

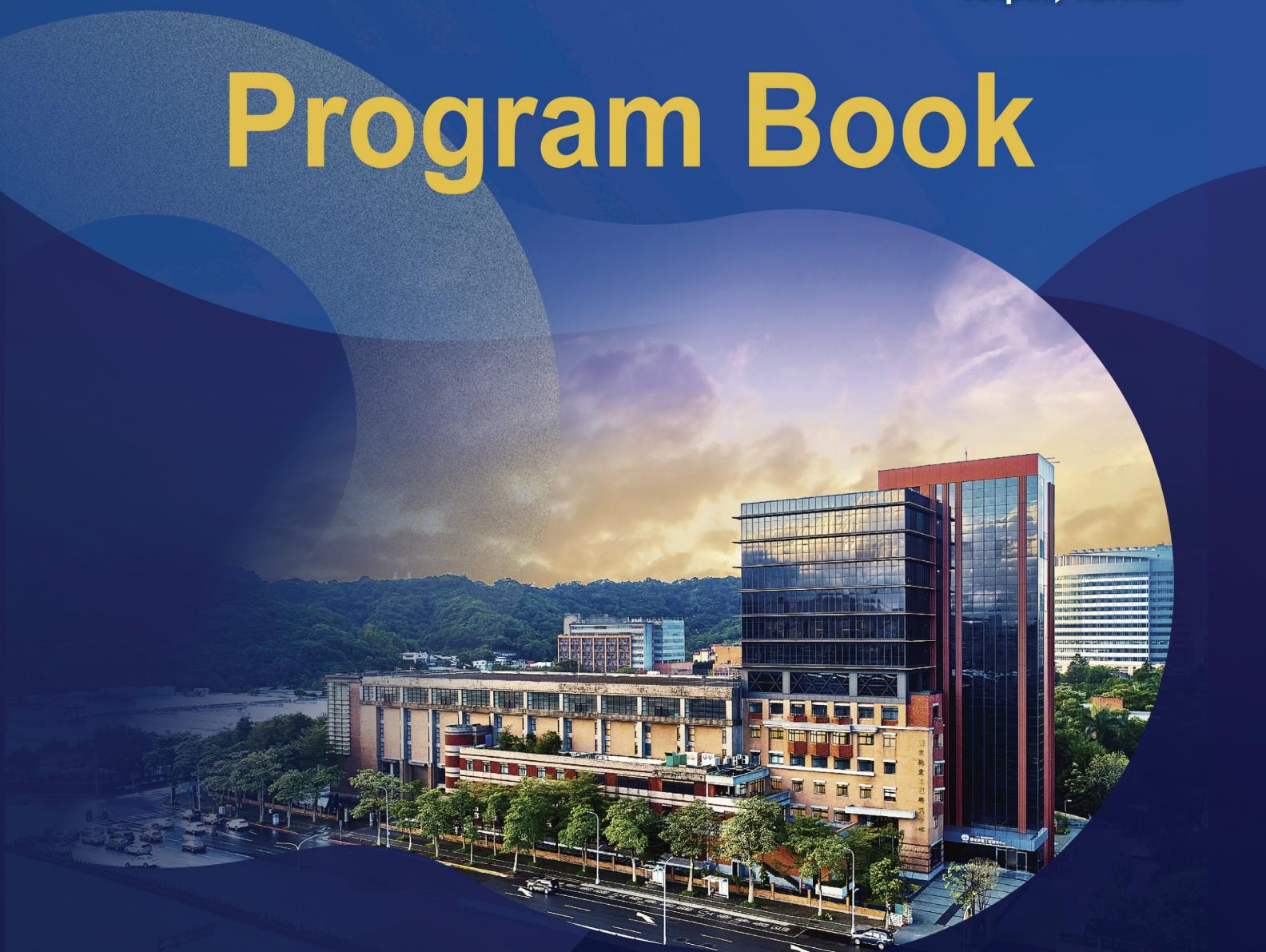


# 8 ACEEE

## 8<sup>th</sup> ASIA CONFERENCE ON EARTHQUAKE ENGINEERING

9~11 November, 2022  
Taipei, Taiwan

# Program Book



### Host



**NARLabs** National Applied Research Laboratories  
National Center for Research on  
Earthquake Engineering

### Co-hosts



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**WiFi**

**SSID: 8ACEE**

**Key: 2022Nov@NCREE**



# Topics

- (1b) Ground motion prediction equations and engineering applications of ground motion simulation
- (1c) Velocity structures and site effect
- (2a) Soil dynamic and ground response
- (2b) Soil liquefaction and ground failure
- (2c) Soil structure interaction
- (2d) Seismic design of foundations and geotechnical structures
- (2e) Geotechnical engineering innovations
- (3a) Practice case studies in seismic retrofits
- (3b) Design for control of seismic damage
- (3c) Advances in earthquake engineering research
- (3e) Practice case studies in innovative structural design
- (3f) Case studies on use of emerging technologies
- (3g) Seismic isolation, energy dissipation and vibration control of structures
- (3h) Seismic performance design, evaluation and retrofit for non-structural components
- (4a) Social impacts and resilience
- (4b) Seismic hazards and vulnerabilities
- (4c) Earthquake loss estimation
- (4d) Disaster risk assessment for earthquakes
- (5a) Structural health monitoring and early warning system
- (5c) Geochemical and seismological investigations
- (6a) Advanced techniques for simulations in earthquake engineering
- (6b) Advanced hybrid simulations with online model updating
- (8a) Reconnaissance, lessons learned from recent earthquakes, and post-earthquake assessment and response
- (8b) Intersection of earthquake engineering with social justice
- (SS1) Artificial intelligence and big data for earthquake engineering
- (SS2) Seismic design, analysis and qualification for off-shore wind turbines
- (SS3) Structural collapse behavior under near-fault earthquake effect
- (SS4) Advanced earthquake engineering techniques for seismic resistance and disaster mitigation
- (SS5) Structural assessment and health monitoring for bridge and civil structures
- (SS6) Advancements in earthquake early warning systems

# Program

# 09 November (Day 1)

Time	R101	R802	R805	R806	R1206
08:00 ~ 09:00	Registration				
09:00 ~ 09:40	Opening Ceremony Prof. Bou-Wen Lin <sup>1</sup> Prof. C. Robert Kao <sup>2</sup> Prof. Chung-Che Chou <sup>3</sup>				
09:40 ~ 10:50	PS1-1R101 Keynote Speakers 1, 2				
10:50 ~ 11:10	Coffee Break				
11:10 ~ 12:40	CS1-1R101 Invited Speakers 1, 2 (1b)	CS1-1R802 (2b)	CS1-1R805 (4a), (SS6), (2c)	CS1-1R806 (SS3)	CS1-1R1206 (3b), (3c)
12:40 ~ 13:30	Lunch Break				
13:30 ~ 14:40	PS1-2R101 Keynote Speakers 3, 4				
14:40 ~ 15:00	Coffee Break				
15:00 ~ 16:30	CS1-2R101 Invited Speakers 3, 4 (3e), (3g)	CS1-2R802 (1b), (3a)	CS1-2R805 (2a)	CS1-2R806 (3b)	CS1-2R1206 (3c), (3f)
16:30 ~ 16:40	Coffee Break				
16:40 ~ 17:40	CS1-3R101 Invited Speakers 5, 6 (2d)	CS1-3R802 (6a)	CS1-3R805 (3g)		
18:30 ~ 21:00	Welcome Reception (Tasty Taipei Fuxing South Restaurant)				

<sup>1</sup>Vice President, National Applied Research Laboratories, Taiwan

<sup>2</sup>Associate Dean, College of Engineering, National Taiwan University, Taiwan

<sup>3</sup>Chair of 8ACEE; Director General of National Center for Research on Earthquake Engineering

# 10 November (Day 2)

Time	R101	R802	R805	R806	R1206
09:00 ~ 10:50	PS2-1R101  Keynote Speakers 5, 6, 7				
10:50 ~ 11:10			Coffee Break		
11:10 ~ 12:40	CS2-1R101  Invited Speakers 7, 8  (3g)	CS2-1R802  (5a)	CS2-1R805  (3h)	CS2-1R806  (4d), (SS5)	CS2-1R1206  (SS4)
12:40 ~ 13:30			Lunch Break		
13:30 ~ 14:40	PS2-2R101  Keynote Speakers 8, 9				
14:40 ~ 15:00	MOU Ceremony  JAEE <sup>1</sup> and NCREE <sup>2</sup> JAEE <sup>1</sup> and CTSEE <sup>3</sup>				
15:00 ~ 15:20			Coffee Break		
15:20 ~ 16:50	CS2-2R101  Invited Speakers 9, 10  (3g)	CS2-2R802  (8a), (4c), (4a)		CS2-2R806  (8b), (1c), (4b)	CS2-2R1206  (SS4)
16:50 ~ 17:00			Coffee Break		
17:00 ~ 17:30			Visit to NCREE Lab		
18:30 ~ 21:00			Banquet  (Shin Yeh Mitsukoshi Xinyi Place A9 Restaurant)  Special Talk: Prof. Shyh-Jiann Hwang <sup>4</sup>  Topic: Seismic Retrofitting Program of School Buildings in Taiwan		

<sup>1</sup>Japan Association for Earthquake Engineering

<sup>2</sup>National Center for Research on Earthquake Engineering

<sup>3</sup>Chinese Taiwan Society for Earthquake Engineering

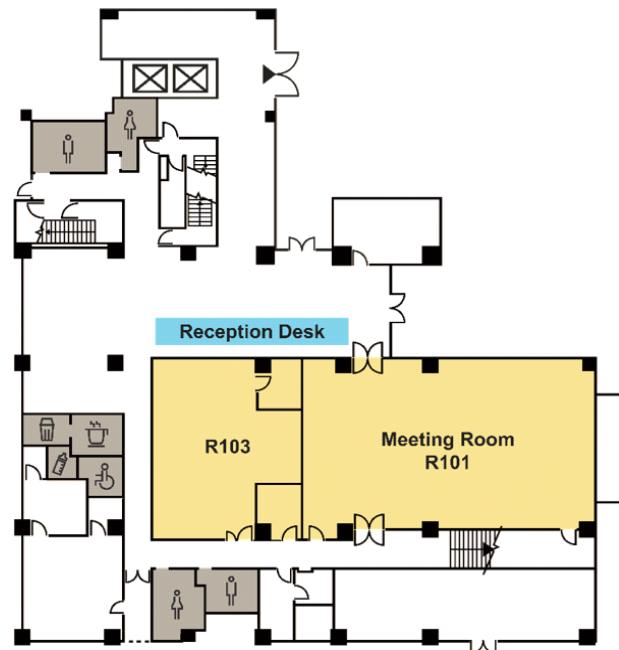
<sup>4</sup>Professor, National Taiwan University, Taiwan

# 11 November (Day 3)

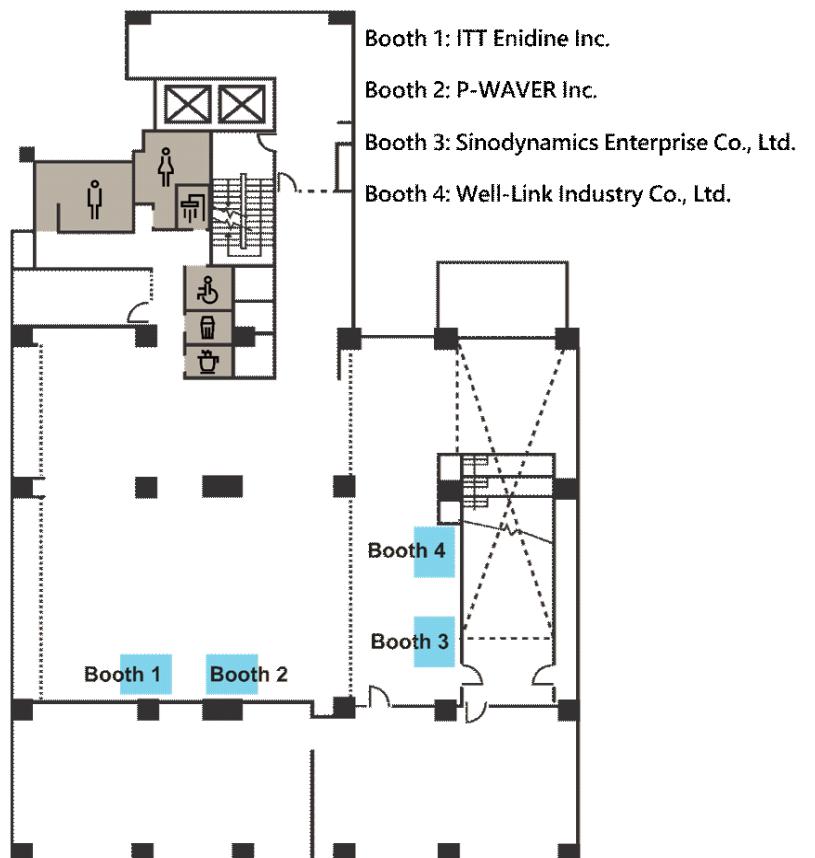
Time	R101	R802	R805	R806	R1206
09:00 ~ 10:00	CS3-1R101 (6b), (2e), (4c)	CS3-1R802 (SS2), (3e)		CS3-1R806 (5c), (SS1)	
10:00 ~ 10:10	Coffee Break				
10:10 ~ 12:00	PS3-1R101  Keynote Speakers 10, 11, 12				
12:00 ~ 12:20	Closing Ceremony				

# Floor Plan

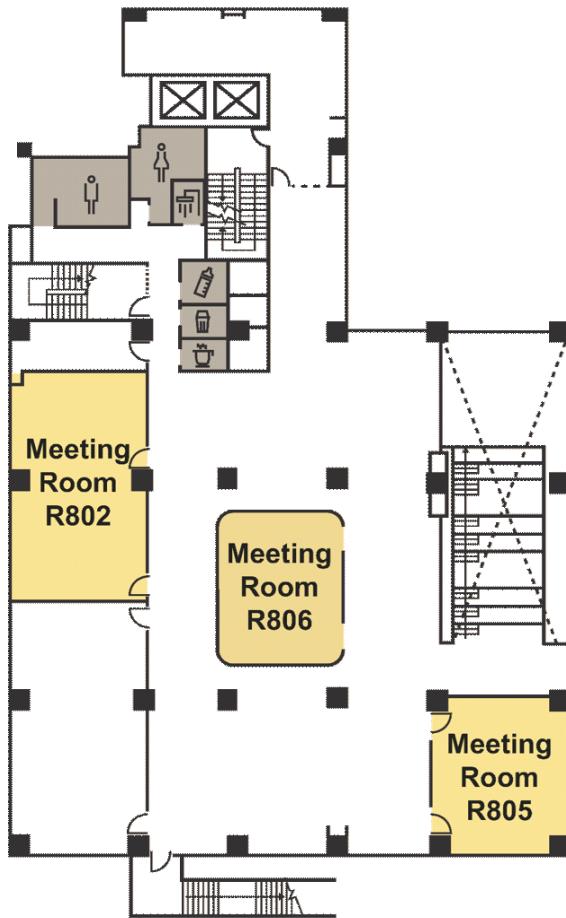
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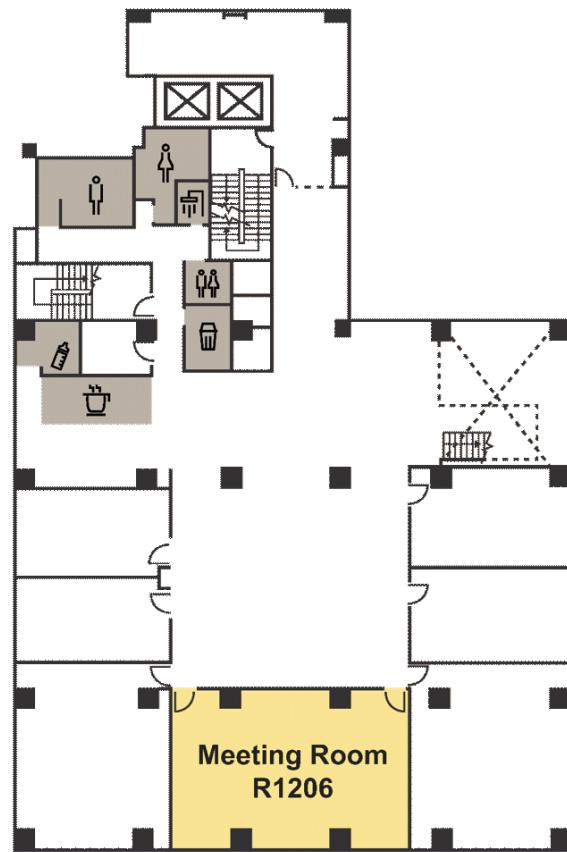
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# Agenda

Room 101

PS1-1R101

09 November (Day 1) / 09:40 ~ 10:50

Chair Dr. Chiun-Lin Wu

Keynote Speaker 1	Key Issues for Fault Rupture Models for Probabilistic Rupture Hazard Analysis <b>Prof. Norman Abrahamson</b> University of California, Berkeley, USA
Keynote Speaker 2	Observation and Modeling of Strong-Velocity Pulses of Earthquakes <b>Prof. Kuo-Fong Ma</b> Institute of Earth Sciences, Academia Sinica, Taiwan

**09 November (Day 1) / 11:10 ~ 12:40**

**Topic** (1b) Ground motion prediction equations and engineering applications of ground motion simulation

**Chair** Prof. Jin-Hung Hwang, Prof. Tony Yang

Invited Speaker 1	<p>Fully Non-ergodic Ground Motion Models for Taiwan</p> <p style="text-align: right;"><b>Dr. Chih-Hsuan Sung</b> University of California, Berkeley, USA</p>
Invited Speaker 2	<p>Soil Liquefaction: A Natural Fuse for Earthquake-resistant System- Observations and Interpretations of the Failure Mechanism of Bridge Piers during the 2022/09/18 Chihshang Earthquake</p> <p style="text-align: right;"><b>Prof. Jin-Hung Hwang</b> National Central University, Taiwan</p>
8ACEE-01366	<p>A Methodology for Developing Empirical Ground-Motion Models Compatible with Shear-Wave Velocity Profiles and Kappa</p> <p style="text-align: right;">Dr. Van Bang Phung</p> 
8ACEE-01470	<p>Toward the Seismic Hazard Assessment of the Stable Continental Region from the Strong-Motion Data Recorded of a Significant Earthquake: Example for Northern Vietnam</p> <p style="text-align: right;">Mr. Ha Vinh Long</p> 
8ACEE-01495	<p>Occurrence Rate and Period of Pulse-Liked Ground Motion Based on Ground Motion Simulation Technique: Shanchiao Fault in Northern Taiwan</p> <p style="text-align: right;">Dr. Jyun-Yan Huang</p> 

## 09 November (Day 1) / 11:10 ~ 12:40

Topic	(2b) Soil liquefaction and ground failure
Chair	Dr. Thirapong Pipatpongsa, Dr. Wei-Kuang Chang
8ACEE-01364 	Evaluation of Liquefaction Resistance in Undrained Cyclic Triaxial Tests by Using Energy-based Method Dr. Thirapong Pipatpongsa
8ACEE-01370 	A Comparison Study of CPT-based Methods for Assessing Liquefaction Potential of Soils: A HBF Simplified Method Mr. Jiun-Shiang Wang
8ACEE-01393 	Geotechnical Investigation for Liquefaction Assessment in Chiang Rai and Phayao Provinces of Northern Thailand Ms. Pakawadee Anussornrajkit
8ACEE-01403 	A Study of Drained Volumetric Behaviour of Weakly Cemented Sands Using Enzyme-Induced Calcite Precipitation (EICP) Ms. Amali Gitanjali Rayappan Kennedy
8ACEE-01411 	Effect of Frequency Characteristics of Input Ground Motion on Slope Failure Displacement: A Numerical Study Using the SPH Method Ms. Moe Sasaki
8ACEE-01472 	Influence of Lowering Groundwater Level on Soil Liquefaction Potential of Taipei Basin Dr. Yuan-Chang Deng

Room 805

CS1-1R805

09 November (Day 1) / 11:10 ~ 12:40

- Topic** (4a) Social impacts and resilience  
 (SS6) Advancements in earthquake early warning systems  
 (2c) Soil structure interaction

**Chair** Dr. Maki Koyama, Dr. Wang-Chuen Lin

8ACEE-01455	 <p>Support for Long-Term Evacuees Based on the Case of the Great East Japan Earthquake -Focusing on Kyoto, Osaka, and Okayama Prefectures</p> <p>Dr. Maki Koyama</p>
8ACEE-01421	 <p>Seismic Site Effects Implication on EEW Parameter Estimation</p> <p>Mr. Mugesh A / <b>Online</b></p>
8ACEE-02542	 <p>Uttarakhand Earthquake Early Warning System: Performance and Validation</p> <p>Prof. Mukat Sharma / <b>Online</b></p>
8ACEE-01395	 <p>Analytical Seismic Responses Considering Soil-Structure Interaction with Structural Nonlinear Property</p> <p>Mr. Kuo-Hung Chao / <b>Online</b></p>
8ACEE-01539	 <p>Site-Specific Response Analysis Involving Dynamic Soil - Structure Interaction</p> <p>Prof. I Wayan Sengara</p>

Room 806

CS1-1R806

09 November (Day 1) / 11:10 ~ 12:40

**Topic** (SS3) Structural collapse behavior under near-fault earthquake effect

**Chair** Dr. Fu-Pei Hsiao, Dr. Tsung-Chih Chiou

8ACEE-01118 	Parameter Optimization for Pivot Hysteresis Model of Reinforced Concrete Shear Walls with Different Failure Modes	Mr. Yu-Che Ling
8ACEE-01461 	Experimental Study of a 7- Story Reinforced Concrete Building Using Real-Time Hybrid Testing Method	Mr. Shih-Wei Yeh
8ACEE-01476 	In-plane Experimental Study on an Attached RC Frame Using High Strength Anchor Bolts	Dr. Tsung-Chih Chiou
8ACEE-01508 	On the Prediction Of Flexural Performance of RC Beams Strengthened with External Steel Wire Ropes: A Numerical Study	Dr. Yanuar Haryanto
8ACEE-01513 	Hybrid Testing Application of OpenFresco in Multiple Physical Substructures of the Seven-Stories RC Structure	Dr. Fu-Pei Hsiao

Room 1206

CS1-1R1206

09 November (Day 1) / 11:10 ~ 12:40

- Topic** (3b) Design for control of seismic damage  
 (3c) Advances in earthquake engineering research
- Chair** Prof. Gregory MacRae, Prof. Pao-Chun Lin

8ACEE-01450	Development of Precast UHPC Panels for Seismic Strengthening of RC Frames  	Ms. Jing-Ya Wei
8ACEE-01066	Considerations for Seismic Ratcheting  	Prof. Gregory MacRae
8ACEE-01260	Time-Dependent Behaviour of Concrete-Filled Steel Tube  	Mr. Doan Binh Nguyen
8ACEE-01268	Analytical Method for Punching of Reinforced Concrete Flat Slabs without Stirrups  	Dr. Srinivas Mogili
8ACEE-01384	Loading Tests for Reinforced Concrete Frames Retrofitted by Attaching Steel Members  	Prof. Yi-Hsuan Tu <i>/ Online</i>
8ACEE-01407	Evaluation of the Base Shear Contribution of Moment-Resisting Frames in High-Rise Reinforced Concrete Non-regular Dual Systems  	Mr. Jerson Rabadon <i>/ Online</i>
8ACEE-01497	Experimental Investigation on Seismic Performance of Reinforced Concrete Sandwich Wall Panels  	Mr. Sushil Kumar <i>/ Online</i>

Room 101

PS1-2R101

09 November (Day 1) / 13:30 ~ 14:40

Chair Dr. Juin-Fu Chai

Keynote Speaker 3	A Review of Seismic Monitoring and Vibration-based Damage Assessment in Civil Structures  <b>Prof. Chin-Hsiung Loh</b> National Taiwan University, Taiwan
Keynote Speaker 4	An Innovative Horizontal Seismic Force-Resisting System for Improved Seismic Resilience of Steel Buildings  <b>Prof. Shih-Ho (Simon) Chao</b> The University of Texas at Arlington, USA

Room 101

CS1-2R101

09 November (Day 1) / 15:00 ~ 16:30

- Topic** (3e) Practice case studies in innovative structural design  
 (3g) Seismic isolation, energy dissipation and vibration control of structures
- Chair** Prof. Yu-Chen Ou, Prof. Kazutoshi Nagata

Invited Speaker 3	<p>Development of High-Performance Carbon Neutral Resilient Infrastructures</p> <p style="text-align: right;"><b>Prof. Tony Yang</b></p> <p style="text-align: right;">The University of British Columbia, Canada</p>
Invited Speaker 4	<p>Use of Lap Spliced Inner Hoops in the Plastic Hinge Regions of Beams of Reinforced Concrete Special Moment Frames</p> <p style="text-align: right;"><b>Prof. Yu-Chen Ou</b></p> <p style="text-align: right;">National Taiwan University, Taiwan</p>
8ACEE-01467 	<p>Study on Crack Initiation Mechanism of Ozone-Deteriorated Rubber Damper</p> <p style="text-align: right;"><b>Prof. Kazutoshi Nagata</b></p>
8ACEE-01255 	<p>Design Equation for Shear Strength of UHPC Beams</p> <p style="text-align: right;"><b>Mr. Manuel Bermudez</b></p>
8ACEE-01394 	<p>Study on Lightweight Truss-Type Composite Temporary Bridges for Emergency Disaster Relief</p> <p style="text-align: right;"><b>Dr. Fang-Yao Yeh</b></p>
8ACEE-00067 	<p>Seismic Design of Damped-Outrigger with Buckling-Restrained Brace for Buildings with Various Heights</p> <p style="text-align: right;"><b>Prof. Pao-Chun Lin</b></p>

Room 802

CS1-2R802

09 November (Day 1) / 15:00 ~ 16:30

**Topic** (1b) Ground motion prediction equations and engineering applications of ground motion simulation

(3a) Practice case studies in seismic retrofits

**Chair** Dr. Chih-Hsuan Sung, Mr. Ruel Ramirez

8ACEE-01493	 <p>Non-ergodic Ground-Motion Model for Taiwan Subduction Earthquakes Using 3-D Simulations</p>	Dr. Chih-Hsuan Sung
8ACEE-01505	 <p>Re-evaluating Ground Motion Intensity Conversion Equations (GMICE) for California, U.S.A.</p>	Ms. Molly Gallahue <i>/ Online</i>
8ACEE-01388	 <p>A Simple Scheme to Prepare Site-Specific Design Ground Motions Based on Local Microtremor Measurement and Globally-Available Strong Motion Databases</p>	Dr. Atsushi Nozu <i>/ Online</i>
8ACEE-01399	 <p>Development of Prediction Equation on Long Period Ground Motion in Bangkok</p>	Ms. Xihan Li <i>/ Online</i>
8ACEE-01465	 <p>Taiwan-Thailand Collaborative Project on Seismic Strengthening of Soft-Story School Buildings in Northern Thailand</p>	Dr. Sutat Leelataviwat <i>/ Online</i>
8ACEE-01502	 <p>Seismic Retrofitting of 100-Years Old 7-Storeys RC Building Using Viscoelastic Dampers</p>	Mr. Ruel Ramirez
8ACEE-01266	 <p>Seismic Performance of RC Frames Retrofitted with Post-Installed Shear Walls</p>	Mr. Yu-Ming Zheng

Room 805

CS1-2R805

09 November (Day 1) / 15:00 ~ 16:30

**Topic** (2a) Soil dynamic and ground response  
**Chair** Prof. Chi-Chin Tsai, Prof. Wen-Shinn Shyu

8ACEE-01439	Influence of Weight of Shear Box on Dynamic Soil Response in Centrifuge Model Test  	Dr. Hiroto Nakagawa
8ACEE-01404	Response of Machine Foundations on Reinforced Soil  	Mr. Neeraj Kumar Das
8ACEE-01430	Development of Frequency Dependent Equivalent Linear Program for Deconvolution Analysis  	Prof. Chi-Chin Tsai
8ACEE-01466	Anti-plane Responses in Frequency Domain and Time Domain Induced by an Oblique-Truncated Semicircular Canyon  	Prof. Wen-Shinn Shyu
8ACEE-01378	Centrifugal Model Test on Seismic Retrofit of Slope with Bench against Shallow Sliding  	Mr. Shanzhi Tao <i>/ Online</i>
8ACEE-01408	Behavior of Embankment Affected by Water Content for Compaction Studied by Dynamic Centrifuge Model Tests  	Mr. Siga A <i>/ Online</i>
8ACEE-01422	Stability of Loose Fill Embankment under Seismic Loads Studied by Physical Model and Discrete Element Method  	Mr. Zirui Lu <i>/ Online</i>

Room 806

CS1-2R806

09 November (Day 1) / 15:00 ~ 16:30

**Topic** (3b) Design for control of seismic damage

**Chair** Prof. Chao-Hsun Huang, Dr. Jui-Liang Lin

8ACEE-01501 	Experimental Study on Seismic Retrofit of Concrete Frames Using Steel Supplemental Beams Prof. Chao-Hsun Huang
8ACEE-01242 	Experimental Investigation on Isolated Strut Behavior of High Strength Steel Fiber Reinforced Concrete Panels Mr. Suyash Wagh
8ACEE-01414 	Unstressed Steel Strands as Longitudinal Reinforcement in Reinforced Concrete Elements Mr. Jones Joju
8ACEE-01447 	Seismic Performance of Resilient Frame-Core Tube Structure Dr. Shurong Li / <b>Online</b>
8ACEE-01398 	Restoring Force Characteristics and Earthquake Response of Doubly Reinforced Tall RM Garden Walls with L-Shaped Foundation Mr. Haruta Kai / <b>Online</b>
8ACEE-01401 	A Study on the Effect of Seismic Damage Mitigation of RC School Building with Different Importance Factor Mr. Taichi Ichioka / <b>Online</b>
8ACEE-01457 	Experimental Investigation of Developed Vertical Connections between PC Walls for Enhanced Shear Strength Ms. Kyo Young Moon / <b>Online</b>

Room 1206

CS1-2R1206

09 November (Day 1) / 15:00 ~ 16:30

**Topic** (3c) Advances in earthquake engineering research  
 (3f) Case studies on use of emerging technologies

**Chair** Prof. Po-Chien Hsiao, Dr. Ryan Hoult

8ACEE-01449 	Assessing the Seismic Performance of Building Structures Using an Improved Pushover Analytical Method Prof. Po-Chien Hsiao
8ACEE-01471 	Experimental Study on Seismic Performance of Innovative Reinforced-Concrete Coupling Beams Ms. Min-Chih Lin
8ACEE-02551 	Vertical Displacement and Strain Measurements of RC Walls Using Fibre-Optic Sensors and Conventional Instrumentation Dr. Ryan Hoult
8ACEE-01507 	Recorded Ground Motion Selecting, Scaling, and Orienting for Nonlinear Response History Analysis: Overview of ASCE 7 Standards Mr. Hsun-Jen Liu
8ACEE-01442 	A Case Study on the Convergence Improvement of Nonlinear Static Pushover Analysis Mr. Chien-Chun Liu
8ACEE-02583 	Study on Development Length in Tension and Bond Splitting Performance of Concrete for Rebar Dr. Kai-Ning Chi
8ACEE-02571 	Application of Robotic Welding Technology to Continuity Plate Weld within Steel Built-up Box Columns in Taiwan Mr. Gee-Jin Yu

**09 November (Day 1) / 16:40 ~ 17:40**

**Topic** (2d) Seismic design of foundations and geotechnical structures

**Chair** Dr. Georgios Tsampras, Prof. Wen-Cheng Liao

<b>Invited Speaker 5</b>	<p>Reusable Force-Limiting Connection with Variable Friction Force for High-Performance Buildings</p> <p style="text-align: right;"><b>Dr. Georgios Tsampras</b> University of California San Diego, USA</p>
<b>Invited Speaker 6</b>	<p>Shear Behavior of High Strength Steel Fiber Reinforced Columns under Different Axial Loading Levels</p> <p style="text-align: right;"><b>Prof. Wen-Cheng Liao</b> National Taiwan University, Taiwan</p>
8ACEE-01368 	<p>Performance of the Buried Water Pipe with Protection Feature</p> <p style="text-align: right;"><b>Dr. Che-Yu Chang</b></p>
8ACEE-01491 	<p>Development of the Design Earthquake in Taipei Basin Considering the Shanchiao Fault</p> <p style="text-align: right;"><b>Dr. Yu-Wen Chang</b></p>

Room 802

CS1-3R802

09 November (Day 1) / 16:40 ~ 17:40

**Topic** (6a) Advanced techniques for simulations in earthquake engineering  
**Chair** Dr. Kuang-Wu Chou, Prof. Wen-Chia Yang

8ACEE-01410	Infrastructure Construction of a Web Application System for Structural Analysis	Dr. Kuang-Wu Chou
8ACEE-02564	Material-Point-Method Implementation of Traction-based Domain Reduction Scheme for Soil-Structure Interaction Problems	Prof. Wen-Chia Yang
8ACEE-01367	Structural Performance Analysis of a Seismic Damaged Bridge with Loading Test	Mr. Po-Hsin Lee / <b>Online</b>
8ACEE-01468	Seismic Fragility Assessment of a Non-conforming RC Frame Considering Shear Deformation of Vertical Members	Mr. Won Jun Hwang / <b>Online</b>

Room 805

CS1-3R805

09 November (Day 1) / 16:40 ~ 17:40

**Topic** (3g) Seismic isolation, energy dissipation and vibration control of structures

**Chair** Dr. Cho-Yen Yang, Dr. Chung-Han Yu

8ACEE-01509 	<p>Seismic Fragility Evaluation for Crossover Piping System of Seismically Isolated APR1400 NPPs</p> <p>Dr. Bub gyu Jeon / <a href="#">Online</a></p>
8ACEE-01369 	<p>Application of Hardware-in-the-Loop Simulation with Digital Twin to Real-Time Hybrid Test</p> <p>Mr. Chan-Jung Kang / <a href="#">Online</a></p>
8ACEE-01436 	<p>Loading Tests on Buckling-Restrained Braces with Multiple Round Steel Core Bars</p> <p>Mr. Sijin Zhang / <a href="#">Online</a></p>
8ACEE-01448 	<p>Improving Seismic Performance of Skewed Highway Bridges with Multidirectional Energy Dissipators</p> <p>Dr. Ramiro Bazaez / <a href="#">Online</a></p>

Room 101

PS2-1R101

10 November (Day 2) / 09:00 ~ 10:50

Chair Prof. George C. Yao

Keynote Speaker 5	Seismic Composite Metamaterials: An Overview  Prof. Tung-Yang Chen National Cheng Kung University, Taiwan
Keynote Speaker 6	Recovery after the Canterbury Earthquakes  Prof. Gregory MacRae University of Canterbury, New Zealand
Keynote Speaker 7	Development of Risk-Targeted Ground-Motions Criteria in Indonesian Seismic Building Code  Prof. I Wayan Sengara Asosiasi Ahli Rekayasa Gempa Indonesia, Indonesia

Room 101

CS2-1R101

10 November (Day 2) / 11:10 ~ 12:40

**Topic** (3g) Seismic isolation, energy dissipation and vibration control of structures  
**Chair** Dr. Ramesh Guragain, Prof. Lyan-Ywan Lu

Invited Speaker 7	<p>Lessons on Building Code Implementation and Seismic Retrofitting in Nepal: Build Better Now</p> <p style="text-align: right;"><b>Dr. Ramesh Guragain</b> National Society for Earthquake Technology, Nepal</p>
Invited Speaker 8	<p>Seismic Risk Assessment Considering Multi-Performance Levels for Base-Isolated Building</p> <p style="text-align: right;"><b>Prof. Lyan-Ywan Lu</b> National Cheng Kung University, Taiwan</p>
8ACEE-01458 	<p>Active Seismic Control Simulation of Nonlinear Structures Using OpenSees-Simulink Connection</p> <p style="text-align: right;"><b>Prof. Pei-Ching Chen</b></p>
8ACEE-01438 	<p>Design of Optimal Passive Tuned Mass Damper Using Direct Output Feedback Control Algorithm</p> <p style="text-align: right;"><b>Ms. Hsuan-Ying Lin</b></p>
8ACEE-01451 	<p>Numerical and Experimental Verification of Eccentric Rolling Isolation System with Convex Guide</p> <p style="text-align: right;"><b>Mr. Zhen-Wei Hong</b></p>

Room 802

CS2-1R802

10 November (Day 2) / 11:10 ~ 12:40

Topic	(5a) Structural health monitoring and early warning system
Chair	Dr. Wen-Tzong Liang, Prof. Shieh-Kung Huang
8ACEE-01056 	Rapid Post-Earthquake Response Assessment of High-Rise Buildings Using Acceleration Response Time Histories Mr. S. M. Zia Uddin
8ACEE-01372 	Data Anomaly Detection and Classification with Statistics and Machine Learning Techniques Prof. Shieh-Kung Huang
8ACEE-01377 	Dynamic Characteristics of a Steel-Framed High-Rise Building Based on Strong Motion Data Analysis Dr. Toshihide Kashima
8ACEE-01386 	Vibration-based Structural Health Monitoring of the NCREE Building under a Series of Environmental and Earthquake Loadings Ms. Yu-Tzu Huang
8ACEE-01419 	Extracting Building Response from the Low-Cost Qsis Seismic Network (QSN) for Structure Integrity Monitoring Dr. Wen-Tzong Liang
8ACEE-02548 	Numerical Modeling of the Steel Arch Bridge to Identify the Cable Force Which Validated by the Field Measurement Ms. Alfinna Mahya Ummati
8ACEE-01400 	An Experimental Study on Seismic Response Estimation Using Measured Acceleration Data Prof. Pennung Warnitchai

## 10 November (Day 2) / 11:10 ~ 12:40

**Topic** (3h) Seismic performance design, evaluation and retrofit for non-structural components

**Chair** Dr. Fan-Ru Lin, Dr. Wei-Chung Chen

8ACEE-01484 	Experimental Studies of Strengthening Strategies for Small-Bore Piping of Fire Protection Sprinkler Piping Systems Dr. Fan-Ru Lin
8ACEE-00039 	Experimental Study of Glass-Type Static Smoke Barriers by Using Large-Scale Shaking Table Dr. Tzu-Chieh Lin
8ACEE-01182 	Numerical Study on Seismic Effect and Retrofit Strategy of Liquid Sloshing Mode in Tanks Dr. Wei-Hung Hsu
8ACEE-01417 	Experimental Study of Suspended Busway Systems Dr. Wei-Chung Chen
8ACEE-01259 	To Obtain Effective Elastic Modulus of Straight Busway by Simple Testing Dr. Yu-Chiau Huang / <b>Online</b>
8ACEE-01397 	Evaluation of Nonstructural Seismic Demand Based on Shake-Table Testing of Steel Racks Installed on Full-Scale 2-Story Moment Frame Dr. Su-Chan Jun / <b>Online</b>
8ACEE-01487 	Fundamental Study on Seismic Performance of Stone Bridges Focusing on Size of Filling Material Prof. Aiko Furukawa / <b>Online</b>

Room 806

CS2-1R806

10 November (Day 2) / 11:10 ~ 12:40

<b>Topic</b>	(4d) Disaster risk assessment for earthquakes (SS5) Structural assessment and health monitoring for bridge and civil structures
<b>Chair</b>	Dr. Gee-Yu Liu, Dr. Chun-Chung Chen
8ACEE-01383	<p>A Study for RC Structure Safety Reduction Assessment in Seismic Response after Regional Fire Damage</p>  <p>Dr. Ren-Jwo Tsay</p>
8ACEE-01441	<p>Assessing Hospital Non-structural Failure after an Earthquake with Structural Damage as a New Factor</p>  <p>Dr. Chi-Hao Lin</p>
8ACEE-01443	<p>Simulations for Seismic Behavior of Running Vehicles on Curved Part of Expressway</p>  <p>Mr. Masaki Tsuda</p>
8ACEE-01478	<p>Software Development of Rescue Route Planning and Seismic Risk Assessment</p>  <p>Dr. Cheng-Tao Yang</p>
8ACEE-00054	<p>Implementation of Twater for Seismic Risk Assessment of Water Supply Systems - A Case Study</p>  <p>Dr. Gee-Yu Liu</p>
8ACEE-01492	<p>Cascading Effects of Seismic Impact on Interconnected Urban Infrastructure</p>  <p>Dr. Chih-Hao Hsu</p>
8ACEE-01059	<p>Experimental Study on the Evaluation Method for Bridge Structures by Using Load Tests</p>  <p>Dr. Chun-Chung Chen</p>

## 10 November (Day 2) / 11:10 ~ 12:40

**Topic** (SS4) Advanced earthquake engineering techniques for seismic resistance and disaster mitigation

**Chair** Prof. Yu-Chen Ou, Prof. Jiunn-Shyang Chiou

8ACEE-02550 	Test and Finite Element Analysis of Two-Story Steel Subassemblage Frames with Highly and Moderately Ductile Box Columns	Mr. Tzu-Ting Lo
8ACEE-01464 	An Evaluation of the Equivalent Linear Method for Lead-Rubber-Bearing Systems Subjected to Pulse-Like Ground Motions	Mr. Julian Adiputra
8ACEE-01480 	Effects of Near-Field and Far-Field Earthquakes on Seismic Response of Extended Piles under Extreme Scouring Conditions	Prof. Jiunn-Shyang Chiou
8ACEE-02556 	Analysis and Test Plan for a Three-Story Steel BRBF with a Sliding Slab to Reduce Seismic Lateral Force in Shake Table Tests	Mr. Huang-Zuo Lin
8ACEE-00045 	Seismic Behavior of Bridge Columns by Partially Unbonded and Non-prestressed Steel Strands	Mr. Jhen-Wei Wu
8ACEE-01153 	Effect of Curing Conditions on the Strength of Bio-treated Sand Specimens	Dr. Yu-Syuan Jhuo

Room 101

PS2-2R101

10 November (Day 2) / 13:30 ~ 14:40

**Chair** Prof. Chung-Che Chou

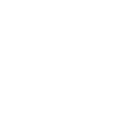
Keynote Speaker 8	Strain Imposed on a Water Pipeline by Stationary Loads for Seismic Design <b>Prof. Junji Kiyono</b> Kyoto University, Japan
Keynote Speaker 9	Damage-Based Seismic Design and Evaluation for Reinforced Concrete Bridges <b>Prof. Kuo-Chun Chang</b> National Taiwan University, Taiwan

Room 101

CS2-2R101

10 November (Day 2) / 15:20 ~ 16:50

**Topic** (3g) Seismic isolation, energy dissipation and vibration control of structures  
**Chair** Prof. Chung-Chan Hung, Prof. Tzu-Kang Lin

<b>Invited Speaker 9</b>  	<p>Use of UHPC Shotcrete for Retrofitting Masonry Infilled RC Frames</p> <p style="text-align: right;"><b>Prof. Chung-Chan Hung</b></p> <p style="text-align: right;">National Cheng Kung University, Taiwan</p>
<b>Invited Speaker 10</b>  	<p>An Intelligent Isolation System Based on Long Short-term Memory Module Model of Ground Motion Characteristics Prediction</p> <p style="text-align: right;"><b>Prof. Tzu-Kang Lin</b></p> <p style="text-align: right;">National Yang Ming Chiao Tung University, Taiwan</p>
8ACEE-00047  	<p>Experimental Study of Shaking Table Test with Displacement-Dependent Tuned Mass Dampers</p> <p style="text-align: right;">Dr. Bo-Han Lee</p>
8ACEE-02569  	<p>Phase Control Active Tuned Mass Damper for Structural Vibration Mitigation</p> <p style="text-align: right;">Mr. Han-Tzuo Lin</p>
8ACEE-01246  	<p>Performance Upgrading of Concrete Encased Steel Composite Beams</p> <p style="text-align: right;">Dr. Yuan-Tao Weng</p>
8ACEE-01416  	<p>Control Parameters Design of Tuned Mass Dampers with Active Variable Inerter</p> <p style="text-align: right;">Dr. Chang-Ching Chang</p>

Room 802

CS2-2R802

10 November (Day 2) / 15:20 ~ 16:50

- Topic**
- (8a) Reconnaissance, lessons learned from recent earthquakes, and post-earthquake assessment and response
  - (4c) Earthquake loss estimation
  - (4a) Social impacts and resilience
- Chair**
- Dr. Fumio Yamazaki, Dr. Chin-Hsun Yeh

8ACEE-01380 	Evaluating Recovery Expenses of Infrastructure Damaged by Earthquakes Dr. Saki Yotsui
8ACEE-01420 	Recovery Monitoring of Minami-Aso Area after the 2016 Kumamoto Earthquake Based on Remote Sensing Data Dr. Fumio Yamazaki
8ACEE-01481 	Study on Pre-event Community-based Recovery Planning for the Earthquake Mitigation in Japan Prof. Pei-Chun Shao
8ACEE-00007 	Reconnaissance of the Damages Caused by the February 6, 2018, Earthquake in Hualien, Taiwan Dr. Jui-Liang Lin
8ACEE-01432 	Recent Progress of Taiwan Earthquake Loss Estimation System Dr. Chin-Hsun Yeh
8ACEE-01486 	Survey on the Structural Characteristics Associated with Seismic Capacity of Masonry Temples in Taiwan Prof. Keng-Chang Kuo
8ACEE-01482 	Study on Pre-Disaster Recovery Planning for the Earthquake Resilient Community: Take Min-An Village of Tamsui District as an Example Prof. Sawyer Mars

## 10 November (Day 2) / 15:20 ~ 16:50

<b>Topic</b>	(8b) Intersection of earthquake engineering with social justice (1c) Velocity structures and site effect (4b) Seismic hazards and vulnerabilities
<b>Chair</b>	Dr. Hsuan-Chih Yang, Prof. Nakhorn Poovarodom
8ACEE-01515 	The Evolution of Taiwan Earthquake Insurance Claims Mechanism for Building Damage Caused by Soil Liquefaction Dr. Hsuan-Chih Yang
8ACEE-01326 	Shallow Crustal Velocity Structures of the Hengchun Peninsula Revealed by Ambient Seismic Noise Mr. Yu-Chih Huang
8ACEE-01423 	Numerical Analysis of Multichannel Analysis of Surface Waves (MASW) Ms. Maria Desti Natalin
8ACEE-01479 	Site Characteristics of Chiang Mai, Thailand from Array Microtremor Observations Prof. Nakhorn Poovarodom
8ACEE-01475 	Three-Dimensional Finite Difference Ground Motion Simulation of the Bangkok Basin, Thailand Dr. Bidhya Subedi <i>/ Online</i>
8ACEE-01373 	Seismic Deaggregation Analysis for Selected Major Cities in Northern South East Asia Dr. Teraphan Ornthammarath <i>/ Online</i>

Room 1206

CS2-2R1206

10 November (Day 2) / 15:20 ~ 16:50

**Topic** (SS4) Advanced earthquake engineering techniques for seismic resistance and disaster mitigation

**Chair** Prof. Yin-Nan Huang, Prof. Chung-Sheng Lee

8ACEE-00031 	The Response of Steel-Reinforced Concrete (SRC) Columns Jacketed by FRP-Wrapped Spiral Corrugated Tube (FWSCT) under Axial Compression Prof. Chung-Sheng Lee
8ACEE-01352 	The Test Program of Steel-Reinforced Concrete (SRC) Columns Jacketed by FRP-Wrapped Steel Corrugated Tube (FWSCT) under Four-Point Bending Mr. Obed Adi Kusuma
8ACEE-01425 	Strain-based Seismic Evaluation of a Multi-span Reinforced Concrete Bridge Dr. Erwin Lim
8ACEE-00002 	The Development of an Application Program for Seismic Fragility Analyses of Structures Dr. Ming-Chieh Chuang
8ACEE-01452 	Seismic Protection of Essential Components and Equipment Using Isolation with Geometrically Nonlinear Viscous Damper Ms. Chieh-Yu Liu / <b>Online</b>
8ACEE-01435 	Seismic Performance of a Self-Centering Precast Reinforced Concrete Rocking Wall with External SMA Rods Mr. Ahmed Elnady / <b>Online</b>

## 11 November (Day 3) / 09:00 ~ 10:00

- Topic**
- (6b) Advanced hybrid simulations with online model updating
  - (2e) Geotechnical engineering innovations
  - (4c) Earthquake loss estimation

**Chair** Dr. Kung-Juin Wang, Dr. Bing-Ru Wu

8ACEE-01256	<p>Hybrid Simulation of a Seven-Story Steel Frame Considering Column Shortening Due to Local Buckling</p> 	Dr. Kung-Juin Wang
8ACEE-01263	<p>Hybrid Simulation of Moment Frames with Deep Columns Experiencing Axial Shortening</p> 	Mr. Claudio Sepulveda
8ACEE-01477	<p>Pseudo-Static Stability Analysis of Laterally Confined Cataclinal Slope Model</p> 	Mr. Pongsakorn Wongchana
8ACEE-01490	<p>Meshed-based Seismic Impact Analysis and Application on Disaster Mitigation Planning</p> 	Dr. Bing-Ru Wu

Room 802

CS3-1R802

11 November (Day 3) / 09:00 ~ 10:00

**Topic** (SS2) Seismic design, analysis and qualification for off-shore wind turbines  
 (3e) Practice case studies in innovative structural design

**Chair** Dr. Bai-Yi Huang, Dr. Xiao-Qin Liu

8ACEE-01418	<p>A Literal Review on the Seismic or Vibration Test Requirements for Wind Energy Equipment</p> 	Dr. Bai-Yi Huang
8ACEE-00028	<p>Soil-Structure Interaction on Jacket-Support Offshore Wind Turbines under Seismic Loading</p> 	Ms. Pei-Hsuan Yu
8ACEE-00057	<p>Numerical Vibrational Analyses of Scour Effects on a Jacket-Supported Offshore Wind Turbine</p> 	Dr. Xiao-Qin Liu
8ACEE-01500	<p>Numerical Studies on Flexural Performance of Geopolymer Concrete Beams with Varied Depth under Cyclic Loading</p> 	Mr. Mohammad Rizwan Bhina

Room 806

CS3-1R806

## 11 November (Day 3) / 09:00 ~ 10:00

**Topic** (5c) Geochemical and seismological investigations  
 (SS1) Artificial intelligence and big data for earthquake engineering  
**Chair** Dr. Vivek Walia, Dr. Hsiao-Fen Lee

8ACEE-01374	 <p>Analysis of Continuous Radon Monitoring Data of San-Jie Station in Northern Taiwan for Seismic Studies</p>	Dr. Vivek Walia
8ACEE-02547	 <p>Discussion of the Activity of the Tatun Volcano Group from Recent Monitoring Results</p>	Dr. Hsiao-Fen Lee
8ACEE-01445	 <p>Application of Artificial-Intelligence on Quick Seismic Estimation of the Building Structures in Taiwan</p>	Mr. Jin-Biau Wei / <b>Online</b>

Room 101

PS3-1R101

11 November (Day 3) / 10:10 ~ 12:00

**Chair** Prof. Shyh-Jiann Hwang

<b>Keynote Speaker 10</b>	<p>Heritage Conservation Asset Value Rating of Buildings in a School Campus for Disaster Risk Assessment</p> <p><b>Prof. Andres Oreta</b> De La Salle University, Philippines</p>
<b>Keynote Speaker 11</b>	<p>Long Span Buckling Restrained Braces for Mega Braced Frames</p> <p><b>Prof. Keh-Chyuan Tsai</b> National Taiwan University, Taiwan</p>
<b>Keynote Speaker 12</b>	<p>Method to Greatly Reduce DOF for Fast Dynamic Analysis of Super-Tall Building with/without Dampers</p> <p><b>Prof. Kazuhiko Kasai</b> Tokyo Institute of Technology, Japan</p>

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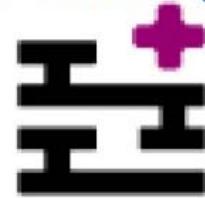
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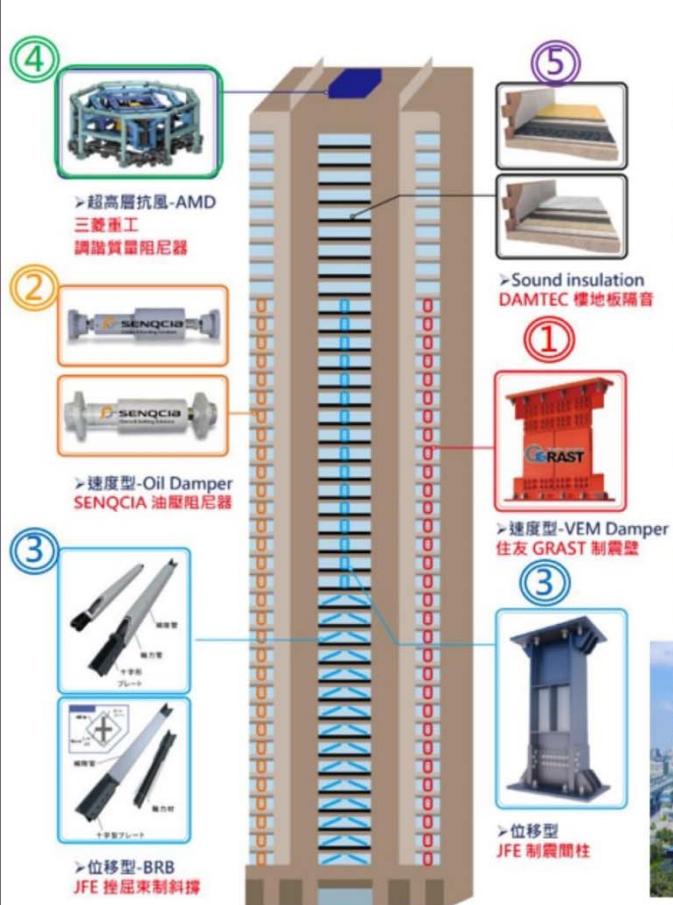
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