Conference Schedule

Sixth M.I.T. Conference on Computational Fluid and Solid Mechanics — Focus: Advances in Solids & Structures

June 15-17, 2011

Conference Schedule Summary

Wednesday, June 15	**Thursday, June 16**	**Friday, June 17**
9:00am - 10:30am **Plenary Session**	9:00am - 10:30am **Plenary Session**	9:00am - 10:40am **Parallel Sessions** **1, 2, 3, 4**
11:00am - 1:00pm **Parallel Sessions** **1, 2, 3, 4**	11:00am - 1:00pm **Parallel Sessions** **1, 2, 3, 4**	11:00am - 1:00pm **Parallel Sessions** **1, 2, 3, 4**
2:00pm - 6:20pm **Parallel Sessions** **1, 2, 3, 4**	2:00pm - 6:20pm **Parallel Sessions** **1, 2, 3, 4**	1:00pm **End of Conference**

Plenary Sessions

Plenary Session for Wednesday, June 15

Chairperson: K.J. Bathe

9:00am - 9:05am
Welcome & Opening Remarks, K.J. Bathe

9:05am - 9:45am
Hyperelasticity of cubic crystals based on density functional theory
D.M. Parks, Massachusetts Institute of Technology, U.S.A.

9:45am - 10:30am
Mastering computational demanding problems in mechanics with neural network predictions
M. Papadrakakis, National Technical University of Athens, Greece

Plenary Session for Thursday, June 16

Chairperson: C.S. Peskin

9:00am - 9:45am
Material identification in viscoelastic damped multifunctional structures
A. Araujo and C.A.Soares, Technical University of Lisbon, Portugal

9:45am - 10:30am
On the influence of material compliance on the performance of physiological systems
M. Gharib, California Institute of Technology, U.S.A.

Parallel Sessions

Session 1

Session 2

Session 3

Session 4

Session 1

Wednesday, June 15

Multiscale Computational Nanomechanics Chairperson: Yvonnet, J.		
11:00am	**A New Multiscale Formulation For The Electromechanical Behavior Of Nanomaterials**	Park, H.S. et al.
11:20	**Plumber's Wonderland Found On Graphene**	Li, J. et al.
11:40	**Self-Assembly And Ordered Growth Of Quantum Structures In Heteroepitaxial Core-Shell Nanowires**	Zhang, Y-W. et al.
12:00	**A Large Strain Isotropic Elasticity Model Based On Molecular Dynamics Simulations Of A Metallic Glass**	Henann, D.L. et al.
12:20pm	**Effective Strain In Non-Ideal Carbon Nanostructures: A Unifying Concept For Understanding Electromechanical Response**	Dumitrica, T.
12:40	**Vibrational Analysis Of Graphene Based Nanostructures**	Avila, A. et al.
1:00	**Lunch**	-
Multiscale Computational Nanomechanics Chairperson: Li, J.		
2:00	**Morphometric Origins of Biological and Bio-inspired Flexible Exoskeleton Design via Mechanics of Macroscale Prototypes**	Ortiz, C.
2:20	**Towards An Understanding Of Diffusion-Induced-Stresses And Fracture In Lithium Ion Battery Electrodes**	Cheng, Y-T. et al.
2:40	**Red Blood Cells In Limiting Geometries**	Pivkin, I.V. et al.
3:00	**A Multiscale Procedure Combining Finite Elements And Ab Initio Calculations To Model Size-Dependent Mechanical Properties Of Nanowires**	Yvonnet, J. et al.
3:20	**Nonlinear Constitutive Behavior Of Spider Silk Minimizes Damage And Begets Web Robustness From The Molecules Up**	Buehler, M.J. et al.

3:40	**Multi-scale Physiologic Investigation of Lung Mechanics: Experiments and Modeling**	Gouldstone, A. et al.
4:00	**Coffee Break**	-
Uncertainty Quantification, Robustness and Computational Stochastic Mechanics Chairperson: Banerjee, J.R.		
4:20	**Introduction To Probabilistic Safety Analysis Of The Steel Frame Structures Exposed To Fire**	Kamiński, M. et al.
4:40	**Algorithms For Stochastic Eigenvalue Analysis With Polynomial Chaos Representation**	Meidani, H. et al.
5:00	**An Approximation Strategy Of Dynamic Systems Based On Modal Data**	Goller, B. et al.
5:20	**Identification Of The Elasticity Tensor Random Field Probabilistic Model Of A Cortical Bone Using *In Vivo* Measurements In Ultrasonic Range**	Desceliers, C. et al.
5:40	**Quantification Of Model-Form And Predictive Uncertainty For Multi-Physics Simulation**	Riley, M.E. et al.
6:00	**A New Modal Correction Method For Linear Structures Subjected To Deterministic And Random Loadings**	Palmeri, A. et al.

6:30 – 7:15 **Reception**

7:15 – 9:00 **Banquet**

Session 1

Thursday, June 16

Multiscale Computational Nanomechanics Chairperson: Pivkin, I.V.		
11:00am	**Multiscale Analysis Of Biological Cell Adhesion Under Mechanical And Chemical Stimuli: Pulling It All Together**	Van Vliet, K.J.

11:20	**Atomistic Simulation Of Instabilities For Atomic-Scale Lattice Structures By Application Of The Numerical Asymptotic Method**	Cong, Y. et al.
11:40	**Mechanical Properties Of Human Red Blood Cell Probed By Quantitative Phase Microscopy**	Park, Y.
12:00	**A Meso-Scale Modeling Framework For Amorphous Metals**	Schuh, C.A.
12:20pm	**Tailoring Nanocomposite Properties Through Atomic-Scale Design Of Interfaces**	Demkowicz, M.J. et al.
12:40	**Numerical Investigation Of The Electronic And Ionic Conductivities And Gas Pore-Triple-Phase Boundaries- In Anodes Of Solid Oxide Fuel Cells (SOFC)**	Wesemeyer, C. et al.
1:00	**Lunch**	-
Uncertainty Quantification, Robustness and Computational Stochastic Mechanics Chairperson: Schuëller, G.		
2:00	**Explicit Solutions For The Static Analysis Of Discretized Structures With Uncertain-But-Bounded Parameters**	Muscolino, G. et al.
2:20	**Stochastic Model For An Uncertain Rigid Body Of A Multibody Dynamical System**	Batou, A. et al.
2:40	**Uncertain Parameter Identification For Modeling Brittle Materials Under Dynamic Failure**	Graham-Brady, L. et al.
3:00	**Maxent Approach For The Probabilistic Modeling Of Matrix-Valued Random Fields With Constrained Eigenvalues: Application To Apparent Mechanical And Transport Properties**	Guilleminot, J. et al.
3:20	**Identification Of Macroscopic Material Properties Of Composites Panels From Limited Experimental Databases**	Mehrez, L. et al.
3:40	**The Probability Distribution Of Maintenance Cost Of A System Affected By Stochastic Degradation**	Pandey, M.D. et al.
4:00	**Coffee Break**	-

Uncertainty Quantification, Robustness and Computational Stochastic Mechanics Chairperson: Muscolino, G.		
4:20	**Generalized Stochastic Finite Element Method In Elastic Stability Problems**	Kamiński, M., et al.
4:40	**A Stochastic Multiscale Approach To Deal With The Homogenization Of Random Nonlinear Heterogeneous Materials Defined In High Dimensional Parameters Space**	Clement, A. et al.
5:00	**Smoothing Free Surface For Simulation Of Stationary Metal-Forming Processes Using An Arbitrary Lagrangian-Eulerian Finite Element Method**	Gavoille, S. et al.
5:20	**Structural Reliability Model Updating Using Noisy Measurements**	Sundar, V.S. et al.

Session 1

Friday, June 17

Molecular Mechanics Chairperson: Buehler, M.J.		
9:00am	**A Quasicontinuum-Mesoscale Approach For Damage Prediction In Polycrystalline Metal Materials**	Könke, C. et al.
9:20	**CanDo: Computer-Aided Engineering For DNA Origami**	Kim, D.-N. et al
9:40	**Molecular Simulation Of Large Strain Plastic Deformation Of Semicrystalline Polyethylene Under Compression And Shear**	Kim, J.M. et al.
10:00	**Comparison Of Concurrent Multiscale Methods In The Study Of Fracture In FCC Nickel**	Iacobellis, V. et al.
10:20	**Application Of The Subspace Iteration Method To The Normal Mode Analysis Of Proteins**	Sedeh, R.S. et al.
10:40	**Coffee Break**	-

Molecular Mechanics Chairperson: Könke, C.		
11:00	**Conformational Dynamics Data Bank: A Database For Conformational Dynamics Of Proteins And Supramolecular Protein Assemblies**	Kim, D.-N. et al.
11:20	**Optimal Properties Of Zinc-Coated Iron Combining Molecular Dynamics And Evolutionary Meta-Models Into Multi-Objective Genetic Algorithms**	Bhattacharya, B. et al.
Advanced Formulations & Analyses Chairperson: Könke, C.		
11:40	**A FORM-based RBDO Algorithm For Solid Mechanics Type Problems With Multiple Constraints**	Dersjo, T. et al.
12:00	**A Novel Numerical Procedure To Couple Suspended Cable Large Displacements, Extensibility And Cross-Sectional Deformations**	Bouaanani, N. et al.
12:20pm	**The Equilibrium And Stability Of The Bent Nonlinearly Elastic Panel**	Shubchinskaya, N. et al.
12:40	**MD Simulation And MKT Analysis Of Precursor Film In Electrowetting And Precursor Chain In An Interior Corner Wetting For Nano Droplets**	Zhao, Y.-P.

End of Session 1

Session 2

Wednesday, June 15

Advances and Applications of Computational Methods in Aerospace Chairperson: Abbink, F.		
11:00am	**Mechanics Of Micrometeoroid Impact Onto Hybrid Space Structures**	Bayandor, J. et al.
11:20	**Status Of FE Simulation Methods For Composite Aircraft Structures Under Impact Loads**	Johnson, A. et al.
11:40	**A Fresh Bio-Inspired Aircraft Design Concept**	Beutel, S. et al.
12:00	**Aerospace Virtual Dynamic Damage Testing Platform**	Gretsch, J. et al.
12:20pm	**Risk Reduction Project In Pad Abort 1 Launch Vehicle Loads**	Armand, S.C.
12:40	**Bird Strike Modeling For Crashworthiness Analysis Of Advanced Propulsion Systems**	Sidden, A. et al.
1:00	**Lunch**	-
Advances and Applications of Computational Methods in Aerospace Chairperson: Bayandor, J.		
2:00	**A Novel Approach To Traditionally Linear Flutter Analysis**	Ueda, T.
2:20	**Collision Provoked Failure Sequencing In Space Reentry Vehicles**	Bayandor, J. et al.
2:40	**Global And Local Modeling Of Gap Defects For Assessing The Performance Of Composite Laminates**	Abdi, F. et al.
3:00	**The Past, The Present And The Future: Three Generations Of Composites Development At NLR**	Abbink, F.
3:20	**Combined Fluid-Structural Damage Analysis For Engine Forward Sections**	Studley, A. et al.
3:40	***Form follows force* approach to shaping mechanical components**	Lewis, W.J. et al.
4:00	**Coffee Break**	-

Advances in Computational Modeling of OHL Systems Chairperson: McClure, G.		
4:20	**Behavior Of Guyed Transmission Line Structures Under Tornado Wind Loading**	Hamada, A.et al.
4:40	**Fluid-Structure Interaction Load Model For Dynamic Analysis Of Overhead Transmission Lines Subjected To Glaze Icing And Gusty Winds**	Keyhan, H. et al.
5:00	**Modeling The Dynamic Post-Elastic Response Of Lattice Transmission Towers**	Zhang, X. et al.
5:20	**Stress Analysis Of An Optical Ground Wire Using Finite Elements**	Qi, G. et al.
5:40	**Modeling The Dynamic Response Of Overhead Transmission Lines To Shock-Induced Ice Shedding With An Improved Failure Criterion For Glaze Ice Deposits**	Mirshafiei, F. et al.
6:00	**Numerical Investigation Of Iced-Conductor Oscillations In The Wake Of Windward Conductors**	Borna, A. et al.

6:30 – 7:15 **Reception**

7:15 – 9:00 **Banquet**

Session 2

Thursday, June 16

Biomechanics Chairperson: Rugonyi, S.		
11:00am	**Biomechanical Modeling Of The Heart: From Multi-Scale Multi-Physics Formulations To Patient-Specific Simulations**	Chapelle, D.
11:20	**Quantifying Blood Flow And Wall Shear Stresses In The Outflow Tract Of Chick Embryonic Hearts**	Rugonyi, S.et al.

11:40	**A Comparison Between Structural And Fluid-Structure Interaction Approaches For The Simulation Of The Mechanical Behavior Of A Healthy Aortic Valve**	Maleki, H. et al.
12:00	**Prediction Of Cardiac Gravitational Deformation And Stress Distribution Using A 3D Finite Element Heart Model**	Iskovitz, I. et al.
12:20pm	**Morphomechanical Model For Embryonic Wound Healing**	Wyczalkowski, M.A. et al.
12:40	**A Hyperelastic Model Of Articular Cartilage**	Heydon, R. et al.
1:00	**Lunch**	-
Biomechanics Chairperson: Chapelle, D.		
2:00	**Patient Specific Characterization Of Tumor-Bearing Lung Tissue Elasticity Using 4D CT Image Data For Radiation Therapy**	De, S. et al.
2:20	**Multi-Physics MRI-Based Two-Layer Fluid-Structure Interaction Anisotropic Models Of Human Right And Left Ventricles With Different Patch Materials: Cardiac Function Assessment And Mechanical Stress Analysis**	Tang, D. et al.
2:40	**Effects Of Shape Versus Material Model Variations On AAA Wall Mechanics**	Raut, S.S. et al.
3:00	**A Two-Scale Approach To Bone Microstructure Remodeling Phenomenon**	Szajek, K. et al.
3:20	**A Novel Approach Combining *In Vivo* 3D Multi-Contrast And Cine Magnetic Resonance Imaging And Modeling To Determine Material Properties Of Human Carotid Arteries**	Liu, H. et al.
3:40	**An FSI Analysis Of Murine Vein Graft Models With Severe Stenosis For Quantifying The Correlations Between Intimal Hyperplasia/Wall Thickness And Biomechanical Stresses**	Cai, M. et al.
4:00	**Coffee Break**	-

Multi-scale Modeling of High-performance Materials Chairperson: Baylot, J.T.		
4:20	**Discontinuous Cell Method (DCM) For Cohesive Fracture Propagation**	Cusatis, G. et al.
4:40	**Multiscale Modeling Of Fiber Reinforced Concrete Using The Lattice Discrete Particle Model**	O'Daniel, J.L. et al.
5:00	**Charge Optimized Many Body (COMB) Potentials For Complex Systems**	Sinnot, S.
5:20	**Using Molecular Dynamics To Help Design Carbon Nanotube Super Tensile Materials**	Cornwell, C.F. et al.
5:40	**The Multi-Scale Physical And Numerical Modeling Of Fracture Phenomena In The Mgca0.8 Alloy**	Milenin, A., et al.
6:00	**Modeling The Effects Of Voids On The High Strain Rate Response Of Concrete**	Foust, B.W. et al.

Session 2

Friday, June 17

Multiphysics Chairperson: De, S.		
9:00am	**Vibration And Stability Equations Of Bars From Electromagnetoelasticity Theory**	Dökmeci, M. C. et al.
9:20	**Numerical Simulation Of The Electron Beam Welding Process**	Lacki, P. et al.
9:40	**A Thermo-Mechanically Coupled Constitutive Model For Shape-Memory Polymers At Finite Strains**	Ozdemir, I. et al.
10:00	**Advances In Fully Coupled Thermal-Structural Finite Element Analysis Of A Solid Deformable Body With Convective Heat Transfer**	Écsi, L. et al.
10:20	**Effects Additional Rod In Piezoelectric/Viscous Liquid Phononic Crystals**	Wang, Yi-Ze et al.

10:40	**Coffee Break**	-
Multiphysics Chairperson: Kamiński, M.		
11:00	**Evaluation Of Electromechanical Properties And Field Concentrations Near Electrodes In Piezoelectric Thick Films For MEMS Mirrors By Simulations And Tests**	Narita, F. et al.
11:20	**Interaction Between Fibers And An Air-Droplets-Mixture In Composite Manufacturing**	Diffo, P. et al.
11:40	**Hydroelastic Analysis Of Floating Structures**	Kim, K.-T. et al.
12:00	**On The Moving Web Dynamics Under Stability Considerations Including Interaction With Surrounding Fluid**	Jeronen, J. et al.
12:20pm	**Modeling Of Acoustic-Emission Wave Propagation In Layered Media**	Alamin, A. et al.
12:40	**Elasto-Plastic Analysis Of Steel Frames In Fire Under Cyclic Loading**	Wu, Y.C.

End of Session 2

Session 3

Wednesday, June 15

Error Assessment and Error Control Chairperson: Grätsch, T.		
11:00am	**A Practical Approach To Error Control In Time-Dependent Fluid-Structure Interaction Analysis**	Grätsch, T.
11:20	**Numerical Modeling Of Mechanical Joining Technologies: Numerical Issues And Optimization Of Mechanical Strength**	Bouchard, P.-O. et al.
11:40	**Error Estimation And Mesh Adaptation For Signorini-Coulomb Problems Using E-FEM**	Lebon, F. et al.
12:00	**Finite Element Analysis Of The Girkmann Problem: Modern *Hp*-Version Vs. Classical *H*-Version**	Niemi, A.H.
12:20pm	**Simulation For Compaction Of Nonlinear Viscoplastic Granular Materials Using Automatic Adaptive Mesh Upgrade Schemes**	Wu, Y.C.
12:40	**Vibration Modelling Of Complex Waveguide Structures**	Popov A., et al.
1:00	**Lunch**	-
Composite Structures Chairperson: Montans, F.J.		
2:00	**Micromechanics Based Progressive Damage Modeling Of 3D Woven Composites Under Ballistic Impact**	De, S. et al.
2:20	**A Constitutive Ply Model For Non-Linear Implicit FEM Analyses Of Laminated Composite Structures**	Petterman, H. et al.
2:40	**Large Deflection And Stability Analysis Of Elastic-Plastic Unbalanced Open Sandwich Conical Shells Under Compound Load**	Zielnica, J.
3:00	**A Nonlinear Strut And Tie Model For Analysis Of Reinforced Concrete Beams In Shear With Repair**	Prasad, Y.K.G. et al.

3:20	**Elastic Constants Of Materials With 3D Pores Of Irregular Geometry On The Example Of Carbon/Carbon Composites**	Drach, B. et al.
3:40	**A Simple Multiscale Numerical Method For Computing The Response Of Linear Viscoelastic Heterogenous Structures**	Tran, A.B. et al.
4:00	**Coffee Break**	-
Composite Structures Chairperson: Kim, D.-N.		
4:20	**Micromechanics-Based Progressive Failure Analysis Of Fibre-Reinforced Composites With Non-Iterative Element Failure Method**	Sun, X.S. et al.
4:40	**Cross-Section Optimal Design Of Composite Laminated Thin-Walled Beams**	Cardoso, J. B. et al.
5:00	**Meso-Scale Analysis Of FRC Using A Two-Step Homogenization Approach**	Gal, E. et al.
5:20	**Dynamic Axial Crushing Of A Crash Tube Using Implicit Time Integration**	Kazanci, Z. et al.
5:40	**Active Damping Of Nonlinear Vibrations Of Doubly Curved Composite Shells Using Active Fiber And 1-3 Piezoelectric Composites**	Ray, M.C. et al.
6:00	**On The Holes Formation Along The Dislocation Line In The Continuum With Microstructure**	Pustovalova, O.

6:30 – 7:15 **Reception**

7:15 – 9:00 **Banquet**

Session 3

Thursday, June 16

Coupling of Meshless Methods with Finite Element Methods in Multiphysics Chairperson: Tang, D.

11:00am	**Cardiac Dynamics By The Immersed Boundary Method: Fluid-Structure Interaction And Bidomain Electrophysiology In A Unified Conceptual And Computational Framework**	Peskin, C.S. et al.
11:20	**Discretized Peridynamics For Solids**	Hong, J.W. et al.
11:40	**An Explicit SPH-FEM Coupling For Fluid-Structure Interaction Simulations**	Fourey, G. et al.
12:00	**Element-Free Galerkin Models For Electromagnetic NDE Applications**	Liu, X. et al.
12:20pm	**Meshless Generalized Finite Difference Models With Fluid-Structure Interactions Based On Serial *In Vivo* MRI Data For Patient-Specific Carotid Plaque Progression Simulation**	Tang, D. et al.
12:40	**A Computational Concurrent Multiscale Method For Modeling Interfacial Mechanics Between Dense Dry Granular Materials And Deformable Solids**	Regueiro, R.A.
1:00	**Lunch**	-
Coupling of Meshless Methods with Finite Element Methods in Multiphysics Chairperson: Hong, J.-W.		
2:00	**Efficient Multiscale Simulations Of Kinetic Transport**	Hadjiconstantinou, N.G.
2:20	**Multiscale Mechanisms Of Brittle Bone Disease Osteogenesis Imperfecta: From First Principles To Tissue Mechanics**	Buehler, M.J. et al.
2:40	**Multiscale, Finite Element Modeling Of Surface Effects On Nanomaterials**	Park, H.S.
3:00	**Coupling Mesh-Meshless Modelling To Describe Melting Solids In Industrial Facilities**	Losurdo, M. et al.
3:20	**A Method For Solving The Equations Of Nonlocal Plasticity Using The Material Point Method**	Burghardt, J.A. et al.
3:40	**Machine Learning Via Gaussian Processes For Solving Differential And Integral Equations**	Melkumyan, A.
4:00	**Coffee Break**	-

Design Optimization: Advances in System, Sizing, Shape and Topology Optimization Chairperson: Tootkaboni, M.		
4:20	**Advances In Projection-Based Algorithms For Continuum Topology Optimization**	Guest, J.K. et al.
4:40	**On Nonlinear Dynamic Simulation Techniques For Hybrid Durability/NVH Optimizations Of Engines**	Payer, E.
5:00	**Topology Optimization For Enhancing Fluidic Performance Of Periodic Structures**	Chen, Y. et al.
5:20	**Improving Numerical Efficiency And Stability In Topology Optimization Governed By Nonlinear Mechanics**	Lotfi, R. et al.
5:40	**Optimization Of Hyperbolic Paraboloid Shell Structures And The Works Of Felix Candela**	Draper, P. et al.
6:00	**Achieving High Resolution Design In Topology Optimization Via Multiple Discretizations**	Nguyen, T.H. et al.

Session 3

Friday, June 17

Design Optimization: Advances in System, Sizing, Shape and Topology Optimization Chairperson: Draper, P.		
9:00am	**Robust Topology Optimization Of Structures With Uncertainties In Stiffness**	Tootkaboni, M. et al.
9:20	**Multi-Objective Optimization Of Energy Absorption And Shear Deformation Properties Of Zinc-Coated Iron**	Bhattacharya, B. et al.
9:40	**A Dynamic Stiffness Solution For In-Plane Free Vibration Analysis Of A Rotating Beam**	Banerjee, J.R.
10:00	**Shape Optimization For Drag Reduction In Linked Bodies Using Evolution Strategies**	Gazzola, M. et al.
10:20	**A Human-Guided Structural Optimization Tool For Conceptual Design**	Clune, R. et al.

10:40	**Coffee Break**	-
Design Optimization: Advances in System, Sizing, Shape and Topology Optimization Chairperson: Li, Q.		
11:00	**Stiffness/Weight Optimization Of Cellular Structures Based On Energy Homogenization**	Shokrgoza, A. et al.
11:20	**Updating Response Sensitivity Models Of Nonlinear Vibrating Structures Using Particle Filters**	Radhika, B. et al.
Advanced Formulations & Analyses Chairperson: Li, Q.		
11:40	**Activation Dynamics In The Optimization Of Targeted Movements**	Eriksson, A.
12:00	**Preconditioning GMRES For Finite Element Discretization Of Linear Elasticity By Hermitian/Skew-Hermitian Separation**	Zhao, D.
12:20pm	**Mixed Spectral/Hp Element Formulation For Nonlinear Elasticity**	Yu, Y. et al.
12:40	**Investigation Of Tunnel Face Stability And Ground Movements Using Small-Scale Models**	Ahmed, M.

End of Session 3

Session 4

Wednesday, June 15

Advanced Formulations & Analyses Chairperson: Shindo, Y.		
11:00am	**Failure Models For Quasi-Brittle Materials With Or Without Reinforcement Capable Of Predicting Crack-Spacing And Opening**	Ibrahimbegovic, A.
11:20	**Lattice Boltzmann Simulations of Cantilevers Interactions with Viscous Fluids**	Falcucci, G. et al.
11:40	**The Nodal Point Force (NPF) Based Stress Calculation Method**	Payen, D. et al.
12:00	**Modeling Large Strain Anisotropic Elasto-Plasticity With Logarithmic Strain And Stress Measures**	Montans, F.J. et al.
12:20pm	**Nonlinear Finite Element Analysis Of A Shallow Crack In A Nuclear Pressure Elbow And Pipe By Three-Term Asymptotic Approach**	Labbe, F.
12:40	**Investigating And Testing The Reference Map Approach For Large-Strain Solid Deformation**	Kamrin, K.
1:00	**Lunch**	-
Earthquake Engineering Chairperson: Gantes, C.		
2:00	**An Overview To Structural Seismic Design Optimisation Frameworks**	Lagaros, N. et al.
2:20	**Numerical Modeling Of Masonry-Infilled RC Frames Subjected To Seismic Loads**	Koutromanos, I. et al.
2:40	**On The Robustness Of Reliability-Based Optimal Design Of Base-Isolated Structural Systems**	Jensen, H.A.
3:00	**Numerical And Experimental Evaluation Of Seismic Capacity Of High Rise Steel Buildings Subjected To Long Duration Earthquakes**	Lignos, D.G. et al.
3:20	**Finite Element Analysis Of Seismic Pounding Of Base-Isolated Reinforced Concrete Buildings**	Pant, D.R. et al.

3:40	**Numerical And Analytical Investigation Of Collapse Loads Of Laced Built-Up Columns**	Kalochairetis, K.E. et al.
4:00	**Coffee Break**	-
Beam/Plate/Shell Structures Chairperson: Lee, P.-S.		
4:20	**Development Of General Beam Finite Elements With Warping Displacements**	Lee, P.-S. et al.
4:40	**Thin-Walled Steel Tubular Columns Under Cyclic Multidirectional Loading**	Mamaghani, I.H.P.
5:00	**Refined Multilayered Shell Elements On MITC Type Technique And Unified Formulation**	Cinefra, M. et al.
5:20	**Equilibrium, Stability And Shape Optimization Of The Nonlinearly Elastic Corrugated Membranes**	Sigaeva, T. et al.
5:40	**Effect Of The Geometry On The Nonlinear Vibrations Of Functionally Graded Cylindrical Shells**	Zippo, A. et al.
6:00	**Local Elastic Buckling Of Thin-Walled Channel Beams And Sandwich Beams**	Magnucki, K. et al.

6:30 – 7:15 **Reception**

7:15 – 9:00 **Banquet**

Session 4

Thursday, June 16

Beam/Plate/Shell Structures Chairperson: Lee, P.-S.		
11:00am	**Free Vibration Of Elastically Supported Timoshenko Beams With Attached Masses By Generalized Regression Neural Network**	Demirdağ, O. et al.
11:20	**Beam Element With Spatial Variation Of Material Properties For Multiphysics Analysis Of Functionally Graded Materials**	Murin, J. et al.

11:40	**Energy Absorption Of Heterogeneous And Functionally Graded Cellular Structures**	Adjari, A. et al.

There are no Thursday afternoon presentations for Session 4.

Session 4

Friday, June 17

Advanced Formulations & Analyses Chairperson: Ibrahimbegovic, A.		
9:00am	**On The Analysis Of Vibro-Acoustic Systems In The Mid-Frequency Range Using A Hybrid Deterministic-Statistical Approach**	Vergote, K. et al.
9:20	**Crack And Contact Problems In A Functionally Graded Plate**	Nikbakht, A. et al.
9:40	**Exploiting The Structural Reserve Of Textile Composite Structures By Progressive Failure Analysis Using A New Orthotropic Failure Criterion**	Rolfes, R. et al.
10:00	**A Combined Finite Element And Monte Carlo Approach For Radiation Damage Assessment On Nuclear Facilities**	Pomaro, B. et al.
10:20	**Efficient Treatment Of Stress Singularities In Poro-Elastic Wave Based Models Using Special Purpose Enrichment Functions**	Deckers, E. et al.
10:40	**Coffee Break**	-
Advanced Formulations & Analyses Chairperson: Murin, J.		
11:00	**On Some Aspects Of The CNEM Implementation In 3D In Order To Simulate High Speed Machining Or Shearing**	Lorong, P. et al.
11:20	**Nonlinear Contact-Theory For Analysis Of Wire Rope Strand Using High-Order Approximation In The FEM**	Páczelt, I. et al.
11:40	**Collapse Load Evaluation Of Structures With Frictional Contact Supports Under Combined Stresses**	Tangaramvong, S. et al.

12:00	**Applicability Of Stress-Force-Fabric Relationship For Non-Proportional Loading**	Li, X. et al.
12:20pm	**Analysis Of The Magnet Support Structure For The Plasma Fusion Experiment Wendelstein 7-X**	Jaksic, N. et al.
12:40	**Mesoscale Studies In Fracture Of Concrete: A Numerical Simulation**	Mungule, M. et al.

End of Session 4