

Disaster Prevention  
Research Institute  
Kyoto University



# 4th Slope Tectonics Conference

14-18 Oct. 2017, Kyoto, Japan

2nd Circular

# **Welcome to Japan and DPRI-Kyoto University**

We are very pleased to be able to host the 4th Slope Tectonics Conference in Kyoto. The conference has been successfully held in Lausanne, Switzerland in 2008, Vienna, Austria in 2011, and Trondheim, Norway in 2014 and this 4th conference is the first conference in Asia.

Japanese islands are located on an area with high tectonic activity and humid climate, and have been suffering from various landslide hazards induced by earthquakes, rainstorms, and heavy snowfall. Our field trip goes to the Kii Peninsula, which is underlain by accretionary complexes and suffered from large landslide disasters. We will see catastrophic landslides and their preparatory processes including deep-seated gravitational slope deformation and rock weathering.

Slope tectonics is a young geoscience discipline that deals with slope movement processes controlled by various factors; the slope movements include very slow to extremely rapid phenomena, which are in other words natural hazards.

This 4th Slope Tectonics Conference is held as a symposium of DPRI and is supported by three academic societies, two academic organizations, 11 private companies of geological engineering, and Kyoto Prefecture and Kyoto Convention & Visitors Bureau. We are very glad to organize this conference based on such a solid foundation.

We have 80 papers from 14 countries/areas, and we are sure that we will have fruitful discussions. We hope all the participants enjoy the conference, Kyoto, and Japan in this beautiful season.

**14 October 2017**

**Masahiro Chigira  
Chair of the 4th Slope Tectonics Conference**

# Program of the 4th Slope Tectonics Conference

## Oral sessions at Kihada Hall

October 14, 2017 (Saturday)

15 min for each = 12 min talk + 3 min discussion

9:00 Reception Open		<b>Welcome addressing (Prof. Nakagawa and Prof. Chigira)</b>
9:30~9:45		
<b>Session 1 (9:45~11:00)</b>		Chairs: Jaboyedoff Michel, Baron Ivo
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
9:45~10:00	Corominas Jordi	Geological structure and relief as controls for the occurrence of large slope failures in the Pyrenees
10:00~10:15	Kojima Satoru	Geomorphological and geological characteristics and development history of deep-seated gravitational slope deformation in the Kanmuriyama area, central Japan
10:15~10:30	Briestensky Milos	Active tectonics affecting the development of deep seated gravitational slope deformations in the Western Carpathians
10:30~10:45	Hirata Yasuto	Rain-induced landslides of granite porphyry which was weathered with many corestones in higher elevations
10:45~11:00	Matsushi Yuki	Multi-scale mass movements in a dip slope of accretionary complex with contact metamorphism and extensive high-angle faulting: a case in Hira Range, central Japan
<b>Break (11:00~11:15)</b>		
<b>Session 2 (11:15~12:30)</b>		Chairs: Giovanni Crosta, Briestensky Milos
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
11:15~11:30	Chigira Masahiro	Deep-seated gravitational slope deformations that develop to catastrophic landslides
11:30~11:45	Yassaghi Ali	Allochthonous Collapse Structures in Zagros Fold Thrust Belt
11:45~12:00	Matsuoka Norikazu	A multi-method approach to detecting bedrock fracturing and rockfall activity in the Southern Japanese Alps
12:00~12:15	Arai Noriyuki	Rain-induced rockslides controlled by a thrust fault and river incision in an accretionary complex in the Shimanto Belt, Japan
12:15~12:30	Baron Ivo	Deciphering large deep-seated gravitational slope deformation stress states in active tectonic settings using contemporary three-dimensional fault-slip data
<b>Lunch + Poster (12:30~14:30)</b>		

<b>Session 3 (14:30~16:00)</b>		<b>Chairs: Dong JJ, Alfaro Pedro</b>
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
14:30~14:45	Kang Keng-hao	Geological model of a potential large-scale landslide and its implication on the possible failure mechanism - paleo and future in southern Taiwan
14:45~15:00	Carey M. Jonathan	Simulating the behavior of slow-moving landslides using a Dynamic Back Pressured Shear Box (DBPSB)
15:00~15:15	Yang Che-Ming	Revisit the classical Newmark displacement analysis for earthquake-induced wedge slide - The kinematics and initiation of the Daguangbao landslide
15:15~15:30	Sezaki Shotaro	Rockslide simulations based on the elasto-plastic finite element method considering the balanced cross-section concept
15:30~15:45	Agliardi Federico	Influence of non-persistent slope-scale brittle features on DSGSD mechanisms and activity
15:45~16:00	Lin Ching-Weei	Large-scale landslide susceptibility assessment of Kaoping River Watershed in Southern Taiwan
<b>Break (16:00~16:30)</b>		
<b>Session 4 (16:30~17:45)</b>		<b>Chairs: Corominas Jordi, Revellino Paola</b>
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
16:30~16:45	Brideau Marc-Andre	Methodology to estimate the rock avalanche frequency for a specific slope
16:45~17:00	Jaboyedoff Michel	3D failure surface and volume estimation of large rock slope instabilities: a review of a bottleneck problem
17:00~17:15	Wei Lun-Wei	Revealing the evolution of slope deformation by adopting UAV techniques
17:15~17:30	Rau Ruey-Juin	Continuous GPS observations on deep-seated gravitational slope deformation in the Lushan area, central Taiwan
17:30~17:45	Migon Piotr	Using Electrical Resistivity Tomography to detect internal structures of deep-seated gravitational deformations
<b>Banquet (17:45~20:15)</b>		

## October 15, 2017 (Sunday)

Session 5 (9:15~10:45)		Chairs: Esposito Carlo, Brezny Michal
Time	Presenter	Title
9:15~9:30	Hermanns L. Reginald	Cosmogenic nuclide ages of back scarps of the Litledalen and Nomedalstinden Deep Seated Gravitational Slope Deformations (DSGSD), Northern Norway, indicate that DSGSDs can survive glacial cycles
9:30~9:45	Tseng Chia-Han	Study on a dip-slope by inclinometers and GPS monitoring at the HuaFan University campus in northern Taiwan
9:45~10:00	Derron Marc-Henri	Slope deformation imaging of sandbox analogue models (LiDAR and InSAR)
10:00~10:15	Osawa Hikaru	Seasonal fluctuations in pore-water pressures of a landslide in a seasonally snow-covered area
10:15~10:30	Chen Rou-Fei	Deformation characteristics and surface monitoring of deep-seated gravitational slope deformation in the Tienchih area, southern Taiwan
10:30~10:45	Brezny Michal	Gravitational transpression folds formed in the large-scale sackung: an example from flysch Carpathians
<b>Break (10:45~11:00)</b>		
Session 6 (11:00~12:30)		Chairs: Hermanns L. Reginald
Time	Presenter	Title
11:00~11:15	Crosta B. Giovanni	Activity of large slope instabilities and denudation rate in the European Alps
11:15~11:30	Lu Jia-Hao	A case study on the comparison of logging applied to core description with well logging results in potential landslide area
11:30~11:45	Troon Marko	An introductory, geostatistical and geomorphological review of the effects of geohazards and severe weather events as a retrospect throughout 2009/2010 in Norway
11:45~12:00	Zhao Siyuan	The response of catastrophic landslides to fluvial incision in the upstream of Minjiang River, Western Sichuan, China
12:00~12:15	Zerkal V. Oleg	The influence of tectonic agents on the activity of landslides on the west Caucasus area (Russia)
12:15~12:30	Sato Tatsuki	Geological background of landslides induced by the 2016 Kumamoto earthquake in the Aso caldera with special reference to the weathering processes

<b>Lunch + Poster (12:30~14:30)</b>		
<b>Session 7 (14:30~15:45)</b>		<b>Chairs: Jon Carey, Bertolo Davide</b>
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
14:30~14:45	Yamada Masumi	Dynamic movement history of the 2017 Iiyama landslide revealed from drone image and seismic data
14:45~15:00	Doi Issei	Behavior of a gravitational deformation slope during earthquake shaking revealed by seismic observation
15:00~15:15	Ma Ning	On the co-seismic responses of a deep-seated landslide: Insight by monitoring
15:15~15:30	Inagaki Hideki	Relationship between distance from active fault and scale of slope failure in Japan
15:30~15:45	Kuo Hsien Li	Assessing Rainfall Threshold for Large-scales Landslide by Exacting occurrence Time of Landslides from Seismic Records
<b>Break (15:45~16:00)</b>		
<b>Session 8 (16:00~17:15)</b>		<b>Chairs: Tsou Ching-Ying, Troon Marko</b>
<b>Time</b>	<b>Presenter</b>	<b>Title</b>
16:00~16:15	Matsuura Sumio	Observations of pore-water pressure during failure in a moving landslide body
16:15~16:30	Wang Gonghui	The internal structure of Nagatono landslide dam and landsliding mechanism
16:30~16:45	Bertolo Davide	The Mont de La Saxe Landslide (Valle d' Aosta-Italy) - Evolution a large alpine landslide controlled by different hydrogeological components
16:45~17:00	Lin Hsi-Hung	Geological characteristics and multi-disciplinary observation in the active deep-seated slope deformation in slate in LuShan, Taiwan
17:00~17:15	Li Kuo-wei	The activity assessment of potential large-scale landslide by means of multi-staged images and data from aerial photographs
<b>Closing (17:15-18:00)</b>		

**Each 15 min presentation includes 12 min talk and 3 min discussion. You can use your own laptop or a shared PC (Windows 7 or 8). If you had been assigned to as a chair of a session, please come to the chair seat on the stage of the Kihada Hall at the beginning of the session.**

## Poster session at the poster hall (2F)

Core time: 13:30-14:30 of Oct. 14 & 15, 2017

Please check poster number to locate the display board. You can display your poster from 09:00 Oct 14 to 17:00 Oct 15. It is noted that tiding up of the posters should be finished **before 17:00 Oct 15**.

No.	Author	Title
P1	Fujii Yukiyasu	Geological background of Nagiso debris flow occurred on July 9 2014, in Nagano prefecture, central Japan
P2	Ando Naomi	Temperature and sound survey on steep tea farm area and salt pan site
P3	Jiang Yao	Shear surfaces of simulated shear zones control mechanical behaviors of granular materials
P4	Hsieh Yu- Chung	Normal faulting and gravitational slope deformation in the central range of Taiwan
P5	Chen Mien- Ming	How deep-seated gravitational slope deformations are transformed into large-scale landslides: an example of 2009 Typhoon Morakot
P6	Krogh Kaja	The Kassen and Hakaneset rock slope instabilities along fjord lakes in Telemark, Southern Norway
P7	Liu Chih Hsuan	Dynamic process analysis for the initiation time of the Aso-bridge co-seismic landslide
P8	Tsou Ching- Ying	Coupling fluvial processes and landslide distribution toward geomorphological hazard assessment: a case study in a transient landscape in Japan
P9	Nagata Hidehisa	Gravitational deformation around Tokugo-toge Pass, Northern Japan Alps
P10	Tajika Jun	A huge frontal bulge of the Horomoe landslide, Shiretoko Peninsula, Hokkaido, northern Japan
P11	Ohta Takehiro	Numerical study on influences of gravity and geometry to large-size landslides
P12	Yokoyama Osamu	Gravitational slope deformation and its transformation into catastrophic landslides during earthquakes in a slate area
P13	Nishiyama Nariaki	Distribution of highly saline groundwater in the areas with many landslides in the southern Niigata Prefecture
P14	Kikuchi Teruyuki	Deformation measurement of slow velocity landslide by analysis of three-dimension point clouds
P15	Kawabata Daisaku	Effects of geological division on geomorphic parameters in Japan based on the spatial analysis of the seamless geological map of Japan

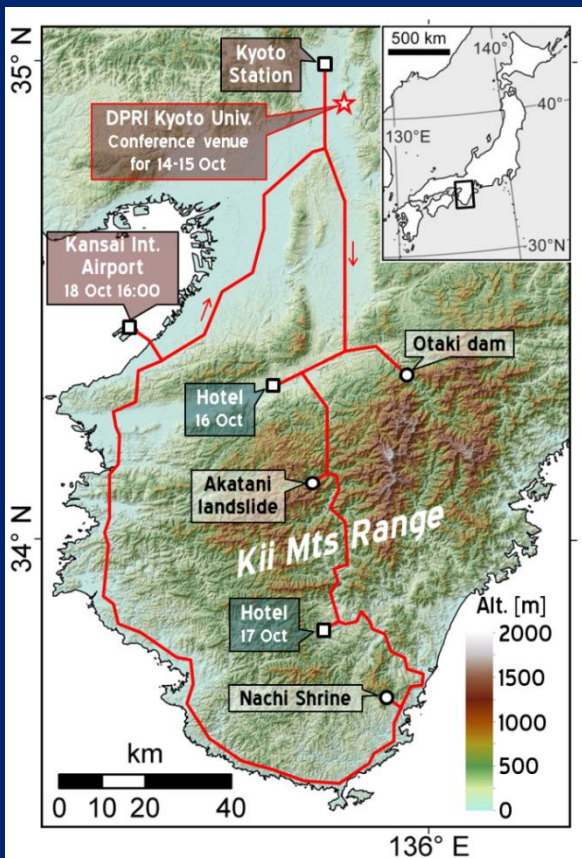
P16	Yamakawa Yosuke	A risk evaluation method for deep-seated landslides based on stream water chemistry
P17	Komata Shinjuuro	Sorting out landslide topography in Japan by knick line distribution, and geological signs of landslide occurrence
P18	Furuki Hirokazu	Structural features and formative processes of a sliding zone of a large rockslide
P19	Yagi Hiroshi	Bell-shape index indicating top-heavy profile of high relief mountain and gravitational deformation
P20	Watanabe Tatsuya	Integrated landslide survey using UAV-SfM and geophysical technologies: a case study in Rikubetsu, Hokkaido, Japan
P21	Ota Yoshimasa	Locations and ages of large mass movements in a high-relief mountainous area underlain by accretionary complex: a case of the Katsuragawa Valley along the Hanaore Fault, central Japan
P22	Istiyanti L. Mega	Characteristics of soil layers on shallow landslides triggered by rainfall at Izu Oshima, Japan
P23	Sato P. Hiroshi	Interpretation of L-band InSAR images to detect landslide surface deformation along Minjiang River, Western Sichuan, China
P24	Doshida Shoji	Evaluation of secondary slope failure susceptibility using detailed topographic data,
P25	Goto Satoshi	Geotechnical study on fluidized landslide at Aso volcanological laboratory in the 2016 Kumamoto earthquake
P26	Watanabe Honami	Breaking-off of hanging glaciers at Mt. Langtang Lirung, Nepal Himalaya
P27	Hata Hitomi	The study of rockfall and topographical change in Shirouma-Daisekkei, the Northern Japanese Alps
P28	Esposito Carlo	Time-dependent analysis of a complex rockslide constrained by geomorphic markers
P29	Guerriero Luigi	Nucleation and kinematic significance of deformational structures in earth flows
P30	Alfaro Pedro	Time-dependent modelling of a mountain front retreat due to a fold-to-fault controlled lateral spreading,
P31	Chai Shaofeng	Dynamic responses of the intact and remodeled loess slope under the coupling effect of earthquake and rainfall: Insights on shaking table model tests
P32	Kimura Takashi	Landslide history in post-caldera central cones of Aso volcano, Japan
P33	Sasaki Natsuki	Geomorphological control on distribution and development of wetlands on large-scale landslides in Ou Mountain Range, NE Japan



P34	Ohta Ryoga	History of mass movements and paleolake formation revealed by depression-filling sediment records in a tectonically active mountainous area: a case study in Mt. Kushigata, Koma Range, central Japan
P35	Sasaki Yasuhito	Slope deformation problem in Quaternary volcanics by the 2016 Kumamoto Earthquake
P36	Dattola Giuseppe	An application of the MIBSA to slow moving landslides

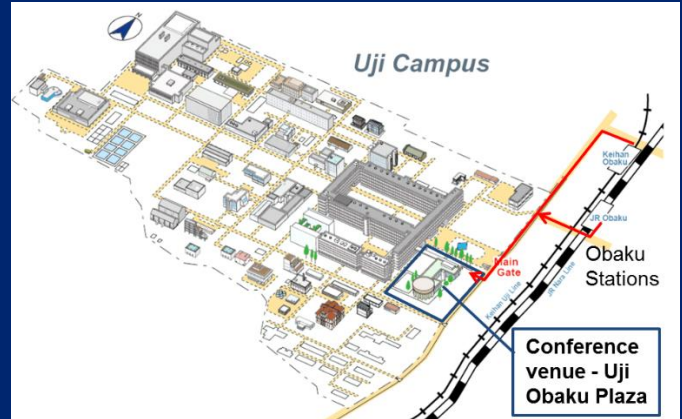
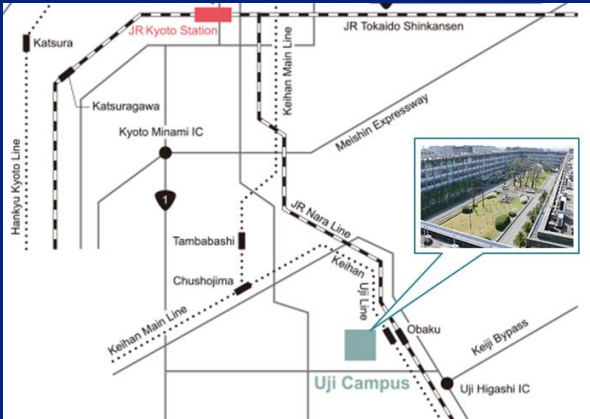
## Post-conference excursion to Kii Peninsula (16-18 Oct 2017)

The destination of the post-conference excursion is the Kii Mountain Range, where a severe rain-induced landslide disaster occurred in 2011. Please check the Field Trip Guide, which will be distributed at the reception desk only for pre-registered participants, for the time and place of meeting at 16 Oct morning. The seats for the field trip had been fully reserved. We are sorry not to be able to accept additional participation.



Road map to the Kii Peninsula.

# Access to the venue



By train

Kyoto Station

↓ JR Nara Line (25 min)

JR Obaku St

(5 min walk to the venue)

Chushojima St

↓ Keihan Uji Line (12 min)

Keihan Obaku St

(10 min walk to the venue)

**14 & 15 Oct 2017**

**09:00 Reception Open**

**On-site Registration fee:**

General JPY20,000/Student JPY10,000

(incl. abstract book & coffee)

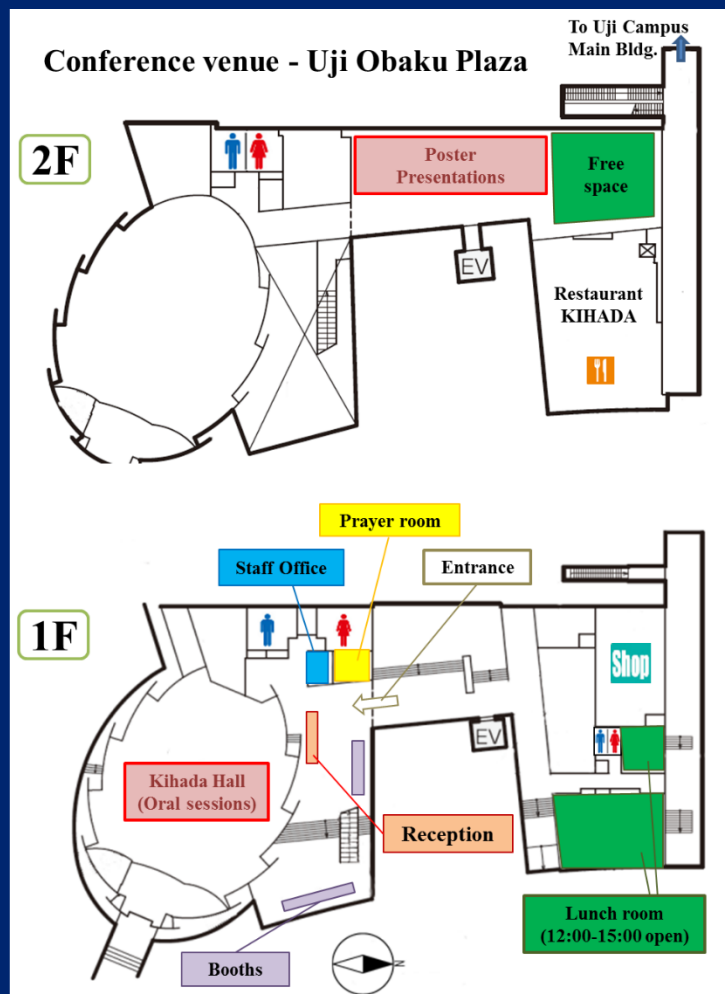
**Banquet:**

General JPY5,000/Student JPY3,000

(Accompanying person JPY5,000)

**Field trip:** ->Closed by full occupancy.

You can pay onsite by a credit card or JPY cash.



# Committees

## Conference chair

Chigira Masahiro (Kyoto University)

## Conference organizers

Matsushi Yuki (Kyoto University)

Wang Gonghui (Kyoto University)

Doi Issei (Kyoto University)

## Scientific committee

Agliardi Federico (University of Milano-Bicocca)

Chigira Masahiro (Kyoto University)

Clague John J. (Simon Fraser University)

Crosta Giovanni B. (University of Milano-Bicocca)

Doi Issei (Kyoto University)

Hermanns Reginald (NGU)

Jaboyedoff Michel (University of Lausanne)

Kamai Toshitaka (Kyoto University)

Kojima Satoru (Gifu University)

Matsushi Yuki (Kyoto University)

Oguchi Takashi (Tokyo University)

Tsou Ching-Ying (Hirosaki University)

Wakizaka Yasuhiko (Japan Dam Engineering Center)

Wang Gonghui (Kyoto University)

Yamasaki Shintaro (Kitami Institute of Technology)

## Supporters in the field trip

Sediment Disaster Prevention Research Organization

Kii Mountain District Sabo Office, Kinki Regional. Development Bureau, MLIT

## Secretary

Kitamura Kazuko (Kyoto University)

# Sponsorships and supporting organizations

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 <p>Japan Society of Engineering Geology</p>	 <p>The Geological Society of Japan</p>	 <p>The Japan Landslide Society</p>
 <p>Association for Disaster Prevention Research</p>	 <p><b>GADRI</b> Global Alliance of Disaster Research Institutes Global Alliance of Disaster Research Institutes</p>	 <p>京都大学 KYOTO UNIVERSITY Disaster Prevention Research Institute, Kyoto University</p>