

EDITORIAL

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Report on the 15th international symposium on geo-disaster reduction, 25–30 august 2017, Oki Islands - Matsue - Kyoto, Japan

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Abstract

On 25–30 August 2017, the 15th International Symposium on Geo-disaster Reduction has been held in Oki Islands, Matsue and Kyoto, Japan, focusing on the theme of “*Global Strategy for Geo-disaster Reduction*”. Through Field Excursion, High Level Forum, Keynote Lectures, Invited Lectures, Scientific Session, Youth Forum and Poster Session, this symposium has successfully provided a platform for scientists, industrial professionals and students to share their research and created a forum to exchange ideas for promoting geo-disaster reduction.

Organizers and organizing committee

This symposium has been jointly organized by the International Consortium on Geo-disaster Reduction (ICGdR), the Project Center on Natural Disasters Reduction, Shimane University, the Research Centre on Landslide, Disaster Prevention Research Institute (DPRI), Kyoto University, the Joint International Center on Natural Hazard (JIC-Nh) of Shimane University, Beijing University of Technology and the University of Florence, and the OKI Islands Global Geopark Office, Japan.

The Organizing Committee of this symposium includes:

Chair Persons: Fawu Wang (Director, Project Center on Natural Disasters Reduction, Shimane University), and Toshitaka Kamai (Director, Research Center on landslides, DPRI, Kyoto University).

Vice Chair Persons: Fuchu Dai (Beijing University of Technology, China), Sandro Moretti (University of Florence, Italy) and Kazuhiro Nobe (OKI Islands UNESCO Global Geopark Office, Japan).

Committee Members: Netra Prakash Bhandary, Guangzhu Cao, Byung-Gon Chae, Fuchu Dai, Zili Dai, Jianhui Deng, Xuanmei Fan, Yong Hong, Mingjian Hu, Bolin Huang, Jianhui Long, Tingkai Nian, Xiangjun Pei,

Wenhao Qi, Jusong Shi, Kun Song, Lijun Su, Hong Sun, Ping Sun, Huabin Wang, Chong Xu, Yan Xu, Hufeng Yang.

The Secretariat of this symposium includes Zili Dai, Tetsuya Kogure, Kiyoshi Masumoto, Hideki Mukoyoshi, Kumiko Nakatsuji, Hirokazu Sato, Toshihide Shibi, Kun Song, Hufeng Yang, Shuai Zhang, and Lu Zheng.

Report of the 15th ISGdR

The 15th International Symposium on Geo-Disaster Reduction (ISGdR) has been focusing on the theme of “Global Strategy for Geo-disaster Reduction” and attracted more than 130 scientists and engineers from 8 countries to give 102 high-quality academic presentations in the field of geo-disasters. There were six major sections in this symposium: High Level Forum, Keynote Lectures, Invited Lectures, Scientific Session, Youth Forum, and Poster Session, offering an opportunity to discuss the most recent advances in the field of Geo-disaster Reduction. In addition to the main sessions of the symposium, pre-event and post-event have also been organized.

Pre-event

On 26–27 August 2017, a field excursion has been organized to visit Oki Islands, which was designated as a UNESCO Global Geopark in September 2014. Firstly,

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the participants investigated the Oki gneiss outcrop near Chōshi Dam (Fig. 1). The Oki gneiss was formed at about 250 million years ago, which was the oldest rock on Oki Islands. Some experts argued that the regional metamorphic rock records the formation of the supercontinent Pangaea, and could be assumed as the evidence that the Japanese Archipelago was once a part of the Eurasian continent. After that, a large-scale landslide located in northwestern base of Mt. Ōmine has been investigated. This landslide is located directly below the summit of Mt. Ōmine with a relative altitude of 250 m and a steep cliff with a width of 1.6 km and an overall length of about 2.6 km. During the field investigation, the triggering of the landslide was discussed and the age was speculated. Then, the symposium participants investigated the geologic phenomena such as sea cliff, sea arch, sea stack, and sea cave at Matengai Cliff and Tsūtenkyō Arch. These geological features were formed about 6.0 million years ago due to wave erosion and the collapse of the volcanic edifice. A group photo has been taken at the Tsūtenkyō Arch (Fig. 2).

Plenary sessions of the symposium

Opening ceremony

Prof. Fawu Wang, the Director-General of ICGdR facilitated the opening ceremony. Three opening speech were presented as the prelude (see Fig. 3). At the beginning, Prof. Yasunao Hattori, the president of Shimane University, Japan, declared the conference to open on behalf of the organizers, and delivered an opening speech to welcome all the distinguished scholars and experts from all over the world. Mr. Soichiro Yasukawa, who was representing UNESCO, introduced the section on Earth Sciences and Geo-hazards Risk Reduction in UNESCO, and expressed his hope that this symposium could provide a platform for researches to improve the relationships between geoenvironment and society. In the last greeting speech given by Prof. Masakatsu Miyajima, the president of ICGdR welcomed all the researchers and expressed his gratitude to the organizers. The opening ceremony ended up with a group photo as shown in Fig. 4.



Fig. 1 Investigation on the Oki gneiss outcrop



Fig. 2 Group photo at the Tsūtenkyō Arch, Oki Islands

Certificate and award ceremony

In the certificate and award ceremony, Prof. Masakatsu Miyajima has presented certificates to part of the advisors of ICGdR who attended the opening ceremony, including Prof. Yasunao Hattori (President, Shimane University, Japan), Dr. Qunli Han (Director, Division of Ecological and Earth Sciences, The Natural Science Sector, UNESCO), Prof. Paolo Canuti (Holder of UNESCO Chair in Florence University, Italy), and Prof. Maochao He (Academician of Chinese Academy of Sciences). The certificates of four new ICGdR memberships have also been presented. They are Universitas Muhammadiyah Yogyakarta, Indonesia, Southeast University, China, and

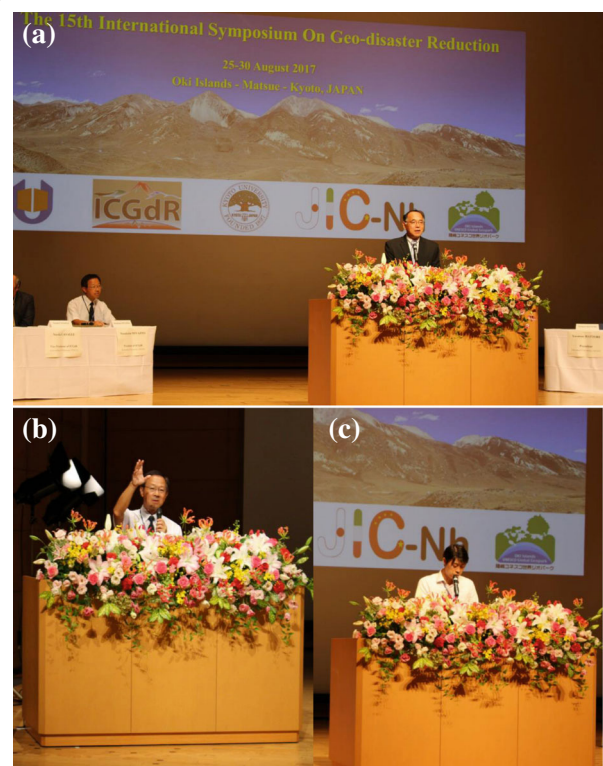


Fig. 3 Opening speech presented by (a) Prof. Yasunao Hattori, (b) Prof. Masakatsu Miyajima, (c) Mr. Soichiro Yasukawa



Fig. 4 Group photo of participants of the 15th ISGdR in Terra Hall

Nanjing University, China, and Qingdao University of Technology, China. The *2016 Best Paper Award* of the ICGdR official journal *Geoenvironmental Disasters* has been awarded to the paper entitled “A new classification of earthquake-induced landslide event sizes based on seismo-tectonic, topographic, climatic and geologic factors” by Hans-Balder Havenith, Almaz Torgoev, Anika Braun, Romy Schlögel and Mihai Micu in No.6, Vol.3. A cheque worth of one thousand Euro was awarded to the authors’ representative (Fig. 5). Besides that, President Miyajima has presented the *ICGdR Outstanding Fellow Award*, *ICGdR Outstanding Young Researcher Award*, and *ICGdR Best Geo-disaster Reduction Activity Award*, to Prof. Qiang Xu from Chengdu University of Technology, China, Dr. Zili Dai from Shimane University, Japan, Mr. Mgr. Adam EMMER from Charles University, Czech Republic, Prof. Louis Ge from National Taiwan University, and Prof. Qiangong Cheng from Southwest Jiaotong University, China (Fig. 6).

High level forum

There were six presentations in the High-level forum as summarized in Table 1. Dr. Soichiro Yasukawa summarized and highlighted UNESCO’s contribution to geo-hazards risk reduction. Prof. Paolo Canuti introduced the



Fig. 5 The winner of the 2016 Best Paper Award of the journal *Geoenvironmental Disasters*



Fig. 6 Group photo of the ICGdR Awards winners

UNESCO Chair on prevention and sustainable management of geo-hydrological hazards. President Miyajima presented his research on large ground displacement caused by fault movement and its countermeasure to protect buried pipelines. Prof. Nicola Casagli presented some innovative technologies for landslide monitoring and early warning. Prof. Tonglu Li gave a presentation related to the soil-water interaction modeling based on discontinuous deformation analysis (DDA) method. Prof. Atsushi Yashima presented his research on the SPH-based liquefaction analysis of detached house foundation. These insightful presentations stimulated lively discussions, in which the audience also contributed many thought-provoking ideas.

Keynote lectures

The Keynote Lectures included 10 presentations in three sessions as summarized in Table 2. The first session was chaired by Prof. Tonglu Li and Prof. Vít Vilimek. Prof. Guangqi Chen presented his research about the landslide risk assessment in Japan in the context of global climate change. Prof. Yu Huang gave a speech about the dynamic reliability analysis of slopes considering the uncertainty of seismic waves. Prof. Sandro Moretti

Table 1 Lists of the presentation in High Level Forum

No.	Title	Presenter	Affiliation
H-1	UNESCO's contribution to geo-hazards risk reduction	Soichiro Yasukawa	UNESCO
H-2	UNESCO Chair on prevention and sustainable management of geo-hydrological hazards	Paolo Canuti	University of Florence
H-3	Large ground displacement caused by fault movement and its countermeasure to buried pipeline	Masakatsu Miyajima	Kanazawa University
H-4	Innovative technologies for landslide monitoring and early warning	Nicola Casagli	University of Florence
H-5	Soil-water interaction modeling based on discontinuous deformation analysis method	Tonglu Li	Chang'an University
H-6	SPH-based liquefaction analysis of detached house foundation	Atsushi Yashima	Gifu University

Table 2 Lists of the presentation in Keynote Lectures

No.	Title	Presenter	Affiliation
K-1	An approach of landslide risk assessment in Japan by considering global climate change	Guangqi Chen	Kyushu University
K-2	Dynamic reliability analysis of slopes	Yu Huang	Tongji University
K-3	EO (Earth Observation) data and technology to detect, map, monitor and forecast ground deformations	Sandro Moretti	University of Florence
K-4	Characteristics and failure mechanism of the deadly June 24th 2017 Xinmo landslide, Maoxian, Sichuan, China	Qiang Xu	Chengdu University of Technology
K-5	A Toppling failure of the right bank slope in a hydropower station, SW China	Shengwen Qi	Institute of Geology and Geophysics, Chinese Academy of Sciences
K-6	Importance of spectral acceleration in evaluating cyclic failure on soft clays – an experience from 2015 Gorkha Earthquake	Binod Tiwari	California State University, Fullerton
K-7	Deterioration mechanisms of cracked surface crust on salt-laden earthen heritages in northwest China	Weimin Ye	Tongji University
K-8	Satellite radar observations in support of geo-disaster risk reduction	Zhenhong Li	Newcastle University
K-9	Reactivation of a dormant earthflow documented by field monitoring data	Matteo Berti	University of Bologna
K-10	Hazard mitigation of GLOFs (Glacial Lake Outburst Floods) in the Cordillera Blanca, Peru	Vít Vilimek	Charles University

presented the research on the application of InSAR in landslide mapping, monitoring, and modelling. Prof. Qiang Xu shared the latest investigation of a recent large-scale landslide occurred on 24 June 2017 in Sichuan, China. The second section was chaired by Prof. Nicola Casagli and Prof. Yu Huang. In this session, Prof. Shengwen Qi shared his research on a slope failure in a hydropower station, SW China. Prof. Binod Tiwari from the California State University, Fullerton presented his research on the earthquake-triggered soil failure. Prof. Weimin Ye discussed the effect of the geoenvironment on the salt-laden earthen heritages in northwest China. The last session of the Keynote Lectures was held at Kyoto University, and chaired by Prof. Luis Ribeiro Sousa and Prof. Wenxing Jian. Prof. Zhenhong Li from Newcastle University, UK introduced the research of his group on remote sensing technologies in support of geo-disaster risk reduction. Professor Matteo Berti from Italy gave a presentation about the reactivation of a dormant earthflow. Prof. Vít Vilimek presented his research about the hazard mitigation of glacial lake outburst floods in the Cordillera Blanca, Peru.

Parallel sessions

The Parallel Sessions included Invited Lectures, Scientific Session, Youth Forum, and Poster Session. There were 86 presentations in Terrasa, Matsue and Obaku Plaza, Kyoto University on the topics of rock avalanche, granular flows, debris flows, soil liquefaction, soil desiccation crack, sediment transport and a variety of other interesting subjects. From all these presentations, one *Best Presentation Award* was awarded to Dr. Veronica

Tofani, a young researcher from University of Florence, Italy (Fig. 7).

Closing ceremony

The closing ceremony was held at Obaku Plaza, Kyoto University on 30 August. After all of the presentations. On behalf of ICGdR, the honorary president Masaru Kitaura gave a closing speech and expressed his gratitude to the participants and organizers. In the end of the ceremony, Prof. Masakatsu Miyajima presented the *Promising Young Scientists Awards* to the recipients from the Youth Forum.

Post-event

After the symposium, all the participants visited the laboratories in the Disaster Prevention Research Institute, Kyoto University (Fig. 8). Prof. Fawu Wang and Prof.

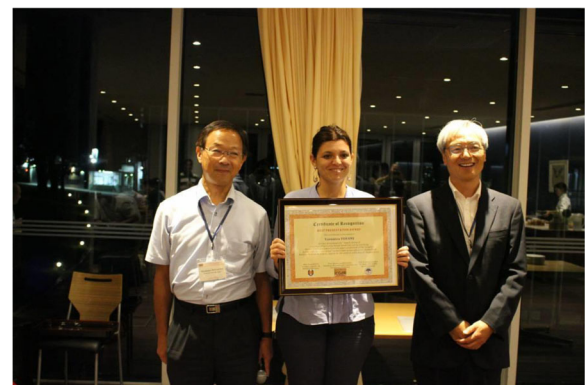


Fig. 7 Winner of the *Best Presentation Award* of the 15 ISGdR

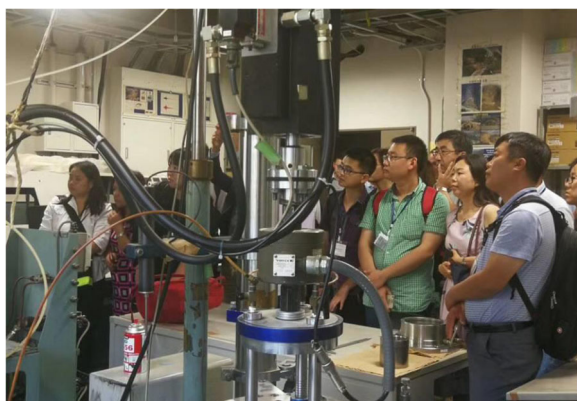


Fig. 8 Laboratory visiting after the symposium

Ryosuke Uzuoka introduced the ring shear apparatus and centrifuge apparatus and their applications in the study of landslide and geotechnical problems, respectively.

Invitation

The 16th ISGdR will be held on 27-31 August 2018 in Strasbourg, France. The ICGdR will invite all entities and individuals, who are willing to contribute to the geo-disaster reduction to join ICGdR.

Authors' contributions

All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

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