



Report
on
the 9th International Conference on Flood
Management (ICFM9)

March 2023

International Centre for Water Hazard and Risk management under the
auspices of UNESCO,
Public Works Research Institute (PWRI), Japan



This program is supported by the UNESCO, the River Fund of the River Foundation, Japan, and the Tsukuba Tourism and Convention Association.



河川基金



一般社団法人
つくば観光コンベンション協会

1. Background

The International Conference on Flood Management (ICFM) is held every three years to discuss a wide range of flood-related issues and achieve significant academic and cross-disciplinary changes. The conference is an active forum for engineers, planners, natural and social scientists, health professionals, disaster managers, decision-makers, policymakers, and other researchers and practitioners to come together from around the world and share the latest findings, information, and experiences. It has been an excellent opportunity for people involved in flood management to learn the current status of water infrastructure systems in each country, get to know fellow experts in other countries, and actively participate in the co-creation of wisdom. Holding an ICFM in Japan was the first time in 12 years since ICFM5 took place in Tokyo in 2011.

Under its grand theme, “River Basin Disaster Resilience and Sustainability by All: Integrated Flood Management in the Post-Corona Era,” ICFM9 planned presentations and discussions on important issues to be addressed in the post-corona era, including how to rebuild a flood-sensitive society and how to shift the current flood management to comprehensive and multi-layered water-related disaster risk reduction that combines hard and soft measures and takes climate change into account.

2. Outline

Schedule:

19 th Feb. 2023 (Sun)	Opening ceremony, Plenary Session 1, Poster Indexing 1, Parallel Sessions, Special Sessions, Public Symposium, Poster Viewing 1, Technical Exhibition
20 th Feb. 2023 (Mon)	Plenary Sessions 2 & 3, Poster Indexing 2, Parallel Sessions, Special Sessions, Poster Viewing 2, Technical Exhibition
21 st Feb. 2023 (Tue)	Plenary Session 4, Closing Ceremony, Technical Exhibition Site visit to research laboratories in Tsukuba City
22 nd Feb. 2023 (Wed)	Site visit to flood control structures in the Kanto Area

Number of Participants:

Participants registered: 412	Asia (except Japan): 111, World (except Asia): 85
	Japan: 216

Participants on site: 394

Asia (except Japan): 100, World (except Asia): 78

Japan: 212, Unknown: 4

Registration fee:

Registration Categories	Fee (JPY)
Regular Early Bird (From 1st April to 20th December 2022)	30,000
Regular (From 21st December 2022 to 20th January 2023, the end of online registration)	35,000
One day	15,000
Student Early Bird (From 1st April to 20th December 2022)	15,000
Student (From 21st December 2022 to 20th January 2023, the end of online registration)	18,000
Student One Day	10,000

ICFM9 Conference Schedule

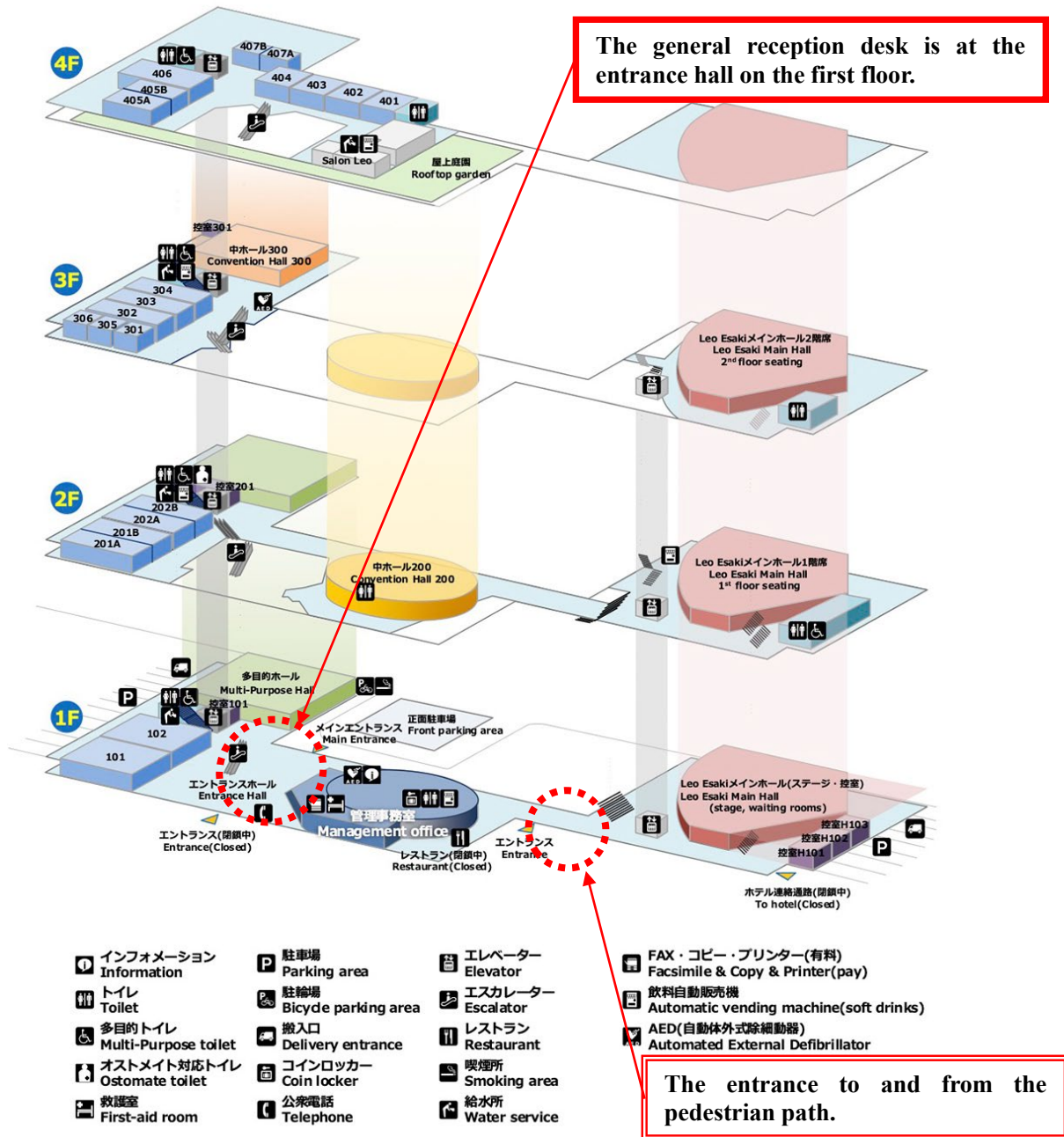
	Room	Multi-purpose Hall	Leo Esaki Main Hall (Main Convention Hall)	Room 101	Room 102	Convention Hall 200	Room 201	Room 202A	Room 202B	2F Corridor	Room 405	
2/18 (Sat)	15:00-18:00	Reception @ 1F Entrance Hall										
2/19 (Sun)	8:00-	Reception @ 1F Entrance Hall										
	9:15-10:15 (15)	Booth exhibitions & Lunch	Opening Ceremony								Poster exhibitions	
	10:30-11:30 (60)		Plenary1 Concluded address "Towards a sustainable sustainable and equitable society"									
	11:30-12:00 (60)		Poster Indexing 1									
	13:00-14:30 (30)		13:30-15:30 Open-to-Public Symposium	Parallel Session 2a	Parallel Session 2e	Parallel Session 1a	Parallel Session 3a	Parallel Session 4a	Parallel Session 6	Special Session "The 28th RSC-AP Center Hokkaido"		
	15:00-16:30 (30)		Parallel Session 2b	Parallel Session 2f	Parallel Session 1b	Parallel Session 3b	Parallel Session 4b	Parallel Session 8	Special Session (LWF)			
	16:30-17:30									Poster Viewing 1 & Networking		
	18:00-20:00	Reception at Hotel Nikko Tsukuba										
2/20 (Mon)	8:00-	Reception @ 1F Entrance Hall										
	9:15-10:15 (15)	Booth exhibitions & Lunch	Plenary2 Integrated Food Management								Poster exhibitions	
	10:30-11:30 (60)		Plenary3 Adaptation by Changes									
	11:30-12:00 (60)		Poster Indexing 2									
	13:00-14:30 (30)		Lunch Seminar: Introduction of SENTAN Program	Parallel Session 5a	Parallel Session 2c	Parallel Session 2g	Parallel Session 1c	Parallel Session 3c	Parallel Session 4c	Parallel Session 10a		Special Session (Prof. Hirabayashi, Shibaura Institute of Technology)
	15:00-16:30 (30)		Parallel Session 5b	Parallel Session 2d	Parallel Session 2h	Special Session (Kato, Prof. Kamachi, Senriho Kyuo Univ.)	Special Session (Dr. Otsu, ICRAR)	Parallel Session 7	Parallel Session 10b	Special Session (Prof. Hirabayashi, Shibaura Institute of Technology)		
	16:30-17:30									Poster Viewing 2 & Networking		
	17:30-20:00									UNESCO-IHP Regional Steering Committee (RSC) Chair: IHP (Prof. Tachikawa, Kyoto Univ.)		
2/21 (Tue)	8:00-	Reception @ 1F Entrance Hall										
	9:15-10:15 (15)	Booth exhibitions & Lunch	Plenary4 River Basin Disaster Resilience and Sustainability by All Stakeholders									
	10:30-12:00 (60)		Closing Ceremony									
	13:00-18:00									UNESCO-IHP The 28th RSC-AP (Prof. Tachikawa, Kyoto Univ.)		

Financial Support:

UNESCO, the River Fund of the River Foundation, Japan, and the Tsukuba Tourism and Convention Association

Venue:

Tsukuba International Congress Center, Tsukuba City, Ibaraki Prefecture



3. Event summary

【Day 1: Sunday, February 19】

The opening ceremony was held at 9:15 a.m. in the Leo Esaki Main Hall.

Prof. Slobodan Simonovic, the chairperson of the ICFM Ad Hoc Committee, made opening remarks on behalf of the organizers.



Dr. FUJITA Koichi greeted the conference participants as the president of the Public Works Research Institute, which hosted ICFM9.



Mr. OKUMURA Yasuhiro also greeted the participants as the director-general of the National Institute for Land and Infrastructure Management, Japan's leading research institute in charge of developing national flood management policies under the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).



Tsukuba City Mayor IGARASHI Tatsuo made a welcome speech on behalf of the hosting city of ICFM9.



After the greetings, Professor Emeritus of Yamanashi University TAKEUCHI Kuniyoshi was awarded the ICFM Lifetime Achievement Award by ICFM.



Professor KOTANI Motoko, the executive vice president for research of Tohoku University, Japan, and the vice president of the International Science Council, delivered the keynote speech online entitled “The responsibility of science, entrusted to us by society.”



All participants in the main hall gathered for group photos to conclude the opening ceremony.



Plenary Session 1 started at 10:40 a.m. to discuss “Concerted Actions towards a Resilient,

Sustainable and Inclusive Society.” The panel discussion was moderated by ICHARM Executive Director KOIKE Toshio and joined by the following three panelists:

- Dr. Johannes Cullmann, Director for SDGs, UN PGA Office
- Dr. Anil Mishra, Chief of Section, Hydrological Systems, Climate Change and Adaptation, UNESCO-IHP
- Prof. Rajib Shaw, IRDR Scientific Committee member and AP-STAG Chair



Each panelist first made a 10-minute presentation and then started discussions on the topics below:

1. What gaps can be identified in the context of flood management?
 - DRR-SD-CCA
 - S&T community-society
 - Current generation - future generation
 - Low income - high income
2. How can the gaps be filled? What roles should the science and technology community play?

Poster Indexing 1 began at 11:30 a.m., moderated by ICHARM Research Specialist AIDA Kentaro. Twenty-three participants spoke about their research in 45 seconds.



Twenty-four parallel sessions were conducted during the two-day conference, covering the following 10 themes on flood management:

1. Lessons Learnt from the Recent Flood & Sediment Disasters towards Better Understanding and Actions
2. Data Integration, Modelling, Forecasting and Early Warning
3. Assessment of Changing Global Risks and their Impacts on Flooding
4. Flood & Sediment Disaster Countermeasures: Structural and Non-structural Approaches
5. Flood & Sediment Disaster Resilience: Shock Absorption, Response and Transformation
6. Flooding Governance and Finance
7. Education and Capacity Building for Effective Flood Management
8. Interlinkage between Flood & Sediment Disaster Resilience and the SDGs: Interdisciplinary and Transdisciplinary Approaches
9. Compound Flooding Disasters
10. Systems Approach to Management of Floods



Technology Exhibition took place in the multi-purpose room, which was also used for

participants to have lunch and breaks. Eight private companies had booths to show their unique services and technologies related to flood management.

1. Asia Air Survey Co., Ltd. (アジア航測)
2. Mitsui Consultants Co., Ltd. (三井共同建設コンサルタント)
3. CTI Engineering Co., Ltd. (建設技術研究所)
4. NTT DATA
5. Yachiyo Engineering Co., Ltd. (八千代エンジニアリング)
6. Japan Bosai Platform (日本防災プラットフォーム)
7. NEXUS EC SDN BHD
8. Hitachi Power Solutions Co.,Ltd.



Special Sessions were also held concurrently with Parallel Sessions. The following sessions took place on Day 1:

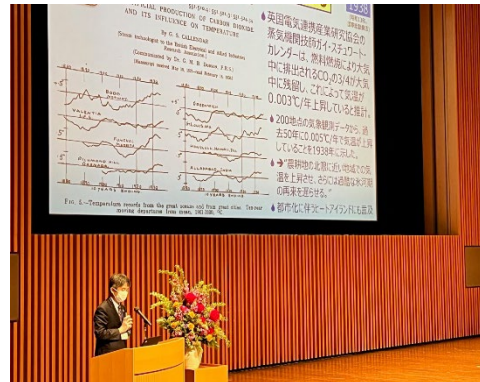
Session title	Organizer
How to incorporate new climate events in flood risk analyses	✓ Dr.ir. B. Kolen, HKV/TU Delft ✓ M. Chiba, River Center Hokkaido
Toward Quality-oriented Societies in Asia through the Actions for Water-related Disasters Risk Reduction and Climate Resilience by All in the River Basins of Asia	✓ Lead organizer: APWF Secretariat c/o Japan Water Forum ✓ Co-lead organizer: UNESCO Regional Science Bureau for Asia and the Pacific

A public symposium entitled "Can You Survive an Unexpected Flood?" was also held at 13:30 concurrently with Parallel Sessions, attended by an audience of 70 people.

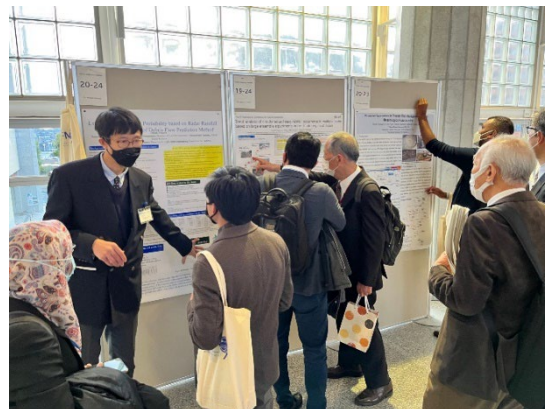
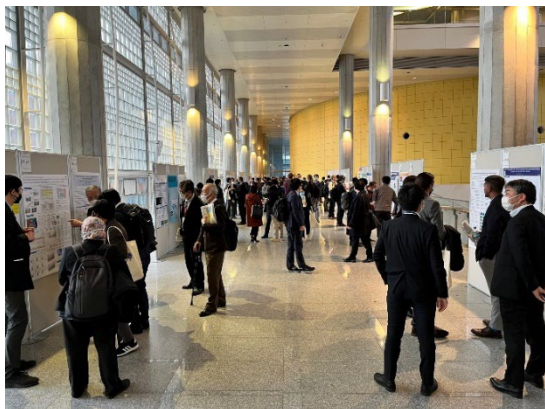
Professor OKI Taikan of the Graduate School of Engineering of the University of Tokyo, who is also the special advisor to the university president, delivered a special lecture titled "Climate Change and Floods."

After the lecture, a special event, "e-sports@KasenBosai," took place, in which the students of five junior high and high schools and a university in the Tsukuba area competed to see who could evacuate best during a flood using the "Virtual Flood Experience System" currently under development at ICHARM.

In addition, ICHARM chief researchers KUBOTA Keijiro and SHINYA Takahumi and Mr. KAIZU Yoshikazu, the director of the MLIT Shimodate River Office, made presentations on ICHARM's ongoing research and MLIT's "My Timeline" initiative, respectively.



Poster Viewing 1 started in the hallway on the second floor after the Plenary Session. Poster presenters were busy answering questions.



The reception party was held on the evening of Day 1 at Hotel Nikko Tsukuba.



【Day 2: Monday, February 20】

“Plenary Session 2: Integrated Flood Management” began at 9:15 a.m. The moderator was ICHARM Chief Researcher SHINYA Takafumi.

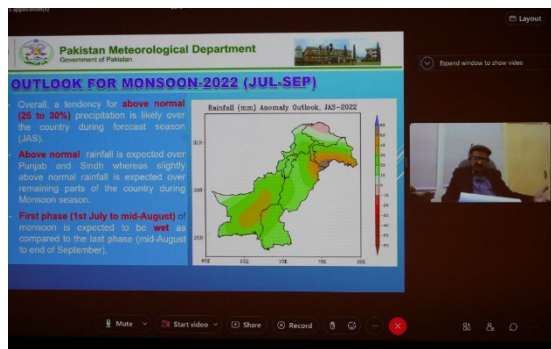
Professor Slobodan Simonovic made a keynote speech, “Systems Approach to Management of Flood – Towards Resilience-based Approach.”

Two speakers followed the keynote speech. Mr. Sahibzad Khan, the director general of the Pakistan Meteorological Department, made an online presentation entitled “Flood Forecasting System of Pakistan and Flood Season 2022.”

Professor Jun XIA, the director of the Research Institute for Water Security of Wuhan University, spoke about “Global Change & Adaptive Water Management for Reducing Water Hazard Risk: Case Study in China.”

“Plenary Session 3: Adaptation to Changes” began at 10:30 a.m. The moderator was ICHARM Research Specialist MAGUMO Naoko.

Professor Ana Maria Cruz of the Disaster Prevention Research Institute of Kyoto University delivered a keynote speech, “A hidden threat, flood triggered chemical accidents: Challenges for disaster risk management.”



Three speakers followed the keynote speech.

The first speaker was Dr. ITAGAKI Osamu, the director of the Upper Kisogawa River Office of the Chubu Regional Development Bureau, MLIT. The title of his presentation was “International Handbook on Emergency Response for Flood Defense.”



Mr. TOKIOKA Toshikazu, the director for International Coordination of River Engineering of the Water and Disaster Management Bureau, MLIT, spoke about “Follow-up Actions for Kumamoto Initiative for Water.”



Dr. Valentin Aich, the senior water and climate specialist of the Global Water Partnership and the World Meteorological Organization, concluded this section by speaking about new developments in integrated approaches to flood management.



Poster Indexing 2 started at 11:30 a.m., moderated by ICHARM Research Specialist AIDA Kentaro. Twenty-three participants spoke about their research in 45 seconds.



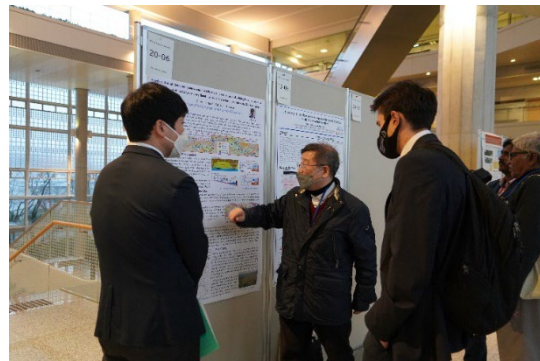
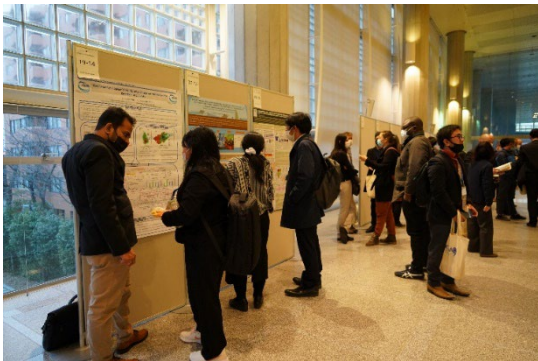
Parallel Sessions began at 13:00.

Special Sessions were also held concurrently with Parallel Sessions on the following three topics:

Session title	✓ Organizer
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JSPS Flash floods Project	✓ Sameh Kantoush, Water Reproduces Research Center, Disaster Prevention Research Institute, Kyoto University
SATREPS project between Japan and Philippines toward Climate Resilience	✓ Miho Ohara, ICHARM, PWRI
Global Flood Monitoring and Modeling	<ul style="list-style-type: none"> ✓ Dai Yamazaki, The University of Tokyo ✓ Yukiko Hirabayashi, Shibaura Institute of Technology ✓ Mark Trigg, University of Leeds, UK ✓ Dirk Eijlander, Vrije Universiteit Amsterdam / VU, Netherlands

Poster Viewing 2 started at 16:30.



【Day 3: Tuesday, February 21】

“Plenary Session 4: River Basin Disaster Resilience and Sustainability by All – Showcases –” started at 9:15 a.m., moderated by ICHARM Senior Research MIYAMOTO Mamoru, with the following three speakers from different parts of the world:

- Davao, the Philippines: Dr. Anthony C. Sales, Regional Director, Department of Science and Technology (DOST) XI
- West Africa: Mr. Salifou DENE, Volta Basin Authority (VBA)
- Latin America: Dr. M. Alfonso Gutiérrez López, Autonomous University of Queretaro



The closing ceremony followed, starting at 10:30 a.m. The keynote speaker was Mr. KUSANO Shinichi, the assistant vice-minister for Disaster Prevention and Risk Communication, MLIT, delivering a presentation entitled “Japan’s New DRR Policy – River Basin Disaster Resilience and Sustainability by All –.”

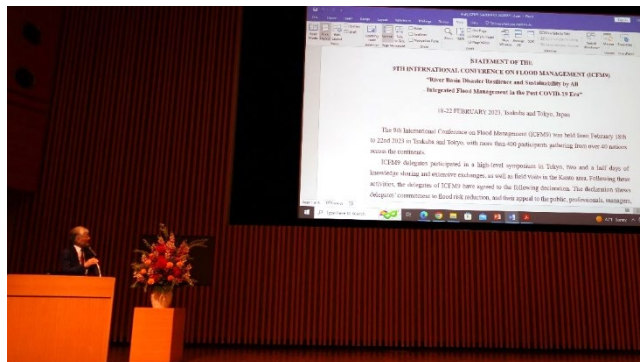


After the keynote speech, the ICFM9 Erich Plate Best Student Poster Award was presented by Professor Slobodan Simonovic to the following three individuals for their excellent poster presentations based on the review results from the ICFM Ad Hoc Committee:

- Attributing weather patterns to Davao River extreme rainfall from Reanalysis and GCM
Ralph Allen E. Acierto, Tomoki Ushiyama, Toshio Koike
- Understanding the vital flood warning dissemination method to approach last-mile End Users in Indonesia effectively
Aminingrum, Afrial Rosya, Linda Lestari, Rucky Nurul WD, Mizan B. F. Bisri
- Evaluating the Impact of Climate Change on the Return Period of Flood Peak Discharge over The Tokachi River Basin, Northern Japan by Using a Massive Ensemble Climate Dataset
Tsuyoshi Hoshino, Keita Shimizu, Mark Hegnauer, Tomohito J. Yamada



ICHARM Executive Director KOIKE Toshio proposed the ICFM9 Declaration and summarized the conference. At the end of the report, the staff of ICHARM, as the organizer of ICFM9, went up on the stage and received applause from the audience.





Concluding ICFM9, Executive Director Koike handed the little torch of ICFM on to Professor Slobodan Simonovic. Then, Professor Simonovic and Professor Paul Kovacs, the executive director of the Institute for Catastrophic Loss Reduction (ICLR), jointly announced that ICLR will host ICFM10 in summer 2026. President Alan Shepard of the University of Western Ontario, to which ICLR belongs, greeted the audience through a video and showed the university and ICLR.



Thanks to the staff's dedication and the participants' cooperation, ICFM9 completed all its events successfully as scheduled.