KSME-JSME Joint Symposium on CM & CAE 2012
at Kanazawa University

Date: September 12th, 2012

Location: Kakuma Campus in Kanazawa University, Kanazawa City, Japan

8:45～9:00 Opening Ceremony
9:00～18:00 Lectures in four rooms

Room A09
MC: Shinji Nishiwaki (Kyoto University)
8:45～9:00 Opening Ceremony

Room A12
Nano/Multiscale Mechanics/Multiphysics
<JSME Organizers>
>   Hiroshi Kanayama, Kyushu University
>   Kazuyuki Shizawa, Keio University

<KSME Organizers>
>   Sung Youb Kim, UNIST
>   Dongchoul Kim, Sogang University

Session 1 *9:00 – 10:30*
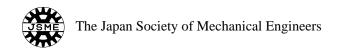**Chair: Sung Youb Kim (UNIST)**

Keynote: [NM-JP-1] *Tsunami simulation of Hakata bay using the viscous shallow-water equations*
Hiroshi Kanayama and Hiroshi Dan (Kyusu Univeristy)

[NM-JP-2] *Fluid-Soil-Structure Coupling Analysis for Tsunami Disaster Simulation*
Mitsuteru Asai, Keisuke Fujimoto, Abdelraheem M. Aly, and Yoshimi Sonoda (Kyusu Univeristy)

[NM-JP-3] *Numerical Simulation of Void Coalescence for Alpha-Iron in the Presence of Hydrogen*

Lijun Liu, Agung Premono, and Hiroshi Kanayama (Kyushu Univeristy)

[NM-JP-4] *Iterative Domain Decomposition Solvers for 3D Magnetostatic Field Problems*
Masao Ogino (Nagoya Univeristy), Shin-ichiro Sugimoto (The University of Tokyo) and Hiroshi Kanayama (Kyushu University)

Session 2: *10:45 - 12:25*
Chair : Hiroshi Kanayama (Kyushu University)

[NM-KR-1] *A Study on Hyperelastic Behaviors of Single Crystal Si and Ge Using Ab Initio Calculation*
Wonbae Kim, Janghyuk Moon, and Maenghyo Cho (Seoul National University)

[NM-KR-2] *Ni-Ti Empirical Potential Development*
Byeongchan Lee (Kyung Hee University)

[NM-KR-3] *Simulation on the Phase Transformation of Microstructures Induced by the Temperature Field*
Jihwan Song, Myeoungseok Yang, and Dongchoul Kim (Sogang University)

[NM-KR-4] *Effect of Intergranular Misorientation on Behavior of Polycrystalline Solids during Elastoplastic Deformation*
Tong-Seok Han and Sang-Yeop Chung (Yonsei University)

[NM-KR-5] *Band-Gap Tuning of MoS2 Monolayer by Mechanical Strains*
Soon-Dong Park and Sung Youb Kim (Ulsan National Institute of Science and Technology)

Session: 3 : *13:30 - 15:20*
Chair: Kazuyuki Shizawa (Keio University)

Keynote: [NM-JP-5] *A Continuum Mechanics Approach to Slip Deformation and Dislocation Accumulation in Metal Microstructures*
Tetsuya Ohashi (Kitami Institute of Technology)

[NM-JP-6] *Atomic Simulation of Grain Boundaries as Dislocation Source in Ultra-fine Grained Metals*
Tomotsugu Shimokawa (Kanazawa University)

[NM-JP-7] *Homogenization Analysis of Plastic Size Effects Using Discrete Dislocation Plasticity Approach*
Dai Okumura, and Nobutada Ohno (Nagoya University)

[NM-JP-8] *Multiphysics Modeling of Deformation Twinning in HCP Metals Based on Phase-field Approach*
Yuichi Tadano (Saga Univesity), Ruho Kondo (Keio University), and Kazuyuki Shizawa (Keio Univeristy)

[NM-JP-9] *Multiscale Simulation for Deformation Response of Crystalline Polymer Using Homogenized Molecular Chain Plasticity Model*
Hideyuki Hara, and Kazuyuki Shizawa (Keio Univeristy)

Room A13
Advanced CAE/Optimization
<JSME Organizers>
      Shinji Nishiwaki, Kyoto University
      Kazuhiro Izui, Kyoto University
<KSME Organizers>
      Seungjae Min, Hanyang University
      Jongsoo Lee, Yonsei University

Session: 1 : *9:00 -10:30*
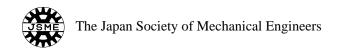**Chair: Shinji Nishiwaki (Kyoto University)**
Keynote:, [CO-KR-1] *Non-traditional Applications of Topology Optimization: Robot Path Planning and Variational Art*
Yoon Young Kim (Seoul National University)

[CO-JP-2] *Performance Evaluation of Particle Swarm Optimization Using Second Global Best Particle Position*
Y.-B. Shin, and E. Kita (Nagoya Univeristy)

[CO-JP-5] *Optimization of Process Parameter in Plastic Injection Molding*
Ryosuke Onuki, Satoshi Kitayama, and Koetsu Yamazaki (Kanazawa University)

[CO-JP-6] *Reliability-Based Multiobjective Optimization Approach Using Hybrid MOPSO with SLSV*
Nozomu Kogiso and Shoichiro Kawaji (Osaka Prefecture University)

Session 2: *10:45 - 12:05*
Chair: Seungjae Min (Hanyang University)
[CO-JP-7] *A Layout Design Optimization Method for Multi-robot Assembly Systems*
Suemitsu Issei, Yamada Takayuki, Kazuhiro Izui, Shinji Nishiwaki (Kyoto University), Akio Noda, and Tatsuya Nagatani (Mitsubishi Electric)

[CO-KR-5] *Multidisciplinary Robust Optimization for a Deep-sea Test Miner*
Tae Hee Lee, Su-gil Cho (Hanyang University), Jong-su Choi, Minuk Lee, Hyung-Woo Kim, and Sup Hong (KORDI)

[CO-JP-4] *Simultaneous Optimization of Variable Blank Holder Force Trajectory and Tools Motion in Deep-Drawing via Sequential Approximate Optimization*
Jirasak Srirat, Satoshi Kitayama, and Koetsu Yamazaki (Kanazawa University)

[CO-KR-4] *A Statistical Framework for CAE Model Validation*
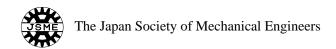Byung C. Jung and Byeng Dong Youn (Seoul National University)

Session 3 : *13:30 - 15:20*
Chair: Tae Hee Lee (Hanyang University)

Keynote: [CO-JP-1] *Ground structure approach for PZT layout optimization in semi-active vibration control systems of space structures*
Akihiro Takezawa (Hiroshima University), Kanjuro Makihara (Tohoku University), Nozomu Kogiso (Osaka Prefecture. University), and Mitsuru Kitamura (Hiroshima University)

[CO-JP-3] *Level set-based topology optimization for the design of negative permeability*

dielectric metamaterials

Masaki Otomori, Takayuki Yamada, Kazuhiro Izui, and Shinji Nishiwaki (Kyoto University)

[CO-KR-2]*Topological design of the nano-aperture forhigh transmission*

Heesung Lim, Hyun Do Shin, and Jeonghoon Yoo (Yonsei University),

[CO-JP-8] *Level Set-Based Topology Optimization of an Internal Flow Problem in an Incompressible Viscous Fluid*

Kentaro Yaji, Takayuki Yamada, Kazuhiro Izui, and Shinji Nishiwaki (Kyoto University)

[CO-KR-3] *Shape optimization of acoustic lens beamformers*

Tran Quang Dat, Gang-Won Jang, Hyu Sang Kwon, Seung Hyun Cho, Yo-Han Cho, and Hee-Seon Seo (Sejong University)

Room A14

Computational Bio/Cell Mechanics

<JSME Organizers>

       Jiro Sakamoto, Kanazawa University

       Taiji Adachi, Kyoto University

<KSME Organizers>

       Sungsoo Na, Korea University

       Moon Ki Kim, Sungkyunkwan University

Session 1 : *9:00 - 10:30*

Chair : Taiji Adachi (Kyoto University)/ Sungsoo Na (Korea University)

Keynote: [BC-KR-1] *Macromolecular Dynamics Study for Bioscience and Nanoengineering*
Moon Ki Kim and Sung Ha Park (Sungkyunkwan University)

[BC-KR-4] *KOSMOS: Macromolecular Morph Server*
Sangjae Seo and Moon Ki Kim (Sungkyunkwan University)

[BC-JP-6] *Molecular Dynamics Simulation of Actin Filament*
Yasuhiro Inoue, Shinji Matsushita, and Taiji Adachi (Kyoto University)

Session 2 : *10:45 ～12:25*

Chair : Moon Ki Kim (Sungkyunkwan University) / Shigeo Wada (Osaka University)

[BC-KR-3] *The Study of Unfolding Mechanics for Ubiquitin Using Brownian Dynamic Simulation*
Gwon-Chan Yoon (Korea University), Kilho Eom (Yonsei University), and Sungsoo Na (Korea University)

[BC-KR-5] *Coarse-Grained Computational Mechanics for Protein Dynamics*
Jae-In Kim (Korea University), Kilho Eom (Yonsei University), and Sungsoo Na (Korea University)

[BC-JP-5] *Computational Biomechanics of Passive and Active Cell Motion Based on Elastic Deformation and Fluid Flow*
Ken-ichi Tsubota and Hao Liu (Chiba University)

[BC-KR-2] *High Throughput Measurements of Cell Spreading Dynamics*
Jong-Cheol Choi and Junsang Doh (Pohang University of Science and Technology)

Session 3 : *13:30-15:20*
Chair Jiro Sakamoto (Kanazawa University) / Ken-ichi Tsubota (Chiba University)

Keynote: [BC-JP-1] *Development of Multiscale Thrombus Simulator*
Shu Takagi (The University of Tokyo, RIKEN), Satoshi Ii (Osaka University), Seiji Shiozaki (RIKEN), Norio Shimamoto, Kazuyasu Sugiyama, and Yoichiro Matsumoto (The University of Tokyo)

[BC-JP-4] *The Effect of Coil-embolized Volume Ratio on Flow Stagnation in Cerebral Aneurysms*
Tomohiro Otani (Osaka University), Masanori Nakamura (Saitama University), Satoshi Ii, Toshiyuki Fujinaka, Masayuki Hirata, Junko Kuroda, Katsuhiko Shibano, and Shigeo Wada (Osaka University)

[BC-JP-2] *Bone Quality Evaluation Based on Bone Remodeling and Multi-scale Simulation*
Daisuke Tawara, Ken Nagura, Tetsuya Tsujikami (Ryukoku University), and Taiji Adachi (Kyoto Univeristy)

[BC-JP-3] *Biological and Biomechanical Characterization of Bone Regeneration by Porous Bioceramics*
Mitsugu Todo (Kyushu University), Akira Myoui, and Hideki Yoshikawa (Osaka University)

Room A15
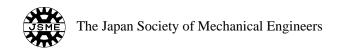
Contemporary Topics in Computational Mechanics

<JSME Organizers>

   Shinobu Yoshimura, (The University of Tokyo)

   Hiroshi Okada (Tokyo University of Science)

<KSME Organizers>

Chang Wan Kim (Konkuk University)

Hyun-Gyu Kim (SNUST)

Session 1 : *9:00 - 10:30*
Chair: Hiroshi Okada (Tokyo University of Science)

Keynote: [CM-JP-1] *Structural Analysis Usin SPH method*

Yuzuru Sakaie (Yokohama Natinoal University)

[CM-JP-2] *Numerical Simulation of Fracture Network in Rock based on GFEM and MLSM*

Hitoshi Matsubara (University of the Ryukyus)

[CM-KR-1] *Interface Elements for Coupling Independently Modeled Finite Element Domains*

Hyun-Gyu Kim (Seoul National University of Science & technology)

[CM-JP-10] *Hierarchical Domain Decomposition Explicit MPS Method for a Billions-of-Particle Analysis*

Kohei Murotani (The University of Tokyo), Masatoshi Oochi (SQUARE ENIX CO., LTD.), Toshimitsu Fujisawa (Prometech Software, Inc.), and Seiichi Koshizuka (The University of Tokyo)

Session 2 : *10:45 - 12:05*
Chair : Gaku Hashimoto (The University of Tokyo)

[CM-JP-11] *Performance Tuning of Parallel Structural Analysis Code Based on Hierarchical Domain Decomposition Method for K Supercomputer*

Hiroshi Kawai (Tokyo University of Science at Suwa), Masao Ogino (Nagoya University), Ryuji Shioya (Toyo University), and Shinobu Yoshimura (The University of Tokyo)

[CM-KR-5] *Efficient Numerical Method to Predict the Brake Squeal Noise Using the Dynamic Instability Technique*

Kewei Zhou, Cheol Kim, and Seoyeon Ahn (Kyungpook University)

[CM-JP-9] *Large Scale Parallel Analysis of Acoustic-Fluid Structure Interaction Using ADVENTURE System*

"Shunji Kataoka (JGC Corporation), Shinobu Yoshimura, Satsuki Minami (The University of Tokyo), and Hiroshi Kawai (Tokyo University of Science at Suwa)

[CM-JP-7] *Finit Element Analysis for Interaction Problems of Structure, Fluid and Electrostatic Field in Micro Cantilever Beams*
Daisuke Ishihara, Tomoyoshi Horie, Tomoya Niho, and Akiyoshi Baba (Kyushu Institute of Technology)

Session 3 : *13:30～15:20*
Chair : Hyun-Gyu Kim (SNUST)

[CM-JP-8] *FSI analysis of simple folded airbag deployment model using Lagrangian-Eulerian coupling method based on level sets*
Gaku Hashimoto (The University of Tokyo), Kenji Ono (RIKEN), and Hiroshi Okuda (The University of Tokyo)

[CM-KR-2] *Reduction of Free-Edge Peeling Stress in Laminated Composites Using Thermal Gradient*
Heung Soo Kim (Dongguk University), Jaehun Lee, and Maenghyo Cho (Seoul National University)

[CM-KR-3] *Comparison of Ordinary and Weighted Voronoi Analysis for Metallic Glasses*
A Discrete Dislocation Model for Polycrystal Plasticity
Junyoung Park (Kumoh National Institute of Technology) and Yoji Shibutani (Osaka University)

[CM-JP-6] *A Discrete Dislocation Model for Polycrystal Plasticity*
Akiyuki Takahashi, Akihiko Namiki, and Taiki Kogure (Tokyo University of Science), Tetsuya Matsuda, Naoto Kubota, and Keita Goto (University of Tsukuba)

[CM-JP-5] *Microscopic Interlaminar Analysis of CFRP Laminates Based on a Multiscale Approach*
Tetsuya Matsuda, Naoto Kubota, and Keita Goto (University of Tsukuba)

Session 4 : *15:40〜16:40*

Chair : Daisuke Ishihara (Kyushu Institute of Technology)

[CM-KR-4] *On Enhanced Asymptotic Computational Plate Models*
Jun-Sik Kim (Kumoh National Institute of Technology)

[CM-JP-3] *Analysis for Solid Mechanics Problems Using Wavelet Galerkin Method and the Applicaiton for Fracture Mechanics Problems*
Satoyuki Tanaka, Shigenobu Okazawa (Hiroshima University), and Hiroshi Okada(Tokyo University of Science)

[CM-JP-4] *Propagation Analyses of Multiple and Arbitrary Shaped Cracks in Complex Structures*
Hiroshi Okada (Tokyo University of Science), Hiroshi Kawai (Tokyo University of Science at Suwa), Shuhei Kaneko, and Yoshiyuki Tanaka (Tokyo University of Science)