

## Monday, October 16th, 2017

### Opening Ceremony

Time: 8:30-9:00, Monday, October 16th, 2017

Location: Room A

Host: Mingwu Yuan (*EC member of IACM, Former Vice President of IACM and Former President of CACM, Peking University, China*)

Speakers: Zhuo Zhuang (*President of CACM, Tsinghua University, China*)

Yangbin Yang (*President of APACM, Taiwan University, China*)

Kenjiro Terada (*Vice President of IACM, Tohoku University, Japan*)

Fei Xu (*President of Southwest Jiaotong University, China*)

### 1A Plenary Lecture 1

Time: 9:00-9:40, Monday, October 16th, 2017

Location: Room A

Chair: Kenjiro Terada (*Tohoku University, Japan*)

PL01 (Time: 9:00-9:40)

#### **Trans-Scale Simulation of Aeolian Sand/Dust Transport and Landform Evolution Process**

*Xiaojing Zheng (Xidian University, Xi'an, China)*

### 2A Plenary Lecture 2

Time: 9:40-10:20, Monday, October 16th, 2017

Location: Room A

Chair: Kenjiro Terada (*Tohoku University, Japan*)

PL02 (Time: 9:40-10:20)

#### **Development of Integrated Earthquake Simulation Enhanced with High Performance Computing**

*Muneo Hori (The University of Tokyo, Japan)*

-----Coffee Break (10:20-10:40) -----

**3A Semi-Plenary Lecture 1**

Time: 10:40-11:10, Monday, October 16th, 2017

Location: Room A

Chair: Yao Zheng (*Zhejiang University, China*)

SPL01 (Time: 10:40-11:10)

**2D and 2.5D Responses of Long Underground Tunnels to Moving Train Loads: A Comparison Study**

*Yeong-Bin Yang (Taiwan University, China)*

**3 B Semi-Plenary Lecture 2**

Time: 10:40-11:10, Monday, October 16th, 2017

Location: Room B

Chair: Qing Zhang (*Hehai University, China*)

SPL02 (Time: 10:40-11:10)

**Multi-scale and –physics tsunami disaster simulation for disaster prevention and mitigation**

*Mitsuteru Asai (Kyushu University, Japan)*

**4A Semi-Plenary Lecture 3**

Time: 11:10-11:40, Monday, October 16th, 2017

Location: Room A

Chair: Yao Zheng (*Zhejiang University, China*)

SPL03 (Time: 11:10-11:40)

**Stochastic process of earthquake motion phase and its inherent features**

*Tadanobu Sato (Southeast University, China)*

**4B Semi-Plenary Lecture 4**

Time: 11:10-11:40, Monday, October 16th, 2017

Location: Room B

Chair: Qing Zhang (*Hehai University, China*)

SPL04 (Time:11:10-11:40)

**Ratchetting and Ratchetting-fatigue Interaction of Metallic Materials: Experiments and Modeling**

*Guozheng Kang (Southwest Jiaotong University, China)*

----- Lunch (12:00-13:00) -----

**5B MS02**

Time: 13:00-15:20, Monday, October 16th, 2017

Location: Room B

Chair: Masao Ogino, Qinghe Yao

MS0226 (Time: 13:00-13:20)

**Iterative Substructuring Methods for Solving Large-Scale Complex Symmetric Linear Systems in Electromagnetic Field Analysis**

*\*Lijun Liu, Masao Ogino (Nagoya University, Japan)*

MS02282 (Time: 13:20-13:40)

**High Performance Library for Small-Sized Matrix and Tensor Operations in Solid Mechanics**

*\*Hiroshi Kawai, Ryuji Shioya (Toyo University, Japan)*

MS0264 (Time: 13:40-14:00)

**An MPI Parallelization for Noise Simulation by Time-Domain Fast Multipole Boundary Element Method**

*\*Takahiro Takagi (Chuo University, Japan), Hitoshi Yoshikawa (Kyoto University-Department of Advanced Mathematical Sciences, Japan), Toru Takahashi (Nagoya University-Department of Mechanical Science and Engineering, Japan), Kazuo Kashiwama (Chuo University, Japan)*

MS0222 (Time: 14:00-14:20)

**CFD Simulation and Evacuation Analysis in a Subway Station Fire**

*Kecheng Chen, Jiabin Chen, \*Qinghe Yao (Sun Yat-Sen University, China)*

MS0263 (Time: 14:20-14:40)

**A Study on Parallel Fluid-Structure Interaction Simulations Using a SPH Code and the Adventure through REVOCAP\_Coupler**

*Masao Ogino (Nagoya University, Japan), Mitsuteru Asai (Kyushu University, Japan), \*Takuya Iwama (Nagoya University, Japan)*

MS0227 (Time: 14:40-15:00)

**Experiment and Simulation of the Air Conditioning System in a Small Data Center**

*\*Zichao Jiang, Hang Bai, Nuo Xu, Qinghe Yao (Sun Yat-Sen University, China)*

MS0270 (Time: 15:00-15:20)

**Parallel Analysis of Thermal Problem Using Two Free and Open Source Software Programs (Ug4 Simulation Framework and Adventure System)**

*\*Hongjie Zheng, Ryuji Shioya, Hiroshi Kawai (Toyo University, Japan)*

**5C MS12, MS22**

Time: 13:00-15:20, Monday, October 16th, 2017

Location: Room C

Chair: Takane Hori, Takamasa Iryo, Kenjiro Terada

MS1229 (Time: 13:00-13:20)

**A Proposal of Monitoring and Forecasting System for Crustal Activity in and Around Japan Using a Large-Scale High-Fidelity Finite Element Simulation Codes**

*\*Takane Hori (Japan Agency for Marine-Earth Science and Technology, Japan), Tsuyoshi Ichimura, Kohei Fujita (The University of Tokyo, Japan), Agata Ryoichiro (Japan Agency for Marine-Earth Science and Technology, Japan), Takuma Yamaguchi (The University of Tokyo, Japan), Narumi Takahashi (National Research Institute for Earth Science and Disaster Resilience, Japan)*

MS1206 (Time: 13:20-13:40)

**Development of Fast Scalable Finite Element Solver for Reducing Earthquake Disasters**

*\*Tsuyoshi Ichimura, Kohei Fujita, Takuma Yamaguchi, Muneo Hori, Wijerathne Lalith (The University of Tokyo, Japan)*

MS1271 (Time: 13:40-14:00)

**Practices of Earthquake Hazard and Disaster Assessment Using Integrated Earthquake Simulation**

*Hitoshi Morikawa (Tokyo Institute of Technology, Japan), Tsuyoshi Ichimura, Muneo Hori, Lalith Wijerathne, \*Kahori Iiyama (The University of Tokyo, Japan)*

MS1257 (Time: 14:00-14:20)

**A Computational Framework for the City-Scale Seismic Simulations of Buildings**

*\*Zhen Xu (University of Science and Technology Beijing, China), Xinzheng Lu (Tsinghua University, China), Kincho Law (Stanford University, USA)*

MS12326 (Time: 14:20-14:40)

**Development of Traffic Demand and Flow Simulator for a Road Network Damaged by a Disaster**

*\*Takamasa Iryo, Junji Urata, Genaro Peque Jr., Kazuki Fukuda, Riki Kawase (Kobe University, Japan), Lalith Wijerathne, Wasuwat Petprakob (University of Tokyo, Japan)*

MS1265 (Time: 14:40-15:00)

**HPC Applications of a Coupled DEM and SPH Simulation for Tsunami Disaster**

*\*Daisuke Nishiura, Mikito Furuichi, Hide Sakaguchi (Japan Agency for Marine-Earth Science and Technology, Japan)*

MS2278 (Time: 15:00-15:20)

**Modeling High Temperature Anneal Hardening in Au Submicron Pillar by Developing Coupled Dislocation Glide-Climb Model**

*Zhanli Liu, \*Fengxian Liu (Tsinghua University, China)*

**5D MS15**

Time: 13:00-15:20, Monday, October 16th, 2017

Location: Room D

Chair: Shinobu Yoshimura, Rong Tian

MS1501 (Time: 13:00-13:20)

**Failure of Composite Laminated Structures Irradiated by Laser**

*\*Jian Bai, Jian Long (Beijing University of Technology, China)*

MS1580 (Time: 13:20-13:40)

**Seismic Motion Analysis of Furniture Placed in a Reinforced Concrete Building Using Fem**

*\*Koichi Kobayashi, Toshiki Miura (University of Tsukuba, Japan), Takuzo Yamashita (National Research Institute for Earth Science and Disaster Resilience, Japan), Daigoro Isobe (University of Tsukuba, Japan)*

MS1508 (Time: 13:40-14:00)

**Unprecedented Resolution of Dam Structural Analysis: Implicit Thermo-Mechanical Coupled Contact Simulation on Tianhe-Ii**

*\*Mozhen Zhou, Jingtao Wang, Yang Li (CAEP, China), Bingyin Zhang (Tsinghua University, China), Rong Tian (CAEP, China)*

MS15202 (Time: 14:00-14:20)

**Optimization Design of Buckling Capacity of Thin Walled Stiffened Cylindrical Shells**

*\*Piao Xue, Lianchun Long, Yang Li (Beijing University of Technology, China)*

MS15327 (Time: 14:20-14:40)

**Large-Scale Collapse Simulation of Large Span Multi-Storey Building under Blast Loading**

*\*Fan Zeng (CAEP, Software Center for High Performance Numerical Simulation, China, China)*

MS1579 (Time: 14:40-15:00)

**Petapar and Its Large-Scale Applications**

*\*Rong Tian, Fan Zeng, Yingrui Wang (IAPCM, China)*

MS1507 (Time: 15:00-15:20)

**A Bridge Wash-Out Simulation Using a Stabilized Isph Incorporated with a Multi-Body Dynamics Based on the Impulse-Based Contact Force Method**

*\*Yi Li (Kyushu University, Japan)*

**5E MS07**

Time: 13:00-14:40, Monday, October 16th, 2017

Location: Room E

Chair: Hiroki Tamai

MS0792 (Time: 13:00-13:20)

**A Numerical Model for the Bond Strength Between Reinforcement Bar and Concrete with Corrosion under Dynamic Loads**

*\*Hiroki Tamai, Yoshimi Sonoda (Kyushu University, Japan)*

MS0702 (Time: 13:20-13:40)

**Numerical Simulation of Rainfall-Induced Landslides with Two-Level Gradient Smoothing Meshfree Formulation**

*\*Junchao Wu (Xiamen University, China)*

MS07322 (Time: 13:40-14:00)

**Efficient Quadrature-Based Superconvergent Isogeometric Frequency Computation with Macro-Integration Cells**

*\*Feixu Pan (Xiamen University, China)*

MS0747 (Time: 14:00-14:20)

**Numerical Simulation of Polyurea Based Sandwich Composite Materials**

*\*Fengyuan Yang (Tsinghua University, China)*

MS0794 (Time: 14:20-14:40)

**Meshfree Methods and Isogeometric Analysis: A Reproducing Kernel Unification**

*\*Dongdong Wang (Xiamen University, China)*

**5F MS04**

Time: 13:00-15:20, Monday, October 16th, 2017

Location: Room F

Chair: Decheng Wan

MS0414 (Time: 13:00-13:20)

**An Interpolation Scheme on MPS-FE Coupled Method for FSI with Non-Conforming Interface**

*\*Chengping Rao (Shanghai Jiao Tong University, China)*

MS0415 (Time: 13:20-13:40)

**Vortex-Induced Vibration (VIV) of a Flexible Cylinder Experiencing Combined Uniform and Oscillatory Flow**

*\*Di Deng (Shanghai Jiao Tong University, China)*

MS0416 (Time: 13:40-14:00)

**Numerical Simulation of Tuned Liquid Damper Filled with Different Fluids by MPS Method**

*\*Xiao Wen (Shanghai Jiao Tong University, China)*

MS0417 (Time: 14:00-14:20)

**Influence of Wind Shear Model on Coupled Aero-Hydrodynamics of a Floating Offshore Wind Turbine**

*\*Yang Huang (Shanghai Jiao Tong University, China)*

MS04326 (Time: 14:20-14:40)

**A Cut-Cell Method for Compressible Two-Phase Flow and Its Applications in the Bubble Collapse in Water**

*\*Jian-Yu Lin (China Academy of Engineering Physics, China)*

MS0423 (Time: 14:40-15:00)

**Robust Design Optimization of Ship Hull Form Based on CFD Considering Uncertainty**

*\*Aiqin Miao (Shanghai Jiao Tong University, China)*

MS0418 (Time: 15:00-15:20)

**Numerical Investigation on the Vortex-Induced Motion of Semi-Submersible Platforms under Different Draft Conditions**

*\*Zhenghao Liu (Shanghai Jiao Tong University, China)*

-----Coffee Break (15:20-15:40) -----

**6B MS08**

Time: 15:40-18:40, Monday, October 16th, 2017

Location: Room B

Chair: Xueling Fan

- MS0882 (Time: 15:40-16:00)  
**Numerical Analysis for the Pattern Formation in Diffusion-Induced Cracks**  
*\*Sayako Hirobe, Kenji Oguni (Keio University, Japan)*
- MS0847 (Time: 16:00-16:20)  
**Development of Crack Propagation Analysis System Taking into Account Welding Residual Stress and Crack Coalescence**  
*\*Masahiro Ono, Hiroshi Okada, Yasunori Yusa (Tokyo University of Science, Japan)*
- MS08334 (Time: 16:20-16:40)  
**Scattering Attenuation of SH-Waves in Fiber-Reinforced Composites with Partial Imperfect Bonding Interfaces**  
*Lian Liu, \*Longhai Zeng, Ning Hu, Xuanzhao You (Chongqing University, China)*
- MS0842 (Time: 16:40-17:00)  
**Study the Dynamic Crack Path in Brittle Material under Thermal Shock Loading by Phase Field Modeling**  
*\*Dongyang Chu, Xiang Li (Tsinghua University, China)*
- MS08330 (Time: 17:00-17:20)  
**Dynamic Crushing of Lattice Shell Structures**  
*Li-Ming Chen, \*Jian Zhang, Bing Du (Chongqing University, China)*
- MS0862 (Time: 17:20-17:40)  
**Numerical Study on the Effect of Confining Pressure and Diametric Forces on Fracture Behavior of CCBD Specimens Using the Interaction Integral Method**  
*\*Zhiyong Wang (Taiyuan University of Technology, China)*
- MS0873 (Time: 17:40-18:00)  
**Large-Deformation Analysis Using Coupling-Matrix-Free Iterative S-Version FEM with Implicit Nonlinear Solution Algorithm**  
*\*Daiji Toyama, Yasunori Yusa, Hiroshi Okada (Tokyo University of Science, Japan)*
- MS0877 (Time: 18:00-18:20)  
**Theoretical and Numerical Prediction of Crack Path in the Material with Anisotropic Fracture Toughness**  
*\*Zhanli Liu (Tsinghua University, China)*
- MS0833 (Time: 18:20-18:40)  
**Characterization Model for Thermal Shock Resistance of Fiber Reinforced Brittle Matrix Composites Over a Wide Temperature Range**  
*\*Yong Deng (Chongqing University, China)*



**6C MS01, MS10**

Time: 15:40-18:40, Monday, October 16th, 2017

Location: Room C

Chair: Fangsen Cui, Mao Kurumatani

- MS0118 (Time: 15:40-16:00)  
**Evaluation of Stent Performance by Computational Simulation**  
*Fangsen Cui, \*Gideon Praveen Kumar (Agency for Science, Technology and Research Institute of High Performance Computing, Singapore), Gongfa Chen (Guangdong University of Technology, China)*
- MS0132 (Time: 16:00-16:20)  
**Numerical Simulation of Head Dynamic Process and Potential Mechanism of Brain Injury During Blast Loading**  
*Xiaochuan You, \*Zhijie Li (Tsinghua University, China)*
- MS0152 (Time: 16:20-16:40)  
**Numerical Study of Inhaled Particle Deposition in Human Upper Respiratory Tract**  
*\*Xiaoyu Xu, Wenguo Weng (Tsinghua University, China)*
- MS0183 (Time: 16:40-17:00)  
**Finite Element Analyses of Intertrochanteric Fractures with an Inhomogeneous Material Model**  
*\*Zongchao Liu, Gongfa Chen (Guangdong University of Technology, China)*
- MS1014 (Time: 17:00-17:20)  
**Numerical Simulation of Three-Stage Failure with Dynamic Contact Based on Co-Rotational Technique**  
*\*Shun Suzuki, Kenjiro Terada, Shuji Moriguchi (Tohoku University, Japan), Norio Takeuchi (Hosei University, Japan)*
- MS1017 (Time: 17:20-17:40)  
**Large Displacement Analysis and Collapse Detection for Framed Structures Using HPM**  
*\*Kiyomichi Yamaguchi (Hosei University, Jip Techno Science Corporation-Structural Engineering Division, Japan), Kazuto Yamamura (Nippon Steel & Sumitomo Metal Corporation, Japan), Norio Takeuchi (Hosei University, Japan), Kenjiro Terada (Tohoku University, Japan)*
- MS1084 (Time: 17:40-18:00)  
**Basic Study on Large Scale Fracture Simulation of Rc Members Using Damage Model Based on Fracture Mechanics**  
*\*Yuto Soma, Mao Kurumatani (Ibaraki University, Japan)*
- MS1097 (Time: 18:00-18:20)  
**Failure Mode Evaluation of Surface Earthquake Fault**  
*\*Marina Okawa, Shun Suzuki (Tohoku University, Japan), Shinsuke Takase (Hachinohe Institute of Technology and Architecture, Japan), Shuji Moriguchi, Kenjiro Terada (Tohoku University, Japan), Mao Kurumatani (Ibaraki University, Japan)*

MS1043

(Time: 18:20-18:40)

**Molecular Dynamics Study of Strengthening Mechanism of Nanolaminated Graphene/Cu Composites under Compression**

*\*Shayuan Weng (Chongqing University, China)*

**6D MS13, NMS86**

Time: 15:40-18:40, Monday, October 16th, 2017

Location: Room D

Chair: Shigenobu Okazawa

- MS1313 (Time: 15:40-16:00)  
**Development of a Robust Contact Algorithm for Fragmentation Simulations**  
*\*Shunhua Chen, Tomonori Yamada (The University of Tokyo, Japan), Mengyan Zang (South China University of Technology, China), Shinobu Yoshimura (The University of Tokyo, Japan)*
- MS1327 (Time: 16:00-16:20)  
**Modelling the Adiabatic Shear Localization of Metallic Material under High Strain Rate**  
*\*Suyang Zhong, Xiaoyang Pei, Jidong Yu (China Academy of Engineering Physics, China)*
- MS13321 (Time: 16:20-16:40)  
**Ultimate Damage Simulation with Damage Model**  
*\*Koji Saito, Hirofumi Sugiyama, Shigenobu Okazawa (University of Yamanashi, Japan)*
- NMS86 (Time: 16:40-17:00)  
**Experimental and Numerical Characterization of Dynamic Moduli of Polymers**  
*\*Zhibo Du (Institute of Solid Mechanics-Mechanics, China)*
- MS1337 (Time: 17:00-17:20)  
**Verification of Pressure Stabilized Tetrahedral Element Fo Hyperelasticity by Method of Manufactured Solutions**  
*\*Takahiro Yamada (Yokohama National University, Japan)*
- MS1366 (Time: 17:20-17:40)  
**A Visco-Hyperelastic Constitutive Model to Characterize Rate Dependent Behavior of Polyurea**  
*\* Chengyu Wang, Zhanli Liu, Zhuo Zhuang (Tsinghua University, China)*
- MS1379 (Time: 17:40-18:00)  
**Simulation of Ductile Fracture by Finite Cover Method**  
*\*Hirofumi Sugiyama (University of Yamanashi, Japan), Kazumi Matsui, Takahiro Yamada (Yokohama National University, Japan), Shigenobu Okazawa (University of Yamanashi, Japan)*
- MS1394 (Time: 18:00-18:20)  
**Ultrasonic Properties of Polymer Composites with Particle Inclusions**  
*Zhanli Liu, Zhuo Zhuang, \*Jian Cheng (Tsinghua University, China)*
- MS13325 (Time: 18:20-18:40)  
**Numerical Research on Ability of Laser-Scanning Based Ultrasonic Visualization Technology to Damage Evaluation**  
*\*Shiwei Qin (Chongqing University, China)*

**6E MS16, MS23**

Time: 15:40-18:40, Monday, October 16th, 2017

Location: Room E

Chair: Hiroshi Okuda, Kazuo Kashiya

MS2323 (Time: 15:40-16:00)

**Numerical Experiments to Verify Code of Concrete Constitutive Relation Implemented in Parallel Finite Element Method**

*\*Hideaki Sonobe (Taisei Corporation, Japan), Hiroki Motoyama, Hiroshi Akiba, Muneo Hori (The University of Tokyo, Japan)*

MS23312 (Time: 16:00-16:20)

**Large-Scale Finite Element Simulation of Seismic Wave Propagation by the Digital Database of 3D Seismic Velocity**

*\*Kenichiro Yoshimi (Research Center of Computational Mechanics Inc., Japan)*

MS23320 (Time: 16:20-16:40)

**Development of Fast FEM Solver for Large Scale Structural Seismic Response Analysis**

*\*Shuhei Takaya, Muneo Hori (The University of Tokyo, Japan)*

MS2335 (Time: 16:40-17:00)

**Study of a Fault-Crossing Structure Subjected to a Fault Slip Using Parallel 3D-FEM**

*Hashimoto Gaku, Okuda Hiroshi (The University of Tokyo, Japan), Uchiyama Fujio, \*Mitsuhashi Yuta (Kozo Keikaku Engineering, Inc., Japan)*

MS1609 (Time: 17:00-17:40)

**Development of Multiscale Multiphysics High Precision Tsunami Runup Simulator Coupled with Structure Analysis**

*\*Taro Arikawa, Katsumi Seki (Chuo University, Japan), Yu Chida, Tomohiro Takagawa, Kenichiro Shimosako (National Institute of Maritime, Port and Aviation Technology, Japan),*

MS1689 (Time: 17:40-18:00)

**Multiphase Model to Predict Fluid-Solid Interactions in Environment and Disaster Problems with Parallel Computations**

*\*Torii Daisuke (Kyoto University, Japan)*

MS16219 (Time: 18:00-18:20)

**Numerical Analysis of Tsunami Open Flume Experiment Using Parallel Solver of 2D-3D Coupled Wave Model**

*\*Naoto Mitsume (The University of Tokyo, Japan), Tori Tomiczek (Oregon State University, USA), Yusuke Imoto (Tohoku University, Japan), Aaron Donahue (Lawrence Livermore National Laboratory, USA), Joannes Westerink (University of Notre Dame, USA), Tomonori Yamada, Shinobu Yoshimura (The University of Tokyo, Japan)*

MS1611 (Time: 18:20-18:40)

**Coupling Analysis of FEM for Free-Surface Fluids and Rigid Body**

*\*Kanji Fukushima, Seizo Tanaka, Daigoro Idobe (University of Tsukuba, Japan)*

**6F MS04, NMS**

Time: 15:40-18:00, Monday, October 16th, 2017

Location: Room F

Chair: Chongwei Zhang

MS0465 (Time: 15:40-16:00)

**Coupled Modeling of Storm Surge and Wave in China's Southeast Coastal Area**

*\*Qingyong Wuxi, Jiachun Li (Institute of Mechanics, Chinese Academy of Sciences, University of Chinese Academy of Sciences Science, China), Bingchuan Nie (Beijing Jiaotong University, China)*

MS0419 (Time: 16:00-16:20)

**Effect of Heave Motions of the Platform on the VIV of a Top Tensioned Riser**

*\*Zhe Wang (Shanghai Jiao Tong University, China)*

MS0420 (Time: 16:20-16:40)

**CFD Simulations of Flow Past Finite Free-Surface Piercing Cylinders Using Urans Method**

*\*Zhenghao Liu (Shanghai Jiao Tong University, China)*

MS0421 (Time: 16:40-17:00)

**Numerical Comparative Study of Viscous Flows Around JBC Ship by DDES and Rans Methods**

*\*Jianhua Wang (Shanghai Jiao Tong University, China)*

MS0422 (Time: 17:00-17:20)

**Numerical Study of the Interaction Between Sloshing Flow and the Three Dimensional Liquid Tank with Flexible Roof**

*\*Youlin Zhang (Shanghai Jiao Tong University, China)*

NMS84 (Time: 17:20-17:40)

**Forced Vibration Analysis of the Thin Walled Axisymmetric Structure Using Bem**

*Yongqiang Chen, \*Qi Zhou (Peking University, China)*

NMS335 (Time: 17:40-18:00)

**A Few New Serendipity Elements and Their Application in Element Collocation Method**

*\*Miao Cui, Jun Lv (Dalian University of Technology, China)*

## Tuesday, October 17th, 2017

### 7A Plenary Lecture 3

Time: 8:30-9:10, Tuesday, October 17th, 2017

Location: Room A

Chair: Sungkie Youn (*Kaist, Korea*)

PL03 (Time: 8:30-9:10)

#### **Recent Advances in Accelerated and Stabilized Meshfree Method for Modeling Man-made and Natural Disasters**

*J. S. Chen (University of California, San Diego, United States)*

### 8A Plenary Lecture 4

Time: 9:10-9:50, Tuesday, October 17th, 2017

Location: Room A

Chair: Sungkie Youn (*Kaist, Korea*)

PL04 (Time: 9:10-9:50)

#### **Petascale Finite Element Simulation Based Investigation on Structural Integrity of Nuclear Power Plant Attacked by Strong Earthquake**

*Shinobu Yoshimura (The University of Tokyo, Japan)*

### 9A Plenary Lecture 5

Time: 9:50-10:30, Tuesday, October 17th, 2017

Location: Room A

Chair: Sungkie Youn (*Kaist, Korea*)

PL05 (Time: 9:50-10:30)

#### **Stability Analysis Based on Inequality Equations**

*Gen-hua Shi (University of Chinese Academy of Sciences, Yangtze River Scientific Research Institute, China)*

-----Coffee Break (10:30-10:50)-----

**10A Semi-Plenary Lecture 5**

Time: 10:50-11:20, Tuesday, October 17th, 2017

Location: Room A

Chair: Chenfeng Li (*Swansea University, UK*)

SPL05 (Time: 10:50-11:20)

**Simulation of Extreme Events with Finite Element Material Point Method**

*Xiong Zhang (Tsinghua University, China)*

**10B Semi-Plenary Lecture 6**

Time: 10:50-11:20, Tuesday, October 17th, 2017

Location: Room B

Chair: Xikui Li (*Dalian University of Technology, China*)

SPL06 (Time: 10:50-11:20)

**A Novel Cohesive Model for Simulating Delamination Propagations in Composite Laminated Structures**

*N. Hu (Chongqing University, China)*

**11A Semi-Plenary Lecture 7**

Time: 11:20-11:50, Tuesday, October 17th, 2017

Location: Room A

Chair: Chenfeng Li (*Swansea University, UK*)

SPL07 (Time: 11:20-11:50)

**Doing Topology Optimization Explicitly and Geometrically Based on Moving Morphable Components (MMC) approach-A New Paradigm**

*Xu Guo (Dalian University of Technology, Dalian, China)*

**11B Semi-Plenary Lecture 8**

Time: 11:20-11:50, Tuesday, October 17th, 2017

Location: Room B

Chair: Xikui Li (*Dalian University of Technology, China*)

SPL08 (Time: 11:20-11:50)

**Development of a Citywide Real-time Landslide Warning System in Busan, Korea**

*Seung-Rae Lee (Korea Advanced Institute of Science and Technology, Korea)*

----- Lunch (12:00-13:00) -----

**12B MS19, MS09**

Time: 13:00-15:20, Tuesday, October 17th, 2017

Location: Room B

Chair: Daigoro Isobe, Qing Zhang

- MS1969 (Time: 13:00-13:20)  
**Collapse Simulation of Wide-Area Suspended Ceiling System Using the Asi-Gauss Code**  
*\*Daigoro Isobe (University of Tsukuba, Japan), Takashi Fujiwara (Samsung Japan Corporation, Japan), Takuzo Yamashita (National Research Institute for Earth Science and Disaster Resilience-E-Defense, Japan), Hiroyuki Tagawa (Mukogawa Women's University, Japan), Tomohiro Sasaki (Obayashi Corporation-Technical Research Institute, Japan)*
- MS1927 (Time: 13:20-13:40)  
**Damage Mitigation Method of Steel Column Against Impact Load**  
*Jinkoo Kim (Sungkyunkwan University, Korea), \*Hyungoo Kang (Sungkyunkwan University, Korea)*
- MS1970 (Time: 13:40-14:00)  
**Risk Estimation for Progressive Collapse of Buildings Using Key Element Index**  
*\*Kota Azuma, Daigoro Isobe (University of Tsukuba, Japan)*
- MS19121 (Time: 14:00-14:20)  
**Foundation Structural System for Building Located on Unstable Subsoil**  
*\*Janusz Rebielak (Cracow University of Technology, Poland)*
- MS1972 (Time: 14:20-14:40)  
**Study on Selection Schemes of Blasted Columns of Buildings to Improve Efficiency and to Secure Safety During Demolition**  
*\*Kenta Higashi, Daigoro Isobe (University of Tsukuba, Japan)*
- MS09117 (Time: 14:40-15:00)  
**Studies on Failure Mode of Concrete Faced Rockfill Dam**  
*\*Zeping Xu (China Institute of Water Resources & Hydropower Research, China)*
- MS0913 (Time: 15:00-15:20)  
**Modeling of Shear Band Evolution in Geomaterials**  
*\*Zhiwei Gong (Engineering Technology Associates, Inc, China)*



**12C MS20**

Time: 13:00-15:00, Tuesday, October 17th, 2017

Location: Room C

Chair: Yu Huang, Qiang Xu

- MS2000 (Time: 13:00-13:20)  
**Experimental and Numerical Analysis of Seismic Responses of a Reservoir Dam**  
*\*Chongqiang Zhu (Tongji University, China)*
- MS2044 (Time: 13:20-13:40)  
**Development of DDA and NMM to Simulate Full Rock Slope Failure Processes**  
*\*Youjun Ning (Southwest University of Science and Technology, China)*
- MS20307 (Time: 13:40-14:00)  
**Computational Rheology of Dense Granular Media and Its Applications to Geohazard Flows**  
*\*Christopher Ness (University of Edinburgh, UK)*
- MS2008 (Time: 14:00-14:20)  
**Numerical Simulation of the Heat Generation Around the Sliding Zone in Landslide by Using Discrete Element Software MatDEM**  
*\*Chun Liu (Nanjing University, China), Qiang Xu (Chengdu University of Technology, China), Chenguang Zhu (Nanjing University, China)*
- MS2080 (Time: 14:20-14:40)  
**Application of HPC Boosted Liquefaction Assessment for Urban Regions**  
*\*Jian Chen, Hideyuki O-Tani (Riken-Advanced Institute for Computational Science, Japan), Satoru Oishi (Kobe University, Japan), Muneo Hori (The University of Tokyo, Japan)*
- MS2088 (Time: 14:40-15:00)  
**Noncontact Detection of Earthquake-Induced Landslides by Image Thresholding Method Incorporating with Monte-Carlo Simulation**  
*\*Zheng Han, Yange Li, Weidong Wang, Jianling Huang, Bin Su, Yangfan Ma (Central South University, China)*

**12D MS14, MS15, MS18**

Time: 13:00-15:20, Tuesday, October 17th, 2017  
Location: Room D  
Chair: Tomonori Yamada

- MS15354 (Time: 13:00-13:20)  
**High Order Numerical Methods and Their Applications in Engineering and Software Developments**  
*\*Bo Liu (Beihang University, China)*
- MS1878 (Time: 13:20-13:40)  
**Advances in Adaptive Finite Element Method for Structural Eigenproblems and Application in Damage Detection as Inverse Eigenproblems**  
*\*Yongliang Wang (State Key Laboratory of Coal Resources and Safe Mining, China)*
- MS1436 (Time: 13:40-14:00)  
**A Wavelet Method for Solving Strong Nonlinear Engineering Problems with Complex Boundaries**  
*\*Jizeng Wang, Cong Xu, Youhe Zhou (Lanzhou University, China)*
- MS1581 (Time: 14:00-14:20)  
**Three-Dimensional Flooding Analysis in a Building by Tsunami Run-Up Using Explicit MPS Method**  
*\*Seiichi Koshizuka, Yasutoshi Nannichi, Zidi Wang, Kohei Murotani, Kazuya Shibata (The University of Tokyo, Japan), Eiichi Nagai (Prometech Software, Inc., Japan), Toshimitsu Fujisawa (Prometech Software, Inc., Japan), Akira Anju (Kozo Keikaku Engineering, Inc., Japan)*
- MS1586 (Time: 14:20-14:40)  
**Improved Xfem and Its Parallelization**  
*\*Lixiang Wang (CAEP Software Center for High Performance Numerical Simulation, China)*
- MS1589 (Time: 14:40-15:00)  
**Hydraulic Fracture at the Dam-Foundation Interface Using the Scaled Boundary Finite Element Method Coupled with the Cohesive Crack Model**  
*\*Hong Zhong (Dalian University of Technology, China), Hongjun Li (China Institute of Water Resources and Hydropower Research, China)*
- MS1598 (Time: 15:00-15:20)  
**Comparison of Two Coupled Finite Element Simulations of Real Chemical Plant Subjected to Strong Seismic Loading**  
*\*Tomonori Yamada (The University of Tokyo, Japan), Keisuke Matsukawa, Masami Oshima, Yoshiaki Sakamoto, Yuya Asano, Hisao Izuchi (Chiyoda Corporation, Japan), Kunizo Onda (Allied Engineering Corporation, Japan), Shinobu Yoshimura (The University of Tokyo, Japan)*

**12E MS16**

Time: 13:00-15:20, Tuesday, October 17th, 2017

Location: Room E

Chair: Ethan Kubatko, Satoru Ushijima

- MS1666 (Time: 13:00-13:20)  
**Large Scale Tsunami Simulation by 2D-3D Hybrid Method Based on Arbitrary Domain**  
*\*Guoming Ling (Chuo University, Japan), Junichi Matsumoto (National Institute of Advanced Industrial Science and Technology (Aist), Japan), Kazuo Kashiya (Chuo University, Japan)*
- MS1631 (Time: 13:20-13:40)  
**Probabilistic Mapping of Storm-Induced Coastal Inundation for Climate Change Adaptation**  
*\*Kwok Fai Cheung Cheung, Ning Li (University of Hawaii at Manoa-Department of Ocean and Resources Engineering, USA)*
- MS1668 (Time: 13:40-14:00)  
**Stable Finite Integration Method for Solving Generalized Regularized Long Wave Equation**  
*\*Benny Hon (City University of Hong Kong-Mathematics, China)*
- MS16110 (Time: 14:00-14:20)  
**Computations of Density Currents by Numerical Models with and Without Boussinesq Approximations as Well as by Compressible-Fluid Model**  
*\*Hirofumi Yanagi (Kyoto University of Engineering, Japan), Ikeda Syunichi (Kubota Corporation, Japan), Toriu Daisuke, Ushijima Satoru (Kyoto University, Japan)*
- MS16325 (Time: 14:20-14:40)  
**The Extreme Water Level and Potential Inundation Risk to Pearl River Estuary Region**  
*\*Linlin Wang (Tsinghua University, China)*
- MS16304 (Time: 14:40-15:00)  
**Modulation of Propagation Speeds of Internal Solitary Waves in the Northeastern South China Sea**  
*\*Qinghe Zhang (Tianjin University, China)*
- MS1603 (Time: 15:00-15:20)  
**A Three-Dimensional Free Surface Flow Modeling by the Lattice Boltzmann Method with PLIC-VOF Model**  
*\*Kenta Sato, Shunichi Koshimura (Tohoku University, Japan)*

**12F MS05**

Time: 13:00-15:20, Tuesday, October 17th, 2017

Location: Room F

Chair: Shunying Ji, Wenxiang Xu

- MS0520 (Time: 13:00-13:25)  
**[Invited] Advances of Continuum-Discontinuum Element Method in Prediction of Geo-Hazards**  
*\*Dong Zhou (Institute of Mechanics, Chinese Academy of Sciences, China)*
- MS0536 (Time: 13:25-13:50)  
**[Invited] Numerical Modeling of Damage-Healing-Plasticity-Breakage of Geo-Structures in the Frame of Second-Order Computational Homogenization**  
*\*Xikui Li, Zenghui Wang, Qinglin Duan (Dalian University of Technology, China)*
- MS0539 (Time: 13:50-14:08)  
**DEM Investigation on Validity of Rolling Resistance for Modelling Particle Shape**  
*\*Xihua Chu (Wuhan University, China), Lunlun Zhou (Wuhan University, China)*
- MS0563 (Time: 14:08-14:26)  
**Multiscale Analysis of Damage-Fracture Coupling Process for Failure of Brittle Rock under Three Axial Compression Test**  
*Jianjun Zhao, Xiaofang Liao, \*Ke Wan (Chengdu University of Technology, China)*
- MS0510 (Time: 14:26-14:44)  
**DEM Simulations of Compressive Wave Propagation Behaviors in Highly Ordered Granular Assemblies with Different Particles**  
*\*Jiao Wang, Xihua Chu (Wuhan University, China)*
- MS0597 (Time: 14:44-15:02)  
**Influence of Intermediate Principle Stress on the Micro-Macro Behaviour of Granular Materials**  
*\*Yishu Wang, Chaomin Shen (Hohai University, China)*
- MS0591 (Time: 15:02-15:20)  
**Distance Potential Discrete Element Method**  
*\*Jia Mao (Hohai University, China)*

-----Coffee Break (15:20-15:40)-----

**13B MS09**

Time: 15:40-18:20, Tuesday, October 17th, 2017

Location: Room B

Chair: Qing Zhang

- MS09314 (Time: 15:40-16:00)  
**Shock Responses of Nanoporous Copper by Molecular Dynamic Simulation**  
*Lei Wang (Hohai University, China)*
- MS09318 (Time: 16:00-16:20)  
**A Novel Crack-Tip Enrichment Mode Based on XFEM for Cohesive Crack Propagation**  
*\*Zhang Qing (Hohai University, China)*
- MS0939 (Time: 16:20-16:40)  
**A Stable Smooth Particle Method for Simulating Geotechnical Slope Failure**  
*\*Ding Chen, Wenxiong Huang (Hohai University, China)*
- MS0960 (Time: 16:40-17:00)  
**Modeling of Shear Band Evolution in Geomaterials**  
*\*Zhiwei Gong (Engineering Technology Associates, Inc-Nanjing Representative Office, China)*
- MS0967 (Time: 17:00-17:20)  
**Three-Dimensional Mesoscopic Numerical Study of Effective Thermal Conductivity of Cracked Concrete**  
*\*Lei Shen (Hohai University, China)*
- MS0973 (Time: 17:20-17:40)  
**A Hybrid Model of PD-FEM and Its Application in Failure Analysis of Gravity Dam**  
*\*Yangtian Yu, Xin Gu (Hohai University, China)*
- MS0987 (Time: 17:40-18:00)  
**The Study of Valley Width Reduction and Its Effects on Baihetan Arch Dam**  
*\*Man Zhang, Yaoru Liu (Tsinghua University, China)*
- MS0991 (Time: 18:00-18:20)  
**Multiscale Analysis of Stone Column Composite Foundations**  
*\*Yang Li, Ga Zhang (Tsinghua University, China)*

**13C MS22**

Time: 15:40-18:20, Tuesday, October 17th, 2017

Location: Room C

Chair: Kenjiro Terada

- MS2299 (Time: 15:40-16:00)  
**Determination of Diffusive Length Parameter ( $l$ ) of Crack Phase Field Model for Cement Paste based on Microstructural Characteristics**  
*\*Tong-Seok Han, Ji-Su Kim (Yonsei University, Republic of Korea)*
- MS2217 (Time: 16:00-16:20)  
**Thermomechanical Computational Homogenization for FRTP**  
*Seishiro Matsubara, Masayasu Kishi, Mayu Muramatsu, \*Kenjiro Terada (Tohoku University, Japan)*
- MS2212 (Time: 16:20-16:40)  
**Non-Linear Thermo-Mechanical Computational Homogenization**  
*Michael Kaliske, \*Robert Fleischhauer (Tu Dresden, Germany)*
- MS2248 (Time: 16:40-17:00)  
**Controlling of Wave Propagation in Composite with Spherical Inclusions in Meso-Scale**  
*\*Chengcheng Luo (Tsinghua University, China)*
- MS2267 (Time: 17:00-17:20)  
**Influence of Spinodal Decomposition on Dislocation Behaviors in Fe-Cr Alloys**  
*\*Akiyuki Takahashi, Takuya Suzuki (Tokyo University of Science, Japan), Akiyoshi Nomoto (Central Research Institute of Electric Power Industry, Japan)*
- MS2272 (Time: 17:20-17:40)  
**Plastic Flow Localization of Hexagonal Metal under Biaxial Loading**  
*\*Yuichi Tadano (Saga University, Japan)*
- MS2237 (Time: 17:40-18:00)  
**Physical Mechanism Based Modelling of Gradient Nanostructured Materials**  
*\*Xiaochong Lu, Jianfeng Zhao (Southwest Jiaotong University, China)*
- MS2297 (Time: 18:00-18:20)  
**Study on Dynamic Mechanical Properties of Polyurea with Coarse-Grained Molecular Dynamics**  
*\*Kaili Yao, Zhuo Zhuang (Tsinghua University, China)*

**13D MS17**

Time: 15:40-18:00, Tuesday, October 17th, 2017

Location: Room D

Chair: Weixi Huang

- MS1739 (Time: 15:40-16:00)  
**Direct Numerical Simulation of Turbulent Flow Over Surface Waves**  
*\*Lihao Wang, Weixi Huang, Chunxiao Xu (Tsinghua University, China), Lian Shen (University of Minnesota, USA)*
- MS1741 (Time: 16:00-16:20)  
**Direct Numerical Simulation of Tiny Spheroidal Particles in Wall Turbulence**  
*\*Yucheng Jie, Zhiwen Cui (Tsinghua University, China)*
- MS1742 (Time: 16:20-16:40)  
**Numerical Study of Mixed Convective Heat Transfer Coefficients for Building Cluster**  
*\*Zexi Hu, Guixiang Cui, Zhaoshun Zhang (Tsinghua University, China)*
- MS1745 (Time: 16:40-17:00)  
**Large Eddy Simulation of Turbulent Flow Over Vegetation-Like Canopy Modelled as Arrays of Bluff-Body Elements**  
*\*Chao Yan (Institute of Urban Meteorology, China Meteorological Administration, China), Wei-Xi Huang (Tsinghua University, China), Shi-Guang Miao (Institute of Urban Meteorology, China Meteorological Administration, China), Gui-Xiang Cui, Zhao-Shun Zhang (Tsinghua University, China)*
- MS1768 (Time: 17:00-17:20)  
**Development of a Numerical Method for Thermal Environment Considering Humidity and Land Utilization in Urban Area**  
*\*Hiroyuki Tanaka, Kazuo Kashiwama (Chuo University, Japan)*
- MS1746 (Time: 17:20-17:40)  
**The Effect of Wall Shear Stress Model on Large-Eddy Simulation of Sub-Threshold Sand Saltation**  
*Ting Jin (Lanzhou University, China), Xiaojing Zheng (Xidian University, China), \*Ping Wang (Lanzhou University, China)*
- MS17355 (Time: 17:40-18:00)  
**Some Experimental and Numerical Studies on Sand Accumulation Over Railway Behind Windbreak Wall**  
*\*Ning Huang (Lanzhou University, China)*

**13E MS16, MS21**

Time: 15:40-18:20, Tuesday, October 17th, 2017

Location: Room E

Chair: Kwok Fai Cheung, Ryosuke Uzuoka

- MS1601 (Time: 15:40-16:00)  
**Tsunami Run-Up Simulation Based on E-MPS and Its VR Visualization with Unity**  
*\*Makoto Akitomo, Gohki Noguchi, Takahiro Saitoh (Gunma University, Japan)*
- MS16316 (Time: 16:00-16:20)  
**Some Recent Advances in a Discontinuous Galerkin Model for Storm Surge Simulation**  
*Dylan Wood, Omar El-Khoury, \*Ethan Kubatko (The Ohio State University, USA)*
- MS16310 (Time: 16:20-16:40)  
**A Local Discontinuous Galerkin Finite-Element Solution of the Richards' Equation**  
*\*Yilong Xiao, Ethan Kubatko (The Ohio State University, USA)*
- MS1660 (Time: 16:40-17:00)  
**Discontinuous Galerkin Approach for Free Surface Flow Analysis Based on Interface Capturing Method**  
*\*Seizo Tanaka (University of Tsukuba, Japan)*
- MS1654 (Time: 17:00-17:20)  
**A Discontinuous Galerkin Method with Moving Boundary Treatment for Solving the Shallow Water Equations**  
*\*Sho Ito, Guoming Ling (Chuo University, Japan), Ethan Kubatko (Ohio State University, USA), Kazuo Kashiwama (Chuo University, Japan)*
- MS16257 (Time: 17:20-17:40)  
**An Experience System Based on a Simulation of Tsunami Flow Around a Building and a VR Device**  
*\*Kazuya Nojima, Masaki Sakuraba (Nippon Koei Co., Ltd., Japan)*
- MS1656 (Time: 17:40-18:00)  
**An Augmented Reality System for Water Disaster Simulations**  
*\*Maiko Hanadate, Guoming Ling, Kazuo Kashiwama (Chuo University, Japan), Hideo Miyachi (Tokyo City University, Japan), Yuuji Maeda (Penta-Ocean Construction Co., Ltd., Japan)*
- MS2109 (Time: 18:00-18:20)  
**Preparation of Random Geometrical Parameters for Stochastic Homogenization Analysis of Textile FRP by Multiphysics Process Simulation**  
*Kohei Hagiwara, \*Naoki Takano (Keio University, Japan), Akio Ohtani (Kyoto Institute of Technology, Japan), Asami Nakai (Gifu University, Japan)*



**13F MS05**

Time: 15:40-18:18, Tuesday, October 17th, 2017

Location: Room F

Chair: Xikui Li, Xihua Chu

- MS0504 (Time: 15:40-16:05)  
**[Invited] Coupled Discrete-Finite Element Method for Settlement Analysis of Transition Zone Between Ballasted and Ballastless Track**  
*Xinglin Guo, \*Shunying Ji (Dalian University of Technology, China)*
- MS0585 (Time: 16:05-16:30)  
**[Invited]Elastic Properties of Granular Materials with Nonspherical Grains of High Packing Density and Soft Interphase**  
*\*Wenxiang Xu (Hohai University, China)*
- MS0513 (Time: 16:30-16:48)  
**A Micro-Morphic Model Predicts Dispersion and Frequency Band Gap in Granular Materials**  
*\*Chenxi Xiu, Xihua Chu (Wuhan University, China)*
- MS0535 (Time: 16:48-17:06)  
**Analysis of Lunar Lander Landing Process with Coupled DEM-FEM Modelling**  
*\*Shaomin Liang, Shunying Ji (Dalian University of Technology, China)*
- MS0598 (Time: 17:06-17:24)  
**DEM Analysis of the At-Rest Lateral Pressure Coefficient of Granular Materials**  
*Yishu Wang, \*Chaomin Shen (Hohai University, China)*
- MS0593 (Time: 17:24-17:42)  
**Influence of Aggregate Shape and Sampling Method on the Overestimation of the Itz Thickness**  
*\*Zhigang Zhu, Wenxiang Xu (Hohai University, China), Huisu Chen (Southeast University, China)*
- MS0595 (Time: 17:42-18:00)  
**Mechanical Analysis of Double Toothed Roller Crusher Based on Dem**  
*\*Zhuo Zhang, Lianchun Long (Beijing University of Technology, China), Xuepeng Yang, Xinwei Yin (Datang Environment Industry Group Co., Ltd., China)*
- MS0505 (Time: 18:00-18:18)  
**Analysis of Lunar Lander Landing Process with Coupled DEM-FEM Modelling**  
*Shunying Ji, \*Shaomin Liang (Dalian University of Technology, China)*

## Wednesday, October 18th, 2017

### 14A Plenary Lecture 6

Time: 8:30-9:10, Wednesday, October 18th, 2017

Location: Room A

Chair: Zhuo Zhuang (*Tsinghua University, China*)

PL06 (Time: 8:30-9:10)

#### **Microstructural material database for self-consistent clustering analysis of strain softening materials**

*Wing Kam Liu (Northwestern University, United States)*

### 15A Semi-Plenary Lecture 9

Time: 9:10-9:40, Wednesday, October 18th, 2017

Location: Room A

Chair: Pu Chen (*Peking University, China*)

SPL09 (Time: 9:10-9:40)

#### **Uncertainty Quantification and Propagation in Materials and Structures**

*C. F. Li (Swansea University, United Kingdom)*

### 15B Semi-Plenary Lecture 10

Time: 9:10-9:40, Wednesday, October 18th, 2017

Location: Room B

Chair: Decheng Wang (*Shanghai Jiaotong University, China*)

SPL10 (Time: 9:10-9:40)

#### **Nonlinear Time-History Analysis of A City: Methodology and Application**

*Xinzheng Lu (Tsinghua University, China)*

-----Coffee Break (9:40-10:00)-----

**16B MS08**

Time: 10:00-12:40, Wednesday, October 18th, 2017

Location: Room B

Chair: Xueling Fan

- MS08143 (Time: 10:00-10:20)  
**Large-Scale Elastic-Plastic Analysis of Cracked Structure Using Domain Decomposition Method with Nonlinear Solver**  
*\*Yasunori Yusa, Hiroshi Okada (Tokyo University of Science, Japan), Tomonori Yamada, Shinobu Yoshimura (The University of Tokyo, Japan)*
- MS08181 (Time: 10:20-10:40)  
**Accuracy Enhancement on the Prediction of Fracture Mode of Cross Tension Testing by Using J-Integral**  
*\*Tatsuro Ishizaka, Hiroshi Okada, Yasunori Yusa (Tokyo University of Science, Japan), Kouji Chiba (Nissan Motor Co., Ltd. Japan), Hidekazu Murakawa, Hisashi Serizawa (Osaka University, Japan), Masakazu Shibahara (Osaka Prefecture University, Japan), Satoyuki Tanaka (Hiroshima University, Japan)*
- MS0825 (Time: 10:40-11:00)  
**Development of Stress Analysis System Using Xfem and Its Application to Composite Laminate**  
*\*Toshio Nagashima (Sophia University, Japan)*
- MS08291 (Time: 11:00-11:20)  
**Numerical Investigations on Dynamic Fracture in Linearly Elastic Solids**  
*\*Shinnosuke Noso, Kenji Oguni (Keio University, Japan)*
- MS08306 (Time: 11:20-11:40)  
**Investigation of Fracture Criteria of Moderate-Toughness Steel for Elastic-Plastic Crack Propagation**  
*\*Yoshitaka Wada, Keishi Kumamoto (Kindai University, Japan)*
- MS0831 (Time: 11:40-12:00)  
**Modeling Multi-Scale Damage Evolution of Shocked Brittle Materials**  
*\*Yin Yu (Institute of Fluid Physics, CAEP-National Key Laboratory of Shock Wave and Detonation Physics, China)*
- MS08315 (Time: 12:00-12:20)  
**Crack Face Contact Problem Analysis Using the Scaled Boundary Finite Element Method**  
*\*Peng Zhang, Chengbin Du (Hohai University, China)*
- MS08349 (Time: 12:20-12:40)  
**Crystal Plasticity Based Multiscale Finite Element Modelling of Ductile Void Growth Evolution in an Aluminium Alloy under Multiaxial Stress States**  
*\*Dong-Feng Li (Harbin Institute of Technology-Shenzhen Graduate School, China)*

**16C MS06**

Time: 10:00-12:20, Wednesday, October 18th, 2017  
Location: Room C  
Chair: Jianchun Guo, Yongxing Shen

- MS0621 (Time: 10:00-10:20)  
**Numerical Modeling Pressurized Fracture by Phase Field Approach**  
*Yongxing Shen, \*Mostafa Mollaali (University of Michigan-Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, China)*
- MS06284 (Time: 10:20-10:40)  
**Study of Fracture Propagation in Multi-Phase Composites Using a Phase Field Method**  
*Dongyang Chu, \*Xiang Li (Tsinghua University, China)*
- MS06311 (Time: 10:40-11:00)  
**Numerical Study of Fracture Branching in an Unbounded Domain Using a Nonlocal Model**  
*\*Yongxing Shen (Shanghai Jiao Tong University-University of Michigan-Shanghai Jiao Tong University Joint Institute, China)*
- MS0676 (Time: 11:00-11:20)  
**Advances in Adaptive Finite Element Method for Rock Fractures and Application in Stimulated Reservoir Volume of Shale**  
*\*Yongliang Wang (State Key Laboratory of Coal Resources and Safe Mining, China)*
- MS0687 (Time: 11:20-11:40)  
**Key Mechanical Problems and Understanding of Deep Shale Fracturing**  
*Jianchun Guo, Mei Li, Yan Deng, \*Ruoyu Yang, Songgen He, Xinghao Gou (Southwest Petroleum University, China)*
- MS0688 (Time: 11:40-12:00)  
**Study on Formation Mechanism of Hydraulic Fracturing Network of Layered Shale**  
*Zhanli Liu, Yue Gao, \*Tao Wang (Tsinghua University, China)*
- MS0690 (Time: 12:00-12:20)  
**Drilling Borehole Failure in a Transversely Isotropic Poroelastic Medium**  
*\*Yue Gao, Keh-Chih Hwang (Tsinghua University, China)*

**16D MS03**

Time: 10:00-12:40, Wednesday, October 18th, 2017

Location: Room D

Chair: Zhuojia Fu, Yan Liu

- MS03292 (Time: 10:00-10:20)  
**Numerical Investigations on Fracture Phenomenon Due to a Projectile Impact**  
*\*Boyang Zhang, Sayako Hirobe (Keio University, Japan), Yuta Nakagama, Tatsuya Nakada (Tokyo Electric Power Services Co., Ltd., Japan), Kenji Oguni (Keio University, Japan),*
- MS0375 (Time: 10:20-10:40)  
**A Novel Monte Carlo Method for the Thermal Wave Band Calculation of Nanoscale Thermoelectric Phononic Crystals**  
*Zhizhong Yan, \*Chengfeng Zheng (Beijing Institute of Technology, China)*
- MS0386 (Time: 10:40-11:00)  
**Meshless RBF Local Weak Form Method for One Dimensional Phononic Crystal Model**  
*\*Zhizhong Yan (Beijing Institute of Technology, China)*
- MS0303 (Time: 11:00-11:20)  
**Discontinuous Deformation Analysis and Its Promotion and Application in the Prediction, Prevention and Mitigation of Natural Disasters**  
*\*Wenyi Tang (Southwest Jiaotong University, China)*
- MS0340 (Time: 11:20-11:40)  
**Mesoscopic Modeling and Simulation of Penetration of 3D Orthogonal Woven Composites**  
*\*Xuena Si, Yan Liu, Xiong Zhang (Tsinghua University, China)*
- MS03230 (Time: 11:40-12:00)  
**Micromechanical Studies of Compressive Strength in Brittle Polycrystalline Materials at High Strain Rates**  
*\*Bo Li, Zongyue Fan (Case Western Reserve University, USA)*
- MS0379 (Time: 12:00-12:20)  
**A Boundary-Type Meshless Solver for Transient Heat Conduction Analysis of Slender Functionally Graded Materials**  
*\*Qiang Xi (Hohai University, China)*
- MS0324 (Time: 12:20-12:40)  
**Node-Based Cellular Automaton for Elastostatics**  
*Weifeng Yuan, \*Qiang Tang (Southwest University of Science Technology, China)*

**16E MS21**

Time: 10:00-12:40, Wednesday, October 18th, 2017

Location: Room E

Chair: Ryosuke Uzuoka, Tetsuya Matsuda

- MS21170 (Time: 10:00-10:20)  
**A Correlation Analysis of Tsunami Risk Between Multiple Coastal Cities**  
*\*Takuma Kotani, Shuji Moriguchi (Tohoku University, Japan), Shinsuke Takase (Hachinohe Institute of Technology, Japan), Yu Otake, Masaaki Sakuraba, Kazuya Nojima (Nippon Koei Co., Ltd., Japan)*
- MS21196 (Time: 10:20-10:40)  
**Buckling Analysis Cubic Lattice Cellular Structures with Uncertainty in Shape**  
*\*Naoto Harasawa, Tetsuya Matsuda (University of Tsukuba and Energy, Japan)*
- MS21328 (Time: 10:40-11:00)  
**Probabilistic Transient Thermal Analysis and Reliability Evaluation for Typical Thermal Protection Systems**  
*\*Kun Zhang, Yin Liu (Chongqing University, China), Jianqiang Xin (China Academy of Launch Vehicle Technology, China)*
- MS2111 (Time: 11:00-11:20)  
**Numerical Structural Design Concepts with Polymorphic Uncertain Data**  
*Wolfgang Graf, Goetz Marco, \*Robert Fleischhauer (Tu Dresden, Germany)*
- MS2142 (Time: 11:20-11:40)  
**A Numerical Study on the Effects of Spatial Characteristics of Slopes in Rockfall Simulations**  
*\*Naohide Uehara, Ikkoh Tachibana, Hasuka Kanno, Shuji Moriguchi, Kenjiro Terada (Tohoku University, Japan), Yu Otake (Niigata University, Japan)*
- MS2144 (Time: 11:40-12:00)  
**Multiscale Analysis of Damage Development and Strength for Various Woven Composites with Laminate Misalignment**  
*\*Gai Kubo, Tetsuya Matsuda (University of Tsukuba and Energy, Japan)*
- MS2194 (Time: 12:00-12:20)  
**Statistical Survey on Effects of Random Laminate Misalignment on Mechanical Behavior of Ultrafine Plate-Fin Structures**  
*\*Kazuma Yamauchi, Tetsuya Matsuda (University of Tsukuba and Energy, Japan)*
- MS2135 (Time: 12:20-12:40)  
**Stochastic Prediction of Macroscopic Compression Stiffness Reduction Ratio with Related to Micro Defects Database of 3D Printed Cellular Structure**  
*Hongling Ye (Beijing University of Technology, China), Naoki Takano (Keio University, Japan), \*Pin Wen (Beijing University of Technology, China)*

**16F MS11**

Time: 10:00-12:40, Wednesday, October 18th, 2017

Location: Room F

Chair: Feng Zhang

- MS1195 (Time: 10:00-10:20)  
**Numerical Studies of Wave-Induced Liquefaction of Seabed around a Single Pile**  
*\*Bin Zhu (Zhejiang University, China), Guanlin Ye (Shanghai Jiao Tong University, China)*
- MS1102 (Time: 10:20-10:40)  
**Numerical Analysis on Long-Term Settlement of Soft Soil Subgrade Considering Stress History**  
*\*Guan-Lin Ye (Shanghai Jiao Tong University, China)*
- MS1105 (Time: 10:40-11:00)  
**Pore-Scale Direct Numerical Simulation on Seepage Flow Through Granular Structure**  
*Shuji Moriguchi (Tohoku University, Japan), Shinsuke Takase (Hachinohe Institute of Technology-Engineering, Japan), Kenjiro Terada (Tohoku University, Japan), Takayuki Aoki (Tokyo Institute of Technology, Japan), Takeshi Kodaka (Meijo University, Japan), \*Ikkoh Tachibana (Tohoku Univeristy, Japan)*
- MS11238 (Time: 11:00-11:20)  
**A Probabilistic Approach of Rockfall Risk Evaluation Based on DEM Simulations**  
*\*Shuji Moriguchi, Hasuka Kanno (Tohoku University, Japan), Shinsuke Takase (Hachinohe Institute of Technology, Japan), Kenjiro Terada (Tohoku University, Japan), Yu Oake (Niigata University, Japan)*
- MS1124 (Time: 11:20-11:40)  
**Formation Mechanism of Décollement Zone**  
*Yuhei Kurimoto (Shimizu Corporation, Japan), \*Feng Zhang (Nagoya Institute of Technology, Japan)*
- MS1183 (Time: 11:40-12:00)  
**Soil-Water Coupling Analysis on the Seismic Response of a Pile-Superstructure Model in Liquefiable Soil**  
*\*Dong Su, Haiyan Ming (Shenzhen University, China)*
- MS1193 (Time: 12:00-12:20)  
**A Numerical Model for Flow Slides in Municipal Solid Waste Landfills Using a Modified Moving Particle Simulation Method**  
*\*Yu Huang (Tongji University, China)*
- MS1106 (Time: 12:20-12:40)  
**Settlement Mechanism of Piled-Raft Foundation Due to Cyclic Train Loads and Its Countermeasure**  
*Guanlin Ye (Shanghai Jiaotong University, China), Feng Zhang (Nagoya Institute of Technology, China), \*Linlin Gu (Qingdao University of Technology, China)*

----- Lunch (12:20-13:30) -----