

EDITORIAL

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Report on the 20th International Symposium on Geo-disaster Reduction, 16–19 August 2022, Kanazawa, Japan

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Abstract

The joint event of 20th International Symposium on Geo-disaster Reduction (20th ISGdR) was held onsite and online during 16–19 August 2022 in Kanazawa City, Ishikawa Prefecture, Japan. This symposium focused on the theme of “the reduction of the disasters triggered by geological and geophysical factors on the earth and beyond”, providing a platform for academics, researchers and practitioners from different countries to discuss the research progress and exchange ideas on the reduction of disasters. The symposium consisted of keynote lecture, invited lectures and other presentations in parallel session. A technical trip to Hakusan Todorigawa Geopark was conducted on August 19.

Introduction

From August 16 to 19, 2022, the 20th ISGdR was held in Kanazawa City, Ishikawa Prefecture, Japan. This hybrid conference was organized by the International Consortium on Geo-disaster Reduction (ICGdR), Kanazawa University, National Institute of Technology, Fukui College, Kanazawa Institute of Technology, Fukui University of Technology, and Tobishima Corporation.

The executive committee of this event was led by three co-chairs, Prof. Emer. Masakatsu Miyajima (Honorary chair/ICGdR Director-General, Kanazawa University, Japan), Prof. Masaho Yoshida (Chair/ICGdR Vice Presidents, National Institute of Technology, Fukui College, Japan), and A. Prof. Toshikazu Ikemoto (Vice chair/Kanazawa University, Japan).

The joint event focused on the theme of “the reduction of the disasters triggered by geological and geophysical factors on the earth and beyond”. Subthemes under the overall theme include: (1) Geo-disasters caused by earthquake; (2) Geo-disasters and climate change; (3)

Geo-disasters related to volcanism; (4) Geo-disasters caused by human activities; (5) Landslides; (6) Tsunami; (7) Social resilience to disasters; (8) New technologies for geo-disaster reduction, and other related topics.

There were two parts of this event, including the symposium at The Kanazawa Chamber of Commerce and Industry and technical tour to Hakusan Todorigawa Geopark. A total of 107 academics, researchers and practitioners from different countries participated in this event (Fig. 1). Among them there were 29 on-line participants and 78 on-site participants. One keynote lecture, 4 invited lectures and 46 presentations (proceeded in two parallel conference rooms) were reported in the symposium, arousing heated discussion among the participants both online and onsite.

Symposium

Opening ceremony

The opening ceremony was presided over by A. Prof. Toshiyuki Takahara from Kanazawa Institute of Technology. As the Chair of 20th ISGdR, Prof. Masaho Yoshida gave an opening speech, warmly welcomed all the guests attended this conference, and ended his speech with the best wish for the success of this symposium (Fig. 2a). Then, Prof. Fawu Wang from Tongji

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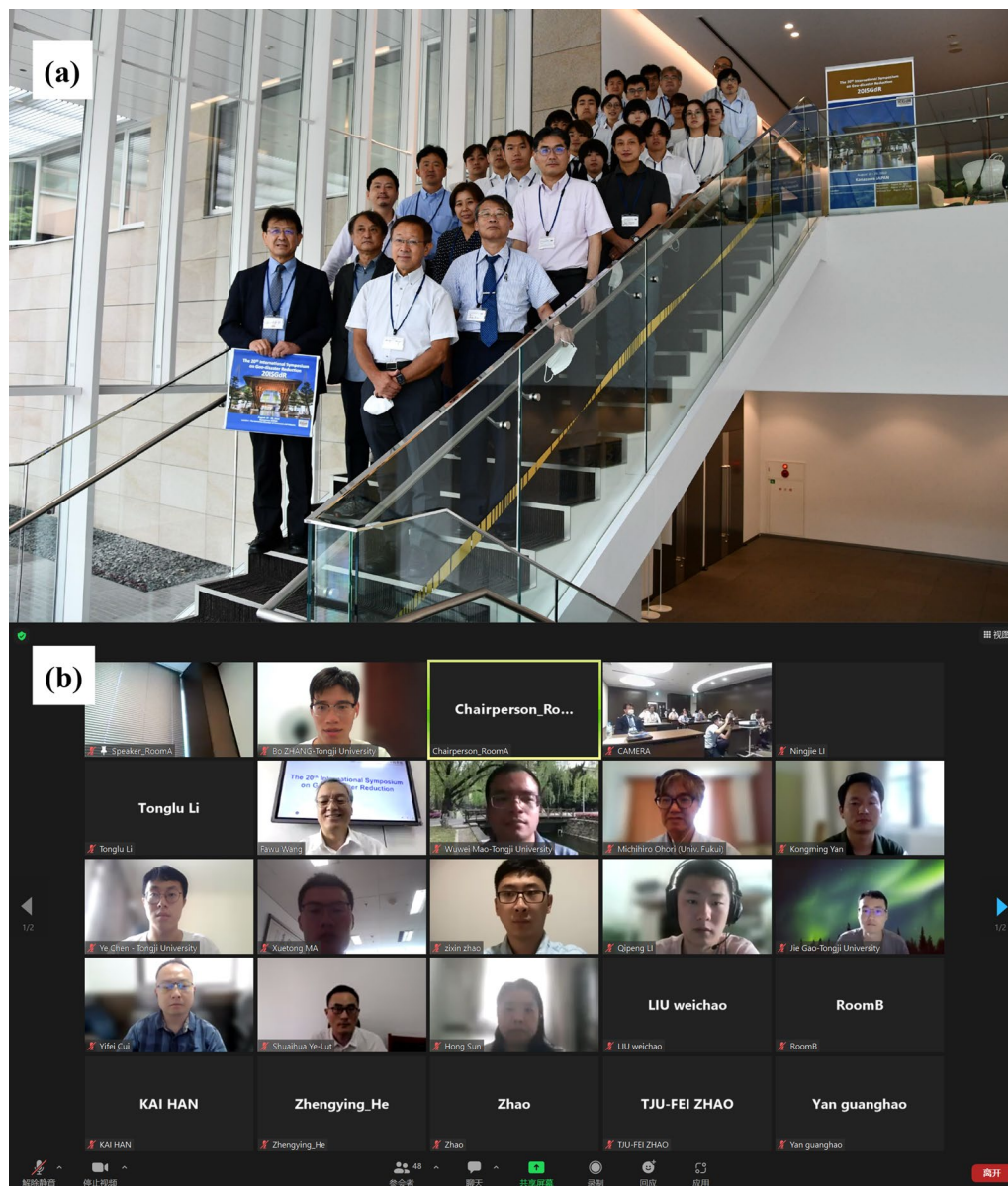


Fig. 1 Group photo of participants of the 20th ISGdR: (a) Onsite; (b) Online

University, China, the president of ICGdR, introduced the activity report of ICGdR. He expressed sincere appreciation to the efforts of the organizing committee and all the staff, and introduced the major achievements of ICGdR in 2021–2022, including the structures, activities, projects, trainings, workshops and so on (Fig. 2b). In the next segment, Prof. Tonglu Li from Chang'an University, China, the Secretary-General of ICGdR, introduced the new ICGdR members (Fig. 2c). A total of 20 researchers from different institutions joined ICGdR, adding new vitality to ICGdR for more cooperation and research.

For the final part of opening ceremony, Prof Emer. Masakatsu Miyajima announced the recipients of five awards of ICGdR, the detail information is showed in Table 1. Dr. Azemeraw Wubalem won the Geoenvironmental Disasters 2021 Best Paper Award for his excellent work in the paper “Landslide susceptibility mapping using statistical methods in Uatzau catchment area, northwestern Ethiopia” (Fig. 3), worth 1000 Euro.

Keynote lecture

The Keynote Lecture of 20th ISGdR was chaired by Prof. Masaho Yoshida. Prof. Emer. Masakatsu Miyajima



Fig. 2 Opening ceremony: **a** Opening speech by Prof. Masaho Yoshida gave an opening speech; **b** Activity Report of ICGdR by Prof. Fawu Wang; **c** Introduction of the new ICGdR members by Prof. Tonglu Li



Fig. 3 2021 Best Paper Award of the ICGdR official journal: Geoenvironmental disasters



Fig. 4 Keynote Lecture presented by Prof. Emer. Masakatsu Miyajima

Table 1 Winners of five ICGdR awards

Awards	Awards-Winner	Affiliation
ICGdR Excellent Doctoral Dissertation Award	Dr. Xingsen GUO	Dalian University of Technology, China
ICGdR Outstanding Young Scientist Award	Dr. Xi XU	Tongji University, China
	Dr. Yifei CUI	Tsinghua University, China
	Prof. Xiaolei LIU	Ocean University, China
	Dr. Wuwei MAO	Tongji University, China
	Prof. Kun SONG	China Three Gorges University, China
ICGdR Outstanding Activity Award	Prof. Fenggui LIU	Qinghai National University, China
ICGdR Technology Invention Award	Prof. Shengwei QI	Chinese Academy of Science, China
	Prof. Bin HE	Guangdong Academy of Science, China
ICGdR Science Achievement Award	Prof. Yonggang JIA	Ocean University of China, China
	Prof. Emer. Masakatsu MIYAJIMA	Kanazawa University, Japan

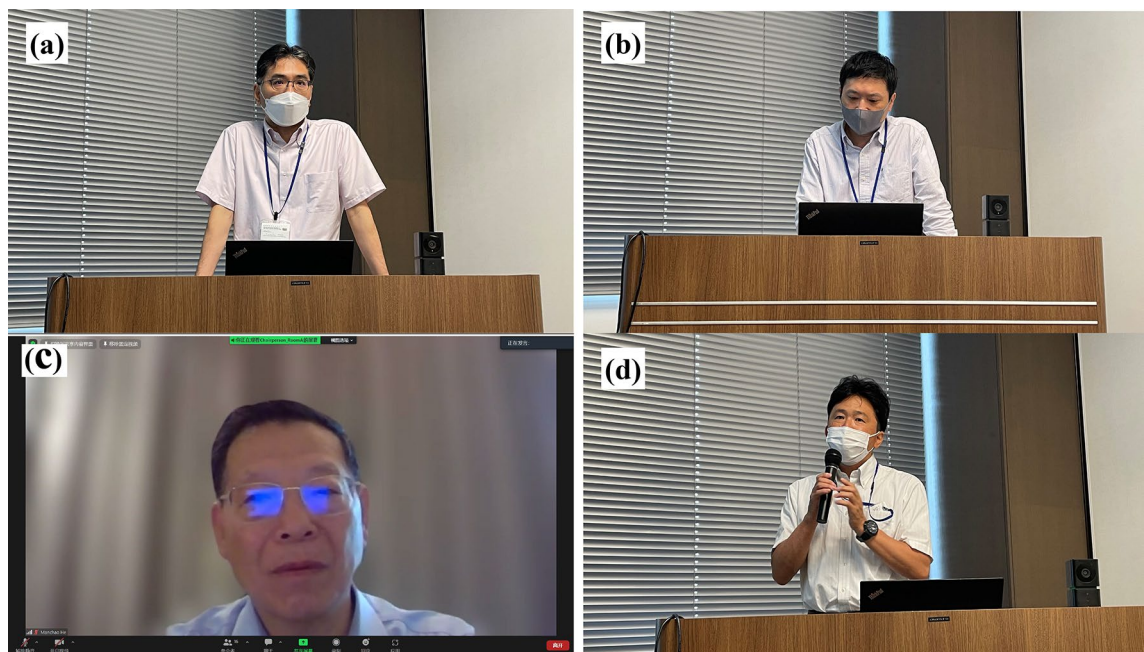


Fig. 5 Invited Lectures presented by **a** Prof. Yusuke Ono, **b** Dr. Ryoichi Furuta, **c** Prof. Maochao He, **d** Prof. Tetsuo Tobita

Table 2 List of Keynote Lecture and Invited lectures

Type	Title	Presenter	Affiliation
Keynote Lecture	Resilience of water pipelines and facilities against geo-hazards induced by earthquakes and heavy rains	Prof. Emer. Masakatsu Miyajima	Kanazawa University
Invited Lecture	Numerical simulation of earthquake-induced slope failures using the SPH method	Prof. Yusuke Ono	Tottori University
Invited Lecture	Monitoring disasters and surveying damages using remote sensing technologies	Dr. Ryoichi Furuta	Remote Sensing Technology Center of Japan
Invited Lecture	Cross-fault measurement for earthquake prediction	Prof. Manchao He	China University of Mining and Technology—Beijing
Invited Lecture	LEAP: International collaborative research project for centrifuge model testing and numerical analysis on dynamic behavior of saturated sloping sand deposit	Prof. Tetsuo Tobita	Kansai University

presented the Keynote Lecture named “Resilience of water pipelines and facilities against geo-hazards induced by earthquakes and heavy rains” (Fig. 4).

Invited lectures

The 20th ISGdR arranged 4 Invited Lectures, covering the areas of numerical simulation, disaster monitoring, earthquake measurement and model testing (Fig. 5). The details of the Invited Lectures, including topics, presenters and their affiliations can be found in Table 2.



Fig. 6 Presentation of Parallel Sessions

Parallel sessions

From August 17 to 18, 46 presentations were reported in the Parallel Sessions focusing on different topics under the overall theme of this symposium. These sessions were held simultaneously in two conference rooms, and provided a platform for young researchers to interact and discuss their research in depth (Fig. 6). They also got a great opportunity to summarize and share their ideas and research progress, and received lots of encouragement and advice in the discussion that followed the presentations.



Fig. 7 Prof. Masaho Yoshida presented the awards to the winners

Closing ceremony

The closing ceremony was held on the afternoon of August 18, and presided over by A. Prof. Toshiyuki Takahara. A. Prof. Wuwei Mao (Tongji University, China) gave a general overview of the next symposium, which will be held at Tongji University, Shanghai, China in the summer of 2023. The theme of 21st ISGdR is "A new era for safe and resilient coastal and marine systems".

Then, Prof. Masaho Yoshida read out the list of winners for the excellent presentation, presented them with awards and expressed great encouragement (Fig. 7).

At the end of closing ceremony, Prof. Emer. Masakatsu Miyajima gave a closing speech and expressed sincere appreciation to the organizers and supporters for the work they did for this symposium.

Technical tour

A technical trip to Hakusan Todorigawa Geopark was conducted on August 19. The entirety of Hakusan City, Ishikawa Prefecture, is designated as the Hakusan Todorigawa Geopark. In the geopark, a number of geosites have been set up as "highlight points (geo points)" in the three areas "mountain and snow" "river and canyon" "sea and fan".



Fig. 8 Technical trip at Hakusan Todorigawa Geopark: **a** Hyakumangan Rock; **b** Ichinose Visitor Center; **c** Watagaya waterfall on Tedomi Canyon; **d** Shishiku Highland

The participants firstly visited Hyakumangan Rock (Fig. 8a), which is a big rock transported by enormous flood on 1934. Then in Ichinose Visitor Center, they learned the formation of the land that makes up the geopark (Fig. 8b) as the guides explained. In the afternoon, they visited Watagaya waterfall on Tedor Canyon and Shishiku Highland (Fig. 8c, d). In this technical trip, the participants not only learned the causes of geological disasters, but also learned how to release the disasters and live in harmony with them.

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