



International Association  
for Hydro-Environment  
Engineering and Research

Hosted by  
Spain Water and IWHR, China



ARISTOTLE  
UNIVERSITY OF  
THESSALONIKI

# RIVER FLOW 2026

## 13th International Conference on Fluvial Hydraulics

30 June - 04 July 2026  
Thessaloniki, Hellas



CONFERENCE  
PROGRAM

## Welcome Message

Dear Colleagues and Friends,

It is our distinct pleasure to welcome you to the 13th International Conference on Fluvial Hydraulics — River Flow 2026 — held in the historic and vibrant city of Thessaloniki, a city that has long stood at the crossroads of cultures, ideas, and innovation. Beyond the technical programme, we hope you will enjoy the rich history, hospitality and cuisine, that make Thessaloniki one of the most welcoming destinations in the Mediterranean.

Since its inception in 2002 under the auspices of the IAHR Fluvial Hydraulics Committee, the River Flow conference series has stood as a premier global platform for exchanging pioneering research and best practices in our field. This year, we are proud to carry on that tradition under the central theme of “Steering the future of hydro-environment research and practice”. We are honored to host you at the Aristotle University Research Dissemination Center (KEDEA) from June 30 to July 4, 2026.

Our journey begins on June 30th with specialized Master Classes and Short Courses, designed for hands-on learning and the opportunity to interact directly with world-class experts. The main conference from July 1st to 3rd will feature a dynamic program of parallel sessions and exciting daily keynote presentations covering our main themes, from fundamental flow processes to river system resilience in a changing climate. We are also proud to feature a dedicated session on Diversity, Equity, and Inclusion, fostering a welcoming and collaborative environment for all attendees.

We encourage you to engage actively throughout the conference, exchange perspectives across disciplines, and take full advantage of the opportunity to connect with peers, mentors, and industry leaders from around the world. We will conclude our time together on July 4th with a memorable excursion, centered around ancient Hellenic culture.

The program laid out in this booklet is the result of immense dedication and hard work from our community. We extend our deepest gratitude to our keynote speakers, session chairs, authors, reviewers and committee members, for sharing their insights. We also thank our sponsors for their invaluable support in making this gathering possible.

We invite you to fully immerse yourself in the scientific exchange, to forge new collaborations, and to enjoy the unique beauty and hospitality of Thessaloniki. On behalf of the Local Organising Committee, the International Scientific Committee, and the IAHR Technical Committee on Fluvial Hydraulics; thank you for being an essential part of River Flow 2026, and wish you a stimulating, productive, and memorable conference.

Warm regards,  
The River Flow 2026 Organizing Committee

## Conference Information

### (a) Venue

The conference will be held on the campus of the Aristotle University of Thessaloniki (AUTH) and will also host the 16th International Symposium on River Sedimentation (ISRS).

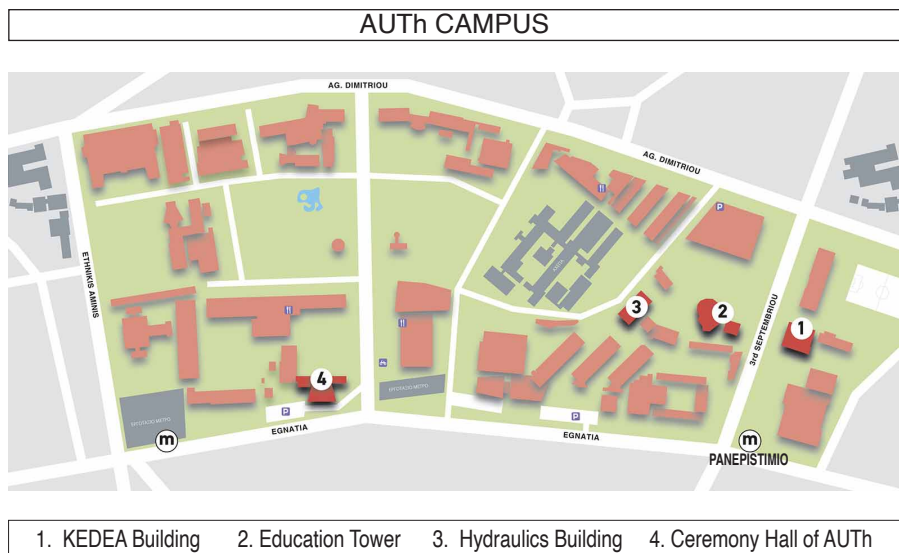
The Opening and Closing Ceremonies will take place in the AUTH Ceremony Hall.

The oral sessions will be held in Amphitheatres 1, 2 and 3 (KEDEA Building), the Amphitheater of the Hydraulics Building (1st Floor), and the Lecture Room of the Education Tower (Ground Floor).

Poster Papers will be displayed in the foyer area of Amphitheatres 2 and 3 (KEDEA Building), where exhibitors will also be present.

The Registration Desk will be located in the KEDEA Building (Ground Floor). Coffee breaks, lunches, and the reception will also take place in the KEDEA Building, both indoors and outdoors.

The map below indicates the location of the various buildings within the AUTH Campus. The nearest metro station to the venue is Panepistimio (Exit on 3rd Septemvriou).



### **(b) Registration**

Participants can register and collect their conference welcome kit at the Registration Desk. The desk will be open from Tuesday 30 June to Friday 3 July, at the following times:

- **Tuesday, 30 June:** 17:00 – 20:00
- **Wednesday, 1 July:** 08:00 – 18:00
- **Thursday, 2 July:** 08:00 – 18:00
- **Friday, 3 July:** 08:00 – 16:00

### **(c) Oral and Poster Presentations**

Presenting authors should provide their presentation files (e.g., PowerPoint) at the amphitheatre of their session at least half an hour before the session begins.

Posters should be mounted at designated spots in the Poster Area upon consultation with a staff member. Posters may remain on display until the end of the Conference. Authors are requested to be available during coffee and lunch breaks to answer questions from interested participants.

### **(d) Social Events**

A Reception will be held in the foyer of the KEDEA Building after the end of Day 1.

The Conference Dinner will take place at the Hyatt Regency Hotel from 21:00 to 24:00. Buses will depart from the AUTh Campus at 20:00, with return options at 22:00 (early departure) and 24:00 from the hotel.

### **(e) S. E. Coleman Best Paper Award**

River Flow 2026 proudly hosts the S. E. Coleman Best Paper Award (during the closing ceremony), recognizing an outstanding scientific contribution presented at the conference and places particular emphasis on encouraging and rewarding excellence among early-career researchers and young scientists. The award places particular emphasis on encouraging and rewarding excellence among **early-career researchers and young scientists**, supporting the next generation of leaders in fluvial hydraulics and river science.

## Beyond the Conference: A Week of Learning, Exchange and Discovery

River Flow 2026 has been designed as much more than a traditional scientific conference. Surrounding the main conference days is a rich programme of training courses, master classes, workshops, networking events, special discussions, and technical visits, offering participants unique opportunities for professional development, interdisciplinary exchange, and cultural discovery.

### Pre-conference Events

#### (a) 8th IAHR/WMO/IAHS International Stream Gauging Course

The week begins with the **8th IAHR/WMO/IAHS International Stream Gauging Course**, a highly regarded three-day international training programme jointly organized by IAHR, WMO and IAHS. Since 2011, this course has been delivered in countries around the world by leading hydrometry experts and has become one of the flagship training activities in the hydro-environment community. Participants undertake a 3 day intensive programme covering field operations, discharge measurements, rating-curve development, uncertainty analysis, data quality assurance, hydrometric data management, and emerging technologies including radar-based and image-based flow measurements. The course combines lectures, field exercises and hands-on activities, providing an exceptional opportunity for students, researchers and practitioners to strengthen both theoretical understanding and practical skills.

#### (b) Master Classes and Workshops

Complementing the training course is a diverse programme of **Master Classes and Workshops**, spanning topics across experimental hydraulics, hydroinformatics, hydraulic modelling, monitoring technologies, river management, numerical simulation, artificial intelligence, and professional development. Delivered by internationally recognized experts, these sessions provide participants with direct exposure to state-of-the-art methods, emerging research directions, and practical applications relevant to both academia and industry.

Specifically, the following Master Classes are listed:

1. Plastic Transport in Rivers
2. Nature-based Solutions for Flooding and Water Management Resilience in a Changing Climate

3. Numerical Modeling of Flow, Transport and Flooding in Rivers
4. Investigating Sediment Fluxes with an Acoustic Doppler Current Profiler (ADCP)
5. Assessing Turbulent Flows in the lab using laser and acoustic methods
6. Local Scour at Bridge Piers
7. Sedimentation in Dam Reservoirs: Processes, Impacts & Sustainable Management Strategies

along with these Workshops:

W1. Advances in Sediment Transport Dynamics

W2. Numerical Modelling of Rivers with Delft3D: From Fundamentals to Applications

W3. Workshop on Ultrasonic Doppler Measurements for Laboratory Hydraulics and Sediment Transport.

## **Conference Themes, Special Sessions/Events and the River Sedimentation Symposium**

The central theme of River Flow 2026, “**Steering the Future of Hydro-Environment Research and Practice,**” reflects the growing need for innovative, interdisciplinary, and sustainable approaches to understanding and managing fluvial systems. Throughout the conference, participants will explore cutting-edge experimental, theoretical, computational, and field-based advances addressing river processes, sediment dynamics, hydraulic structures, flood risk, environmental restoration, monitoring technologies, and climate resilience.

### **(a) Conference Themes**

The scientific programme of River Flow 2026 reflects the breadth and vitality of contemporary fluvial hydraulics research, bringing together contributions that span fundamental processes, engineering applications, environmental challenges, and river management strategies. Specifically, the seven selected main themes are:

- (1) Theme A – Fundamental Flow Processes
- (2) Theme B – Sediment Transport Dynamics and River Evolution Processes
- (3) Theme C – Flow and Sediment Transport through Hydraulic Structures
- (4) Theme D – Eco-Hydraulics and River Re-naturalization
- (5) Theme E – Transport Processes in Rivers
- (6) Theme F – River Systems and Resilience in a Changing Climate
- (7) Theme G – Integrated River Basin Management

## **(b) Special Sessions**

Several **Special Sessions** (SS) are planned to complement the main conference themes and provide focused forums for discussion on emerging and interdisciplinary topics in river science and engineering. These sessions bring together leading researchers and practitioners to address current challenges and recent advances in river management, monitoring, modelling, and restoration. Topics include the hydraulic performance and resilience of river structures (SS1), the complex interactions between vegetation, flow and turbulence (SS2), innovative approaches for plastic monitoring, modelling and mitigation in aquatic environments (SS3a–b), the application of artificial intelligence and soft computing techniques in river engineering (SS4), advances in remote sensing and geomorphological analysis (SS5), and the development and assessment of nature-based solutions and river restoration strategies for sustainable river management (SS6a–b).

## **(c) The 16th International River Sedimentation Symposium**

The **16th International Symposium on River Sedimentation** (ISRS), co-organised by the World Association for Sediment and Erosion Research (WASER), will also take place in conjunction with the conference, promoting interdisciplinary dialogue between hydraulic engineering, geomorphology, ecology and river management. Five ISRS sessions are included in the Programme, covering topics such as: Reservoir Sedimentation and Operational Management; Large River Morphodynamics and Human Impacts; Sediment Transport Processes and Riverbed Evolution; Estuarine and Coastal Sediment Dynamics; and Extreme Events and Morphodynamic Response. These sessions highlight the growing importance of integrated approaches for understanding and managing river systems under changing environmental conditions.

## **(d) Diversity, Equity and Inclusion (DEI) Session: Drop a step to fill the IAHR bucket: Understanding Privilege and Equity in the Water Sector.**

A particular highlight of this year's programme is the **Diversity, Equity and Inclusion (DEI) Session** (convened by IAHR's DEI task force, EPD Committee, YPN Committee, and the Local Organising Committee), which continues the successful tradition established at previous River Flow conferences. The session provides an open forum for discussing how the water sector can foster more inclusive, equitable and supportive environments for researchers and practitioners at all career stages. Through discussion, networking and shared experiences, participants are encouraged to contribute to building a stronger and more diverse international community.

### **(e) Round table discussion: Water Security under Climate Change**

River Flow 2026 will also host a **special round-table discussion organized by the UNESCO C2C CIMWRM AUTH, IAHR, and CRSRI**. Bringing together researchers, policy-makers and practitioners from Greece, China, Austria, Japan, and the UK, the round table will explore the evolving challenges of water governance, sustainability, resilience and international cooperation in an era of increasing environmental uncertainty.

### **(f) Journal of Hydraulic Research presentation: How to Write a Good Paper: An Editor's Perspective**

For early-career researchers and aspiring authors, a dedicated professional-development session entitled "How to Write a Good Paper: An Editor's Perspective" will be delivered by one of the Associate Editors of the Journal of Hydraulic Research. The session will provide practical guidance on manuscript preparation, responding to reviewers, avoiding common pitfalls, improving scientific communication, and navigating the publication process in leading international journals.

## **Post-conference Excursion**

On Saturday 4 July, the River Flow 2026 experience concludes with an optional daily excursion (preregistration required) with cultural focus to the **Royal Tombs of Vergina**, one of the most important archaeological sites in Greece and a UNESCO World Heritage Site. Participants will have the opportunity to visit the ancient capital of the Macedonian Kingdom, explore the magnificent royal burial monuments, and gain insight into the history and heritage of the region.

We hope that this combination of intensive training, scientific exchange, professional development, networking opportunities and cultural experiences will make River Flow 2026 both intellectually rewarding and personally memorable.

# Conference Program Overview

	Tue., 30 June	Wednesday, 1 July	Thursday, 2 July	Friday, 3 July	Sat., 4 July
8:00-9:00	MSc Classes / Worksh	8:00-18:30	8:00-18:30	8:00-14:30	
		Registration	Registration	Registration	
		9:00-10:45	9:00-10:30	9:00-10:30	
		<b>Opening Ceremony Keynote Lectures 1 &amp; 2</b>	<b>Parallel Sessions (B3, C3, SS5, ISRS1)</b>	<b>Parallel Sessions (A5, B6, E4, SS3b, SS7)</b>	
		Coffee break	Coffee break	Coffee break	
	Master Classes,	11:30-13:00	11:15-12:30	11:00-11:45	
	Worksh. & Short Courses, 8th IAHR/WMO/IAHS ISGC Day 3	<b>Parallel Sessions (A1, B1, C1, D1, E1)</b>	<b>Keynote Lectures 3 &amp; 4</b>	<b>Keynote Lecture 5</b>	
9:00-17:00		Lunch	12:30-13:30	11:45-13:15	
		Lunch	<b>Parallel Sessions (SS1, SS4, SS6b)</b>	<b>Parallel Sessions (A6, B7, F3, G1, ISRS4)</b>	
		14:30-16:00	Lunch	Lunch	
		<b>Parallel Sessions (A2, B2, C2, D2, E2)</b>	15:00-16:30	14:30-16:00	
		Coffee break	<b>Parallel Sessions (A3, B4, C4, F2, ISRS2)</b>	<b>Parallel Sessions (A7, B8, F4, G2, ISRS5)</b>	
		16:30-18:00	Coffee break	Coffee break	
		<b>Parallel Sessions (SS2, SS3a, F1, SS6a)</b>	17:00-18:30	16:30-18:00	
		FHC meeting	<b>Parallel Sessions (A4, B5, C5, E3, ISRS3)</b>	<b>Keynote Lecture 6 &amp; Closing Ceremony</b>	
17:00-20:00	Registration	Reception			
		21:00	Conference dinner		
					DAILY EXCURSION (VERGINA)

## Detailed Program

### Tuesday 30 June

**8:00 - 9:00**

MSc Classes and Workshops Registration  
(Hydraulics Bldg. - Amph. 1st Floor)

**9:00 - 17:00**

Hydraulics Bldg. - Amph. 1st Floor

Master Classes, Workshops & Short Courses

8th IAHR/WMO/IAHS International Stream Gauging Course.

Day 3 - Discharge computation and hydrometric data management

**17:00 - 20:00**

Registration  
(KEDEA Bldg.)

## Wednesday 1 July

**8:00 - 18:30**

Registration (KEDEA Bldg.)

**9:00 - 9:30**

**AUTh Ceremony Hall - Opening Ceremony**

**9:30 - 10:45**

**AUTh Ceremony Hall**

**KEYNOTE LECTURE 1: Flux Partitioning in River Delta Networks:  
From Local Controls to Global Predictions**

**PROF. PAOLA PASSALACQUA (ETH ZÜRICH, Switzerland)**

**KEYNOTE LECTURE 2: It takes a nation of processes to forge a river**

**PROF. MÁRIO J. FRANCA (KARLSRUHE INSTITUTE OF TECHNOLOGY, Germany)**

**10:45 - 11:30 Coffee Break KEDEA Area**

**11:30 - 13:00**

**KEDEA - Amph. 1**

**Session A1 - Fundamental Flow Processes**

**Chairpersons: Ana Maria Ferreira da Silva (Queen's Univ., Canada);  
Silke Wieprecht (Univ. of Stuttgart, Germany)**

On the characterization of the largest turbulence coherent motions in ice-covered flows: large-scale horizontal motions or very large-scale vertical motions?

GAMBOA MONGE Cr.A., FERREIRA DA SILVA A.M.

PIV experiments of flow past a circular array of rigid emergent cylinders in shallow open channel

ROUSSINOVA V., BALACHANDAR R.

PIV measurements above progressively colmating river beds – a flume study

LEISTER R., SCHNAUDER I., WIEPRECHT S.

Experimental characterization of the shear layer of a lateral cavity at low Froude numbers

FERREIRA R., RESTREPO S., CARVALHO R.F., RICARDO A.M.

Influence of secondary currents on large-scale motions in an annular flume

WEI M., LIU N.

Effect of aspect ratio on secondary currents and very-large-scale motions in open-channel flows

ZHU Y., LIU Y., TANG Z.

**11:30 -13:00**

**KEDEA - Amph. 2**

**Session B1 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Philippe Frey (Univ. Grenoble Alpes, INRAE, France); Ricardo Rebel (Technische Univ. Dresden, Germany)**

First DNS of sediment transport with microscopically realistic sand grains

REBEL R., FRÖHLICH J.

Flume observations on near bed turbulence-sediment interactions over sloping mixed beds

JHA S., CHAUDHURI S., BERA D., DEBNATH K., MAZUMDAR B.S., DAS V.

Slope-dependent competence and critical shear stress in coarse-bed streams

FROEHLICH D.C.

Effects of particle density and relative submergence on coarse-sediment entrainment: experiments using a smart sediment particle

LU X., MELVILLE B., SHAMSELDIN A., WANG L., YANG Y., XIE Y.

Sediment size distribution over an abruptly sloping bed of heterogeneous sands: insights from flume experiments

CHAUDHURI S., JHA S., DEBNATH K., MAZUMDER BS

Reliability-based analysis of bed load transport under turbulent flow conditions

BAYSAL, S., KIRCA, V.S.O., VALYRAKIS, M.

**11:30 - 13:00**

**KEDEA - Amph. 3**

**Session D1 – Eco-Hydraulics and River Re-naturalization**

**Chairpersons: Donatella Termini (National Biodiversity Future Center, Univ. of Palermo, Italy); Dionysis Latinopoulos (Aristotle Univ. of Thessaloniki, Hellas)**

Effect of an isolated mussel on flow and turbulence characteristics: preliminary experimental results

TERMINI D.

The gutter as a key element that may determine the migration of brown trout through block ramps

CEDRO K., PLESIŃSKI K.

Is the last wild river of the Alps still wild? Human pressures and management alternatives for the Tagliamento

PICCO L., PELLEGRINI G., CAMPAGNARO T., RAVAZZOLO D., CUCCHIARO S.

The troubled journey of river benthic macroinvertebrates in a Mediterranean river – how ecohydrological patterns influence colonization and water quality

LATINOPOULOS D., NTISLIDOU Ch., KAGALOU I.

Oxygen transfer in flow through a porous rubble mound weir

ÇOKGÖR, Ş., YAVUZ, V.S., HASSANİ, T.

Downstream passage success of *Chondrostoma colchicum* with angled fine screen under different inflow conditions

OZBEY C., KUCUKALI S., YOGURTCUOGLU B., ALP A.

**11:30 - 13:00**

**Hydraulics Bldg. - Amph. 1st Floor**

**Session E1 – Transport Processes in Rivers**

**Chairpersons: Anastasios Stamou (NTUA, Hellas); George Constantinescu (Univ. of Iowa, USA)**

Effect of bed discordance on mixing at the confluence between a small tributary channel and a large channel

JIANG C., CONSTANTINESCU G.

Oscillations in the mixing interface at river confluences: insights from field and laboratory studies

ABDOU A., BIRON P., DUGUAY J., BUFFIN-BÉLANGER T., LACEY J.

Effect of discharge ratio on the mixing efficiency in a T-shaped open-channel confluence with flat and degraded beds

DESSIE AT., DE MULDER T.

Effect of turbulence integral length scale on the dispersion of large objects in an open-channel flow: application to the modelling of the drift of drowning victims

SESSOU K., LOPEZ D., LE COZ J., DEWALS B., RIVIERE N.

Effect of the initial velocity shear on the dispersion of suspended sediment in a shallow shear layer.

FINANCE R., PROUST S., BERNI C., CAMENEN B., GOSTIAUX L.

Laboratory experiments reproducing the transverse mixing in a riffle-pool sequence of a Piedmont river (middle Durance, France)

THIERCELIN V., BERNI C., RIVIERE N., MIGNOT E., GOSTIAUX L., KATEB L.

**11:30 - 13:00**

**Education Tower – Ground Floor**

**Session C1 – Flow and Sediment Transport through Hydraulic Structures**

**Chairpersons: Francesco Ballio (Politecnico di Milano, Italy); Priscilla Williams (Univ. of Iowa, USA)**

Experiments on driftwood-induced increase of backwater and hydrodynamic load at bridge deck

BALLIO F., RADICE A., RONDENA M.

Influence of a floating debris jam on the horseshoe vortex around bridge piers

GIORDANA F., CONSTANTINESCU G., MANES C.

Proximity effects on scour at bridge piers and abutments in vegetated channels

GHIMIRE A., WILLIAMS P.

Effects of water surface fluctuation on turbulent structure around a bridge abutment

INOUE T., UCHIDA T.

Numerical simulation of tandem pier arrangements using FLOW 3D hydro

KUMARI S., TIWARI H.L., RUTUJA C.

Effects of flow regime and bridge deck geometry on vertical contraction scour in cohesive soils

MOWLA QAE, AHMARI H., MORADI M.

**13:00 - 14:30 Lunch Break KEDEA Area**

**14:30 - 16:00**

**KEDEA - Amph. 1**

**Session A2 – Fundamental Flow Processes**

**Chairpersons: Marian Muste (Univ. of Iowa, USA); Jérôme Le Coz (INRAE, France)**

Validation of a novel uncertainty propagation method for stationary acoustic Doppler current profiler discharge measurements

HAMMEMI S., LE COZ J., DESPAX A., HAUET A., MUELLER D.

HyGage: a new monitoring method for spatial-temporal gradually varied flows

MUSTE M., KIM K., HAUET A., KIM D.

Evaluation of image-based velocimetry methods using experimental and synthetic open-channel flow videos

FAGOUR C., LE COZ J., BODART G., CASSAN L., ROUX H., COURRET D., JODEAU M., HAUET A., TERRAZ T., PENARD L.

Secondary currents in open channel flows developing over a porous bed

GASTON L., TAIT S., GUL M.

Orientation effects on momentum transport around spur dikes

AITA H., HIRAKAWA R., OHMOTO T.

Analysis of measurement accuracy according to H-ADCP measurement methods

KIM J., GWON Y.

**14:30 - 16:00**

**KEDEA - Amph. 2**

**Session B2 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Massimo Guerrero (Univ. of Bologna, Italy); Bruce MacVicar (Univ. of Waterloo, Canada)**

Indirect measurements of bedload transport in the steep, high energy, gravel and sand White River on Mt. Rainier, Washington state

CROWE CURRAN J.

Combining sampling and acoustic backscatter profiling for estimating suspended sand concentrations during dam flushing

VINCENT B., FOUILLET J., CAMENEN B., BERNI C., LE COZ J., PIERREFEU G., PERRET E.

Monitoring of bedload transport in steep flume experiments

CHEN Z., RICKENMANN D., BADOUX A.

The effect of organic content on ADCP signal inversion for suspended load monitoring in rivers

GUERRERO M., CONEVSKI S., STOKSETH S.

Advances in sediment motion tracking in a shallow flume

MACVICAR B., IUN M., MESSENGER-LEHMANN R., MONTAKHAB A., MUELLER L.

Influence of vegetation on flow and mixing in a small channel – tracer case study

BOJDECKI F., KALINOWSKA M., KARAMUZ E.

**14:30 - 16:00**

**KEDEA - Amph. 3**

**Session D2 – Eco-Hydraulics and River Re-naturalization**

**Chairpersons: Christos Katopodis (Katopodis Ecohydraulics Ltd., Canada); Lorenzo Picco (Univ. of Padova, Italy)**

Effects of weak climatic trends on the return period of riparian vegetation uprooting by flow

CALVANI G., PERONA P.

Flow dynamics and riverbed morphology around engineered logjams: physical experiments

SPELTONI S., WEITBRECHT V., BOES RM., SCHALKO I.

Influence of submerged vegetation on the hydrodynamics of a large shallow lake: Hongze lake, China

FENG L., XU D., ZONG S., ZHANG F.

Numerical investigation of the effects of bank-vegetation root length and in-channel vegetation distribution on riverbank erosion risk

ZHOU Y., TODA Y.

Impact of vegetation-induced DEM errors on floodplain inundation: a HEC-RAS 2D case study from a natural river reach in Turkey

YILDIZ A., KÖSE Ö.

Effect of plant morphology on vegetation drag in river channels

TSENG C-Y, RAHMAN T.

**14:30 - 16:00**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session E2 – Transport Processes in Rivers**

**Chairpersons: Emmanuel Mignot (INSA Lyon, France); Romeji Ngangbam (NIT Manipur, India)**

Pollutant source identification in river systems with complex transport processes using physics-informed neural networks

XU Z., HAIFEI L., XINAN Y.

Physically based simulation of flood-triggered oil spills release using the CAESAR-LISFLOOD model

DI FLURI P., WILSON M., DOMENEGHETTI A.

Modelling contaminant transport in urban environments: effect of evaluation of the diffusion tensor using different approaches

CHAKRABORTY P., FAGOUR C., MIGNOT E., PROUST S., ARCHAMBEAU P., DEWALS B.

Towards an operational tool for microplastic risk: rapid predictions of accumulation zones

KIRBY K., PILECHI A., ROGHANI A., CHENIER S.

Results of applying of a modified aggregated dead zone model on the example of radionuclide contamination transport in the Loire river (France), Kiev and Kanev reservoirs (Ukraine)

SIZONENKO V., SINITSYN I.

Mitigating the effects of radioactive contamination by changing the operating modes of nuclear power plants (France) and reservoirs (Ukraine)  
SIZONENKO V., SINITSYN I.

**14:30 - 16:00**

**Education Tower - Ground Floor**

**Session C2 – Flow and Sediment Transport through Hydraulic Structures**

**Chairpersons: Veysel Şadan Özgür Kirca (Istanbul Technical Univ., Turkey); Sung Won Park, Incheon National Univ., Korea**

Pressure distribution around a pile inside scour protection  
KIRCA O., SUMER B.M., GHASEMPOUR R., BATTAL D.B.

Application of feed forward neural networks in predicting scour depth around bridge piers.

RAHMAN F., RUTUJA C.

Prediction of local scouring and dune crest propagation at the downstream of the river-bed protection

PARK S.W., SHIN E.T., KIM D., SONG C.G

Effect of the ogee-shaped outlet key of piano key weir on the downstream riverbed scouring

YOSUFZAI S., KADIA S., RÜTHER N.

Effect of water injection on flow characteristics of submerged wall jets and scour mitigation downstream of apron

LEE J., SONG C., EUM T., KIM K.

Experimental study of toe scour at a sloping dike with vegetated foreshore

HAO Z., PENG Z., HE Q.

**16:00 - 16:30 Coffee Break KEDEA Area**

**16:30 - 18:00**

**KEDEA - Amph. 1**

**Special Session SS2 – Vegetation-Flow-Turbulence Interactions**  
**Chairpersons: Dong Xu (Hohai Univ., China); Andrea Del Gaudio (Univ. of Naples Federico II, Italy)**

Vertical mixing and sediment exchange dynamics in open-channel flows with submerged vegetation

ZONG S., XU D., FENG L., CHEN X., JI C., VALYRAKIS M.

Effect of stem shape on flow structure around a rectangular canopy of emerged vegetation

DEL GAUDIO A., CONSTANTINESCU G., DE PAOLA F.

Evolution of large-scale vortices and its influence on flow and flexible vegetation dynamics of a finite-length canopy in a 2-D laminar flow

NI J., ZHANG Z., JI C., XU D., ZHANG X.

Feedback of vegetation-patch-induced morphological changes on wake dynamics

ZHANG Y-H., DUAN H-F., NEPF H.

Experimental study on the turbulent interaction in a symmetrically distributed vegetated channel

ZHANG Y-H., DUAN H-F., STOCCHINO A.

A numerical study on flow characteristics in a partially vegetated channel

BISWAL SK.

**16:30 - 18:00**

**KEDEA - Amph. 2**

**Session F1 – River Systems and Resilience in a Changing Climate**  
**Chairpersons: Evangelia Farsirotou (Univ. of Thessaly, Hellas); Foteini Kyrousi (IMDC, Belgium)**

Flood risk prediction using machine learning, two-dimensional hydraulic simulations and open-access data. A case study of the Enipeas river basin, Thessaly, Greece.

XAFOULIS N., FARSIROTOU E., KOTSOPOULOS S.

Integrating time series of flood extent maps with a shallow-water model for estimating riverbed geometry: a synthetic twin experiment

BAUDU F., HOSTACHE R., CATRY T., RICCI S., CASSAN L., HERBRETEAU V., DELENNE C.

Enhancing river operations with hydrological-hydrodynamic modeling

KYROUSI K., ZOETER F., KINDERMANN V., ALVES SANCHES J., VAN HOLLAND G.

Spatial flood risk prediction using graph neural networks: a proof of concept study

AELAMI M., DELENNE C., TOULEMONDE G., HOSTACHE R.

Embedding climatic drivers into dynamic flood susceptibility mapping with LSTM: insights from the Nakdong-Miryang basin, South Korea

PARK K., HWANG S., BAIK J., KIM H., KU S., CHO M., JUN C.

Combined hydrologic and hydrodynamic simulation of extreme flood events Ianos and Daniel in the Kalentzis river basin, western Thessaly (Greece)

DIMAS P., KOSSIERIS P., TSOUKALAS I., KOUTSOS G., VASILIADES L., EFSTRATIADIS A., MAKROPOULOS C., MICHAS S.

**16:30 - 18:00**

**KEDEA - Amph. 3**

**Special Session SS6a – Nature-Based Solutions & River Restoration**

**Chairpersons: Catherine Wilson (Cardiff Univ., UK); Menno Straatsma (Utrecht Univ., Netherlands)**

An overview of river restoration projects in Italy

LATELLA M., GRASSO G., CAMPOREALE C.

Evaluating flood attenuation effect of leaky barriers with a field-validated permeability-based model

ZHUANG W., LIANG D., WILSON C.

Hydro-geomorphic responses to large wood in river systems from literature to field evidence

NASSAJI MATIN G., PANICI D., BENNETT G., BRAZIER R.

Kickstarting rivers: initiation measures to accelerate and enhance morphodynamics in river restoration

DEMUTH P., VETSCH D., BOES R., WEITBRECHT V.

Large-scale nature-based solutions for the lowland river Rhine to accommodate climate change and foster biodiversity recovery

STRAATSMA M.

Comparing nature-based solutions in the Rhine and Rhône and advancing viability mapping for large-scale rivers

SCHIELEN R., DUNNE K., COSTAZ-PUYOU I., SPIJKERVET A., WEL-LING C., ROEFS W., VAN DER MEULEN G.

**16:30 - 18:00**

**Hydraulics Bldg. – Amph. 1st Floor**

**DEI Session: Drop a step to fill the IAHR bucket: Understanding Privilege and Equity in the Water Sector**

**Convened by IAHR's DEI task force and EPD Committee, YPN Committee, and the Local Organizing Committee.**

**16:30 - 18:00**

**Education Tower – Ground Floor**

**Special Session SS3a-Plastic Monitoring, Modelling and Mitigation**

**Chairpersons: James Lofty (KIT, Germany); Łukasz Przyborowski (Polish Academy of Sciences, Poland)**

Stirred from the bottom: remobilization dynamics of degraded macroplastics on different riverbeds

MANCINI M., FRANCALANCI S., COLOMER J., SERRA T., SOLARI L.

Simplifying river plastics: geometric and physical properties of the most persistent litter items

REBAI D., LOFTY J., FRANCA M., VALERO D.

Modelling input and transport processes to quantify plastics distribution in European rivers

STIBORA M., VAN EMMERIK T., GONZALEZ-FERNANDEZ D., WEERTS A., SÁNCHEZ-GUERRO HERNÁNDEZ M., EVERAERT G., WALDSCHLÄGER K.

Experimental investigation of the early dynamics of urban and natural flood drifters

AGIRRE J., CALLAGHAN A.H., VALERO D.

Two-dimensional simulation of the transport of plastic bottles in the Firenze urban reach of the Arno river

PERSI E., PETACCIA G. CONTÒ FP, SIBILLA S., FENOCCHI A., INNOCENTI L., MANCINI M., SOLARI L.

The role of particle size and density on microplastic retention efficiency in bubble barrier systems

SANTOS C., LA CAPRA M., FREI S., GILFEDDER B., FAEL C.

**18:00 - 19:00**

**KEDEA - Amph. 1**

**Session IAHR-FHC meeting (the Fluvial Hydraulics Committee meeting)**

George Constantinescu (Univ. of Iowa, USA); Donatella Termini (Univ. of Palermo, Italy); Emmanuel Mignot (INSA Lyon, France); Nadia Penna (Univ. della Calabria, Italy); Alessio Radice (Politecnico Di Milano, Italy); Subhasish Dey (Indian Institute of Technology Gandhinagar, India); Oscar Link (Univ. de Concepción, Chile), Sandra Soares-Frazão (Univ. Catholique de Louvain, Belgium), Manousos Valyrakis (Aristotle Univ. of Thessaloniki, Hellas)

**19:00 - Reception - KEDEA Area**

## Thursday 2 July

**8:00 - 18:30**

**Registration (KEDEA Bldg.)**

**9:00 - 10:30**

**KEDEA – Amph. 1**

**Round Table Session - Water Security Under Climate Change**

Organized by AUTH UNESCO C2C CIMWRM, IAHR, CRSRI

Chairpersons: Elpida Kolokytha (UNESCO C2C CIMWRM / Aristotle Univ. of Thessaloniki, Hellas), Fang Ze (Changjiang River Scientific Research Institute, China)

Speakers: MYLOPOULOS Y. (Aristotle Univ. of Thessaloniki, Hellas), ZHU Y. (Changjiang River Scientific Research Institute, China), HABERSACK H. (UNESCO-IHP / BOKU, Austria), Oishi S. (Kobe Univ., Japan), WILSON C. (Cardiff Univ., UK), PAPADOPOULOS A. (Thessaloniki Water Supply and Sewage Co. S.A., Hellas)

**9:00 - 10:30**

**KEDEA – Amph. 2**

**Session B3 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Ali Khosronejad (State Univ. of New York, USA); Joanna Crowe Curran (US Army Corps of Engineers, Univ. of Tennessee, USA)**

Exploration of the complexity of gravel-bed rivers with numerical simulations

MESSIANT V., DENG J., RECKING A., CHAUCHAT J., BEL C., GONZALES DE LINARES M., JODEAU M., PITON G.

Long-term 1D numerical simulations of bedload transport and bed evolution along a regulated river: the Rhône upstream of Lyon, France

HERNANDEZ D., CAMENEN B., LE COZ J., TERRAZ T., PEETERS A., MARTINEZ T., PIEGAY H.

Temporal organization of braided rivers through morphological states  
GOTELLI C., ANCEY

Leveraging insights from CFD-DEM simulation to bedload transport modelling

ZHAO T., LI X., XU B.

Numerical modeling of hydrodynamics and sediment diversion in a large bifurcation-confluence system

ZHU H., XIA J., ZHOU M., DENG S., NIKORA V.

High-fidelity hydro-morphodynamics modeling of large-scale meandering rivers under bankfull conditions

SEYEDZADEH H., KHOSRONEJAD A.

**9:00 - 10:30**

**KEDEA - Amph. 3**

**Session ISRS1 – Reservoir Sedimentation and Operational Management**

**Chairpersons: Luka Javornik (Univ. of Ljubljana, Slovenia); Libing Huang (Yellow River Institute of Hydraulic Research, China)**

Large Scale Physical Modelling of Gravel Augmentation

HABERSACK H.

Analysis of navigation water flow conditions in the Laojuntan section of Baihetan reservoir

ZHANG B., FAN X., YIN Y., DENG A., LU Q.

Research on the dynamic maintenance mechanism of effective storage capacity in daily regulation reservoirs by individual flood events

HUANG L., WANG M., ZHANG F.

Two-Dimensional Simulation of Long-Term Morphological Evolution Around Idealized Tidal Inlets

ISLAM M.M., WU W.

Applying Blench's (1970) Regime Equations in Meandering Channels

NESSA S., WU W.

Water-sediment inflow variations in Heishanxia reservoir: characteristics and driving forces

PENG Y., LUO S.

**9:00 - 10:30**

**Hydraulics Bldg. – Amph. 1st Floor**

**Special Session SS5 – Remote Sensing & Geomorphology**

**Chairpersons: Michael Nones (Polish Academy of Sciences, Poland); Katelyn Kirby (National Research Council, Canada Canada)**

Measurement of suspended sediment concentration in rivers using hyperspectral imaging

GWON Y., Siyoon KWON, Dongsu KIM, Ilwon SEO, Sanghwa JUNG

A global geomorphometric framework for identifying large rivers using freely available remote sensing datasets

NAGARAJAN R., GHARAMAN K., NONES M.

Satellite data to inform integrated river management models

NONES M., SAMARAS A.

Merits of multi-mission remote sensing data assimilation on improving flood forecasting – a case study of Ohio river between Cannelton-Newburgh

RICCI S., NGUYEN TH, CASSAN L., BONASSIES Q., PIACENTINI A., RODRIQUEZ SUQUET R., PEÑA LUQUE S., FATRAS Ch., ASTIFAN B., DAVIS R., DURAND M., COSS SP

High-resolution soil moisture retrieval using Sentinel-1 SAR satellite data

XING X., XUE Y., ZHANG Y., XU M.

Evaluating the performance and scalability of stone weir nature-based solutions using earth observation: evidence from Sifnos island

KOSSIERIS S., MICHALIS P., PETRAKOS K., TSIMIKLIS G., AMDITIS A.

**9:00 - 10:30**

**Education Tower – Ground Floor**

**Session C3 – Flow and Sediment Transport through Hydraulic Structures**

**Chairpersons: Mudassar Razzaq (Hochschule Bochum, Germany); Gábor Fleit (Budapest Univ. of Technology and Economics, Hungary)**

Simulation of two-phase aerated flow over spillway aerators

RAZZAQ M., GURRIS M., ANWAR M.A., HUSSAIN Ch. T.

Analysis of the velocity field inside a jet's plunging pool

ALEIXO R., BIEGOWSKI J., GUERRERO M.

Modifying inflow discharge formula toward side-weir detention basin with in-situ direct monitoring

LEE S., KIM D., GWON Y., JEONG B., KIM D., YUN J.

Multimethod estimation of reservoir sedimentation rate

FLEIT G., BARANYA S.

Experimental analysis of vegetation effects on piano key weir performance

KUMAR B., RAJ M., KUMAR A., AGARWAL H.

A practical application of CFD modelling of turbulent flow and force fluctuation over gated weir

SKIADAS A., DIMAKOPOULOS A.

**10:30 - 11:15 Coffee Break KEDEA Area**

**11:15 - 12:30**

**KEDEA - Amph. 1**

**KEYNOTE LECTURE 3: Lowland Rivers in a Changing Climate: Projected Response of a Fixed-Planform System**

**PROF. ASTRID BLOM (DELFT UNIVERSITY OF TECHNOLOGY, Netherlands)**

**KEYNOTE LECTURE 4: On the Need of Large-Scale Physical Modelling**

**PROF. HELMUT HABERSACK (UNIVERSITY OF NATURAL RESOURCES AND LIFE SCIENCES, BOKU, Austria)**

**12:30 - 13:30**

**KEDEA - Amph. 1**

**Session IAHR-JHR (from the Editorial Team of the Journal of Hydraulic Research)**

**How to write a good paper: an Editor's perspective**

**Sandra Soares-Frazaõ (Univ. Catholique de Louvain, Belgium), Panos Diplas (Lehigh Univ., USA)**

**12:30 - 13:30**

**KEDEA - Amph. 2**

**Special Session SS4 – Soft Computing & Machine Learning**

**Chairpersons: Yifan Yang (Wuhan Univ., China); Vasileios Kitsikoudis, (Univ. of Twente, Netherlands)**

A novel deep learning approach for predicting turbulent flow and equilibrium bed morphology of large-scale waterways

**GHOLAMI ANJIRAKI M., KHOSRONEJAD A.**

Live-bed scour depth modelling around the bridge pier using physics informed neural network

**PRAKASH S., DAS Bh.Sh., DEVI K., KHUNTIA Jn.R.**

A physics-informed neural network method for predicting scour depth around bridge pier

KANDAKATLA R., SHANKAR DAS B., DEVI K., KHUNTIA JR.

Strengthening flood preparedness in a cascading dams under climate change scenarios using deep learning model and large ensemble dataset

NGUYEN PS., KANTOUSH SA, KOBAYASHI S., NGUYEN BQ, SABER M., NOURANI V.

**12:30 - 13:30**

**KEDEA – Amph. 3**

**Special Session SS6b – Nature-Based Solutions**

**Chair: Catherine Wilson (Cardiff Univ., UK)**

Experimental framework to study the response of Gammarus spp. to flow obstructions

BROSS F., KASTINGER M., HOLZNER M., COLETTI F., SCHALCO I.

Exploring local sediment erosion and deposition patterns around in-stream boulders: an experimental investigation

RAHMAN MZ., ROKNUJJAMAN Md, BAKI AB, GHAMRY H., KATOPODIS Ch.

Flood-resilient urban rivers: towards better flood risk assessment for restoration

NÚÑEZ-GONZÁLEZ F., HAUN S., BRANDIMARTE L., CAMPOREALE C.V., CHASSAGNE R., JÄRVELÄ J., MUSCHALLA D., FERRER-BOIX C., MARTÍN-VIDE J.D., SAUQUET LLONCH R., AQUILUE JUNYET I.

Morphological evolution and habitat responses of the Changjiang estuary nature reserves under reduced sediment supply

YANG Q., ZHOU J., JIN Z., ZHANG L., ZHOU X., QU G., LUAN H.

**12:30 - 13:30**

**Hydraulics Bldg. – Amph. 1st Floor**

**Special Session SS1 – River Structures, Scour & Protection**

**Chairpersons: Manish Pandey (IIT Kharagpur, India); Gordon Gilja (Univ. of Zagreb, Croatia)**

Energy dissipation and scour dynamics induced by hydraulic jumps on smooth and corrugated beds

PADHI E., AGRAWAL N., SINGHAL G.D.

Performance-based design of riverbank protections using modern re-  
vetment systems

BROCCA G., PSIMIS G., DI PIETRO P., VICARI M.

Experimental and numerical investigation of local scour around bridge  
piers under flow action

KHUNTIA JR, DEVI K., SHANKAR DAS B.

Physical model study for provision of protection works for safety of an  
under-construction bridge on Ghaghra river, Deoria, Uttar Pradesh, India

AHMAD Z., AHMAD F., AHMAD R.

**13:30 - 15:00 Lunch Break KEDEA Area**

**15:00 - 16:30**

**KEDEA – Amph. 1**

**Session A3 – Fundamental Flow Processes**

**Chairpersons: Xiaofeng Liu (Pennsylvania State Univ., USA); Dimitrios K. Fytanidis (Argonne National Laboratory, USA)**

Let the gradient flow: differentiable modeling for bridging physics-based  
and data-driven hydraulic modeling

LIU X.

3-D computational fluid dynamics modeling and probabilistic rock armor-  
ing to assess stability of large canals: a case study for the Belo  
Monte diversion canal (Xingu River, Brazil)

FYTANIDIS D., SANTACRUZ S.S., DUTTA S., GARCIA M.H.

Granular slide-generated waves in reservoirs using a coupled two-phase  
MPS model

JANDAGHIAN M., GOODARZI D., SHAKIBAEINIA A.

Reconsidering critical flow: an organizing principle for high-energy fluid  
dynamics on steep slopes

GRANT G., FASTH B., LEGLEITER C., WHITE D., BAE I., LEONARD C.

Breach induced by overtopping of widely graded coarse-material em-  
bankments: large scale laboratory experiment and CFD numerical mod-  
elling

HADDAD H., CHUA K.V., HASSAN M., PICAULT C., MONTABONNET  
L., STOTER H., EL KADI ABDERREZZAK K.

Quality, strategies and opportunities with 3D numerical simulations

FEURICH R., TEBBEN H.

**15:00 - 16:30**

**KEDEA – Amph. 2**

**Session B4 – Sediment Transport Dynamics and River Evolution  
Processes**

**Chairpersons: Debora Baumann (Technical Univ. of Munich, Ger-  
many); Ryota Tsubaki (Kobe Univ., Japan)**

Evaluating the effects of mechanical river widening on the sediment bal-  
ance in a gravel-bed river in southern Germany using TELEMAC-2D  
and GAIA

BAUMANN D., RÜTHER N.

Evaluating long-term efficiency of sediment management measures at  
the River Iller demonstration site (iNNO SED project)

DALLMEIER A., CASAS MULET R., RÜTHER N.

How braided rivers adapt: insights from controlled sediment-supply experiments

HENNING N., LEISTER R., SCHNAUDER I., WIEPRECHT S.

Dam-induced channel adjustments in the middle Yangtze river and its effects on flood and low water levels

XIA J., ZHU H., ZHOU M., DONG B., NIKORA V.

Exploring the recent morphological evolution and effectiveness of seven experimental floods in the lower Spöl river (Swiss Alps)

SHEIKH M., WIESMANN S., RUIZ-VILLANUEVA V.

Bedload dynamics in an artificial secondary channel in a braided gravel river

TSUBAKI R., SAKAUE N., SAEKI T., SEFAT K., KAWAMURA S.

**15:00 - 16:30**

**KEDEA – Amph. 3**

**Session ISRS2 – Large River Morphodynamics and Human Impacts**

**Chairpersons: Junqiang Xia (Wuhan Univ., China); Qing He (East China Normal Univ., China)**

Human activities alter meandering channel evolution: insights from the lower Jingjiang reach of the Yangtze river (1987-2022)

ZHU J., ZHANG W.

Analysis of channel scouring propagation downstream of the Three Gorges project

SHI H., SHEN M., LI Y., LIU A.

Sediment source to sink reversal in a coupled river-lake system

HE Q., ZHU C., CHEN J., XIE W., GUO L., VAN MAREN D.S., WANG Z.

Technical solutions for removing excessively deposited sediment in the Boštanj HPP reservoir on the lower Sava river in Slovenia

JAVORNIK L.

The impact of sediment retention by the Three Gorges reservoir on channel scouring in the middle and lower reaches of the Yangtze river

ZHONGWU Z., GUO X., GUO C.

Sediment transport dynamics of different particle sizes in the downstream reach of the Three Gorges reservoir

HAIWEI H., GUO X., QU G., JIN Z., GUO C.

**15:00 - 16:30**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session F2 – Flood Hazard Assessment and Risk Analysis**

**Chairpersons: David Froehlich (Consulting Engineer (USA)); Vasilis Bellos (Democritus Univ. of Thrace, Hellas)**

Trends in long term river discharge records

SCHIELEN R., BLOM A., QUARTEL S.

Incorporating probable maximum flood limits into extreme flood frequency analysis: a hybrid statistical-deterministic approach

FROEHLICH D.

Deep uncertainty in interconnected deltas: addressing the impact of climate change on river functions

WELSCH N.M., WARMINK J., AUGUSTIJN D.C.M, HULSCHER S.J.M.H

Flooding on meandering rivers: a remote sensing approach and geomorphological analysis

GHAHRAMAN K., NONES M.

Estimating flood depth from crowdsourced social media images

VAGENAS S., BELLOS V.

Integrating HEC-HMS and Q-GIS for the application of the S.C.S-CN method using semidistributed GIS hydrological models for river basin management

PROSSEDA V.

**15:00 - 16:30**

**Education Tower – Ground Floor**

**Session C4 – Flow and Sediment Transport through Hydraulic Structures**

**Chairpersons: Seongeun Choi (Seoul National Univ. Korea); Antonija Harasti (Univ. of Zagreb, Croatia)**

Breaching of sand embankments: laboratory investigation of scale effects

EBRAHIMI M., SOARES-FRAZÃO S.

Application of a semi-analytical approach for early-stage dam design and post-construction monitoring

PIRONE D., CIMORELLI L., D'ANIELLO A., PIANESE D.

Reevaluation of Kutsuwa-domo based on excess flood flow simulations

HIRAKAWA R., AITA H., OHMOTO T.

Continuous monitoring methods for suspended sediment concentrations during large-scale sediment management operations: a case study of the Rhône river

PERRET E., BAROU P-Y, PIERREFEU G.

Large-eddy simulation of a real-life tidal farm to optimize turbine array arrangement

AKSEN M.M., KHOSRONEJAD A.

Research on settling efficiency of suspended discrete particles in inclined plate settling basins

FEI L., GU L., LIU C., ZHANG L.

**16:30 - 17:00 Coffee Break KEDEA Area**

**17:00 - 18:30**

**KEDEA – Amph. 1**

**Session A4 – Fundamental Flow Processes**

**Chairpersons: Alexandre Hauet (EDF, France); Aristeidis Bloutsos (Univ. of West Attica, Hellas)**

A combination of mobile ADCP and stationary camera-based systems for an accurate flow measurement in rivers

HANSEN I., PENA-HARO S., LUTHI B.

Comparing velocity reconstruction methods to improve discharge computation and uncertainty estimation in acoustic Doppler current profiler measurement

SENEQUIER E., HAUET A., MUELLER D., LE COZ J., HAMMEMI S., DESPAX A.

Towards a low-tech/low-cost discharge measurement technique for slow-flowing streams

LE COZ J., BORGNA A.-L., BONNEFOY A., LAGOY M., DRAMAIS D., THOLLET F.

Natural stream discharge measurements using air bubble technique

BLOUTSOS A., MANARIOTIS I., YANNOPOULOS P.

Study on internal flow-surface interaction using experimental and numerical simulation data toward developing an image-based internal flow estimation method during flooding

ITO K., UCHIDA T., MIYAMOTO H., YOKOJIMA S., TAKAHASHI K.

Seeing the unseen: estimating riverbed from surface data

YOROZUYA A., KUDO S.

**17:00 - 18:30**

**KEDEA – Amph. 2**

**Session B5 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Slaven Covenski (Norwegian Univ. of Science and Technology, Norway); Manousos Valyrakis (Aristotle Univ. of Thessaloniki, Hellas)**

Distribution characteristics and stability thresholds of channel-floodplain morphology in the Qingshuigou river at the Yellow River estuary

JI Z., TIAN Y., JI M., XIE Y.

Short-term morphological changes at Drava river confluence

GILJA G., HARASTI A.

Sediment transport in an ephemeral stream

AVGERIS L., HRISSANTHOU V.

Morphological response of a river bifurcation to a sediment overload caused by a volcanic eruption

MENDOZA A., RIVERA-TREJO F., PRIEGO-HERNANDEZ G., SOTO-CORTES G., BEREZOWSKY M.

Effect of abrupt sediment supply from tributary debris flow on main-stream

HOU W., ZHANG C., CUI P., YU G-A

Integrating Flow, Ice, and Sediment Transport: The SkyRices Model for Winter River Evolution

GUO X., PAN J., WANG T., FU H., GUO Y., LI J.

**17:00 - 18:30**

**KEDEA – Amph. 3**

**Session ISRS3 – Sediment Transport Processes and Riverbed Evolution**

**Chairpersons: Helmut Habersack (BOKU, Austria); Sandra Soares-Frazão (Univ. Catholique de Louvain, Belgium)**

Experimental study on improving bed shear stress estimation by ADV  
YAO P., SU M., ZHAO X., LIU Z., GU H.

Coordinated Regulation of Wintertime Water Transfer in Central Route of South-to-North Water Diversion Project in China

PAN J., GUO X., WANG T., FU H., GUO Y., CHEN Y.

Application and development of bed load transport formula in hydrological model

GAO J., LONG S., XU X., GAO Z, ZHANG G., WANG W., ZHANG K., HAO H., HUI SHAO H., JI M.

Distributed acoustic sensing for monitoring bed load: insights from controlled flume experiment

GU F., CHEN X., XU M., FU X.

Setting the key operational phases of the Vrhovo-Boštanj hydropower plant chain through the process of sediment transport

JAVORNIK L., MIKOŠ M., KRYŽANOWSKI A.

Using Distributed Optical Fiber Sensing (DFOS) to complement photogrammetric measurement for dike breaching experiments.

DELPIERRE N., EBRAHIMI M., BERTHOLET A., SCAIOLI A., PANZERI L., SOARES-FRAZAO S.

**17:00 - 18:30**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session E3 – Transport Processes in Rivers**

**Chairpersons: Isabella Schalko (WSL, Switzerland); Claudia Adduce (Univ. degli Studi di Roma Tre, Italy)**

Scour around engineered log jams: shear decay function and a simple conceptual model

DARZIKOLAEI S., LIU X.

Simulation of large wood dynamics during the Vaia extreme event in the Tegnas torrent using ORSA2D\_WT

CASASOLA H., PERSI E., RAVAZZOLO D., PETACCIA G., PICCO L., PELLEGRINI G., SIBILLA S.

The influence of the amount of runoff and sediment of unobserved areas on incoming sediment patterns in the lower reaches of Jinsha river

DENG A., XIE Y., FENG Z.

Hydraulic effects and flow resistance of plastic debris jams: laboratory insights for modeling

KOLERSKI T., CUBAN Z.

Surrogate techniques for suspended sediment monitoring in Po river

CECCHINI L., GUERRERO M., SCHIPPA L., BOSI A.

Fundamental study on traditional pile structures for protecting bridges from collision with driftwood

NISHIZAWA S., KIMURA I., HARADA N.

**17:00 - 18:30**

**Education Tower – Ground Floor**

**Session C5 – Flow and Sediment Transport through Hydraulic Structures**

**Chairpersons: Oral Yağcı (Aydın Adnan Menderes Univ., Turkey);  
Chris Dritselis (Univ. of Thessaly, Hellas)**

Numerical modeling of bio-cohesive sediment effects on particle deposition in vegetated aquatic channels

DRITSELIS Ch., TSAKALIDOU S., DEDOUSIS D.

Can we estimate benefits of re-naturalization of small rivers prior to works?

PETITJEAN M., GOUSENBOURGER P., SOARES-FRAZAO S.

Numerical simulation of flow over a submerged vane field

MANDAL A., AHMAD Z.

Mechanisms of secondary flow development in a sharp bend under varied inflows

HU C.

A numerical study of internal flow structure and bed shear stress in cylinder arrays with different spacings

CHOI S., LEE J., HWANG J.H.

Numerical Modeling of Ice Hydrodynamics Process in the Yellow River with Limited Data

WANG T., GUO X., CHEN Y., PAN J.

**21:00 - Conference Dinner**

## Friday 3 July

**8:00 - 14:30**

**Registration (KEDEA Bldg.)**

**9:00 - 10:30**

**KEDEA – Amph. 1**

**Session A5 – Fundamental Flow Processes**

**Chairpersons: Mario Franca (Karlsruhe Institute of Technology, Germany); Tommaso Lazzarin (Univ. of Padova, Italy)**

Eddy-resolving modeling of sharp-bend open-channel flows  
FYTANIDIS D., KITSIKOUDIS V., BLANCKAERT K.

A probabilistic method for estimating friction coefficients and their uncertainty in a 1D hydraulic model

MÉNDEZ-RÍOS F., LE COZ J., RENARD B., TERRAZ T., GARAMBOIS P-A.

Advancing depth-averaged modelling of river confluences with density-driven transverse flows

LAZZARIN T., XU L., YUAN S., HOITINK A.J.F., VIERO D.

Experimental and numerical analysis of the discharge coefficient in rivers with partial blockage by large woody debris

MEISTER S.M., BALMES J.P.

Channel confluence hydrodynamics over a gravel surface

YUAN Z., YUAN S., LIN J., XU H., HAN R.

The effect of wind field on the dynamics of two-layer density-stratified free surface flows in channels

KIRKIL G.

**9:00 - 10:30**

**KEDEA – Amph. 2**

**Session B6 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Fransisco N. Gonzalez (Univ. Politècnica de Catalunya, Spain); Kamalini Devi (National Institute of Technology Warangal, India)**

Analysis of characteristics of sediment suspension under nonlinear waves over a ripple bed by LES

XIE Y., ZHOU J., DENG A.

BedformsATMpyffer, a Python version of a 10-year-old freely accessible software for bedform variability and evolution analysis

GUTIERREZ R.R., ESCUSA F., NÚÑEZ-GONZÁLEZ F., GUALTIERI C.

Investigation of Manning's roughness coefficient ( $n$ ) for various sediment sizes: a rating curve assessment

DEVI K., KHUNTIA J.R., DAS B.R.

Size sorting due to finer grain infiltration in bedload transport

FREY P.H., DUDILL A.

Sediment deposition analysis using a commercial multibeam echosounder: sonar-equation corrections and machine-learning classification

CONEVSKI S., KHAKUREL A., GUERRERO M., MAHO E., LAZARENI A., ZHARKU E., KASMI F., STOKSETH S.

Experimental investigation of bedform dynamics induced by bedload transport using multi-camera SfM reconstruction

LIU CH., BAI X., ZHANG L., JIANG X., GU L., LIU F.

**9:00 - 10:30**

**KEDEA – Amph. 3**

**Special Session SS7 – Sediment Management & Bridge Scour**

**Chairpersons: Fong-Zuo Lee (National Chung Hsing Univ., Taiwan); Sameh Ahmed Kantoush (Kyoto Univ., Japan)**

Evaluating the sediment reduction efficiency of best management practices in a reservoir watershed using the numerical model

LEE P-J, HUANG C-C

Data mining approach drives large atmospheric-scale teleconnection and extreme flood event associations in the southwestern Kingdom of Saudi Arabia

ABDELMONEIM H., KANTOUSH S., VAKILI AT., NOURANI V., SABER M., ALAMOUDI F.

Wake dynamics of a permeable vertical cylinder and its implications for river training structures

HUANG Y-E., SHIH W.

Application of robust monitoring equipment and 2D numerical modeling to analyze bridge pier scour depth

LEE F-Z, LAI J-S, LIN Y-B, CHANG K-C, WANG Y-C

Enhancing prediction of scour depth under submerged jet using genetic algorithm-based support vector regression

GUGULOTH S., PANDEY M., UMAMAHESH N.V.

The Roman soil retention dams for water retention in ephemeral rivers  
MULLER G.

**9:00 - 10:30**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session E4 – Transport Processes in Rivers**

**Chairpersons: Colin Rennie (Univ. Ottawa, Canada); Vlassios Hrissanthou (Democritus Univ. of Thrace, Hellas)**

Laboratory experiments on gravity currents over roughness elements

MAGGI M.R., DI LOLLO G., ADDUCE C.

Experimental characterization of the mixing pattern in a confluence with density difference

DUREUIL E., THUMMLER-KAISER T., MIGNOT E., GOSTIAU L., RIVIERE N., LE COZ J., BOYER P.

Numerical investigation of obstacle-controlled turbidity currents

ANDREDAKI M. CARNACINA I., GEORGOULAS A.

Device configuration effects on mass transport and microplastic retention in bubble barrier systems

SANTOS C., LA CAPRA M., FREI S., GILFEDDER B., FAEL C.

Decoding plastic pollution pathways: insights from medium-term monitoring of the Arno river

MANCINI M., INNOCENTI L., DALI A., BECUCCI M., SOLARI L.

Quasi three-dimensional hydrodynamic and Lagrangian modelling of microplastic transport in river-influenced coastal areas

ZAFEIRAKOU A., KATSOULEA A., PALANTZAS G., KARASANI M., CHATZIGIANNIS A., KARAMBAS T.

**9:00 - 10:30**

**Education Tower – Ground Floor**

**Special Session SS3b – Plastic Monitoring**

**Chairpersons: Arianna Varrani (Polish Academy of Sciences, Poland); Daniel Rebai (KIT, Germany)**

Riverine microplastic flux

GRAY A.

Quantifying the three-dimensional settling and rising behaviour of full-scale river litter

LOFTY J., FRANCA M., VALERO D.

Plastic litter retention in an urban channel with vegetation

PRZYBOROWSKI L., ŁOBODA AM, SKORUPA W.

Flume experiments on oscillating microplastics entrainment from a regular bedform at transients

VARRANI A., GUERRERO M.

Macro- and microplastic transport and deposition dynamics in the Ticino river urban reach (Pavia, Italy): field observations and source assessment

CONTO F., PERSI E., RAVAZZOLO D., PETACCIA G., SIBILLA S., GALAFASSI S., ZULLO, R. FENOCCHI A.

Microplastics and sediment deposition due to logjams

SCHALKO I., NEPF H.

**10:30 - 11:00 Coffee Break KEDEA Area**

**11:00 - 11.45**

**KEDEA - Amph. 1**

**KEYNOTE LECTURE 5: From Turbulence Simulations to Digital Twins: Reimagining Waterway Engineering in the Age of AI**

**PROF. FOTIS SOTIROPOULOS (PENN STATE UNIVERSITY, USA)**

**11:45 - 13:15**

**KEDEA - Amph. 1**

**Session A6 – Fundamental Flow Processes**

**Chairpersons: Luiz E.D. de Oliveira (Karlsruhe Institute of Technology, Germany); Kitsikoudis Vasileios (Univ. Twente, Netherlands)**

The use of 3D CFD models to improve the estimation of flood discharge  
LAZZARIN T., VIERO D.

Impacts of floodplain forest characteristics on riverine flood propagation  
de OLIVEIRA LED, VANZO D., HUBER N.P, FRANCA M.J.

1D+ modelling of river floods: improving the parametrisation of momentum exchanges between flows in main channel and floodplain

LEMANT F., PROUST S., CIERCO F-X, TERRAZ Th.

Study on the time-averaged three-dimensional flow structure in a compound meandering channel

FUKUSHIMA Y., FUKUOKA S.

Study on the structure of secondary flow in a compound meandering channel with longitudinal variations in planform and cross section, based on the channel experiment and quasi-three-dimensional analysis (Q3D-FEBS)  
HIRAYAMA K., FUKUOKA S.

A computationally efficient framework for channel-floodplain interaction  
SHUKLA R., PAHAR G.

**11:45 - 13:15**

**KEDEA – Amph. 2**

**Session B7 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Gilles Pierrefeu (CNR, France); Arman Haddadchi (Earth Sciences New Zealand, New Zealand)**

Traditional and LISST-aided suspended load concentration and PSD determination – a comparative case study

TAMÁS E.A., AL SHAHHAF M., KOCH D., BURGAN H.I

Experimental measurements of sandy suspended matter flows in the Romanche river between 2022 and 2024: testing new methods and comparing the temporal dynamics of sand and fine particles.

ZANKER S., LAUTERS F.

Measurement of fine and sand suspended concentration along a transect in the French upper River Rhône: sampler, pump system, acoustic  
PIERREFEU G., DRAMAIS G., CAMENEN B., PERRET E., FISCHER S.

Advancing understanding of sand transport dynamics in gravel bed rivers  
HADDADCHI A.

Discharge and suspended sediment concentration variations along a primary distributary channel in the lower Mississippi River delta

BRANNUM S., KONSOER K., HIATT M.

Analyses at an event scale to define the sampling strategy to establish the most relevant calibration between suspended sediment concentration and turbidity

MÉUROU A., LEGOUT C., ZANKER S., PARMENTIER L., LAUTERS F.

11:45 - 13:15

**KEDEA – Amph. 3**

**Session ISRS4 – Estuarine and Coastal Sediment Dynamics**

**Chairpersons: Chunyan Zhu (State Key Laboratory of Estuarine and**

**Coastal Research, East China Normal Univ. China); Chuansheng Guo (China Institute of Water Resources and Hydropower Research, China)**

Numerical simulation of the impacts of sea level rise on suspended sediment diffusion and tidal dynamics in the Yellow River estuary

GUO C., LIU D., WANG Y., ZHAO H., WANG C.

How does gradual deepening alter sediment transport in the North Passage of the Yangtze estuary?

ZHU C., ZHOU S., CHEN J., VAN MAREN DS, GUO L., WANG Z., HE Q.

Sediment dynamics and flocculation on tidal flats in the Yellow River delta

XIE W., YU S., YU H., ZHU C., XU F., GUO L., WANG X., HE Q.

Observation and research on near-bottom sediment carrying capacity and bedload transport of Yangtze estuary

HAN Y., QIAN M., LU C., DING H.

Morphodynamic response of tidal flats to adjacent reclamation: the role of wetland spatial scale

SU M., QIN L., WANG J., DAI Y., YAO P.

Study on the impact of roll waves on soil detachment rate in overland flow

WANG P., ZHANG K., ZHANG G., GAO J., WANG W., XU X.

**11:45 - 13:15**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session F3 – River Systems and Resilience in a Changing Climate**

**Chairpersons: Eleonora Perugini (Univ. of Trento, Italy); Katelyn Kirby (National Research Council, Canada)**

A hybrid model integrating hydro-sediment dynamics and machine learning for flow-sediment predictions in a reservoir-river coupled system of the Yellow river

ZHANG X., XIA J., XU R., ZHOU M., CHEN C., NIKORA V.

Numerical modelling of sediment transport for infrastructure management in a changing climate

CORTI M., CRIPPA C., ANTELMI M., ESPOSITO C., PAPINI M., LONGONI L.

How does the design rainfall affect the results of a detailed hydrodynamic simulator?

BELLOS V., OUZOUNIS C.

An integrated approach to continuous discharge monitoring in high-altitude catchments using pressure loggers, drone-based bathymetry and hydrodynamic modelling

AEIN N., HÄGELE T., KOPECKI I.

Sand-gravel mining impacts on sediment transport and water quality in an alluvial river with tributary intervention: a case study of Thoubal-Itok river system, Manipur, India

NGANGBAM R., MUKESH KUMAR YADAV, LANGTAINGAMBA LEI-MAPOKPAM, SYED ASHMA

How much can you extract? Preliminary results from an integrated, low-cost monitoring system in the Tomarrazón river (Colombia)

NARDINI A.G.C., ESCOBAR J.R., HERRERA F., ARIZA Y., OSPINO E., PELLEGRINI G., MAO L.

**11:45 - 13:15**

**Education Tower – Ground Floor**

**Session G1 – Integrated River Basin Management**

**Chairpersons: Matthew Wilson (Univ. of Canterbury, New Zealand);  
Mike Spiliotis (Democritus Univ. of Thrace, Hellas)**

Effect of spatio-temporal rainfall variability on flood simulations: insights from the Brague catchment (France)

LOMBARDO M., AH-WOANE E., DELESTRE., MOUSSA M., COSTABILE P.

Random walk on rainfall field: impacts on flood mapping at street-level detail

LOMBARDO M., COSTABILE P., TSOUKALAS I., COSTANZO C., BELLOS V.

A comparative analysis of three multicriteria TOPSIS approaches aiming at integrated water resources management in a Mediterranean basin in an uncertain environment

BAKAS T., PAPADOPOULOS C., SPILIOTIS M.

Integrating multicriteria and SWOT analyses with hydraulic modelling for local-scale flood protection planning

TZANOUE., SKOULIKARIS Ch., CHATZIGIANNIS A., TSAKOUMIS G.

A river basin water management optimisation tool with eco-hydrological feedbacks

RODRIGUEZ J., CARLIER R., SACO P., QUIJANO-BARON J., SANDI S., KUCZERA G.

A novel method to identify vulnerable edges in river networks from structure perspective

LIU W., SAIYU YUAN Y., YAN G. LIN J.

**13:15 - 14:30 Lunch Break KEDEA Area**

**14:30 - 16:00**

**KEDEA – Amph. 1**

**Session A7 – Fundamental Flow Processes**

**Chairpersons: Juha Järvelä (Aalto Univ., Finland), Panagiotis Prinos (Aristotle Univ. of Thessaloniki, Hellas)**

Comparison of patch and reach scale vegetative properties in estimating flow resistance

KHALID H.A., VÄSTILÄ K., JÄRVELÄ J.

Effect of unevenly distributed vegetation on the distribution of flow in an open channel

TANG X., HAN J.

Experimental analysis of floodplain vegetation flow resistance based on apparent drag coefficient

JI Un, RYU J., KIM S.

Upstream boundary layer separation around prismatic bodies under convective acceleration: a Lagrangian low-cost PIV study

AKSEL M., YAVUZ ME, OZDEMIR C., ELBIR B., BITIRGE ME, ERBISIM M.E., VALYRAKIS M., YAGCI O.

Accurate flow resistance estimation in submerged rigid vegetated channels using a machine learning approach

MIR A.A., GUALTIERI P., GUALTIERI C., PATEL M.

Experimental insights into flow turbulence with vetiver grass in mobile-bed channels

KUMAR P., ALAM J., SHARMA A.

**14:30 - 16:00**

**KEDEA – Amph. 2**

**Session B8 – Sediment Transport Dynamics and River Evolution Processes**

**Chairpersons: Anurag Sharma (National Institute of Technology Rourkela, Odisha, India); Jay Lacey (Univ. de Sherbrooke, Canada)**

An experimental study on pipeline-induced bed scour in rivers and streams

CELIA L., DA SILVA AMF., AHADI MS., GROVER P.

Physical and numerical modelling of bed scour induced by pipelines in fluvial rivers and streams

AHADI M. S., GROVER P., CELIA L., FERREIRA DA SILVA AM.

Bank erosion and geomorphologic change under the influence of vegetation

LACEY J., MAHMOUD B., TRUDEL M., BIRON P., SKLAR L., MACVICAR B., RENNIE C.

Field study on boat wake hydrodynamics and their role in riverbank erosion

AZARI-DODARAN N., RENNIE C., NISTOR I., ROBINSON S., VERMAIRE J.

Turbulence modulation by a submerged obstacle over a bimodal sediment bed: insights from laboratory experiments

PRIYADARSHINI A., DAS V.K., KHATUA K.K.

Estimation of the sand resuspension in a gravel-bed river during a major flood

CAMENEN B., MORITZ M., BONNEFOY A., PÉNARD L., DRAMAIS G.

**14:30 - 16:00**

**KEDEA – Amph. 3**

**Session ISRS5 – Extreme Events and Morphodynamic Response**

**Chairpersons: Yunlong Lei (Institute of Water Resources and Hydropower Research, China); Loukas Avgeris (Democritus Univ. of Thrace, Hellas)**

Assessing climate change impacts on sediment transport on Padas river, Sabah, Malaysia

CHANG C.K., RAMLI M.W.A., LIEW Y.S., MAT DESA S., MOHD ARIFF M.A.

Morphological response of mountain rivers to post-earthquake sediment supply changes

LEI Y., SHI H., WANG J., SHEN M., FU X.

Settlement flood-exposure by hazard levels in mega-cities of Ganges-Brahmaputra-Meghna delta

YE Y., LI HE

Long-term recovery of mountain rivers following the 2000 Yigong dam-break flood: emphasis on the role of large boulders

LEI Y., SHI H., WANG J., SHEN M., FU X.

Control technology of gully sediment yield in Yellow River basin

ZHAO S., HUI M., LI J., GENG B., SUN Z., DU H., LI K., SHEN Z.

Application of three-dimensional numerical experiment results to field observational data of debris flows

KATO H., FUKUOKA S.

**14:30 - 16:00**

**Hydraulics Bldg. – Amph. 1st Floor**

**Session F4 – River Systems and Resilience in a Changing Climate**

**Chairpersons: Theophanis Karambas (Aristotle Univ. of Thessaloniki, Hellas); Sergio Makrakis (Western Paraná State Univ., Brazil)**

Impact of river-sea interactions on bridges at a microtidal estuary: moderate sea forcing

PERUGINI E., POSTACCHINI M., GETACHEW Y., DARVINI G., MELITO L., BROCCINI M.

Trade-offs in flood management and sediment continuity in the Inn river:  
a numerical study

RANJIT R., KADIA S., RÜTHER N.

Combined 2D/3D modeling of the failure of Diava bridge in Thessaly,  
Greece, under increasing extreme flood risk in a changing climate

ZAIRIS P., MITSOPOULOS G., STAMOU A.

Breach simulation and flood hazard assessment of a hydrodynamic  
urban earthfill dam in southern Brazil under extreme rainfall scenarios

MAKRAKIS S., ZOGARIS S., SISTI MR., da SILVA JFM., da COSTA  
LC., de ASSUMPTÃO L., de FARIA AEC., dos SANTOS PHO., Cardoso  
BORGES LQF., de AZEVEDO LH., MACHADO VC., BUZOLIN E., Ca-  
vicchioli-MAKRAKIS M.

Study on a probabilistic damage assessment method for compound dis-  
asters involving earthquake-induced liquefaction and flooding

OISHI S., TATSUMI T., TAKADA R.

Modelling of coastal inundation and morphodynamics including fluvial  
flow, wave-induced set-up/runup and sediment supply from rivers

KARAMBAS Th., SAMARAS A., MAKRIS Ch.

**14:30 - 16:00**

**Education Tower – Ground Floor**

**Session G2 – Integrated River Basin Management**

**Chairpersons: Maurizio Brocchini (Marche Polytechnic Univ., Italy);  
Charis Skoulikaris, (Aristotle Univ. of Thessaloniki, Hellas)**

Complex network approach for the analysis of hydrological drought in  
the Greek territory of the Nestos river

SPILIOTIS M., SKOULIKARIS C., VANGELIS H., BOURDIS D., PET-  
KOPOULOS S., KAMPAS G.

Towards rapid, on-demand assessments of flood risk within integrated  
river basin management: development of a flood resilience digital twin

WILSON M., NGUYEN M., PARKINSON L., HUGHES M., RUWHIU J.,  
VEGA-CORREDOR M.

Rain-on-grid hydraulic modeling of flash floods in non-perennial rivers for compound inundation forecasting in coastal areas

KOKKINOS A., MAKRIS C., ANDROULIDAKIS Y., MALLIOS Z., PYTHAROULIS I., KARAMBAS TH., KRESTENITIS Y.

Sediment siltation characteristics and formation mechanisms of Huairou reservoir

LEILEI G., LIU F., LIU C., ZHANG L.

Sea-river interactions at microtidal estuaries: impacts on the flooding of estuarine cities

BROCCHINI M., MARINIF., BALDONI A., MELITO L.

Investigating hydrodynamic forces on buildings in urban environments using a 2D porosity model

RYCKMANS C., FINAUD-GUYOT P., SOARES-FRAZAO S.

**16:00 - 16:30 Coffee Break KEDEA Area**

**16:30 - 18:00**

**AUTH Ceremony Hall**

**KEYNOTE LECTURE 6: Mechanisms of Gravity Currents in Stratified Fluids Interacting with Erodible Beds**

**PROF. ZHIGUO HE (ZHEJIANG UNIVERSITY, China)**

**CLOSING CEREMONY**

## POSTER PAPERS

### A. FUNDAMENTAL FLOW PROCESSES, MODELLING AND MONITORING

Determination of Calibration Equations for Mechanical Current-Meters with Piecewise Linear Regression

ÖZCAN B.C.

Assessing River Flow Velocities Using Current Meter, LSPIV, and PIV-Lab Across Selected Reaches in Southern Ontario

OLUSOLA A., WONG J., RAHMATYAN M.

Interpretable Machine Learning in Hydraulic Conveyance Laws: A Review of Dimensionality Reduction and Symbolic Regression Techniques

CHEN H., WANG F., HUAI W., LI S.

Implicit Scalar-Dissipation Scheme for Saint-Venant Equations: A Finite-Volume Approach

XIA Q., ZHANG S.

The Effect of Rotation on the Wake Dynamics of a Horizontal Cylinder Near a Plane Wall

LIAO P., STOESSER T.

Hydrodynamic Modelling for Transient Flow and Velocity Estimation Using Low-Cost Ultrasonic Sensors

PEREIRA T.S.R., FORMIGA K.T.M.

Advanced Forward Uncertainty Propagations for Probabilistic Flood Modelling

MA Z., SIRIPATANA A., BEEVERS L.

Hydrodynamics of a Braided-Meandering Confluence

KONSOER K.M., GUERRERO L.

Experimental Study on Higher-order Turbulence in a Vegetated Channel

PATRA S., KUMAR B., PANDEY M.

The Dynamics of Deep Scour Holes: A Large Eddy Simulation in Open-FOAM

OLDENHOF M., WARMINK J., BLANCKAERT K., HULSCHER S.

Investigating Vertical Velocity Profiles under Varying Wind Conditions in a Natural River

INABA R., YOROZUYA A., KUDO S.

Development of Measurement System of the Water Surface Information in Actual River by the Auto-Operated UAV-Based Photogrammetry

YASUDA T., YOROZUYA A., YAMASAKI R., UETA N., CHIBA M.

Flow Structures at Confluence of Compound Channel Junction Using  $k-\epsilon$  and  $k-\omega$  Turbulence Models

SANDILYA S.S., DAS B.S., DEVI K., KHUNTIA J.R.

Camera Systems for River Turbidity Monitoring: Procedure, Experiments and Practical Applications

MIGLINO D., JOMAA S., KHLIFI S., RODE M., MANFREDA S.

## **B. SEDIMENT TRANSPORT DYNAMICS AND RIVER EVOLUTION PROCESSES**

Multiscale Sediment Load Dynamics and Temporal Hysteresis Analysis at Saloora Station (Manjeera Basin) Using MVFBSE-EWT and Machine Learning

S M S.K., PANDEY M., UMA MAHESH N.V.

Characterization of Impact Signatures Using Instrumented Bedload Tracers

MANIATIS G., HOEY T., TUHTAN J.

Sandbar Dynamics and Planform Shifts in the Mahanadi River: A Multi-Decadal Assessment (1990–2020)

SAHOO S., DAS V.K.

Numerical Simulation of Flow Field over Trains of Bed-Load Dunes: Insights and Recommendations

RADICE A., MESSA G.V., NABAVI S.M.

The Interplay of Wave Turbulence and Bedform Dynamics on an Oppositely Sloping Sand Bed: An Experimental Insight

MONDAL K., CHAUDHURI S., DEBNATH K., MAZUMDER B.

Bedload and Suspended Sediment Dynamics in a Mediterranean Intermittent River

RAVAZZOLO D., CASASOLA H., FORTESA J., GARCÍA-COMENDADOR J., CUELLO-LLOBEL Fr., MORAGUES A., COMPANY J., ESTRANY J.

Energy Distribution and Vorticity Dynamics in Turbulent Flow over an Adverse Sloping Bed

ROY S., DEBNATH K., DAS V.K.

One-Dimensional Morphodynamic Model: Analysis of Sediment Transport and the Effects of a Perpendicular Log as an Obstacle

FAÚNDEZ M., FERRER-BOIX C.; NUÑEZ Fr., MARTÍN-VIDE J.P., ALCAYAGA H.

Challenges and Opportunities in River Dune Modeling for Nature-Based Solutions

MEDINA ORMACHEA R.E., WARMINK J.J., BOGATINOSKA B., HULSCHER S.J.M.H.

VMS 3.0: An Integrated Platform for Suspended Sediment Discharge using SonTek and RDI Acoustic Doppler Current Profilers coupled with Laser In-Situ Scattering and Transmissometry (LISST)

KIM D., JEONG B., CHOI S., ROH Y., CHOI G.

Hydrodynamics and Sediment Transports of Turbidity Currents Through the Rigid Vegetation

HAN D., HE Zh., LIN Y.-T., GUO Y., JIAO P., Wang Sh.

Deep Learning for Predicting Incipient Sediment Motion from Flow Time Series: A Proof-of-Concept Study

MAVRIS I., VALYRAKIS M.

Spatial and Seasonal Variability of Suspended Sediment in the Chorokhi River Mouth

SHAINIDZE M., DUMBADZE G., TETEMADZE N., MATCHUTADZE I.

Bathymetry-Based Assessment of Sedimentation for Inland Waterway Maintenance: The Włocławek Reservoir Case Study

SZAŁKIEWICZ E., JĘDRZYCHOWSKI K., PIERON Ł., BARSZCZEWSKA-SKĄPSKA M.

Groyne Field Nourishments to Address Main Channel Erosion

LIPTIAY E., BLOM A., SLOFF K., RENEERKENS M., KRABBENDAM J.,  
MOL J.-W., UIJTTEWAAL W.

### **C. FLOW AND SEDIMENT TRANSPORT THROUGH HYDRAULIC STRUCTURES**

Extending the Service Life of Gabion Hydraulic Structures with Advanced Polymeric Wire Coatings

BROCCA G., VICARI M., PSIMIS G.

IoT-Enabled Early Warning and Smart Monitoring of Scour at Bridge Piers

BASSETTO P., BROCCA G., PSIMIS G., VICARI M.

Application of 2D Numerical Modeling to Analyze Riverbank Landslides and Their Impacts on Downstream Bridge Piers

LEE F.Z., NGUYEN N.L.H., WANG Y.C.

Investigation of Reattachment Length and Width at a Single Spur Dike under Fixed- and Mobile-Bed Conditions

AUNG H., ZHANG M., OLIVETO G., ONORATI B., SILEO B., YU G.

Bridge Pier Induced Morphodynamics in the Lower Godavari Basin: A Remote Sensing GIS Study

ROUTRAY J., DAS V.K.

Proposal of Blockage-Mitigation Structures Against Sediment and Driftwood Inflow from Outside the Right-of-Way into Road Embankments

HARADA N., SATOFUKA Y.

Real-Scale Experiment for Analyzing the Drainage Efficiency of Gutter Covers and Gutters

KIM J., JUNG S., GWON Y.

Effect of Introduction of a New Bridge on Scour Around the Foundation of the Existing Bridges in Tons River

KUMAR A., KUMAR S., AHMAD Z.

Two-Dimensional Mathematical Modeling for a Bridge over River Tapi near Surat, Gujarat

AHMAD Z., LAVANIYA N.

Improving the Estimation of the Design Scour Depth at Bridge Piers  
SAENGER V., MORAGA S., LINK O.

Influence of Radial Spacing and Relative Angle on Scour Patterns  
Around Staggered Bridge Piers  
GHOSH D., PANDEY M., CHAUDHURI A.R., KUMARI S.

Utilization of Barges as Temporary River Training Structures  
HARASTI A., GILJA G.

Smart Sediment Particles for Proactive Scour Monitoring: Enhancing  
Resilience of Heritage and Modern Water Infrastructure  
TREPEKLI D., XU Y., GILJA G., MICHALIS P., VALYRAKIS M.

Integrated Hydraulic Vulnerability Assessment of River Bridges: A Brief  
Framework  
BENTO A.M., HAMIDIFAR H., GILJA G.

Study on Modeling Methods for River-Crossing Bridges in One-Dimen-  
sional Hydrodynamic Models  
LI M., LIU Sh., QIN Q., HU Ch., ZHANG H.

Interaction between hydrokinetic turbine wakes and bed-induced flow  
structures  
CAYROCHE L., GOTELLI C., MUSA M.

## **D. ECO-HYDRAULICS AND RIVER RE-NATURALIZATION**

Colmation in a Gravelly Riverbed Lowering Ecological Suitability  
BOON A., STRAATSMA M.W., KLEINHANS M.G.

Bed Morphological Response to Vegetation Patches in Large-Scale  
Flume Experiments  
JANG E., KIM J., JI U.

Abiotic Drivers for Plant Species Presence Along the Lower Rhine  
OVERHOFF J., STRAATSMA M.W., NIENHUIS J.H., GEERLING G.,  
ASSELMAN N.E.M., KELDERMANN St., van GEEST G., van VELD-  
HUIZEN br., MIDDELKOOP H.

Flow Characteristics of Flow Through Vegetation of Rigid-Base-Flexible-Top

FANG Z., TANG X., JI J.

Balancing Biodiversity and Flood Control: Effects of Drainage Ditch Management on Hydraulics and Water Storage

RAHIMI H., COOMES D., FRIDAY L., HATAMISENGELI T.

Hydraulic Modeling for Sustainable River Management: Channel Widening in the Rímac River

AVILA MIRANDA F.L.

Restoration of Flow to the Dried-Up Meander Channel of the Mierzawa River

PLESIŃSKI K., BIEŃ M.

Behavioral Preference of *Capoeta damascina* for Low Reynolds Shear Stress Zones in a Pool-Weir Fishway

TURKER M.S., KUCUKALI S.

## **E. TRANSPORT PROCESSES IN RIVERS**

Effect of Flow Path Geometry and Substratum Properties on Biofilm Accumulation Under Controlled Hydrodynamic Conditions

AVGOULAS D.I., PETALA M., TSIRIDIS V., KOSTOGLU M., KARAPANTSIOS Th.

Understanding Acoustic Backscatter for Monitoring Riverine Plastic Pollution

LIESE N., VAN EMMERIK T.H.M., WALDSCHLÄGER K., DAUGHARTY M., WALLERSTEIN N., VRIEND P., MANI Th., BUSCHMAN Fr., HOITINK T.

Improving Sediment Accumulation Efficiency by Controlling Circulation Flows in a Rectangular Closed Water Basin

IKEDA M., KIMURA I., NAKAZA E.

Sediment Deposition with Permeable Obstacles under Forced Recirculation Flows in an Aquacultural Rectangular Pond

FUNAHASHI H., KIMURA I., NAKAZA E.

Pollutant Dynamics and Contamination Assessment in a Tropical Urban Stormwater Pond

PEREIRA DA SILVA E., FORMIGA K.T.M.

Assessment and Mitigation of Contaminated Sediment Transport from Abandoned Mining Activities in the Ogosta River

BOURNASKI E., BARDASKA G., IVANOV K., BATCHAROVA E.

## **F. RIVER SYSTEMS AND RESILIENCE IN A CHANGING CLIMATE**

Hydraulic Modeling of the Ourthe Valley: Enhancing Flood Management Post-2021 Floods

CARLIER D'ODEIGNE O., HORLAI J.Ch., BOUSMAR D.

Numerical Modelling of Estuarine Dynamics for Infrastructure Design: Case Studies from Nigeria and Tanzania

AHMED A.S.M., ABDELKADER A., OTHMAN M.A.

Practical Integration of Earth Observation and In-Situ Data for Calibration of Hydraulic Models in Data-Scarce Rivers

CHEWNING C., MUSAEUS A. F., COPPO FRIAS M., MACHADO FONTANA M., JOERGENSEN G. H., KITTEL C. M. M., JAKOBSEN F., KÆRGAARD K.

Integrating RUSLE and Rain-on-Grid Models for Enhanced Soil Erosion Assessment

RAVAZZOLO D., PERSI E., FENOCCHI A., PETACCIA G., COSTANZO C., ENNOUINI W., BORDONI M., MEISINA C., COSTABILE P., SIBILLA S.

A Novel Framework for Predicting Water Encroachment Risks on Railways

KIRBY K., PILECHI A., ROGHANI A., CHENIER S.

Management of Saltwater Influx in a Semi-Closed Basin under Uncertainty

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