



# The Fifth World Landslide Forum

## Implementing and Monitoring the Sendai Landslide Partnerships 2015-2025

*-Voluntary contribution to the Sendai Framework 2015-2030 and  
the Agenda 2030-Sustainable Development Goals-*

**<Hybrid Conference: Participation in Kyoto and Online-Virtual Participation>**

**Date:** 2-6 November 2021

**Venue:** Kyoto International Conference Center (KICC), Kyoto, Japan

### Organizers

International Consortium on Landslides (ICL)

Global Promotion Committee of International Programme on Landslides (IPL-GPC), including:

United Nations Educational, Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), Food and Agriculture Organization (FAO), United Nations Office for Disaster Risk Reduction (UNDRR), United Nations University (UNU), International Science Council (ISC), World Federation of Engineering Organizations (WFEO), International Union of Geological Sciences (IUGS), International Union of Geodesy and Geophysics (IUGG)

Kyoto University (KU), Japan Landslide Society (JLS), Japanese Geotechnical Society (JGS), Japan Society for Natural Disaster Science (JSNDS) and Japan Association for Slope Disaster Management (JASDiM)

### Cosponsors

Cabinet Office (Disaster Management Bureau) of Japan, Ministry of Foreign Affairs of Japan (MOFA), Ministry of Education, Culture, Sports, Science and Technology-Japan (MEXT), Ministry of Land Infrastructure, Transport and Tourism (MLIT), Ministry of Agriculture, Forestry and Fisheries (MAFF), Science Council of Japan (SCJ), Japan International Cooperation Agency (JICA), Japan Society of Civil Engineers (JSCE), and Japanese Society of Irrigation, Drainage and Rural Engineering (JSIDRE), Japan Society of Erosion Control Engineering, Japan Society of Engineering Geology.

### Supporting Organizations with Finance

Tokyo Geographical Society, International Union of Geological Sciences (IUGS), Association for Disaster Prevention Research, Kyoto, Japan

### AIM

World Landslide Forums have been organized every three years after the first Forum in Tokyo, Japan, in 2008. It is a common platform for scientists, engineers, practitioners and policy makers who are involved in landslide disaster risk reduction to present their latest progress. *The Sendai Landslide Partnerships 2015-2025 for Global Promotion of Understanding and Reducing Landslide Disaster Risk* was adopted on 16 March 2015 as a voluntary commitment to the United Nations World Conference on Disaster Risk Reduction, held in Sendai, Japan, in 2015. It is a supporting tool for the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. In order to implement further the Sendai Landslide Partnerships 2015-2025 and pursue and enhance efforts to 2030 and beyond, **the Kyoto 2020 Commitment for global promotion of understanding and reducing landslide disaster risk (KLC2020) - A Commitment to the Sendai Landslide Partnerships**

*2015-2025, the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda Sustainable Development Goals, the New Urban Agenda and the Paris Agreement* - was launched by all signatory organizations at the online launching session of KLC2020 on 5 November 2020. The Fifth World Landslide Forum will be the opportunity to achieve a mid-term review of the Sendai Landslide Partnerships 2015-2025, and one-year review and planning of the further development strategy of KLC2020.

## **ORGANIZING COMMITTEE**

### **Honorary Chairpersons**

Audrey Azoulay, Director-General of UNESCO\*

Mami Mizutori, Special Representative of the United Nations Secretary-General for Disaster Risk Reduction\*

Petteri Taalas, Secretary-General of WMO \*

Qu Dongyu, Director-General of FAO \*

David Malone, Rector of UNU

Akira Murakami, Executive Vice-President of Kyoto University

Daya Reddy, President of ISC

Gong Ke, President of WFEO

John Ludden, President of the International Union of Geological Sciences (IUGS)

Kathy Whaler, President of the International Union of Geodesy and Geophysics (IUGG)

Qunli Han, Executive Director of Integrated Research on Disaster Risk (IRDR)

Walter Ammann, President and CEO of Global Risk Forum GRF Davos, Switzerland

Angelo Borrelli, Head of the National Civil Protection Department, Italian Presidency of the Council of Ministers, Italy

Darko But, Director General of the Administration for Civil Protection and Disaster Relief of the Republic of Slovenia,  
Slovenia

Akifumi Nakao, Director, International Cooperation Division, Disaster Management Bureau, Cabinet Office, Japan

Hiroaki Tsunakawa, Director for Sabo planning coordination, Ministry of Land Infrastructure, Transport and Tourism,  
Japan

Chungsik Yoo, President of the International Geosynthetic Society

Rafiq Azzam, President of the International Association for Engineering Geology and the Environment

\* to be confirmed.

### **Chairpersons**

Kyoji Sassa (Professor Emeritus, Kyoto University; Secretary General of ICL)

Peter Bobrowsky (Geological Survey of Canada; Immediate past President of ICL)

Kaoru Takara (Kyoto University, Japan; Executive Director of ICL)

### **Members**

Željko Arbanas (University of Rijeka, Croatia)

Snježana Mihalić Arbanas (University of Zagreb, Croatia)

Nicola Casagli (University of Firenze, Italy)

Fausto Guzzetti (Department of Civil Protection, Italy)

Matjaž Mikoš (University of Ljubljana, Slovenia)

Paola Reichenbach (Research Institute for Geo-Hydrological Protection, National Research Council, Italy)

Shinji Sassa (Port and Airport Research Institute, Japan)

Alexander Strom (Geodynamics Research Center LLC, Russia)

Binod Tiwari (California State University, Fullerton, USA)

Veronica Tofani (University of Firenze, Italy)  
Vít Vilímek (Charles University in Prague, Czech Republic)  
Fawu Wang (Tongji University, China)

### **Chairpersons of Local Organizing Committee**

Kaoru Takara (Former President, Japanese Society of Natural Disaster Science)  
Daisuke Higaki (Chair, ICL Committee of the Japan Landslide Society)  
Ikuo Towhata (Former President, Japanese Geotechnical Society)

### **Secretary Generals**

Ryosuke Uzuoka (Professor, Disaster Prevention Research Institute, Kyoto University)  
Kazuo Konagai (Professor Emeritus, University of Tokyo; Principal researcher of ICL Headquarters)  
Khang Dang (Research Promotion Officer, ICL)

### **KYOTO INTERNATIONAL CONFERENCE CENTER**

The Kyoto International Conference Center (KICC) in Kyoto, Japan is selected as the venue of the Fifth World Landslide Forum. It was constructed by the decision of the Cabinet of Japan as the national conference center to host major International Conferences in Kyoto, Japan in May 1966. The Kyoto Protocol was adopted in KICC in the third Session of the Conference of the Parties (COP3) to the United Nations Framework Convention on Climate Change in the December 1997, the third World Water Forum was in March 2003.



Room A: Plenary Session planned for 3 November 2021



Room D: The Event for Tsunami Awareness day on 5 November and Closing Ceremony on 6 November 2021

## Forum Publication

Publication of WLF5 is the followings;

**1. Journal *Landslides* thematic issues:**

- 1) The thematic issue “Sendai Landslide Partnerships 2015-2025” was published in October – November 2020.
- 2) The thematic issue “Kyoto Landslide Commitment 2020” to be published in October – November 2021.

**2. Full color books:** Six volumes of full color books titled “Understanding and Reducing Landslide Disaster Risk” which are the inaugural volumes of the new ICL book series “ICL contribution to landslide disaster risk reduction” (ISSN 2662-1894 (print version) and e-ISSN 2662-1908 (electronic version)) was published in January 2021.

Volume 1	Sendai Landslide Partnerships and Kyoto Landslide Commitment	640 pages
Volume 2	From Mapping to Hazard and Risk Zonation	504 pages
Volume 3	Monitoring and Early Warning	360 pages
Volume 4	Testing, Modeling and Risk Assessment	506 pages
Volume 5	Catastrophic Landslides and Frontiers of Landslide Science	426 pages
Volume 6	Specific Topics in Landslide Science and Applications	406 pages

**3. Electronic Proceedings:** The printing format of Electronic Proceedings is one page (title/author/office and abstract) + 5-9 pages of 2 PPT slides/page.

Part 1 Japan Landslide Society Sessions 262 pages.

Part 2 Other sessions 253 pages

WLF5 electronic proceedings will be published with ISBN number in May 2021.

**4. One-page abstract volumes (New):** WLF5 in 2021 will invite speakers for one-page text-based abstract (with no figures or photos). The deadline for the one-page abstract is **30 June 2021**. Acceptance will be informed to the authors by **31 July 2021**. WLF5 abstract volume will be published with an assigned ISBN number. Authors can choose among (1) 10-minute oral presentation, (2) no talk, or (3) non-attendance.

**5. Electronic posters:** E-Poster is one A0 page electronic poster file (pptx format), template can be downloaded from WLF5 website < <http://wlf5.iplhq.org/wp-content/uploads/2019/10/E-Poster.pptx>>. All accepted electronic posters will be numbered and uploaded on the web for downloading by registered participants. Each poster is citable by its number of the WLF5 electronic posters. The submission deadline of Electronic posters is **10 August 2021**. Acceptance will be informed to the authors by **10 September 2021**. Authors can choose among (1) 3-minute oral presentation, (2) no talk, or (3) non-attendance.

## Forum Organization Process

The forum organization process including publication, registration, panel exhibition (New), and Kyoto Landslide Commitment 2020 are shown in the table below.

**Table of Forum Organization Process**

Month	4-6		7	8	9-10	WLF5
Year	2021					3-6 November 2021
Journal thematic Issue	Review/Publication					Thematic issue "KLC2020" Vol.18-10 and 11
One-page abstract	Abstract submission (by 30 June 2021)	Notice of Acceptance (by 31 July)	Programme making			Choice of 10-minute oral presentation, no talk, or no attendance
Electronic Posters One A0 page poster	Submission of posters (by 10 August 2021)			Notice of Acceptance (by 10 Sept. 2021)	Programme making	Choice of 3-minute talk, no talk, or no attendance
Panel exhibition	1200 mm x 2100 mm panel exhibition (in the center of Exhibition Room B-1) Max 20 exhibition panels (JPY150,000 including 2 non-speaker registration tickets ) Call is closed when the application number will reach 20					3-6 November 2021
Registration	Normal registration (by 31 July 2021)			Late registration		
	Registration fee for those who paid the publication fee for Books and E-Proceedings in June-July 2020 will be reduced					
Kyoto Landslide Commitment 2020 (KLC2020)	Report of the launching session in Vol.18-1 with group photo of participants. Introduction of KLC2020 partners in Vol.18-1 and subsequent issues. Call for further KLC2020 signatories by 31 July 2021.			Planning of KLC2020 in WLF5		High-level Panel Discussion for KLC2020 Way Forward. The Second Session of KLC2020 signatories.

**Deadline for one-page abstract volume:** 30 June 2021.

**Deadline for Electronic posters:** 10 August 2021.

**Deadline for Panel exhibition:** It will be closed when the applied number reaches 20.

**Deadline for Registration:** Normal registration by 31 July 2021.

## Themes of Forum

WLF5 parallel sessions will be organized under the following 6 themes and their coordinators. Sessions proposed for one-page abstract volume and the electronic proceedings will be organized under Theme 6.

Theme 1: Sendai Landslide Partnerships and Kyoto Landslide Commitment

First Coordinator: Kyoji Sassa (ICL Headquarters)

Contact: ICL secretariat <secretariat@iclhq.org>

Theme 2: From Mapping to Hazard and Risk Zonation

First Coordinator: Fausto Guzzetti (Department of Civil Protection, Italy)

Contact: Paola Reichenbach <paola.reichenbach@irpi.cnr.it>

Theme 3: Monitoring and Early Warning

First Coordinator: Nicola Casagli (University of Firenze, Italy)

Contact: Veronica Tofani <veronica.tofani@unifi.it>

Theme 4: Testing, Modeling and Risk Assessment

First Coordinator: Binod Tiwari (California State University, Fullerton, USA)

Contact: Binod Tiwari <btiwari@fullerton.edu>

Theme 5: Catastrophic Landslides and Frontiers of Landslide Science

First Coordinator: Vít Vilímek (Charles University in Prague, Czech Republic)

Contact: Vít Vilímek <vit.vilimek@natur.cuni.cz>

Theme 6: Specific Topics in Landslide Science and Applications

First Coordinator: Željko Arbanas (University of Rijeka, Croatia)

Contact: Zeljko Arbanas <zeljko.arbanas@gradri.uniri.hr>

The following Electronic proceedings sessions are organized by the Japan Landslide Society under theme 6.

Session 6.E1 International Cooperation in Landslide Disaster/Risk Reduction (Japan)

Session 6.E2 Introduction of landslide mitigation measures of Japan

Session 6.E3 Activities of Landslide-prevention engineers to enhance local capacity for disaster reduction in Japan

Session 6.E4 Challenges in international unification of slope disaster prevention technologies

Session 6.E5 Countermeasures conducted by the Japanese government against landslide disasters

## Programme of WLF5 in Kyoto, Japan in 2021

Date	Time	Activities
2 Nov. 2021	9:00-18:00	Forum Registration in Reception desk in KICC
	9:00-16:00	20 <sup>th</sup> BOR/ICL, 16 <sup>th</sup> GPC/IPL/General Conference of KLC2020 Signatory organizations in Room (C2) in KICC
	16:00-17:00	20 <sup>th</sup> Anniversary ceremony of ICL in Heianjingu Shrine Hall
	17:30-19:30	20 <sup>th</sup> Anniversary dinner in Heianjingu Shrine Hall
3 Nov. 2021	9:00 – 10:00	Opening addresses: ICL, ICL supporting organizations and host organization (Room A)
	10:10-11:50	High-level Panel Discussion “KLC2020 review and way forward” (Room A) Panelists: Representatives of KLC2020 signatories
	12:00-12:20	Group Photo of KLC2020 Signatory organizations (Room A)
	12:00-13:30	Lunch (Sakura)
	13:30-15:30	<b>Forum lectures/Forum speeches</b> (Room A) Fausto Guzzetti (Italy): On the prediction of landslides and their consequence Charles NG (Hong Kong, China): Interaction mechanisms between debris flow and multiple barriers Speeches from KLC2020 signatory organizations
	15:45-17:00	<b>Recognition and Awards Ceremony</b> (Room A) World Centres of Excellence on Landslide Risk Reduction (WCoEs) 2020-2023 Bestow the Varnes Medal, IPL Awards for 2017-2021
	9:00-18:00	Exhibition in Booths and Panels (Room B1)
	18:30-21:00	Welcome Reception (Room SAKURA)

4 Nov. 2021	9:30-12:00	ICL-KLC2020 Intergovernmental round table discussion
	9:00-17:00	Parallel Sessions
	12:00-13:30	Lunch (Sakura)
	9:00-18:00	Exhibition in Booths and Panels
5 Nov. 2021	9:00-17:00	Special Event of World Tsunami Awareness Day in Room B-2 Special Lectures and Panel Discussion on Landslide-induced Tsunamis
	12:00-13:30	Lunch (Sakura)
	9:00-17:00	Parallel Session
6 Nov. 2021	9:00-12:00	Parallel Sessions
	12:00-13:30	Lunch (Sakura)
	13:30-15:30	<b>Forum Lectures and Award Lectures</b> in Room 510 (5F) Michel Jaboyedoff (Switzerland): Improving the rockfall failure hazard assessment. Brian Collins (U.S.A): Progress and lessons learned from responses to catastrophic landslides Claudio Margottini (Italy) Fukuoka IPL Award lecture Beena Ajmera (USA) Oldrich Hungr Award lecture
	15:30-17:00	<b>Closing Ceremony</b> in Room 510 (5F) ➤ Speech by ICL President Nicola Casagli (2021.1.1 - 2023.12.31) ➤ Introduction of new ICL officers by ICL President ➤ Certificates to new ICL members (2017-2021) by ICL President ➤ Acknowledgement to WLF5 supporting organizations with financial support and sponsors by ICL President ➤ Welcome to 6th WLF (WLF6 Forum Chair, Nicola Casagli)
7-9 November 2021	Field trip to Urban landslides in Hiroshima, Landslide-induced Tsunami in Unzen volcano, earthquake-induced-landslides in Kumamoto	

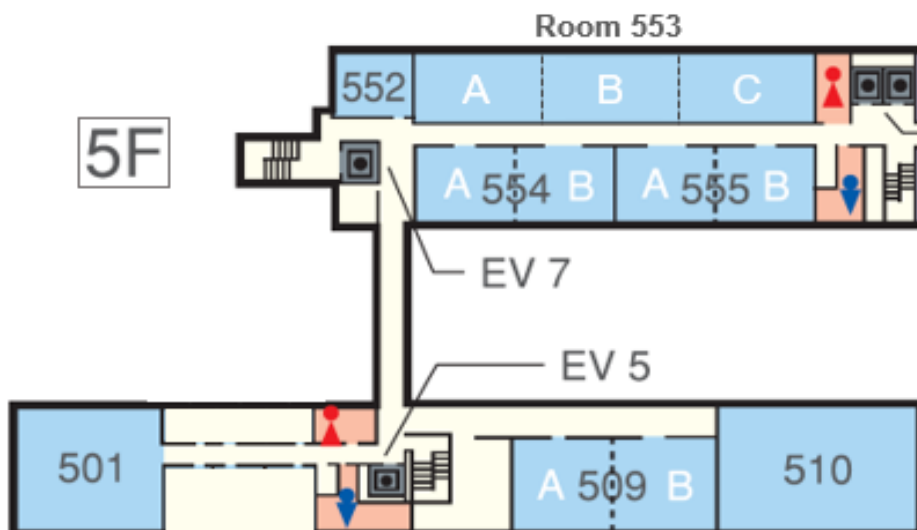
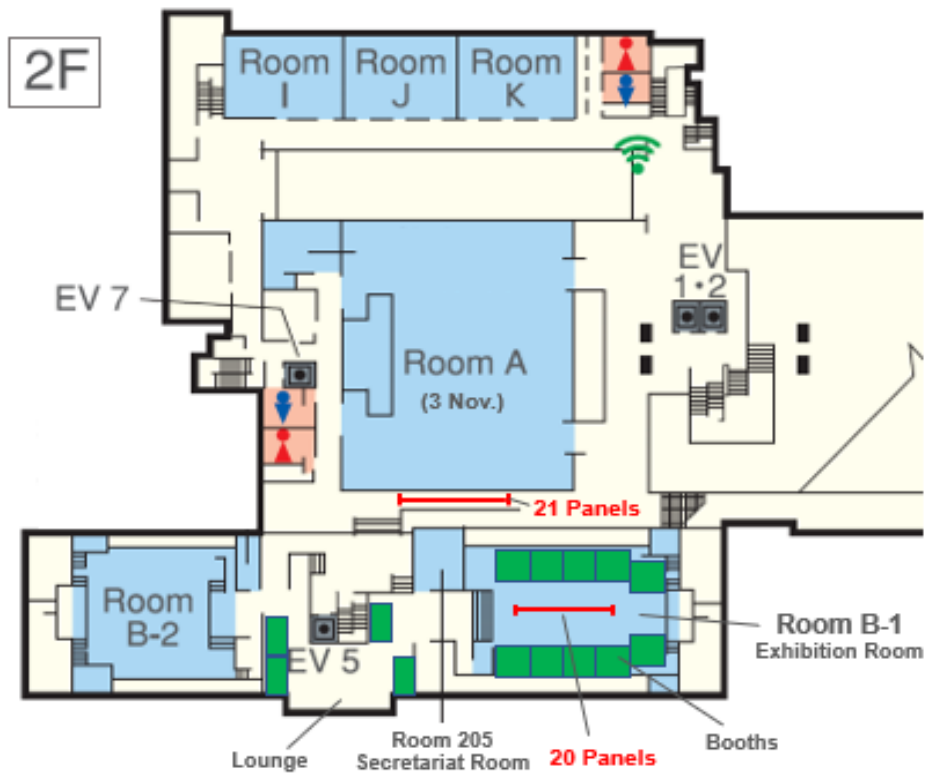
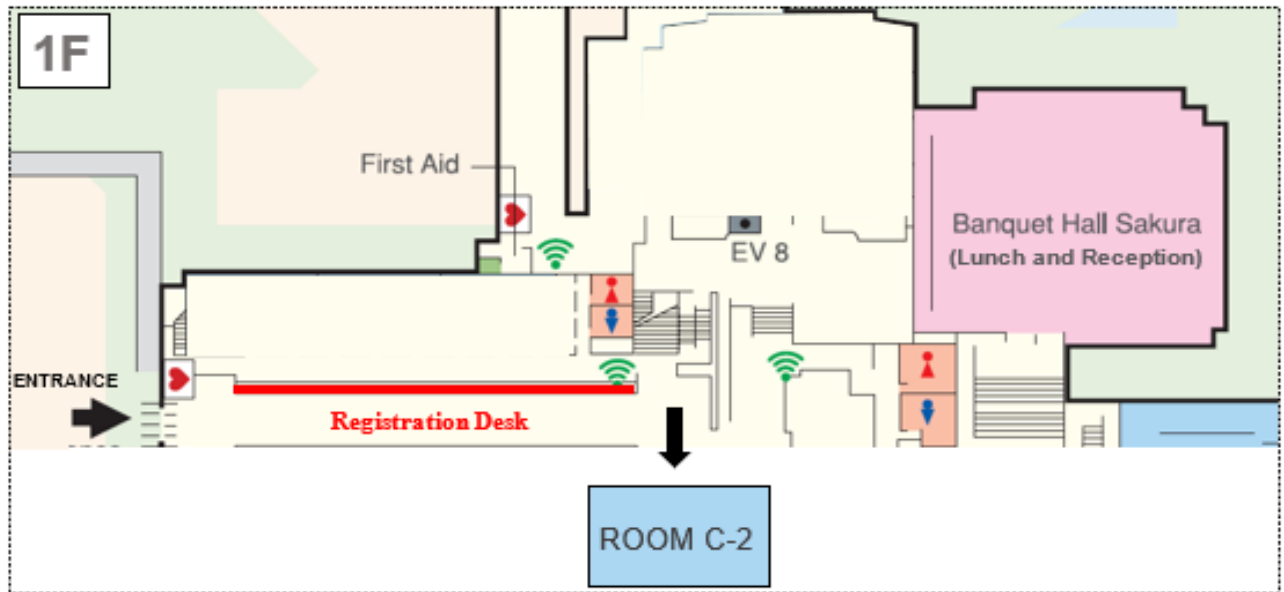
## Location of Conference Rooms

Forum sessions are organized on 1<sup>st</sup>, 2<sup>nd</sup> and 5<sup>th</sup> Floor of the National Kyoto International Conference Center.

**The First Floor:** Entrance and Registration desk, C-2 (20<sup>th</sup> BOR/ICL/16<sup>th</sup> GPC/IPL/General conference of KLC2020) Banquet Hall SAKURA for lunch on 3, 4, 5, 6 November 2021 and reception in the evening of 3 November 2021.

**The Second Floor:** Room A (Opening Plenary sessions on 3 November 2021), Room B-2, Room I, J, K (parallel sessions on 4, 5, 6 November 2021), Room B-1 (Exhibition Booths and Panels), Lounge, Room 205 (Forum secretary room).

**The Fifth Floor:** Parallel session rooms (501, 509, 510, 554, 555. 552 (service), 553 (spare),





## Registration Timeline and Fee of WLF5

Forum Registration Website: <http://wlf5.iplhq.org/registration/>

Speaker Registration	Early (01 Oct. 2019 to 31 Mar. 2021)	Normal (01 Apr. to 31 Jul. 2021)	Late and On-Site (After 01 Aug. 2021)
Regular	66,000 JPY	71,000 JPY	76,000 JPY
ICL Board member,	46,000 JPY	51,000 JPY	76,000 JPY
ICL Deputy Board member	46,000 JPY	51,000 JPY	76,000 JPY
ICL Supporter (up to 2 persons)	46,000 JPY	51,000 JPY	76,000 JPY
ICL Associates	56,000 JPY	61,000 JPY	76,000 JPY
One-page abstract (New)	31,000 JPY	36,000 JPY	X
E-Posters (New)	31,000 JPY	36,000 JPY	X
Students	26,000 JPY	31,000 JPY	X
<b>Registration fee for participants who paid publication fee</b>			
Regular	38,000 JPY	43,000 JPY	48,000 JPY
ICL Board member,	18,000 JPY	23,000 JPY	48,000 JPY
ICL Deputy Board member	18,000 JPY	23,000 JPY	48,000 JPY
ICL Supporter (up to 2 persons)	18,000 JPY	23,000 JPY	48,000 JPY
ICL Associates	28,000 JPY	33,000 JPY	48,000 JPY
Registration fee includes Vol.1 of Full-color E-books, E-Proceedings, E-posters and Abstract volume. Additional registration fee of E-posters for speakers (one-page abstract, full color books, E-proceedings) is 15,000 JPY for Early and Normal registration. Paid registration fee for one-page abstracts and e-posters will be 100% refunded when they are not accepted.			
<b>Registration fee for non-speaker/non-poster publication</b>			
Regular (Vol.1, E-proceedings., E-posters, Abstract volume)	21,000 JPY	26,000 JPY	31,000 JPY
Spouses	16,000 JPY (including reception)		
World Tsunami Awareness Day	15,000 JPY	20,000 JPY	25,000 JPY
<b>Options</b>			
Conference Reception	10,000 JPY	12,000 JPY	15,000 JPY
Lunch (3, 5, 6 November 2021)	3,000 JPY for 3 days (no single lunch sale)		
One of full-color E-books # Vol.1, Vol. 2, Vol.3, Vol.4, Vol.5, Vol.6	5,000 JPY/volume	X	
Post-Forum Field trip (Max 30ps)*	75,000 JPY	80,000 JPY	85,000 JPY
# Participants may order any volume (s). From Springer, all chapter authors can download E-book they contributed to. * Field Trip fee: 100 % will be refunded when the trip will be cancelled. 70 % will be refunded when a participant is not possible to come to Japan due to COVID-19. No cancellation after <b>15 September 2021</b>			

**Note:** Conference is organized by onsite presentation in KICC and online-virtual/pre-recorded presentation. Registration fee is the same. Programme will be made based on the registration (real and virtual participation) in April 2021. Switching between the real or the virtual presentation will be accepted by **15 September 2021**.

### Call for WLF5 Supporting Organizations with Financial Support

WLF5 supporting organizations with Financial support (more than 3,000 USD or 300,000 JPY) are called for. The representative of each organization is invited to attend all sessions, the reception, and lunches throughout the WLF5. The ICL President will present his sincere appreciation for their supports at the closing ceremony. **Current Organizations:** Tokyo Geographical Society, International Union of Geological Sciences (IUGS), Association for Disaster Prevention Research, Kyoto, Japan.

### Call for Sponsor Type C / Panel Exhibition (New)

**Registration fee (JPY150,000):** Panel exhibition (1200 mm x 2100 mm) in Room B-1 or Outside wall of Room A, 2 non-speaker registration tickets, Appreciation of the organization: Sponsor Banners in WEB, Bulletin, Programme and Journal "Landslides".

Registrant as Listeners of the special event for the World Tsunami Awareness day (November 5, 2021) may participate in the symposium and panel discussion for Landslide-induced Tsunamis in Room B-2 and also visit the Exhibition for early warning and disaster reduction technologies for landslides and flows in Room B-1.

The registration to Forum, Field Trip, City tours and Hotel accommodation will be received by JTB Corp. Western Japan MICE Branch. Co-authors of the presenter are registered as non-speakers.

### Post-Forum Field Trip (Max 30 persons) (7 to 9 November 2021)

Field trip to urban landslides in Hiroshima, landslide-induced tsunami in Unzen volcano, and earthquake-induced landslides in Kumamoto will be organized on 7-9 November 2021.

#### **1st day in Hiroshima (7th Nov. 2021)**

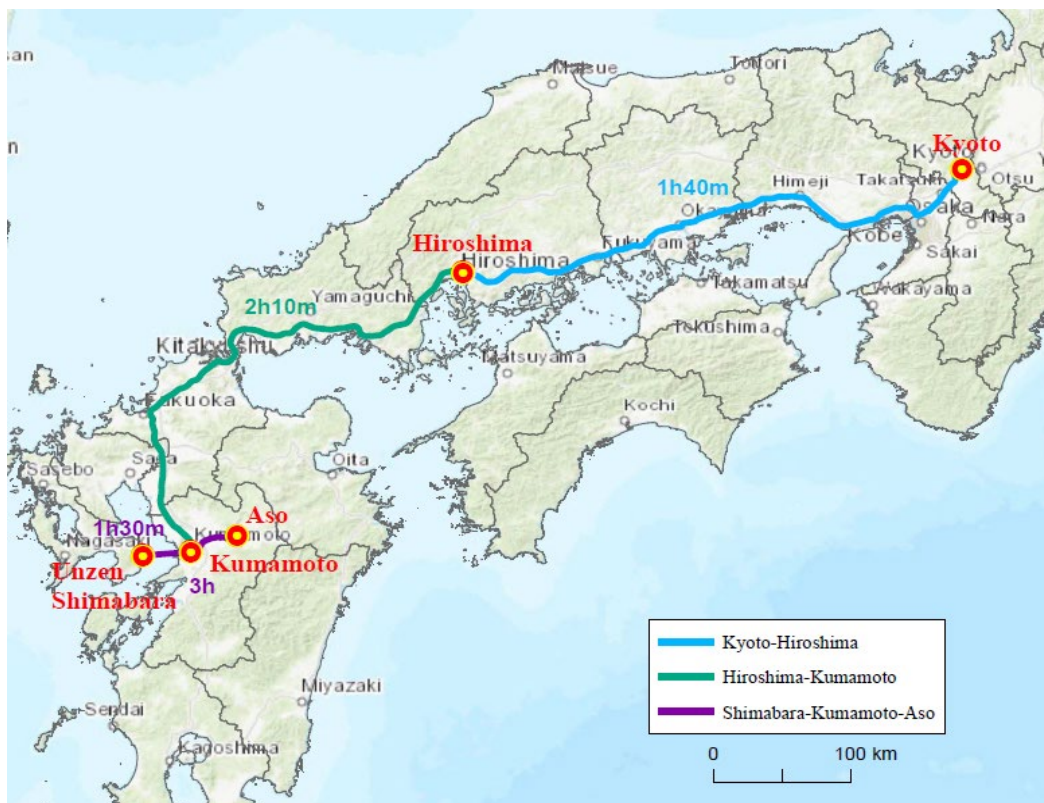
Start from Kyoto by Shinkansen: Urban landslide disasters triggered by local extreme rainfalls. World Cultural Heritage “Itsukushima Shrine”, and “Hiroshima Peace Memorial Park” and go to Kumamoto (Stay in Kumamoto).

#### **2nd day in Unzen (8 Nov. 2021)**

From Hiroshima to Kumamoto by Shinkansen and to Unzen-Shimabara by bus and ferry: 1792 Unzen-Mayuyama megaslide by an earthquake and caused big Tsunami disaster. Visit to Unzen Volcanic Area Global Geopark, Unzen Disaster Memorial Hall (Stay in Unzen Hot Spring).

#### **3rd day (9 Nov. 2021)**

From Unzen Hot Spring to the Shimabara port by bus and ferry to Kumamoto (observation from the ferry to Unzen volcano and megaslide): Visit to the landslides induced by the 2016 Kumamoto earthquake in the Aso caldera area. Leave from Kumamoto Station/Airport to Osaka by railway, or from Kumamoto airport to Osaka, Tokyo or others.



The route map of field trip on 7-9 November 2021

- ◆ Hiroshima (urban small-scale landslides and debris flow, World Cultural Heritage “Itsukushima Shrine”, and “Hiroshima Peace Memorial Park”. Landslide simulation (LS-RAPID) for Hiroshima disaster can be found at: <https://www.youtube.com/watch?v=Sp-JIQoi87M>



- ◆ Unzen volcano and megaslide-induced tsunami (Unzen volcano, Unzen Volcanic Area Geopark, Unzen landslide-and-tsunami disaster (15,153 people were killed). The field trip will take a Ferry from Shimabara (Unzen) to Kumamoto crossing the Ariake sea.





Video of 1991 Pyroclastic flow: <<https://www.gsj.jp/data/openfile/no0469/0104.mov>>

Landslide simulation (LS-RAPID): <<https://www.youtube.com/watch?v=GwAWjdXXNbk>>

Tsunami simulation (LS-Tsunami): <<https://youtu.be/QoQboDi7dQw>>

◆ Landslides induced by Kumamoto Earthquake in Aso Caldera (2016)



# Map

国立京都国際会館 (ICC Kyoto)  
Kyoto International Conference Center



● 地下鉄 Subway  
● 世界遺産 UNESCO World Cultural Heritage Sites

## Secretariat of the 5th World Landslide Forum

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