

Conference Program 1/2

Date	Time	Program	Venue
9/20 Sun.	-18:30	Arrival and Registration	South Garden
	18:30-21:00	Ice Breaker	
9/21 Mon.	08:00-09:40	Arrival and Reception	National Central University
	08:40-09:00	Opening ceremony	
	09:00-09:40	Introductory Keynote by Dr. Keefer David: Landslides caused by earthquakes: 25 years later	
	09:40-10:10	Session 1(A) Post-earthquake inventories and related ground failures	
	10:10-10:30	Coffee Break	
	10:30-12:00	Session 1(B) Post-earthquake inventories and related ground failures	
	12:00-12:10	General Discussion for Session 1	
	12:10-13:30	Lunch and poster viewing	
	13:30-15:10	Session 2(A) Earthquake-induced landsliding and ground failures in different tectonic/climatic environments	
	15:10-15:30	Coffee Break	
	15:30-17:10	Session 2(B) Earthquake-induced landsliding and ground failures in different tectonic/climatic environments	
	17:10-17:20	General Discussion for Session 2	
		18:00-20:00	Welcome Banquet
9/22 Tue.	08:30-10:00	Session 3(A) Regional-scale seismic landslide hazard assessment	National Central University
	10:00-10:30	Coffee Break	
	10:30-12:10	Session 3(B) Regional-scale seismic landslide hazard assessment	
	12:10-12:20	General Discussion for Session 3	
	12:20-13:30	Lunch and poster viewing	
	13:30-15:10	Session 4(A) Mechanisms of seismically induced landslides and other permanent deformations in slopes	
	15:10-15:30	Coffee Break	
	15:30-17:15	Session 4(B) Mechanisms of seismically induced landslides and other permanent deformations in slopes	
	17:15-17:25	General Discussion for Session 4	
		18:00-20:00	Banquet

Conference Program 2/2

Date	Time	Program	Venue
9/23 Wed.	08:30-10:10	Session 5(A) Seismic ground motion and site response properties	National Central University
	10:10-10:30	Coffee Break	
	10:30-12:10	Session 5(B) Seismic site response	
	12:10-12:20	General Discussion for Session 5	
	12:20-13:30	Lunch and poster viewing	
	13:30-15:10	Session 6(A) Uncertainty in ground motion estimates and seismic slope stability analysis	
	15:10-15:30	Coffee Break	
	15:30-17:10	Session 6(B) Uncertainty in ground motion estimates and seismic slope stability analysis	
	17:10-17:20	General Discussion for Session 6	South Garden
18:00-20:00	Banquet		
9/24 Thu.	08:30-10:10	Session 7(A) Impact of earthquake on mountain slopes evolution and sediment yields	National Central University
	10:10-10:30	Coffee Break	
	10:30-12:10	Session 7(B) Impact of earthquake on mountain slopes evolution and sediment yields	
	12:10-12:20	General Discussion for Session 7	
	12:20-13:30	Lunch and poster viewing	
	13:30-15:10	Session 8 Next generation of research on earthquake-induced landslides	
	15:10-15:30	Coffee Break	
	15:30-17:10	Introduction to the Field Trip	
	18:00-20:00	Banquet	
9/25 Fri.	Field Trip to Chiufengerhshan & 921 Earthquake Museum		
9/26 Sat.	Field Trip to Tsaoling Landslide & Back to Taoyuan		

PROGRAM DETAILS

SUNDAY, SEPTEMBER 20	South Garden
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-18:30 **Arrival and Registration**

18:30-21:00 **Ice Breaker**

MONDAY, SEPTEMBER 21	National Central University
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08:40-09:00 **Opening Ceremony**

Chairperson: *Benjamin F. Chao*

09:00-09:40 **Introductory Keynote**

Chairpersons: *Janusz Wasowski and Chyi-Tyi Lee*

Landslides caused by earthquakes: 25 years later

Keefer, David

09:40-10:10	Session 1(A) Post-earthquake inventories and related ground failures
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Landslide inventories: the essential part of seismic landslide hazard analyses

Harp, Edwin L. (Invited)

10:10-10:30 **Coffee Break**

10:30-12:00	Session 1(B) Post-earthquake inventories and related ground failures
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Chairpersons: *Chyi-Tyi Lee and Janusz Wasowski*

Recent advances applying terrestrial LIDAR to earthquake landslide research

Kayen, Robert (Invited), Ashford, Scott, Stewart, Jonathan P., Collins, Brian D.

Application of airborne LiDAR technology for landslide types and processes: Taiwan examples and future prospects

Chang, Kuo-Jen (Invited), Chan, Yu-Chang, Chen, Rou-Fei

Automated landslide detection algorithms to investigate controls on the spatial distribution of landslides triggered by the Wenchuan earthquake, Sichuan province, China

Parker, Robert Neville, Rosser, Nick, Densmore, Alexander, Petley, David (Invited)

12:00-12:10 **General Discussion for Session 1**

12:10-13:30 **Lunch and poster viewing**

13:30-15:10 Session 2(A) Earthquake-induced landsliding and ground failures in different tectonic/climatic environments

Chairpersons: Edwin L. Harp and Fu-Shu Jeng

Earthquake triggered debris avalanche comparison: May 31, 1970 (M_w 7.9) Peru Earthquake and July 8, 1958 (M_w 7.8) Alaska Lituya Bay Earthquake
Cluff, Lloyd (Invited)

Earthquake induced landslides in Italy
Wasowski, Janusz (Invited)

Central Italy seismic sequences-induced landsliding: 1997-1998 Umbria-marche and 2008-2009 L'aquila cases

Guzzetti, F., Esposito, E., Balducci, V., Porfido, S., Cardinali, M., Violante C., Fiorucci, F., Sacchi, M., Ardizzon, F., Mondini, A., Reichebach, P., Rossi, M.

Analysis of pre- and post-earthquake landslide distribution in the Wenchuan County, Sichuan, China

Gorum, Tolga, van Western, C.J., Xu, Q., Huang, R., Wei C., Hu, L. Han

15:10-15:30 Coffee Break

15:30-17:10 Session 2(B) Earthquake-induced landsliding and ground failures in different tectonic/climatic environments

Chairpersons: Fu-Shu Jeng and Edwin L. Harp

Characteristics of landslide disasters caused by earthquakes
Evans, Stephen G. (Invited)

Analysis of pyramidal block slide induced by seismic excitation
Jeng, Fu-Shu (Invited)

The Hungtsaiping Landslides- from a rock slide to a colluvial slide

Chang, Kuang-Tsung, Lin, Ming-Lang, Lo, Chia-Ming, Dong, Jia-Jyun

Non-catastrophic Hongtsaiping Landslide Induced by the 1999 Chi-Chi

Earthquake in Central Taiwan Insights from Distinct-Element Method

Tseng, Chia-Han, Hu, Jyr-Ching, Tang, Chao-Lung, Chan, Yu-Chang, Lin, Ming-Lang, Lee, Jin-Fa, Wei, Jheng-Yue

17:10-17:20 General Discussion for Session 2

18:00-20:00 Welcome Banquet

South Garden

TUESDAY, SEPTEMBER 22

National Central University

08:30-10:00 Session 3(A) Regional-scale seismic landslide hazard assessment

Chairperson: Roberto W. Romeo and Meei-Ling Lin

Earthquakes and seismotectonics of Taiwan: an overview

Tsai, Yi-Ben (Invited)

Landslide hazard assessment of the 2008 Wenchuan Earthquake: a case study in Beichuan area

Lin, Jiun-Chuan, Tang, Chuan

Probabilistic hazard analysis of earthquake-induced landslides - an example from Kuohsing, Taiwan

Liao, Chi-Wen, Lee, Chyi-Tyi

Cross analyses of space distributions for triggered landslide and triggered earthquakes

Tatard, Lucille, Grasso, Jean-Robert

10:00-10:30 Coffee Break

10:30-12:10 Session 3(B) Regional-scale seismic landslide hazard assessment

Chairpersons: Meei-Ling Lin and Roberto W. Romeo

Future developments in earthquake-induced landslides scenarios

Romeo, Roberto W. (Invited)

Statistical approach to model spatial and temporal variability of earthquake-induced landslides

Lee, Chyi-Tyi (Invited)

Variation of the probability and significance of factors on debris flows occurrence after the 1999 Chi-Chi Earthquake

Dong, Jia-Jyun, Chen, Jie-Ru, Liu, Chia-Nan, Rou, Tser-Ming, Wu, I-Tser

Development of neuro-fuzzy-based landslide susceptibility analysis on the Shihmen reservoir catchment area in Taiwan

Huang, Chuen-Ming, Shen, Che-Wei, Yang, Shu-Rong, Lee, Chyi-Tyi, Chung, Yi-Ching

12:10-12:20 General Discussion for Session 3

12:20-13:30 Lunch and poster viewing

13:30-15:10 Session 4(A) Mechanisms of seismically induced landslides and other permanent deformations in slopes

Chairpersons: Roberto W. Romeo and Ching-Weei Lin

Methods to model co-seismic landslide movement

Jibson, Randall (Invited)

Giant landslides induced by the 1999 Chi-Chi earthquake

Hu, Jyr-Ching (Invited), Tang, Chao-Lung, Tseng, Chia-Han, Lin, Ming-Lung, Chan, Yu-Chang, Chu, Hao-Tsu, Lee, Jin-Fa, Wei, Jheng-Yue

Investigating the shear mechanisms of Tsaoling landslide in Chi-Chi Earthquake using dynamic ring-shear test

Liao, Cheng-Jie, Lee, Der-Her, Wu, Jian-Hong, Lai Chia-Ze

Analysis on sliding mechanism of Tsao-Ling rockslide in Chi-Chi earthquake event

Chen, Tien-Chien, Lin, Meei-Lin, Wang, Tau-The

15:10-15:30 Coffee Break

15:30-17:15 Session 4(B) Mechanisms of seismically induced landslides and other permanent deformations in slopes

Chairpersons: Ching-Weei Lin and Roberto W. Romeo

Energy approach for earthquake-induced slope failures and case studies

Kokusho, Takaji (Invited), Ishizawa, Tomohiro

Modeling of seismic slope behavior with shaking table test

Lin, Meei-Ling (Invited), Wang, Kuo-Lung

Can tilt tests provide correct insight regarding frictional behavior of sandstone under seismic excitation?

Hsieh, Yo-Ming, Lee, Kuo-Cheng, Jeng, Fu-Shu, Huang, Tsan-Hwei

Runout Path of the Tsaoling Landslide Induced by the 1999 Chi-Chi Earthquake, Insights from a 3D discrete element simulation

Tang, Chao-Lung, Hu, Jyr-Ching, Lin, Ming-Lang

High-velocity friction of faults: a review and implication for landslide studies

Togo Tetsuhiro, Shimamoto, Toshihiko, Ma, Sheng-Li, Hirose, Takehiro ...

17:15-17:25 General Discussion for Session 4

18:00-20:00 Banquet

South Garden

WEDNESDAY, SEPTEMBER 23

National Central University

08:30-10:10 Session 5(A) Seismic ground motion and site response properties

Chairpersons: Takaji Kokusho and Kuo-Fong Ma

Near-fault ground motions and fault rupture directivity pulse

Abrahamson, Norman (Invited)

Amplification and directivity phenomena in the dynamic response of slopes to seismic shaking

Del Gaudio, Vincenzo (Invited)

Dynamic post-failure simulation of the earthquake-induced Tsaoling landslide in Chi-Chi earthquake

Wu, Jian-Hong, Chen, Chun-Hwa

Numerical analysis of landslide-triggering mechanisms-example of Jiufengershan debris avalanche

Chang, Kuo-Jen, Taboada, Alfredo

10:10-10:30 Coffee Break

10:30-12:10 Session 5(B) Seismic site response

Chairpersons: Kuo-Fong Ma and Takaji Kokusho

Topographic amplification of strong shaking - can it be predicted on the basis of rock mass properties?

Murphy, William (Invited)

Effects of realistic topography on seismic wave propagation: Small and large-scale topography effects in northern Taiwan

Lee, Shiann-Jong (Invited), Komatitsch, Dimitri, Chan, Yu-Chang, Huang, Bor-Shouh, Tromp, Jeroen

Review of computation methods for earthquake-induced landslide hazard assessment based on a case study from Central Asia

Bourdeau, Celine, Havenith, Hans-Balder

Numerical modeling of the directional seismic site response in a landslide area

Coccia, Stella., Chaljub, Emmanuel, Del Gaudio, Vincenzo, Jongmans, Denis

12:10-12:20 General Discussion for Session 5

12:20-13:30 Lunch and poster viewing

13:30-15:10 Session 6(A) Uncertainty in ground motion estimates and seismic slope stability analysis

Chairpersons: *Vincenzo Del Gaudio and Hung-Chie Chiu*

Uncertainty in earthquake induced deformations: case history of Calabasas landslide

Wartman, Joseph (Invited), Strenk, Patrick M.

Epistemic uncertainty of median predictions from the Next-Generation Attenuation models

Chiou, Brian (Invited), Youngs, Robert

Repeatable path effects on the standard deviation for empirical ground motion models

Lin, Po-Shen, Lee, Chyi-Tyi, Abrahamson, Norman, Chiou, Brian

Single site strong-motion attenuation relationship

Sung, Chih-Hsuan, Lee, Chyi-Tyi

15:10-15:30 Coffee Break

15:30-17:10 Session 6(B) Uncertainty in ground motion estimates and seismic slope stability analysis

Chairpersons: *Hung-Chie Chiu and Vincenzo Del Gaudio*

Ground motion variability: comparison of surface and downhole ground motions

Rodriguez-Marek, Adrian (Invited), Bonilla, Fabian, Cotton, Fabrice

The decrease of uncertainty in ground motion estimation based on the empirical correction model

Wen, Kuo-Liang (Invited), Wu, Tzu-Hsiu, Huang, Ming-Wey, Jhang, Shun-Jiang, Chang, Chi-Ling, Liu, Sheu-Yien, Chang, Yu-Wen, Lin, Che-Min, Kuo, Chun-Hsiang

Uncertainty in empirical Arias intensity estimates

Sung, Chih-Hsuan, Hsieh, Pao-Shan, Lin, Po-Shen, Lee, Chyi-Tyi

Empirical estimation of Newmark displacement from Arias intensity and critical acceleration

Lee, Chyi-Tyi, Hsieh, Shang-Yu

17:10-17:20 General Discussion for Session 6

18:00-20:00 Banquet

South Garden

THURSDAY, SEPTEMBER 24

National Central University

08:30-10:10 Session 7(A) Impact of earthquake on mountain slopes evolution and sediment yields

Chairpersons: *David N. Petley and Su-Chin Chen*

Patterns of seismically induced landsliding and the mass balance of a large earthquake

Hovius, N. (Invited), Meunier, Patrick, Haines, John, Lin, Chin-Weei, Chen, Hongey, Dadson, Simon, Horng, Ming-Jame

The debris-flow disaster prevention and response strategy of Taiwan after the Chi Chi Earthquake

Wu, Huei-Long (Invited)

On the correlation of sedimentation and landslides in Wu-Hsi catchment influenced by the 1999 Chi-Chi earthquake

Shou, K.-J., Fei, Li-Yuan, Lee, Jiin-Fa, Wei, Cheng-Yueh, Huang, S.-T., Lin, Y.-C.

Aerial photogrammetry investigation and numerical simulation of Tsaoling landslide triggered by the 1999 Chi-Chi earthquake, Taiwan

Chen, Rou-Fei, Kuo, Chih-Yu, Chang, Kuo-Jen, Li, Hou-Yen, Hung, Win-Cheng

10:10-10:30 Coffee Break

10:30-12:10 Session 7(B) Impact of earthquake on mountain slopes evolution and sediment yields

Chairpersons: *Su-Chin Chen and David N. Petley*

The impact of the Chi-Chi earthquake on the subsequent rainfall induced landslides in the epicentral area of central Taiwan

Lin, Ching-Weei (Invited), Liu, Shou-He, Chang, Wei-Shu, Chen, Mien-Ming

Criteria modification for debris flow warning after the Chi-Chi earthquake

Shieh, Chjeng-Lun, (Invited), Chen, Yu-Shiu, Tsai, Yuan-Jung

Landslide restoration on Mt. 99 peaks after ChiChi earthquak Chen e in Taiwan

Chen, Su-Chin, Wu, Chung-Hung

Evaluation of landslides and debris flow hazards for reconstruction of Chin-Shan Hydropower Plant in Ta-Chia watershed after Chi-Chi Earthquake

Cheng, Chin-Tung, Chiao, C.-H., Ku, C.-Y., Shu, S.-M., Shao, K.-S., Hwang, L.-T.

**The Next Generation of Research on Earthquake-induced Landslides:
An International Conference in Commemoration of 10th Anniversary of the Chi-Chi Earthquake, 2009**

12:10-12:20 General Discussion for Session 7

12:20-13:30 Lunch and poster viewing

13:30-15:10 Session 8 Next generation of research on earthquake-induced landslides

Chairpersons: David Keefer and Hongey Chen

15:10-15:30 Coffee Break

15:30-17:10 Introduction to the Field Trip

Chu, Hao-Tsu, Lin, Ming-Lang

18:00-20:00 Banquet

South Garden

Posters

The impact of the Chi-Chi earthquake on the subsequent rainfall induced landslide in area with slight to moderate ground motion: an example from the Lao-Lung River watersheds

Chen, Chin-Hao, Liu, Shou-He, Lin, Ching-Weei, Chen, Hua-Wen

The impact of the Chi-Chi earthquake on the triggering threshold of debris flows in the Chenyulan River watershed

Chang, Wei-Shu, Tsai, Tsai-Tsung, Lin, Ching-Weei, Chen, Mien-Ming

Reconstructing the landscape response to high magnitude disturbance in active mountain belts

Howarth, Jamie Devereux, Fitzsimons, S.J.

Landslide geological investigation and relative studies in Taiwan

Lin, Chao-Chung, Lee, Jiin-Fa

Dynamic weakening of shale and bedding-parallel fault gouge as a possible mechanism for Tsaoling landslide induced by 1999 Chi-Chi earthquake

Miyamoto, Yuuki, Shimamoto, Toshihiko, Togo, Tetsuhiro, Dong, Jia-Jyun, Lee, Chyi-Tyi

Ultra-low friction of shale and clayey fault gouge at high velocities: implication for Jiufengershan landslide induced by 1999 Chi-Chi earthquake

Yano, Kanako, Shimamoto, Toshihiko, Oohashi, Kiyokazu, Dong, Jia-Jyun, Lee, Chyi-Tyi