:00-09:30		Onsite Registration & S1 Ecohydraulics Committee Networking		S5 Opening Ceremony	Study Tour to Liyuan Hydropower Station	Study Tour to Snow Mountain and Stone Town
09:30-10:30				S6 Keynote Speeches 1-4		
10:30-11:00				Group Photo & Tea Break		
11:00-12:00				S6 Keynote Speeches 5-7		
12:00-13:30		Lunch				
13:30-15:20	Onsite Registration	S2 Young Scholar Innovative Achievement Exhibition	S4 Undergraduate Session on "Global Water Issues"	Oral Sessions S7, S8, S9	Study Tour to Liyuan Hydropower Station	Study Tour to Snow Mountain and Stone Town
15:20-15:40		Tea Break				
15:40-16:30		S3 Journal Editors' Workshop	S4 Continuing	S7, S8, S9 Continuing		
16:30-17:00				Preparation for Closing Ceremony		
17:00-18:00				S10 Closing Ceremony		
18:00-20:00	Dinner and Cultural Events					

Program at a Glance

Session list for Jan 28th, 2024

Time	Session ID	Contents
10:00-12:00	S1 The reception/ coffee/bar zone	Ecohydraulics Committee Networking Conveners: Dongdong Shao, Chao Qin
12:00-13:30	Lunch	
13:30-15:20	S2 Room S2/S3 (二楼风味厅)	Young Scholar Innovative Achievement Exhibition Conveners: Kaiyue Shan, Aoran Sun
15:20-15:40	Tea Break	
15:40-16:00	S3 Journal Editors' Workshop Room S2/S3 (二楼风味厅)	Invited Talk 1: The Journal of Ecohydraulics - Frontiers of Ecohydraulics Speaker: Takashi Asaeda Session chair: Saiyu Yuan
16:00-16:30		Invited Talk 2: Introduction to Journal Publication and Research Paper Writing Speaker: Huanfeng Duan Session chair: Saiyu Yuan
16:30-17:00		Tea Break
17:00-18:00		Discussion on the Wikipedia article of 'ecohydraulics' Speaker: Joseph Hun-wei Lee Session chair: Philippe Gourbesville
13:30-18:00	S4 Room S4 (一楼大会议室)	Undergraduate Session on "Global Water Issues"
18:00-20:00	Dinner	

Session list for Jan 29th, 2024

Time	Session ID	Contents
09:00-09:30	S5 Opening Ceremony Main Hall (一楼大宴会厅)	Welcome Message: Xudong Fu Speaker 1: Zongliang Zhang Speaker 2: Guozhu Yang Speaker 3: Deyu Zhong Speaker 4: Wenqi Peng Session chair: Xudong Fu
09:30-09:45	S6 Keynotes Main Hall (一楼大宴会厅)	Keynote 1: Forecasting of Harmful Algal Blooms (HAB) in sub-tropical coastal waters- a 20-year retrospective Speaker: Joseph Hun-wei Lee Session chair: Qihua Ran
09:45-10:00		Keynote 2: Ecohydraulics in river damming impact assessment and adaptive management Speaker: Qiuwen Chen Session chair: Qihua Ran
10:00-10:15		Keynote 3: Challenges for Ecohydraulics Speaker: Philippe Gourbesville Session chair: Qihua Ran
10:15-10:30		Keynote 4: Complementary operation of hydro-wind-photovoltaic systems in a river basin Speaker: Pan Liu Session chair: Qihua Ran
10:30-11:00		Tea Break and Group Photo
11:00-11:15		Keynote 5: Ecofluvial dynamics - managing the Three Parallel Rivers for human and ecological needs Speaker: Danny Reible Session chair: Mengzhen Xu

Program at a Glance

11:15-11:30	S6 Keynotes	Keynote 6: Evolution and habitat simulation of vegetation in the salt marsh wetland, Yellow River Delta Speaker: Yujun Yi Session chair: Mengzhen Xu
11:30-11:45	Main Hall (一楼大宴会厅)	Keynote 7: Interactions between flows and vegetation Speaker: Michele Mossa (video) Session chair: Mengzhen Xu
11:45-12:00		Q &A for all keynotes
12:00-13:30	Lunch	
13:30-15:20	S7, S8, S9 (Room S7, S8, S9)	Oral Sessions of Young Scholar Forum on High-Quality River Basin Development
15:20-15:40	Tea Break	
15:40-16:30	S7, S8, S9 (Room S7, S8, S9)	Oral Sessions of Young Scholar Forum on High-Quality River Basin Development
16:30-17:00	Tea Break (Signing the Initiative for High-Quality River Basin Development)	
17:00-18:00	S10 Closing Ceremony Main Hall (一楼大宴会厅)	Title: Suggestions for young scholars Speaker: Xiping Yu Title: Summary of the forum and future perspectives Speaker: Mengzhen Xu Session chair: Duruo Huang
18:00-20:00	Dinner	

Opening Ceremony Speakers



Prof. Xudong Fu

Tsinghua University

Personal Profile

Xudong Fu is a professor, and the head of the School of Civil Engineering in Tsinghua University. His research interests include solid/liquid two-phase flow dynamics with focus on sediment transport, mountain river and watershed sediment dynamics, flash flood, and dam-breaching processes. He is the principal investigator of several state-level research projects, including sediment dynamics in mountain streams and watershed, some fundamental issues of sediment transport during flash flood, crucial techniques supporting hyperconcentrated flood regulation in the middle and lower Yellow River, formation and modeling of urban flash flood hazards in extreme rainstorm events, etc. He serves as the chair of the Chinese National Commission for the International Association of Hydrological Sciences, vice-chair of the International Association of Hydrological Sciences - Commission on Continental Erosion.



Prof. Zongliang Zhang

Power Construction Corporation of China

Personal Profile

Zongliang Zhang is the Chief Technical Officer of the Kunming Branch of the Power Construction Corporation of China, and the Chief Expert of the Power Construction Corporation of China. He is an academician of China Engineering Academy. He graduated from Tsinghua University in 1984 and became an engineer of the Kunming Survey, Design and Research Institute of the Ministry of Water Resources. He is a specialist of high dam design. He took leadership on the construction of 24 large hydropower stations, including Nuozhadu, Tianshengqiao First Level, Hongshiyuan, Guanyinyan, etc. He developed theories and practices of building earth dams with core walls over 300m tall and concrete face rock-fill dams over 200m tall, and made innovative contribution to the emergent treatment of landslide dams over 100m tall. He formulated three technical standards, published more than 15 books and over 100 academic papers. The Hydraulic Engineering Projects he designed won two FIDIC Project Awards and more than 28 other awards.

Opening Ceremony Speakers



Mr. Guozhu Yang

CPC Deputy Secretary of Nujiang Lisu
Autonomous Prefecture

Personal Profile

Guozhu Yang graduated from Department of Hydraulic Engineering of Tsinghua University in 1997. He is a native of Yunnan. After graduation he returned home and became an engineer in the Yunnan Survey, Design and Research Institute. In 2003 he became the director of the Planning and Design Office of the Department of Water Resources of Yunnan Province. He studied from 2004 to 2005 in the Central College of Hydraulic Engineering and Hydropower Design and Planning of the Ministry of Water Resources. He studied from 2006 to 2009 in the Faculty of Public Administration. In 2016 he became the head of the Planning and Design Office. In 2019 he became the head of the River Manager System Office of the Department of Water Resources of Yunnan Province. In 2020 he became the Deputy Secretary of the Department of Water Resources of Yunnan Province. In 2023 he became the Deputy Secretary of Nujiang Lisu Autonomous Prefecture.



Prof. Deyu Zhong

Tsinghua University

Personal Profile

Deyu Zhong got his Bachelor Degree in Wuhan University of Hydraulic and Electric Engineering (now a part of Wuhan University) in 1993. He got his Ph.D. degree in Tsinghua University in 1999. He is now a professor in Tsinghua University and Qinghai University. His major research interests include big data analysis of moisture delivery by atmospheric circulation, flood forecast, numerical simulation of sediment transport, water resources management, floodplain and riparian ecology management, etc. He is an associate editor of International Journal of Sediment Research and serves in another six scientific societies. He has published more than three books and over 180 academic papers. He has also registered 13 patents. He won a second National Science Progress Prize for his contribution in the research of wandering river management in Talimu River, among 13 other prizes.

Opening Ceremony Speakers



Prof. Wenqi Peng

China Institute of Water Resources and Hydropower Research

Personal Profile

Prof. Peng is the chief engineer of China Institute of Water Resources and Hydropower Research. His main expertise is in mechanism and regulation technology of water environment and water ecological process in river basin. He presided over a large number of major national and provincial science and technology projects. He has made a series of achievements in watershed water environment model, watershed water quality target management, river and lake health assessment and watershed water ecological restoration. His research results play an important role in supporting science and technology in the country's most stringent water resources management system, river basin water resources protection and water pollution prevention and control planning and management, etc. He has published more than 12 books, presided over the compilation of 7 national or MWR standards, and published more than 100 papers.

Keynote Speakers



Prof. Joseph Hun-Wei Lee

Macau University of Science and Technology,
China

Title of Speech: Forecasting of Harmful Algal Blooms (HAB) in Sub-tropical Coastal Waters, a 20-year retrospective

Abstract

We have been observing algal and dissolved oxygen dynamics in Hong Kong coastal waters since the 1990s. HAB occurrence is notoriously difficult to predict. The first early warning system and data driven modeling of coastal algal blooms was developed in the early 2000s - based on continuous field measurements of water quality. The understanding of physical-biological interactions provided a basis for realistic prognostic forecasts of HAB risks. In recent years we have also successfully developed AI-based machine learning methods to detect HAB species using an Imaging Flow Cytobot (IFCB). This talk will give an overview of some key advances on the prediction of algal blooms and red tides from an engineering and fisheries management perspective.

Personal Profile

Professor Lee is a Shanghai native and received his primary and secondary education in Hong Kong. He then moved on to pursue university studies at the Massachusetts Institute of Technology (MIT) where he obtained his BSc, MSc and PhD degrees. He joined the University of Hong Kong (HKU) in 1980, where he rose through the ranks to become the Redmond Chair Professor of Civil Engineering in 1996. He was Dean of the Faculty of Engineering (2000-2003) and Pro-Vice-Chancellor (Staffing) of HKU (2004-2009). From 2010-2016 he served as Vice-President (Research & Graduate Studies) of the Hong Kong University of Science and Technology, followed by appointments as Elman Family Professor of Engineering and Public Policy and Senior Advisor to the President (2018-2020). Professor Lee is currently Vice-Chancellor and President of Macau University of Science and Technology (MUST). Prof Lee's research revolves around the use of hydraulics to solve environmental problems, in particular the theory of buoyant jets and its environmental applications, and the prediction and control of water quality. He was elected into the Royal Academy of Engineering, United Kingdom in 2008, and was bestowed Honorary Membership by the International Association for Hydro-environment Engineering and Research (IAHR) in 2015. He is a Fellow and Past President of the Hong Kong Academy of Engineering Sciences and Honorary Professor of Nankai University and Hohai University. Professor Lee is the Immediate Past President of the International Association for Hydro-Environment Engineering and Research (IAHR) (2019-2023). He is also the inaugural Chief Editor of the *Journal of Hydro-environment Research* (JHER), and served as Associate Editor of *ASCE Journal of Hydraulic Engineering*, *Environmental Fluid Mechanics*, and *China Ocean Engineering*.

Keynote Speakers



Prof. Qiuwen Chen

Nanjing Hydraulic Research Institute, China

Title of Speech: Ecohydraulics in River Damming Impact Assessment and Adaptive Management

Abstract

There is a long dispute worldwide on the effects of river damming on biogeochemical cycling of nutrients, emission of greenhouse gas from reservoirs, and fish habitat loss, which has become a bottleneck of sustainable hydropower development, and even jeopardizes regional geopolitical cooperation. Here we investigated the changes of phosphorus and nitrogen concentrations and fluxes of greenhouse gas emissions from the cascade reservoirs along the upper Mekong River. Meanwhile, we studied the ecological flow and habitat restoration for fish spawning. Our new findings may overturn the long-term perception on the effects of hydropower development on nutrient regimes in dammed rivers, which could support sustainable hydropower development worldwide.

Personal Profile

Dr. Qiuwen Chen is the director of the Center for Eco-Environmental Research at Nanjing Hydraulic Research Institute. He got his B.S. degree from Hohai University in 1996. He got his M.S. degree in TU Delft in 2000 and his Ph.D. degree in TU Delft in 2004. Prof. dr. Qiuwen Chen has long been engaged in the research on eco-environmental impacts of hydropower development. His research interests include ecohydraulics, ecodyrology, ecological hydro-informatics, eutrophication of rivers and lakes, and urban hydro-informatics. He has long been engaging in research and application of cutting-edge technologies in the ecological environment protection of major river basins. Prof. Chen has led major projects of the National Natural Science Foundation of China (NSFC) that include Creative Research Group, Distinguished Youth, Key Support Project, Major International Cooperation Project; and the National Program on Key Basic Research, National High-tech Research and Develop Program, major projects on water pollution control and management, projects on national key research and development programs, etc. He has published over 360 research papers in peer-reviewed journals, including National Science Review, Nature Reviews Earth & Environment, Science Bulletin, ES&T, WR and etc. He has been issued more than 60 national and PCT patents. For his outstanding achievements, he received the 20th IAHR Arthur Thomas Ippen Award, the 2020 Xplorer Award, and National Innovation Award.

Keynote Speakers



Prof. Philippe Gourbesville

Université Côte d'Azur, France

Title of Speech: Challenges for Ecohydraulics

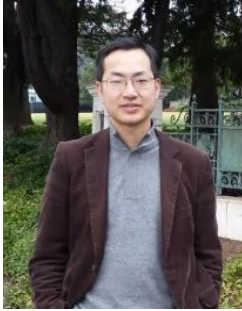
Abstract

The management of various and frequently concurrent water uses along a river request to develop a holistic strategy that can integrate needs and constraints before to formulate an optimize proposal. Over the last decades, the fast increase of the diverse water uses has induced severe stresses on many hydro environments and produce significant ecological degradation. Ecohydraulic solutions have been defined and deployed to formulate relevant answers and helped to optimize flow conditions for ecological restoration. With the acceleration of the processes linked to climate change like the fast melting of glaciers, new phenomena are appearing in rivers like the warming of water. When this process is combined with changes in the hydrological regime and a global reduction of flows during the dry period, many water uses should be reassessed and a new strategy should be formulated. The presentation will address the complex conditions of the Rhone River and the constraints introduced by the energy production (hydro power and electro nuclear plants). In addition to the analysis of the hydrological processes and the associated uses, the presentation will address the difficulty to establish regulation rules and to monitor their potential impact. Examples will be taken from the Rhone River for temperature and from tropical coastal environments for bacterial contamination (E.coli) assessment.

Personal Profile

Philippe Gourbesville is a professor of Hydroinformatics at Polytech Nice Sophia, the graduate school of engineering of Université Côte d'Azur, France, since 1997. He graduated from Louis Pasteur University, Strasbourg in 1993 and started his career as hydraulic engineer in a French consulting company and was involved in projects in Europe, Africa and Asia. After joining University Côte d'Azur as associate professor and professor in 2006, he managed a wide range of research projects on hydro-environmental modelling within different frameworks including 16 European Commission projects as member, work package leader or coordinator. He is actively engaged at the national level with the Société Hydrotechnique de France (SHF) as a management board member, division chair and initiator of the SimHydro biannual conferences since 2010. Philippe is currently serving as associate editor for the *Journal of Hydroinformatics*, *Journal of Hydraulic Engineering, River*, and as co-editor in chief for *La Houille Blanche / Hydrosience Journal*. He has published extensively in the field of water engineering, crisis management and resilience assessment. Philippe received several awards from scientific and professional organizations including the "Grand Prix de l'Hydrotechnique" award from SHF in 2011 and he is currently invited professor in 16 universities and institutes in Europe and Asia.

Keynote Speakers



Prof. Pan Liu

Wuhan University, China

Title of Speech: Complementary Operation of Hydro-Wind-Photovoltaic Systems in a River Basin

Abstract

China is striving to peak carbon dioxide emissions before 2030 and endeavor to achieve carbon neutrality by 2060. These goals have brought significant opportunities for large-scale development of renewable energy sources such as wind and solar power. China leads the world in wind and solar installed capacity, but the rates of wind and solar power curtailments are high. The quick adjustment capability of hydro turbine units can help offset the short-term fluctuations in wind and solar power, reduce power curtailment and meet the stability requirement of power grid. New technologies for short-term power forecasting, risk mitigation operations, and feature extraction in complementary systems were introduced to balance strong, unpredictable fluctuations in wind and solar power. A new method for operation rule formulation in short-term and medium-long term coordination with flexibility and adaptability was proposed to meet the challenges of disconnection between medium-long term and short-term power redistribution operations. New technologies for the numerical, analytical, and climate-adaptive capacity planning in the entire lifecycle of complementary systems were introduced to face the high uncertainty of future grid boundary conditions and the possibility of disconnection between capacity planning and operation of complementary systems. Application of these technical innovations in the Yalong River hydro-wind-photovoltaic complementary system were demonstrated.

Personal Profile

Pan Liu is a professor of the College of Water Resources and Hydropower of Wuhan University. He got his B.S. degree from Wuhan University in 2000 and his Ph.D. degree from Wuhan University in 2005. He has long been engaging in prediction and management of reservoir groups. He is the deputy editor of *Journal of Water Resources Planning and Management*. He is named as a member of the “10000 Pioneer Researcher Initiative”, and he is a recipient of the “Outstanding young scholar Fund”. He published over 200 research papers, of which 140 are SCI indexed.

Keynote Speakers



Prof. Danny Reible

Texas Tech University, United States

Title of Speech: Ecofluvial Dynamics – Managing the Three Parallel Rivers for Human and Ecological Needs

Abstract

The Three Parallel Rivers area includes the headwaters of three of the great rivers of Asia, the Yangtze (Jinsha), Mekong (Lancang) and Salween (Nu), and exhibits great diversity of landscapes, flora and fauna. The natural richness of the area is such that it has been recognized as a UNESCO World Heritage Site. The area is also the home of a large indigenous population which is stressed by poverty and limited development. It has been proposed to aid societal development by managing the river systems to provide renewable low-cost hydroelectric power and better manage the water resources of the region but the challenge is to do so without impacting the ecology of the Three Parallel Rivers and downstream regions.

The key to effectively meeting these conflicting objectives is to understand the impacts of river management and dams on the river system. In this presentation I will summarize some of the key roles of the rivers in supplying water, sediment and nutrients and the potential impacts of dams on ecofluvial dynamics. I will summarize some of the observed impacts of the Three Gorges on water elevation and sediment erosion in the Yangtze River as well as some of the resulting ecological impacts.

Personal Profile

Dr. Danny Reible is the Donovan Maddox Distinguished Engineering Chair and Paul Whitfield Horn Professor at Texas Tech University where he guides the development of the Maddox Environmental Engineering Research Center. Dr. Reible completed his PhD in Chemical Engineering at the California Institute of Technology in 1982. In 2004 he joined the University of Texas after 23 years in the Department of Chemical Engineering at Louisiana State University (LSU). In 1991 he was a Senior Visitor to the Department of Applied Mathematics and Theoretical Physics at Cambridge University. He also served as Shell Professor of Environmental Engineering at the University of Sydney, Australia between 1993 and 1995 while on leave from LSU. He returned to LSU as Director of the Hazardous Substance Research Center in 1995. He is a Board Certified Environmental Engineer, a Professional Engineer (Louisiana), a Fellow of the National Academy of Inventors and in 2005 was elected to the National Academy of Engineering. He has authored or edited six books and more than 200 journal articles and book chapters, and has attracted more than \$40 million in research funding. His current research is focused on sustainable management of water resources, technologies and practices for the use and reuse of brackish and produced waters, and the assessment and remediation of contaminated soils and sediments.

Keynote Speakers



Prof. Yujun Yi

Beijing Normal University, China

Title of Speech: Evolution and Habitat Simulation of Vegetation in the Salt Marsh Wetland, Yellow River Delta

Abstract

As the most extensive, complete, and youngest estuary wetland in China's warm temperate zone, the Yellow River Delta has increasingly faced soil salinization due to climate change and human activities. This poses a severe threat to the diversity and stability of wetland ecosystems. To address this issue, researches have been taken from 2018 in various field monitoring sampling zones with different environmental gradients in the Yellow River Delta. A long-term field investigations and monitoring as well as in-situ and indoor experiments on plant species cultivation were conducted during the research period. Additionally, numerical simulations were performed on groundwater, soil water-salt interactions and vegetation community dynamics. Based on these efforts, the following research findings were obtained: (1) Field observations revealed that under hydrodynamic forces driven by runoff and tides, salt was transported through soil pore water in complex patterns resulting in distinct distributions of water-salt ratios along sea-land/sea-river directions within the Yellow River Delta. (2) Results from a coupled groundwater-soil water model demonstrated that fluctuations in groundwater levels caused by changes in freshwater input from the Yellow River played a crucial role in shaping patterns of soil water-salt distribution compared to tidal processes alone. (3) By utilizing parameters derived from indoor culture experiments alongside historical remote sensing imagery results, a vegetation growth competition model was constructed. Simulation results indicated a clear banded distributions of three vegetation types: the phragmites, suaeda and tamarix across tidal flats. However, the expansion of invasive species spartina would disrupt this distribution pattern..

Personal Profile

Dr. Yi is a distinguished professor from Beijing Normal University. Her research fields include ecohydraulics, habitat suitability simulation, practical solutions to improve local aquatic environment and ecology. She published over 200 peer-reviewed journal papers, Web of science counts over 3500 citations. She has won awards such as "Dayu Water Science and Technology Award - First Prize", "Capital Leading Women", "National Science Fund for Distinguished Young Scholars", "China Navigation Science and Technology Award", "Nature Science Prize of Higher Education of China", "Yangtze Young Scholars", "National Science Fund for Excellent Young Scholars", "Alexander of Humboldt Scholar (Germany)", etc. She serves as associate editor or member of editorial board of 8 SCI/EI journals. She serves in Selection Committee of Humboldt Foundation (Germany) and LOC Executive Board of IAHR China.

Keynote Speakers



Prof. Michele Mossa

Technical University of Bari, Italy

Title of Speech: Interaction Between Flows and Vegetation

Abstract

Aquatic vegetation plays a crucial role in providing diverse ecosystem services. Its capacity to uptake nutrients and produce oxygen enhances water quality, particularly in waterways where widespread planting can effectively remove nitrogen and phosphorous. Coastal vegetation, including marshes and mangroves, mitigates erosion by dampening waves and storm surge, while riparian vegetation stabilizes riverbanks. The dynamic interaction between vegetation and flow fields influences various processes at different scales, such as blade-scale, patch scale, or canopy-scale. Given the context of climate change, rising global temperatures impact fluid flow variables, affecting coastal zone morphology and precipitation patterns. Changes in vegetation density become critical, necessitating monitoring for coastal and river management. Marshes and mangroves emerge as valuable allies in combating climate change by sequestering substantial carbon, making them among the richest tropical forests. Fluctuations in vegetation density trigger cascading effects, leading to imbalances in ecosystems. The lecture focuses on the broader theme of flows in the presence of obstacles, emphasizing the effects of varying vegetation density in jet-like flows and certain wave types. Analytical models and laboratory experiments, including data from the LIC - Coastal Engineering Laboratory of the Polytechnic University of Bari, illustrate the impacts of obstacles on advective-diffusive processes, fluid mechanics, and turbulence quantities. The analysis extends to large scales, considering Coriolis forces, and explores the interaction between waves and obstacles.

Personal Profile

Michele Mossa is a professor of Hydraulics at the Polytechnic University of Bari (Italy), with a PhD in hydraulic engineering for the environment and land. He is the chief scientist of the Coastal Engineering Laboratory – LIC, a member of the board of directors of the National Consortium of Universities for Marine Sciences (CoNISMa) for the Polytechnic University of Bari, and a member of the Fluid Mechanics Committee of IAHR. At the University, he was elected as the representative for the Academic Senate, is the coordinator of the PhD course in "Environmental and Building Risk and Development," and is Deputy Rector of Research and Transfer for the University. He has served as president of the IAHR Education and Professional Development Section, and as the expert reviewer of research project grant applications in Hydraulics and Oceanography for both the Research Council of Norway and the OeAD (Österreichische Austauschdienst) GmbH Austrian Agency for International Cooperation in Education and Research. He is associate editor of 10 renowned academic journals.

Invited Speakers



Prof. Takashi Asaeda

Saitama University, Japan

Title of Talk: The Journal of Ecohydraulics -
Frontiers of Ecohydraulics

Abstract

The 1st volume of the Journal of Hydraulics was published in 2016, as the 1st journal in the ecohydraulics filed. Main contributions in these days were fish-related matters, such as the dynamic of fish ladders, habitats of fish in a stream, etc. However, associated with the widening of the ecohydraulics' field in these days, a variety of topic papers, including nature based solution matters, aquatic vegetations, even ecophysiological papers, etc., are occupying a large share. The Journal of Ecohydraulics is one of few journals, which treat the biological phenomena by dynamics and mathematical analyses. Therefore, in spite of relatively newly started, the Journal of Ecohydraulics is highly evaluated, in the recent intensive competition among journals, such as Citation Metrics, 5.4 (2022) CiteScore, Q1, 1.016 (2022) SNIP, 0.675 (2022) SJR.

The Journal of Ecohydraulics is the journal which young researchers will create with their fascinating activities, for their future.

Personal Profile

Takashi Asaeda was graduated from the University of Tokyo, then got MS and DR degrees from the same university. He is working as a supervisor of five SATREPS projects organized by JICA and JST, research advisor of private companies, etc., as well as research activities. His original field was Environmental Hydraulics, however, these days his research field was shifted to biological fields, such as Aquatic Ecology, Plant Ecophysiology as well as Ecohydraulics. He engages problems including physical processes of watered areas, structures associated with urban heat islands, and field observation and mathematical modelling of aquatic ecology and biology. He has published more than 200 journal papers. He has received numerous awards from international organizations and also plays an active role in international and domestic society and committees, including serving as chairperson of committees of the Japanese Ministry of Land, Infrastructure, Transport and Tourism, and as chairperson of Prefectural Committees of Saitama, and of the Japanese Society of Civil Engineers among others. He is working as a Chief Editor of the *Journal of Ecohydraulics* (IAHR), in addition to *Wetlands Ecology and Management* (Springer Nature), and *Aquatic Ecology* (Springer Nature, Associate Editor), and *Journal of Hydro-Environmental Research* (IAHR).

Invited Speakers



Prof. Huanfeng Duan

Hong Kong Polytechnic University, China

Title of Talk: Introduction to Journal Publication and Research Paper Writing

Abstract

This talk introduces the development and impact of an inter-disciplinary SCI Journal published by the Taylor & Francis, particularly on the relevant fields of computational fluid mechanics and eco-hydraulics. The scope and the preferred topics of this journal are revealed through the publication data analysis. Meanwhile, the writing skills and prospective impacts of publishing high-quality journal papers are discussed from the perspective of a journal editor-in-chief.

Personal Profile

Dr. Huan-Feng Duan (HF Duan) is currently an Associate Professor in the Department of Civil and Environmental Engineering of the Hong Kong Polytechnic University. He received his Ph.D. in Urban Hydraulics and Water Resources from the Hong Kong University of Science and Technology, with PhD Research Excellence Award in Engineering. Dr. Duan's research focuses mainly on the urban hydraulics, including topics: (1) pipe fluid transients and open channel flow dynamics; (2) urban asset management (pipe defects detection and water distribution system analysis); (3) environmental fluid mechanics (water quality assessment and urban flooding risk analysis). In the past years, his research group and collaborating partners have developed advanced theoretical methods and numerical models for pipe flow simulations and pipeline diagnosis in fluid conveyance (water & oil) and drainage (stormwater & sewage) systems. Relevant copyright and patent have been granted for these achievements. Meanwhile, he exploited classic and innovative experimental measurements for complex flow dynamics in open channels with vegetation and compound bottoms. In addition, he performed systematic investigation on the hydrodynamic interactions of coastal wave-tide-current-drainage flows based on the CFD and experimental applications, so as to explore the mechanism and dynamics of coastal flooding under extreme climate and urbanization conditions. Dr. Duan has published over 100 journal articles (over 90 in the SCI-indexed journals) and more than 30 international conference papers (e.g., organized by IWA, IAHR and ASCE). He has also led and participated in many key research projects and grants from different funding bodies in Hong Kong and Mainland China. Dr. Duan is currently serving as the Editor-in-Chief for the *Journal of Engineering Applications of Computational Fluid Mechanics* (2020-IF = 9.391) and *IWA-AQUA Journal* (2020-IF = 1.644); and the Executive Committee of IAHR-HK (since 2014). He is active member of IAHR and ASCE.

Invited Speakers



Prof. Daniele Tonina

University of Idaho, United States

Title of Talk: Monitoring Surface Subsurface Flow for Ecohydraulic Applications

Abstract

High-density environmental data acquisition of surface and ground water exchange is key for estimating surface subsurface connectivity, energy and nutrient transport and in the conjunctive management of surface and groundwater. Long-term monitoring through different climatic years also allows understanding the hydrologic response of the watershed and the interaction between groundwater storage and stream flows. This presentation shows a novel methodology based on water temperature signal analysis for monitoring longitudinal streambed-aquifer interactions along two managed mountain streams. The passive thermal method uses the naturally-occurring fluctuations of stream water temperature as a tracer to quantify downwelling/upwelling fluxes along the streambed-groundwater interface. The method provides: 1) local hyporheic fluxes within the first layers of the riverbed sediments, 2) scour and deposition of the streambed, as well as 3) the thermal regime of the water in the channel and streambed, which have important ecological applications. We suggest that *Journal of Ecohydraulics* should also include research papers on technique development and application.

Personal Profile

Daniele Tonina is Professor at the Center for Ecohydraulics Research. He held post-doctoral research positions at the University of California at Berkeley (USA) and at the University of Trento (Italy). He received engineering degrees from the University of Trento (BS, MS, 2000) and the University of Idaho (PhD, 2005). His interests include surface and ground water processes and the interface between these two major systems — the hyporheic zone. In subsurface hydrology, he has investigated solute transport in heterogeneous formations with a stochastic approach. In surface waters, he is interested in sediment transport, river morphology response to disturbances and their effect on solute mixing and the aquatic habitat. He is an IAHR, ASCE and AGU member. Professor Daniele Tonina is an associate editor of *Water Resources Research*, *Hydrological Processes*, and *Hydraulic Engineering*.

Invited Speakers



Prof. Francisco Martinez Capel

Universitat Politecnica de Valencia, Spain

Title of Talk: Large Flood Contribution to Restoring Riverine Morphology, Connectivity and Fish Habitats in a Regulated River

Abstract

Flow regulation in gravel-bed rivers impacts the hydrology, sediments and morphology, riparian vegetation, and vertical connectivity with the hyporheic zone. In this context, it has been suggested that flood events could be used as a restoration mechanism. In a Mediterranean-climate river system, we analysed the impact of a ca. 18-year return period flood of the Serpis River (Spain) on river morphology, riparian vegetation, aquatic habitat quality for fish species, and hyporheic exchange. We collected pre- and post- flood riparian vegetation distributions and bathymetries, which were used to develop two-dimensional surface and three-dimensional subsurface numerical models to map surface and hyporheic hydraulics. We estimated the sediment budget, which indicated net erosion, and compared the hydraulic complexity based on the HMDI index. Results show that the large flood removed the invasive giant reed from large areas, reshaped the in-channel morphology, by forming new bars and pools and enhancing the complexity of the flow field by scouring around large boulders. The habitat availability for the endemic Eastern Iberian chub and invasive bleak increased. Hyporheic exchange did not show noticeable change under losing conditions, but there can be under neutral ambient groundwater condition. This study corroborates the beneficial effects that flood events or high flow releases may have on regulated streams and the potential use of high flow pulse as a restoration tool.

Personal Profile

Francisco Martinez-Capel (Paco) is professor and senior researcher in the Universitat Politecnica de Valencia (Spain), and performs research and technical support with a cross-disciplinary approach since 1996, on environmental flows assessment, habitat modelling, relations between flow regime and communities in freshwater ecosystems, and effects of climate change on environmental flows and water resources management. He has participated in approximately 40 national and international projects and published more than 60 scientific papers in international journals. He has been the Chair of the International Ecohydraulics Committee of the IAHR and the President of the Iberian River Restoration Centre (CIREF) whose geographical area covers Spain and Portugal. Professor Francisco Martinez Capel is an associate editor of *The Journal of Ecohydraulics*, the *International Journal of River Basin Management*, and the *Journal of Applied Water Engineering and Research*.

Invited Speakers



Dr. Goh Hui Weng

Universiti Sains Malaysia, Malaysia

Title of Talk: Harmony in Nature: Unveiling the Constructed Wetland Revolution in Malaysia

Abstract

In Malaysia, the introduction of constructed wetland applications marks a significant stride in sustainable water management. The Putrajaya Wetland stands out as the nation's inaugural man-made wetland, boasting the status of the largest constructed freshwater wetland in the tropics. Complementing this landmark initiative is the Bio-Ecological Drainage Systems (BIOECODS) pilot project at the USM Engineering Campus, a result of the strategic partnership between Universiti Sains Malaysia and the Department of Irrigation and Drainage (DID) Malaysia. REDAC, the first research center at the USM Engineering Campus, further elevates wetland research in Malaysia by achieving Higher Institution Centre of Excellence (HICoE) status, with a focus on Sustainable Urban Stormwater Management. The development of constructed wetland research and ongoing projects by REDAC expands the horizon of possibilities. Collaborations with entities such as the Sewerage Services Department (JPP) and DID highlight innovative approaches, including the use of tropical wetland plants for sewage treatment and the application of constructed wetlands in diverse settings, from rural areas to regional sewage treatment plants. Notable collaborations also include projects like the Paddy Field Concept Wetland, Terrace Wetland and Brackish Wetland, showcasing the versatility of constructed wetlands in addressing pollution and promoting environmental balance. These endeavors reflect Malaysia's commitment to advancing constructed wetland technologies and their diverse applications in wastewater treatment and sustainable development.

Personal Profile

Goh Hui Weng is a Lecturer in River Engineering and Urban Drainage Research Centre of Universiti Sains Malaysia. Her research interests include hydraulic conductivity, soil organic matter, stormwater management, nutrient removal, bioretention, and water quality. She involved in research and consultancy projects for Nature-Based Solutions (NBS), such as constructed wetland systems (CWS) and bioretention systems and she was also an appointed facilitator to conduct international training and workshops for U Sains Holding. She was the Congress Event Manager for 37th IAHR World Congress 2017 and she was involved in various course development for B(Tech) Construction Management Program and Environmental, Health and Safety (EHS) courses for MBA in Construction Management (MBACM) and MBA in Manufacturing and Production Management Programs for Wawasan Open University.

Invited Speakers



Prof. Ruidong An

Sichuan University, China

Title of Talk: Fish Schooling and Attracting for High Dam

Personal Profile

Ruidong An is a professor and the deputy director of Institute of Ecology and Environment of Sichuan University. He is a member of the Committee on Experimental Methods and Instrumentation of the International Society for Hydraulic and Environmental Engineering (IAHR). He is also a mentor of École nationale supérieure d'électrotechnique, d'électronique, d'informatique, d'hydraulique et des télécommunications (INP-ENSEEIH). His research interests include modern fluid mechanics measurement technique and environmental fluid dynamics. He took charge of three research projects funded by the National Science Foundation. He published many SCI-indexed research papers, EI-indexed research papers, and registered a series of patents as the first author.



Prof. Xindi Chen

Hohai University, China

Title of Talk: Floating Wetland: An Erosion-Resistant Engineering Practice Protecting Coastal Ecology Coupling “Grey and Green”

Personal Profile

Xindi Chen is an associate professor of Hohai University. Her research focuses on erosion-resistant engineering practices protecting coastal ecology coupling “grey and green”. She conducted experimental research and field investigations of ecology of tidal coastal areas home and abroad. She took charge of researches supported by national funding and postdoc special grant. She was selected as “Shuimu Scholar” of Tsinghua University during her postdoc. Her research results were published in academic journals such as *Geophysical Research Letters*, *Water Resources Research*, and *Scientific Bulletin*. She was invited to give talks in international scientific conferences in the United States, United Kingdom, the Netherlands, Italy, and Republic of Korea.

Invited Speakers



Prof. Pavisorn Chuenchum

Chulalongkorn University, Thailand

Title of Talk: Water Management Strategies in an Era of Turbulence, Case Study in Thailand

Personal Profile

Dr. Pavisorn Chuenchum is the deputy head of the Department of Water Resource Engineering of Chulalongkorn University. He got his B.S. degree from King Mongkut's University of Technology North Bangkok in 2014. He got his M.S. degree from Chulalongkorn University in 2016, and he got his Ph.D. degree from Tsinghua University in 2021. His research focuses on the water resources management of Mekong River, aiming to reach a balance between upstream and downstream in terms of tapping the water resources and hydropower of Mekong River. He developed methods to estimate soil erosion and sediment yield in the Lancang-Mekong River Basin using revised Universal Soil Loss Equation and GIS Techniques. He also made assessment of reservoir trapping efficiency and hydropower production under future projections of sedimentation in Lancang-Mekong River Basin.

Closing Ceremony Speakers



Prof. Xiping Yu

Southern University of Science and Technology,
China

Title of Speech: Suggestions for Young
Scholars

Personal Profile

Xiping Yu is currently a chair professor at Southern University of Science and Technology and a distinguished visiting professor at Tsinghua University. He was awarded Distinguished Young Scientist by National Natural Science Foundation of China and Cheung Kong Professorship by Ministry of Education. Prof. Xiping Yu's research interests cover shallow-water oceanography and coastal engineering, particularly, nearshore hydrodynamics and water-wave mechanics, two-phase flows and nearshore sediment transport, air-sea interaction under storm conditions, climatology of tropical cyclone activities, etc.



Prof. Mengzhen Xu

Tsinghua University, China

Title of Speech: Summary of the forum and
future perspectives

Personal Profile

Mengzhen Xu is presently the Deputy Head of School of Civil Engineering, Tsinghua University. She has been serving as an Executive Committee Member in the International Association for Hydro-Environment Engineering and Research China (Mainland) Chapter (IAHR China), a Leadership Member of IAHR Ecohydraulics Committee, a Board Member of River, Coastal, and Estuarine Morphodynamics (RCEM), and a Council Member of World Association for Sedimentation and Erosion Research (WASER). She has leaded over 20 research projects supported by the National Natural Science Foundation of China (NSFC), the Ministry of Science and Technology of China (MSTC), the Ministry of Water Resources (MWRC), and industrial institutions, and has published around 90 papers on SCI/EI indexed journals, and over 10 standards and patents. Her research has been recognized and awarded the John F. Kennedy Prize (IAHR) and the Prize of Outstanding Contribution to Sedimentation Studies (WASER), and several inland prizes.

Session Chairs



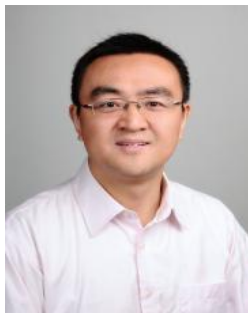
Prof. Qihua Ran

Hohai University, China

Session Chair of Keynote Session

Personal Profile

Qihua Ran is a professor and the deputy dean of College of Water Resources and Hydropower of Hohai University. He received B.S. degree from Tsinghua University in 1996. He received M.S. degree from Stanford University in 2002, and received Ph.D. degree from Stanford University in 2006. His major research interests include: physics-based numerical simulations, hydrologic response of land surface and top soil layer, surface runoff and sediment load generation process on slopes, coastal sediment transport, erosion on various scales, and forecasts of geologic disasters. He is a member of the American Geophysical Union and a member of the International Association for Hydro-Environment Engineering and Research.



Prof. Dongdong Shao

Beijing Normal University, China

Session Chair of S1, S7

Personal Profile

Dongdong Shao is a professor in Beijing Normal University and the director of the Department of Environmental and Ecological Engineering. He is currently a member of the Ecological Hydraulics Committee of the International Society for Hydraulic and Environmental Engineering (IAHR), and an associate editor of the *Journal of Hydro-environment Research* and *Journal of Ecohydraulics*. His research interests include environmental hydraulics, hydrology and ecological processes of wetland, coastal and estuarine engineering. His team has made a series of innovative achievements have been made in the coupling process of wetland ecology and geomorphology, and the stress-response mechanism of wetland plants. He has published many academic papers in high-level journals such as GRL and WRR.

Session Chairs



Prof. Saiyu Yuan

Hohai University, China

Session Chair of S3

Personal Profile

Saiyu Yuan, a full professor and doctoral supervisor of Hohai University, National Youth Expert by the Ministry of Education, was supported by the Fok Ying-Tong Education Foundation for Young Teachers in the Higher Education Institutions, Outstanding Youth Fund of Jiangsu Province, and was awarded Jiangsu Province Youth May Fourth Medal. He is also the deputy chairman of the Hydraulics Committee of the Chinese Hydraulic Engineering Society, the member of the Hydrology and Sediment Committee of the Chinese Hydraulic Engineering Society, and the deputy chief editor of the Journal of Ecohydraulics. He has published more than 50 SCI papers in authoritative journals such as Water Resources Research, authorized more than 10 invention patents, and participated in the compilation of 3 national and industry standards. He has received the first prize of National Ministry of Education Technology Advancement Award in 2022, the first prize of Science and Technology of Jiangsu Province in 2013 and 2017, and the second prize of Dayu Water Resources Science and Technology in 2017.



Ir. Woo Soo Wei

Tanahasia Consulting Engineers Sdn Bhd,
Malaysia

Session Chair of S4

Personal Profile

Ir. Woo Soo Wei is a Professional Engineer (PEPC) and Certified Professional in Erosion and Sediment Control (CPESC). He has vast experience in flood mitigation projects including river and coastal engineering studies. He has been working at design office and project sites, from supporting roles to lead management role. He has over 18 years' experience in carry out feasibility study, engineering design, technical assessment/review, tenders, construction supervision and project management. He was the lead design engineer for Sg Bertam Flood Mitigation Project in Cameron Highlands; Timah Tasoh Western Flood Bypass Project in Perlis; and coastal rehabilitation projects in Pontian Kecil, Tioman Island, Kuala Pahang, Kuala Sg Kuantan, etc. Currently Ir Woo is the Director of Tanahasia Consulting Engineers Sdn Bhd.

Session Chairs



Dr. Honglei Tang

Kunming University of Science and Technology,
China

Session Chair of S7

Personal Profile

Honglei Tang holds a Doctoral degree as Hydrology and Water resources (Zhejiang University) and finished his dissertation about “Analysis of runoff/sediment reduction efficiency of check-dam in its lifespan” in 2019. He worked as visiting scholar at the University of California, Berkeley in 2017 and now serves as reviewer for journals such as Earth Surface.Process.Landforms, Journal of Hydrology etc. Based on the development and application of physics-based water-sediment model, his research has been mainly focusing on catchment-scale soil erosion, sediment transport, soil & water conservation in arid and semi-arid region and now extending to the mechanism, process and early warning system development of mountainous water-related disasters such as flash floods, landslides. He has published more than 10 peer-reviewed-papers in international journals and conferences, and Chinese journals, and co-authored one English monographs. Selected “Xingdian Talents” plan of Yunnan Province in 2022, he now works as a lecturer in Kunming University of Science and Technology.



Dr. Lu Chang

Beijing Normal University, China

Session Chair of S8

Personal Profile

Dr. Lu Chang is a lecturer in Beijing Normal University. She received her Ph.D. degree from the Hong Kong University of Science and Technology. Her research interests include the contamination and propagation of heavy metals in drinking water, urban flood defense and drainage system, eutrophication and red tides in natural water bodies. She led a research project of Research on Water Body Space and Primary Productivity in the Yangtze River sponsored by National Natural Science Foundation of China, and took part in the project “Artificial Intelligence (AI) based Hydro-ecological and Environmental Monitoring System for Water Security Warning. Her works have been published in top journals like Water Research, Environmental Science & Technology, Journal of Hazardous Materials, etc.

Session Chairs



Prof. Zhiwei Li

Wuhan University, China

Session Chair of S9

Personal Profile

Zhiwei Li is an associate professor at the School of Water Resources and Hydropower of Wuhan University. In addition, he is the Vice Chairman of the International Hydrographic Union's Commission on Land Erosion, the Youth Working Committee, and a member of the Yangtze River Estuary Conservation and Development Committee of the Yangtze River Technical and Economic Society. His current interests focus on fluvial morphodynamics and ecogeomorphology of meandering and braided rivers on Qinghai-Tibet Plateau under climate warming, and fluvial processes affected by anthropogenic activities in the middle and lower Yangtze, Yellow and Tarim Rivers, and peatland ecohydrology and riverine carbon dynamics.



Prof. Duruo Huang

Tsinghua University, China

Session Chair of S10

Personal Profile

Huang Duruo is the Deputy Chair of the Department of Hydraulic Engineering at Tsinghua University, a special researcher, associate professor, and doctoral supervisor. Her research mainly focuses on the seismic resistance of hydraulic structures and engineering practices. She has received several academic honors, including the Second Prize of the Ministry of Education Natural Science Award (ranked 1st), Mao Yisheng Science and Technology Award - Beijing Youth Science and Technology Award, Zhang Guangdou Outstanding Youth Science and Technology Award, Tsinghua University "Academic Newcomer Award," and the "Future Star Lecture Award" granted by the International Society of Soil Mechanics and Geotechnical Engineering.

Evaluation Panelists

Note: The panelists are invited to evaluate quality of the posters and oral presentations delivered by the undergraduate students and young scholars, and to give the awards to the winners.

Name	Affrication	Title	Session No.
Philippe Gourbesville	IAHR	President	S2, S10
Jindong Cai	IAHR	Beijing Office Manager	S2, S10
Xudong Fu	Tsinghua University	Professor	S2, S10
Jianshi Zhao	Tsinghua University	Professor	S2, S10
Xiaoli Liu	Tsinghua University	Professor	S2, S10
Jinyi Zhao	Tsinghua University	Deputy secretary of CCYL Tsinghua University Committee	S2, S10
Honglei Tang	Kunming University of Science and Technology	Lecturer	S4
Duruo Huang	Tsinghua University	Associate Professor	S4
Manjie Li	Tsinghua University	Assistant Professor	S4
Lu Jing	Tsinghua University	Assistant Professor	S4
Nantawoot Inseeyong	Tsinghua University	TA	S4
Goh Hui Weng	Universiti Sains Malaysia	Lecturer	S4, S7
Dongdong Shao	Beijing Normal University	Professor	S7
Qihua Ran	Hohai University	Professor	S7
Deyu Zhong	Tsinghua University	Professor	S7, S10
Xindi Chen	Hohai University	Associate Professor	S8

Evaluation Panelists

Pavisorn Chuenchum	Chulalongkorn University	Associate Professor	S8
Lu Chang	Beijing Normal University	Lecturer	S8
Yuefei Huang	Tsinghua University	Professor	S8, S10
Ruidong An	Sichuan University	Professor	S9
Zhiwei Li	Wuhan University	Associate Professor	S9
Xiping Yu	Southern University of Science and Technology	Professor	S9, S10
Yujun Yi	Beijing Normal University	Professor	S9, S10

Oral Presentations on Jan 28th



S4 Undergraduate Session on “Global Water Issues”

Theme 1 Water hazards: disaster defense

Time	Name	Affiliation	Title
13:30-13:35	Tianle Li	Tsinghua University	Impact of the tsunami on the coast along the Pearl River Estuary
13:35-13:40	Xiaogang Hu	Tsinghua University	Water resources crisis in the context of global warming
13:40-13:45	Ye Li	Tsinghua University	Soil liquefaction — a “magnifying glass” of earthquake disaster
13:45-13:50	Chenyang Wang	Tsinghua University	Flooding under global warming conditions
13:50-13:55	Juntao Wei	Tsinghua University	Atmospheric pressure disturbance — a rare factor that induces tsunami
13:55-14:00	Futao Zhao	Tsinghua University	Thermodynamic responses of extreme hydrological events to climate change
14:00-14:05	Feihong Zheng	Tsinghua University	The relationship between hydrological disasters and global climate change
14:05-14:10	Shulei Zhou	Tsinghua University	Climate change and compound disasters
14:10-14:15	Yancen Jin	Wuhan University	Predicting the evolution of hydrological hazards under climate change and their stress effects on carbon balance
14:15-14:20	Xiaosheng Tan	Tsinghua University	Urban flooding and flood control

Oral Presentations on Jan 28th

Theme 2 Water management: application of modern technology

Time	Name	Affiliation	Title
14:35-14:40	Yunhao Dai	Tsinghua University	Shenzhen intelligent water system exploration
14:40-14:45	Ke Li	Tsinghua University	Utilizing technology to combat water pollution
14:45-14:50	Xuanyu Chen	Hohai University	Integrating crowd hydrology and AI for enhanced global water resource management under extreme conditions
14:50-14:55	Haoxuan Du	Hohai University	Fine identification and life assessment of UHPC structure durability in extreme corrosion environment based on machine vision
14:55-15:00	Zixiu Yu	Hohai University	The research status and prospects of water use efficiency
15:00-15:05	Yicheng Ma	Northwest A&F University	Morphological generalization of underwater river cross sections: a key step in the construction of a three-dimensional river network
15:05-15:10	Zhenguo Wang	Northwest A&F University	Effects of water-sand connectivity on water-sand modeling processes under extreme climatic conditions
15:10-15:15	Liuying Jiang	China Agricultural University	Focus on China: innovative smart irrigation technology for water saving and efficiency in agriculture
15:15-15:20	Yiyang Liu	Tsinghua University	Evolving strategies in flood risk management and insurance: a comparative analysis of Chinese and global perspectives

Oral Presentations on Jan 28th



Theme 3 Water ecology: protection and restoration

Time	Name	Affiliation	Title
15:40-15:45	XianLiang Lin	Tsinghua University	The impacts of sea level rise on mangroves in China
15:45-15:50	Caicheng Duan	Tsinghua University	Research on water resources and carbon emissions in the development of urban group in the Yellow River Basin
15:50-15:55	Chunrui Liu	Tsinghua University	Impacts of dams on the ecosystem of the upper Yangtze River
15:55-16:00	Haoran Jiang	Tsinghua University	Biodiversity attenuation in the Yangtze: how human activities impacted the aquatics species of the Yangtze River Basin
16:00-16:05	Qingquan Zeng	Tsinghua University	The call of the ocean: challenges and strategies in coastal water pollution
16:05-16:10	Yu Feng	Tsinghua University	Industrial wastewater recycling
16:10-16:15	Longcan Lu	Tsinghua University	Generation and treatment of water pollution in poor areas
16:15-16:20	Qingxufeng Zhu	Tsinghua University	Ecological challenges and restoration in the Ganjiang River Basin
16:20-16:25	Zijia Wang	Hohai University	Optimal measures to control urban waterlogging under the condition of global climate change
16:25-16:30	Zeyang Yu	Tsinghua University	Changes in precipitation patterns caused by global warming
16:30-16:35	Fan Mei	Tsinghua University	The solution to water shortage
16:35-16:40	Tao Yuan	Tsinghua University	The impact of climate change on the global water cycle
16:40-16:45	Chaoyue Yuan	Tsinghua University	Marine pollution

Oral Presentations on Jan 28th

Theme 4 Water resources: sustainable development

Time	Name	Affiliation	Title
17:00-17:05	Qingcai Liang	Tsinghua University	Study on the impact of inter-basin water transfers on the problem of uneven distribution of water resources
17:05-17:10	Pinyi Xiang	Tsinghua University	Exploration and investigation of multi-energy complementation under dual-carbon target
17:10-17:15	Zihan Liu	Tsinghua University	Prediction of mechanical behavior of hydrate dissociation by depressurization method from single fracture
17:15-17:20	Shuo Shi	Tsinghua University	Collaborative efforts in structural cooperation along the Yangtze and Huaihe Rivers to jointly address the existing dilemma
17:20-17:25	Zemiao Zhang	Tsinghua University	China's agricultural water use in a comparative perspective between China and the U.S.
17:25-17:30	Wenyuan Zheng	Tsinghua University	Soil and water conservation construction in Gansu Province
17:30-17:35	Yi Chen	Tsinghua University	Resourceization of the Yangtze River floods
17:35-17:40	Zhonghua Qin	Tsinghua University	The new situation and measures of water resource supply and demand in the water receiving area of the South to North Water Diversion Project
17:40-17:45	Minxi Wang	Tsinghua University	Global water distribution and circulation patterns
17:45-17:50	Xiao Xu	China University of Geosciences Beijing	Brief introduction on purification and reuse of urban water resources

Oral Presentations on Jan 29th

S7 Ecology and Environment

Time	Name	Affiliation	Title
13:30-13:50 Invited Talk	Daniele Tonina	Hong Kong Polytechnic University	Monitoring surface subsurface flow for ecohydraulic applications
13:50-14:10 Invited Talk	Goh Hui Weng	Universiti Sains Malaysia	Harmony in nature: unveiling the constructed wetland revolution in Malaysia
14:10-14:20	Ying Zhang	Hohai University	Cumulative and offsetting effects of streamflow response to climate change and large reservoir group in the Jinsha River Basin, China
14:20-14:30	Longyu Li	Beijing Normal University	Regime of intradelta lobe avulsion in relation to river discharge: a numerical study
14:30-14:40	Yunhao Lai	Kunming University of Science and Technology	Water-sediment movement and slope stability in the process of vegetation restoration
14:40-14:50	Fengshuo Fu	Tsinghua University	Study on the formation mechanism of ice jams in the source region of the Yangtze River based on multi-source satellite remote sensing data
14:50-15:00	Zhenhai Liu	Wuhan University	Mechanisms of antimony release from lacustrine sediments with increasing temperature
15:00-15:10	Yunyu Wu	Hohai University	Study on the environmental response patterns of microbial diversity in the Qinghai-Tibet Plateau basin
15:10-15:20	Maozhou Wu	Tsinghua University	Vertical water renewal estimates dissolved oxygen depletion in a semi-enclosed sea
15:40-15:50	Zifu Zhang	Tsinghua University	Ecohydrological effects of photovoltaic power plants on energy budget and vegetation near surface in arid regions of China: a modeling study

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15:50-16:00	Xue Meng	Northwest Agriculture & Forestry University	Identification of runoff response mechanisms for permafrost degradation driven by climate warming
16:00-16:10	Fanxuan Zhao	Beijing Normal University	Mechanism and threshold of environmental stressors on seagrass in high-turbidity estuary: case of <i>Zostera japonica</i> in Yellow River Estuary, China
16:10-16:20	Jun Zhang	Tsinghua University	Moisture spectrum on small timescales in root-soil-water system
16:20-16:30	Discussion and signing the Initiative for High-Quality River Basin Development		

Oral Presentations on Jan 29th

S8: River Basin Economy

Time	Presenter	Affiliation	Title
13:30-13:50 Invited Talk	Xindi Chen	Hohai University	Floating wetland: an erosion-resistant engineering practice protecting coastal ecology coupling "grey and green"
13:50-14:10 Invited Talk	Pavisorn Chuenchum	Chulalongkorn University	Water management strategies in an era of turbulence, case study in Thailand
14:10-14:20	Juntai Han	Tsinghua University	Flash flood grading and warning based on dynamic rainfall threshold
14:20-14:30	Yuanhang Yang	Wuhan University	Quantifying the drivers of terrestrial drought and water stress impacts on carbon uptake in China
14:30-14:40	Amrit Prasad Sharma	Tsinghua University	"Risk and resilience insight in basin-scale". A synthesis of 50 years (1971-2020) flood loss in Nepal Himalaya."
14:40-14:50	Ding Guo	Sichuan University	Transforming agriculture through a hydrological perspective - a technological revolution in irrigation water
14:50-15:00	Mahmut-Tudaji	Tsinghua University	Evaluation and bias correction of ECMWF precipitation forecast over the confluence of the Asian monsoons and Westerlies
15:00-15:10	Jiajian Qiu	Hohai University	Fish assemblage in the connecting channel of the river-lake system: accounting for extreme drought
15:10-15:20	Nantawoot Inseepong	Tsinghua University	Impacts Of climate and land use changes on streamflow in the Mun-Chi River Basin, the largest tributary of the Mekong River
15:40-15:50	Rutong Liu	Wuhan University	Machine learning-constrained projection of bivariate hydrological drought magnitudes and

Oral Presentations on Jan 29th

socioeconomic risks

15:50-16:00	Senchang Hu	Tsinghua University	Factors influencing international infrastructure investment: an empirical study from Chinese investors
16:00-16:10	Shiruo Hu	Tsinghua University	Detecting economic mechanism of irrigation efficiency paradox from farmers' behavior
16:10-16:20	Jiemei Duan	Tsinghua University	Exploring the fourth ecological concept based on Yunnan regional architectural practice
16:20-16:30	Discussion and signing the Initiative for High-Quality River Basin Development		

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S9: Green Energy

Time	Presenter	Affiliation	Title
13:30-13:50 Invited Talk	Francisco Martinez Capel	Universitat Politècnica de València	Large flood contribution to restoring riverine morphology, connectivity and fish habitats in a regulated river
13:50-14:10 Invited Talk	Ruidong An	Sichuan University	Fish Schooling and attracting for high dam
14:10-14:20	Xuan Li	Tsinghua University	Research progress on production and emission of CH ₄ and N ₂ O from urban rivers
14:20-14:30	Enhua Cao	Hohai University	A data enhancement-based framework for quadratic imputation of dam deformation missing values
14:30-14:40	Xudong Li	Wuhan University	Impacts of priority regulation of pumped storage on low-carbon operation of hybrid energy system
14:40-14:50	Zhina Wang	Tsinghua University	PEMFC durability analysis combined with membrane and Pt catalyst degradation models: based on real vehicle data
14:50-15:00	Shengye Liang	Sichuan University	From self-circulating mist cultivation systems at sea to adequate crop provisioning
15:00-15:10	Pianpian Xiang	Beijing University of Technology	Zero-Carbon Ammonia technology pathway analysis by IPAC- technology model in China
15:10-15:20	Yifan Shao	Tsinghua University	A wave energy collection device under the micro wave conditions
15:40-15:50	Jingxuan Xie	Sichuan University	A novel hybrid model based on grey wolf optimizer and group method of data handling for the prediction of monthly mean significant wave heights

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15:50-16:00	Yinshuo Li	Tsinghua University	High precision joint inversion of gravity and magnetic: an environmentally friendly geological exploration method
16:00-16:10	Ran Wang	Wuhan University	Regulation intensity assessment of pumped storage units in daily scheduling for renewable energy consumption
16:10-16:30	Discussion and Signing the Initiative for High-Quality River Basin Development		

Jan 30th: Study Tour to Liyuan Hydropower Station

We will visit the dry-hot valley of the Jinsha River (the upper reaches of the Yangtze River) to experience high quality hydropower development (Liyuan Hydropower Station) supported by the nature-based solutions. The invited experts will come back to the hotel in Lijiang, and the students will lodge at the hydropower station hotel.

The Liyuan Dam is a concrete-face rock-fill dam on the Jinsha River on the border of Yulong County and Shangri-La County, Yunnan Province, China. The dam has an associated hydroelectric power generation of 2,400 MW by 4 generators. The dam construction began in 2008, and started impoundment of the reservoir in November 2014. The first generator was commissioned on December 28, 2014, and the second generator was commissioned in July 2015. The dam is 155 m high withholding a reservoir of 727,000,000 m³, of which 209,000,000 m³ as active storage. The reservoir normal water storage level is 1,618 m above sea level with a minimum of 1,602 m above sea level. The catchment area for the reservoir is 220,000 km² while the reservoir surface area is 14.73 km².

Besides power generation, the dam also affords flood protection to downstream, and the reservoir is used for fish-farming. Meanwhile, the reservoir has also significantly improved the vegetation cover of the original dry-hot valley. To sustainably improve the vegetation cover and riparian ecology, efforts have been made to survey local plants and find the species suitable for cultivation. We will visit the fish spawning pond and the rare species botanic garden at the Liyuan Hydropower Station.



Birdview of Liyuan Dam and Reservoir

Study Tours

Jan 31st Route 1: Study Tour to Baoshan Stone Town

The students will visit the Baoshan Stone Town, which is a National Historic Site on a steep cliff overlooking the Jinsha River. The town was firstly built in Yuan Dynasty. It is surrounded by terrace fields and is close to an important ferry of the Jinsha River. Most of the buildings and furniture in the town are made of stone, thus giving it the name of “stone town”. It provides the visitors an immersive experience of the harmony between human and nature.



Birdview of Baoshan Stone Town, picture from *National Geography*

Jan 31st Route 2: Study Tour of Vertical Zonation of Biomes in Hengduan Mountains

Lijiang lies in a basin within the Great Hengduan Mountains area. This area is marked by a typical vertical zonation of biomes from dry-hot valleys to glaciated peaks, and one of the highest biodiversity in the temperate region on earth, of which the majestic Jade Dragon Snow Mountain provides a best embodiment. Here we will experience a rapid transition from meadows and forests to glacier and snow peak within 20 minutes by taking a cable car. Moreover, we will marvel at the abundance of biological and cultural diversity nourished by the limpid streamflow from snow peaks to the fertile basin at the foot of the mountain.



Jade Dragon Snow Mountain, picture from *Planet Institute*