



# 第9回洪水管理国際会議 (The 9<sup>th</sup> International Conference on Flood Management (ICFM9)) 実施報告書

2023年8月



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水災害・リスクマネジメント国際センター (ICCHARM)



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# 第9回洪水管理国際会議 (ICFM9)実施報告書

水災害・リスクマネジメント国際センター 上席研究員 栗林大輔

要 旨：

2023年2月19日（日）から22日（水）にかけて、水災害・リスクマネジメント国際センター（ICHARM）は、つくば国際会議場において、第9回洪水管理国際会議（The 9<sup>th</sup> International Conference on Flood Management (ICFM9)）を開催した。

洪水管理国際会議（ICFM）は3年ごとに開催され、洪水に関する様々な問題を議論し、学術的・分野横断的に重要な変化を実現することを目的としており、日本での開催は12年ぶりとなる。

本会議では、“River Basin Disaster Resilience and Sustainability by all～ポストコロナ時代の統合洪水管理～”を大きなテーマとして、発表および議論が行われ、日本含めて41か国から、合計394人の洪水に関する専門家が参加した。

本土木研究所資料は、本会議の開催に至る準備段階、および本会議に関する資料を取りまとめたものである。

キーワード：洪水、流域治水、国際会議

# 第9回洪水管理国際会議（ICFM9） 実施報告書

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## 1. はじめに

### 1. 1 概要

2023年2月19日(日)から22日(水)にかけて、土木研究所水災害・リスクマネジメント国際センター(ICHARM)はつくば国際会議場(茨城県つくば市竹園)において、第9回洪水管理国際会議(The 9<sup>th</sup> International Conference on Flood Management(ICFM9)、以下「本会議」と言う。)を開催した。

洪水管理国際会議(ICFM)は3年ごとに開催され、洪水に関する様々な問題を議論し、学術的・分野横断的に重要な変化を実現することを目的としている。ICFMには、世界各国のエンジニア、プランナー、自然科学者、社会学者、健康専門家、災害管理者、意思決定者、政策立案者など、様々な研究者や実務者が一堂に会し、最新の知見・情報・経験を共有する場として、活発な活動を行っている。日本での開催は、第5回(2011年東京)をICHARMが開催して以降、12年ぶりとなる。

本会議では、“River Basin Disaster Resilience and Sustainability by All～ポストコロナ時代の統合洪水管理～”を大きなテーマとし、コロナ後の社会において、洪水に配慮した社会の再構築や、ハードおよびソフト対策を組み合わせ、気候変動を考慮した包括的かつ多層的な水災害リスク軽減に転換をどのように行うかなどに関して、発表および議論が行われ、最終日には「ICFM9 Statement」案が提示された。

本会議は参加者にとって、各国の水インフラシステムの現状や実務関係者を把握するとともに、知恵を生み出す“共創の場”として大変有意義な絶好の機会ともなった。本会議には、日本含めて41か国から、合計394人の洪水に関する専門家(日本から212名、アジアから100名、世界から78名(不明4名))が参加した。

本会議においては、全体会合(Plenary session)は4セッション、分科会(Parallel session)は24セッションを開催し、発表者は、分科会での口頭発表143編、ポスター発表48編となった。また、横断的テーマを含む5つの特別セッションを開催するとともに、洪水に関する民間企業の技術を紹介する「技術展示ブース」を設置し、8社・団体が出展を行った。また、19日午後には一般公開シンポジウム「君は想定外の洪水から生き残れるか」を開催した。

21日午後および、22日には、希望者を対象につくば市内研究所視察および関東近郊の洪水対策施設視察を行い、それぞれ約60名が参加した。

本土木研究所資料は、準備段階および本会議に関する資料を取りまとめるとともに、会議開催報告を行うものである。2章では開催準備段階における各種設定作業、3章では本会議の概要、4章では現地視察の概要、5章では一般公開シンポジウム「君は想定外の洪水から生き残れるか」の概要を記述する。

## 1. 2 開催までの主な経緯

以下、2021年8月に本会議の開催を表明してから本会議開催までの主な経緯を示す。

2021年8月10日 小池センター長がICFM8代替ウェビナーにてICFM9の開催を表明

2021年11月30日 アブストラクト(1,000文字)募集開始

2022年2月28日 アブストラクト提出締切(→3月31日に延長)

～国際科学委員会(ISC)メンバーによるアブストラクト査読～

2022年3月10日 第1回国内委員会

2022年6月22日 第2回国内委員会

2022年6月末 アブストラクト採否通知

2022年10月上旬 拡張アブストラクト(Extended Abstract、6ページ)受付開始

2022年10月3日 オンライン登録開始

(10月以降月1回の頻度でICHARM内全体確認会議を開催)

2022年11月15日 拡張アブストラクト締切

2022年12月上旬 発表プログラム原案を発表者に照会

2022年12月20日 オンライン早期登録締切

2022年12月末 発表プログラム確定版を発表者に通知

(1月以降週1回の頻度でセンター長・グループ長・事務局メンバーでのICFM9コアメンバー会議を開催)

2023年1月20日 オンライン登録締切

2023年1月20日 第3回国内委員会

2023年2月19-22日 ICFM9本会議

19日(日) Opening ceremony, Plenary session 1, Poster Indexing 1,  
Parallel sessions, special sessions,  
一般公開シンポジウム

Poster Viewing 1, Technical exhibition booth

20日(月) Plenary session 2 & 3, Poster Indexing 2,  
Parallel sessions, special sessions,  
Poster Viewing 2, Technical exhibition booth

21日(火) Plenary session 4, Closing ceremony,  
Technical exhibition booth

つくば市内研究所視察

22日(水) 関東近郊洪水対策施設視察

## 2. 開催準備

### 2. 1 実施体制

本会議の実施に当たり、以下の委員会等を設置した。

#### ○ ICFM Ad Hoc Committee :

(以下、ICFM ホームページから抜粋)

*“An ad hoc committee underpins the series of international conferences on flood management. It coordinates with and has volunteer members from many organizations worldwide, but is not under the auspices of any particular organization.”*

ICFM9 の上位組織である ICFM を構成する委員会である。ICFM9 の運営に関して重要な判断が必要な際は、国内委員会（下記参照）の共同議長兼 ICFM Ad Hoc Committee メンバーである小池 ICHARM センター長と、ICFM 議長である Slobodan P. Simonovic 教授（Director of Engineering Studies, Institute for Catastrophic Loss Reduction The University of Western Ontario）が協議し、決定。

#### ○ ICFM9・ハイレベルシンポジウムの開催に向けた国内委員会（Local Organizing Committee (LOC)）

(以下、設置趣旨から抜粋)

「ICFM を ICHARM がホストするにあたり、国際会議の運営を円滑に行うため、関係する日本国内の行政機関、機構、大学、学会等との協力・助言を得ることのできる体制を構築することが必要。

一方、ICFM9 の開催に際しては、*High-level Experts and Leaders Panel on Water and Disasters (HELP)* 事務局の政策研究大学院大学 (GRIPS) や国土交通省と連携することにより、国内外から政府高官を招くハイレベルシンポジウムの開催を企画しており、同シンポジウムのテーマは、「ポストコロナ時代の統合洪水管理」とすることが想定されている。

これら会議は、日本の知見を活かした気候変動の適応策等の国際的な展開を図る上で、貴重な機会となるものであり、相互の会議の連携による開催効果の向上を図るとともに、国内関係機関から水・気候・災害に関する幅広い情報共有や国内外活動提案等に係る助言・協力をいただくことは有意義である。

上記より、ICFM9・ハイレベルシンポジウムの開催に向けた国内委員会 (LOC) を設置する。」

LOC は、共同議長 3 名 (ICCHARM センター長、GRIPS 教授、国土交通省水管理・国土保全局長) を含む、14 名で構成。

#### ○ ICHARM Thematic team :

ICCHARM の複数の研究員から構成される、本会議において設定された下記 10 のテーマごとに割り当てられたチーム (複数のテーマを兼務する研究員もあり)。この中から分科会 (パラレルセッション) の共同議長 (Co-chair) を選出。



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 Counter Measures: 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

上記 10 の各テーマのコンセプトノートを資料 1 に示す。

○ **ICFM9 International Science Committee (国際科学委員会) :**

上記 10 のテーマごとに、各テーマに精通した研究者を ICHARM Thematic team が推薦し、決定。44 名で構成。アブストラクトの査読や分科会(パラレルセッション)での議長、および「Proceedings of International Association of Hydrological Sciences (PIAHS)」(2. 13 参照)への推薦などを担当。

○ **ICFM9 Secretariat (ICFM9 事務局) :**

会場・物品手配および現地視察調整などのロジスティクス担当。参加者の連絡窓口担当。VISA 発給支援担当。上席研究員(特命担当)1名、主任研究員2名(兼務)、研究員1名(兼務)、非常勤職員2名で構成。

○ **ICFM9 コアメンバー会議 :**

ICFM9 の LOC の共同議長である ICHARM センター長、ICARM グループ長、および ICFM9 事務局メンバーで構成。進捗確認のために1月以降週1回の頻度で開催。

## 2. 2 会議参加費

一般参加 (Regular) と学生参加 (Student) にわけ、それぞれ3日間の通し参加券と1日参加券を発行した。通し参加券については、早期割引 (Early bird) 料金を設定した。設定した参加費一覧を表1に示す。支払い方法については、特設サイトにてクレジットカードによる事前決済を基本としたが、会議当日におけるクレジットカード決済も受け入れた。

表1 会議参加費一覧表

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, Online Registration Deadline)	35,000
Regular 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, Online Registration Deadline)	18,000
Student One Day	10,000

## 2. 3 会議スケジュール

2月19日から21日までのスケジュールは以下のとおりである。なお、18日(土)15時から18時においては、会場にて前日受付を実施した。

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		Plenary1 Convened authors discuss an in-depth substantive and in-depth 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 (Prof. T. Daito & River Center Hokkaido)			
	15:00-16:30			Parallel Session 2b	Parallel Session 2f	Parallel Session 1b	Parallel Session 3b	Parallel Session 4b	Parallel Session 8	Special Session (ISAP)			
	16:30-17:30											Poster Viewing1 & 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 River Management								Poster exhibitions		
	10:30-11:30		Plenary3 Adaptation to Change										
	11:30-12:00 (60)		Poster Indexing 2	Lunch Seminar: Introduction of SENTAN Program									
	13:00-14:30 (30)		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, Shizuoka Institute of Technology)			
	15:00-16:30		Parallel Session 5b	Parallel Session 2d	Parallel Session 2h	Special Session (Aka: Prof. Kamakura, Sammi, Kyoto Univ.)	Special Session (Dr. Ohsara, ICHARM)	Parallel Session 7	Parallel Session 10b	Special Session (Prof. Hirabayashi, Shizuoka Institute of Technology)			
	16:30-17:30											Poster Viewing2 & Networking	
	17:30-20:00												UNESCO-IHP Regional Steering Committee (RSC) OHA-MS (Prof. Tachikawa, Kyoto Univ.)
2/21 (Tue)	8:00-		Reception @ 1F Entrance Hall										
	9:15-10:15 (15)	Booth exhibitions & Lunch	Plenary4 River Basin Ecosystem Resilience and Sustainability by IIR Showcases										
	10:30-12:00 (60)		Closing Ceremony										
	13:00-18:00												UNESCO-IHP The 29th RSC-AP (Prof. Tachikawa, Kyoto Univ.)

本会議は、主に以下のセッション等から構成されている。

- 全体会合 (Plenary session)
- 分科会 (Parallel session)
- ポスター発表 (Indexing, Viewing)
- 特別セッション
- サイドイベント
- 技術展示ブース
- 現地視察

以下、それぞれについて概説する。

### 2. 3. 1 全体会合 (Plenary session)

全体会合は、4つのセッションにおいて、洪水管理分野を専門とする大学教授あるいは洪水管理に携わる行政責任者など計13名による基調講演や発表、および議論が行われた。各セッションのタイトルとスピーカーの一覧を表2に示す。また、詳細なアジェンダを資料2に示す。

### 2. 3. 2 分科会 (Parallel session)

分科会は、前述の10のテーマに沿って開催された。ただし、テーマによって発表数にかなりの差があり、複数のセッションを開催したテーマもあれば、統合したテーマもあった。

各セッションの議長 (Chair) は、ICFM9 International Science Committee (国際科学委員会)、ICFM Ad Hoc Committee の委員あるいは他の参加者に依頼し、共同議長 (Co-chair) は、ICHARM Thematic team から選出した。各セッションの議長および共同議長の一覧を表3に示す。また、発表プログラムを資料3に示す。

### 2. 3. 3 ポスター発表 (Poster Indexing, Poster Viewing)

ポスター発表者は48名であったが、半分に分けて1日目(19日)と2日目(20日)のそれぞれ午前中に、ポスター発表者による「Poster Indexing」を大ホールにて行った。これは、決められた発表フォーマットに従い、各人が45秒で概要を説明するものである。その後、各日の最後に「Poster Viewing」の時間を1時間設け、発表者が参加者の質問に答えられる時間として配慮した。ポスター発表のリストを資料4に示す。

なお、ポスター発表論文のうち、ICFM Ad Hoc Committee 選出による「ICFM9 Erich Plate Best Student Poster Award」が以下の3つの論文に授与された。賞状のサンプルを資料5に示す。

- Attributing weather patterns to Davao River extreme rainfall from Reanalysis and GCM
- Understanding the vital flood warning dissemination method to approach last-mile End Users in Indonesia effectively
- 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

表2 全体会合 (Plenary session) タイトルとスピーカー一覧表

Title	Speaker
<p>Plenary 1: Concerted actions towards a resilient, sustainable and inclusive Society (Panel Discussion)</p>	<p>Panelists:</p> <ul style="list-style-type: none"> <li>● Dr. Johannes Cullmann, Director for SDGs, UN PGA Office</li> <li>● Dr. Anil Mishra, Chief of Section, Hydrological Systems, Climate Change and Adaptation, UNESCO-IHP</li> <li>● Prof. Rajib Shaw, IRDR Scientific Committee member and AP-STAG Chair</li> </ul> <p>Moderator:</p> <ul style="list-style-type: none"> <li>● Prof. KOIKE Toshio, Executive Director, International Centre for Water Hazards and Risk Management (ICHARM), PWRI, Japan</li> </ul>
<p>Plenary 2: Integrated Flood Management</p>	<ul style="list-style-type: none"> <li>● Keynote Speech: Prof. Slobodan Simonovic, Director of Engineering Studies, Institute for Catastrophic Loss Reduction, The University of Western Ontario</li> <li>● Report 1: Mr. Sahibzad Khan, Director General, Pakistan Meteorological Department (PMD) *via Online</li> <li>● Report 2: Prof. Jun XIA, IUGG Fellow &amp; Bureau member, President, China National Committee for IUGG, Academician of Chinese Academy of Sciences (CAS), Director, Research Institute for Water Security (RIWS), Wuhan University</li> </ul>
<p>Plenary 3: Adaptation to Changes</p>	<ul style="list-style-type: none"> <li>● Keynote Speech: Prof. Ana Maria Cruz, Professor, Disaster Prevention Research Institute (DPRI), Kyoto University</li> <li>● Report 1: Dr. ITAGAKI Osamu, Director, Upper Kiso-gawa River Office, Chubu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT)</li> <li>● Report 2: Mr. TOKIOKA Toshikazu, Director for International Coordination of River Engineering, Water and Disaster Management Bureau, MLIT</li> <li>● Report 3: Dr. Valentin Aich, Senior Water and Climate Specialist, Global Water Partnership (GWP) and World Meteorological Organization (WMO)</li> </ul>
<p>Plenary 4: River Basin Disaster Resilience and Sustainability by All Showcases:</p>	<ul style="list-style-type: none"> <li>● Dr. Anthony C. Sales, Regional Director, Department of Science and Technology (DOST) XI</li> <li>● Mr. Salifou DENE, Volta Basin Authority (VBA)</li> <li>● Dr. M. Alfonso Gutiérrez López, Autonomous University of Queretaro</li> </ul>

表3 各セッションの議長 (Chair) および共同議長 (Co-Chair) 一覧表

Theme		Chair	Co-chair
1. Lessons Learnt from the Recent Flood & Sediment Disasters towards Better Understanding and Actions	1a	Guillermo Q. Tabios III	OHARA Miho
	1b	Ali CHAVOSHIAN	QIN Menglu
	1c	Zhang Cheng	NAGUMO Naoko
2. Data Integration, Modelling, Forecasting and Early Warning	2a	YOSHIMURA Kei	Abdul Wahid Mohamed RASMY
	2b	Anil Mishra	Abdul Wahid Mohamed RASMY
	2c	TANIGUCHI Kenji	NUMATA Shingo
	2d	Nikola Zlatanovi	TSUTSUI Hiroyuki
	2e	Xin Li	TAMAKAWA Katsunori
	2f	Maria Clara Fava	AIDA Kentaro
	2g	Minjiao LU	MATSUKI Hirotada
	2h	TACHIKAWA Yasuto	NAITO Kensuke
3. Assessment of Changing Global Risks and their impacts on flooding	3a	HIRABAYASHI Yukiko	USHIYAMA Tomoki
	3b	Jos van Alphen	MIYAMOTO Mamoru
	3c	Karmakar Subhankar	Shrestha Badri Bhakta
4. Flood & Sediment Disaster Counter Measures: Structural and Non-structural Approaches	4a	SHIMIZU Yasuyuki	MIYAMOTO Mamoru
	4b	TAKEBAYASHI Hiroshi	Kattia Rubi Arnez Ferrel
	4c	Nigel Wright	HARADA Daisuke
5. Flood & Sediment Disaster Resilience: Shock Absorption, Response and Transformation	5a	Dalila Loudyi	SHINYA Takafumi
	5b	Paul Kovacs	Ralph Allen ACIERTO
6. Flooding Governance and Finance	6	K. E. Seetharam	MORI Noriyuki
7. Education and Capacity Building for Effective Flood Management	7	Duminda Perera	FUJIKANE Masakazu
8. Interlinkage between Flood & Sediment Disaster Resilience and the SDGs: Interdisciplinary and Transdisciplinary Approaches	8	KAWASAKI Akiyuki	YOSHINO Hirosato
10. Systems approach to management of floods	10a	OKI Taikan	DENDA Masatoshi
	10b	Valentin Aich	KAKINUMA Daiki

### 2. 3. 4 特別セッション

本会議での分科会では 10 のテーマを設定したが、それにとらわれない横断的なテーマについて、公募を行ったうえで特別セッションとして開催した。公募の結果、5 つのテーマ（セッションの数としては計 6 つ）を選定した。開催した 5 つの特別セッションのタイトルと主催者の一覧を表 4 に示す。また、各セッションの概要を資料 6 に示す。

表 4 特別セッションのタイトルと主催者 一覧表

Session title	Organizer
How to incorporate new climate events in flood risk analyses	<ul style="list-style-type: none"> <li>✓ Dr.ir. B. Kolen, HKV/TU Delft</li> <li>✓ CHIBA Manabu, River Center of Hokkaido</li> </ul>
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	<ul style="list-style-type: none"> <li>✓ Lead organizer: APWF Secretariat c/o Japan Water Forum</li> <li>✓ Co-lead organizer: UNESCO Regional Science Bureau for Asia and the Pacific</li> </ul>
JSPS Flash floods Project	<ul style="list-style-type: none"> <li>✓ Sameh Kantoush, Water Reproduces Research Center, Disaster Prevention Research Institute, Kyoto University</li> </ul>
SATREPS project between Japan and Philippines toward Climate Resilience	<ul style="list-style-type: none"> <li>✓ OHARA Miho, ICHARM, PWRI</li> </ul>
Global Flood Monitoring and Modeling	<ul style="list-style-type: none"> <li>✓ YAMAZAKI Dai, The University of Tokyo</li> <li>✓ HIRABAYASHI Yukiko, Shibaura Institute of Technology</li> <li>✓ Mark Trigg, University of Leeds, UK</li> <li>✓ Dirk Eijlander, Vrije Universiteit Amsterdam / VU, Netherlands</li> </ul>

### 2. 3. 5 サイドイベント

国内外の多くの洪水専門家が参加する本会議の機会を捉えて、ICHARM も参画している文部科学省「気候変動予測先端研究プログラム」（先端プログラム）を広く周知するためのランチセミナー「Introduction of Flood Prediction and Adaptation Research under Japan's National Climate Program (SENTAN Program)」が 20 日の昼休みに開催された。リーフレットを資料 7 に示す。

### 2. 3. 6 技術展示ブース

本会議へは、洪水災害被害軽減に関心を持つ国内外からの参加者が多く見込まれ、企業等の皆様が持つ優れた技術や知見を広く情報発信・宣伝する絶好の機会となると考えられたため、一般社団法人日本防災プラットフォームとともに、多目的ホールにおける技術展示ブースを企画し、公募を行った。募集要項（日本語・英語）を資料8に示す。最終的に、以下の8社・団体がブース展示を行った。

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 (NTT データ)
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. (日立パワーソリューションズ)

### 2. 3. 7 現地視察

希望者を対象として、21日午後にはつくば市内研究所視察、および22日には関東近郊洪水対策施設視察をそれぞれ行った。訪問・視察箇所は以下のとおりである。

<つくば市内研究所視察>

- ①土木研究所 ダム水理実験施設
- ②土木研究所 ICHARM 洪水VR体験
- ③宇宙航空研究開発機構(JAXA)

<関東近郊洪水対策施設視察>

- ①2015年の関東・東北豪雨で鬼怒川破堤地点と復旧プロジェクト
- ②首都圏外郭放水路
- ③渡良瀬遊水地
- ④防災科学技術研究所 大型降雨実験施設

各視察行程を資料9に示す。いずれも最大60名参加とし、3班に分かれて移動した。視察報告は4章に示す。

### 2. 4 資金サポート

本会議においては、ユネスコ資金による、途上国からの発表者10名への支援（会議参加費、国内移動費、宿泊費）を行った。

また、会場費等に一般社団法人つくば観光コンベンション協会によるコンベンション開催支援補助金を活用した。

さらに、公益財団法人河川財団による「河川基金」を一般シンポジウムに活用した。



## 2. 5 会場

本会議の会場は、数々の国際会議の開催実績があり、つくば駅からも至近距離である「つくば国際会議場（エポカルつくば）」（茨城県つくば市）とした。つくば国際会議場のフロアマップを図1に示す。また、各部屋の詳細レイアウト図を資料10に示す。

また、19日のレセプション会場は、「ホテル日航つくば」の「昴」とした。

## 2. 6 緊急事態への対応

参加者が数百名に及ぶことが予想されたため、新型コロナウイルス感染症対策と大地震等の緊急時対策には細心の注意を払った。

新型コロナウイルス感染症対策としては、首相官邸・厚生労働省が作成した啓発チラシ（資料11）を各部屋に掲示するとともに、本会議直前に参加者に連絡した「Important information for ICFM9 participants」内でも以下のように通知した。

- Please wear a mask at the conference venues and during the field trips. Also, sanitize your hands using an antiseptic prepared at the door to each room.
- Contact the general reception desk on the first floor if you are feverish or feel sick.
- When dining at a conference venue, please refrain from speaking loudly and practice social distancing.

また、大地震等緊急時の対策として、資料12に挙げる「ICFM9 Safety Confirmation System」に関する掲示を会場内に行い、緊急時には氏名やその時の状況などを登録してもらい、ICFM9事務局が参加者の状況を把握できるシステムを事前に構築した。

## 2. 7 参加者への情報提供

参加者には、ICFM9公式ホームページにより、以下のような情報提供を適宜行った。

- 10月中旬：FAQ（よくある質問集）（資料13）を掲載。
- 11月下旬：日本入国のためのVISA申請が必要な参加者に対し、記入様式など（資料14）を掲載し、VISA書類作成支援の効率化を図った。
- 11月下旬：技術展示ブースの募集要項を掲載。
- 1月中旬：「ICFM9 Guide Booklet」（資料15）を掲載するとともに参加者に送付。
- 2月中旬：「Important information for ICFM9 Participants」（資料16）を掲載。

また、発表者のExtended Abstractは、オリジナリティを確保するため、ID/パスワードを設けたページを作成し、PDFでのダウンロードができない形で参加者のみの閲覧に供した。

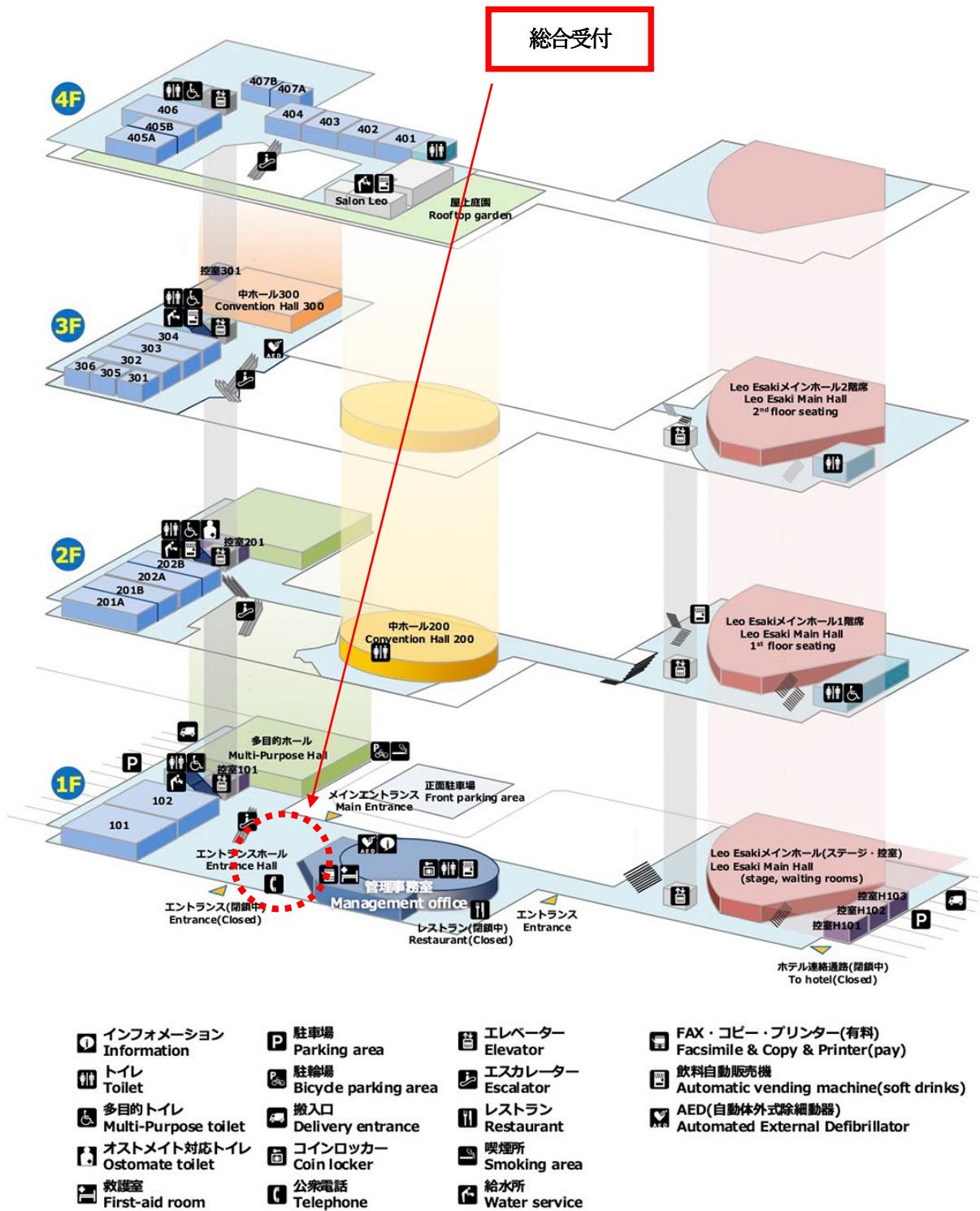


図1 つくば国際会議場フロアマップ  
 (「つくば国際会議場」ホームページ掲載の図を加工)

## 2. 8 一般周知活動

下記コンサルタント協会や学会メーリングリストなどを活用し、本会議の周知に努めた。

- 一般社団法人 海外建設協会
- 一般社団法人 建設コンサルタンツ協会
- 一般社団法人 海外コンサルタンツ協会
- 日本自然災害学会 会員向けメールニュース
- 気象学会 メーリングリスト
- リバーメール（一般社団法人 国際建設技術協会）
- 「最新！水ニュース」（特定非営利活動法人 日本水フォーラム）

また、本会議直前には一般公開シンポジウムと併せ、プレスリリースを行った（資料17）。

## 2. 9 ノベルティ作成

参加者には以下のノベルティおよび関連リーフレットを配布した。

- トートバッグ
- クリアファイル
- ミニノート
- 4種類ペン
- 付箋（一般社団法人つくば観光コンベンション協会）



## 2. 10 供食体制

会場周辺には飲食店が少ないことや、昼食時間も短いことから、事前に登録サイトにて弁当の受注を実施した。メニューは下記5種類とし、総合受付で配布するバウチャー券（右下参照）と引き換えて配布した。なお、多目的ホールを昼食・休憩会場 兼 技術展示ブース会場とし、ブースへの集客を図った。

- 和風弁当（1000円）
- 和風弁当（500円）
- ハラル対応弁当（1000円）
- ベジタリアン弁当（1000円）
- サンドイッチ弁当（1000円）



また、茨城県国際観光課を經由して依頼し、下記2社のキッチンカーが会議会場隣の公園にて販売を行った。

「飯田丸」：しらす丼、天丼、ラーメン（写真左）

「LAX」：ホットドッグ・ドリンク等（写真右）

<出店日時・台数>

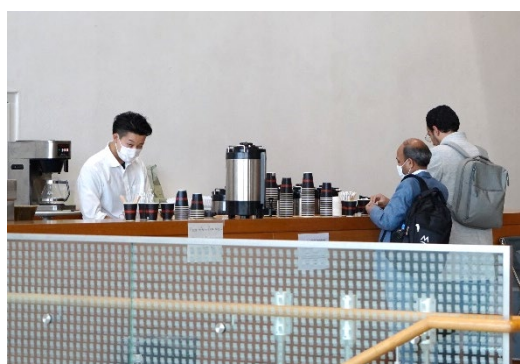
2月19日（日） 10：00～16：00 2台

2月20日（月） 10：00～16：00 2台

2月21日（火） 10：00～13：00 2台



さらに、会場内の2か所（1階多目的ホール前、2階大ホール入り口付近）にて、サザコーヒーによるコーヒーの提供を行った。



## 2. 1 1 土木学会 CPD プログラムの認定

本会議は、土木学会により以下のように継続教育（CPD）プログラムに認定された（各日別に別のプログラムとして認定）希望者には、「受講証明書」を発行した。

プログラム名	第9回洪水管理国際会議 (ICFM9) 2/19	第9回洪水管理国際会議 (ICFM9) 2/20	第9回洪水管理国際会議 (ICFM9) 2/21
認定番号	JSCE22-1463	JSCE22-1464	JSCE22-1465
開催日	2023年2月19日	2023年2月20日	2023年2月21日
受講時間	10：30～16：30	9：15～16：30	9：15～10：15
単位数	4.5単位	5.5単位	1.0単位

## 2. 1 2 「Certificate」の発行

本会議への参加を証明するものとして、希望参加者には、「Certificate」を発行した。資料18に示す。

### 2. 1 3 論文投稿

本会議に提出された論文のうち、各セッションの議長 (Chair) と共同議長 (Co-chair)、および LOC によって内容を評価された論文については、国際水文科学協会 (International Association of Hydrological Sciences (IAHS)) が出版する「PIAHS」(Proceedings of IAHS)、および JFRM (Journal of Flood Risk Management Science) の特別号に投稿することを推薦した。このうち、「PIAHS」への投稿については ICFM9 事務局が投稿費などを負担することとした。

### 3. 開催概要

本章は、19日の開会式から21日の閉会式までの本会議開催概要である。3. 1で日本語版、3. 2で英語版を記載するが、内容は同一である。

#### 3. 1 日本語版概要

##### 【1日目 (2月19日 (日))】

開会式は、松木 ICHARM グループ長の司会のもと、9:15 から Leo Esaki メインホールで行われた。

まず、ICFM Ad Hoc Committee の Chairperson である Prof. Slobodan Simonovic が主催者を代表して開会挨拶を行った。



次いで、本会議を主催する土木研究所の藤田光一理事長から挨拶を行った。



続いて、日本の洪水政策を担う国土交通省の研究機関である国土技術政策総合研究所の奥村康博所長から挨拶を行った。



最後に、開催地であるつくば市を代表し、五十嵐立青市長から Welcome Speech が述べられた。



開会挨拶に続き、竹内邦良山梨大学名誉教授に「ICFM Lifetime Achievement Award」が授与された。



次いで、東北大学理事・副学長（研究担当）、およびISC（国際科学委員会）の次期 Vice President である小谷元子教授から、“The responsibility of science, entrusted to us by society”と題し、オンラインでの基調講演が行われた。



開会式の最後に、集合写真を撮影した。



10：40 から Plenary Session 1: Concerted Actions towards a Resilient, Sustainable and Inclusive Society が開始された。小池俊雄 ICHARM センター長がモデレータ、以下の3名がパネリストとなり、パネルディスカッションが行われた。

- 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



各パネリストから 10 分程度のプレゼンテーションを行った後、以下のテーマに沿って議論が行われた。

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?



11:30 からは、会田専門研究員の司会のもと、Poster Indexing 1 が行われ、23 名のポスター発表者が 45 秒で発表を行った。



13:00 からパラレルセッションが開始された。パラレルセッションは、洪水管理に関し、「データ統合・モデリング・早期警報」や「効果的な洪水管理のための教育」など幅広く設定された 10 のテーマに沿って、2 日間で 24 のセッションが実施された。



また、昼食会場兼休憩会場でもある多目的ホールでは、洪水に関する民間企業の技術を紹介する「技術展示ブース」が設置され、以下の 8 社・団体が出展を行った。

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 (NTT データ)
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. (日立パワーソリューションズ)



パラレルセッションと並行して特別セッションが開催された。1日目は、下記2件のセッションが開催された。

Session title	Organizer
How to incorporate new climate events in flood risk analyses	<ul style="list-style-type: none"> <li>✓ Dr.ir. B. Kolen, HKV/TU Delft</li> <li>✓ M. Chiba, River Center Hokkaido</li> </ul>
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	<ul style="list-style-type: none"> <li>✓ Lead organizer: APWF Secretariat c/o Japan Water Forum</li> <li>✓ Co-lead organizer: UNESCO Regional Science Bureau for Asia and the Pacific</li> </ul>

また、パラレルセッションと並行し、一般公開シンポジウム「君は想定外の洪水から生き残れるか」が13:30から開催された。開催の詳細は5章に示すが、概要は以下のとおりである。

基調講演では、東京大学総長特別参与、大学院工学系研究科の沖大幹教授から「気候変動と洪水」と題して講演が行われた。

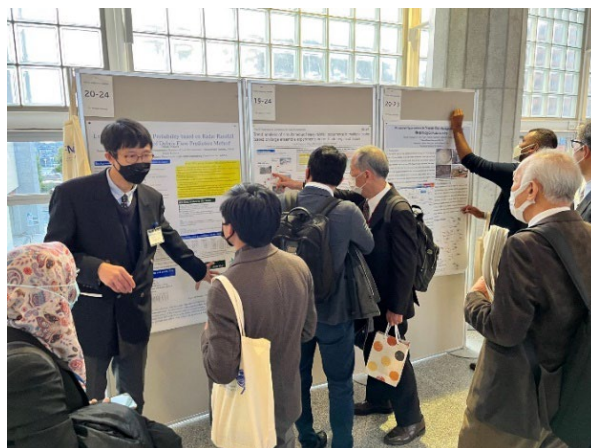
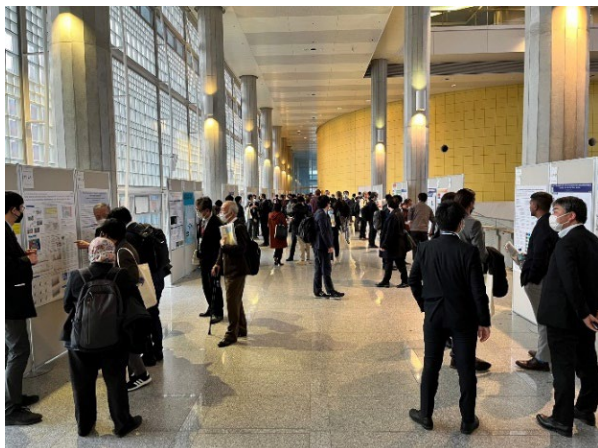
続いて、ICHARMで開発している「仮想洪水体験システム」を用いてつくば近郊の6つの中学・高校・大学生が学校ごとにいかにうまく洪水時に避難できるかを競う「水防災競技会」を開催した。

さらに、ICHARMで行っている研究紹介および国土交通省で進めている「マイ・タイムライン」の取組について、



ICHARM の久保田啓二郎上席研究員と新屋孝文上席研究員および国土交通省下館河川事務所の海津義和所長からそれぞれ説明を行った。

プレナリーセッション終了後、2階廊下で Poster Viewing1 が実施され、ポスター発表者は熱心に質問に答えていた。



18:00からは、つくば国際会議場から徒歩10分の距離にある、「ホテル日航つくば」の「昴」にてレセプションパーティーが開催された。



## 【2日目 (2月20日 (月))】

9:15 から、ICHARM 新屋上席研究員の司会のもと、Plenary Session 2: Integrated Flood Management が行われた。

最初に、Prof. Slobodan Simonovic から基調講演 "Systems Approach to Management of Floods - Towards Resilience-based Approach " が行われた。

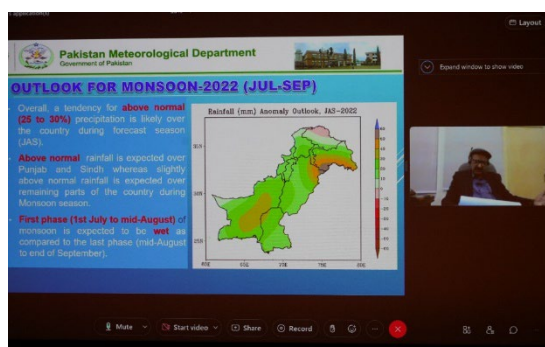
基調講演の後、2名からそれぞれ報告発表が行われた。1 件目はオンライン形式で、Pakistan Meteorological Department (PMD) の Director General である Mr. Sahibzad Khan から Report 1: "Flood Forecasting System of Pakistan and Flood Season 2022" と題する発表が行われた。

2 件目は、Research Institute for Water Security (RIWS), Wuhan University の Director である Prof. Jun XIA から "Global Change & Adaptive Water Management for Reducing Water Hazard Risk: Case study in China" と題する発表が行われた。

休憩の後、10:30 から、南雲専門研究員の司会のもと、Plenary Session 3: Adaptation to Changes が行われた。

最初に、京都大学防災研究所の Prof. Ana Maria Cruz から 基調講演 "A hidden threat, flood triggered chemical accidents: Challenges for disaster risk management" が行われた。

基調講演の後、以下の3名からそれぞれ報告発表が行われた。



まず、国土交通省木曾川上流河川事務所の板垣修所長から Report 1: “International Handbook on Emergency Response for Flood Defenses” と題する発表が行われた。



ついで、国土交通省水管理・国土保全局の時岡利和国際河川技術調整官から、Report 2: “Follow-up Actions for Kumamoto Initiative for Water” と題する発表が行われた。



3 人目として、Global Water Partnership (GWP) and World Meteorological Organization (WMO) の Senior Water and Climate Specialist である Dr. Valentin Aich から、Report 3: “New developments in integrated approaches to flood management” と題する発表が行われた。



11:30 からは、1 日目と同じく会田専門研究員の司会のもと、Poster Indexing2 が行われ、23 名のポスター発表者が 45 秒で発表を行った。



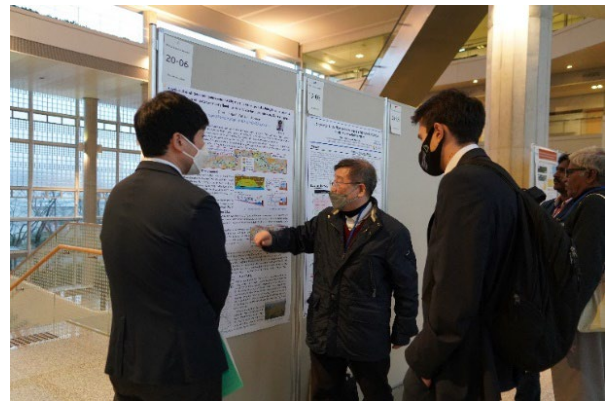
13:00 から、1 日目と同じくパラレルセッションが行われた。

また、パラレルセッションと並行して特別セッションが開催された。2 日目は、下記 3 件のセッションが開催された。

Session title	✓ Organizer
JSPPS 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	✓ Dai Yamazaki, The University of Tokyo ✓ Yukiko Hirabayashi, Shibaura Institute of Technology ✓ Mark Trigg, University of Leeds, UK ✓ Dirk Eilander, Vrije Universiteit Amsterdam / VU, Netherlands

16:30からは、1日目と同様、Poster Viewing2が行われた。



### 【3日目 (2月21日 (火))】

9:15 から、宮本主任研究員の司会のもと、Plenary Session 4: River Basin Disaster Resilience and Sustainability by All – Showcases–が行われ、下記3名から各地域における取組が紹介された。

- 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



続いて10:30 から、ICHARM 森特別研究監の司会のもと、閉会式が開催された。

まず、国土交通省水管理・国土保全局の草野慎一審議官から、基調講演 “Japan's New DRR Policy - River Basin Disaster Resilience and Sustainability by All -”が行われた。

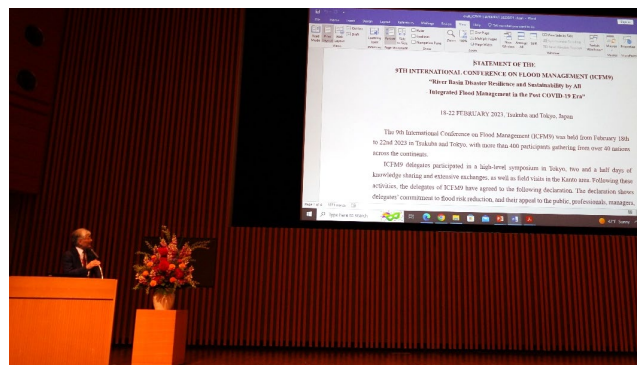


ついで、Prof. Slobodan Simonovic による「ICFM9 Erich Plate Best Student Poster Award」の授賞式が行われた。ICFM Ad Hoc Committee メンバーによる審査の結果、受賞者は以下の3編となった。

- 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



次に、小池センター長から「ICFM9 Statement」案の提示と、ICFM9 のまとめ報告が行われた。報告の最後には、ICFM9 主催者として ICHARM のスタッフが壇上に上がり、会場から喝さいを浴びた。





最後に、小池センター長から Prof. Slobodan Simonovic に、ICFM を引き継ぐことを象徴する「トーチ」が渡され、Prof. Slobodan Simonovic および Institute for Catastrophic Loss Reduction (ICLR) の Executive Director である Prof. Paul Kovacs から、次回 ICFM10 (2026 年夏) のホストを ICLR が務めることが発表され、ICLR が属する The University of Western Ontario (WESTERN) の President である ALAN SHEPARD 氏による紹介ビデオが放映された。



21 日午後と 22 日は、4 章で示すように、宇宙航空研究開発機構 (JAXA)、防災科学技術研究所 (NIED)、国土交通省関東地方整備局利根川上流河川事務所、下館河川事務所、江戸川河川事務所のご協力を頂き、希望者による現地視察を実施した。

以上をもって、4 日間にわたった ICFM9 本会議は無事終了した。

会議終了後には、参加者からのコメントを踏まえた「ICFM9 Statement」(資料 19) が公表された。

### 3. 2 Outline of English version

【Day 1: Sunday, February 19】

The opening ceremony was held at 9:15 in the Leo Esaki Main Hall moderated by Dr. MATSUKI Hirotada, ICHARM Deputy Director.

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 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 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:



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.
2. Mitsui Consultants Co., Ltd.
3. CTI Engineering Co., Ltd.
4. NTT DATA
5. Yachiyo Engineering Co., Ltd.
6. Japan Bosai Platform
7. NEXUS EC SDN BHD
8. Hitachi Power Solutions Co.,Ltd.



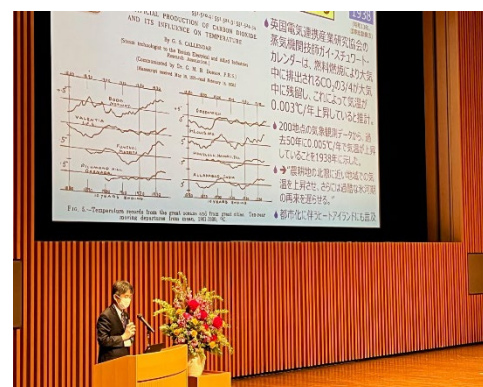
Special Sessions were also held concurrently with Parallel Sessions. The following sessions took place on Day 1:

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.

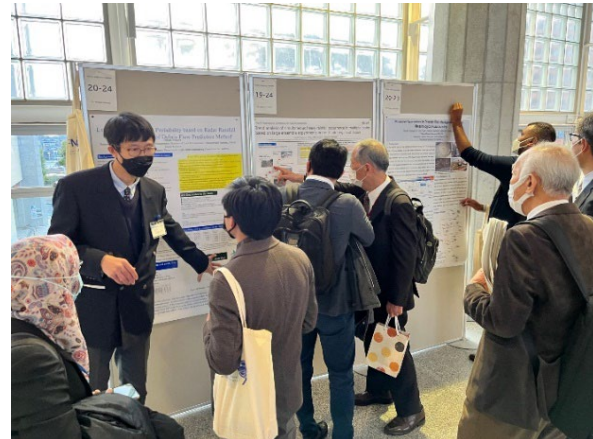
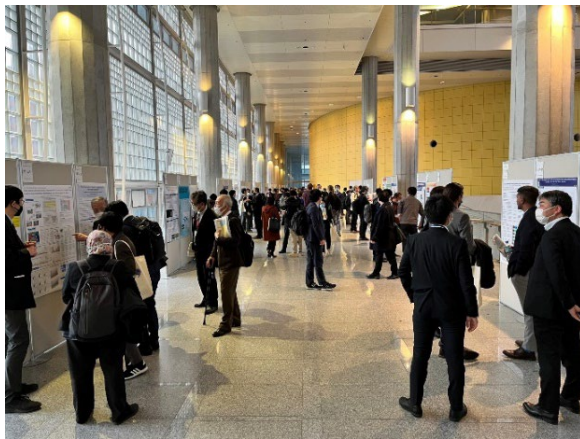
Professor OKI Taikan of the Graduate School of Engineering of the University of Tokyo, who is also the special advisor to the university president, delivered a special lecture titled "Climate Change and Floods."

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.



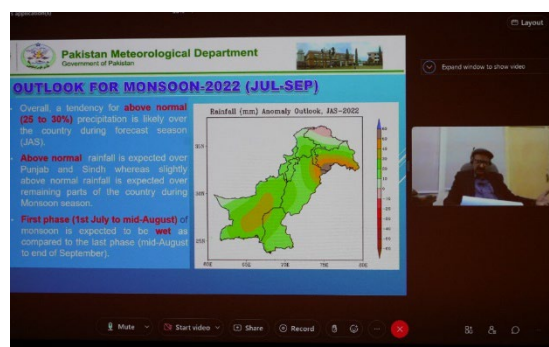
【Day 2: Monday, February 20】

“Plenary Session 2: Integrated Flood Management” began at 9:15. 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. The moderator was ICHARM Research Specialist NAGUMO 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 moderated by ICHARM Research Specialist AIDA Kentaro. Twenty-three participants spoke about their research in 45 seconds.



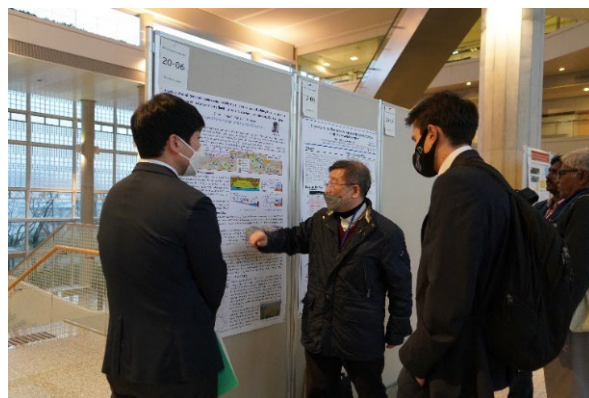
Parallel Sessions began at 13:00.

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

Session title	✓ Organizer
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	✓ Dai Yamazaki, The University of Tokyo ✓ Yukiko Hirabayashi, Shibaura Institute of Technology ✓ Mark Trigg, University of Leeds, UK ✓ Dirk Eilander, 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, 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 moderated by Mr. MORI Noriyuki, ICHARM Director for Special Research. 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

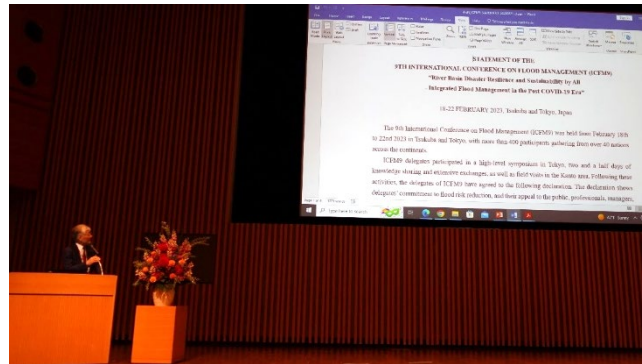
Aminingrum, Afrial Rosya, Linda Lestari, Rucky Nurul WD, Mizan B. F. Bisri

- 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 Statement 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.



On the afternoon of the 21st and 22nd, site visits were conducted with the cooperation of the Japan Aerospace Exploration Agency (JAXA), the National Research Institute for Earth Science and Disaster Prevention (NIED), and three local offices of MLIT's Kanto Regional Development Bureau (the Upper Tone River Office, the Shimodate River Office, and the Edogawa River Office).

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

## 4. 現地視察

2月21日午後と22日には、希望者を対象として、つくば市内研究所視察と関東近郊洪水対策施設視察をそれぞれ実施した。それぞれ約60名が3班に分かれて参加した。

### 4. 1 つくば市内研究所視察

会議会場から半日で移動が可能な視察先として関係者間で調整および検討した結果、以下の施設・研究所を視察先として選定した。

- ①土木研究所 ダム水理実験施設
- ②土木研究所 ICHARM 洪水VR体験
- ③宇宙航空研究開発機構(JAXA)

それぞれの位置を以下の図に示す。



(地理院地図(国土地理院)を加工して作成)

まず、土木研究所 ダム水理実験施設を訪問した。河道保全研究グループ水工チームの研究者から、各種ダム模型を見ながらどのような実験を行っているかが説明された。



ついで、ICHARM 棟講堂に移動し、ICHARM 研究員の説明のもと、ICHARM が開発している仮想洪水体験システム（Virtual Flood Experience System (VFES)）を、各参加者が VR ゴーグルを用いて体験した。



最後に、宇宙航空研究開発機構（JAXA）へ移動し、世界の雨分布速報である「GSMap（Global Satellite Mapping of Precipitation）」の説明を受けた後、各種人工衛星が展示されているスペースドームを見学した。



#### 4. 2 関東近郊洪水対策施設視察

22日には、つくばから1日で移動が可能な関東近郊の洪水対策施設を視察した。国土交通省との調整の結果、下記を視察先として選定した。

- ①2015年の関東・東北豪雨で鬼怒川破堤地点と復旧プロジェクト
- ②首都圏外郭放水路
- ③渡良瀬遊水地

昼食会場は、1947年のカスリーン台風での破堤地点に位置する、国土交通省大利根出張所の会議室とした。

また、防災科学技術研究所の大型降雨実験施設において、時間雨量300mmの降雨を体験した。

それぞれの位置を以下の図に示す。



(地理院地図 (国土地理院) を加工して作成)

まず、2015年の関東・東北豪雨にて被害を受けた、鬼怒川左岸の破堤地点（常総市三坂地区）を視察し、ソフト対策・ハード対策含む「鬼怒川緊急対策プロジェクト」について国土交通省下館河川事務所の職員から説明を受けた。



2015年の洪水状況

(国土交通省下館河川事務所作成資料から引用)



ついで、首都圏外郭放水路（埼玉県春日部市）に移動し、「防災地下神殿」とも言われる調圧水槽に入り、国土交通省江戸川河川事務所の職員の説明を受けながら、内部を視察した。





次に、渡良瀬遊水地を視察した。遊水地北部に位置する展望タワーに移動し、国土交通省利根川上流事務所の職員から、利根川の支川である渡良瀬川の最下流に位置する遊水地の役割の説明を受けた。



渡良瀬遊水地 全景

(国土交通省利根川上流河川事務所 ホームページ  
「渡良瀬遊水地について」から引用)



最後に、つくば市の防災科学技術研究所を訪問し、大型降雨実験施設にて、時間雨量 300mm の降雨をバスの中から、および自ら傘をさしながら体験した。



以上で、1 日半にわたった現地視察は終了した。視察にご協力いただいた国土交通省各事務所、宇宙航空研究開発機構、防災科学技術研究所の皆様に対して深く感謝する。

## 5. 一般公開シンポジウム「君は想定外の洪水から生き残れるか ～e-sports@KasenBousai～」開催概要

### 5. 1 はじめに

気候変動に伴う豪雨災害の激甚化により、大規模な人的被害が発生している。このため土木研究所水災害・リスクマネジメント国際センター（ICHARM：アイチャーム）では、洪水氾濫に対するリアリティの高い疑似体験を通じて洪水に対するわがこと感を醸成し、事前の備えを促すため、VR による疑似（仮想）洪水体験システムを開発している。本システムは、デジタルツインで再現した仮想空間上において土砂や流木を伴う洪水氾濫シミュレーション結果をVR で動的に表示し、体験者の分身となるアバターを操作し、洪水時における体験を行うものであり、臨場感をもった洪水体験が可能となる。

本アウトリーチ活動では、令和4年4月に熊本で開催された第4回アジア太平洋水サミットの成果の一つとなった「ユースによるリーダーシップ、イノベーション」を踏まえ、上記ICHARMが開発したVRによる仮想洪水体験システムを一般の住民、特に今後の防災活動を担う中学・高校・大学生に体験してもらい、洪水体験を通じて洪水に対する危険性や遭遇の可能性を実感し、水災害に対する心構えや準備を促すことを目的としている。またその一方で、VRシステムのリアリティや体験効果を評価して頂き、さらなる改良に繋げる機会とした。

上記を鑑み、本アウトリーチの具体的な手法として、中学・高校・大学生を含む一般向けのシンポジウムを開催し、仮想洪水体験システムについて効率的に聴講者に訴求することとした。ただし、一般的な講演形式では、参加者の参加モチベーションが高まらず、効果的な訴求となりにくいため、挑戦的な試みとしてつくば市近郊の中学・高校・大学計6校の参加による「水防災競技会」を実施することとした。

具体的には、会場内に設置された6台のパソコンおよびモニターを用いて、仮想洪水体験システムで再現した同じ仮想空間上に存在する6校それぞれのアバターを各校の代表者が操作し、それらアバターが洪水時の情報収集や避難道中における高齢者への声掛け等を行いながら、いかに効果的に避難できるかについて、得点形式で競う競技会の形式を採用した。他の聴講者は、会場に設置された大型モニターで競技の様子を見ることが出来るほか、ステージ上のスクリーンに投影される各校の位置情報を見ながら観戦ができる。また、競技中は逐次チャット方式で、参加校を応援したりコメントを投稿したりできる仕掛けを導入した。これらにより、単純に仮想洪水体験システムを講演形式で説明するのではなく、会場全体が一体感を持って、自然とシステムの仕組みや重要性、およびねらいなどを理解できるよう工夫した。

また、「水防災競技会」の実施だけでなく、その前後において、専門家による基調講演および仮想洪水体験システムの基礎となる研究の紹介、国土交通省による洪水被害軽減の取組である「マイ・タイムライン」の紹介を行い、理解がより深まるよう配慮した。

なお、本アウトリーチ活動は、第9回国際洪水管理会議（ICFM9）の実施時期に合わせて開催し、国内外



洪水VRシステムにおける「アバター」（体験者の分身）

から同会議に参加する洪水管理に関する専門家も、本シンポジウムに気軽に参加できるよう配慮した。

## 5. 2 シンポジウム概要

- 日時：令和5年2月19日（日）13：30－15：30
- 場所：つくば国際会議場 Leo Esaki メインホール（茨城県つくば市竹園）
- タイトル：「君は想定外の洪水から生き残れるか ～e-sports@KasenBousai～」
- 言語：日本語のみ
- 参加費：無料
- スケジュール構成：

(2分)【シンポジウム趣旨説明】 ICHARM 上席研究員 栗林大輔

(5分)【開会挨拶】 ICHARM 水災害研究グループ長 松木洋忠

(20分)【基調講演】 東京大学総長特別参与、大学院工学系研究科教授 沖大幹  
講演タイトル「気候変動と洪水」

～休憩（5分）～

(50分)【水防災競技会 ～e-sports@KasenBousai～】

○つくば近郊の中学・高校・大学計6校による気候変動下での洪水疑似体験

- 筑波大学
- 茨城県立竹園高校
- 茨城県立並木中等教育学校
- つくば市立学園の森義務教育学校
- つくば市立谷田部東中学校
- つくば市立手代木中学校

解説者：筑波大学准教授 白川直樹

～休憩（5分）～

(7分×3)【各取り組みの概説】

- ICHARM で開発している水位予測システムおよび氾濫解析システムの紹介  
ICHARM 上席研究員 久保田啓二郎
- ICHARM で開発している疑似洪水体験システムの紹介  
ICHARM 上席研究員 新屋孝文
- マイ・タイムラインの紹介  
国土交通省関東地方整備局下館河川事務所 海津義和所長

(5分)【閉会挨拶】 ICHARM 上席研究員 栗林大輔

次ページに、本シンポジウムのチラシを示す。

一般公開シンポジウム

# 君は想定外の洪水から 生き残れるか

～e-sports@KasenBousai～

気候変動により国内外で激化する洪水災害。予想しない洪水も発生するかも！？  
その時に備え、あなたも「マイ・タイムライン」を作成し、  
洪水時の避難をデジタルツインの世界で一緒に体験してみませんか？

## 日時

2023年2月19日(日)  
13:30～15:30

## 場所


つくば国際会議場(エポカルつくば)  
Leo Esaki メインホール

参加無料!

誰でも  
ご参加ください!



## プログラム

- 開会挨拶 ※言語:日本語
- 基調講演  
「国内外の気候変動  
問題について」(仮)  
東京大学 総長特別参与、  
工学系研究科教授  
**沖 大幹 氏** 
- 水防災競技会  
～e-sports@KasenBousai～
- 洪水に関するICHARMの  
研究紹介 
  - 水位予測システムおよび  
氾濫解析システム
  - 疑似洪水体験システム
- 洪水に関する国土交通省の取組紹介  
• マイ・タイムライン
- 閉会挨拶

主催：国立研究開発法人土木研究所  
水災害・リスクマネジメント  
国際センター(ICHARM)

### 5. 3 シンポジウム報告

基調講演に先立ち、ICHARM 栗林大輔 上席研究員から趣旨説明、および ICHARM 松木洋忠 副センター長から開会挨拶を行った。

#### 5. 3. 1 基調講演

東京大学総長特別参与、大学院工学系研究科 沖大幹 教授から、「気候変動と洪水」と題して 20 分間ご講演頂いた。

沖教授からは、近年 CO<sub>2</sub> 濃度が年々上昇して地球全体の気温が上昇を続けていること、気温が上がると大気中の水蒸気量が増加し降水の強さも増加すること、さらには温暖化に伴い地球上の多くの地域で洪水頻度が増加するとする研究結果が紹介された。また、日本においては第二次世界大戦後には洪水による犠牲者は減少してきたが、被害額は横ばいか増加傾向にあること、東京は東アジアだけではなく世界のどんな地域でもこれまでに経験されていない気候リスクに曝される可能性があることなどが紹介された。結論として、

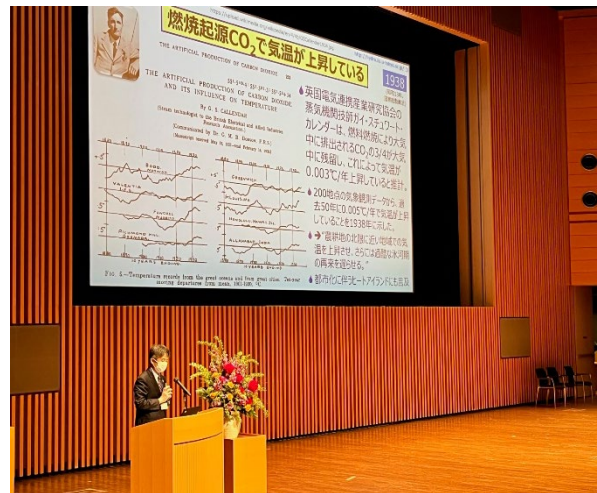
- ▶ 今すぐに温室効果ガスの排出を止めても、今後しばらく気温と海面水位は上昇し、洪水や干ばつなど極端な現象の頻度が増大。
  - ✓ 排出済の温室効果ガスのせいでは不可避。その後どうなるかは我々次第。
  - ✓ 緩和策と適応策の両方が必要
- ▶ 例え温暖化に伴う気候変動がなくても、極端な豪雨や洪水は生じる。
  - ✓ 水インフラの整備、予警報の精度向上と日頃からの避難の準備が必要。
  - ✓ 人口減少を好機ととらえ、安全な場所に集まって住んで守るのも吉。
  - ✓ 河川拡幅や貯留施設整備も効果有。

ことが示された。

#### 5. 3. 2 「水防災競技会」

今後防災活動の中核を担う中高生等を対象とし、ICHARM で開発を進めている疑似（仮想）洪水体験システムを活用したグループ対戦型イベントを通じて、気候変動下での洪水災害を経験して洪水の危険性を理解するとともに、マイ・タイムライン作成や水位・雨量情報の収集など、防災における事前準備の重要性を学習することを目的として開催した。

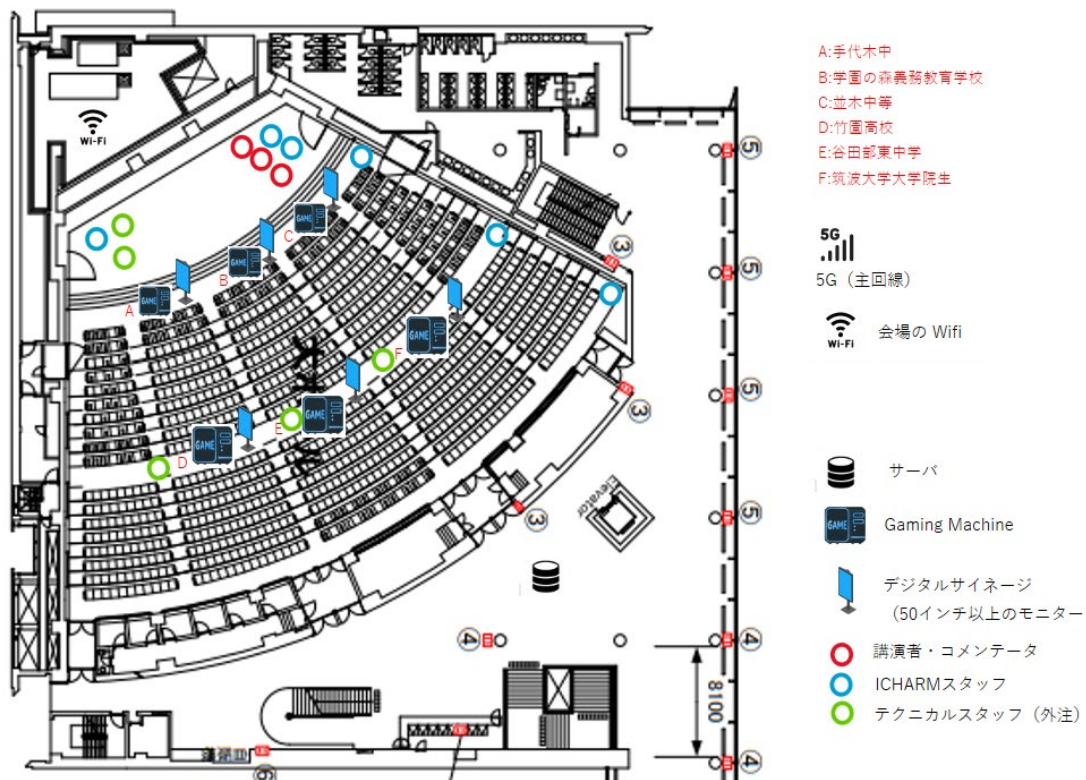
参加校および参加者は、以下の 6 校（大学 1 校、高校 1 校、中学校 4 校）である。



東京大学総長特別参与、大学院工学系研究科 沖大幹 教授による基調講演

- 筑波大学：4名
- 茨城県立竹園高校：4名
- 茨城県立並木中等教育学校（中学生の参加）：2名
- つくば市立学園の森義務教育学校：11名
- つくば市立谷田部東中学校：4名
- つくば市立手代木中学校：4名

競技会を開催するにあたり、会場フロアを以下のように大きく6つに分け、それぞれの区画の最前席に仮想洪水体験システム用のパソコンと大型モニターを設置した。また、各パソコンを LAN 接続し、管理者用パソコンにて各校のアバターの避難の様子をステージ上のスクリーンにて俯瞰画面で確認できるようにした。



会場設営模式図（客席を大きく6つに分けて大型モニターとパソコンを設置）  
 （つくば国際会議場の資料を元に加工）



会場の様子（客席を大きく6つに分けて大型モニターとパソコンを設置）

栗林上席研究員から、仮想洪水体験システムの概要や、体験の舞台となるつくば市上郷地区の特性と操作方法について簡単に説明した後、まず練習として1回目の体験を実施した。

実際の仮想洪水体験システムの体験は以下のような流れである。

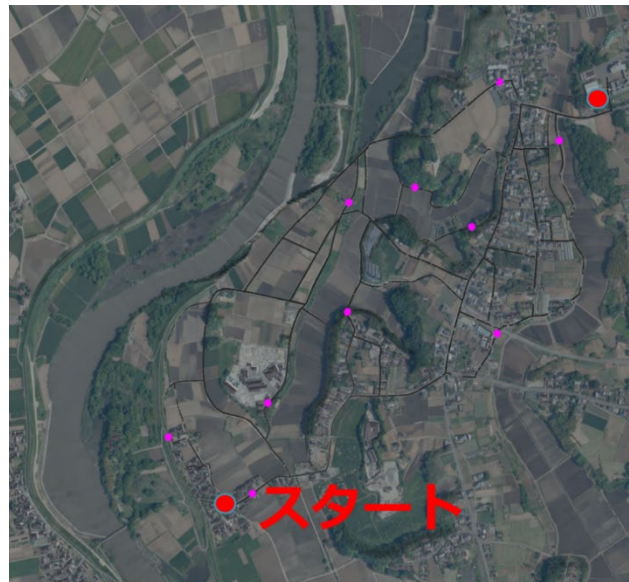
まず、避難前の家の中にいる場面からスタートする。家の中には洪水ハザードマップ、テレビ、携帯電話、パソコンなどが置かれており、その前に立つと、選択肢が表示され、情報を

入手することが出来る。情報を入手すると加点される。なお、画面には、近傍の小貝川に設置されている上郷地点での水位も表示されている。

ある程度、情報を入手したと判断すれば、上郷地区の水位情報も参考にしながら家の外に出て避難を開始する。避難場所は、北東方向にある指定避難場所である上郷小学校で、画面では緑の光の塔が立っている。なお、紫の光の塔は、仮想に設定し



家の中の画面



**上郷小学校  
(ゴール)**

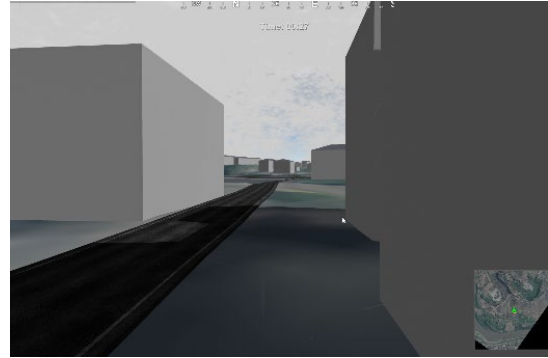
上郷地区の地形およびスタート・ゴール地点  
(紫の点は仮に設定した要避難支援者が入る施設)



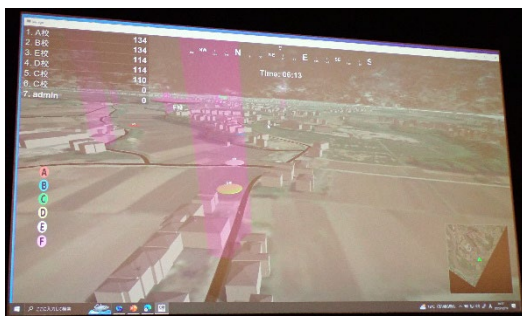
た、高齢者などの要避難支援者がいる場所で、声掛けしたり、助けたりしても加点される。ただし、助けると一緒に行動することになるので、移動スピードが遅くなる。また、時間がたつと浸水が発生し、浸水区域を歩くと減点される。得点を重ねながら、避難場所に着くと終了となる。



避難中の俯瞰画面  
(緑の塔が避難場所)



避難中の画面



各校避難中の管理者俯瞰画面（ステージ上の大型スクリーンに表示。各校の位置情報が聴講者にもわかる）



競技中の様子

体験2回目となる本番では、解説の白川准教授とともに栗林上席研究員が実況を行った。実況の合間には、競技観戦が冗長にならないように、時折洪水に関する下記質問の回答を頂きつつ進行した。

- 洪水時にはどのような情報を事前に入手する必要があるか？
- 情報を活用した上での、もっともよい避難のタイミングというのはあるか？
- 大雨や浸水中の避難で心がけることはあるか？
- 「共助」の重要性はどのようなものか？
- 氾濫した水はどのように危険なのか？

体験は 10 分間ほどで実施し、結果 B,C,F 校がゴールした。競技中は、各校の位置情報がステージ上に映し出されるとともに、各校別の大画面モニターでも各校の避難の状況がわかるため、会場は非常な盛り上がりを見せ、ICHARM が開発した仮想洪水体験システムの機能を聴衆にわかりやすく訴求できたと考えられる。また、競技中にはシンポジウム参加者の一体感を出すため、参加者が所持するスマートフォンなどにより、競技者を応援するコメントや、競技の感想などを書き込むためのアドレスを開設した。入力していただいたコメントは競技中あるいは後に適宜読み上げた。



競技終了時の画面



A 校 手代木中学校



B 校 学園の森義務教育学校



C 校 並木中等教育学校



D 校 竹園高校



E 校 谷田部東中学校



F 校 筑波大学

### 5. 3. 3 洪水被害軽減に関する研究・取組紹介

「水防災競技会」で使用した疑似（仮想）洪水体験システムに活用されている研究技術として、土木研究所で実施している2件の研究紹介を行った。

1件目は「水位予測システムおよび氾濫解析」と題して、ICHARMの久保田啓二郎上席研究員から発表を行った。まず、日本における過去の洪水事例を示しながら、国土交通省が実施している「水害リスクライン」が紹介された。ただし、水位予測が行われていない中小河川も約1,500あり、それらでも適用可能な安価・簡便なシステムの開発を行っていること、および、そのシステムの基となる技術として「RRIモデル」や「水位データ同化技術」、およびリアルタイム自動配信システムなどの開発を行っていることが紹介された。

続いて、ICHARM新屋孝文上席研究員から、「疑似洪水体験システムの開発」と題して、2015年の関東・東北豪雨により茨城県常総市で避難遅れが発生した事例が紹介され、人が避難しない心理学面での理由として「正常化バイアス」が説明された。そのような「正常化バイアス」にとらわれないための早期避難を実現するためには、「水災害への気づき」や「水災害時の適切な行動の促し」が重要であることが説明され、仮想洪水体験システムの概要が紹介された。仮想洪水体験システムでは、「水防災競技会」のような避難行動体験を多数の人が同時に行うことが出来、アバターの運動能力をコントロールすることで、災害弱者の身になっての体験も可能である。

ICHARMからの研究紹介に続き、国土交通省で推進されている「マイ・タイムライン」の取組について、国土交通省関東地方整備局下館河川事務所の海津義和所長から説明された。「マイ・タイムライン」とは、住民一人ひとりのタイムライン（防災行動計画）であり、台風等の接近による大雨によって河川の水位が上昇する時に、自分自身がとる防災行動を時系列的に整理し、自ら考え命を守る避難行動のための一助とするものであることが紹介された。

2015年の関東・東北豪雨に伴う常総市洪水においては、4,300名が救助されるという多数の「逃げ遅れ」が課題となり、同年に国土交通省が「水防災意識社会再構築ビジョン」を策定し、住民自らが避難行動を起こすことの重要性が提唱されたことが紹介された。その後、下館河川事務所がモデル地区の住民の皆さんと



ICHARM  
久保田上席研究員



ICHARM  
新屋上席研究員



国土交通省下館河川事務所  
海津所長

議論を重ね、2017年に「マイ・タイムラインノート」が作成されたことが説明された。その後、流域自治体と連携したマイ・タイムラインの普及や、小中学生向けのマイ・タイムライン作成教材として「逃げキッド」、およびマイ・タイムラインリーダーの認定制度などが紹介された。

最後に、栗林上席研究員から閉会挨拶を述べ、シンポジウムは無事終了した。

以下、水防災競技会に参加した、各校の参加者の感想を引用し、報告を終了する。

- 水防災競技会では、同級生と協力しながら、なんとか避難所にたどり着くことができました。練習の段階では、どこに逃げたらいいいのかという焦りで良い判断をできずに水に飲み込まれてしまいましたが、本番では、冷静に避難することができました。本番で避難所に無事に辿り着けたのは「冷静でいられたこと」と「練習の時に避難経路を確認していた」からだと思います。いつ起こるかわからない自然災害に、冷静に対応できるように事前の準備が必要なのだと改めて感じました。
- e-sportsの対抗戦では、他校と一緒に競技ができて楽しかったです。また、スマホでチャットができるのも良いと思いました。競技中に応援メッセージが送れるのも面白かった。
- シンポジウムをとっても楽しみにしていました。講演もとても勉強になりました。実際に洪水が襲ってきたら、どのように避難をするか、イメージをしながら勉強することが出来ました。事前にどのような準備しておくべきか、マイ・タイムラインで勉強をして、洪水VRでより多くの命を守るためにどのように避難すればいいか考えるきっかけが出来ました。
- 実際に洪水にあった時に、どのように避難行動をすればよいか考えることが出来ました。VR体験ではリアルに感じられとても楽しかったです。安全な街を実現させるために、いろいろと考えるきっかけになりました。
- 洪水の心配をしたことがなかったので、洪水のことについてよく知れてとてもよかった。また、地球温暖化などのわかりやすい話を聞けたので良かった。VR体験ではとてもひりひりする場面とかもあったので、洪水への危機感が高まった。
- 自分の家は洪水の心配はなかったが、このシンポジウムを通じて、避難する場所や避難するときに声掛けをしたり、高齢者を助けるなどの行いや、洪水は地震などと違い対策できるなどの知識をたくさん吸収することが出来た。

#### 5. 4 成果

本シンポジウムは、気候変動に伴う豪雨災害の激甚化により大規模な人的被害が発生している洪水災害に



マイ・タイムライン作成教材  
「逃げキッド」

関し、ICHARM で開発を行っている疑似（仮想）洪水体験システム（洪水 VR システム）の普及を図ることを目標としたものである。

シンポジウム全体に対する反応は、体験参加者のアンケートを含めおおむね好意的なものが多く、シンポジウムイベントとしては成功したと考えている。

当初は VR 専用ゴーグルを使用した仮想洪水を、希望者に体験していただくことを予定していたが、より効果的に洪水 VR の良さを多くの方に体験して頂くために、中学・高校・大学の学生による競技会の形式で、会場全体で洪水 VR を体験する方式とした。これにより、VR 専用ゴーグルでの個別の体験ではなく、競技会形式での共同体験となったことで、参加者はより強く仮想洪水体験システムを記憶に深く刻んだことが推察され、競技会形式は洪水体験システム普及の上で効果的な手法であったと認識している。

また、本競技会の準備作業を通じて、洪水避難時での集団行動、競争心理、達成度の数値化などの要素を取り入れた避難行動の疑似体験を行うシステム開発が出来た。

## 6. おわりに

現地視察を含め4日間にわたった本会議は、天候にも恵まれ無事に終了した。COVID-19がなかなか収束しない状況であったものの、国内外から多くの方の参加を頂き、リアル開催できたことに、主催者としてはうれしい限りであった。

ICHARMとしては、今回の会議で再強化することが出来た各種ネットワークを通じて、国内外の水災害被害軽減により一層邁進する所存である。

最後に、次へ向けたより良い国際会議開催のために、本会議に携わったICHARMスタッフによる主な反省事項を以下に列記し、本報告書を終了する。

### <開催時期>

- ✓ 開催時期は、9、10月頃のほうが、予算執行や残務処理の面では良いと思う。現地視察に関しても、2月実施は寒い。
- ✓ 年度末の開催であったため、本イベントでの不確定要素に備えるために土研の交付金予算執行を控えなければならない状況が続いた。

### <ICHARM 部内連絡>

- ✓ CCのメールが飛び交い、結果的に重要情報も埋もれた。
- ✓ ICFM9全体メール等が必要以上に使用されており、情報を追えない状況が多々あった。最終的にまとまった情報をどこかのファイルに置く等の方法も良いのでは。
- ✓ メールベースでのやり取りで単純な報告や、直接関係のないメーリングリストからのメールで重要な情報を追うことが手間になることがあった。内容に応じて Teams のチャットなどを活用しても良かったと思う。

### <会場設定>

- ✓ 受付(1階)とスタッフ控室(4階)が遠かった。学会受付で預かったちょっとした作業ができるよう、受付と近い場所(1階など)に控室があればなお良かったかもしれない。
- ✓ Awardの椅子準備などは当日手配となった。臨機応変力が重要。

### <発表者への連絡>

- ✓ 著者、査読者とのやり取りは、最近の国際会議(学会)はほとんど電子化・システム化(クラウド化)されている。今回のようなメールベースのやり取りは多大な労力を要したと感じる。できれば準備段階で、クラウドベースの著者・査読者とのやり取りを計画できれば良かった。

- ✓ extended abstract の締め切りや、early-bird registration の〆切など、日付がリアナウンスされることが多かった。
- ✓ Abstract、Extended Abstract など、どの分量で、いつ出すのか、必須なのかどうなのか、レター発行や、Visa の手続きはどう進んでいくのかなど、後からでてきた情報が多かったように思われ、しかもそれらがメールで連絡されたりして、わかりづらいことになっていた。
- ✓ Proceedings をどのようにダウンロードするか、ほとんどアナウンスが無くて、わかりづらかった。登録者向けの配布資料に、アクセス方法を説明した紙を入れるとかするべきものであると思う。

#### <投稿・受付などのシステム化>

- ✓ 論文投稿のための My Page と、参加費支払いのための My Page が並立することになり、参加者に対してあまり親切でなかった。
- ✓ 受付や昼食券・Field Tripなどはデジタル化して行うとスムーズに進むかと感じた。
- ✓ 事前に PPT を収集したが、かなり手間だったので、システム上で発表者自身がアップロードするシステムがあればよかった。

#### <弁当・昼食>

- ✓ 昼食の手配に一部混乱あり、食べ物には気をつけるべき。
- ✓ 弁当の事前注文形式は、ロジ作業が非常に多く煩雑で、実際にトラブルも発生した（足りない、余る、業者への支払い方法など）。費用的にも無駄が多く、お金が絡むので大きなトラブルに発展しかねない。一括で業者に任せてシステム化するか、お金をかけたくないなら余裕を持って締め切るなど相当の割り切りが必要であると思う。

#### <プレナリーセッション・パラレルセッション>

- ✓ プレナリーセッションは、聴講のみの来場者を集めるためには重要な目玉企画であるから、普通は、顔写真付きで講演内容とかの案内が HP に載せられると思う。しかし、今回、そのような情報が無くて、HP にアップされたプログラムもわかりづらくて、わざわざ基調講演をしてもらっているのに、プレナリーの魅力を伝えきれていなかった。
- ✓ Co-chair の役割が次第に増え、あまりクリアではなかった。

#### <特別セッション>

- ✓ 特別セッションの発表リストや会場等の情報が、登録者向けの配布資料に一切載っておらず、どのような発表があるのか、発表リストが不明な状況となっていた。

#### <演出>



- ✓ 予算や時間の都合上やむを得なかったが、開閉会式での簡単なコンセプト動画の上映や、プロ（または地元学校の放送部アナ等？）の MC、地元サークル等の伝統芸能上演などがあれば、“手作り感”は薄められたように思う。
- ✓ 閉会式の次回開催地の紹介でフラッグを渡したのは、物理的にバトンを渡すことで互いに終わり始まりを認識できるのでとても良い演出だった。

#### <技術展示ブース>

- ✓ 夕方頃、2階のポスターセッションは賑わっているのに多目的室は閑古鳥という状態があった。来客者が帰る途中の動線上にブースがなかったことが要因か？ 2階のポスターセッションと並んで展示していれば状況は違っていたのではないか？
- ✓ session 等が隙間なく入っていたので、なかなか人が集まらず、企業の方が手持ち無沙汰だった。

#### <レセプション>

- ✓ 日本酒企画は喜ばれていた。食べ物の分量・品揃えともに、良かった。

#### <外国人招へい>

- ✓ 外国人の招へいにあたっては航空券を適切なタイミングで余裕を持って、かつ招へい者に負荷がかかりにくい方法で購入できるような制度（特に 100 万円以上かかる招へいについて）が必要だと強く思った。また、招へい者からもらうべき情報の照会が五月雨式になり双方に効率が悪いと感じた。

## **Parallel Session 1: Lessons Learned from Recent Flood and Sediment Disasters towards Better Understanding and Actions**

### Concept note:

Since ICFM7 in 2017, the world has frequently experienced flood and sediment disasters. This session focuses on lessons learned from recent flood and sediment disasters. The session will be an opportunity to share the experiences of recent disasters and discuss their characteristics to find the right direction to plan countermeasures for future disasters. The lessons to be addressed in the session also include lessons learned in the different phases before and after a disaster, e.g., emergency response, recovery, and rehabilitation, and lessons about technology used for rapid assessment of disaster damage. The session will also discuss how to archive and utilize the lessons for the capacity development of stakeholders and disaster risk reduction in the future.

### Session topics

- 1) Lessons about the characteristics of recent flood and sediment disasters

*Keywords: floods, sediment disasters, hazard, characteristics, mechanism, field observation, lessons*

- 2) Lessons about emergency response, recovery, and rehabilitation from flood and sediment disasters

*Keywords: floods, sediment disasters, emergency response, recovery, rehabilitation, contingency planning, build back better (BBB)*

- 3) Lessons about technology used for quickly assessing disaster damage

*Keywords: damage investigation, post-disaster damage assessment, situation report, damage data collection, satellite image analysis, UAV*

- 4) Archives of lessons and knowledge learned from recent disasters

*Keywords: lessons, after action review (AAR), knowledge management, knowledge hub, archives, disaster museum, capacity development, education*

## **Parallel Session 2: Data Integration, Modelling, and Forecasting:**

### Concept note

Damage due to increasingly intense and frequent water-related hazards, such as flood and sediment disasters, is expected to worsen manifold in the near future. This aggravation is attributable to global warming, vulnerable livelihood due to rapidly growing population and unplanned urbanization, poor accessibility to the latest knowledge and technology, and inadequate public perception of disaster risks. On the other hand, science and technology have continued making advancements in observation technologies including remote sensing, artificial intelligence, big-data analysis, modelling capacities, and helping experts and other stakeholders gain additional capabilities and thus contribute to making significant changes in confronting water-related disasters. The goal of this particular session is to provide a premier forum for researchers and practitioners working on issues regarding water-related disasters involving flooding, sediment, and driftwood to discuss and share recent advancements in science, technology, modeling, and practices under the COVID-19 pandemic for better management of water-related disaster risks and damage.

### Session topics

1) Application of multi-platform data, integration/merging, artificial intelligence, big-data analysis, GIS, and remote sensing to flood- and sediment-related hazard and risk mapping

*Keywords: ground and satellite observation, bias correction and merging, artificial intelligence, big-data integration and analysis, GIS, flood monitoring, hazard and risk mapping*

2) Deterministic and ensemble weather forecasting of heavy rainfall prediction, uncertainty estimation, and application of artificial intelligence and machine learning

*Keywords: weather forecasting, downscaling, data assimilation, bias correction, ensemble prediction, uncertainty estimation, artificial intelligence, machine learning*

3) Modeling of floods and sediment- and driftwood-related disasters and risk assessment

*Keywords: hydrological and hydrodynamic modeling, sediment and/or driftwood laden flood, sediment transport, driftwood, bank erosion, channel change, hazard and risk mapping, river channel design and management, water diversion,*

### **Parallel Session 3:**

## **Assessment of Changing Global Climate Risks and Their Impacts on Flooding**

### Concept note

Due to ongoing global warming, record-breaking rainfall events and devastating flood disasters (e.g., 2021 floods in Germany and China) frequently occur around the world. Increasing demands for social resilience and adaptation measures for flood disaster risk and damage reduction require prompt, reliable, and quantitative climate risk assessment. Statistical analysis of global climate models (GCM) projections and their downscaling have paved the path to quantify climate change risks under different global warming scenarios. The recent development of large ensemble climate projections, e.g., d4PDF (Japan), UKCP18 (UK), ClimEx (Canada), MPI-GE (Germany), and CORDEX, provides tools to assess climate risks for rare events with less uncertainty. These experiments have extended the horizon of climate change risk assessment of natural hazards, flood impacts, agriculture and food security, and climate adaptation policies. This session will discuss recent advances in conventional and large ensemble climate projections and their applications to assess climate change impacts on future flood risks.

### Session topics

- 1) Assessment of climate change impact on heavy rainfall, flood events, and uncertainty

*Keywords; extremes, downscaling, ensemble, bias, uncertainty, atmospheric moisture pathway, storyline approach*

- 2) Climate change adaptation, risk assessment, and implications for decision makers

*Keywords: adaptation opportunity/constraints/planning/implementation, human settlements/security/well-being, climate resilience*

## **Parallel Session 4:**

### **Flood and Sediment Disaster Counter Measures: Structural and Non-structural Approaches (including early-warning systems)**

#### Concept note:

Flood and sediment disasters are expected to increase in frequency and scale around the world in association with rapid population growth and climate change. Effective countermeasures should be implemented to reduce the vulnerability to such disasters, using various approaches, both structural (e.g., flood control by dams, river improvement works, and sediment source control and trapping works) and non-structural (e.g., forecasting and early warning, evacuation planning, and emergency response preparedness). Particularly, recent advancements in observation technology, numerical weather modeling, flood and sediment disaster forecasting, dam operation, early warning, and risk communication provide a unique opportunity to utilize structural and non-structural approaches in a combined way to control and mitigate the impact of water-related disasters effectively. This session will discuss recent advancements in both approaches and their practical applications for better management of flood and sediment disasters.

#### Session topics

##### 1) Early warning and flood forecasting systems

*Keywords: early warning system, hazard map, flood forecasting, distributed hydrological model, evacuation, dam operation, flood control, flood monitoring, flood and sediment disaster*

##### 2) Structural countermeasures for flood and sediment disasters

*Keywords: flood and sediment disasters, structural countermeasures, dam, levee, bank protection, flood control, sediment transport, check dam, numerical simulation*

##### 3) River channel design – Structural and non-structural countermeasures-

*Keywords: river channel design, river planning, flood and sediment disasters, disaster mitigation, river channel morphology, bed deformation and channel change, bank erosion, sediment transport, numerical simulation*

## **Parallel Session 5: Flood and Sediment Disaster Resilience: Shock Absorption, Response and Transformation**

### Concept note:

River and sediment flooding is impacting many communities worldwide. This is due to significant geographic changes; areas once sparsely populated are now filled with growing cities, exposing new communities to an increased risk of extreme weather events. To avoid catastrophic damage, various countermeasures should be planned and implemented, including forward-looking urban planning (e.g., flood maps, flood plain management), insurance systems, transforming human behavior, analyzing socio economic impact and policy for relocation from vulnerable area. It is also important to foster a culture of preparedness in society. To do so requires disaster risk reduction beyond traditional programs by employing advanced technology such as virtual and augmented reality. Lessons from past critical situations, including ones under the COVID-19 pandemic, should be studied and shared. Effective restoration programs should be developed to support communities recovering from disasters. Ecosystem-based disaster risk reduction (Eco-DRR), such as nature-based solutions and green infrastructure, deserves due attention for its central role in strengthening the coherent implementation of various international frameworks under the 2030 Agenda for Sustainable Development.

### Session topics

#### 1) Flood plain management and urban planning

*Keywords: lowering risk by increasing resilience, physically resilient structures, urban planning, flood maps, flood plain management, "Build Back Better" in recovery, rehabilitation and reconstruction, Double embankment, open levee, city relocation, dam using paddy fields*

#### 2) Understanding of disaster risks using technology

*Keywords: flood maps, culture of preparedness, human behavior, socio economic impact, relocation planning, community basis practice, understanding of disaster risks, VR/AR, AI technology, lessons from critical situations, evacuation drill*

#### 3) Disaster Risk Reduction for flood Risk Management approaches based on ecosystem

*Keywords: ecosystems as a buffer against hazards, ecosystems for their livelihoods and resilience, nature-based solution, Eco-DRR, green infrastructure, double embankment, open levee, city relocation, dam using paddy fields*

## **Parallel Session 6: Flood Governance and Finance**

### Concept note

To achieve the sustainable development goals, the present society needs to be shifted to a sustainable and resilient society against water-related disasters, pressing regional and global threats to be further aggravated due to future climate changes. Since this challenge affects various stakeholders and important development areas worldwide, actions must be promoted at all levels through adequate coordination to fill the gaps among countries and organizations.

It is also essential to allocate more resources to accelerate actions against water-related disasters so that practical governance schemes can be established to manage the resources effectively and efficiently for implementing human resources development and other programs. Furthermore, the resources should be used to enhance the effectiveness of investments, which helps reduce disaster risks drastically and consequently achieve quality growth.

This session widely calls for research outcomes and practical actions that address local efforts in communities and regions, including good practices and lessons under the COVID-19 pandemic.

### Session topics

1) Strengthening governance capability for institutional structure improvement and community empowerment

*Keywords: community empowerment or CBDRR (Community Based DRR), governance, policy, plan and implementation of DRR, post-disaster recovery and reconstruction, quality growth, multi-stakeholder engagement, transdisciplinary approach, Sustainable solution, conflict solution, transboundary, poverty, gender, peace, inclusiveness, partnership*

2) Effective flood risk reduction policy by utilizing accessible flood hazard information

*Keywords: flood risk reduction policy, strategy, intervention, accessible information, flood hazard, flood vulnerability, flood exposure, flood protection, stakeholder, public engagement, good practices, lessons learnt*

3) Finance, investment, economic assessment, and cost benefit analysis in water-related disaster risk reduction, recovery and reconstruction

*Keywords: finance and investment, economic assessment, international cooperation, prior investment, cost benefit analysis, cost effectiveness, direct and indirect monetary impact, Emergency management cost, tax revenue, budget, subsidy, ODA (Official Development Assistance), PFI (Private Financial Initiative), PPP (Public Private Partnership), financial gap, Incentive, anti-corruption, building code*

4) Development and progress of the platform on water resilience and disasters

*Keywords: International Flood Initiative (IFI), Platform on water resilience and disasters, Integrated Flood Management (IFM)*

## **Parallel Session 7: Education and Capacity Building for Effective Flood Management**

### Concept note:

The ultimate purpose of education on water-related disaster prevention is for people to learn how to protect lives from water disasters. Therefore, it is necessary for them to know why water disasters occur, the current situations of local communities, and how to prepare for and respond to water disasters and put the knowledge and learning outcomes into practice. This session widely calls for research and practices in water disasters. Students and early career researchers are particularly encouraged to contribute to topic 3).

### Session topics

1) What people should know about water disasters: Learning why water disasters occur, the current situations of local communities, how to prepare for water disasters, and how to respond to water disasters at their onset.

*Keywords: disaster education, disaster prevention literacy, risk understanding, local communities, lessons learned, good practice, education for community leader, knowledge sharing, risk perception, evacuation under the spread of COVID-19 infection, capacity building, training*

2) What people should do to put into practice what they have learned: Putting knowledge into practice.

*Keywords: disaster education, behavioral change, multi-stakeholders, risk communication, local communities, evacuation drills*

3) What people should know about disaster risk education: Learning how to learn flood disaster risk reduction ranging from physical understanding to social solutions under climate change considering diverse human behaviors by combining education, training and experience.

*Keywords: end-to-end approach, proactive learning, on-site research and training, emergency management, incident command system (ICS)*



## **Parallel Session 8:**

### **Interlinkages between Flood & Sediment Disaster Resilience and the Sustainable Development Goals (SDGs): Interdisciplinary and Transdisciplinary Approaches**

#### Concept note:

Floods and sediment disasters, which have become increasingly severe and frequent around the world, are a critical impediment to the achievement of the 17 Sustainable Development Goals (SDGs) adopted by UN countries in 2015 to be achieved in 2030.

From the SDGs perspective, this session aims to discuss and share the recognition that flood and sediment disaster countermeasures contribute to the achievement of the SDGs with multipurpose and cross-cutting benefits and that the effects of those countermeasures will increase synergistically through collaboration with other projects and initiatives, including infection control measures for COVID-19. The session also aims to contribute to the achievement of the SDGs by discussing and sharing interdisciplinary knowledge, new research areas, and initiatives, as well as social frameworks for promoting and supporting such initiatives, which are all necessary to promote cooperation between flood and sediment disaster countermeasures and other fields more effectively and efficiently.

#### Session topics

- 1) Flood and sediment disaster resilience and the water, food and energy nexus

*Keywords: food, agriculture, livestock, fisheries, irrigation facilities, renewable energy, hydroelectric power generation, integrated water resource management, trade-offs, nexus*

- 2) Flood and sediment disaster resilience and quality of life (quality of life: poverty, health, education, labor)

*Keywords: living standards, poverty, health, education, labor, welfare, sanitation, economic growth, COVID-19 infection countermeasures, virtuous cycle*

- 3) Flood and sediment disaster resilience and natural environment, urban environment and social systems (green infrastructure, nature-based approach, gender, peace)

*Keywords: green infrastructure, nature-based approach, urban environment, natural environment, ecosystem, forest, social system, gender equality, peace.*

## **Parallel Session 9: Compound flooding disasters**

### Concept note:

Compound flooding risk associated with globalization and urbanization is characterized by high complexity, uncertainty, ambiguity, and far-reaching effects beyond a given system. In some cases, damage caused by a single extreme event expands and evolves over time, triggering an unexpected secondary event or series of events that result in significant physical, social, or economic disruptions. Such events tend to expose unaddressed underlying vulnerabilities in society. With the increased frequency and intensity of floods due to climate change, it is imperative that such complex and systemic nature of risks and interactions between floods and different disaster risk factors be analyzed for comprehending the patterns of inherent and impending disaster risks and laying down effective frameworks, policies, and strategies in this regard. The flood management community needs to learn from those managing other types of hazards and look across hazards. More emphasis has been placed on earthquake hazard in many regions of North America for example, with arguably more tangible results than we have seen for flood control. In this session, we will discuss what we can learn from these other communities and, conversely, what they can learn from flood management.

### Session topics

1) Lessons learnt and key gaps in management of compound flooding.

*Keywords: compound flooding disasters, strategies, system of systems, systemic risks, cascading disasters, natech disasters, risk assessment, risk identification and warning, lessons learnt, key gaps*

2) Steps undertaken prior to event towards prevention, mitigation, and management of compound flooding risk and to manage the disaster event.

*Keywords: compound flooding risk, cascading disasters, risk perception and communication, institutional and financial mechanism, multi-sectoral mechanism, transboundary policies and collaboration, steps undertaken in advance, prevention, mitigation, management of compound flooding risk*

## **Parallel Session 10: Systems approach to flood management**

### Concept note:

This session will discuss and share research results on system development and digital transformation (DX) in water-related disaster management. The research topics to be addressed in this session cover, for example, remote sensing data and data analysis and visualization at global and regional levels in hydrology, basin-scale information management systems for water-related disasters in basin management, the simulation and visualization of water-related disaster conditions in urban and river management. Researchers, managers, and policymakers will join this session and discuss how the latest technologies and systems can contribute to disaster risk reduction in the future.

### Session topics

- 1) River basin management systems, response to climate change, and disaster risk management

*Keywords: river basin management system, integrated system, decision making system*

- 2) DX systems in water-related disaster risk reduction

*Keywords: remote sensing, disaster prevention process simulation, spatial information, computer vision, risk management system, enlightenment and education system, BIM/CIM*

## Draft Program of Opening Ceremony, Plenary Sessions, and Closing Ceremony

February 19, 2023

9:15-10:15 (JST) Opening Ceremony

- Opening Remarks:
  - ◇ Prof. Slobodan Simonovic, Chairperson of the ICFM Ad Hoc Committee (5 min)
  - ◇ Dr. FUJITA Koichi, President, National Research and Development Agency Public Works Research Institute (PWRI) (5 min)
  - ◇ Mr. OKUMURA Yasuhiro, Director-General, National Institute for Land and Infrastructure Management (NILM), Ministry of Land, Infrastructure, Transport and Tourism of Japan (MLIT) (5 min)
  - ◇ Mr. IGARASHI Tatsuo, Mayor, Tsukuba City (5 min)
- ICFM Lifetime Achievement Award: Prof. TAKEUCHI Kuniyoshi  
\*Presented by Prof. Slobodan Simonovic (10 min)
- Keynote Speech: “The responsibility of science, entrusted to us by society” by Prof. KOTANI Motoko, Executive Vice President for Research, Tohoku University, Japan, Vice President of ISC (30 min)  
*\*via Online*

10:30-11:30

**Plenary 1: Concerted actions towards a resilient, sustainable and inclusive Society (Panel Discussion)**

Moderator

- Prof. KOIKE Toshio, Executive Director, International Centre for Water Hazards and Risk Management (ICHARM), PWRI, Japan

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

**February 20, 2023**

**9:15-10:15 (JST) Plenary 2: Integrated Flood Management**

- Keynote Speech: "Systems Approach to Management of Floods - Towards Resilience-based Approach " by Prof. Slobodan Simonovic  
(30 min)
  
- Report 1: "Flood Forecasting System of Pakistan and Flood Season 2022" by Mr. Sahibzad Khan, Director General, Pakistan Meteorological Department (PMD)  
(10 min of presentation and 5 min of Q&A)  
*\*via Online*
  
- Report 2: "Global Change & Adaptive Water Management for Reducing Water Hazard Risk: Case study in China" by Prof. Jun XIA, IUGG Fellow & Bureau member, President, China National Committee for IUGG, Academician of Chinese Academy of Sciences (CAS), Director, Research Institute for Water Security (RIWS), Wuhan University  
(10 min of presentation and 5 min of Q&A)

**10:30-11:30 Plenary 3: Adaptation to Changes**

- Keynote Speech: "A hidden threat, flood triggered chemical accidents: Challenges for disaster risk management" by Prof. Ana Maria Cruz, Professor, Disaster Prevention Research Institute (DPRI), Kyoto University  
(30 min)
  
- Report 1: "International Handbook on Emergency Response for Flood Defences" by Dr. ITAGAKI Osamu, Director, Upper Kiso-gawa River Office, Chubu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT)  
(8 min of presentation)
  
- Report 2: "Follow-up Actions for Kumamoto Initiative for Water" by Mr. TOKIOKA Toshikazu, Director for International Coordination of River Engineering, Water and Disaster Management Bureau, MLIT  
(8 min of presentation)

- Report 3: “New developments in integrated approaches to flood management” by Dr. Valentin Aich, Senior Water and Climate Specialist, Global Water Partnership (GWP) and World Meteorological Organization (WMO)  
(8 min of presentation)
  
- Q&A and Discussion (6 min)

February 21, 2023

**9:15-10:15 (JST) Plenary 4: River Basin Disaster Resilience and Sustainability by All**

**Showcases:**

- Davao, the Philippines: Dr. Anthony C. Sales,  
Regional Director, Department of Science and Technology (DOST) XI  
(15 min of presentation and 5 min of Q&A)
- West Africa: Mr. Salifou DENE, Volta Basin Authority (VBA)  
(15 min of presentation and 5 min of Q&A)
- Latin America: Dr. M. Alfonso Gutiérrez López, Autonomous  
University of Queretaro  
(15 min of presentation and 5 min of Q&A)

**10:30-12:00 Closing Ceremony**

- Keynote Speech: “Japan's New DRR Policy - River Basin Disaster  
Resilience and Sustainability by All -” by Mr. KUSANO Shinichi,  
Assistant Vice-Minister for Disaster Prevention and Risk  
Communication for Ministry of Land, Infrastructure, Transport and  
Tourism (MLIT) (30 min)
- ICFM9 Declaration: Prof. KOIKE Toshio (15 min)
- Poster-Session Award Ceremony  
\*Presented by Prof. Slobodan Simonovic (15 min)
- Invitation to the ICFM10 (15 min)
- Concluding remarks: Prof. KOIKE Toshio (15 min)

## Oral Presentation Program

Date	Time	Room	Session	Session Chair	Co-chair	No.	Paper title	Authors
Sunday, 19th February	13:00-14:30	Hall 200	TT01a	Guillermo Q. Tabios III	Miho OHARA	1a-01	Recent flood events and climate change impact on Australia's extreme flood risk	Mark Babister, Monique Retallick, Behzad Jamali
						1a-02	Cancelled	
						1a-03	Bridge collapse in Mutsu, Aomori Prefecture, Japan in 2021	Hiroshi Takebayashi, Masaharu Fujita
						1a-04	Local Governance Capacities and Institutions for Flood Risk Reduction: The 2018 and 2019 Kerala Floods	Dhanalekshmy Sivani, Eric Zusman, Gangadharan Kadangat, DON MATHEW
						1a-05	Joint flood risks in the Grand River Basin	Poornima Unnikrishnan, Kumaraswamy Ponnambalam, Nirupama Agrawal, Fakhri Karray
						1a-06	The need for a flood control planning including the hydraulic function of floodplain -- Lessons from two cases of recent severe flood disaster in Japan --	Ryosuke Akoh, Tadaharu Ishikawa
Sunday, 19th February	15:00-16:30	Hall 200	TT01b	Ali CHAVOSHIAN	QIN Menglu	1b-01	Experience in Flood Management from a Global Perspective	Zhang Cheng, Li Wenyang, Guo Chongshan, Wang Kaifeng, Zhang Hongbin, Zhang Xiaolei, Bi Wuxia
						1b-02	Towards a broader framework for managed retreat and adaptation	Nicholas Pinter
						1b-03	Seasonal Rainfall and Disaster Relief Activities in Sri Lankan Context	Balachandran Sheeba
						1b-04	Flood risk management in planning and construction of city: the Guangzhou experience	Kuang Minyi, Deng Xingdong, Zheng Yanyan, Zhu Liming, Wang Jingchen, Sui Xintian
						1b-05	The Role of Construction Consultants in Disaster Recovery	Minoru Kamoto, Akira Nakamura, Masashi Ogura
Monday, 20th February	13:00-14:30	Hall 200	TT01c	Zhang Cheng	Naoko Nagumo	1c-01	Vulnerability analysis of the Water-Sanitation-Public Health Nexus due to flood events occurrence. Case study: Rio Paranaíba, Brazil	Maria Clara Fava, Marina Batalini de Macedo, Frederico Carlos Menezes Filho
						1c-02	Flood Risk Assessment of Water Infrastructure in Data Deficient Areas Using Remote Sensing Products and RRI Model: A Case Study of Irrigation Scheme in Lake Alaotra Catchment Area, Madagascar	Shinichi Masuda
						1c-03	4 "R" Approach of Catastrophic Disaster of Melamchi Flood: A Sustainable Urban Planning	Tapendra Bahadur Khadka
						1c-04	How to Avoid Heavy Life Losses in Liulin-like Flash Flood Events	Changzhi Li, Miao Zhang, Qing Li, Bingshun He
						1c-05	Spatio-temporal assessment of urban flood disaster using social media: A case study of Zhengzhou '720'	Jiaqi Peng, Jianmin Zhang
						1c-06	The development of flood risk analysis for critical infrastructure in Pinang river basin, Malaysia	Yusrin Wahab, Eliza Alias, Aznah Anuar, Rohaizi Jusoh, Khairolden Ghani, Sabri Mulok, Abdullah Isnin
Sunday, 19th February	13:00-14:30	Room 101	TT02a	YOSHIMURA Kei	Katsunori TAMAKAWA	2a-01	An integrated design discharge calculation system for small to mid-sized ungauged catchments in Serbia	Nikola Zlatanović, Mamoru Miyamoto
						2a-02	On the possibility of near real-time flood inundation mapping with social network information	Kohin Hirano, Shakti P.C., Satoshi Iizuka
						2a-03	Flood inundation mapping of river basins during extreme rain events	Shakti P.C., Kohin Hirano, Satoshi Iizuka
						2a-04	Influence of Data Length on Determination of Data Adjustment Parameters in Lumped Hydrological Modeling: A Case Study Using the Xinanjiang Model	Zin Thandar Tun, Minjiao LU
						2a-05	Method of Unit graph is Rediscovered with Explainable AI	Toshiyuki Moriyama, Masaki Mitoma, Mukuzo Sakai, Hidehisa Iwaishi
						2a-06	Flood Simulation in Yangon City with Rainfall-Runoff Inundation (RRI) Model	Pyae Pyae Phye, Tatsuhiko Uchida
Sunday, 19th February	15:00-16:30	Room 101	TT02b	Anil Mishra	M. Rasmy	2b-01	Flood modelling and calibration of a recent flood event in Bharathapuzha river basin, Kerala, India	Abdulla Bava, Mohamed Rasmy, Hemakanth Selvarajah, Toshio Koike
						2b-02	Near Real Time (NRT) Flood Forecasting for the Great Chao Phraya River Basin using Rainfall-Runoff-Inundation Model	Pongsit Polsomboon, Anurak Sriariyawat
						2b-03	FLOOD HAZARD MAPPING OF CHAO PHRAYA RIVER BASIN USING MONTHLY RAINFALL FREQUENCY ANALYSIS	Chidsumon Sasirat, Supattra Visessri, Pongsit Polsomboon, Bounhome Kimmany, Anurak Sriariyawat
						2b-04	Temporal and spatial distributions of flood water storage volume of the main river and tributaries in the Ishikari River basin	Shoji Fukuoka, Yutaro Ishii
						2b-05	Hydraulic Analysis of the Marikina River Floodplain During Typhoon Vamco using Numerical Modelling	Jonathan S. Serrano, Eugene C. Herrera, Kensuke Naito
Monday, 20th February	13:00-14:30	Room 101	TT02c	TANIGUCHI Kenji	Shingo Numata	2c-01	Impact of multiple reservoirs operation on flood situation in the Mun and Chi River Basins, Thailand	Shunta Nakamura, Taichi Tebakari, Takuya Matsuura, Yosuke Nakamura, Shojun Arai



Date	Time	Room	Session	Session Chair	Co-chair	No.	Paper title	Authors
						2c-02	Integrated WEB-DHM and RRI based modelling framework to assess the role of dam operation on flood disaster risk reduction in Brahmani-Baitarani delta	Ravindra V. Kale, Toshio Koike, Katsunori Tamakawa, Manmohan K. Goel, Yoshihiro Shibuo, Yoshiyuki Imamura
						2c-03	Development of a distributed rainfall-runoff model to forecast flash floods in ungauged urban catchments: Identification of model parameters integrating spatial soil datasets	Shi Feng, Yasuto Tachikawa
						2c-04	A tale of two floods: Hawkesbury-Nepean valley floods of February 2020 and March 2021	Wendy Sharples, Katayoon Bahramian, Christoph Rüdiger, Kesav Unnithan, Elisabetta Carrara
						2c-05	Development of model predictive controls for flood control and power generation of reservoir cascade in Mahaweli basin, Sri Lanka to mitigate energy and economic crisis provoked by the COVID-19 pandemic	R.D.T. Kaushalya, S.P. Hemakumara, S.Hemakanth, S.P.C. Sugeeshwara
						2c-06	Implementation of a gridded river routing scheme within Australian land surface models	Zaved Khan, Christoph Rüdiger, Toby Marthews, Huqiang Zhang
Monday, 20th February	15:00-16:30	Room 101	TT02d	Nikola Zlatanović	Hiroyuki Tsutsui	2d-01	An impact-based forecast for an extreme flood event using a large ensemble flood prediction system	Tsuta Oizumi, Takuya Kawabata, Le Duc, Kenichiro Kobayashi, Kazuo Saito, Takuma Ohta
						2d-02	Artificial Neural Networks Applied for Flood Forecasting in Ungauged basin – the Paranaiba river study case	Abderraman R. A. Brandão, Frederico C. M. M. Filho, Maria Clara Fava
						2d-03	Designing and Developing Dynamic Decision Support Information for Disaster Response	Makoto Hanashima, Hiroaki Sano, Yuichiro Usuda
						2d-04	Dual-Stage Attention-Based LSTM Network for Multiple Timescales and Steps Flood Forecasting	Fan Wang, Weiqi Wang, Wuxia Bi, Wenqing Lin, Dawei Zhang
						2d-05	Applicability of HAND methodology for generating flood inundation maps for Australia – a sensitivity study in Hawkesbury-Nepean Valley catchment	Katayoon Bahramian, Wendy Sharples, Kesav Unnithan, Christoph Rudiger, Elisabetta Carrara
						2d-06	Repository-based dynamic sampling for ensemble optimal interpolation implementation in a distributed hydrological model	Manoj Khaniya, Yasuto Tachikawa, Takahiro Sayama
Sunday, 19th February	13:00-14:30	Room 102	TT02e	Xin Li	M. Rasmy	2e-01	Flood damage model bias caused by aggregation	Bryant Seth, Kreibich Heidi, Merz Bruno
						2e-02	Flood risk mapping using multi-data integration - A case study of Adyar river basin, Chennai	Stephen Jayaseelan, Anjana Vencatesan
						2e-03	Flood Forecasting and Early Warning in Adayar Minor Basin of Chennai Basin, Tamil Nadu, India	S. Thirunavukkarasu, Jayshree Vencatesan
						2e-04	Risk-Based Alerts on Regional Flooding Associated with Heavy Rain	Hui-Ching Tam, Ping Cheung, Linus Hon-yin Yeung, Kayan Lai, Alex Wai-shing Hui, Maxwell Shiu-wai Mak
						2e-05	Evaluation of Satellite Precipitation Products (SPPs) for Real-time Extreme River Flow Modeling in the Blue Nile Basin	Mihretab G. Tedla, Mohamed Rasmy, Toshio Koike, Li Zhou
						2e-06	Developing a Flood Monitoring System by Utilizing Real-Time Satellite Rainfall Estimates and Water Energy Budget-Based Rainfall-Runoff Inundation Model in West Africa	M. Rasmy, K. Tamakawa, M. Gusyev, M. Ohara, K. Onuma, T. Koike
Sunday, 19th February	15:00-16:30	Room 102	TT02f	Maria Clara Fava	Kentaro Aida	2f-01	Investigation of Transition Signals from Single Cell to Multicell Thunderstorms in the Kinki Region, Japan using Vertical Vorticity and Multi-Parameter Radar Analysis	Fauziana Ahmad, Kosei Yamaguchi, Eiichi Nakakita, Tomoki Ushiyama
						2f-02	Radar-based rainfall estimation over Cambodia	Hideyuki Kamimera, Kumiko Tsujimoto, Mao Hak, Oum Ryna, So Im Monichoth, Korng Youtray
						2f-03	Integration of Satellite-based Precipitation Observations in Global Satellite Mapping of Precipitation (GSMaP)	Takuji Kubota, Moeka Yamaji, Munehisa K. Yamamoto, Hitoshi Hirose
						2f-04	Exploring the potential of paired satellite and NWP precipitation for global flood forecasting	Zhijun Huang, Huan Wu, Xiaomeng Li, Nergui Nanding
						2f-05	Satellite and UAV derived seasonal vegetative roughness estimation for flood analysis	Andre A. Fortes, Masakazu Hashimoto, Keiko Udo, Ken Ichikawa
						2f-06	Impacts of spatial resolutions of rainfall on streamflow simulation by land surface models	Aulia Febianda Anwar Tinumbang, Kazuaki Yorozu, Yasuto Tachikawa, Yutaka Ichikawa, Hidetaka Sasaki, Toshiyuki Nakaegawa
Monday, 20th February	13:00-14:30	Room 102	TT02g	Minjiao LU	MATSUKI Hirotada	2g-01	Water Assessments in Watersheds of Laguna Philippines	Fernando C. Sanchez Jr, Patricia Ann J. Sanchez, Catherine B. Gigantone, Jessa O. Aquino, Abdul Wahid Mohamed Rasmy, Ralph Allen Acierto
						2g-02	Quantifying the changes in floodplain regimes over Canada under changing climate conditions- Development of Flood Map Viewer to enhance disaster preparedness	Mohit Prakash Mohanty, Slobodan P. Simonovic, Andre Schardong
						2g-03	Development of an impact-based river-flood warning tool-DFRM	Shampa, Md M. Hossain, Marin Akter, Anisul Haque, Md. M. Rahman, MD R. Rahman, Juwel Islam, A. K. Azad, Hamima Huma, Md S. Ahmed, Kamrun Nahar, Sabrina Akther, Md A. Rahman
						2g-04	Nonstationary Extreme Value Analysis of Annual Rainfall Maxima Under Changing Climate	Guillermo Q. Tabios III
						2g-05	Social Challenges of Flood Early Warning Systems	Duminda Perera, Jetal Agnihoti, Ousmane Seidou, Riyanti Djanlante
						2g-06	Aerosol Forcing dominating the late-summer precipitation change over East Asia's transitional climatic zone in CMIP6 Model Simulation	Paul Adigun, Dairaku Koji

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Monday, 20th February	15:00-16:30	Room 102	TT02h	Yasuto Tachikawa	Kensuke Naito	2h-01	Developing a river basin disaster resilience and sustainable plan for Malwathu Oya river in Sri Lanka	Maheswaran Myuran, Toshio Koike, Mohamad Rasmy, Mamoru Miyamoto
						2h-02	Towards Rapid Flood Modelling with Hydraulics-Inspired Graph Neural Networks	Roberto Bentivoglio, Elvin Isufi, Sebastiaan Jonkman, Riccardo Taormina
						2h-03	Comparison of physically-based (HEC-RAS, CADDIES) with AI-based (LSTM) flood models for two case studies	Marina Batalini de Macedo, Nikunj K. Mangukiya, Maria Clara Fava, Ashutosh Sharma, Roberto, Fray da Silva, Ankit Agarwal, Maria Tereza Razzolini, Eduardo Mario Mendiondo, N. K. Goel, Mathew Kurian, Adelaide Cássia Nardocci
						2h-04	Development of probabilistic debris-flow hazard map considering the uncertainty of initiation points	Kazuki Yamanoi, Satoru Oishi, Kenji Kawaike
						2h-05	An approach to assess sediment disaster risk using soil moisture deficit: A case study about sediment disasters occurred during 2010-2011 in Niigata Prefecture, Japan	Minjiao LU, Takahiro Ogura, Thandar Tun Zin
						2h-06	Application of Entrainment Velocity Concept for Evaluation of River Morphology: A Numerical Model Study	Robin K. Biswas , Shinji Egashira, Daisuke Harada
Sunday, 19th February	13:00-14:30	Room 201	TT03a	Yukiko Hirabayashi	Tomoki Ushiyama	3a-01	Estimation of Future Flood Risk Influenced by the Effects of Climate Change Using the d4PDF Datasets in the Chao Phraya River Basin, Thailand	Aakanchya Budhathoki, Tomohiro Tanaka, Yasuto Tachikawa
						3a-02	Seamless 150-year changes of 100-year basin rainfall in a changing climate in the class-A river basins, Japan	Tomohiro Tanaka, Yuki Kawai, Yasuto Tachikawa
						3a-03	ASSESSMENT OF FUTURE FLOODING IN TAIWAN BY USING ENSEMBLE CLIMATE CHANGE SCENARIO DATABASE, D4PDF	JuiChe, Chang, Tomohiro Tanaka, Yasuto Tachikawa
						3a-04	Towards Improved Damage Uncertainty Estimates in Flood Risk Assessment Through Probability Bounds Analysis in the Time of Climate Change	Hiva Viseh, David N. Bristow
						3a-05	Projection of climate change effects on flood inundation in the Gin River basin, Sri Lanka	J.M.M.U. Jayapadma, Kazuyoshi Souma, Hiroshi Ishidaira, Jun Magome, T.N. Wickramaarachchi
						3a-06	The Role of GEWEX in Moving the Needle on the Resiliency of Society to Flooding in a Climate Context	Vidya Samadi, Peter van Oevelen, Andreas Prein, Joshua K. Roundy, Francina Dominguez, and Ali Nazemi
Sunday, 19th February	15:00-16:30	Room 201	TT03b	Jos van Alphen	Mamoru Miyamoto	3b-01	Calculating flood probability in Obihiro using a probabilistic method: Incorporating the probability of dike failure with uncertainty	Fumihiko Uemura, Guus Rongen, Shigekazu Masuya, Takatoshi Yoshida, Tomohito J. Yamada
						3b-02	FLOOD RISK IN OBIHIRO Economic and Individual Risk including evacuation and the impact of uncertainties	Bob Maaskant, Sho Tomura, Bas Kolen, Manuba Chiba, Guus Rongen, Shigekazu Masuya
						3b-03	Added values of regional multi-ensemble downscaling approach in CORDEX Asia	Koji Dairaku
						3b-04	Modeling the Impact of Climate Change on Flood and Drought: case study Awash River Basin, Ethiopia	Ermias S. Brhane, Dairaku Koji
						3b-05	Regional climate change impact on flood inundation and Evaluation of Adaptation Measures in Jakarta, Indonesia	Akbar Rizaldi, Shuichi Kure, Bambang Adhi Priyambodho, Nurul Fajar Januriyadi
						3b-06	Multi-model and multi-initial-condition ensemble experiment for the future change of tropical cyclone related flood	Kenshi Hibino, Hiroaki Kawase, Yukiko Imada, Munehiko Yamaguchi, etsuya Takemi, Nobuhito Mori, Takahiro Sayama, Tomohiro Tanaka, Sachie Kanada, Izuru Takayabu
Monday, 20th February	13:00-14:30	Room 201	TT03c	Karmakar Subhankar	Badri Bhakta Shrestha	3c-01	Risk of flooding associate with Madrid region urban drainage network	Antonio Lastra, Celia Ortega, Alejandro Pinilla, Mónica Ortega, Jaime Botello
						3c-02	Cancelled	
						3c-03	Hydrodynamic Investigation of Laguna Lake, Philippines for Water Security and Flood Risk Management of Metro Manila	Eugene C. Herrera, Kensuke Naito
						3c-04	Beyond the limits of present adaptation strategies: exploring strategies and measures to anticipate on accelerated sea-level rise in the Netherlands	Jos van Alphen, Marjolijn Haasnoot Ferdinand Diermanse, AnneLoes Nillesen
						3c-05	Changes in bank erosion risks due to the channel meandering under the different hydrograph – the case study of Otofuke River, Hokkaido, Japan	Tomoko Kyuka, Kazunori OKABE, Satomi Yamaguchi, Kazuyoshi HASEGAWA, Kho SHINJO, Yasuyuki SHIMIZU
						3c-06	Assessing the impacts of urbanization and climate change on the rainwater storage functions in the Tsurumi River Basin, Japan	Yoshiyuki Imamura, Hideo Amaguchi, Kazushi Matsuda
Sunday, 19th February	13:00-14:30	Room 202A	TT04a	Yasuyuki Shimizu	Mamoru Miyamoto	4a-01	A BASIC STUDY ON THE EFFECT OF THE SPACING BETWEEN A FORCED BAR WITH THRIVING VEGETATION AND A BRIDGE PIER ON THE LOCAL SCOUR AROUND THE BRIDGE PIER	Yoshiya Ogawa, Shinya Omote, Shota Ajiki
						4a-02	River management viewed from long-term changes of the main channel in the middle reach of Tama River	Katsuhiko Gotoh, Takahisa Gotoh, Shoji Fukuoka
						4a-03	Experimental study on mechanism and countermeasures of the sediment and flood inundation	Kosuke TABATA, Amane OOTANI, Masaki FUKUSHIMA
						4a-04	Shoreline erosion and its countermeasure along west coast of Teknaf peninsula, Bangladesh.	Tanjir Saif AHMED, Zia UDDIN, Shinji EGASHIRA, Daisuke HARADA

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						4a-05	Controlling Sedimentation through Regulating the River by Thalpitigala Reservoir Project	Thanura Lasantha Guruge, Bandara Palugaswewa, Egashira Shinji
						4a-06	Sediment transport processes in the Sangu river basin using rainfall sediment runoff model for sustainable river management	Md. Majadur Rahman, Daisuke Harada, Shinji Egashira
Sunday, 19th February	15:00-16:30	Room 202A	TT04b	Hiroshi Takebayashi	Kattia Rubi Arnez Ferrel	4b-01	ADAPTATION OF 3 <sup>RD</sup> GENERATION FLOOD MITIGATION APPROACH FOR PENANG RIVER (A CASE STUDY)	Saravanan Mariappan , Nor Ibrahim Bin Berhonuddin, Muhammad Helmi, Sagunthala Devi, Siti Afiqah Aminah, Fauziah Hanis, Nor Azlan Ibrahim, Kavita Veerapan, Paveethira Suppiah, Mohd Bazli, Vikneshwara Subramaniam, Siti Hadawiah, Mohd Fairuz, Muhammad, Che Wan Ridzwanamin, Mohamad Hafizi
						4b-02	Projections of future river flood inundation and evaluation of adaptation measures in Toyama Prefecture, Japan	Daichi Kikuchi, Shuichi Kure, Ryuto Fujishita
						4b-03	Methods to create hazard maps for flood disasters with sediment and driftwood	Daisuke Harada, Shinji Egashira, Katsuhiko Onuma
						4b-04	Investment decision support for business sustainability improvement based on flood inundation simulations with a variety of extreme rainfall scenarios	Saki Nonaka, Kazuki Suzuki, Nobuyuki Iwamae, Daisuke Nohara, Yoriyuki Yamada
						4b-05	Development of a simple method of predicting river flooding aims to support decision-making for the evacuation of detained railway vehicles	Yohei Nakabuchi, Daisuke Sato, Mizuki Onishi
						4b-06	Countermeasures Against Flood Damage of Buildings and Their Applicability	Nozomu Kiuchi, Taku Nakano
Monday, 20th February	13:00-14:30	Room 202A	TT04c	Nigel Wright	Daisuke Harada	4c-01	Development of flash flood prediction system for small and medium-sized rivers	Koji Ikeuchi, Daiki Kakinuma, Shingo Numata, Takafumi Mochizuki, Keijiro Kubota, Yosuke Nakamura, Masaki Yasukawa, Toshihiro Nemoto, Toshio Koike
						4c-02	A Particle-filter application method for real-time flash flood prediction system for small and medium-sized rivers	Daiki Kakinuma, Shingo Numata, Takafumi Mochizuki, Keijiro Kubota, Yosuke Nakamura, Toshio Koike, Koji Ikeuchi
						4c-03	Efforts on pre-discharge at Kusaki Dam	Hitoshi Nishimura , Mika Tsunoda, Naoki Tomida, Hideshi Sasahara
						4c-04	Flood Control Effects and Potential of Dams in River Basin of Central Vietnam	Kei Koura, Naoki Koyama, Tadashi Yamada
						4c-05	Water-level propagation characteristics in the Arakawa River and its tributaries after construction of the Arakawa No.2 and No.3 retention basins	Shinya ISHIHARA, Norio TANAKA, Yoshiya IGARASHI
						4c-06	Elucidation of potential areas for "Paddy field dam", a flood control measure in a watershed, using integrated rainfall, runoff, and flood analysis in the entire Arakawa Basin	Yuya Karaki, Norio Tanaka, Yoshiya Igarashi
Monday, 20th February	13:00-14:30	Main Hall	TT05a	Dalila Loudyi	Takafumi Shinya	5a-01	Tipping Points: The Role of Thresholds in the Assessment of Resilience to Flooding	Angela Peck, Slobodan P. Simonovic
						5a-02	Is there capacity for transformative adaptation? Community resilience to riverine hazards in Bangladesh	Amelie Paszkowski, Finn Laurien, Reinhard Mechler, Jim Hall
						5a-03	A study of road closure due to rainfall and flood prone areas based on logistic regression	Hao Zhong, Daan Liang
						5a-04	The damage of and response to 1931 and 1954 floods in Yangtze River Basin, China: from the perspective of traditional countermeasures and agricultural society transformation	Chang Liu, Akiyuki Kawasaki, Tomoko Shiroyama
						5a-05	Study on flood mitigation using paddy field considering crop calendar in Japan	Yohei Ueno, Taichi Tebakari, Kazuhiro Yoshimi, Keigo Noda
						5a-06	Industrial Park-scale Flood Analysis for Business Continuity Management	Mamoru Miyamoto, Daiki Kakinuma, Anurak Sriariyawat, Supattra Visessri, Toshio Koike
Monday, 20th February	15:00-16:30	Main Hall	TT05b	Paul Kovacs	Ralph Allen E. Acierto	5b-01	Quantitative Evaluation of Evacuated Populations in flood events Using Mobile Phone Base Dynamic Data	Masakazu Hashimoto, Shinichi Egawa, Erick Mas, Daisuke Sano, Shunichi Koshimura
						5b-02	Modelling resilience to floods in art cities	Chiara Arrighi, Fabio Castelli
						5b-03	An Assessment on Urban Flood Resilience in Colombo District, Sri Lanka	J.A. Chandrika Lalani Wijesuriya, Ranjith Premasiri
						5b-04	SPATIAL ANALYSIS OF DISADVANTAGED POPULATION EXPOSED TO FLOODS IN THE ITAPOCU RIVER BASIN, BRAZIL	Rafael Silva Araújo, Miho Ohara, Mamoru Miyamoto, Kuniyoshi Takeuchi
						5b-05	Clustering Flood Risk- Are we compounding the problem by using the 1 in 100 Annual Exceedance Probability level for too much?	Monique Retallick, Mark Babister
						5b-06	Area-Business Continuity Management Concept in Flood Disasters: A Conceptual Review	Natt Leelawat, Jing Tang, Sansanee Sappathai, Kananut Charoenthammachoke, Kunruthai Meechang, Akira Kodaka, Jaehyun Park, Yuku Iwasaki, Kenji Watanabe
Sunday, 19th February	13:00-14:30	Room 202B	TT06	K. E. Seetharam	Noriyuki MORI	6a-01	Promoting Practitioner's Networking in Water Resources Management: NARBO - Network for Asian River Basin Organizations	Nobuyuki Ichihara, Toshiro Suzuki , Michitarou Nakai
						6a-02	Estimate for Investments and their benefits in Flood Protection in Asia	Mikio Ishiwatari, Daisuke Sasaki

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						6a-03	Working Together on Civil-Engineering Structures within the Dutch Flood Protection Programme: challenges and opportunities	Ellen Tromp, Joost Breedevelde, Johan Apperloo, Jaap Kottier
						6a-04	Flood Risk and Adaptation Decisions in the U.S. Housing Markets	Okmyung Bin
						6a-05	Development of a framework to cope with automobile damage reduction due to flooding at large parking yard from the perspective of insurance	Kenichiro KOBAYASHI, Toshihiro OKUYAMA, Takahiro KITADA, Kenichi SHINOHARA, Yuuichi HONDA, Niho TAKAYOSHI
						6a-06	Managed retreat: an adaptation tool for inland and coastal flooding	Sharad K Jain, Subhankar Karmakar
Monday, 20th February	15:00-16:30	Room 202A	TT07	Duminda Perera	Masakazu Fujikane	7a-01	Building disaster prevention capacity in a continental scale country: The trajectory and experience of the Geological Survey of Brazil.	Leandro Galvanese Kuhlmann, Mamoru Miyamoto, Julio Cesar Lana, Tiago Antonelli
						7a-02	Disaster risk reduction education with flood management in Vietnam	HOANG Le Hong Giang, KATO Takaaki
						7a-03	Education and capacity building for effective flood management	Tadaharu Ishikawa
						7a-04	Flood resilience enhancement in Thailand through the SATREPS: Area-BCM project and systematic review of flood management	Supattra Visessri, Anurak Sriariyawat, Mamoru Miyamoto, Daiki Kakinuma, Shakti P. C., Yosuke Nakamura, Shingo Numata
						7a-05	A Platform on Water Resilience and Disasters in Sri Lanka	Seenipellage Chaminda Sugeeswara, Mohamed Rasmay, Tomoki Ushiyama, Masaki YASUKAWA, Toshio Koike
Sunday, 19th February	15:00-16:30	Room 202B	TT08	Akiyuki Kawasaki	Hirosato Yoshino	8a-01	A Systematic Review and Analysis on a Nuanced Nexus of Poverty and Floods	Nyi Linn Maung, Akiyuki Kawasaki
						8a-02	Quantitative Estimation of the Effects of Flood Risk Reduction on Reducing Inequalities in Developing Countries: Focusing on Household Vulnerability Based on Savings and Education Level	Risa Nakamura, Akiyuki Kawasaki
						8a-03	Synergies and trade-offs among climate policies and Sustainable Development Goals in terms of flooding	Yukiko Hirabayashi, Andi Besse Rimba, Yuzuru Kawamitsu
						8a-04	Impact Assessment of Climate Change on Sediment Discharge using d4PDF	Riho Kido, Takuya Inoue, Misako Hatono, Kazuki Yamanoi
						8a-05	Implementing climate change adaptation and energy transition policies simultaneously through urban green infrastructure	Karina Vink, Ahmad Ali Gul, Mamoru Miyamoto
						8a-06	Creation of flood-resilient and sustainable society by reconstruction of urban and regional structures	Kenji Taniguchi, Keitaro Yamaguchi
Monday, 20th February	13:00-14:30	Room 202B	TT10a	Taikan Oki	Masatoshi Denda	10a-01	Evidence-based Flood Variability Analysis in Snow-fed Watersheds using Water Energy Budget based Distributed Hydrological Model with Vertical Profile of Temperature and Precipitation Bias Correction	Asif NASEER, Toshio KOIKE, Mohamad RASMY, Tomoki USHIYAMA, Katsunori TAMAKAWA, Abdul MOIZ
						10a-02	The Current and Future Global Flood Inundation Mapping Systems from Multiple-Source Satellite Imagery through the CEOS WGDIsater Pilot Project	William Straka, Mitchell Goldberg, Sean Helfrich, William Sjoberg, Jay Hoffman, Donglian Sun, Sanmei Li, Vincent Decker, Ian Olthof, Qingyuan Zhang, Qing Yang, Xinyi Shen
						10a-03	Global Sensitivity Analysis in a Complex 1D-2D Coupled Hydrodynamic Model: Highlighting its Importance in Flood Disaster Management over an Urban Catchment	Kaustav Mondal, Mousumi Ghosh, Subhankar Karmakar
						10a-04	Developing a river water-level predicting system with a 3D viewer using virtual reality technology	Yoshimasa Morooka, Shuichi Tsuchiya, Tetsuya Takeshita
						10a-05	Prioritization of minor hydraulic structures for flood management in the Lower Limpopo river basin, Mozambique	Sanjeewa P.B. Illangasingha, Alessandro Cattapan, Mário J. Franca
						10a-06	Assessment of Effectiveness of Submersible Embankment Considering Rainfall Variations in Haor Area in Bangladesh	Mohammad Hossain Mahtab, Miho Ohara, Mohamed Rasmy
Monday, 20th February	15:00-16:30	Room 202B	TT10b	Valentin Aich	Daiki Kakinuma	10b-01	Flood resilient landscapes: area-based solutions combine added value for society with flood risk management	Annemargreet de Leeuw, Ellen Tromp, Femke de Boer
						10b-02	Assessment of flood risk in a coastal city considering socio-economic vulnerability scenarios	Mousumi Ghosh, Subimal Ghosh, Subhankar Karmakar
						10b-03	Tasmanian Strategic Flood Mapping – Improving Community Flood Recovery and Resilience	Fiona L.N. Ling, Daniel Wood, Sarah Blundy, Mark Babister, Nathan Dunning
						10b-04	Application of Forecast Informed Reservoir Operations (FIRO) on US Army Corps of Engineers (USACE) Dams in California	Joe Forbis, Cuong Ly
						10b-05	Adoption of smart technology in drainage improvement and maintenance measures against extreme weather events of Hong Kong	Maxwell Shiu-wai Mak, Paul Chi-keung Chu, Esther Kawai Yuen, Edwin Shing-cheong Lau
						10b-06	Development of a virtual flood experience system and its possibility as a flood risk communication tool	Masatoshi Denda, Masakazu Fujikane

# Poster Indexing Program

Date	Time	Room	No.	Paper title	Authors
Sunday, 19th February	11:30-12:00	Main Hall	19-01	Case Study of Interpolation Method of Missing River Stage of Mountainous Flash Floods Based on Microseismical Monitoring Network	Kazuo Tsutsui, Yuta Tanida, Akito Nakata, Gaku Kitamoto, Osamu Tsujihara, Soichi Kaihara, Atsuhiko Kinoshita, Hiroaki Nakaya
			19-02	Study on Image-based Rain Gauge for Intensive Rainfall in Mountainous River Basin - Experiments in Large-scale Rainfall Experiment Facility	Akito KANAZAWA, Hiroaki NAKAYA, Nobuya YOSHIMURA, Kenji TSURUTA , Chang SONGMI
			19-03	Development of the river water level prediction method using data assimilation and the display system called Flood Risk Line	Shuichi Tsuchiya, Yoshimasa Morooka, Tetsuya Takeshita
			19-04	Toward basin flood control with yatsu topography ~ effect of grid resolution on runoff calculation ~	Takehiko Ito, Jin Kashiwada, Yasuo Nihei
			19-05	The influence of riverbed slope and channel width transitions on downstream flow and bed evolution characteristics	Soichi Tanabe, Toshiki Iwasaki, Yasuyuki Shimizu
			19-06	Long-range streamflow prediction using a distributed hydrological model in a snowfed watershed	Abdul Moiz, Akiyuki Kawasaki
			19-07	Validation and Improvement of Today's Earth-Japan: Toward the Integration of Satellite Observation and Flood Simulation	Kosuke Yamamoto, Kei Yoshimura, Masato Ohki
			19-08	Algorithm updates and validation results of GSMaP realtime version (GSMaP_NOW)	Moeka Yamaji, Tomoko Tashima, Munehisa K. Yamamoto, Takuji Kubota
			19-09	Investigation of ensemble reservoir inflow prediction system in Sai River, Japan	Katsunori TAMAKAWA, Shigeru Nakamura, Cho Thanda Nyunt, Tomoki Ushiyama, Mohamed Rasmy, Asif Naseer, Abdul Moiz, Katsuhiko Onuma, Toshio Koike
			19-10	Investigation of Uncertainties in Multi-variable Bias Adjustment in Multi-model Ensemble	Saurabh Kelkar, Koji Dairaku
			19-11	Relationship between frequency distribution of rainfall intensity and topography during the annual maximum rainfall event	Hiroki Okachi, Tomohito J. Yamada
			19-12	Comparative analysis between models of different complexities for the determination of flood spots: Case study of the Alto Paranapanema Basin	Jaqueline Carolino Santos, Maria Clara Fava <sup>2</sup> , Javier Tomasella
			19-13	Development of a Prevention Method for Possible Heavy Rainfall Disasters Using a Climate Projection Database	Akihiro Suzuki, Tsuyoshi Hoshino, Taro Yamamoto, Fumihiko Uemura, Tomohito J. Yamada
			19-14	Development of Integrated Water Resources Management Plan for Gal Oya River Basin in Sri Lanka	Mohamed Zuhail, Mohamad Rasmy
			19-15	Case study of Himawari-8 precipitation estimation algorithm in the East Asian summer monsoon region	Hitoshi Hirose, Takuji Kubota, Koichi Toyoshima, Atsushi Higuchi
			19-16	Assessment of flood damage to agricultural crops under climate change scenarios using MRI-AGCM outputs in the Solo River basin of Indonesia	Badri Bhakta Shrestha, Mohamed Rasmy, Tomoki Ushiyama, Ralph Allen Acierto, Takatoshi Kawamoto, Masakazu Fujikane, Hiroyuki Ito, Takafumi Shinya
			19-17	Estimating the rate of change in heavy rainfall intensity for flood control planning in Japan	Yuta Maeda, Tetsuya Takeshita, Masaki Kawasaki
			19-18	Evaluation of climate change impacts on an urban river flow by the high resolution rainfall data	Hideo Amaguchi, Jonas Olsson, Akira Kawamura, Yoshiyuki Imamura

Date	Time	Room	No.	Paper title	Authors
			19-19	Uncertainty of river discharge estimation caused by bias correction using historical ensemble climate data	Kazuaki Yorozu, Yasuto Tachikawa
			19-20	Attributing weather patterns to Davao River extreme rainfall from Reanalysis and GCM	Ralph Allen E. Acierto, Tomoki Ushiyama, Toshio Koike
			19-21	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
			19-22	Assessment of future flood risk using water and energy budget-rainfall runoff inundation (WEB-RRI) model: case study for the Davao River in the Philippines	Kensuke Naito, Daiki Kakinuma, Mamoru Miyamoto, Mohamed Rasmy, Tomoki Ushiyama, Anthony C. Sales, Toshio Koike
			19-23	Prediction of future flood frequency under changing climate using a large ensemble climate projections	Akihiro Hashimoto, Keita Yamaguchi, Yuki Tomitani
			19-24	Trend analysis of simultaneous heavy rainfall occurrence in multiple basins based on large ensemble experiments in the Kanto region of Japan	Naoki KOYAMA, Keigo Namikawa, Tadashi Yamada
Monday, 20th February	11:30-12:00	Main Hall	20-01	A study on an integrated water resources management plan under climate change for Grand River North West River basin, Mauritius	Akshay Kowlessar, Mohamed Rasmy, Toshio Koike
			20-02	Study on a flood damage reduction countermeasure by installing a spillway on a riverine levee for promoting the initiative of River Basin Disaster Resilience and Sustainability by All	Osamu Itagaki, Miho Ohara, Toshio Koike
			20-03	Influence of suspended sediment on the geomorphology of meandering rivers	Kattia Rubi Arnez Ferrel, Harada Daisuke, Egashira Shinji
			20-04	Disaster Mitigation Education for reducing sediment disaster impact conducted by the Wakayama Prefectural Government	Satoru MORIKAWA, Tadanori Ebisu, Takaki Sakaguchi, Akihiro Kishihata, Kaname Mori
			20-05	Experimental study of dike-break induced flow generated by instantaneous opening of the side gate	DAWEI ZHANG, ZHONGXIANG WANG
			20-06	A series of small detention ponds composed by river terrace edges and existing levees to reduce the peak discharge of an extraordinary flood – a case study in the upper Abukuma River in Japan –	Hiroshi Senoo, Tadaharu Ishikawa
			20-07	Flood Management in Angat Watershed	Patricia Ann J. Sanchez, Allan T. Tejada, Jr., Renz Kevin R. Ilagan, Jessa O. Aquino, Catherine B. Gigantone, Myra E. David, Roger A. Luyun, Jr., Fernando Sanchez Jr., Francis Faderogao, Mamoru Miyamoto
			20-08	Recent progress in the Sabo projects against sediment and flood damage in Japan	Shin-ichiro Hayashi, Hiroaki Tsunakawa, Takao Yamakoshi, Yusuke Sakai
			20-09	Finding obstructive factors for resilient housing recovery practice after flood	Michiko Banba, Tamiyo Kondo, Ryohei Fujii
			20-10	Research and development of an information sharing tool for safe and effective flood fighting	Yuki EBIHARA, Yoko YAMAMOTO, Osamu ITAGAKI
			20-11	Research on flood resilience improvement of underground space based on analysis of flooding characteristics	Jie Mu, Cheng Zhang, Ruozhu Shen, Xiaoli Hao, Haijun Yu, Binbin Wu, Xiaolan Chen, Wangyang Yu
			20-12	Strengthen resilience to rivers flooding by the drag reduction technique	WALID BOUCHENAF, Arnaud LEFEVRE
			20-13	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
			20-14	A Study on Improving Disaster Mitigation Awareness by Simulated Flood Experience Using VR Videos	Tsuyoshi Koyabu, Masatoshi Denda

Date	Time	Room	No.	Paper title	Authors
			20-15	Characteristics of shape and stagnation of rainfall depending on river basin	Yuta Ohya, Tomohito J. Yamada
			20-16	Landslide dam formation susceptibility evaluation research of Italy	Hang Wu, Mark A. Trigg, William Murphy, Raul Fuentes
			20-17	Study on methods of improving flood resilience in flood plain area from CAS theory perspective	SHANG Xuefeng, CHEN Zhiduan, CHEN Hong
			20-18	SIGNIFICANCE OF HAVING INTEGRATED WATER RESOURCE PLAN IN A COMPLEX WATERSHED SYSTEM FOR BETTER WATER MANAGEMENT DURING COVID PANDEMIC: THE CASE OF MAHAWELI RIVER BASIN	Roshan Indika Jayasinghe, Mohamad Rasmy
			20-19	Necessary storage for managing early flash-flood to save crops in the north-eastern region of Bangladesh	Muhammad Masood, Abdul Wahid Mohamed Rasmy
			20-20	A Study on the Assessment of Flood Vulnerability Considering Social Influence and Urban Functions	Gyumin Lee, Doosun Kang, Seokhyeon Kim, Kyung Soo Jun
			20-21	Development of a route search system considering the risk of being involved in flooded areas	Kohei Ogawa, Takuya Inoue, Yuki Hiramatsu
			20-22	Understanding Flood Risk and Local Community Adaptation During Covid-19. Case of Samarinda City, Indonesia	Ariyaningsih, Rajib Shaw
			20-23	Proactive Approaches to Disaster Risk Management (DRM) for Hydro-Meteorological Hazards in Fiji	Mesake Mataitoga, Miho Ohara, Wojciech Dabrowka, Shinya Abe, Meiapo Faasau
			20-24	Estimation of Rainfall Probability based on Radar-Rainfall – For Improvement of Debris Flow Prediction Method	Hiroaki Nakaya, Soichi Kaihara

Sample

International Conferences on Flood Management



# ICFM9 Erich Plate Best Student Poster Award

presented to

*Aminingrum, Afrial Rosya, Linda Lestari,  
Rucky Nurul WD, Mizan B. F. Bisri*

for the poster entitled

**Understanding the vital flood warning dissemination method  
to approach last-mile End Users in Indonesia effectively**

Slobodan P. Simonovic  
Chairperson, ICFM Ad Hoc Committee

Paul Kovacs  
Executive Director, ICLR

February 21, 2023

Tsukuba, Japan



Special session outline

<b>Date &amp; Time: 19<sup>th</sup> Feb. 13:00–14:30</b>	<b>Venue: Room 405</b>
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○ Title	How to use new climate events in flood risk analyses
○ Organizer	Dr.ir. B. Kolen (HKV/TU Delft) M. Chiba (River Center Hokkaido)
○ Outline/Objectives	<p>Because of climate change new events happen which up front were considered to be impossible. Examples are typhoons on Hokkaido and the extreme flood in summer 2021 in Germany, Belgium and the Netherlands.</p> <p>In the special sessions we build on knowledge developed in the joint research by The Netherlands and Japan and discuss lessons learned. We would like to invite other experts to participate and share experience with their research and events from other countries.</p>
○ Output (Tentative)	A better understanding about new possible flood events caused by climate change, and how to integrate these events in risk analyses given uncertainty about these events.
○ Number of Participants (Tentative)	No limit. We prefer to invite some countries to give a short pitch to in the special session after an introduction of the Jointed NL/JP research, and afterwards discuss the insights with all participants.
○ Contact	<p>Bas Kolen, <a href="mailto:Kolen@hkv.nl">Kolen@hkv.nl</a> Executive Director Senior expert Risk and Disaster Management</p> <p>Manabu Chiba, <a href="mailto:m.chiba@ric.or.jp">m.chiba@ric.or.jp</a> Planning Department of River center of Hokkaido (RIC)</p>

## 9<sup>th</sup> International Conference on Flood Management (ICFM9)

### APWF for the special session

Special Cooperation from the UNESCO IHP Asia-Pacific Regional Steering Committee

**19<sup>th</sup> February 15:00- 16:30**

### Hybrid Format:

**Room 405** in the Epochal Tsukuba International Congress Center, Tsukuba, Japan

Online (zoom) [https://us02web.zoom.us/webinar/register/WN\\_u84otPjLSHCXLYXwrokF6w](https://us02web.zoom.us/webinar/register/WN_u84otPjLSHCXLYXwrokF6w)

**(online participation is free)**

#### **Title of Special Session**

**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**

#### **Session Overview**

Rivers hold the key to climate resilience, but water-related disasters — whether slow-onset or acute events — continue to have devastating impacts on the communities and economies of each river basin. To discuss the issues and accelerate the actions for solutions, 18 Heads of State and Government (HSG) of Asia and the Pacific who participated in the 4th Asia-Pacific Water Summit (APWS) adopted the Kumamoto Declaration. The HSG has reached the collective understanding that we can reduce cascading flood risk and strengthen transboundary cooperation by restoring a sound water cycle. The HSG also determined to improve quality infrastructure development for sustainable, resilient, and inclusive societies by integrating water sector measures' hard and soft components.

The objectives of this special event are to examine flood controls in science and technologies, governance, and finance, as part of the follow-up of the Kumamoto Declaration of the 4th APWS. It aims to summarize the challenges and opportunities in Asia to promote river basin management toward disaster resilience and sustainability by all. It also seeks to share the pathways to remove hurdles, innovate solutions, and forge cooperation by sharing the good practices to facilitate the HSG's informed decision-making toward the UN Water Conference 2023 and the 10<sup>th</sup> World Water Forum.

By sharing the cases of each sub-region of Asia, it will discuss:

- Contribution of science and technologies to address the flood challenges in Asia
- Ways to develop and integrate methods and data sets to better address the complexity of the water cycle and water resource management under changing climate,

- Opportunities, barriers, and resource and technological needs to promote river basin disaster resilience and sustainability by all
- Governance to make use of the best available science and technologies
- Ways to set goal-orientated cooperation to enhance engagement from stakeholders other than the government organizations about river basin management,
- ways to enhance the political wills of government leaders to mobilize and improve resources for data and information, capacity development, and innovation to encourage river basin disaster resilience and sustainability by all.

#### Provisional Agenda

15:00-15:02	Session overview: Ms. Yumiko Asayama, Chief Manager, JWF
15:02-15:06	Opening Remarks: Dr. Kotaro Takemura, JWF Secretary-General
15:06- 15:17	Keynote presentation Contribution of science and technologies toward the solutions to address flood challenges in Asia (title TBD): Prof. Taikan Oki, Professor, Graduate School of Engineering, The University of Tokyo (c/o Advisor to the President of Japan Water Forum)
15:17-15:26	Indonesia's case Dr. Firdaus Ali, Senior Advisor in Water Resources to the Minister of Public Works and Housing, the Republic of Indonesia
15:26-15:35	Philippines' case Prof. Guillermo Q. Tabios III, Institute of Civil Engineering, University of the Philippines
15:33-15:42	Pakistan's case : Dr. Hifza Rasheed, Director General, Pakistan Council of Research in Water Resources, Islamabad, Pakistan
15:42-15:51	Cases of the Republic of Korea Dr. Joo-Heon Lee, Vice-chairperson of IHP-ROK c/o Professor of civil engineering department, Director of drought research center, Joongbu University
15:51-16:00	Flood control investments in Asia Dr. Mikio Ishiwatari, Senior Advisor on Disaster Management and Water Resources Management at Japan International Cooperation Agency (JICA) c/o Visiting Professor, Graduate School of Frontier Sciences, The University of Tokyo c/o Board Director, Japan Water Forum

16:00-16:09	Governance to make use of science for flood control (Title TBD): Dr. Hiroataka Matsuki, Head of Research Group, International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM)
16:10-16:28	Panel Discussion, Q&A
16:28-16:30	Wrap up

### **The output of this event**

- The showcases and recommendations of this event will supplement and deepen the discussion of the 4th APWS
- Assist the HSGs and their supporting policymakers in informed decision-making in visualizing the goals and process of the measures towards Water-related Disasters Risk Reduction and Climate Resilience by All in the River Basins with the provision of the concrete measure implemented in various Asia following each country's development process and their available resources
- it will contribute to the goals of the actions proposed for the theme of interactive dialogue about Water for Climate, Resilience, and Environment, as well as Water for Development, Water for Cooperation, and action proposals for the accelerators of the SDG6 Global Acceleration Framework in terms of data and information, capacity building, innovation, and governance, by designing the session reflecting the themes of the UN Water Conference 2023 and providing the showcases in Asia
- Provide knowledge to the international community involved in the Global Platform for Disaster Risk Reduction about the ways of transformation from risk to resilience toward Sustainable, Resilient, and Inclusive development for quality-oriented societies in Asia

### **Contact**

**Ms. Yumiko Asayama, Chief Manager, Japan Water Forum c/o APWF Secretariat**

6th Fl., 5-4 Nihonbashi-Hakozaki-cho, Chuo-ku, Tokyo,

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Email: [asayama@waterforum.jp](mailto:asayama@waterforum.jp)

<b>Date &amp; Time:</b> 20 <sup>th</sup> Feb. 13:00-14:30, 15:00-16:30	<b>Venue:</b> Room 405
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Title	Global Flood Monitoring and Modeling
Organizer	<ul style="list-style-type: none"> <li>● Dai Yamazaki, The University of Tokyo, Japan</li> <li>● Yukiko Hirabayashi, Shibaura Institute of Technology, Japan</li> <li>● Mark Trigg, University of Leeds, UK</li> <li>● Dirk Eilander, Vrije Universiteit Amsterdam / VU, Netherlands</li> </ul>
Outline/Objectives	<p>Flood risks associated with recent climate change and socioeconomic development have become apparent in many parts of the world. However, in many developing countries, detailed flood risk information, such as hazard maps, are available only in a few places.</p> <p>In areas where local flood risk information is unavailable, Global Flood Models (GFMs) and satellite-based flood risk monitoring can be essential tools for disaster mitigation. This session invites abstracts from people involved in various aspects of developing and applying GFMs and global flood monitoring.</p>
Output (Tentative)	The latest research trends on GFMs and global flood monitoring will be presented.
Number of Participants (Tentative)	40
Contact	Dai Yamazaki ( <a href="mailto:yamadai@rainbow.iis.u-tokyo.ac.jp">yamadai@rainbow.iis.u-tokyo.ac.jp</a> ) Yukiko Hirabayashi ( <a href="mailto:hyukiko@shibaura-it.ac.jp">hyukiko@shibaura-it.ac.jp</a> )

## ICFM9 Special Session : Global Flood Partnership

Date & Time: 20th Feb. 13:00-14:30, 15:00-16:30 (JST)

On-site Venue: Room 405, Epochal Tsukuba International Congress Center, Tsukuba, Japan

Online: <https://u-tokyo-ac-ip.zoom.us/j/91680211813?pwd=SGs3SE5bTlItOxWRWpyOGY2eVFOOT09>

Meeting ID: 916 8021 1813 Passcode: 633284

GFP Session 1 (10-minutes presentation, 5-minutes discussion)			Chair: Yukiko Hirabayashi (Shibaura Institute of Technology)
13:00-14:30	Author 1 Name	Author 1 Organization	Title
O1	Dai Yamazaki	The University of Tokyo	What's the value of super-high-resolution global river
O2	Dirk Eilander	1) Institute for Environmental Studies (IVM), Vrije Universiteit, Amsterdam 2) Deltares, Delft	Towards large-scale compound flood risk analysis
O3	Manal A. H. Al Balushi	School of Geography, University of Leeds, Leeds, UK	Flood processes in the Sahalnout ephemeral catchment, Sultanate of Oman
O4	Huan Wu	Sun Yat-sen University	A Glocal (global to local) Hydrometeorological Solution to Floods (GHS-F)
O5	Amrie Singh	University of Leeds	Estimating Drainage Capacity for Flood Modelling Using the Capacity Assessment Framework
O6	Sagy Cohen	University of Alabama	Current and Future Directions in Flood Inundation Mapping within Forecasting Frameworks

GFP Session 2 (10-minutes presentation, 5-minutes discussion)			Chair: Dai Yamazaki (IIS, the University of Tokyo)
15:00-16:30	Author 1 Name	Author 1 Organization	Title
O7 (online)	Gode Bola	General Commissioner of Atomic Energy/Regional Centre for Nuclear Study	Applications of Open-Access Data for Flood risks assessment in the Congo River Basin
O8	Mark V. Bernhofen	University of Leeds	Left off the map? Limits of global data for assessing flood risk to refugee camps in Ethiopia
O9	Andrew B. Carr	School of Civil Engineering, University of Leeds, Leeds, UK	City-scale flood modelling in data scarce situations: Perspectives from a case study of Addis Ababa
O10	Masahiro Tanoue	National Institute for Environmental Studies	The limit to adaptation of river flooding
O11	Yugo TSUMURA	Graduate School of Civil Engineering, Shibaura Institute of Technology, Japan	Development of a unit cost model of structural river management based on global construction cost data
O12	Mark A Trigg	School of Civil Engineering, University of Leeds, Leeds, UK	Combining global flood risk data and approaches with local data and expertise to assess urban flood risk in the city of Belo Horizonte, Brazil

Poster	Ruijie Jiang	Department of Earth System Science, Tsinghua University, Beijing, China	Tenfold increase in flood exposure across China's major urban agglomerations induced by climate change and urbanization
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Special session outline

<b>Date&amp;Time:</b> 20 <sup>th</sup> Feb. 15:00-16:30	<b>Venue:</b> Convention Hall 200
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Title	JSPS Flash floods Project
Organizer	Sameh Kantoush, Water Reproduces Research Center, Disaster Prevention Research Institute Kyoto University
Outline/Objectives	<p>Description of the Special Session</p> <p>Under the umbrella of the JSPS Core to Core Project, we are going to organize a special session for discussing the new advances and progress in research activities about flash floods and sediment disasters in both African and Asian basins to compare the impacts of climate change at these different climatic regions. There are many shared challenges in African and Asian Countries. Therefore, we would highlight the current challenges and recent research achievements as well as the future perspective in terms of flooding and sedimentation impacts. The main aim of this Core-to-Core project is to connect the developed separated efforts in the MENA region and Asia for flooding research studies, sharing achievements, and extending collaboration through establishing a network within institutions in the participating countries (JSPS WaFFNet). Additionally, it is to foster young researchers and graduate students to create a research network as well as direct mutual collaboration at the institutional levels, which will be an excellent achievement to share challenges and current progress to come up with reasonable and practical solutions for the flash flooding challenges and sedimentation impacts under the climate change variability.</p>
Output (Tentative)	The collaborative members, including many professors and researchers from Asian, African, and Japanese Institutes, will join the special session. Several topics will be presented from different countries covering modeling, case studies, experiences, new approaches to flood risk assessment, and climate changes.
Number of Participants (Tentative)	20
Contact	Prof. Sameh Kantoush kantoush.samehahmed.2n@kyoto-u.ac.jp
Other information	Detailed Program is attached.



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# **Establishing Network focusing on Flash Flood Disaster: Comparison between MENA and Asia (JSPS WaFFNet Project)**

**Program for special sessions in ICFM9 Conference**

**Special Session at the 9th International Conference on Flood Management (ICFM9)**

**Venue: Epochal Tsukuba International Congress Center, Tsukuba, Japan**

***20<sup>th</sup> of February 2023, Tsukuba, Japan***

Funded by: JSPS/ Core-to-Core Program/ B. Asia-Africa Science Platforms

&

Disaster Prevention Research Institute

Kyoto University

## **Description of the Special Session**

Under the umbrella of the JSPS Core to Core Project, we are going to organize a special session for discussing the new advances and progress in research activities about flash floods and sediment disasters in both African and Asian basins to compare the impacts of climate change in these different climatic regions. There are many shared challenges in African and Asian Countries. Therefore, we would highlight the current challenges and recent research achievements as well as the future perspective in terms of flooding and sedimentation impacts. The main aim of this Core-to-Core project is to connect the





developed separated efforts in the MENA region and Asia for flooding research studies, sharing achievements, and extending collaboration through establishing a network within institutions in the participating countries (JSPS WaFFNet). Additionally, it is to foster young researchers and graduate students to create a research network as well as direct mutual collaboration at the institutional levels, which will be an excellent achievement to share challenges and current progress to come up with reasonable and practical solutions for the flash flooding challenges and sedimentation impacts under the climate change variability. The collaborative members, including many professors and researchers from Asian, African, and Japanese Institutes, will join the special session. Several topics will be presented from different countries covering modeling, case studies, experiences, new approaches to flood risk assessment, and climate changes.

***Program of the JSPS WaFFNet Project Special Session at ICFM9 on 20<sup>th</sup> of February 2023, Tsukuba, Japan: 3pm-4:30pm (90 min)***

	Time	Title	Speakers
		<i>Chairman: Opening and welcome remarks</i>	<i>Prof. Tetsuya Sumi, DPRI, Kyoto Univ.</i>
1	10	<i>JSPS WaFFNet Project objectives, concept, and activities</i>	<i>Prof. Sameh Kantoush, DPRI, Kyoto Univ.</i>
2	10	<i>Hydrological and morphological Changes of the coast due to extreme typhoons in Japan</i>	<i>Prof. Tanaka Hitoshi, Tohoku University</i>
2	10	<i>Flash floods and sedimentation modeling, challenges over Algeria</i>	<i>Prof. Cherifa Abdelbaki, PAUWES, Algeria</i>
3	10	<i>Impact of Sedimentation of Recharge dams on Water Resources Management: overview from Oman</i>	<i>Prof. Ali Al-Maktoumi, SQU, Oman</i>
4	10	<i>Flash floods and urban planning in Morocco</i>	<i>Prof. Dalila Loudyi, Hassan II University of Casablanca ,Morocco:</i>
5	10	<i>Integrated flood and sediment management in river basins for sustainable development: The case of Cagayan River Basin, the Philippines</i>	<i>Prof. Orlando Balderama, Isabela State University, Philippines</i>

## ICFM9 Special Session

### “SATREPS project between Japan and Philippines toward Climate Resilience”

Date: 15:00-16:30 (JST), February 20 (Mon)

Style: Hybrid (in person and online)

Place: Room number #201, Epochal Tsukuba International Congress Center, Tsukuba,  
Japan

Online link:

<https://pwri.webex.com/pwri-jp/j.php?MTID=m51b07e71a14a522bb11ee46cee4a1>

#### Outline of the session:

This session introduces bilateral international joint research project between Japan and the Philippines under Science and Technology Research Partnership for Sustainable Development (SATREPS). The project aims to develop a hybrid water-related disaster risk assessment technology combining climate, hydrological agricultural and socio-economic models and propose sustainable local economic development policy under climate change.

The session includes 7 presentations introducing each component of the project activity and discussions among presenters and audience.

#### Program (tentative):

Time	Program	Speaker / Presentation title /Abstract
Opening		
15:00-15:05	1. Opening remarks	Dr, OHARA Miho (ICHARM / SATREPS Project Leader)
15:05-15:15	2. Speech from JICA	Mr. MINAMITANI Taichi, (Director, Disaster Risk Reduction Team1, Disaster Risk Reduction Group, Global Environment Department, JICA)
3. Presentations (Presentation 8 min, Q&A part 1 and part2)		
15:15-15:23	Development of a Hybrid Water-Related Disaster Risk Assessment Technology for Sustainable Local Economic Development Policy under Climate Change in the Philippines	Dr. Fernando C.Sanchez Jr. (Professor, The University of the Philippines Los Baños (UPLB) / SATREPS Project Director)

15:23-15:31	Agricultural Monitoring and Flood/Drought Risk Assessment with Hydro-Agricultural Simulation Model in the Laguna de Bay Basin, Philippines	Engr. Vicente G. Ballaran Jr. (Assistant Professor, UPLB /Research Assistant, ICHARM-GRIPS)
15:31-15:39	Methodologies for the Impact Assessment of Floods and Droughts in Laguna Watersheds	Dr. Patricia Ann J. Sanchez (Professor, The University of the Philippines Los Baños (UPLB) /SATREPS Project Manager)
15:39-15:47	Integrated Decision Support System Analysis for Water Resource Management: Applications and Lessons Learned from Laguna Lake	Dr. Eugene C. Herrera (Assistant Professor, The University of the Philippines Diliman)
15:47-15:57	Q&A Session (part 1) (10min)	
15:57-16:05	Classification of communities based on landforms and flood history in Candaba Swamp	Dr. NAGUMO Naoko (Research Specialist, ICHARM)
16:05-16:13	Efforts to visualize the spatial damage distribution of typhoon disasters in the Philippines using Google Earth Engine	Dr. AIDA Kentaro (Research Specialist, ICHARM)
16:13-:16:21	e-Learning for Capacity Building on Flood Simulation and Risk Assessment Technology	Dr. Miho OHARA (Senior Researcher, ICHARM)
16:21- 16:28	Q&A Session (part 2) (7min)	
Closing		
16:28-16:30	4. Closing Remarks	Dr. Fernando C.Sanchez Jr. (Professor, The University of the Philippines Los Baños (UPLB) / SATREPS Project Director)

## ABSTRACT

### **Presentation1**

Presenter: Dr. Fernando C.Sanchez Jr

(Professor, The University of the Philippines Los Baños (UPLB) / SATREPS Project Director)

Title: Development of a Hybrid Water-Related Disaster Risk Assessment Technology for Sustainable Local Economic Development Policy under Climate Change in the Philippines

#### Abstract

The Philippines is one of the most disaster-prone countries in the world. Located in the Pacific ring of fire, the Philippines is visited by a multitude of hazards that, compounded with climate change, have devastating effects to the local communities in the country. This study looks at 3 areas: Laguna, Metro Manila and Pampanga River basin. These areas are the major urban and agricultural development areas that are frequently visited by floods and drought hazards. The SATREPS project is a collaboration between Japan and the Philippines that aims to: 1) enhance cooperation in science and technology between nations, 2) develop new technologies, new knowledge, and innovations, and 3) capacity development for all for practical utilization and implementation of research outcomes that will be beneficial to society. The Hybrid water-related disaster risk assessment technology study incorporates climate model into the hydrological and agricultural and socio-economic models to determine the impacts of floods and droughts to agriculture and local communities while factoring in climate change with the overall goal of recommending policies, plans and programs to achieve sustainable economic development by improving water-related disaster resilience and to promote balanced national land development. The project utilizes the end-to-end approach combining the scientific approach, engineering approach and the socio-economical approach with the purpose of coming up with policy recommendations for sustainable economic development in urban and rural areas under climate change formulated based on the hybrid water-related disaster risk assessment technology covering climate change, hydrology, agriculture, and socio-economic activity. Currently, for the Philippine side, this project is a collaboration between the academe (UPLos Banos (lead), UPDiliman, UPMindanao) and both local and national government agencies of the Philippines (DOST, DPWH, LLDA and MMDA) and JICA (ODA). For the Japan side, this is in collaboration with ICHARM (lead agency), academe (University of Tokyo, Tohoku University, University of Shiga Prefecture, University of Nagoya, Kyoto University), JICA, Embassy of Japan and JST (funder).

## **Presentation2**

Presenter: Engr. Vicente G. Ballaran Jr.

(Assistant Professor, UPLB /Research Assistant, ICHARM-GRIPS)

Co-author: Abdul Wahid Mohamed RASMY, OHARA Miho

Title: Agricultural Monitoring and Flood/Drought Risk Assessment with Hydro-Agricultural Simulation Model in the Laguna de Bay Basin, Philippines

### Abstract

The Philippines is a country prone to natural disasters, including floods and droughts, which can significantly impact the agricultural sector. Laguna de Bay, the study area, is the largest lake in the Philippines, spanning 900 square kilometers and located in the Laguna de Bay Basin, a significant part of the Pasig-Laguna Basin. Due to its low-lying coastal areas and numerous bodies of water, the lake is susceptible to several natural disasters, including floods and typhoons, particularly during typhoon seasons. As such, it is crucial for the local government, the community, and the agricultural sector to be prepared for these types of disasters and have contingency plans in place to minimize their impacts. To account for the water balance at the field scale, the Water and Energy Budget-based Rainfall, Runoff, and Inundation (WEB-RRI) Model will be used as the hydrological model, coupled with SIMRIW (Simulation Model for Rice Weather Relations), a crop simulation model, to simulate the growth and development of rice crops based on weather data. After the installation of the WEB-RRI framework and the database needed for the Pasig-Laguna Basin, the 2005 discharge data from Sto. Niño Station will be calibrated, and the initial calibration yields a fairly good result. As the study is still in progress, it will be improved and validated for the 2006 and 2007 actual discharge data. The flooding and inundation during Typhoon Ulysses in 2020 and Typhoons Karding and Paeng in 2022 will be investigated and validated from this calibrated WEB-RRI Model, considering the actual field observation and validation activities that were done in Laguna Lake to further enhance the model. Currently, the use of drones and satellite data and ongoing field activities are also being undertaken to provide more comprehensive and timely information for hydrological and agricultural models. Overall, the study on agricultural monitoring and flood/drought risk assessment with hydro-agricultural models can improve the efficiency and effectiveness of agricultural monitoring and response strategies, resulting in increased agricultural productivity, reduced risk of crop loss due to floods and droughts, improved livelihoods for farmers in the Philippines, and help inform policy decisions related to water and food security.

### **Presentation3**

Presenter: Dr. Patricia Ann J. Sanchez:

(Professor, The University of the Philippines Los Baños (UPLB) /SATREPS Project Manager)

Co-author : Decibel V. Faustino-Eslava, Damasa M. Macandog, Mona Liza F. Delos Reyes, Janice B. Sevilla-Nastor, Jessica D. Villanueva-Peyraube, Evaristo Niño T. Cando, III, Alma Lorelei D.J. Abejero, Aurelio A. Delos Reyes, Jr., Jessa O. Aquino, Catherine B. Gigantone, Therese R. Olviga, Daniel Edison M. Husana, Eugene Herrera, Joy Marie M. Jamilla, Maria Angeles O. Catelo, Agnes C. Rola, Agham C. Cuevas, Marnie Mae M. Mendoza, Myra E. David, Aaron T. Castillo, Deborah B. Gay, Maria Cristina A. Alvarez, Maria Helen F. Dayo (UPLB)

Title: Methodologies for the Impact Assessment of Floods and Droughts in Laguna Watersheds

#### Abstract

The Municipalities of Bay, Pila and Santa Cruz are the 3 study sites selected based on their economic importance, varied ecosystems, vulnerability to climate change hazards and accessibility. The main objective of the study is to analyze the impacts of water-related disasters and adaptation strategies in the agri-fisheries municipalities of Laguna. Specifically, 1) to identify flood and drought events experienced by and roles of the communities, 2) assess the knowledge and perception of communities on existing flood and drought related management policies/ordinances and programs 3) assess gendered risk management strategies and disaster responses of the municipalities, 4) quantify the social and economic losses of floods and droughts, 5) propose interventions based on adaptive collaborative flood and drought management and 6) co-create policies or ordinances in support of flood and drought management. The End-to-End approach utilized in the HyDEPP SATREPS study for floods, droughts and climate change was localized to these municipalities by combining the environmental system and the socioeconomic system to determine activities that promote resilience in the local communities by providing both soft and hard structures that are geared towards improving the quality of life of the people. This study combines secondary data, plans and maps, with primary data gathered through monthly meetings with the local barangay officials, municipal employees, key informant interviews of the local farmers and fisherfolks, and detailed surveys of selected communities to come up with a detailed storyline of their experiences with floods and droughts, their perceptions and local adaptation strategies, co-create policies and ordinances and possible programs with them that may help adapt to these hazards, and come up with resilience indicators that could be utilized in improving their quality of life despite the hazards that they encounter.

#### **Presentation4**

Presenter: Dr. Eugene C. Herrera

(Institute of Civil Engineering, University of the Philippines, Diliman)

Title: Integrated Decision Support System Analysis for Water Resource Management: Applications and Lessons Learned from Laguna Lake

Abstract:

Laguna Lake with its competing and conflicting water-users and continued environmental degradation from anthropogenic-based stressors may be considered the most stressed inland water body in the Philippines. A Decision Support System which provides a comprehensive scientific description of environmental systems and variables is essential for the assessment of different strategies and measures in aid of management. A prerequisite for setting up a successful ecosystem model is a good understanding of the key processes in the lake. Continuous monitoring and field surveys accompanied by data processing and analysis are important and integral for this purpose. Numerical models for describing hydrology, hydrodynamics, sediment transport, water quality and ecology provide a deeper temporal and spatial understanding of Laguna Lake ecosystem functioning. This information provides the needed scientific basis for developing policies and strategies for effectively managing the lake environment.

## **Presentation5**

Presenter: Dr. NAGUMO Naoko

Co-author : AIDA Kentaro, OHARA Miho, Vicente G. Ballaran, Jr.

Title: Classification of communities based on landforms and flood history in Candaba Swamp

### Abstract

Candaba swamp is an important agricultural field in the Luzon Island. Since it receives floods in the rainy season and is inundated, local livelihoods and agriculture are adopted to the seasonal floods. However, large-scale floods often occur by typhoons and cause serious damage, and there is concern about the expansion of flood-prone area due to climate change and the spread of damage to the areas that have not been adopted to the floods. Therefore, understanding local characteristics regarding inundation and agriculture is necessary. The authors classified the communities based on analysis of floods for the past 10 years and local landforms. As a result, they were roughly divided into a group that is hardly inundated, a group that is heavily inundated when a large-scale flood happens, and a group that is always inundated. The authors also analyzed agricultural statistical data in the communities and found that each group cultivated according to the degree and timing of inundation.



## **Presentation6**

Presenter: Dr. AIDA Kentaro

Co-author: NAGUMO Naoko, Patricia Ann Jaranilla-Sanchez, OHARA Miho

Title: Efforts to visualize the spatial damage distribution of typhoon disasters in the Philippines using Google Earth Engine

### Abstract

The Philippines has frequent typhoon disasters, which cause severe flood damage. Although the national government releases daily situation reports, it is still difficult to have a timely nationwide picture of damage distribution. This problem can be solved using satellites and Google Earth Engine (GEE). Satellites provide abundant imagery to identify inundation areas, and GEE integrates satellite data and GIS data quickly at a low cost. These technologies help to easily combine satellite imagery with the situation report data and plot the results on GIS, promptly providing an overall picture of the affected region.

This study will report our efforts to visualize spatial damage distribution by integrating satellite imagery and situation report data on GEE for the Typhoon VAMCO in 2020 and RAI in 2021. We will also discuss the applicability and future directions of using such new methods, including the relief efforts to the build-back-better after a disaster.

## **Presentation7**

Presenter: Dr. OHARA Miho

Author: OHARA Miho, MIYAMOTO Mamoru, FUJIKANE Masakazu, YASUKAWA Masaki,  
Patricia Ann J. Sanchez, Fernando C. Sanchez, Jr.

Title: e-Learning for Capacity Building on Flood Simulation and Risk Assessment  
Technology

### Abstract

Capacity building for skills flood simulation, hazard mapping and risk assessment is essential for identifying flood risk in local areas and achieving disaster risk reduction. However, the COVID-19 pandemic has made it difficult to have face-to-face training for this purpose. As an innovative solution to coping with this situation, an e-learning training program was developed to help obtain these skills and provided as part of an international collaborative project between Japan and the Philippines. The program was conducted through both on-demand self-study with a newly developed online platform system and online live sessions to help the participants understand the materials better. A total of 49 participants acquired the essential skills to conduct flood simulation, hazard mapping and risk assessment and completed the program. This pioneering program verified that capacity building is possible even in a remote environment or under a pandemic such as the one caused by COVID-19.

# Lunch Seminar:

## Introduction of Flood Prediction and Adaptation Research under Japan's National Climate Program (SENTAN Program)

Date: 20 February 2023 (ICFM9 Day 2) 12:00-13:00

Venue: EPOCHAL Tsukuba, Room 101

### Program:

Chair: Dr Kenichiro KOBAYASHI, Associate Professor, Kobe University

#### 1) Actionable Climate Science in the SENTAN Program

Dr Izuru TAKAYABU, Japan Meteorological Business Support Center (JMBSC)

#### 2) Flood Prediction Research under the SENTAN Program

Dr Yasuto TACHIKAWA, Graduate School of Engineering, Kyoto University

#### 3) Future Climate Projection Data Set under a Global Warming, DS2022

Dr Toshiyuki NAKAEGAWA, Japan Meteorological Business Support Center (JMBSC)

#### 4) Platforms on Water Resilience and Disasters for Social Sustainability

Dr Hirotsada MATSUKI, International Center for Water Hazard and Risk Management (ICCHARM)

### MEXT-Program for the Advanced Studies of Climate Change Projection (SENTAN)

Across the planet, there have been numerous extreme weather events and disasters in recent years, and their frequency and severity are projected to increase under climate change. Working Group I contribution to the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) (Climate Change 2021: The Physical Science Basis) concluded that it is unequivocal that human influence has warmed the Earth. The report, released in August 2021, is more categorical than its predecessors and highlights the urgent need to address climate change globally and collaboratively. It is therefore important that Japan contributes actively to international efforts, such as the upcoming Seventh Assessment Report (AR7) cycle and the development of the Sustainable Development Goals (SDGs) for 2030, and advance the field of climate change science and technology.

In Japan, various legislations, plans, and activities related to climate change have been put into place. These include the Climate Change Adaptation Act, which came into force in 2018 and diverse practical measures taken by municipalities and private companies. The importance of scientific information as a basis for decision-making is growing; for example there is increasing demand for science-based predictions to support activity planning. However, the practical application of climate change research has remained limited because prediction accuracy and data usability and availability are insufficient to meet the high demand of users. Climate change research needs to be adapted to provide information that can meet the needs of the society.

Thus, in this program, we build on and expand the Integrated Research Program for Advancing Climate Models (2017-2021 FY), and collaborate closely on four study themes under a unified research framework. We aim to improve our understanding of climate change mechanisms, reduce uncertainties, and create highly accurate climate change projections that can be used as the scientific basis for the development of climate change adaptation and mitigation measures. Our goal is to conduct application-oriented research to meet the needs of different users and contribute to the realization of a decarbonized society.

## Invitation to set up a technology exhibition booth at ICFM9

ICFM9, a conference on water-related disaster risk reduction, will have space for businesses and other organizations to set up technology exhibition booths during the conference period.

Since many people eager to see something new in the field are expected to be there, the event will be a great opportunity for you to widely advertise the excellent technology and knowledge that you can offer.

We are looking forward to your active participation.

### <Conference>

- Venue: Multipurpose hall, EPOCHAL Tsukuba
- Theme: End-to-end approach to reduce flood disaster damage in the world: From data collection, analysis, assessment and prediction of natural phenomena to socio-economic impact assessment
- Sub themes:



#### ① Observation & Data Collection

*e.g. Observation using UAVs, artificial satellites, radar systems, etc.*

*Collection of geological, meteorological, and land-use data, etc.*

*Monitoring of river or dam water levels using remote sensing technology, etc.*

#### ② Data Analysis & Prediction

*e.g. Rainfall prediction, flood simulation, risk assessment, etc.*

#### ③ Information Delivery

*e.g. Disaster information dissemination systems, support systems for decision-making such as evacuation orders, etc.*

### <Booths>

- Types:

Type	Large	Medium	Small
Size (m × m)	4.5 × 1.3	2.2 × 1.3	0.9 × 1.3
Fee (Including the personnel registration fee*)	¥200,000	¥120,000	¥50,000
Equipment	Power outlets Two tables Four chairs	Power outlets One table Two chairs	Power outlets No table One chair
No. of personnel allowed in the booth	Three	Two	One

\*The registration fee is 35,000 yen per person to attend the conference, but it is included in the exhibition booth fee for the number of people specified for each size of the booth listed in the table.

<Application>

- **Deadline: Wednesday, 28th December**
  - ✓ Fill in the application form and send it by email to the address below.
  - ✓ The ICFM9 secretariat will examine the content of the exhibition and decide whether it is appropriate to have a booth. The secretariat will contact successful applicants with detailed information, such as payment methods.
  - ✓ The application period may end even before the deadline if we receive too many applications.
- Contact/application: ICFM9 Secretariat [icfm9@icharm.org](mailto:icfm9@icharm.org)

## ICFM9 における技術展示ブースについて

ICFM9 では、以下要領で技術展示ブースを設置します。

本会議へは、洪水災害被害軽減に関心を持つ国内外からの参加者が多く見込まれることから、企業等の皆様が持つ優れた技術や知見を広く情報発信・宣伝する絶好の機会となります。どうぞ奮ってご応募ください。

- 実施場所：エポカルつくば 多目的ホール
- 全体テーマ：「世界の洪水災害被害軽減のための End to End のアプローチ」  
～データの取得から、自然現象の解明・評価・予測、社会・経済への影響評価まで～
- サブテーマ：



① *Observation & Data Collection*

(例) UAV、人工衛星、レーダーなどによる観測、  
地形・気象データ、土地利用データなどのデータ取得、  
水位計(河川やダム)によるモニタリング、  
リモートセンシング技術の活用 など

② *Data Analysis & Prediction*

(例) 降雨予測、洪水シミュレーション、リスク評価 など

③ *Information Delivery*

(例) 防災情報システム、意思決定支援システム など

- ブースの種類：

	ブース大	ブース中	ブース小
大きさ(m×m)	4.5×1.3	2.2×1.3	0.9×1.3
出展費用	¥200,000	¥120,000	¥50,000
備品	電源・ 机 2つ・椅子 4つ	電源・ 机 1つ・椅子 2つ	電源・ 机なし・椅子 1つ
上記費用に含まれる 参加登録費※	3人分	2人分	1人分

※本会議への出席には通常 35,000 円/人の参加登録費が必要ですが、出展費用にはブースの大きさに応じて、右の人数分の参加登録費が含まれます。

- **応募締切：12月28日(水)**

- ✓ 申込書に必要事項を記入し、下記応募先までメールでお送りください。
- ✓ 事務局で展示内容など審査させて頂き、お申し込みを正式に受理させていただいた段階で、費用のお支払い方法など詳細情報をご連絡します。
- ✓ 応募多数の場合、期日前に応募を締め切ることがあります。

- 問合せ先・応募先：ICFM9 事務局 [icfm9@icharm.org](mailto:icfm9@icharm.org)

つくば市内研究所訪問 行程表

(A 班の場合)

時刻	所要時間	場所
13:00	0:10	エポカルつくば
13:10	0:30	移動
13:40	0:30	土木研究所 ダム水理実験施設見学
14:10	0:10	移動
14:20	0:30	土木研究所 洪水 VR 体験 (ICHARM 棟)
14:50	0:30	移動
15:20	0:40	宇宙航空研究開発機構 (JAXA) GsMap の紹介、スペースドーム見学
16:00	0:10	移動
16:10	0:00	エポカルつくば

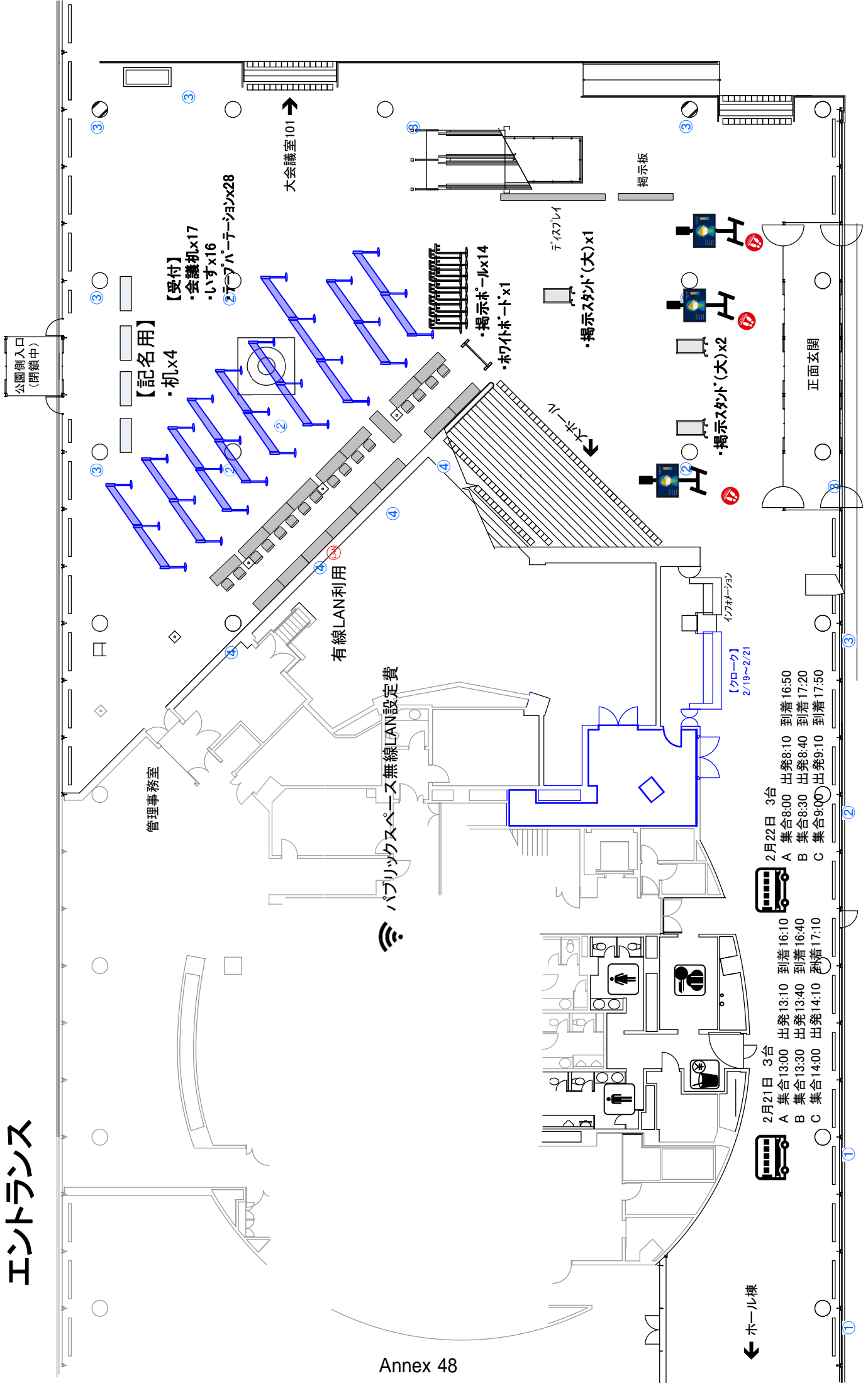
## 関東近郊洪水対策施設見学 行程表

(A 班の場合)

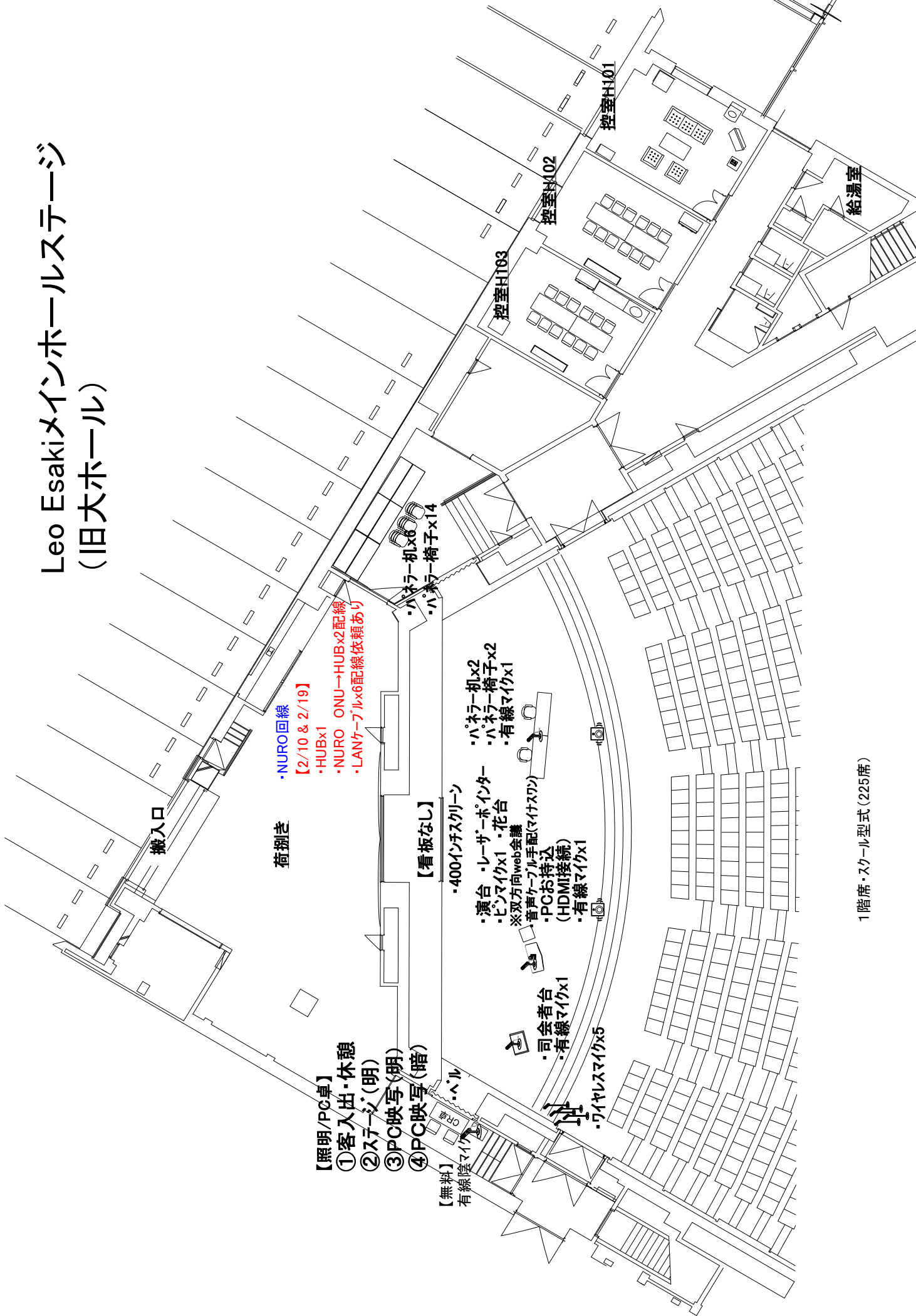
時刻	所要時間	場所
8:00	0:10	エポカルつくば
8:10	0:50	移動
9:00	0:30	2015 年関東・東北豪雨での鬼怒川破堤地点 (鬼怒川堤防決壊の碑 (常総市三坂町))
9:30	1:00	移動
10:30	0:40	首都圏外郭放水路
11:10	1:00	移動
12:10	0:30	大利根水防センター (昼食)
12:40	0:30	移動
13:10	0:30	渡良瀬遊水池
13:40	0:10	移動
13:50	0:20	道の駅かぞわたらせ (休憩)
14:10	1:40	移動
15:50	0:30	防災科学技術研究所 大型降雨実験施設
16:20	0:30	移動
16:50	0:00	エポカルつくば



# エントランス



# Leo Esakiメインホールステージ (旧大ホール)



- 【照明/PC卓】**  
 ①客入出・休憩  
 ②ステージ(明)  
 ③PC映写(明)  
 ④PC映写(暗)

【無料】  
有線マイク

- 荷捌き
- NURO回線  
【2/10 & 2/19】
  - HUBx1
  - NURO ONU→HUBx2配線
  - LANケーブルx6配線依頼あり

- パネラー机x6
- パネラー椅子x14

【看板なし】

- 400インチスクリーン
- 演台
- レーザーポインター
- ピンマイクx1
- 花台
- ※双方向web会議
- 音声ケーブル手配(マイクx2)
- PCお持ち込み(HDMI接続)
- 有線マイクx1
- ワイヤレスマイクx5

- パネラー机x2
- パネラー椅子x2
- 有線マイクx1

- 司会者台
- 有線マイクx1

控室HI03

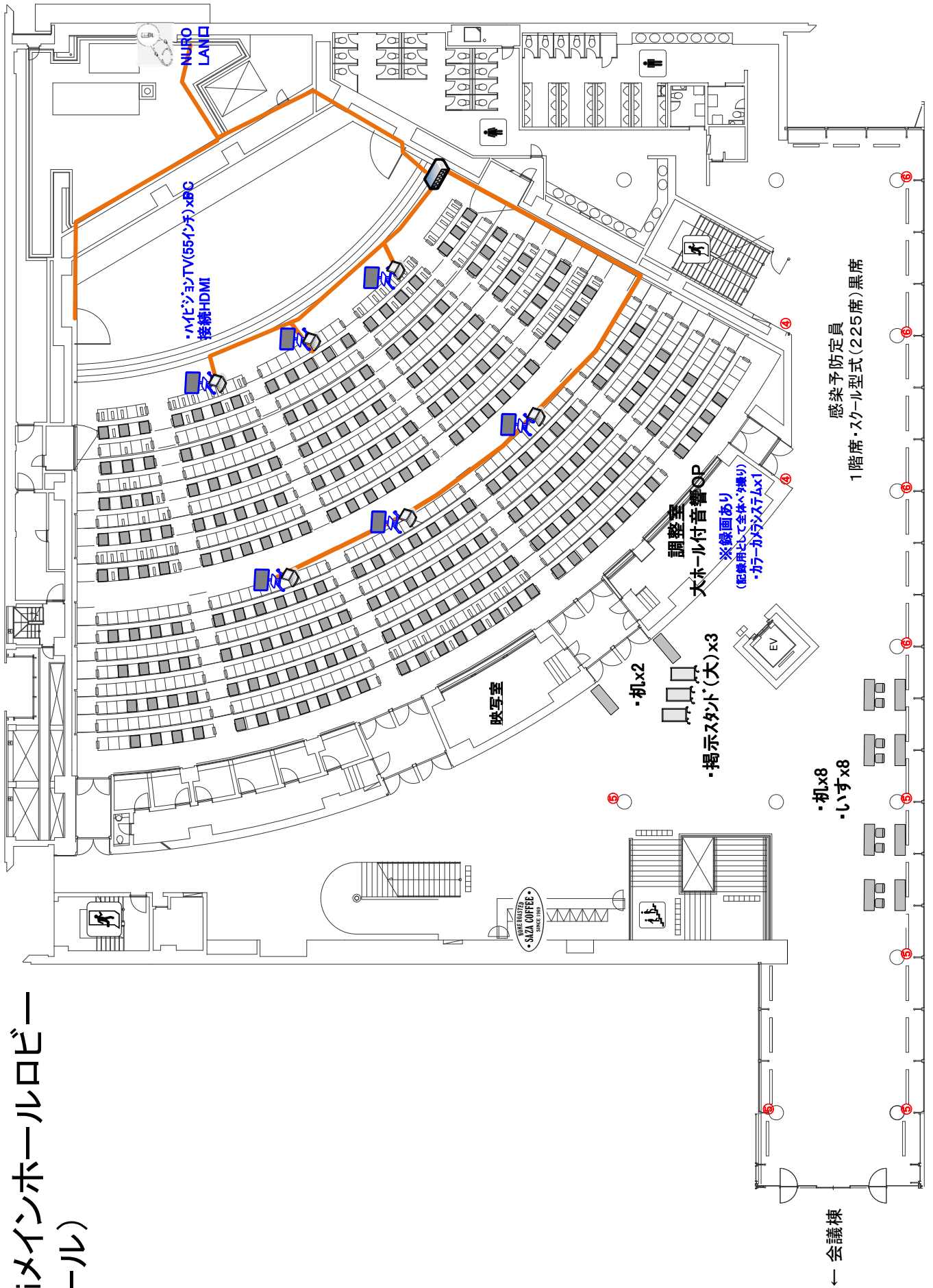
控室HI02

控室HI01

給湯室

1階席・スクール型式(225席)

# Leo Esakiメインホールロビー (旧大ホール)



電源(AC100V)  
15Ax10系統  
無線LAN装置

W3100xH3500

アシア  
光速

三井  
共同

NTTデータ

建設技術  
研究所

照明卓【全体明るく】  
音響卓  
【ワイヤレスマイクx2】

【商談スペースx5】  
・机x10 ・椅子x20

【屋食スペース】  
・机x64 ・椅子x128

・展示ハナルx56

控室101  
電源(AC100V)  
15Ax1系統

# 多目的ホール

Annex 51

多目的ホール利用の場合の  
ホワイエ利用範囲

控室101を利用しない場合  
控室101を利用する場合

・三脚スクリーン  
・視聴覚ワゴン  
・プロジェクター-B  
・PC音声あり(3.5φ)

JBP

日立パワー  
ソリューションズ

NEXUS

天井高 ↑7.2m  
↑3.65m

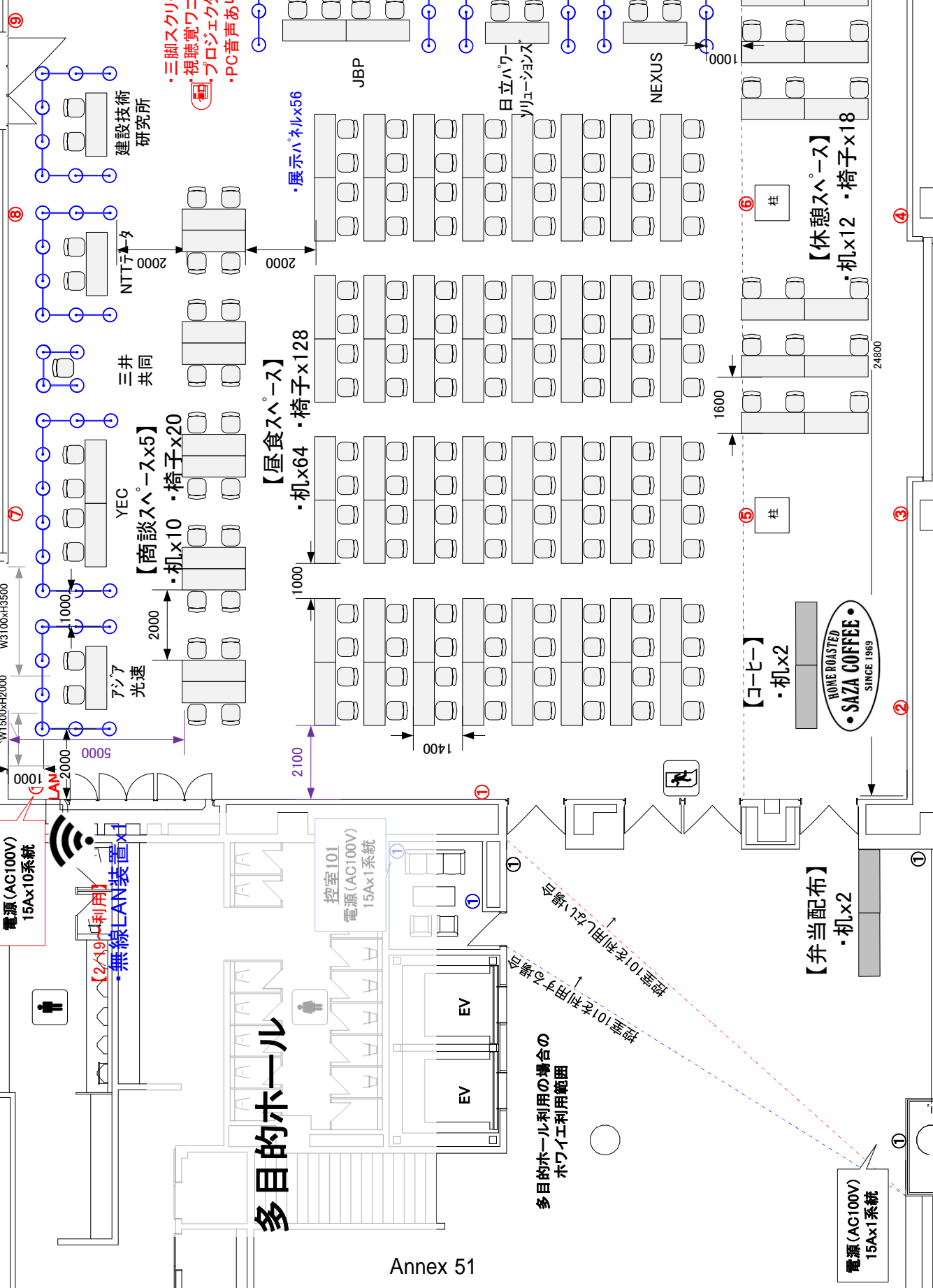
【休憩スペース】  
・机x12 ・椅子x18

【コーヒー】  
・机x2

【弁当配布】  
・机x2

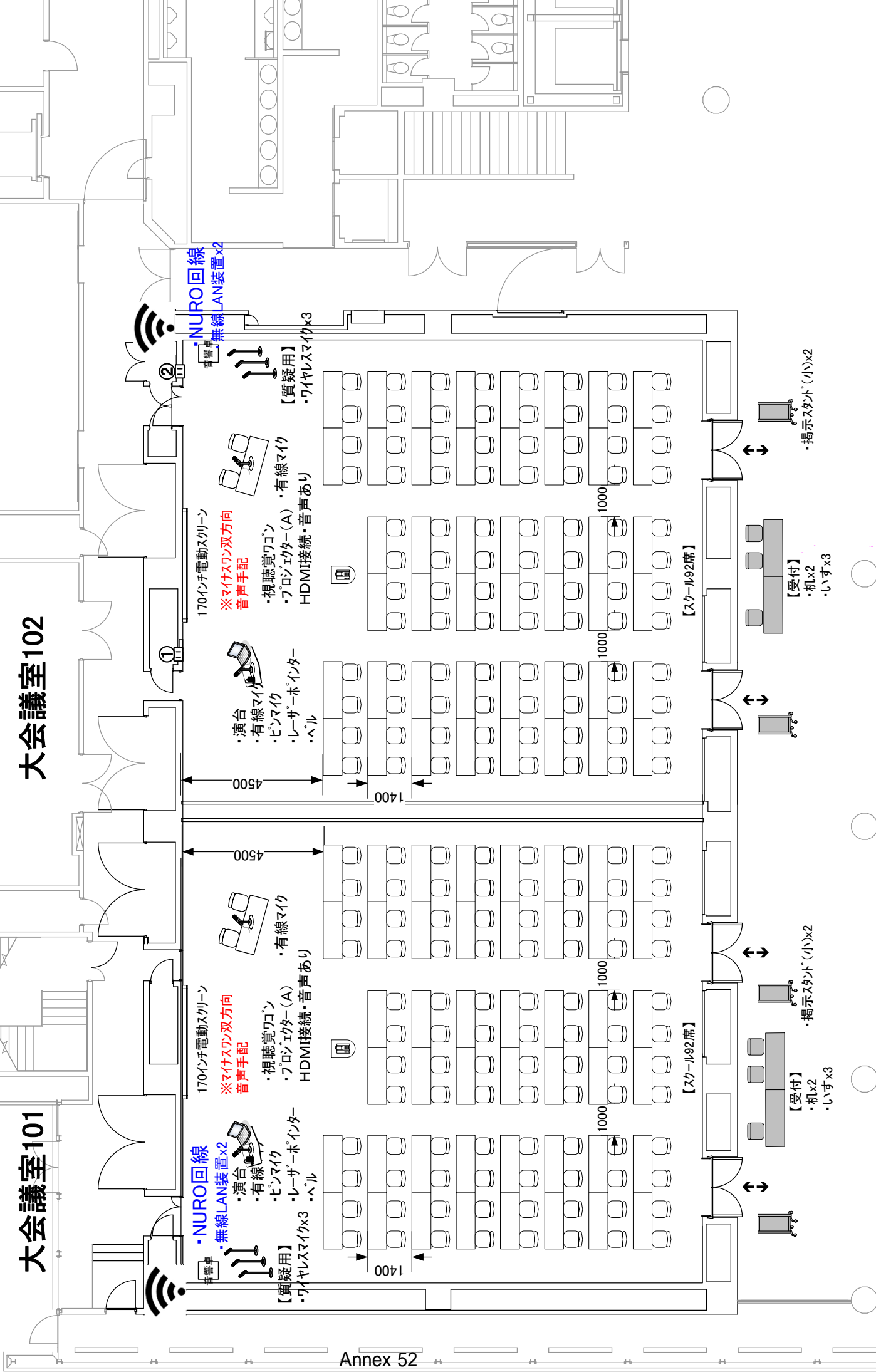


電源(AC100V)  
15Ax1系統



# 大会議室101

# 大会議室102



・NURO回線  
 無線LAN装置x2  
 ・演台  
 ・有線マイク  
 ・ヒンマイク  
 ・レーザーポインター  
 ・ペル  
 【質疑用】  
 ・ワイヤレスマイクx3

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

170インチ電動スクリーン  
 ※マイクx2/双方向  
 音声手配  
 ・視聴覚ワゴン  
 ・プロジェクター(A)  
 HDMI接続・音声あり

【スクール92席】

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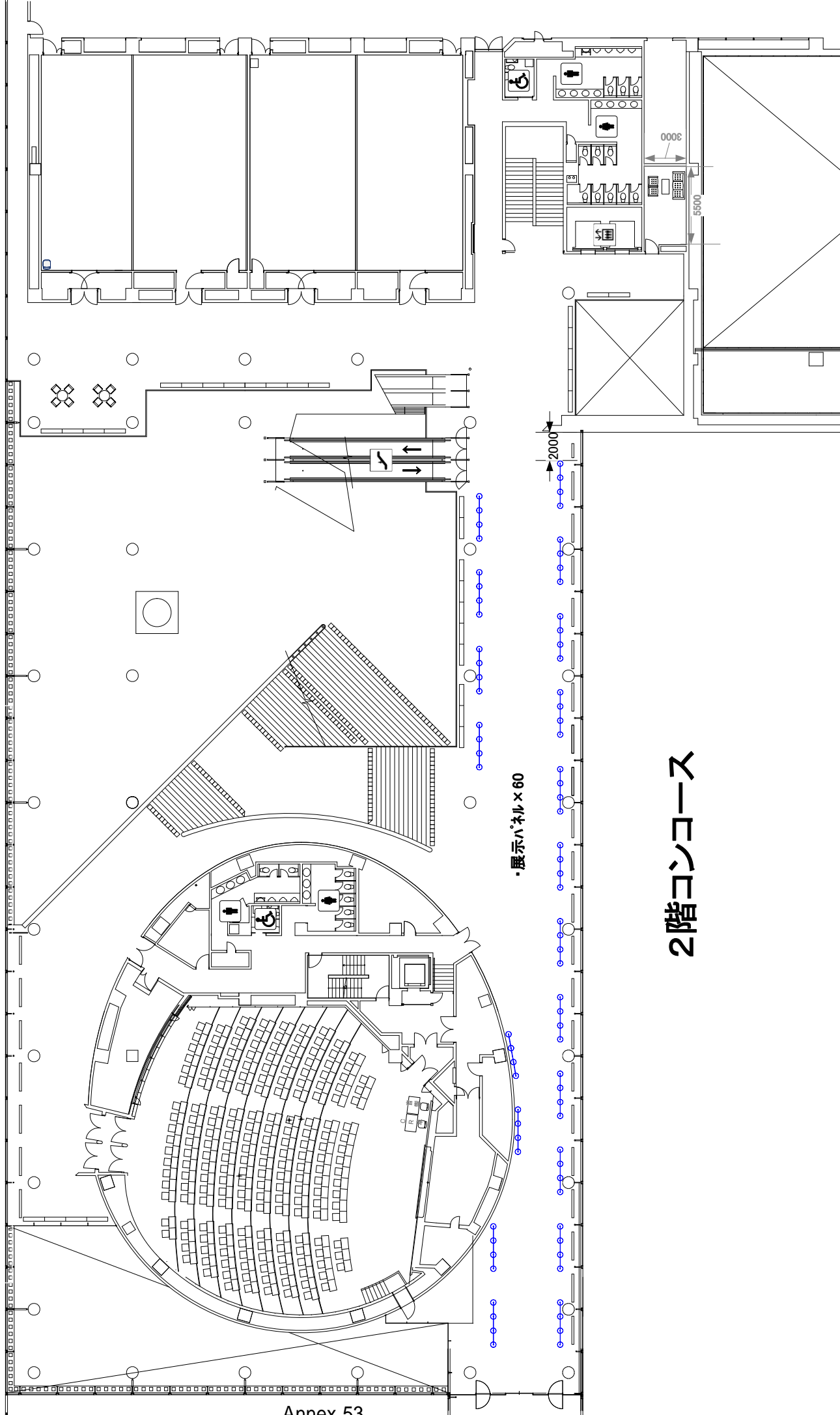
【受付】  
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【受付】  
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2F平面図

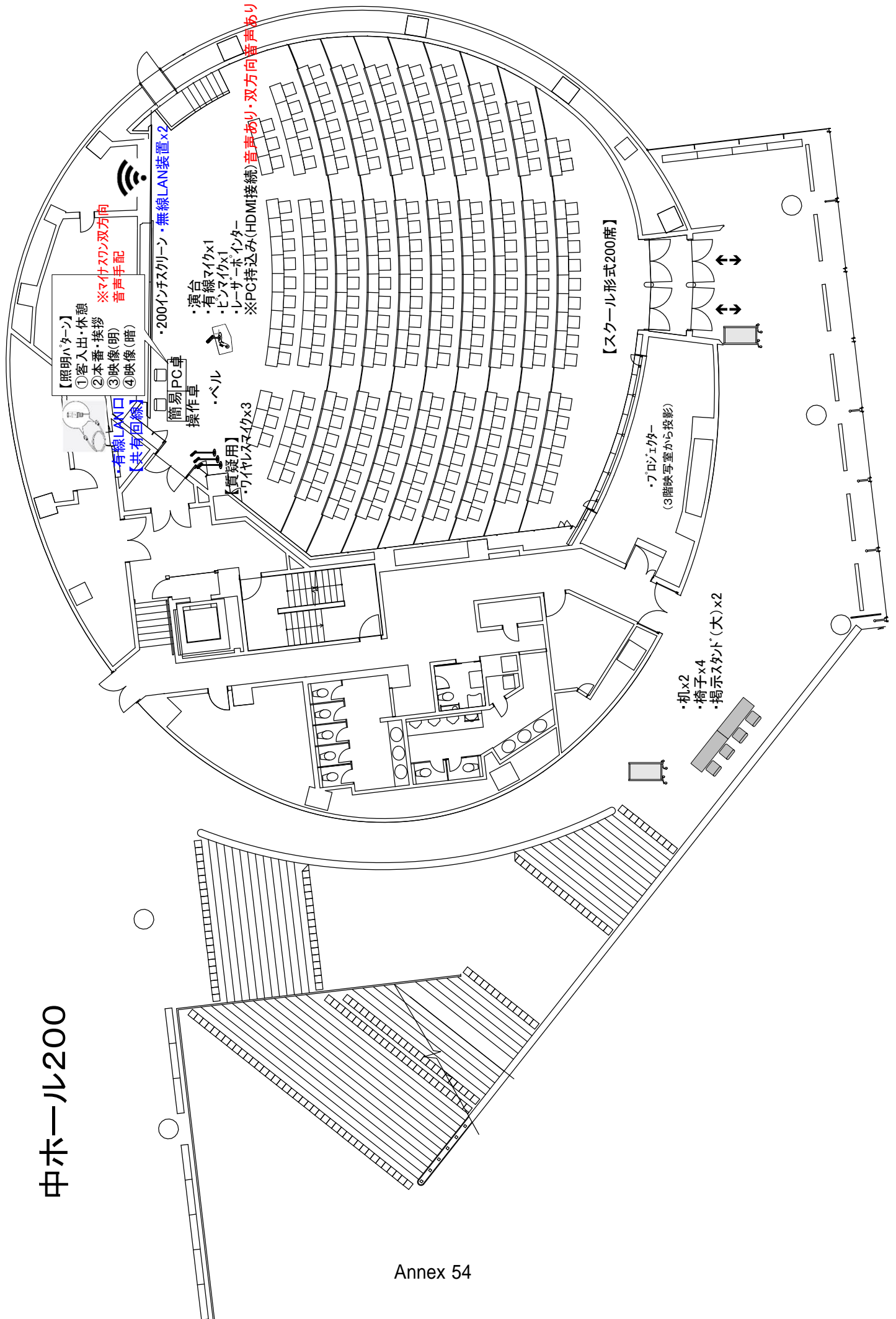


-展示パネル×60

Annex 53

2階コンコース

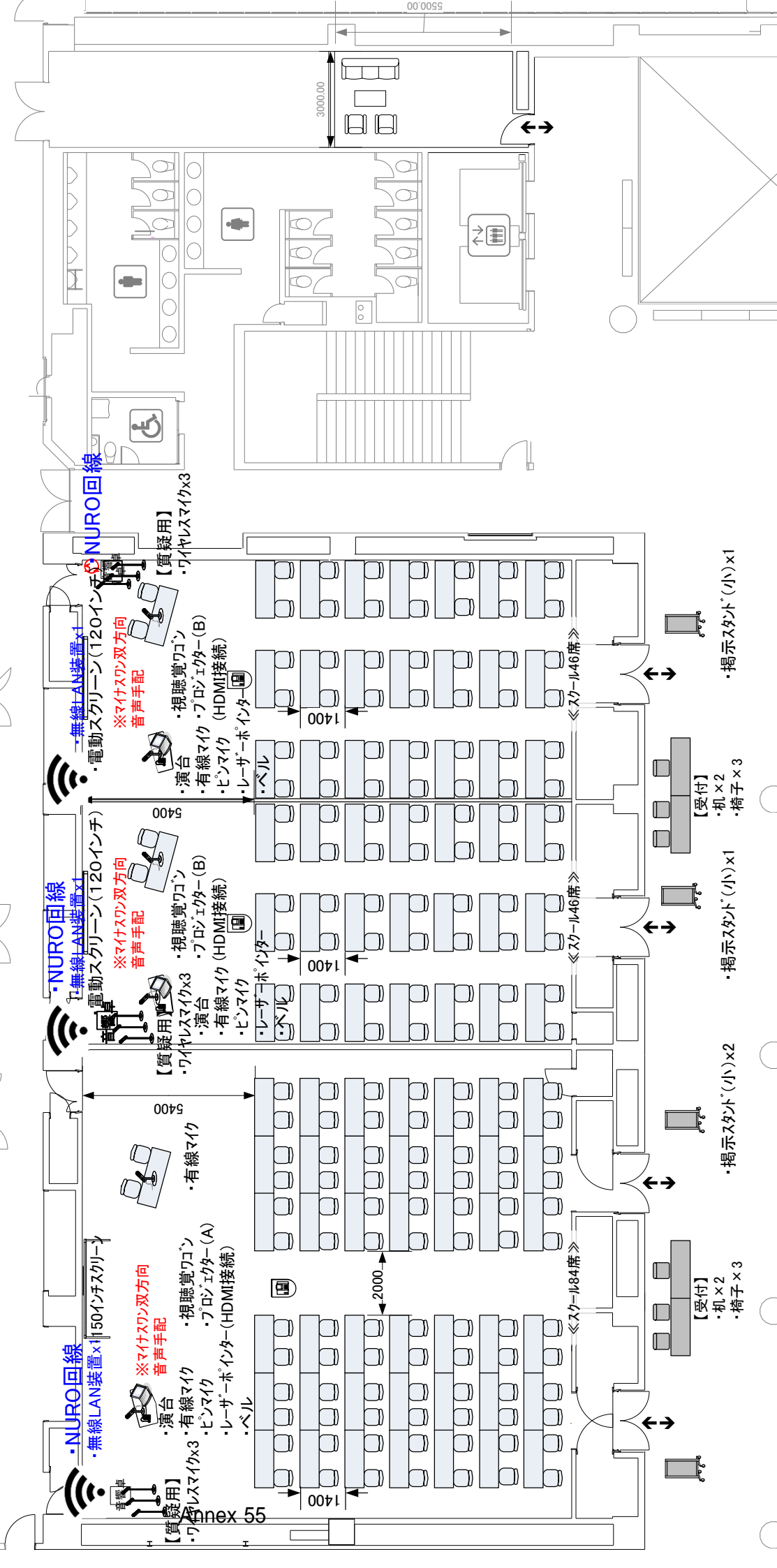
# 中ホール200



# 中会議室201

# 中会議室202A

# 中会議室202B









# Preventing the Spread of COVID-19

Please continue to **wear a mask, wash your hands,** and **avoid the 3 Cs (Closed spaces, Crowded places, and Close-contact settings)** even after vaccination.

## Wear a mask properly!



1 Cover up to your nose so there are no gaps



2 Cover your chin and make it fit against your face without gaps

Always wear a mask when talking!

Important

- Not covering your nose ✗ Covering only your chin ✗
- Don't touch the surface of a mask
- Hold the strings when wearing and taking off a mask
- Use a quality-certified non-woven fabric mask

## Clean your hands frequently!



When to clean your hands:

- After touching items used by multiple people
- Before and after a meal
- After using public transportation

Important



Wash your finger tips, under your fingernails, between your fingers, and your wrists!

## Avoid the 3Cs and aim for Zero C!



Close-contact settings

- No-mask ✗
- Speaking loudly ✗



Crowded places

- Large gatherings ✗
- Close distance ✗



Closed spaces

- Poor ventilation ✗
- Confined area ✗

▶ Stay home when you feel unwell. ▶ Everyone is encouraged to get vaccinated when eligible.



# ICFM9 Safety Conformation System

ICFM9 Secretariat

The ICFM9 Safety Conformation System is used to confirm the safety of participants in the event of a major earthquake or other emergencies.



The participants are expected to use the system only when instructed to do so by the ICFM9 Secretariat.



<https://forms.gle/a7dAt6UAZZXGrGap9>

## FAQ

注) 下記記載のリンクなどは現在は使用できない

### <Online participation>

Q: Can I participate in the conference online?

A: No. We plan to hold ICFM9 in person rather than in a hybrid style. However, we may make an exception when you are a speaker and cannot come to the conference because of COVID-19 infection or other unforeseen circumstances, allowing you to deliver a presentation online if you wish. In such a case, you should let us know as soon as possible. When you consider making an online presentation, please understand that online communication is always subject to technical difficulties and that the internet connection may be disrupted during the presentation.

### <Registration>

Q: Where can I register for the ICFM9 conference?

A: Please go to the following site:

“Registration site” <https://amarys-jtb.jp/icfmp/>

Q: I cannot log in via the registration site for some reason.

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

Q: Can I log in using the ID and the password I have registered on the “My Page” site?

A: Yes. However, please note that you must enter the long-in ID without the hyphen. If your ID is “ICFM9-R0001,” you need to enter “ICFM9R0001.”

Q: I forget the ID and the password I have registered on the “My Page” site. What should I do?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

Q: How much is the registration fee?

A: Please refer to the following site. Please be aware that the early-bird registration fee is available until 23:59, 20th January 2023 (Japanese time).

<https://www.icfm9.jp/registration.html>

Q: When will the registration end?

A: The online registration will be open until 31st December 2022. Please be aware that the early-bird registration fee is available until 23:59, 20<sup>th</sup> December 2022 (Japanese time). For those wishing to participate in the conference after the online registration ends, on-site registration at the conference venue is possible, but the payment will be accepted by credit card only.

Q: Can I pay the registration fee for multiple participants at once?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

Q: I don't have a credit card. Can I pay the registration fee in cash at the venue?

A: No. Please use a bank transfer.

Q: Can I use a bank transfer?

A: Yes. Please contact the ICFM9 Management Desk (mice-tsukuba"at"jtb.com (replace "at" with @)) for the information necessary for bank transfer.

Q Can I ask to the ICFM9 secretariat to issue an invoice instead of payment by my credit card?

A Yes. Please contact the ICFM9 Management Desk (mice-tsukuba"at"jtb.com (replace "at" with @)) for the information necessary for invoice.

Q: I don't plan to make a presentation. Do I still have to pay the registration fee?

A: Yes. You have to pay the registration fee.

Q: I have already paid the registration fee, but I cannot participate in the conference for some compelling reason. Is the registration fee refundable?

A: In the case of cancellation, the registration, reception, and tour fees will be refunded after deducting the cancellation fee, as shown below.

\*Please note that all refunds will be made after the conference and the symposium.

\*Please cancel your registration by logging in to your registration page.

Cancellation Fee	
By 19th December 2022	0% of the registration fee (full refund)
Between 20th December and 19th January 2023	50% of the registration fee (50% refund)
After 20th January 2023	100% of the registration fee (No refund)

<Visa>

Q: Who should I contact if I need some documents for my visa application?

A: Please refer to the "[VISA Application](#)" page.

Q: I don't plan to make a presentation but want to participate in the conference. Can the ICFM9 Secretariat issue the documents necessary for visa application?

A: Yes. Also, see the answer to the question right above.

<Extended abstract>

Q: Is there a specific format to follow to prepare an extended abstract?

A: Please go to the following site:

[https://www.icfm9.jp/extended\\_abstracts.html](https://www.icfm9.jp/extended_abstracts.html)

Q Where should I put figures and tables in the manuscript? Should all figures and tables put at the end?

A It is requested to insert figures and tables respectively where they are referenced (instead of at the end.)

Q: Where should I submit a revised extended abstract?

A: The revised extended abstract should be submitted directly to those who ask you to revise by 27th November.

Q: Will submitted extended abstracts be open to the public?

A: Yes. The submitted extended abstracts will be made available only for the conference participants via an exclusive website.

Q: Will all submitted extended abstracts be published in the "Proceedings of IAHS (PIAHS)"?

A: No. Only ones reviewed and accepted will be published in PIAHS. Extended abstracts that have already published in journals and other publications will not qualify for this publication. In addition, extended abstracts will be published in PIAHS only with the authors' consent.

Q Is an extended abstract necessary to be original?

A Because extended abstracts will be dealt as conference materials, it is not necessary original one. But it is not eligible for PIAHS.

Q: The abstract I submitted is from the research that has already been published in a different journal. Do I need to submit an extended abstract?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)). The ICFM9 Secretariat does not require all speakers to submit an extended abstract but recommend that they do so.

Q: Can I make an oral or poster presentation without submitting an extended abstract?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)). The ICFM9 Secretariat does not require all speakers to submit an extended abstract but recommend that they do so.

Q: What do I need to know when planning to submit a paper to the WATER journal? Does the content need to be different from the extended abstract?

A: You need to know that the same paper cannot be submitted to the journals of WATER and PIAHS. However, you can still submit the paper to WATER that you used to submit an extended abstract for ICFM9 because extended abstracts will only be used to prepare documents for discussion.

<Deleting abstracts, etc.>

Q: Can I delete the old abstract on the "My Page" site?

A: No. The system is not designed to allow users to delete old files.

Q: Can I withdraw my abstract because I cannot attend the conference?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

Q: I failed to submit the revised version of my abstract by the due date. Would you still accept my revised abstract?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

<Budget support>

Q: Is there any financial support I can use for traveling and other expenses?

A: No. Due to the limited budget, there is little financial support available to help the participants. However, we will inform you via the ICFM9 website if any information arrives.

<Hotel reservation>

Q: Does the ICFM9 Secretariat keep hotel rooms in Tsukuba for participants?

A: Yes. The secretariat keeps some rooms in Hotel Nikko Tsukuba and Hotel Grand Shinonome. The participants can make reservations via the registration site at the following address:

[https://amarys-jtb.jp/icfmp/WebRegistry/Registry/RegGuide\\_v3.aspx?bosyu=2](https://amarys-jtb.jp/icfmp/WebRegistry/Registry/RegGuide_v3.aspx?bosyu=2)

<Special session>

Q: What do I need to do to host a special session?

A: Proposals for special sessions will be accepted by 31st October on a first-come-first-served basis due to the limited room availability. If you are interested, please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

<https://www.icfm9.jp/sessions/>

<Booth exhibition>

Q: What do I need to know to put up a booth exhibition?

A: The detailed information will be posted on the following site soon.

<https://www.icfm9.jp/sessions/>

<Lunch>

Q: Are there any places to have lunch near the conference venue?

A: Yes. There are some restaurants and convenience stores nearby. However, you should consider ordering lunch via the following site in advance because the lunch break is rather short.

“Registration site” <https://amarys-jtb.jp/icfmp/>

Q: Are there any shops I can buy lunch in the conference venue?

A: No. There will be no shops or vendors selling food, though some restaurants and convenience stores are nearby. However, you should consider ordering lunch via the following site in advance because the lunch break is rather short.

“Registration site” <https://amarys-jtb.jp/icfmp/>



Q: Can I cancel my lunch order?

A: In the case of cancellation, the lunch fee will be refunded after deducting the cancellation fee, as shown below.

\*Please note that all refunds will be made after the conference or the symposium.

\*Please cancel your registration by logging in to your registration page.

Cancellation Fee	
By 19th December 2022	0% of the lunch fee (full refund)
Between 20th December and 19th January 2023	50% of the lunch fee (50% refund)
After 20th January 2023	100% of the lunch fee (No refund)

<Field tours>

Q: Can I have information about field tours? I'm interested in taking one. Where do we visit on the field tour?

A: Please go to the following site. The information will be updated from time to time.

[https://www.icfm9.jp/date\\_place.html](https://www.icfm9.jp/date_place.html)

Q: What do I need to do to participate in a field tour?

A: You need to sign up at the following address by 31st December 2022. Each tour accepts up to 60 people. Depending on the number of applicants, you may have a chance to join a tour on the day.

“Registration site” <https://amarys-jtb.jp/icfmp/>

Q: Do I need to pay for a field trip?

A: Depends. The half-day tour to research institutes in Tsukuba is free, but the one-day tour costs 3000 yen, not including lunch.

Q: Do I need to prepare special clothes?

A: No. However, if you plan to take the one-day tour, it is recommended to wear clothes easy to move as there will be stairs on the way to the site. And you might wear clothes that can get wet because one of the destinations is the National Research Institute for Earth and Disaster Resilience (NIED), where the tour participants can experience a super-heavy rainfall event.

Q: Does the secretariat prepare lunch for all tour participants?

A: No. It's all up to you. You can get some food at a nearby convenience store or other shops before the departure. You can also order lunch at the address below for 500 yen or 1,000 yen.

“Registration site” <https://amarys-jtb.jp/icfmp/>

<High-level Symposium>

Q: How can I get information on the High-level Symposium on 18th February 2023?

A: Please refer to the following site. The information will be updated as needed.

[https://www.icfm9.jp/date\\_place.html](https://www.icfm9.jp/date_place.html)

Q: How can I get to GRIPS from Tsukuba?

A: The ICFM9 Secretariat will prepare free buses from Tsukuba to GRIPS. Please refer to the following site for details. The information will be updated as needed.

[https://www.icfm9.jp/date\\_place.html](https://www.icfm9.jp/date_place.html)

<Other questions>

Q: My abstract was accepted, but I cannot attend the conference due to my schedule. Can a co-author make a presentation instead of me? Suppose it is possible, do I still pay the registration fee?

A: Yes to both questions. It is possible for a co-author to make a presentation for you, and you still have to pay the registration fee as long as your research is presented at the conference. Also, your co-author needs to pay the registration fee to participate in the conference.

Q: What do I need to do to host a side event?

A: Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)).

Q: Can I change my contact e-mail address?

A: Yes. Please contact the ICFM9 Secretariat (icfm9"at"icharm.org (replace "at" with @)). Be sure not to change addresses before notifying the secretariat, or you will miss important notices from the secretariat.

## Support for VISA Application

If you need a visa to participate in ICFM9, please start the process (see the chart below) by preparing visa application documents to finally submit to the Japanese Embassy in your country.

ICFM9 Secretariat can basically issue a complete invitation letter only for participants who has finished registration and payment to the ICFM9.

Please note that the required documents differ from country to country. Visit the website of the Ministry of Foreign Affairs of Japan and make sure what documents you need.

<Ministry of Foreign Affairs of Japan >

General information about Visa

[https://www.mofa.go.jp/j\\_info/visit/visa/index.html](https://www.mofa.go.jp/j_info/visit/visa/index.html)

Exemption of Visa (Short-Term Stay)

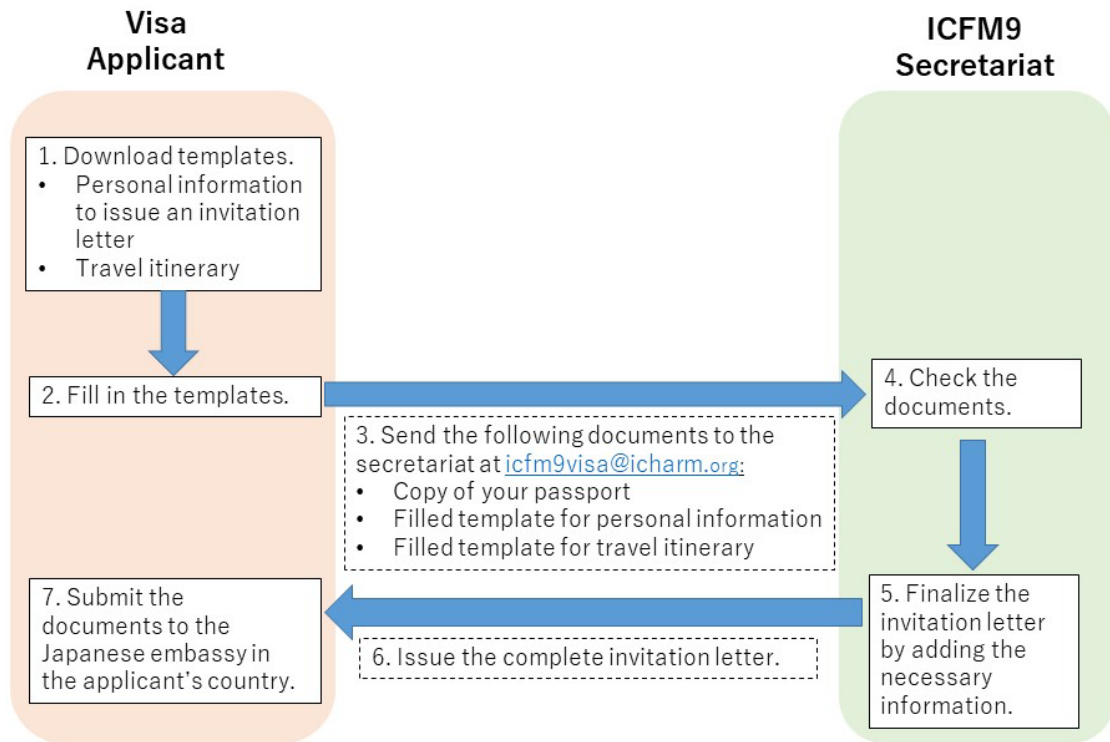
[https://www.mofa.go.jp/j\\_info/visit/visa/short/novisa.html](https://www.mofa.go.jp/j_info/visit/visa/short/novisa.html)

Application for Visa for foreign nationals eligible for Phased Measures toward Resuming Cross-Border Travel

[https://www.mofa.go.jp/ca/fna/page22e\\_000921.html](https://www.mofa.go.jp/ca/fna/page22e_000921.html)

Written Pledge

<https://www.mofa.go.jp/files/100351582.pdf>



<Documents to download >

- Template for personal information to issue an invitation letter ([EXCEL file](#))
- Template for travel itinerary ([PDF file](#))
  - <For your reference> Sample of travel itinerary ([PDF file](#))
- Brochure of ICHARM (the host organization and the ICFM9 Secretariat) ([PDF file](#))

<Important notes>

If you have a smartphone or can get one before coming to Japan, you are advised to try the following before entering the country:

1. Install MySOS (the Health and Location Monitoring App for Overseas Entrants).
2. Input information, such as a COVID-19 test certificate, into MySOS to complete as much entry screening as possible beforehand.
3. Use “Visit Japan Web” (a web service that helps the applicant go through entry procedures, such as quarantine, immigration, and customs).

If you do not have a smartphone or cannot get one before coming to Japan, you need to rent one at the airport if you are required to self-quarantine at a hotel or some other place upon entry to the country.

If you have any questions, don't hesitate to ask the ICFM9 Secretariat [icfm9visa@icharm.org](mailto:icfm9visa@icharm.org)

Please fill out the required information below (yellow-colored cells) so that ICFM9 Secretariat can prepare a Letter of Invitation for your visa application.

\* Please see the blank letter of invitation on next excel sheet for your reference.

**Name (Place) of Embassy/Consulate where you apply for visa (addressee of the invitation letter)**

Required Items for letter of invitation	Name (Place) of Embassy/Consulate
To: (Ambassador/Consul-General) of Japan in_____	

**Visa Applicant's Information**

Required Items for letter of invitation	Your information
Full name (in Latin alphabet as it appears on your <b>passport</b> )	
Male or Female	
Number of additional applicants (if applicable)	
Date of birth (Year)	
Date of birth (Month) in number (e.g. 5; NOT May)	
Date of birth (Day)	
Nationality	
Occupation	

**List of Visa Applicants**

Fill out green cells below when there are additional applicants who will attend ICFM9 and apply for their visas with the above-mentioned applicants at the same time. Their information will be included in the "List of Visa Applicants"

**Additional applicant 1**

Required Items for letter of invitation	His/her information
Full name (in Latin alphabet as it appears on his/her <b>passport</b> )	
Male or Female	
Number of additional applicants (if applicable)	
Date of birth (Year)	
Date of birth (Month)	
Date of birth (Day)	
Nationality	
Occupation	

**Additional applicant 2**

Required Items for letter of invitation	His/her information
Full name (in Latin alphabet as it appears on his/her <b>passport</b> )	
Male or Female	
Number of additional applicants (if applicable)	
Date of birth (Year)	
Date of birth (Month)	
Date of birth (Day)	
Nationality	
Occupation	

\* If there are more additional applicants, please copy add cells below to fill in their information .



This list is used only when there are additional applicants who will attend ICFM9 and apply for their visas at the same time. (Example)

## List of Visa Applicants

\* Be sure to write the name in the Latin alphabet as it appears on his/her passport.

### 【Visiting Relatives/Acquaintances】

Applicant 1 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_  
Relationship to the inviting person/guarantor : \_\_\_\_\_

Applicant 2 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_  
Relationship to the inviting person/guarantor : \_\_\_\_\_

Applicant 3 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_  
Relationship to the inviting person/guarantor : \_\_\_\_\_

### 【Short-term business affairs, etc.】

Applicant 1 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_

Applicant 2 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_

Applicant 3 Full name : \_\_\_\_\_ (  Male •  Female )  
Date of birth : \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (Age: \_\_\_\_\_ )  
(Year) / (Month) / (Day)  
Nationality : \_\_\_\_\_  
Occupation : \_\_\_\_\_





**Travel Itinerary (Example)**

- (1) Specify the date of arrival and departure, flights and airports/ports if already fixed.
- (2) Write the place of stay in detail. (If staying at hotel, write its name, address and phone number.)
- (3) The travel itinerary needs to be written for each day. If an activity continues on consecutive days, the format “(date) – (date)” is acceptable.

The travel itinerary of the visa applicant and \_\_\_\_ (number) others are as follows:

**[Short-term business affairs, etc]**

Date	Activity Plan	Contact	Accommodation
YYYY.MM.DD	Arrive in ____ from ____ aboard flight ____	The inviting person's home Tel.: 00-000-0000	The inviting person's home Tel.: 00-000-0000
YYYY.MM.DD	Business talks at ____ company	____ company [contact person ...] Tel.: 00-000-0000	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Visit ____ plant Move to ____ by Shinkansen	____ Town, ____ City, ____ Prefecture	Same as above
YYYY.MM.DD	Return home from ____ to ____ on flight ____		

**[Visit to relatives/acquaintances]**

Date	Activity Plan	Contact	Accommodation
YYYY.MM.DD	Arrive in ____ from ____ aboard flight ____	The inviting person's home Tel.: 00-000-0000	The inviting person's home Tel.: 00-000-0000
YYYY.MM.DD	Attend a wedding reception at ____ Hall	____ Town, ____ City, ____ Prefecture	Same as above
YYYY.MM.DD	Sightseeing all day	The inviting person's home Tel.: 00-000-0000	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Return home from ____ to ____ on flight ____		

**[Tourism with travel agency guarantee]**

Date	Activity Plan	Contact	Accommodations
YYYY.MM.DD	Arrive in ____ from ____ aboard flight ____	____ tourist co. (contact person ____) Tel.: 00-000-0000	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Sightseeing all day	____ tourist co. (contact person ____) Tel.: 00-000-0000	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Sightseeing all day	Same as above	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Sightseeing all day	Same as above	Hotel ____ Address ____ Tel.: 00-000-0000
YYYY.MM.DD	Return home from ____ to ____ on flight ____	____ tourist co. (contact person ____) Tel.: 00-000-0000	

# ICFM9 Guide Booklet

-Important information for ICFM9 participants-

Thank you for participating in ICFM9. We at the ICFM9 Secretariat are looking forward to seeing you all in Tsukuba, Japan.

This is an ICFM9 guide booklet to provide you with important information you need to know to participate in the conference. Please read it thoroughly before coming to Japan.

Also, **note that there are several items for which you will be asked to fill out the forms indicated on the last page of this document as instructed.**

As of January 16

Revised on February 2

Revised on February 11

## <INDEX>

1. Japan's current border control policy
2. VISA application
3. Transportation
4. Tsukuba International Congress Center
5. Receiving a conference participant pass, etc. *(Revised on February 2)*
6. Presentations *(Revised on February 11)*
7. Lunch and breaks
8. Internet
9. Reception party
10. Field trips
11. Submitting to PIAHS (only for authors)
12. Participation in the High-Level Symposium on February 18 *(Revised on February 2)*
13. Certificate of CPD by JSCE (Japan Society of Civil Engineers)
14. Weather information

## 15. Contact

### 1. Japan's current border control policy (based on the announcement posted on the website of Japan's Foreign Affairs Ministry)

- Since 0:00 AM (JST) on October 11, 2022, except for returnees and entrants with symptoms of suspected COVID-19 infection, on-arrival test at the quarantine station, self-quarantine in places such as their own residence or accommodations, and refraining from the use of public transportation have no longer been required.
- On the other hand, all returnees and entrants are required to show either a valid COVID-19 vaccination certificate of three doses of vaccines prescribed on the Emergency Use List of the World Health Organization (WHO) or a certificate of the negative test result of pre-departure COVID-19 test conducted within 72 hours prior to departure from the original country/region.
- Since December 30, 2022, the following provisional measures have been implemented:
  - Upon arrival in Japan, all travelers and returnees who have stayed in China (except Hong Kong and Macau) within 7 days prior to the entry and all travelers and returnees coming from China (except Hong Kong and Macau) by direct flight are required to take an on-arrival test at the quarantine station.
- For the latest, more detailed information, visit the Ministry of Foreign Affairs and the Ministry of Health, Labor and Welfare website:

*Ministry of Foreign Affairs:*

[https://www.mofa.go.jp/ca/cp/page22e\\_000925.html](https://www.mofa.go.jp/ca/cp/page22e_000925.html)

*Ministry of Health, Labor and Welfare:*

<https://www.mhlw.go.jp/stf/covid-19/bordercontrol.html>

### 2. VISA application

- As for the participants from other countries, **we strongly request you to make sure whether you have to apply the VISA to Japan or not.** because it may take about 10 days usually.
- If you have any trouble related to VISA, don't hesitate to let us know as soon as possible.
- For the latest, more detailed information, visit the Ministry of Foreign Affairs website:

*Ministry of Foreign Affairs:*

[https://www.mofa.go.jp/j\\_info/visit/visa/index.html](https://www.mofa.go.jp/j_info/visit/visa/index.html)

### 3. Transportation

#### < Narita Airport to Tsukuba Center >

Terminal 1: Bus stop 8

Terminal 2: Bus stop 10

Terminal 3: Bus stop 8

\*At your bus stop, take a highway bus bound for Tsuchiura and Tsukuba.

Time: about 60 minutes Cost: ¥2,400

#### 成田空港 → つくば・土浦 Timetable To Tsukuba and Tsuchiura

運行会社→		成空※	関鉄	成空	関鉄	成空	成空
成 田 空 港	成田空港第3ターミナル Narita Airport Terminal 3	9:30	10:40	13:00	16:20	17:50	22:30
	成田空港第2ターミナル Narita Airport Terminal 2	9:35	10:45	13:05	16:25	17:55	22:35
	成田空港第1ターミナル Narita Airport Terminal 1	9:40	10:50	13:10	16:30	18:00	22:40
↓		↓	↓	↓	↓	↓	↓
ひたち野うしく駅 Hitachinoshiku Station		↓	↓	↓	↓	↓	↓
つくばセンター Tsukuba Center		10:35	11:45	14:05	17:25	18:55	23:35
土浦駅(東口) Tsuchiura Station		10:45	11:55	14:15	17:35	19:05	23:45

運行会社：関鉄＝関東鉄道株式会社、千交＝千葉交通株式会社、成空＝成田空港交通株式会社

※印・・・トイレなし車両で運行いたします。

#### 土浦・つくば→成田空港 Timetable To Narita Airport

運行会社→		成空	関鉄	成空※	関鉄	成空※	成空
土浦駅(東口) Tsuchiura Station		5:00	7:00	11:30	13:30	15:00	20:00
つくばセンター Tsukuba Center		5:20	7:20	11:50	13:50	15:20	20:20
ひたち野うしく駅 Hitachinoshiku Station		↓	↓	↓	↓	↓	↓
↓		↓	↓	↓	↓	↓	↓
成 田 空 港	成田空港第3ターミナル Narita Airport Terminal 3	6:12	8:12	12:42	14:42	16:12	21:12
	成田空港第2ターミナル Narita Airport Terminal 2	6:15	8:15	12:45	14:45	16:15	21:15
	成田空港第1ターミナル Narita Airport Terminal 1	6:20	8:20	12:50	14:50	16:20	21:20

(「成田空港交通」ホームページから抜粋)

The “※” marks in the timetables above indicate buses without toilets.

Note: The timetables show the bus schedule as of January 4, 2023, and are subject to change.

< Haneda Airport to Tsukuba Center >


Terminal 1: Bus stop 12


Terminal 2: Bus stop 13

Terminal 3: Bus stop 9

\*At your bus stop, take a highway bus bound for Tsukuba.

Time: about 110 minutes Cost: ¥1,900

Haneda airport Terminal 3	Haneda airport Terminal 2	Haneda airport Terminal 1		Tsukuba Center
9:20	9:30	9:35		11:20
12:15	12:25	12:20		14:15
17:05	17:15	17:20		19:05
19:05	19:15	19:20		20:45

Tsukuba Center		Haneda airport Terminal 2	Haneda airport Terminal 1	Haneda airport Terminal 3
6:00		7:47	7:52	7:59
9:00		10:57	11:02	11:09
13:10		14:47	14:52	14:59
15:50		17:27	17:32	17:39

(「関東鉄道」ホームページから ICHARM 作成)

Note: The timetables show the bus schedule as of January 4, 2023, and are subject to change.

< Akihabara Station to Tsukuba Station >

Take a TX (Tsukuba Express) train bound for Tsukuba.

Time: 45 minutes (rapid trains), 53 minutes (semi-rapid trains) Cost: ¥1,210

< Tsukuba Center to Tsukuba International Congress Center >

Walk south along the pedestrian path for about 10 minutes to the Tsukuba International Congress Center.

There is also a taxi stand at the Tsukuba Center.

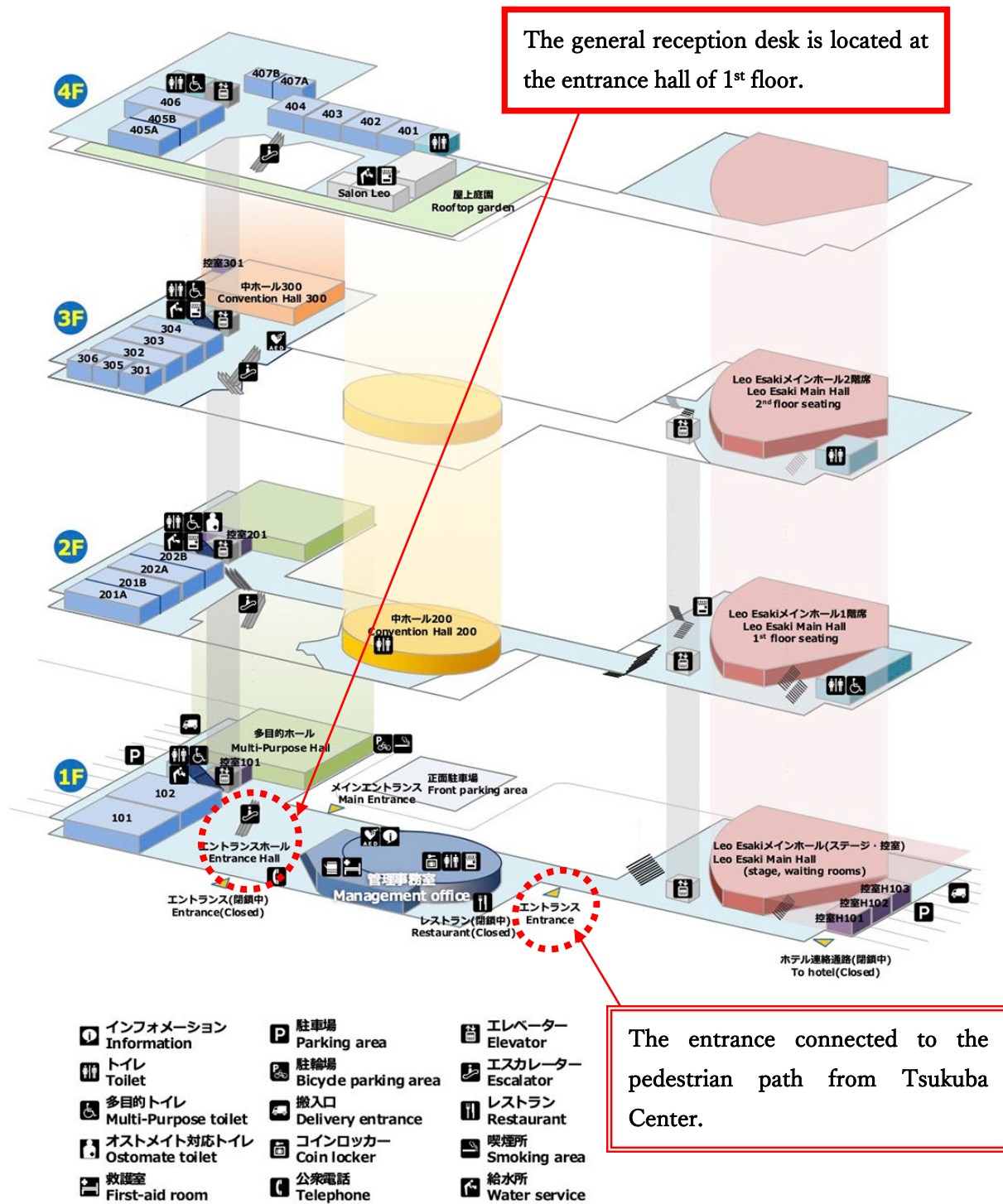
< Tsukuba Station to Tsukuba International Congress Center >

Find **Exit A3** and use the escalator to go up to Tsukuba Center. The rest is the same as how to get to the congress center from Tsukuba Center.



(「つくば国際会議場」ホームページから引用)

#### 4. Tsukuba International Congress Center



(「つくば国際会議場」ホームページ掲載の図を加工)

## 5. Receiving a conference participant pass, etc. *(Revised on February 2)*

- All participants must always carry a conference participant pass with them at the venue.
- The pass will be provided at the General Reception Desk in the Entrance Hall on the first floor of the Tsukuba International Congress Center. Please come to the booth assigned later to you in advance.
- The reception will be open from 15:00 to ~~17:00~~ 18:00 on the day before the conference and from 8:00 a.m. during the conference days. Since the reception is expected to be very busy on the first day, it is advisable to get a pass the day before the conference.
- Lunch vouchers, field trip tickets, and reception party tickets will be distributed at the same time. Please be careful not to lose them.
- ~~For the secretariat to plan staffing at the reception,~~ **it will be very helpful if you inform us of the date you wish to receive a conference participant pass by filling out Form No.1 indicated on the last page of this document.** (This is only for us to have a rough idea of how many will come for the pass on which day. You are free to change the date later.)

## 6. Presentations

### 6. 1 Oral presentations *(revised on 11<sup>th</sup> Feb.)*

- ~~The PowerPoint documents for the presentation must be sent to the secretariat staff in charge of the session you will attend by 17:00 the day before the presentation by e-mail or other means. (the submission address will be informed later)~~ the co-chair assigned to each session you will attend by 17:00 on 16<sup>th</sup> Feb. by e-mail or other means.
- In the case of six speakers, for example, it is assumed that each may have about 10 minutes (not included Q&A session) to deliver a presentation. However, the time may be longer or shorter, depending on the circumstances. Please follow the instructions provided by the session chair before the presentation.
- All participants are expected to follow the instructions given by the session chair regarding the management of the session.

### 6. 2 Poster presentations *(Revised on February 11)*

- Posters must be up to 900 mm (width) x 2100 mm (length) in size. A0-size posters are acceptable.
- Each participant must print out and bring their posters to the conference. The ICFM9 Secretariat will not print them out for any participant.
- The hallway on the second floor will be a space for poster presentations.
- ~~Posters can be displayed from 8:00 a.m. on the day allocated to each participant.~~ All posters can be displayed from 8:00 a.m. on the 1<sup>st</sup> day (19<sup>th</sup> Feb.) The secretariat will provide thumbtacks and other stationery for posting posters.



- From 16:30 to 17:30 on the 1<sup>st</sup> day (19<sup>th</sup> Feb.) and the 2<sup>nd</sup> day (20<sup>th</sup> Feb.), "Poster view and Networking" is added. The poster presenters are requested to be in front of each poster to introduce to those who are interested.
  - The posters must be taken down between 16:30 and 17:00 after 17:30 on the 2<sup>nd</sup> day (20<sup>th</sup> Feb.) The secretariat will remove posters left displayed, keep them at the General Reception Desk until the morning of February 21, and discard them after that.
  - PowerPoint documents for poster indexing must be sent to the secretariat staff in charge by February 15. The presentation must be ~~one minute~~ 45 seconds at the longest. (the submission address ~~will be informed later~~ is [icfm9poster@icharm.org](mailto:icfm9poster@icharm.org))
- ✓ <Indexing slide submission>
- Slide size: Standard 4:3
  - Number of slides: only one
  - Data format: PDF or MS-PowerPoint(ppt, pptx)
  - Slide format: Refer to the below dormat
  - Presentation time: within 45 seconds
  - Submission e-mail address: [icfm9poster@icharm.org](mailto:icfm9poster@icharm.org)

Poster title	Poster No.
Authors, institution	
<p>&lt;1-minute presentation contents&gt; Free layout to describe your highlight</p>	
<div style="border: 1px solid black; padding: 5px;"> <p>Submission to <a href="mailto:icfm9poster@icharm.org">icfm9poster@icharm.org</a>            Deadline: February 15, 2023            Presentation time: within 45 seconds            Format: PowerPoint(ppt, pptx) or PDF            Slide size: Standard 4:3 ratio            The slide must be 1 page</p> <p>&lt;Poster indexing schedule&gt;            The poster presenters on the day will make the indexing presentation.            Date &amp; Time: 11:30 to 12:00 on Feb 19 and 20 (just after the plenary session)            Venue: Leo Esaki Main Hall</p> </div>	

#### 6. 3 Open of conference material

- The submitted extended abstracts will be made available only for the conference participants via an exclusive website.
- In case the extended abstract was not submitted for some reason, the abstract will be made available.

#### 7. Lunch and breaks *(revised on 11<sup>th</sup> Feb.)*

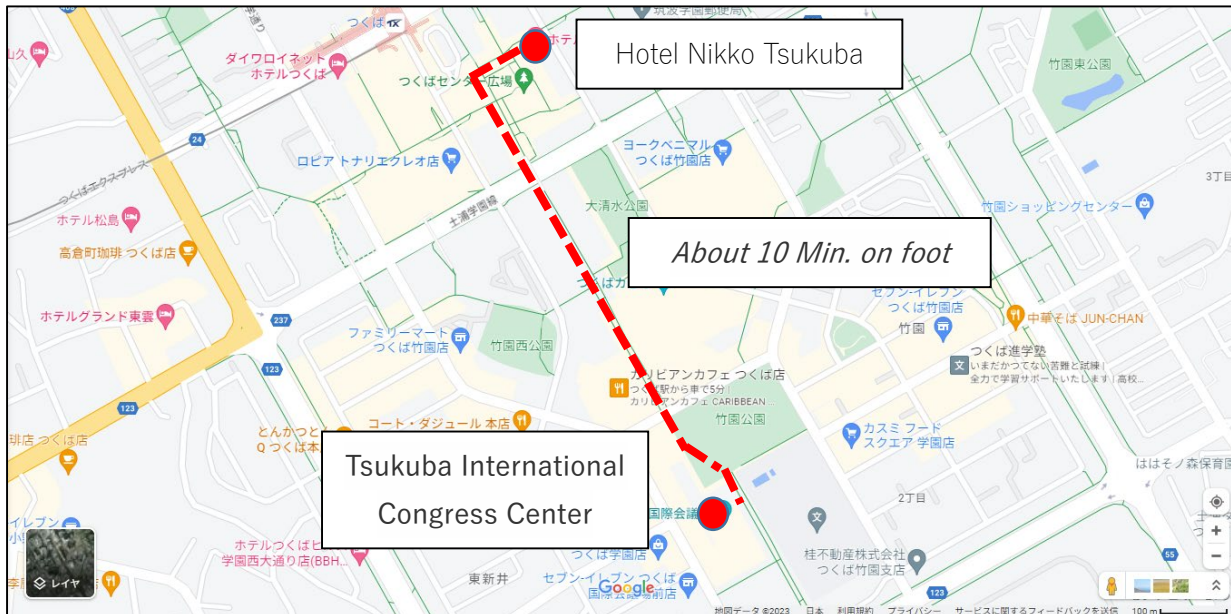
- The multipurpose hall on the first floor is designated as a space for lunch and breaks. Food and drinks are allowed ~~only in this space~~ in each conference room except for Main hall and convention hall 200.
- Boxed lunches will be ready to pick up at the entrance to the multipurpose hall. Make sure to bring a lunch voucher you will receive with a participant pass at the General Reception Desk.
- If there are extra boxed lunches, they will be offered to people without prior ordering. Purchase a lunch voucher at the General Reception Desk and then go to the boxed lunch stand at the entrance of the multipurpose hall.
- A sufficient number of electric outlets will be ready in the multipurpose hall for computers and other electrical devices.

#### 8. Internet

- The venue will be equipped with a Wi-Fi internet environment.

## 9. Reception party (18:00, February 19)

- The reception party will be held at Hotel Nikko Tsukuba, a different venue from where the conference will take place. (Walk north along the pedestrian path back to the Tsukuba Center for about 10 minutes from the congress center, and you'll see the hotel.)



(Google Map を引用、加工)

- In the case of not having registered for the reception party before coming to the conference but wishing to participate, please sign up at the General Registration Desk by 13:00, February 19, with a fee of 5,000 yen.

## 10. Field trips

- Due to the tight schedule, there will be no time to stop and purchase lunch on the way. Please make a reservation for a boxed lunch or bring lunch for yourself.
- If there are some vacant seat, we may receive some applications by noon of one day before of each trip day.
- The participants planning to experience a rainfall event at the National Research Institute for Earth Science and Disaster Prevention should expect to get wet and prepare for it, such as bringing some extra clothes for change.

## 11. Submitting to PIAHS (only for authors)

- ICFM9 provides you with an opportunity to submit your work to PIAHS free of charge. ~~If you wish to do so at this moment, inform the ICFM9 Secretariat of your decision using Form No.2 indicated on the last page of this document~~ to help us estimate how many are planning to submit their work. (You may always change your decision later.)—
- Note that due to the limitation of the budget, all papers which are wished to be submitted cannot be submitted to PIAHS. Through the selection process, the paper which can be submitted to PIAHS is decided. And also note that the paper will go through a review process after submission by the PIAHS editorial board.

## 12. Participation in the High-Level Symposium on February 18 *(Revised on February 2)*

- The High-Level Symposium will be held at GRIPS from 9:30 to 14:30 on Saturday, February 18 as attached in the last of this guidebook.
- ~~Those wishing to participate are requested to register for the symposium using Form No.3 indicated on the last page of this document~~ to help us estimate how many are planning to attend the event.—
- ~~Free buses from Tsukuba Station to GRIPS will be arranged.~~ Please sign up using the same form if you wish to use a bus on a round or one-way trip.
- ~~Note that due to the limitation of the seat, they will accept on a first-come, first-served basis. And after this registration ends, even if you want to later, additional participants cannot be accepted.~~
- The registration is closed.

## 13. Certificate of CPD by JSCE (Japan Society of Civil Engineers)

- The ICFM9 is certificated as a program of the CPD (Continuing Professional Development) by JSCE.
- If you want to receive the certificate that you have participated the conference, please fill in the necessary items at the reception desk after the conferences of each day end. (NOT before the conference)
- The ICFM9 secretariat will send you the certificate.

## 14. Weather information

- Tsukuba's average temperature in February is a high of 9°C and a low of 1°C. Morning temperatures can drop below zero. It occasionally snows. It is advisable to wear warm.

## 15. Contact

icfm9@icharm.org

### <Registration forms> *Each registration is closed.*

~~Note: You are free to change your mind about your decisions after sending the forms to the ICFM9 Secretariat except for the form 3.~~

- ~~◆ Form No.1 about the date to pick up a conference participant pass~~

~~(Deadline: 23 January)~~

~~<https://forms.gle/MiU23BBSgusrnzU6A>~~

- ~~◆ Form No.2 about submission to PIAHS (only authors)~~

~~(Deadline: 23 January)~~

~~<https://forms.gle/GLdtQ4dAz1cT2ooEA>~~

- ~~◆ Form No.3 about participation in High-Level Symposium and use of buses~~

~~(Deadline: 23 January)~~

~~<https://forms.gle/KWViHRVCgpNM4jF99>~~

## Important information for ICFM9 participants

ICFM9 Secretariat

PLEASE READ THIS DOCUMENT THOROUGHLY *BEFORE* COMING TO THE ICFM9 CONFERENCE. This document has been sent to remind you of particularly important information that has been explained in the ICFM9 Guide Booklet and also to provide you with additional information that is also important but not included in the booklet.

### <COVID-19>

- **If you cannot come to the conference because of COVID-19 but still wish to make a presentation, you must contact the ICFM9 Secretariat as soon as possible and ask for permission for only online presentation.** Please note that the quality of the communication status cannot be guaranteed.
- **Please understand that ICFM9 will not allow online presentations for any other cases in principle** and that conference and other fees you have paid by then will not be refunded.
- **Please wear a mask at the conference venues and during the field trips.** Also, sanitize your hands using an antiseptic prepared at the door to each room.
- Contact the general reception desk on the first floor if you are feverish or feel sick.
- When dining at a conference venue, please refrain from speaking loudly and practice social distancing.

< High-level symposium at GRIPS on 18th February >

- High-level symposium participants who use a free bus should be at the meeting place (the space boxed by a red, dotted line in the map below) **across the street from Daiwa Roynet Hotel by 6:30.**



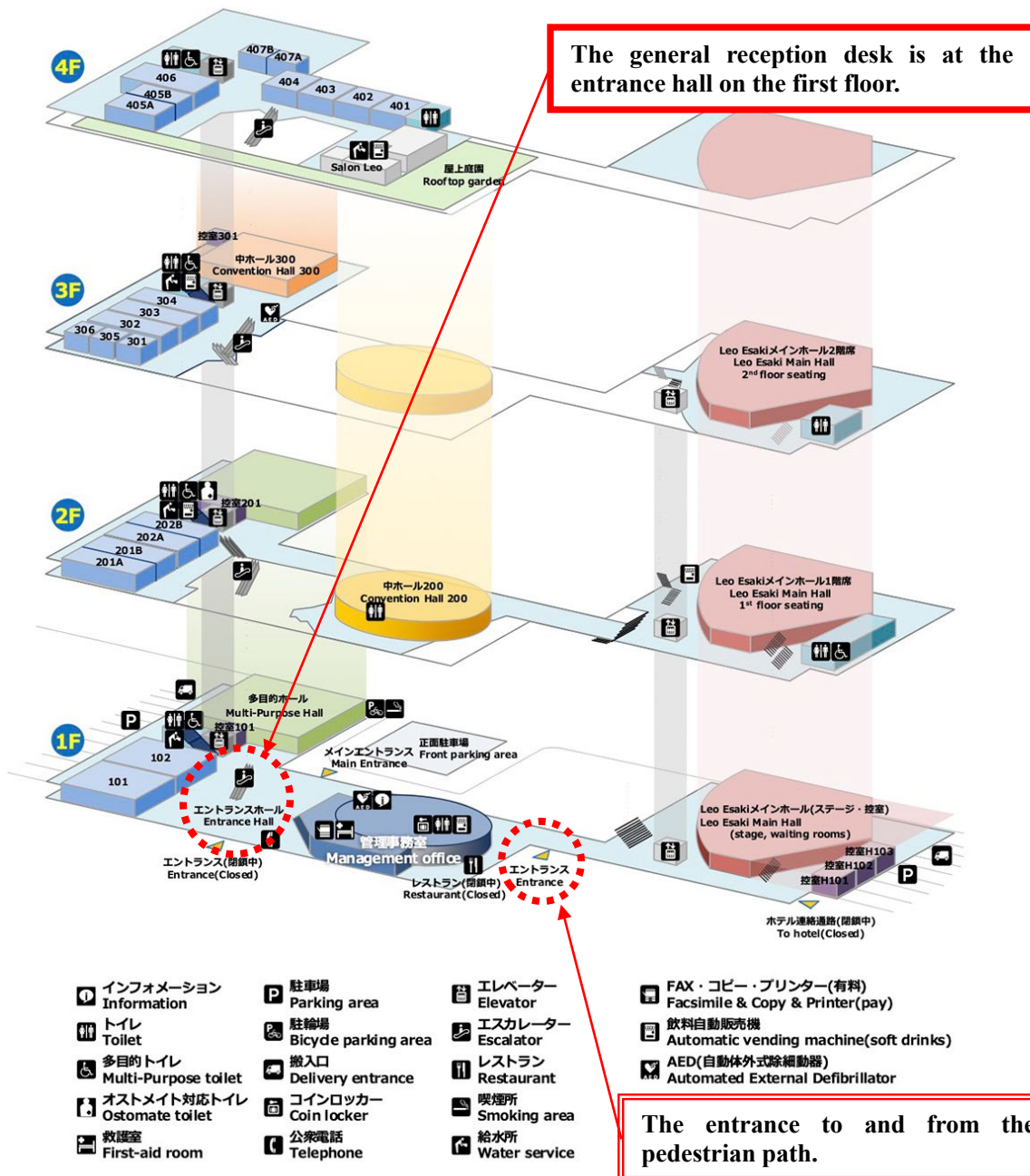
(Google Map を引用、加工)

- Three buses will be waiting at the meeting place. No seats are reserved. Bus users can take seats on a first-come basis.
- Make sure to receive a High-level Symposium participant ID card before getting on a bus.
- **The buses will leave GRIPS around 15:00.** Ask the ICFM9 Secretariat staff or ICHARM staff where the meeting place for the buses.
- The registration for the High-level Symposium has already been closed. No additional registration is scheduled.
- **Free buses coming back to Tsukuba from the High-level Symposium will arrive at Epochal Tsukuba, the conference venue.** Since the general reception desk will be open on the day, the conference participants are strongly encouraged to complete the registration upon arrival.

< Reception desk >

- The general reception desk is at the entrance hall on the first floor of the Tsukuba International Congress Center. See the map below.

### Floor map of Tsukuba International Congress Center (Epochal Tsukuba)



(「つくば国際会議場」ホームページ掲載の図を加工)



- All participants must always carry a conference participant pass with them at the venue.
- The pass will be provided at the general reception desk at the Entrance Hall on the first floor. Please come to booths categorized by country.
- The reception will be open from 15:00 to 18:00 on the day before the conference (18th Feb.) and from 8:00 a.m. during the conference days. Since the reception is expected to be very busy on the first day (19th Feb.), it is advisable to get a pass the day before the conference.
- **Participants are advised to print out and bring the registration confirmation sheet, which is issued in the registration site, to the reception desk.** If you do not bring your registration confirmation, we may ask you to show us something that can confirm your name, such as your passport.
- Lunch vouchers, field trip tickets, and reception party tickets will be distributed at the same time. Please be careful not to lose them.
- Each participant is required to write their name on their ID pass.
- **If you are a plenary session speaker or ISC member, please come to the ICHARM booth set up for them to receive a speaker badge.**

<Oral presentations>

- As informed by the co-chair of each session, **all speakers of oral presentations must submit presentation materials to their session co-chair by no later than 16th February.** The aspect ratio for the materials is 4:3.
- **In principal, the submitted presentation materials cannot be updated after submission.** But if the speaker strongly needs to replace it in advance, he/she must consult the session co-chair. If the co-chair decides that the offer is acceptable, they can replace it. In that case, consider the risk of virus infection.

<Poster Indexing>

- **The time given to each speaker for poster indexing has been shortened from the previously announced one minute to 45 seconds** considering the time required between speakers. Speakers are expected to be efficient and effective to maximize what short time you'll have.
- All speakers should read the latest version of the ICFM9 Guide Booklet for other instructions.

<Dining at the conference venue>

- Dining is allowed in meeting rooms but not in the hallways or the convention halls (Convention

Halls on the 2nd and 3rd floors and Leo Esaki Main Hall; see the map above). Boxed lunches will be ready to be picked up at the Multi-Purpose Hall on the 1st floor.

- Coffee breaks will be at 10:15-10:30 and 14:30-15:00. Coffee will be served in the entrance areas of the Multi-Purpose Hall on the 1st floor and the Leo Esaki Main Hall on the 2nd floor.
- **If there are extra boxed lunches, they will be offered to those without prior ordering.** Purchase a lunch voucher at the general reception desk and then go to the boxed lunch stand at the entrance of the Multi-Purpose Hall on the 1st floor.
- **Two catering cars will be at Takezono Park, the park next to the congress center.** Use the entrance to the pedestrian path to get to the park. See the map above. Also, see some examples of the food menu served by the two vendors though they are subject to change.
  - ✓ Iidamaru (<https://ibaraki-genki.com/shop/kid/>): Fresh whitebait bowl, kakiage-tempura bowl, etc.
  - ✓ LAX (<https://www.ibaraki-shokusai.net/shop/shops?id=9808>): Ibaraki-style hotdog, fish & chips, etc.

< Reception party at 18:00 on 19th February >

- **The reception party will be held at Hotel Nikko Tsukuba, a different venue from where the conference will take place.** Walk north along the pedestrian path back to the Tsukuba Center for about 10 minutes from the congress center, and you'll see the hotel.



(Google Map を引用、加工)

- If you did not register for the reception party before coming to the conference but wish to participate, you can still sign up for it at the general reception desk by 13:00 on 19th February

with a fee of 5,000 yen.

<Field trips>

- **Please check body temperatures in the morning and make sure that you don't have a fever above 37.5 degrees or more than 1 degree above normal.**
- Those who have a fever above 37.5 degrees or more than 1 degree above normal, subjective symptoms of cough and respiratory symptoms (e.g., short breath), loss of taste and smell, fatigue, sore throat, headache (more than 2 days), diarrhea (more than 2 days) and nasal discharge (more than 2 days) will not be accepted.
- **Field-trip participants are divided into three groups on both the 21st and 22nd. Participants are expected to be at the Entrance Hall on the 1st floor of the congress center at the meeting time. However, each group has its own meeting time. Make sure to check what time your group meets for the trip.**
- Due to the tight schedule, there will be no time to stop and purchase lunch on the way. Please make a reservation for a boxed lunch or bring lunch for yourself.
- Extra trip participants may be accepted only if there are seats available. Those wishing to join a trip must sign up for it by noon of the day before each trip day.
- Trip participants should wear comfortable shoes for walking around, such as sneakers.
- Trip participants should understand that clothes and shoes might get dirty depending on the trip they join.
- Please read the following before deciding to take a tour of the Metropolitan Area Outer Underground Discharge Channel.
  - 1. You need to walk down 116 steps to the underground gigantic pressure control tank (meaning another 116 steps to come back up to the ground). There are no elevators or escalators. If you are not confident enough to manage so many steps, you might want to choose to stay around the bus while waiting for others to finish the tour.
  - 2. You are advised to wear sneakers or such because the pressure control tank has mesh flooring in some parts and is slippery in general. You should avoid slippery shoes or heels.
  - 3. The pressure control tank is used to store dirty floodwaters. Please be aware that your clothes and shoes may get dirty while walking around.
  - 4. For safety reasons, please do not carry large luggage during the tour. Also, be informed that there are no checkrooms or such on the premises to keep luggage for tour participants.
  - 5. You may use a tripod in the pressure control tank once you get there. However, please refrain from using one on the way.

資料配布の場所・日時

筑波研究学園都市記者会  
(資料配付)  
日時：令和5年2月17日  
14時同時配付



令和5年2月17日  
国立研究開発法人土木研究所

## 洪水に関する国際会議を12年ぶりにつくばで開催します

国立研究開発法人土木研究所水災害・リスクマネジメント国際センター(ICHARM)は、第9回洪水管理国際会議(9<sup>th</sup> International Conference on Flood Management: ICFM9)を、2月19-21日につくば国際会議場で開催します。ICFMの日本での開催は、第5回以来12年ぶりとなります。日本含めて40か国の洪水に関する専門家など約400名が参加します。

洪水管理国際会議(ICFM)は3年ごとに開催され、洪水に関する様々な問題を議論し、学術的・分野横断的に重要な変化を実現することを目的としています。本会議には、世界各国の様々な研究者や実務者が一堂に会し、最新の知見・情報・経験を共有する場として、活発な活動を行っています。



ICFM9では、“River Basin Disaster Resilience and Sustainability by all～ポストコロナ時代の統合洪水管理～”を大きなテーマとし、コロナ後の社会において、洪水に配慮した社会の再構築や、ハードおよびソフト対策を組み合わせ、気候変動を考慮した包括的かつ多層的な水災害リスク軽減に転換をどのように行うかなどに関して、発表および議論が行われる予定です。

なお、本会議の成果は、3月にニューヨークで開催される「国連水会議」の議論に反映されます。

【主な全体スケジュール】(詳細スケジュールは別紙-2、主な参加者は別紙-3参照)

- 2月19日(日) 9:15-10:15 開会式：五十嵐立青 つくば市長他 ご挨拶  
その後全体会議、分科会、ポスター発表など
- 2月20日(月) 終日全体会議、分科会、ポスター発表など
- 2月21日(火) 10:30-12:00 閉会式：ICFM9 宣言発表

【場所】つくば国際会議場(茨城県つくば市)

【その他】使用言語：英語

【公式ホームページ】 <http://www.icfm9.jp/>

【問い合わせ先】

国立研究開発法人土木研究所 水災害研究グループ 上席研究員 栗林 大輔  
電話番号 029-869-5083

## 第9回洪水管理国際会議（ICFM9）全体スケジュール

2月19日（日） 9:15-10:15 開会式  
10:15-10:20 集合写真撮影  
10:30-11:30 プレナリーセッション（全体会合） 1  
11:30-12:00 ポスター発表1  
13:00-16:30、パラレルセッション（分科会）、特別セッション

2月20日（月） 9:15-11:30 プレナリーセッション（全体会合） 2・3  
11:30-12:00 ポスター発表2  
13:00-16:30 パラレルセッション（分科会）、特別セッション

2月21日（火） 9:15-10:15 プレナリーセッション（全体会合） 4  
10:30-12:00 閉会式  
午後 土木研究所・JAXA 視察（希望者のみ）

※3日間通して、各企業による技術紹介ブースを展示

2月22日（水） 関東近郊洪水対策現地視察（2015年鬼怒川破堤地点、首都圏外郭放水路、渡良瀬遊水池）、防災科学技術研究所

## 第9回洪水管理国際会議（ICFM9）主な参加者

### <開会式>

- Prof. Slobodan Simonovic, Chairperson of the ICFM Ad Hoc Committee
- 小谷元子、東北大学理事・副学長・国際学術会議（ISC）次期会長 【オンライン参加】
- 竹内邦良、山梨大学名誉教授

### <全体会合>

- 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
- Mr. Sahibzad Khan, Director General, Pakistan Meteorological Department (PMD) 【オンライン参加】
- Prof. Jun XIA, IUGG Fellow & Bureau member, President, China National Committee for IUGG, Academician of Chinese Academy of Sciences (CAS), Director, Research Institute for Water Security (RIWS), Wuhan University
- Prof. Ana Maria Cruz, Professor, Disaster Prevention Research Institute (DPRI), Kyoto University
- Dr. Valentin Aich, Senior Water and Climate Specialist, Global Water Partnership (GWP) and World Meteorological Organization (WMO)
- Davao, the Philippines: Dr. Anthony C. Sales, Regional Director, Department of Science and Technology (DOST) XI



# Certificate

*This is to certify that*

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*has participated to  
the 9<sup>th</sup> International Conference on  
Flood Management (ICFM9)  
at Tsukuba, Japan,  
on 19-21 February, 2023.*

A handwritten signature in black ink, appearing to read 'Toshio Koike', is centered on the page.

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**STATEMENT OF THE  
9TH INTERNATIONAL CONFERENCE ON FLOOD MANAGEMENT (ICFM9)  
“River Basin Disaster Resilience and Sustainability by All  
- Integrated Flood Management in the Post COVID-19 Era”**

18-22 FEBRUARY 2023, Tsukuba and Tokyo, Japan

The 9th International Conference on Flood Management (ICFM9) was held from February 18th to 22nd 2023 in Tsukuba and Tokyo, with more than 400 participants gathering from over 40 nations across the continents.

ICFM9 delegates participated in a high-level symposium in Tokyo, two and a half days of knowledge sharing and extensive exchanges, as well as field visits in the Kanto area. Following these activities, the delegates of ICFM9 have agreed to the following declaration. The declaration shows delegates’ commitment to flood risk reduction, and their appeal to the public, professionals, managers, and decision-makers to engage in the crucial task of improving flood disaster resilience and sustainability under changing climate conditions in the post COVID-19 era.

**Acknowledging:**

1. From 2000 to 2019, floods affected 1.6 billion people worldwide and accounted for 44% of all disaster events, the highest figure for any disaster type. Floods also killed 104,614 people and caused US\$651 billion in economic damage during this period<sup>1)</sup>.
2. IPCC AR6 reports an increase in the frequency and intensity of heavy precipitation events since the 1950s over most land areas for which observational data are sufficient for trend analysis (high confidence)<sup>2)</sup>. Though recording and reporting of flood events has improved in recent decades, this trend is closely related to a 2.3 fold increase in the number of flood events between 1980-1999 and 2000-2019<sup>1)</sup>. In addition, sea-level rise is accelerating, and since the 1990s it has doubled to 4 mm/yr.
3. The economic burden experienced by low-income countries from climate-related disasters is many times greater than that experienced by high-income countries. High-income countries experienced average losses from climate-related disasters of 0.41% of GDP, compared to 1.77% for low-income countries over the period 1998-2017<sup>3)</sup>.
4. The world’s urban population grew rapidly from 751 million in 1950 to 4.2 billion in 2018. Fifty-five percent of the world's population currently lives in urban areas. This figure is expected to increase to 68% by 2050<sup>4)</sup>. Urban expansion has often been carried out in an unplanned manner, leading to social, economic and environmental deterioration, and more intensive and severe flood damage. While urbanization will continue to increase, the population of 61 countries or areas is



projected to decrease by 1 per cent or more between 2022 and 2050<sup>5)</sup>.

5. Recurrent heavy rainfall events combined with already saturated water systems have caused the failures of protective infrastructure, especially in the case of embankment structures, which are susceptible to erosion and infiltration.
6. The COVID-19 pandemic has disrupted access to shelters and medical services, exacerbating damage and human suffering caused by floods. The pandemic has also slowed economic development and has hindered the advancement of social equity, making society more vulnerable to flood impacts, especially in low-income countries. The pandemic has demonstrated that our societies and systems are unprepared for sudden disturbances and changes. At the same time, the pandemic has created new opportunities for open science and learning. E-learning, in particular, is seen as a promising alternative methodology to enhance water and climate resilience during and after the COVID-19 pandemic.
7. ICFM9 is a contribution to the 9th phase of the Intergovernmental Hydrological Programme (IHP IX 2022-2029) UNESCO "Science for a Water Secure World in a Changing Environment."<sup>6)</sup>

**Declaring:**

8. The preventable loss of life and destruction of property as a result of flooding is unacceptable and requires bold and transformative action. Furthermore, flood disaster resilience is a prerequisite for achieving sustainable development. Flood resilience should therefore be strengthened by engaging all stakeholders in efforts to increase the capacity of societies to reduce disaster impacts, overcome loss and damage, and expedite recovery.
9. Concerted actions should be undertaken according to internationally accepted goals and targets, including those addressed in the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, and the 2015 Paris Agreement. Good practices, gaps and challenges identified and discussed during ICFM9 contribute to the midterm review of the implementation of the Sendai Framework and to the objectives of the UN 2023 Water Conference.
10. Improving resilience requires understanding and addressing systemic factors that create flood risk. These factors must be addressed through cross-sectoral and basin-wide coordination. Economic recovery investment activities stemming from the COVID-19 pandemic should be linked with efforts for building a resilient society.
11. Alongside other disciplines, science and technology should play a central role in making society more resilient and adaptive to devastating floods - one of the most destructive natural disasters. Floods can cause severe damage to infrastructure, property, and human life. Thus, it is imperative to prioritize the quantification and visualization of resilience in efforts to combat this catastrophe. It is essential to provide evidence of the effectiveness of investments in flood resilience to policymakers and decision-makers. Additionally, science and technology can aid in preparing for

sudden- and slow-onset disturbances, such as pandemics, climate change, and social changes.

12. To achieve sustainability, structural and non-structural flood management and climate change adaptation must be combined with climate change mitigation.
13. Flood disaster resilience and sustainable development are closely and structurally interlinked. For this reason, it is necessary to understand their issues in a comprehensive manner. Flood managers must promote holistic, integrated and interdisciplinary approaches, and conduct planning, implementation and evaluation to enhance resilience.
14. On-site stakeholders from national and local governments, for-profit companies, non-government organizations, communities, as well as individuals, should recognize the importance of local and indigenous knowledge, and should incorporate the concept of citizen science in developing flood disaster resilience and sustainability. These stakeholders must all work to address the social inequities that create and exacerbate flood risk, and should take action in accordance with site-specific conditions. Laws and regulations should ensure that central/national level risk management has the authority to decide on regional or transboundary interests, while there should be decision-making processes that arbitrate in cases of differences between central management and local communities.
15. The three key concepts of resilience, sustainability, and inclusiveness should be considered as guiding principles to execute flood resilience projects, as emphasized at the 4th Asia-Pacific Water Summit held in Kumamoto, Japan, on April 23-24 April, 2022, and addressed in its three outcome documents, the Kumamoto Declaration<sup>7)</sup>, the Chairs' Summary<sup>8)</sup>, and the Kumamoto Initiative for Water<sup>9)</sup>.

**Agreeing:**

16. Establish cross-sectoral frameworks at local, national, regional, and global levels to link cutting-edge science beyond disciplines with on-site decision-making and action to achieve goals using an end-to-end approach.
17. Promote collecting, archiving, and sharing data and information on flood risk.
18. Improve models of flood events and their economic impact, as intensified by climate and social changes, to plan practical policies for national and global economic development.
19. Promote water cycle consilience by integrating the knowledge of water cycle, climate, agriculture, and energy using well-organized observation, modeling, and data and information systems.
20. Foster the integration of "Facilitators" to work as catalysts capable of providing expert advice in the local context based on a broad range of scientific and indigenous knowledge about flood resilience and sustainable development under climate change<sup>10)</sup>.
21. Understand and integrate the impacts of social inequity, and the rights of indigenous peoples into all strategy, planning, and action for flood resilience.

**Inviting:**

22. In order to continue the benefits of sharing experiences and approaches, the Ad Hoc Committee is invited to convene ICFM10 in 2026, to further develop flood risk management research and practice at individual, community, business, local authority, national and regional levels.

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