

## March 3rd (Wednesday)

Opening Session (Chair : ) Main Hall 10:00~10:30

Welcome Message / **Kohji Tokimatsu** (Tokyo Institute of Technology)

**Shih-Chi Liu** (US National Science Foundation)

K1 Keynote Lecture 1 (Chair : **Sabroh Midorikawa**) Main Hall 10:30~11:00

Engineering Seismology: Directions in Probabilistic Seismic Hazard Analysis / **John G. Anderson** (Professor, University of Nevada, Reno)

K2 Keynote Lecture 2 (Chair : **Stephen Mahin**) Main Hall 11:00~11:30

Full-Scale Shake Table Tests of 5-Story Steel Building with Various Dampers / **Kazuhiko Kasai** (Professor, Tokyo Institute of Technology)

K3 Keynote Lecture 3 (Chair : **Kohji Tokimatsu**) Main Hall 11:30~12:00

Demand Spectra and SFSI for the Performance Based Design / **Kyriazis Pitilakis** (Professor, Aristotle University of Thessaloniki)

Parallel Session 1 13:00~14:48

S1-H New Design Criteria and Methods 1 (Chair : ) Main Hall

Prescriptive Seismic Codes : Societal Inconveniences / **Fabio Casciati** (University of Pavia)

A Methodology for the Seismic Design of Tall Buildings Incorporating Base Isolation Devices / **Troy A. Morgan** (Tokyo Institute of Technology)

Scaling the Ground Motion Records in Order to Estimate the Probabilistic Seismic Demand using Bayesian Statistics / **Mehdi Banazadeh** (Amirkabir University of Technology)

Evaluation of the Dynamic Pressure Envelopes in Embedded Storage Tanks under Near Field Earthquakes / **Fayaz R. Rofoei** (Sharif University of Technology)

A New Design Idea for Mitigating Seismic Damage of Frame Columns by using SMA Related Device / **Yun Chen** (Togji University)

Fiber Reinforced Polymer (FRP) Strengthening of Unreinforced Masonry Bearing Wall Buildings - A New Approach / **Geoff Sharp** (Homes Culley)

S1-1 Concrete Building 1 (Chair : ) W931

An Overlooked Failure Mechanism of Reinforced Concrete Beam-Column Joints - An Experimental Verification - / **Hitoshi Shiohara** (The University of Tokyo)

Study on Compressive Strength of R/C Column by using the Upper Bound Theorem / **Koshiro Nishimura** (Tokyo Institute of Technology)

Large-Scale Testing of High-Performance Fiber-Reinforced Concrete Coupled Walls / **James K. Wight** (University of Michigan)

Analytical Study of Shear Stud Behavior in High Strength Concrete / **Shim Hak Bo** (Lotte Research & Development Institute)

Strengthening of Masonry Infill Panels with GRP Fabric for Out-of-plane Seismic Loads / **Adam Crewe** (University of Bristol)

S1-2 Rocking Frame (Chair : ) W932

Seismic Resilience of Self-Centering Steel Braced Frames with Replaceable Energy-Dissipating Fuses - Part 1 : Large-Scale Cyclic Testing / **Jerome F. Hajjar** (University of

Seismic Resilience of Self-Centering Steel Braced Frames with Replaceable Energy-Dissipating Fuses - Part 2: E-Defense Shake Table Test / **Gregory G. Deierlein** (Stanford

Seismic Behavior of Steel Rocking Frames by Three-dimensional Shaking Table Tests / **Mitsumasa Midorikawa** (Hokkaido University)

Shaking Table Test on Controlled Rocking Frame of Wooden Structures / **Shoichi Kishiki** (Tokyo Institute of Technology)

S1-3 General and Miscellaneous Issues (Chair : ) W933

Testing of an Earthquake-Damaged Unreinforced Masonry Building / **Dmytro Dizhur** (University of Auckland)

Comparison Shaking Table Test Study on Seismic Strengthening of Single Story Masonry School Building / **Shi Tiehua** (China Academy of Building Research)

Life-Cycle Cost Estimation of Open-Type Wharf Based on Seismic Damage Risk / **Hiroshi Yokota** (Hokkaido University)

Shear Carrying Capacity of RC Beams Having Partially Corroded Longitudinal Reinforcement / **Tomohiro Miki** (Kobe University)

Strengthening Reinforced Concrete Columns by High Performance Ferrocement / **Ivy F.Y. Ho** (The Hong Kong Polytechnic University)

Consideration on Process of Seismic Retrofit using Environmentally Friendly Materials in Existing Bridge / **Won-Rak Jang** (Seoul Metro)

S1-4 Engineering Seismology 1 (Site Response and Strong Motion) (Chair : ) W934

Site Specific Ground Motion Estimations for the Vulnerability Assessment of Historic Buildings in Istanbul / **Atilla Ansal** (Bogazici University)

Site Response at Mexico City. Progress Made and Pending Issues / **Francisco J. Chavez-Garcia** (Universidad Nacional Autónoma de México)

Microzonation and site Effect Studies in Istanbul / **Oguz Ozel** (Istanbul University)

Site Characteristics of Strong-Motion Earthquake Stations in Metropolitan Izmir, Aegean Region of Turkey / **Orhan Polat** (Dokuz Eylul University)

Attenuation Characteristics of Peak Ground Motions during the  $M_w$ 7.9 Wenchuan Earthquake, China / **Hongjun Si** (Kozo Keikaku Engineering Incorporation)

An Empirical Arias Intensity Relationship for Rock Sites in Stable Continental Regions / **Russell A. Green** (Virginia Tech)

S1-5 Geotechnical Engineering 1 (Retaining walls and landslides) (Chair : ) W935

Seismic Earth Pressure Acting on Cantilevered Retaining Walls / **Akihiro Takahashi** (Tokyo Institute of Technology)

Investigation on the Seismic Performance of Under Ground Efficient Tie-rod System, a New Existing Quay Reinforcement Method by the Centrifuge Experiment / **Takashi Matsuda** (Tokyo Institute of Technology / Obayashi Corp.)

Evaluation of Damage in Geogrid Reinforced Soil Walls Based on Wall Displacement / **Jun Izawa** (Tokyo Institute of Technology)

The Study of Relationship between Landslide Geometry and Run-out Distance of Landslide Mass / **Muneyoshi Numada** (The University of Tokyo)

Mechanism and Sliding Distance of Earthquake-Induced Amayachi Landslide Estimated by Modified Newmark Method / **Atsuo Onoue** (Nagaoka National College of Technology)

Centrifuge Model Tests and Deformation Analyses on Seismic Behaviors of Embankments in Mountainous Areas / **Susumu Nakajima** (Public Works Research Institute)

S1-6 Innovative, Non-conventional Materials and Technologies for Earthquake Relief and Reconstruction (Chair : ) W936

Bamboo As A Green Building Material / **Shyam K Paudel** (International Network for Bamboo and Rattan)

Fire Resistant Testing and Analysis of Light-gauge Steel Earthquake Disaster Relief Shelters / **Quan Zhou** (Institute of Modern Bamboo, Timber and Composite Structures)

Sustainable Rural House Design in Post-quake Reconstruction / **Hu Rongrong** (Xi'an University of Architecture and Technology)

Glulam Buildings for Earthquake Relief in Sichuan / **Bo Shan** (Hunan University)

Behavior of Concrete Horizontal-hole Hollow Block Masonry / **Wu Fangbo** (Hunan University)

Design and Construction of Lightweight Glulam Frame Residential Houses / **Guo Chen** (Hunan University)

Parallel Session 2 15:10~16:58

S2-H New Design Criteria and Methods 2 (Chair : ) Main Hall

The Development and Use of the Continuous Column Concept / **Gregory MacRae** (University of Canterbury)

A Novel Approach to Performance-based Seismic Design of Bridge using Fuzzy Genetic Optimization / **Yu-Chi Sung** (National Taipei University of Technology)

Study on Seismic Retrofitting using Rocking Walls and Steel Dampers / **Hiroshi Ito** (Tokyo Institute of Technology)

A Study on Earthquake Response Analyses of Buildings using Energy Transmitting Boundary in the Time Domain / **Naohiro Nakamura** (Takenaka Corporation)

Performance Based Seismic Design for the Shanghai Tower / **Jiemin Ding** (Tongji University)

S2-H Concrete Building 2 (Chair : ) W931

Verification of Pushover Analysis with Chi-Chi Earthquake Damage Database of School Buildings / **Fu-Pei Hsiao** (National Center for Research on Earthquake Engineering)

Seismic Performance Evaluation of Industrial Building Structures in Turkey using Capacity Spectrum Method / **Baki Ozturk** (Nigde University)

System Identification and Damage Detection of Degrading Hysteresis of Reinforced Concrete Frames / **Chin-Hsiung Loh** (National Taiwan University)

Earthquake Response Evaluation using Equivalent SDOF System for Single-Story Asymmetric Buildings / **Hiroshi Kuramoto** (Osaka University)

Seismic Performance of RC Building by Cyclic Pushover Analysis / **Phaiboon Panyakapo** (Sripatum University)

Effects of Aspect Ratios on Seismic Behaviour of Concrete-filled Rectangular Steel Tubular Columns under Low Cycle Reversed Loading / **Lai Wang** (Shandong University of Science and Technology)

#### S2-H **Seismic Isolation & Semi-active Control (Chair : ) W932**

Three-dimensional Analysis for Square Seismic Isolation Bearings under Large Shear Deformation and High Axial Loads / **Masaru Kikuchi** (Hokkaido University)

Structural Response Control by Controllable Dampers setting at Inter-Story of Buildings / **Hideto Kanno** (Akita Prefectural University)

Experimental Validation of Market-based Control using Wireless Sensor and Actuator Networks / **Jerome P. Lynch** (University of Michigan)

#### S2-H **Seismic Diagnosis and Strengthening (Chair : ) W933**

Seismic Retrofitting of RC Columns by CF Rope and its Computational Model / **Takumi Shimomura** (Nagaoka University of Technology)

Train-Running Safety during Seismicity on Railway Viaduct Group and its Improvement / **Masamichi Sogabe** (Railway Technical Research Institute)

Shear Retrofitting Method for RC Beams using UFC Panels / **Koji Matsumoto** (Tokyo Institute of Technology)

A Comparative Experimental Study on Alternative Strengthening Methods for Historical Masonry Walls / **Fatih Sutcu** (Istanbul Technical University)

Seismic Resistance of Beam-Column Joints in Scaled Framed Bridges / **Kabir Shakya** (Tokyo Institute of Technology)

Rocking Behavior of Bridge Piers with Spread Footing under Cyclic Loadings and Earthquake Excitations / **H. H. Hung** (National Center for Research on Earthquake Engineering,

#### S2-H **Engineering Seismology2 (Microtremor and Seismic Exploration) (Chair : ) W934**

Site Effect Study in Taiwan Area From Dense Microtremor Survey / **Kuo-Liang Wen** (National Central University)

Analysis of Love-Wave Components in Microtremors / **Taku Tada** (National Institute of Advanced Industrial Science and Technology)

A Study on Array Microtremors Survey with Motions Generated by 3D Finite Element Models with Irregular Bedrock / **Huei-Tsyr Chen** (National Central University)

Evaluation of Site Effects in the Onikobe Basin in Miyagi Prefecture, from Ground Motion Data from Aftershocks of the Iwate-Miyagi Nairiku Earthquake in 2008 and Microtremor Measurements / **Kentaro Motoki** (Tokyo Institute of Technology)

Preliminary Analysis for Ground Structure around Damaged Area by 2008 Iwate-Miyagi Nairiku Earthquake / **Hitoshi Morikawa** (Tokyo Institute of Technology)

A Detailed Receiver Function Study of the Southern Dead Sea Transform (SDST) / **Ayman Mohsen** (Deutsches GeoForschungsZentrum)

#### S2-H **Geotechnical Engineering 2 (Soil Dynamic and Tunnels) (Chair : ) W935**

Difference between Viscous Damping and Hysteresis Damping in Earthquake Response Analysis of Ground / **Nozomu Yoshida** (Tohoku Gakuin University)

Seismic Damages of Mountain Tunnels in Japan and Case Studies / **Kazuhide Yashiro** (Tokyo Institute of Technology)

Isolation Method for Existing Cut and Cover Tunnel using Polymer Material / **Satoshi Kiryu** (JR East Consultants Company)

Initial Shear Modulus of Auckland Residual Soil from Field and Laboratory Tests / **Rolando P. Orense** (The University of Auckland)

Liquefaction Potential at Padang City : Comparison of Predicted and Observed Soil Liquefaction during the Padang Earthquake / **Adrin Tohari** (Research Center for Geotechnology)

#### S2-H **Non-Structural Components & Contents (Chair : ) W936**

Analysis and Experimental Approaches on Seismic Performance of Architectural Curtain Walls / **Baofeng Huang** (Tongji University)

Dynamic Characteristics of Japanese Style of Ceiling / **Shojiro Motoyui** (Tokyo Institute of Technology)

Estimation of Floor Acceleration Design Spectra / **Hossein Akhlaghi** (Iranian Earthquake Engineering Association)

#### K4 **Keynote Lecture 4 (Chair : Bill F. Spencer) Main Hall 17:15~18:00**

**Early Advances in Earthquake Engineering / Joseph Penzien (Professor Emeritus, University of California, Berkeley)**

**Welcome Party (Chair : Jiro Takemura) 18:15~20:00**

## March 4th (Thursday)

**Parallel Session 3 9:00~12:00**

#### S3-H **Young Researcher's Session (Advanced Technologies) Main Hall**

**(Chair : )**

Experimental and Theoretical Study on Self-centering Isolators Made of Shape Memory Alloy Metallic Rubber / **Suchao Li** (Harbin Institute of Technology)

Passive Energy Dissipation Device using U-shaped Steel Dampers Based on Quasi-Linear Motion Mechanism / **Jinhe Gao** (Nagoya University)

Adaptive Noise Variance Identification for Data Fusion using Subspace-based Technique / **Zhen Li** (Hong Kong University of ST)

Effective Buckling Length for Buckling Restrained Braces Considering Rotational Stiffness at Restrainer Ends / **Ryota Matsui** (Tokyo Institute of Technology)

An Experimental Study on ASNLSE Method for Health Monitoring of Base-Isolated Structures / **Qiang Yin** (Nanjing University)

**(Chair : )**

A Study on the Stability of Step-over Isolated Structure / **Yosuke Yamamoto** (Tokyo Institute of Technology)

Optimum Design of Particle Dampers under Random Excitation / **Zheng Lu** (Tonji University)

Measurement of Performance and Estimation of Scalability for Enhanced IES with High Performance Computing Techniques / **Gholamreza Sobhaninejad** (The University of

A New Model Parameter Identification Technique for Magnetorheological Dampers / **Aditya Venkatesan** (National Institute of Technology-Allahabad)

Torsional Seismic Response Reduction by Passive Control Device for Conventional Post-and-beam One-story Wooden House with Stiffness Eccentricity / **Yoshihiro Yamazaki** (Tokyo Institute of Technology)

#### S3-1 **Young Researcher's Session (Structural Engineering-Concrete) W931**

**(Chair : )**

Modeling of Diagonally Reinforced Concrete Coupling Beams / **David Naish** (University of California, Los Angeles)

The Effect of Angle's Crack on The Debonding of The Reinforced Beams by Polymer's Fiber of The FRP (Experimental and Modeling) / **Hassan Afshin** (Sahand University in

Effect on the Nonlinear Performance of Tall Buildings under the Earthquake due to the Simplification to Structural Systems for the Earthquake Risk Analysis / **Du Wenxue** (China Earthquake Administration)

An Evaluation of Vibration Comport on Reaction Mass Foundation with Shake Table System / **DaJung Jung** (Pusan National University)

Analytical and Experimental Study on RC Exterior Beam-Column Joints without Transverse Reinforcement / **Sangjoon Park** (University of California, Berkeley)

Damage Distribution of Buildings in Istanbul During the 1894 Marmara Sea, Turkey, Earthquake / **Masashi Morita** (Tokyo Institute of Technology)

**(Chair : )**

The Analysis of Non-linear Seismic Response between A Collapsed and A Serious Damage Infilled Frame Structure in Yingxiu Town - The Heavy Disaster Areas of Wenchuan 8.0 Earthquake / **Yan Peilei** (Harbin Engineering University)

Hysteresis Model of Square Reinforced Concrete Columns with Non-seismic Detailing / **Eddie S.S. Lam** (The Hong Kong Polytechnic University)

Seismic Analysis of RC Frame Structure with Passive Energy Dissipation Devices using Modal Pushover Analysis / **Gao Ma** (Harbin Institute of Technology)

Experimental Study of Unreinforced Masonry Pier Sub-Structures / **Charlotte Knox** (The University of Auckland)

Strength Deterioration Model Based on Effective Hysteretic Energy Dissipation for RC Members under Cyclic Loading / **Zhe Qu** (Tsinghua University)

Simulation-Based Fragility Relationships for Unreinforced Masonry Buildings / **Thomas Frankie** (University of Illinois)

#### S3-2 **Young Researcher's Session (Structural Engineering-Steel) W932**

**(Chair : )**

Assessment of the Seismic Performance of a Suspended Zipper Frame with Hybrid Testing / **Andreas Stavridis** (University Of California, San Diego)  
 Effects of Edge Distances on Shear Capacity of Anchor Bolt Fastenin Steel Column Base to Concrete Foundation / **Hayato Asada** (Tokyo Institute of Technology)  
 Seismic performance evaluation of the steel intermediate moment frame systems with RBS with bolted web / **Seong-Hoon Hwang** (Construction Research Center at Hanyang)  
 Evaluation of Plastic Energy Dissipation Capacity of Steel Beams under Various Loading Histories / **Yu Jiao** (Tokyo Institute of Technology)  
 The Influence of the Lateral Load Pattern on the Minimum Column-to-Beam Moment Strength / **Se Woon Choi** (Yonsei University)  
 System-level Seismic Evaluation of Partial-strength Semi-rigid Steel Frames using Hybrid Simulation / **Hussam Mahmoud** (University of Illinois)

(Chair : )

Numerical Simulation of Large Scale Seismic Frame Structures / **Yi-Jer Yu** (National Center for Research on Earthquake Engineering)  
 Evaluation of Rotation Capacity for Reduced Beam Section with Bolted web / **Ki-Hoon Moon** (Han Yang university)  
 Applicability of Simulated Ground Motions in Design of Tall Buildings in California / **Pierson Jones**, (University of California, Irvine)  
 Seismic behavior of a new steel beam-column connection using Steel Fiber Reinforced Cementitious Composite (SFRCC) / **Yao Cui** (Kyoto University)  
 Test on Retrofit Effects of Steel Beam-to-Column Connections with RC Floor Slabs / **Yulin Chung** (Kyoto University)

**S3-3 Young Researcher's Session (New Design Criteria & Methods, Earthquake Engineering Practice, and Human Behavior) W933**

(Chair : )

A Design Approach using Viscous-type Damper to Control Seismic Vibration of Slip-hysteretic Structure / **Wuchuan Pu** (Tokyo Institute of Technology)  
 Structural Damage Assessment Based on 3D Nonlinear Dynamic Response and Its Seismic Design / **Yongle Zhang** (Zhejiang University)  
 Seismic Response of Rocking Bridges Self-Centering Due to Gravity / **Mostafa Masoudi** (IUSS Pavia)  
 Analysis and Comparison of An Innovative Partial Isolation Method and Traditional Isolation Method for A Shaking Table Laboratory / **Yifei Ma** (Tongji University)  
 Static-Dynamic Analysis Method for Energy-Dissipated Design of Frame-Shear-Wall Structures with Dampers / **Gengwen Zhao** (Southeast University)  
 Response of RC Buildings under Multiple Earthquakes / **Adel Essam Abdelnaby** (University of Illinois at Urbana-Champaign)  
 Experimental Study on In-plane and Out-of-plane Behavior of PP-Band Retrofitted Masonry Walette Made of Shapeless Stones / **Kotaro Sakurai** (The University of Tokyo)

(Chair : )

Educational Activities To Promote Earthquake Preparedness using A Portable Virtual Reality System / **Shinsuke Tsubota** (Tokyo Institute of Technology)  
 Residents' Evaluation in Java 2006 Earthquake Post Disaster Settlement -Case Study of New Ngelepen, Sleman, Yogyakarta- / **Syam Rachma Marcillia** (Tokyo Institute of  
 Survey on Causes of Fatalities in Recent Japanese Earthquakes / **Masahiro Yoshimura** (Tokyo Institute of Technology)  
 Workshop for Disaster Imagination Improvement of Nursery School Leaders / **Mariko Abe** (The University of Tokyo)

**S3-4 Young Researcher's Session (Engineering Seismology) W934**

(Chair : )

Detailed Mapping of Geomorphologic Classification using High Resolution Satellite Image and Digital Elevation Model for Seismic Hazard Assessment / **Kazunori Ishii** (Tokyo Institute of Technology)  
 Analysis of the BICEP Borehole Array / **Liam Wotherspoon** (The University of Auckland)  
 Three-Dimensional Site Response at KiK-net Downhole Arrays / **Eric M Thompson** (Tufts University)  
 Ground Motion Selection and Scaling for Site Response Analysis / **Gokce Tonuk** (Bogazici University)  
 Imaging Sedimentary Layers of Metro Manila, Philippines from the Joint Inversion of Receiver Function and Surface-Wave Phase Velocity / **Rhommel Grutas** (Tokyo Institute of Technology)  
 Site Characterization using Spatial Autocorrelation Method in Linear and Triangular Arrays by Means of Ambient Vibration Measurements / **Fabio Upegui-Botero** (University of Puerto Rico at Mayagüez)  
 Time-frequency Energy Distribution of Wenchuan Earthquake Motions Based on Matching Pursuit Decomposition / **Dongwang Tao** (Harbin Institute of Technology)  
 A Quantitative Approach to Estimate Coseismic Displacements in the Near-Field from Strong-Motion Accelerographs: Example of the 2007 Niigata-Ken Chuetsu-Oki Earthquake, Japan / **Emmanuel H. Javelaud** (Tokyo Institute of Technology)  
 Development of a Forward-Inversion Crust Modeling Scheme for Accurate Strong-Ground Motion Prediction / **Pher Errol B. Quinay** (Tokyo Institute of Technology)  
 Effects of Water Depth Variation on Seismogram Synthesis in Oceanic Structures Based on a Hybrid Boundary Element Method / **Zheng-Hua Qian** (Tokyo Institute of Technology)  
 Development of Earthquake Experience System using Ground Motion Simulator "JISHIN the VUTON" / **Sou Adachi** (Hakusan Corporation)

**S3-5 Young Researcher's Session (Geotechnical Engineering) W935**

(Chair : )

Characterization of ERT as A New Non-invasive Monitoring Method of Liquefaction Process / **Suresh R Dash** (University of Oxford)  
 Large Deformation Analysis of Dynamic Behavior of Embankment on Liquefiable Sand Deposit using a Strain Space Multiple Mechanism Model / **Kyohei Ueda** (Kyoto University)  
 Additional Anchor Influence on Dynamic Behavior of Anchored Retaining Wall / **Ali Derakhshani** (The University of Tokyo)  
 Effect of stress state around tunnel on pseudo-static response of urban mountain tunnel in sand / **Shuhei Shibayama** (Tokyo Institute of Technology)  
 Dynamic Field Testing of Shallow Foundations Subjected to Rocking / **Thomas B Algie** (The University of Auckland)  
 Mechanical Behavior of Piled Raft Foundation in Sand Subjected to Static Horizontal Load / **Kouhei Sawada** (Tokyo Institute of Technology)  
 Simplified Dynamic Analysis of Pile Supported Structures in Liquefiable Soils / **Domenico Lombardi** (University of Bristol)  
 Evaluation of Pile Diameter Effect on p-y method precision, in seismic analysis of pile supported wharves / **Mohammad Sajjad Fayyazi** (University of Tehran)  
 lateral Resistance Reduction for Static Analysis of Lateral Spreading / **Christopher R McGann** (University of Washington)  
 Vertical Loads Effect on Lateral Pile Group Response on the Basis of Soil-pile-cap Interactions / **Mahmoud Nasser Hussien** (Kyoto University)  
 Seismic Performance and Communication Failure of Cellphone Towers in Iran's Seismic Zones, Case Study : Developing Structurel and Communicational Fragility Curves for 24m Monopole Tower / **Mehdi Sadeghi** (Azad university of Tehran)

**S3-6 Young Researcher's Session (Structural Engineering-Civil and Lifelines) W936**

(Chair : )

Ground-motion Selection for PEER Transportation Research Program / **Nirmal Jayaram** (Stanford University)  
 Damage Analysis of High Arch Dam including Contraction Joint and Cracking Nonlinearity / **Xiaowen Yao** (Zhejiang University)  
 Nonlinear behavior of reinforced concrete columns impacted by a tsunami water-borne shipping container / **Kavinda M. Madurapperuma** (Tokyo Institute of Technology)  
 Sensitivity Skewed Bridges Seismic Response to Structural Parameters / **Peyman Kaviani** (University of California, Irvine)  
 Effect of Fiber Reinforced Cement Composites on the Seismic Performance of Bridge Columns / **Richelle Zafra** (Tokyo Institute of Technology)  
 Effect of Finger Expansion Joints on Seismic Response of Bridges / **Guilian Quan** (Tokyo Institute of Technology)  
 Three Dimensional Nonlinear Finite Element Analysis of Seismic Pounding between Multi-Story Reinforced Concrete Buildings / **Deepak Raj Pant** (Tokyo Institute of Technology)  
 Experimental Testing of Innovative Confinement Techniques for Seismic Retrofitting of RC Bridge Columns / **Bassem Andrawes** (University of Illinois)  
 Experimental Study on Static and Dynamic Behavior of PP-band Mesh Retrofitted Adobe Masonry Structures / **Navaratnarajah Sathiparan** (The University of Tokyo)

Effect of Rubber Bearing's Modeling on Seismic Response of Base Isolated Highway Bridge / **Muht K. Razzaq** (Saitama University)

Mitigation of Residual Deformations of RC Bridge Piers using Steel Fiber Composite Bars as Longitudinal Reinforcement / **Mohamed F.M. Fahmy** (Ibaraki University)

Bayesian Network for Infrastructure Seismic Risk Assessment: Challenges and Opportunities / **Michelle T. Bensi** (University of California, Berkeley)

**President's Welcoming Speech (Chair : Kohji Tokimatsu) Main Hall 13:00~13:10**

**Kenichi Iga (President of Tokyo Institute of Technology)**

**K5 Keynote Lecture 5 (Chair : Chitoshi Miki) Main Hall 13:10~13:40**

**Self-Centering Damage-Free Seismic-Resistant Steel Frame Systems / Richard Sause (Professor, Lehigh University)**

**Parallel Session 4 13:55~15:43**

**S4-H Passive Control / Dynamic Test (Chair : ) Main Hall**

Performance-based Seismic Design of Building Systems with Dampers : Experimental Validation using Real-Time Hybrid Simulation / **James M. Ricles** (Lehigh University)

Experimental Seismic Response of a Full-Scale Seven-Story Mixed-Use Steel/Wood Apartment Building / **Steven E. Pryor** (Simpson Strong-Tie)

Cyclic Loading Tests on Buckling-restrained Braces using Round Steel Bar Cores and Double Steel Tubes / **Shunji Fujii** (Okabe Corporation)

Parametric Studies of Particle Dampers under Multi-Axis Excitations / **Xilin Lu** (Tongji University)

A Tracking System to Maximize the Efficiency of TMD / **Ali Bozer** (Bogazici University)

Practical Nonlinear Response Analysis Method of Viscoelastic Damper considering Temperature, Frequency, and Stain Dependencies / **Naohiro Nakamura** (Takenaka Corporation)

**S4-1 Seismic Evaluation & Retrofit of Concrete Building (Chair : ) W931**

Seismic Retrofit of RC or SRC Buildings with Prestressed Braces / **Susumu Kono** (Kyoto University)

Seismic Evaluation and Retrofit of RC Buildings by using Structural Walls / **Yeou-Fong Li** (National Taipei University of Technology)

Structural Retrofit for Depth Reduced Beams in Mid-rise Existing Reinforced Concrete Boxed Wall-buildings / **Yo Hibino** (Tokyo Institute of Technology)

A Brief Introduction to the New Standard for Seismic Appraisal of Existing Buildings in China / **Cheng Shaoge** (China Academy of Building Research)

Seismic Evaluation of Existing Facilities of Primary and Secondary Schools in Shanghai, China / **Haibei Xiong** (Tongji University)

Structural Retrofit of the Taipei Camphor Factory / **Chao-Hsun Huang** (National Taipei University of Technology)

**S4-2 Lifeline Systems and Multihazards (Chair : ) W932**

Multi-Hazard Resilient Bridges: Facts and Challenges / **George C. Lee** (University at Buffalo, State University of New York)

Earthquake Damage Assessment of Multiple Lifelines for System Interaction Analysis / **Nobuoto Nojima** (Gifu University)

Earthquake Disaster Restoration Support Technologies for Electric Power Distribution Equipment / **Yoshiharu Shumuta** (Central Research Institute of Electric Power Industry)

Modeling of Restoration Process associated with Critical Infrastructures and the Interdependency due to a Seismic Disaster / **Gaku Shoji** (University of Tsukuba)

Application of Disaster Chain Principle in the Earthquake Disaster Mitigation / **Yu Shizhou** (China Earthquake Administration)

**S4-3 Isolation, Seismic Response Control System and Seismic Response (Chair : ) W933**

Experimental Study of Rate-Dependent Mechanical Behavior of Laminated Rubber Bearings / **Takashi Imai** (Rubber Bearing Association)

Viscous Fluid Devices for an Italian Viaduct / **Lucia Faravelli** (University of Pavia)

Nonlinear Modeling and Seismic Performance of a Multi-Span Simply Supported Viaduct / **Ashok K. Jain** (Indian Institute of Technology, Roorkee)

Shake Table Test and Non-Linear Dynamic Analysis for a Bridge Model using Rigid-Plastic Dampers / **Takao Okada** (Public Works Research Institute)

**S4-4 Engineering Seismology3 (Long Period Motion) (Chair : ) W934**

Long-Period Ground Motion Simulation of Osaka Sedimentary Basin for a Hypothetical Nankai Subduction Earthquake / **Tomotaka Iwata** (Kyoto University)

Effects of Shallow Soil Layers on Propagation of Long-Period Ground Motion in Large Basin in 3D Numerical Simulation / **Hiroaki Yamanaka** (Tokyo Institute of Technology)

Broadband Strong-Motion Evaluation by a Hybrid Method for The Miyagi-Oki Earthquakes, Japan / **Susumu Ohno** (Tohoku University)

3D Subsurface Structural Model for Strong Motion Simulation around Lake Biwa using Earthquake Ground Motion Records / **Haruhiko Suzuki** (OYO Corporation)

An Evaluation of Long-Period Earthquake Motion for the Purpose of Structural Design / **Izuru Okawa** (Building Research Institute of Japan)

Shaking Table Test for Indoor Human Response and Evacuation Limit / **Toru Takahashi** (Chiba University)

Disaster Mitigation Activities of a High-Rise Building in the Shinjuku Station Area by Collaborating with Local Government and Communities / **Yoshiaki Hisada** (Kogakuin)

**S4-5 Geotechnical Engineering 3 (Soil-Structure Interactions) (Chair : ) W935**

performance-based earthquake evaluation of a single column bridge system / **Jinchi Lu** (University of California, San Diego)

Effects of Roughness of Shallow Foundations Surface on Superstructure response during a Strong Earthquake / **Shuji Tamura** (Kyoto University)

Centrifugal modeling of road embankment engulfed by Tsunami for its damage prediction / **Akihiko Hiro-oka** (Kyushu Institute of Technology)

Boundary Effects of Laminar Container in Centrifuge Shaking Table Test / **Chung-Jung Lee** (National Central University)

Distinct element analysis on uplift resistance of belled pile and multi-belled piles / **Tsuyoshi Honda** (Takenaka Corporation)

**S4-6 Tsunami 1 (Chair : ) W936**

Introduction of Japanese Coastal Wave Monitoring Network / **Toshihiko Nagai** (Port and Airport Research Institute, Japan)

Field Survey of the 2009 Samoa Earthquake Tsunami / **Shunichi Koshimura** (Tohoku University)

Differences of Tsunami Waves induced by Earthquakes, Submarine Landslides and Sea Floor Collapse / **Kam-tim Chau** (The Hong Kong Polytechnic University)

Verification of a Dynamic Tsunami Simulation Technique Based on Observation Records in Near-field / **Shusaku Inoue** (Tokyo Institute of Technology)

Recent Progress on Offshore Tsunami Observation / **Hiroyuki Matsumoto** (JAMSTEC)

Tsunami Loading-From Experiments to Field Load Test / **Panitan Lukkunaprasit** (Chulalongkorn University)

**Parallel Session 5 16:05~17:53**

**S5-H E-Defense Blind Analysis Contest Session (Chair : ) Main Hall**

Overview of 2009 E-Defense Blind Analysis Contest Results / **Tsuyoshi Hikino** (National Research Institute for Earth Science and Disaster Prevention)

2-D Blind Analyses of Full-Scale 5-Story Building with Steel Dampers / **Harumi Yoneda** (Takenaka Research and Development Institute)

3-D Blind Analyses of Full-Scale 5-Story Building with Steel Dampers / **Naohiro Nakamura** (Takenaka Corporation)

2- and 3-D Blind Analyses of Full-Scale 5-Story Building with Viscous Dampers / **Tadamichi Yamashita** (Kozo Keikaku Engineering)

**S5-1 Timber Structures (Chair : ) W931**

Testing of a Full-Scale Apartment Building at E-Defense: Design and Performance / **John W. van de Lindt** (Colorado State University)

Seismic Assessment for Restoration of Prambanan World Heritage Temples Damaged by the Central Java Earthquake of 2006, Indonesia / **Toshikazu Hanazato** (Mie University)

Experimental Study on Shear Behavior of Thick Structural Plywood Sheet Floor Framing with Opening / **Hiroyasu Sakata** (Tokyo Institute of Technology)

Recent Large-scale Wood Construction in Japan - Development and Consideration of Mid-rise Timber Based Structure - / **Hiroshi Isoda** (Shinshu University)

Instrumental Earthquake Intensities vs. Ductility Demand: Correlation Study using Data from Europe & The Middle East / **Juan Enrique Martinez-Rueda** (University of Brighton)

Indian Bamboo as An Alternate to Timber : A Critical Evaluation from Strength of Material Perspective / **Parthasarathi Mukhopadhyay** (Bengal Engineering and Science)

Analytical Study on Seismic Response Controlled Effect of Wooden Houses using Frame Model / **Kazuhiro Matsuda** (Tokyo Institute of Technology)

**S5-2 Human Behavior (Chair : ) W932**

Emergency and Transitional Shelter Post Earthquake: The Role of Social Capital in Javanese Community / **Ikaputra** (Gadjah Mada University)

Housing Reconstruction and Community / **Yoshimitsu Shiozaki** (Kobe University)

Human Behavior in Preparation for Earthquake Damage Mitigation / **Haruyuki Fujii** (Tokyo Institute of Technology)

Spatiotemporal Distribution of Railroad Users Facing Difficulty in Returning Home After A Devastating Earthquake / **Toshihiro Osaragi** (Tokyo Institute of Technology)

A human behavior model in replacement of wooden housing for earthquake damage mitigation / **Yusuke Meshitsuka** (Tokyo Institute of Technology)

#### S5-3 **Dynamic Analysis and Failure (Chair : ) W933**

Shake-Table Tests and Numerical Study of the Seismic Performance of Non-Ductile RC Frames with Masonry Infill Walls / **Benson Shing** (University of California, San Diego)

Shake Table Experiment of Reinforced Concrete Bridge Columns using E-Defense / **Kazuhiko Kawashima** (Tokyo Institute of Technology)

Seismic Progressive Collapse of Reinforced Concrete Frames and Bridges / **David T. Lau** (Carleton University)

Predicting In-Cabinet Response Spectrum by using Impact Hammer Tests / **Jintao Cui** (Kunsan National University)

Cracking Behavior of Reinforced Concrete Beams Repaired with Strain Hardening Cement-based Composites / **Yuichi Uchida** (Gifu University)

#### S5-4 **Earthquake Loss Estimation (Chair : ) W934**

Rapid Visual Seismic Vulnerability Assessment Tool and its application in disaster risk mitigation in urban areas / **Youb Raj Paudyal** (Ehime University)

Damage Estimation of Water Distribution Pipes following Recent Earthquakes in Japan / **Yoshihisa Maruyama** (Chiba University)

Post Quake Microzoning Study on Pisco and Tambo de Mora due to August 15th 2007 Pisco Quake / **Carlos Zavala** (Universidad Nacional de Ingeniería, Lima, Perú)

Enhancement of Earthquake and Tsunami Disaster Mitigation Technology In Peru: A SATREPS Project / **Fumio Yamazaki** (Chiba University)

Seismic Loss Estimation for Three Major Cities in Bangladesh / **Pennung Warnitchai** (Asian Institute of Technology)

#### S5-5 **Geotechnical Engineering 4 (Site Response) (Chair : ) W935**

Site Amplification Formula from Bedrock to Surface using Average Vs in Equivalent Surface Layer based on Vertical Array Records / **Takaji Kokusho** (Chuo-University)

Where Topographic Effects Responsible for Building Collapses in the 2001 Southern Peru Earthquake? / **Joseph Wartman** (Drexel University)

H/V Method Used to Qualify the Modification of Dynamic Soil Characteristics due to Ground Improvement Work by Means of Heavy Compaction Process A Case Study: the Former Givors's Glass Factory / **Stephane Brule** (Menard)

TBA / **Kohji Tokimatsu** (Tokyo Institute of Technology)

#### S5-6 **Tsunami 2 (Chair : ) W936**

Numerical Simulation of Tsunami Generation / **Taro Kakinuma** (Kagoshima University)

Numerical Simulation of Hydroacoustic Effects in Tsunami Source / **Sergey Kolesov** (Moscow State University)

Hydrodynamics of Boulder Transport on a Shore Platform on Phi Phi Island during the 2004 Tsunami / **Bao J.Q.** (The Hong Kong Polytechnic University)

Real-Time Tsunami Simulation accelerated by GPU / **Marlon Arce Acuna** (Tokyo Institute of Technology)

**Banquet (Chair : Toru Takeuchi) Meguro Gajoen 19:00~21:00**

## March 5th (Friday)

**Parallel Session 6 9:00~10:48**

#### S6-H **Structures Miscellaneous Issues (Chair : ) Main Hall**

Educational Programs at the PEER Center That Encourage Multidisciplinary Understanding / **Heidi Faison** (University of California Berkeley)

Protection of Mediterranean Historical Structures against Earthquakes using Fragility Curves / **Syrmakezis A. Costas** (National Technical University of Athens)

Improving Seismic Performance of Brick Masonry Junctions / **Sekhar Chandra Dutta** (Indian Institute of Technology)

Towards Earthquake Safer Non-engineering Houses by Technological and Social Approaches / **Kimiro Meguro** (The University of Tokyo)

Earthquake Resistance Analysis on A Double Circuit Intermediate Tower Consisted of Steel Tubes and Angel Steels / **Wang Lai** (Shandong University of Science and Technology)

The Investigation and Analysis of Structure Earthquake Damage in Dujiangyan / **Zhong Jiangrong** (China Earthquake Administration)

#### S6-1 **Steel Structures (Building) 1 (Chair : ) W931**

Full Scale Shaking Table Collapse Experiment on 4-Story Steel Moment Frame: Part 1 Outline of the Experiment / **Satoshi Yamada** (Tokyo Institute of Technology)

Full Scale Shaking Table Collapse Experiment on 4-Story Steel Moment Frame: Part 2 Detail of Collapse Behavior / **Keiichiro Suita** (Kyoto University)

Numerical Simulation of Collapse using Collaborative Structural Analysis System / **Motohide Tada** (Osaka University)

Parallel FE-Analysis for Collapse Simulation of 4-Story Steel Building Frame / **Tomoshi Miyamura** (Nihon University)

A Steel Database for Component Deterioration of Tubular Hollow Square Steel Columns under Varying Axial Load for Collapse Assessment of Steel Structures under Earthquakes / **Dimitrios G. Lignos** (Kyoto University)

Collapse Mechanism for Steel Moment Resisting Frames with Different Column Bases / **Katsunori Kaneda** (Structural Design PLUS ONE Co., Ltd)

#### S6-2 **Spatial Structures (Chair : ) W932**

Seismic Risk Evaluation of School Gymnasia based on Dynamic Nonlinear Response Analysis / **Shoji Nakazawa** (Toyohashi University of Technology)

Response Control of Lattice Dome Roofs using Seismic Isolation / **Toru Takeuchi** (Tokyo Institute of Technology)

Shaking Table Tests of Cylindrical Lattice Shell Roofs supported by Substructure with Viscous Damper subjected to Horizontal Earthquake Motions / **Tomohiko Kumagai** (Tokyo Institute of Technology)

Structural Design and Research of A Large-span Single-layer Ellipsoid Latticed Shell with Complex Boundary / **Zhang Hui** (Shanghai IADR)

#### S6-3 **Steel Structures and Cable-stayed Bridges ( ) W933**

Fatigue Behavior of Load-Carrying Cruciform Joints with Weld Defect under Cyclic Plastic Strain / **Takeshi Hanji** (Tokyo Institute of Technology)

Effect of Plate Thickness on Low Cycle Fatigue Strength of Cruciform Welded Joints / **Koji Kinoshita** (Gifu University)

Residual Strength of Damaged Steel Bridge Pier with Cylindrical Cross Section and its Repair Method / **Moriaki Suzuki** (Aichi Institute of Technology)

Elasto-Plastic Behavior of Spiral Steel Pipes under Cyclic Loading / **Kiyoshi Ono** (Tokyo Institute of Technology)

The Application to the Viaduct of the Energy Dissipation Connectors of Girders in Consideration of Axial and Transverse Directions / **Kentaro Tanaka** (Kanto Gakuin University)

Seismic Fragility Analysis of Long-span Cable-stayed Bridges / **Jiao Chi-yu** (Beijing University of Civil Engineering and Architecture)

Identifying Cable Tension Loss and Deck Damage in a Cable-Stayed Bridge using a Moving Vehicle / **Shih-Hsun Yin** (National Taipei University of Technology)

#### S6-4 **Engineering Seismology 4 (Seismic hazard and risk) (Chair : ) W934**

Seismic Hazards of Gyeongju Historic Areas / **Heon Joon Park** (KAIST)

Signal Processing and Probabilistic Seismic Hazard Analysis Tools for Characterizing the Impact of Near-Fault Directivity / **Jack W. Baker** (Stanford University)

The Gutenberg-Richter b-Value of The Korean Peninsula for a Seismic Hazard Analysis / **Jeong-Moon Seo** (Korea Atomic Energy Research Institute)

Upthrow of Objects during Recent Earthquakes in Japan / **Saburoh Midorikawa** (Tokyo Institute of Technology)

Seismic Demands on California High Speed Rail / **Tat S. Fu** (University of Southern California)

Distribution of Building Damage Areas Detected from Satellite Optical Images of the 2006 Central Java, Indonesia, Earthquake / **Hiroyuki Miura** (Tokyo Institute of Technology)

Building Damage Estimation using Seismic Intensity and Satellite L-band SAR Imagery / **Masashi Matsuoka** (Advanced Industrial Science and Technology)

#### S6-5 **Geotechnical Engineering 5 (Liquefaction) (Chair : ) W935**

Non-linear dynamic modeling of bridge embankments underlain by liquefied soil / **Ross W. Boulanger** (University of California, Davis)

Seismic Stability of Gravity Type Quay Wall on Desaturated Loose Sand / **Jiro Takemura** (Tokyo Institute of Technology)

Centrifuge Model Tests on Effect of Deep Mixing Wall Spacing on Liquefaction Mitigation / **Masaki Kitazume** (Tokyo Institute of Technology / Port and Airport Res. Inst.)

In-situ Air Injection as Liquefaction Countermeasure and its Evaluation by Multiphase Flow Simulation / **Mitsu Okamura** (Ehime University)

Effects of Calcite Precipitation on Liquefaction Resistance of Sand / **Kazuyuki Hayashi** (Ehime University)

**S6-6 Information and Computing Technology (Chair : ) W936**

Urban Structural Damage Characterization using Optical Imagery / **Tara Hutchinson** (University of California, San Diego)

Prediction and Utilization of Spatial Geotechnical Information for Administrative Decision Support on Earthquake Disaster in Urban Area / **Chang-Guk Sun** (Korea Institute of Geoscience and Mineral Resources)

A New Disaster Management Manual for Disaster Reduction / **Shinya Kondo** (The University of Tokyo)

Parallelized Fast Multiple BEM for Seismic Analysis in Time-Domain / **Sohichi Hirose** (Tokyo Institute of Technology)

Analytical Evaluation for Local Buckling Behavior of Steel Framed Structures / **Takahiro Ohtsuka** (Meijo University)

**K6 Keynote Lecture 6 (Chair : ) Main Hall 11:10~11:40**

**Seismic Design for Resilient Society / Akira Wada (President, ANCER / Professor, Tokyo Institute of Technology)**

**SL Special Lecture (Chair : Kazuhiko Kasai ) Main Hall 11:40~12:10**

**Preliminary Reconnaissance Report - 12 January 2010 Haiti Earthquake / Eduardo A. Fierro (BFP Engineers, Inc.)**

**An Overview of Geotechnical Field Observations of the January 12, 2010 Haiti Earthquake / Russell Green (Virginia Tech )**

**Group Photo 12:20~12:30**

**Parallel Session 7 13:30~15:18**

**S7-H Earthquake Engineering Practice (Chair : ) Main Hall**

Selection of Earthquake Records for Time-history Analysis of Structures / **Abbas Moustafa** (Kyoto University)

Analysis of Earthquake Damage for Various Types of Buildings Structures in Wenchuan Earthquake / **Sun Bai-tao** (China Earthquake Administration)

Bi-spectra for Two-way Asymmetric-plan Structures under Bi-directional Ground Excitations / **Jui-Liang Lin** (National Center for Research on Earthquake Engineering Research)

An Evaluation of Cost Effectiveness of New Technology for Seismic Mitigation in Gansu during Wenchuan Earthquake / **Yongfeng Du** (Lanzhou University of Technology)

Approximate Incremental Dynamic Analysis using Modal Pushover / **Sang Whan Han** (Hanyang University)

**S7-1 Steel Structures (Building) 2 (Chair : ) W931**

Performance of Steel Frame Structures with Controlled Buckling Mechanism in the Knee Braces / **Hsieh-Lung Hsu** (National Central University)

Shake Table Study of Dynamic Friction between Steel and Mortar for Seismic Applications in Structures / **Jason McCormick** (University of Michigan)

Effect of Vertical Non-Uniform Ground Motion on Seismic Response of Large Span Structures / **Feng Liu** (Shandong University of Science & Technology)

Cyclic Behavior and Collapse Mode of High Strength Steel H-Section Beams / **Kikuo Ikarashi** (Tokyo Institute of Technology)

Plastic Deformation Capacity and Post Buckling Behavior of H-Shaped Beam with Large Depth-Thickness Ratio under Cyclic Loading / **Tao Wang** (Tokyo Institute of Technology)

Crack Fracture of H-Section Cantilever Beam under Strong Cyclic Load / **Katsuhiko Goto** (Miyakonojo National College of Technology)

**S7-2 Health Monitoring & Sensing System (Chair : ) W932**

Implementation of Bio-informatics on Structural Health Monitoring / **Tzu-Kang Lin** (National Center for Research on Earthquake Engineering)

Structural Control using Global Vibration Sensing and Model Updating Based on Local Infrared Imaging / **Chun-Hung Lin** (University of California, Santa Barbara)

Statistical-based Structural Damage Detection using Strain Power Mode Shape / **Eun Hyung Cho** (POSCO Engineering & Construction)

A High Resolution Distributed Moisture Sensing System to Quantify Earthquake Induced Void Redistribution / **Xiong Yu** (Case Western Reserve University )

Application of Different Continuous Wavelet Functions on Cylindrical Guided Wave Signals for Underground Pipe Inspection / **Rais Ahmad** (University of Connecticut)

**S7-3 Structural Concrete (Chair : ) W933**

Piezoresistive Cement-Based Sensors For Real-time Structural Health Monitoring During Earthquakes / **Nemy Banthia** (The University of British Columbia)

A Precast Concrete Bent System for Bridges in Seismic Regions / **John Stanton** (University of Washington)

Experimental Study on Shear Failure Mechanism of Circular Reinforced Concrete Beams / **Ken Watanabe** (Tokyo Institute of Technology)

Experimental Study for Shear Carrying Capacity of Segmental Concrete Beams with External Tendons and Dry Joint / **Dinh Hung Nguyen** (Tokyo Institute of Technology)

Seismic Response of R/C Structures Subjected to Simulated Ground Motions Compatible with Design Spectrum / **Dae-Han Jun** (Dongseo University)

**S7-4 Socio-Economic Issues (Chair : ) W934**

Development of integrated disaster information system and information management / **Kimiro Meguro** (The University of Tokyo)

The Meanings of the Approval System for Business Continuity Ability of Construction Companies / **Hiroaki Maruya** (Tokyo Institute of Technology)

Mining Critical Infrastructure Interdependency Relationships to Mitigate Disasters using GSP / **Chien-Cheng Chou** (National Central University)

Economic Impacts Caused by Building and Transportation Infrastructure Damages : Application of Interregional Commodity Flow Model to the 1995 Hanshin Awaji Earthquake Disaster / **Yoshio Kajitani** (Central Research Institute of Electric Power Industry)

Relative Analysis between a Community Disaster Recovery Potential and Social Capital / **Emi Ishibashi** (University of Tsukuba)

Effectiveness of a Sports Festival Style of Disaster Drill by Picked Community Groups in Their Capacity Building for Responding to Earthquake Disasters / **Masaki Fujioka** (Tokyo Institute of Technology)

Globalization and Localization of Disaster Impact : Examination for Global Propagation / **Yasuhide Okuyama** (Tokyo Institute of Technology)

**S7-5 Geotechnical Engineering 6 (Soil-Pile Interactions) (Chair : ) W935**

A 3D Soil-Structure Interaction Computational Framework / **Ahmed Elgamal** (University of California, San Diego)

Response Characteristics and Failure Mechanisms of Pile Foundations in Liquefiable Soil / **Sumanta Haldar** (I.I.T. Bhubaneswar)

Effects of Spatial Variation of Laterally Spreading Ground on Stress Distributions within Pile Groups / **Hiroko Suzuki** (Tokyo Institute of Technology)

Kinematic Bending Moments of Piles : An Experimental Study / **Subhamoy Bhattacharya** (University of Bristol)

Simulation of Soil-pile-structure Interaction through Multi-dimensional Shaking Table Tests using E-Defense Facility / **Hiroyuki Yoshida** (Tokyo Electric Power Services Cot, Ltd.)

Simulation Analyses of Shaking Table Test on Soil-pile-structure Model with Semi-rigid Pile Head Connections / **Sadayuki Ishizaki** (Taisei Corporation)

**K7 Keynote Lecture 7 (Chair : ) Main Hall 15:40~16:10**

**Seismic Performance of Concentrically Braced Steel Frames: Past and Future / Stephen Mahin (Director, PEER / Professor, University of California, Berkeley)**

**Closing Session (Award Presentation) (Chair : ) Main Hall 16:10~16:30**

**Closing Remarks / Sabroh Midorikawa (Tokyo Institute of Technology)**

**Short Field Trip to Tokyo Tech Buildings Retrofitted by Steel Dampers (EM : Toru Takeuchi)**

**Immediately after closing session, for one hour approximately**