ICTAM 2012 Technical Program

Monday, 20 August 2012

Session	*9:00*
Opening Ceremony **Room: Plenary Hall B**	

Session	*10:00*
Opening Lecture Chair: Zhemin Zheng, China **Room: Plenary Hall B**	***Multiscale fluid mechanics and modeling*** Shiyi Chen, China

Coffee Break: 11:00 – 11:20, Main Lobby, 1st floor

Session	*11:20*	*11:50*
MS01 Mechanical challenges in energy (Introductory Lectures) Chairs: Kenneth Reifsnider, USA Anil Virkar, USA **Room: Ballroom A**	***The role of solid mechanics in electrochemical energy systems such as lithium-ion batteries and fuel cells (MS01-009)*** Robert M. McMeeking, USA	***Mechanisms for geological carbon sequestration (MS01-022)*** Dongxiao Zhang, China
MS02 Mechanics of natural disasters (Introductory Lectures) Chairs: Frederic Dias, Ireland Pavel Tkalich, Singapore **Room: Ballroom B**	***Fukushima and Chernobyl nuclear accidents' environmental assessments and U.S. hanford nuclear site's waste management (MS02-010)*** Yasuo Onishi, USA	***Fluid mechanics approaches to modeling the environmental consequences of nuclear accidents and mud volcano eruption (MS02-013)*** Mark Zheleznyak, Ukraine
MS03 Fluid-structure interactions in biological systems (Introductory Lecture) Chair: Gerhard A. Holzapfel, UK **Room: Ballroom C**	***Modelling the evolution of cerebral aneurysms: biomechanics, mechanobiology and multiscale modelling (MS03-017)*** Paul N. Watton, Alisa Selimovic, Haoyu Chen, Gerhard A Holzapfel, Yiannis Ventikos, UK	
MS04 Mechanics of transport in microfluidic devices (Introductory Lectures) Chairs: Matthew Begley, USA Thomas Laurell, Sweden **Room: Function Hall A**	***Rapid and precise particle manipulation in microfluidic devices (MS04-018)*** Masumi Yamada, Sari Sugaya, Minoru Seki, Japan	***Theoretical aspects of microchannel acoustophoresis: thermoviscous corrections to the radiation force (MS04-014)*** Henrik Bruus, Denmark
MS05 Dynamics and control of morphing structures (Introductory Lecture) Chair: Haiyan Hu, China **Room: Function Hall B**	***Morphing structures for improved aircraft performance (MS05-027)*** Jonathan E. Cooper, UK	
MS06 Effects of small size scales in materials modeling (Introductory Lecture) Chairs: Huajian Gao, USA Julia Greer, USA **Room: Function Hall C**	***Atomistic mechanical testing of nanostructures – seeing the invisible and bridging theory and experiments (MS06-049)*** Horacio D. Espinosa, Rodrigo A. Bernal, Ravi Agrawal, USA	

Lunch: 12:20 -13:20, Exhibition Hall 5, underground floor

Session	*13:20*	*13:40*	*14:00*
FM06: Drops, bubbles and multiphase flows Chairs: Howard H. Hu, USA Roberto Zenit, Mexico **Room: Ballroom A**	***Dynamics and rheology of elastic particles in an extensional flow (FM06-008, invited lecture)*** Tong Gao, Howard H. Hu, Pedro Ponte Castaneda, USA	***Droplet impact near a millimeter-size hole (FM06-066)*** Rianne de Jong, Oscar R. Enriquez, Devaraj van der Meer, The Netherlands	***Slender body theory for the generation of microemulsions and microbubbles with medical applications (FM06-012)*** José Manuel Gordillo, E. Castro-Hernández, F. Campo-Cortès, Spain
SM16: Vibrations and control of structures Chairs: Felix L. Chernousko, Russia Zaihua Wang, China **Room: Ballroom B**	***Global dynamics and complexity: a modern perspective for the analysis, design and control of mechanical/structural systems (SM16-032, invited lecture)*** Stefano Lenci, Rega Giuseppe, Italy	***Nonlinear vibrations of axially moving viscoelastic beams with supercritical transport speed (SM16-022)*** Hu Ding, Guoce Zhang, Liqun Chen, China	***Nonlinear vibrations of hyperelastic membranes resting on a nonlinear elastic foundation (SM16-004)*** Paulo B. Gonçalves, Renata M. Soares, Brazil
FM07: Flow instability and transition Chairs: Nadine Aubry, USA Patrick Huerre, France **Room: Ballroom C**	***A mechanism for generating a packet of hairpins –comparison between model and experimental results (FM07-045)*** Jacob Cohen, Michael Karp, Vyomesh Mehta, Israel	***Double diffusivity on miscible fluid flow in a channel (FM07-009)*** Manoranjan Mishra, Anne De Wit, Kirti Chandra Sahu, India	***Weakly nonlinear theory for Rayleigh-Taylor instability of rotating fluids (FM07-013)*** Jianjun Tao, China
SM05: Fracture mechanics Chairs: Andrei Abramian, UK Yuri Antipov, USA **Room: Function Hall A**	***Stress corrosion cracking investigation in Zircaloy-4 using digital image correlation (SM05-023, invited lecture)*** Emilien Durif, Julien Réthoré, Marion Fregonese, Alain Combescure, France	***On damage-tolerant properties test and predictions of titanium alloys used in the pressure hull of manned submersibles (SM05-022)*** Fang Wang, Weicheng Cui, Xiaoping Huang, Binbin Pan, Yunsheng Shen, China	***Kinetics of interfacial adhesion strength and fracture (SM05-025)*** Mikhail Perelmuter, Russia
SM15: Structural optimization Chairs: Erik Lund, Denmark Ole Sigmund, Denmark **Room: Function Hall B**	***Multi-material topology design of laminates with strength criteria (SM15-038)*** Erik Lund, Denmark	***Composite optimization - ply drop-rate constraints for concept and detailed design (SM15-033)*** Ming Zhou, Raphael Fleury, USA	***Isogeometric shape design sensitivity analysis of elasticity problems using multi-resolution and h-refinement approach (SM15-041)*** Seonho Cho, Taeho Lee, Bonyong Koo, Korea
MS06: Effects of small size scales in materials modeling Chairs: Erik van der Giessen, The Netherlands Bob Svendsen, Germany **Room: Function Hall C**	***Twinning-mediated plastic deformation in Au nanowhiskers (MS06-058, invited lecture)*** Andreas Sedlmayr, Reiner Mönig, Erik Bitzek, Gunther Richter, Oliver Kraft, Germany	***Multiscale atomistics for defects in electronic materials (MS06-002)*** Kaushik Dayal, Jason Marshall, USA	***Mechanism of dislocation jam and starvation on crystal plasticity in submicron pillars (MS06-004)*** Zhuo Zhuang, Yuan Gao, Zhanli Liu, China
SM13: Plasticity, viscoplasticity and creep Chairs: Frédéric Barlat, Republic of Korea George Z. Voyiadjis, USA **Room: 202A+B**	***On constitutive equations for processes of severe plastic deformation (SM13-040, invited lecture)*** Sergei Alexandrov, Robert Goldstein, Russia	***Micromechanical modelling of the softening of metallic materials during cyclic and creep loading (SM13-033)*** Maxime Sauzay, Pierre-François Giroux, Anne-Françoise Gourgues-Lorenzon, France	***Steady granular flow: local and nonlocal approaches (SM13-037)*** Ken Kamrin, Georg Koval, USA
FS01: Acoustics Chairs: Max Kandula, USA Yuesheng Wang, China **Room: 203A+B**	***Correlation model for noise generation by large vortex oscillations in turbulent jet (FS01-020, invited lecture)*** Victor F. Kopiev, Sergey A. Chernyshev, Russia	***FMBEM acoustic shape sensitivity analysis and its application to shape optimization of noise barriers (FS01-015)*** Changjun Zheng, Haibo Chen, China	***Noise radiation of periodical sandwich structures (FS01-003)*** Fengxian Xin, Han Meng, Cheng Shen, Tianjian Lu, China
FM01: Biological fluid dynamics Chairs: Han Chen, China Tianyou Fan, China **Room: 205A+B**	***Topology optimization of the three-dimensional fish tail (FM01-012)*** Chuijie Wu, Zhiqiang Xin, China	***Pairwise interactions between squirming micro-organisms (FM01-006)*** Richard J. Clarke, Matthew D. Finn, New Zealand	***Segregation phenomena in flowing suspensions of deformable particles: toward an understanding of cell and particle dynamics in blood flow (FM01-008)*** Amit Kumar, Kushal Sinha, Rafael G. Henriquez Rivera, Michael D. Graham, USA

Session	*14:20*	*14:40*	*15:00*
FM06: Drops, bubbles and multiphase flows Chairs: Howard H. Hu, USA Roberto Zenit, Mexico **Room: Ballroom A**	***Formation of bubbles in planar co-flowing air-water sheets (FM06-016)*** Carlos Martínez-Bazán, Cándido Gutiérrez-Montes, Rocío Bolanos-Jiménez, Alejandro Sevilla, Spain	***Gas influence in drop impact on a dry solid surface (FM06-017)*** Zhen Jian, Christophe Josserand, Stephane Popinet, Pascal Ray, Stephane Zaleski, France	***Drop impact on (superheated) surfaces: high-speed color interferometry allows to quantify the role of air and vapor layer (FM06-019)*** Chao Sun, Tuan Tran, Roeland C. A van der Veen, H. J. J. Staat, Andrea Prosperetti, Detlef Lohse, The Netherlands
SM16: Vibrations and control of structures Chairs: Felix L. Chernousko, Russia Zaihua Wang, China **Room: Ballroom B**	***A new variational method for free vibration analysis of conical shells with discontinuity in thickness (SM16-008)*** Yegao Qu, Hongxing Hua, Yong Chen, Guang Meng, China	***Analysis of non-linear vibrations of a viscoelastic cylindrical shell under the conditions of internal resonance (SM16-059)*** Yury A. Rossikhin, Marina V. Shitikova, Russia	***Nonlinear vibrations of laminated circular cylindrical shells: comparison of different shell theories (SM16-091)*** Marco Amabili, Canada
FM07: Flow instability and transition Chairs: Nadine Aubry, USA Patrick Huerre, France **Room: Ballroom C**	***Linear mechanisms of the sensitivity of jets to external forcing (FM07-010)*** Xavier Garnaud, Lutz Lesshafft, Peter J. Schmid, Patrick Huerre, France	***Mixed cross spirals as interim solutions in the Taylor Couette system (FM07-011)*** Sebastian A. Altmeyer, Christian Hoffmann, Korea	***Vortex-wave interaction theory and self-sustained processes in shear flows (FM07-012)*** Philip Hall, UK
SM05: Fracture mechanics Chairs: Andrei Abramian, UK Yuri Antipov, USA **Room: Function Hall A**	***A variational approach to thermal fracture (SM05-027)*** Blaise Bourdin, Corrado Maurini, USA	***Interfacial cracks in bi-material solids: stroh formalism and skew-symmetric weight functions (SM05-031)*** Lorenzo Morini, Enrico Radi, Natalia V. Movchan, Alexander B. Movchan, Italy	***Multifissuration and debonding of thin films— analytic and numeric 1D solutions via a variational approach (SM05-039)*** Andrés A. León Baldelli, Blaise B. Bourdin, Jean-Jacques Marigo, Corrado Maurini, France
SM15: Structural optimization Chairs: Erik Lund, Denmark Ole Sigmund, Denmark **Room: Function Hall B**	***Free material design with multiple load cases (SM15-015)*** Pauli Pedersen, Niels Leergaard Pedersen, Denmark	***Particle swarm optimization in identification of stochastic multiscale models (SM15-045)*** Waclaw Kus, Tadeusz Burczynski, Poland	***Thickness optimization of fiber reinforced laminated composites using the discrete material optimization method (SM15-010)*** Soeren N. Soerensen, Erik Lund, Denmark
MS06: Effects of small size scales in materials modeling Chairs: Erik van der Giessen, The Netherlands Bob Svendsen, Germany **Room: Function Hall C**	***Self-healing of GaAs nanowires: an atomistic study (MS06-005)*** Jun Wang, Chunsheng Lu, Qi Wang, Pan Xiao, Fujiu Ke, Yilong Bai, Yaogen Shen, Yanbo Wang, Bin Chen, Xiaozhou Liao, Huajian Gao, China	***Multiscale modeling of multi-physics (MS06-006)*** Xiangjao Wang, James D. Lee, Jiaoyan Li, USA	***Intrinsic lengths govern failure mode transition in metallic glasses (MS06-031)*** Lanhong Dai, Yan Chen, China
SM13: Plasticity, viscoplasticity and creep Chairs: Frédéric Barlat, Republic of Korea George Z. Voyiadjis, USA **Room: 202A+B**	***Dislocation-mechanics-based constitutive descriptions of crystal plasticity of metals: an overview (SM13-035)*** Chongyang Gao, Liangchi Zhang, China	***Strain hardening for steel under non-proportional loading (SM13-009)*** Frédéric Barlat, Jin Jin Ha, Myoung-Gyu Lee, Republic of Korea	***A new elastic-plastic model for describing the nanoindentation size effects of surface-nanocrystalline materials (SM13-050)*** Shaoming Yu, Yueguang Wei, China
FS01: Acoustics Chairs: Max Kandula, USA Yuesheng Wang, China **Room: 203A+B**	***Trailing-edge noise reduction via spanwise oscillation (FS01-008)*** Wolfgang Schröder, Seong Ryong Koh, Matthias Meinke, Germany	***Wave propagation in one-dimensional nanoscale phononic crystals (FS01-007)*** Ali Chen, Yuesheng Wang, China	***Variation of acoustic streaming flow field due to a bounding wall (FM06-049)*** Xiaolong Wang, Hong Wei, Tongbeum Kim, Tianjian Lu, China
FM01: Biological fluid dynamics Chairs: Han Chen, China Tianyou Fan, China **Room: 205A+B**	***Chemobioconvection in a suspension of luminescent bacteria (FM01-009)*** Simon F. Park, Jocelyn Dunstan, Timothy J. Pedley, Raymond E. Goldstein, UK	***Unsteady boundary layers on flapping wings (FM01-010)*** Dmitry Kolomenskiy, Keith Moffatt, Marie Farge, Kai Schneider, France	***Effect of spatial confinement on helical swimming in Stokes flow (FM01-037)*** Bin Liu, Kenneth S. Breuer, Thomas R. Powers, USA

Session	*15:20*	*15:40 – 16:00*
FM06: Drops, bubbles and multiphase flows Chairs: Howard H. Hu, USA Roberto Zenit, Mexico **Room: Ballroom A**	***Simulation of aerosol evolution in a turbulent flow (FM06-024)*** Kun Zhou, Antonio Attili, Fabrizio Bisetti, Kingdom of Saudi Arabia	***Coffee Break*** ***Main Lobby, 1st floor***
SM16: Vibrations and control of structures Chairs: Felix L. Chernousko, Russia Zaihua Wang, China **Room: Ballroom B**	***Two parameter codimension-three bifurcations of a novel nonlinear oscillator with strong irrational nonlinearities (SM16-011)*** Qingjie Cao, Yanwei Han, Yushu Chen, Marian Wiercigroch, Sergey Piskarev, China	
FM07: Flow instability and transition Chairs: Nadine Aubry, USA Patrick Huerre, France **Room: Ballroom C**	***Angular momentum transport and turbulence in laboratory models of Keplerian flows (FM07-008)*** Matthew S. Paoletti, Dennis P. M. van Gils, Berengere Dubrulle, Chao Sun, Detlef Lohse, Daniel P. Lathrop, USA	
SM05: Fracture mechanics Chairs: Andrei Abramian, UK Yuri Antipov, USA **Room: Function Hall A**	***Static and dynamic fatigue of cracked piezoelectric ceramics in three-point bending under AC electric fields (SM05-014)*** Yasuhide Shindo, Fumio Narita, Japan	
SM15: Structural optimization Chairs: Erik Lund, Denmark Ole Sigmund, Denmark **Room: Function Hall B**	***Topology optimization of a composite cathode in a solid oxide fuel cell (SM15-051)*** Xiankai Song, Alejandro R Diaz, Andre Benard, Jason Nicholas, USA	
MS06: Effects of small size scales in materials modeling Chairs: Erik van der Giessen, The Netherlands Bob Svendsen, Germany **Room: Function Hall C**	***Nanostructured networks: materials and applications (MS06-012)*** Zhiping Xu, China	
SM13: Plasticity, viscoplasticity and creep Chairs: Frédéric Barlat, Republic of Korea George Z. Voyiadjis, USA **Room: 202A+B**	***Effect of stress-state and spacing on voids in a shear-field (SM13-004)*** Viggo Tvergaard, Denmark	
FS01: Acoustics Chairs: Max Kandula, USA Yuesheng Wang, China **Room: 203A+B**	***Ultrasound as a probe of dislocation density in aluminum (FS01-011)*** Felipe Barra, Maria Teresa Cerda, Rodrigo Espinoza, Fernando Lund, Agnes Maurel, Nicolas Mujica, Vincent Pagneux, Chile	
FM01: Biological fluid dynamics Chairs: Han Chen, China Tianyou Fan, China **Room: 205A+B**	***Aerodynamic forces and power of a hovering hawkmoth in different wing motion (FM01-015)*** Zhen Wei, China	

Session	*13:20*	*13:40*	*14:00*
FM04: Compressible flow Chairs: Song Fu, China Olaf Marxen, Belgium **Room: 206A+B**	***Analysis of an aero-acoustic flow field using dynamic modes (FM04-016, invited lecture)*** Peter J. Schmid, Xavier Garnaud, Lutz Lesshafft, Patrick Huerre, France	***Compressible fluid-structure interaction simulations of an inflatable tension cone decelerator for planetary re-entry (FM04-005)*** Carlos Pantano, Richard Kramer, Fehmi Cirak, USA	***On the linearity of the quieting of high speed jets by heating (FM04-007)*** Daniel J. Bodony, USA
FM02: Boundary layers Chairs: Xuesong Wu, UK Chunxiao Xu, China **Room: 207**	***A new receptivity mechanism of supersonic boundary layers to free-stream disturbances (FM02-024)*** Jisheng Luo, Min Yu, Xuesong Wu, China	***Flat-plate boundary layer with continuous freestream turbulence: a preliminary direct numerical simulation study (FM02-001)*** Xiaohua Wu, Parviz Moin, Canada	***An interferential streak instability of hypersonic boundary layer over a circular cone (FM02-019)*** Qing Shen, Feng Ji, Xiangjiang Yuan, Qiang Wang, China
FM03: Combustion and flames Chairs: Ann Karagozian, USA Jianping Wang, China **Room: 210A**	***Direct numerical simulation of wet-CO combustion (FM03-003)*** Zacharias M. Nikolaou, Nedunchezhian Swaminathan, UK	***A multi-regime flamelet method for premixed and non-premixed combustion in spray flames (FM03-014)*** Benedetta G. Franzelli, Benoit Fiorina, Nasser Darabiha, France	***Modeling of a piloted premixed jet burner using large-eddy simulation (FM03-019)*** Yuntao Chen, Matthias Ihme, USA
FM17: General fluid mechanics Chairs: Jacques Magnaudet, France Timothy Pedley, UK **Room: 210B**	***Unstable behavior of subsonic round and plane jets in a transverse acoustic field (FM10-006)*** Viktor V. Kozlov, Genrih R. Grek, Yuriy A. Litvinenko, Russia	***Lattice Boltzmann simulation of induced flow by means of low-temperature plasma (FM10-016)*** Gang Wan, Baoming Li, Daniel Kwok, Canada	***Analysis of the effect of ground proximity on the unsteady flows past oscillating airfoils at low Reynolds numbers (FM10-027)*** Dan Mateescu, Olivier Scholz, Chao Wang, Canada
FM10: Low Reynolds number flow Chairs: Maria L. Ekiel-Jezewska, Poland Osamu Sano, Japan **Room: 211**	***The effects of membrane laws on the capsule flow in microfluidic channel with square cross-section (FM10-012, invited lecture)*** Xu-Qu Hu, Anne-Virginie Salsac, Dominique Barthès-Biesel, France	***Three-dimensional flow reversal in droplets in Hele-Shaw cells (FM10-025)*** Francois. Gallaire, S. Lee, C. N. Baroud, Switzerland	***The super-thermohydrophobic effect (FM10-005)*** Jerzy M. Floryan, Mohammad Z. Hossain, Daniel C. Floryan, Canada
FS03: Experimental methods in mechanics Chairs: Qingyuan Wang, China Yunche Wang, Taiwan, China **Room: 212A**	***Distortion measurement of large crane arms in loading test based on series-parallel cameras net videometrics (FS03-014)*** Yang Shang, Hongliang Zhang, Pengyu Guo, Qifeng Yu, China	***Multi-planar stereoscopic PIV measurements in a combustion engine (FS03-001)*** Isabella Büecker, Daniel Karhoff, Michael Klaas, Wolfgang Schroeder, Germany	***Metal magnetic memory NDT method: experimental, theory and numerical simulation (FS03-003)*** Zhengdao Wang, Kai Yao, Bo Deng, China
FS08: Granular materials and flows Chairs: Joe Goddard, USA Pierre Jop, France **Room: 212B**	***Measurement and simulation of the streamwise solid fraction of a granular hydraulic jump in a rectangular chute (FS08-002)*** L. T. Sheng, S. Y. Chiu, C. Y. Kuo, Y. C. Tai, S. S. Hsiau, Taiwan, China	***Experimental study on the modulated aeolian barchan dune (FS08-003)*** Yang Zhang, Yuan Wang, Willem van de Water, China	***Edelen's dissipation potentials and the viscoplasticity of granular media (FS08-005)*** Joe D. Goddard, USA
MS01: Mechanical challenges in energy Chairs: Gunner Larsen, Denmark Kenneth Reifsnider, USA **Room: 213A**	***Aspects on the use of wind lidar measurements up to 600 meters for wind energy studies: wind profile, Weibull distribution and boundary layer height (MS01-007, invited lecture)*** Sven-Erik Gryning, Rogier Floors, Jesper G. Pedersen, Ekaterina Batchvarova, Torben Mikkelsen, Denmark	***Wind turbine wakes, power deficit in clusters and wind farms (MS01-017, invited lecture)*** Kurt S. Hansen, Rebecca J. Barthelmie, Denmark	***Theories of optimal rotor (MS01-012)*** Valery L. Okulov, Jens N. Sørensen, Denmark
MS02: Mechanics of natural disasters Chairs: Bernhard Schrefler, Italy Rajesh Mishra, India **Room: 213B**	***Multi-scale simulations and analysis on windblown sand movenments (MS02-011, invited lecture)*** Xiaojing Zheng, China	***Instantaneous coal outbursts: mechanism and prediction (MS02-007)*** Kang Ping Chen, USA	***2011 Tohoku (Japan) earthquake and its impact on design of super high-rise buildings (MS02-008)*** Izuru Takewaki, Kohei Fujita, Japan

Session	*14:20*	*14:40*	*15:00*
FM04: Compressible flow Chairs: Song Fu, China Olaf Marxen, Belgium **Room: 206A+B**	***Supersonic flow structure on compression surfaces of model inlet under plasma impact (FM04-009)*** Sergey Leonov, Alexander Firsov, Dmitry Yarantsev, Marat Goldfeld, Konstantin Timofeev, Francois Falempin, Russia	***Numerical simulation shock wave buffet on an OAT15 airfoil by IDDES hybrid methods (FM04-012)*** Jingbo Huang, Zhixiang Xiao, Jian Liu, Song Fu, China	***On the evolution of a heavy-gas cylinder accelerated by a cylindrical converging shock wave: effect of initial conditions (FM04-015)*** Ting Si, Zhigang Zhai, Xisheng Luo, Jiming Yang, China
FM02: Boundary layers Chairs: Xuesong Wu, UK Chunxiao Xu, China **Room: 207**	***Low-dimensional modelling for optimal streaks in the Blasius boundary layer (FM02-003)*** Maria Higuera, Jose M. Vega, Spain	***Experimental study of localized disturbances at straight wing boundary layer (FM02-004)*** Mikhail M. Katasonov, Viktor V. Kozlov, Pavel A. Motyrev, Dmitriy S. Sboev, Russia	***Turbulent separation from a bluff body: the trailing-edge case (FM02-005)*** Bernhard F. Scheichl, Alfred Kluwick, Austria
FM03: Combustion and flames Chairs: Ann Karagozian, USA Jianping Wang, China **Room: 210A**	***A flame describing function analysis of combustion instability limit cycles sustained by multiple modes (FM03-011)*** Frédéric Boudy, Daniel Durox, Thierry Schuller, Sébastien Candel, France	***The effect of obstacles on propagation mechanism of 3D detonation wave (FM03-024)*** Cheng Wang, Wenhu Han, Jianguo Ning, Xiangxiong Zhang, China	***Numerical simulation of cellular detonation in space (FM03-017)*** Vladimir A Levin, Ivan S. Manuylovich, Vladimir V Markov, Russia
FM17: General fluid mechanics Chairs: Jacques Magnaudet, France Timothy Pedley, UK **Room: 210B**	***Wind turbine load performance using iterative learning control (FM17-001)*** Owen R. Tutty, Mark Blackwell, Eric Rogers, Richard Sandberg, UK	***A new solution of Euler's equation of motion with helicity (FM17-002)*** Tsutomu Kambe, Japan	***A generalized reciprocal theorem for predicting the force and torque on bodies moving in an inhomogeneous flow at arbitrary Reynolds number (FM17-003)*** Jacques Magnaudet, France
FM10: Low Reynolds number flow Chairs: Maria L. Ekiel-Jezewska, Poland Osamu Sano, Japan **Room: 211**	***Analysis of wall effect on the process of diffusion of nanopartices in a microchannel (FM10-007)*** Krzysztof Zembrzycki, Sławomir Błoński, Tomasz A. Kowalewski, Poland	***Many-body hydrodynamic interactions in a microchannel (FM10-010)*** Eligiusz Wajnryb, Marcin Kedzierski, Poland	***Towards understanding of geometrical structure in microstructured optical fibres (FM10-013)*** Yvonne M. Stokes, Darren G. Crowdy, Hayden Tronnolone, Heike Ebendorff-Heidepriem, Tanya M. Monro, Australia
FS03: Experimental methods in mechanics Chairs: Qingyuan Wang, China Yunche Wang, Taiwan, China **Room: 212A**	***Experimental determination of time-dependent mechanical properties of soft materials (FS03-005)*** Yun-Che Wang, Chih-Chin Ko, Yu-Ti Wu, Gen Nakamura, Taiwan, China	***Mechanical and thermal performances of CNT micro-pin-fin cooler with air jet impingement (FS03-011)*** Yan Zhang, Jingyu Fan, China	***Linear digital image correlation with SOBEL or SCHARR operators (FS03-017)*** Wei Tong, Hang Yao, Yue Xuan, USA
FS08: Granular materials and flows Chairs: Joe Goddard, USA Pierre Jop, France **Room: 212B**	***Three dimensional simulation of granular jet scattering (FS08-007)*** Tomohiko Sano, Hisao Hayakawa, Japan	***Partially-cohesive granular flows: rheology and segregation (FS08-008)*** Charles Voivret, Emmanuelle Gouillart, Pierre Jop, France	***High-speed X-ray imaging of a ball impacting on sand (FS08-010)*** Devaraj R. M. van der Meer, Tess Homan, Evert Wagner, Rob F. Mudde, Detlef Lohse, The Netherlands
MS01: Mechanical challenges in energy Chairs: Gunner Larsen, Denmark Kenneth Reifsnider, USA **Room: 213A**	***LES modeling of wind turbines: interaction with turbulent flow (MS01-023)*** Paolo Schito, Alberto Zasso, Italy	***On the potential load reduction on wind turbines by flap control using measurements of local inflow to the blades (MS01-019)*** Helge Aagaard Madsen, Andreas Fischer, Torben Juul Larsen, Christian Bak, Denmark	***Full scale verification of wind farm production predictions (MS01-020)*** Gunner C. Larsen, Torben J. Larsen, Søren Ott, Kurt S. Hansen, Helge Aa. Madsen, Denmark
MS02: Mechanics of natural disasters Chairs: Bernhard Schrefler, Italy Rajesh Mishra, India **Room: 213B**	***Mesh generation of geological body with crack extension (MS02-014)*** Shuli Sun, Jie Sui, Mingwu Yuan, China	***Tsunami run-up problems treated by modern software Geoclaw: the Tohoku-Oki event as an example (MS02-016)*** Huimin Jing, David A. Yuen, David L. George, Huai Zhang, Yaolin Shi, China	***Lessons from Sichuan earthquake: failure and structural integrity (MS02-018)*** Qingyuan Wang, China

Session	*15:20*	*15:40 – 16:00*
FM04: Compressible flow Chairs: Song Fu, China Olaf Marxen, Belgium **Room: 206A+B**	***A multi-layer model for mean velocity and density profile in compressible channel flow (FM04-013)*** Yanzhi Wang, Zhensu She, Fazle Hussain, China	***Coffee Break*** ***Main Lobby, 1st floor***
FM02: Boundary layers Chairs: Xuesong Wu, UK Chunxiao Xu, China **Room: 207**	***Is the wall "necessary" for generating turbulence in wall-bounded flows? (FM02-007)*** Min S. Chong, Jason P. Monty, Ivan Marusic, Cheng Chin, Australia	
FM03: Combustion and flames Chairs: Ann Karagozian, USA Jianping Wang, China **Room: 210A**	***Experimental investigation of flame characteristics in a lean-direct-injection spray combustor (FM03-023)*** Qinghua Zeng, Yuhua Ai, Chunjie Sui, Wenjun Kong, China	
FM17: General fluid mechanics Chairs: Jacques Magnaudet, France Timothy Pedley, UK **Room: 210B**	***Snapshot-based flow analysis with arbitrary sampling (FM17-008)*** Florimond Guéniat, Lionel Mathelin, Luc Pastur, France	
FM10: Low Reynolds number flow Chairs: Maria L. Ekiel-Jezewska, Poland Osamu Sano, Japan **Room: 211**	***Electro-viscous interactions between sedimenting particles (FM10-017)*** Ehud Yariv, Itzchak Frankel, Ory Schnitzer, Israel	
FS03: Experimental methods in mechanics Chairs: Qingyuan Wang, China Yunche Wang, Taiwan, China **Room: 212A**	***Dynamic stress experimental study on asymmetric beam to column connection structure (FS03-018)*** Songgang Li, Guobiao Yang, Weiming Zeng, China	
FS08: Granular materials and flows Chairs: Joe Goddard, USA Pierre Jop, France **Room: 212B**	***Hopper flow prediction using a constitutive model with microstructure evolution (FS08-012)*** Jin Sun, Sankaran Sundaresan, UK	
MS01: Mechanical challenges in energy Chairs: Gunner Larsen, Denmark Kenneth Reifsnider, USA **Room: 213A**	***Molecular dynamics simulation of deformation behavior of gadolinia doped ceria under tensile loading (MS01-014)*** Yi Sun, Chen Wang, Yunjun Chen, China	

Session	*16:00*	*16:20*	*16:40*
FM06: Drops, bubbles and multiphase flows Chairs: Peter Spelt, France Chao Sun, The Netherlands **Room: Ballroom A**	***Three-dimensional internal flow structures of a moving droplet actuated by wettability gradient (FM06-032)*** Zhen Li, Guohui Hu, Zhiliang Wang, Zhewei Zhou, China	***An efficient computational model for large-scale simulations of moving contact lines (FM06-031)*** Peter D. M. Spelt, Yi Sui, France	***Similarity solutions for coalesce of two sessile drops (FM06-035)*** José. Federico Hernández Sánchez, Antonin Eddi, Luuk Lubbers, Jacco H. Snoeijer, The Netherlands
SM16: Vibrations and control of structures Chairs: Viktor Berbyuk, Sweden Dengqing Cao, China **Room: Ballroom B**	***Minimum-time damping of a physical pendulum (SM16-081, invited lecture)*** Alexander Ovseevich, Russia	***Damage detection using proper orthogonal decomposition (SM16-010)*** Ugo Galvanetto, Marco Thiene, Mirco Zaccariotto, Marco Gherlone, Italy	***Vortex-induced vibrations of pipes conveying fluid in subcritical and supercritical regimes (SM16-018)*** Huliang Dai, Lin Wang, China
FM07: Flow instability and transition Chairs: Sebastian Altmeyer, South Korea Jean-Christophe Robinet, France **Room: Ballroom C**	***Direct numerical simulations of high-speed boundary layer transition including adverse pressure gradients (FM07-027)*** Kenneth Franko, Sanjiva K. Lele, USA	***Boundary layer transition in hypersonic boundary layer (FM07-015)*** Chuanhong Zhang, Qing Tang, Cunbiao Lee, Yanji Hong, Jifei Ye, China	***DNS of turbulent transition in channel flow induced by boundary layers interaction (FM07-016)*** Marc Buffat, Lionel Le Penven, Julien Montagnier, Anne Cadiou, France
SM05: Fracture mechanics Chairs: Leslie Banks-Sills, Israel Alberto Carpinteri, Italy **Room: Function Hall A**	***Hardening cohesive zone model for size effects in the necking and ductile fracture of metals (SM05-012)*** Alberto Carpinteri, Baoming Gong, Mauro Corrado, Italy	***Analysis of complex crack problems by the polygonal numerical manifold method (SM05-005)*** Huihua Zhang, Jingjing Zhu, China	***An interaction energy integral method for an interface crack between two nonhomogeneous materials under thermal loading (SM05-006)*** Licheng Guo, Fengnan Guo, Hongjun Yu, China
SM15: Structural optimization Chairs: Xu Guo, China Pauli Pedersen, Denmark **Room: Function Hall B**	***A review of topology optimization approaches (SM15-007)*** Ole Sigmund, Kurt Maute, Denmark	***Topology optimization procedures for reinforced concrete design (SM15-008)*** Oded Amir, Denmark	***Application of GJ-integral to shape optimization problems for partial differential equations/system with mixed boundary conditions (SM15-009)*** Kohji Ohtsuka, Japan
MS06: Effects of small size scales in materials modeling Chairs: William A. Curtin, Switzerland Baohua Ji, China **Room: Function Hall C**	***Twin boundary: strengthening or softening? (MS06-009, invited lecture)*** Lei Lu, China	***A quasicontinuum approach to modeling discrete microstructures (MS06-014)*** Lars A.A. Beex, Ron H.J. Peerlings, Marc G.D. Geers, The Netherlands	***Some observations on the size effects in nanotwined metals and their theoretical explanation (MS06-015)*** Yujie Wei, China
FS01: Acoustics Chairs: Camille Perrot, France Xiaodong Wang, Canada **Room: 203A+B**	***Measurements of thermal effects on acoustic screech in a choked circular jet emanating from a sharp-edged orifice (FS01-023, invited lecture)*** Max Kandula, USA	***Complete bandgaps in three-dimensional holey phononic crystals with resonators (FS01-012)*** Yanfeng Wang, Yuesheng Wang, China	***Acoustic metamaterials for imaging beyond the diffraction limit (SM07-038)*** Xiaoming Zhou, Gengkai Hu, China
FM01: Biological fluid dynamics Chairs: Kamran Mohseni, USA Jane Wang, USA **Room: 205A+B**	***Aerodynamics of chestnut tiger butterfly in forward flight (FM01-038)*** Naoto Yokoyama, Kei Senda, Makoto Iima, Norio Hirai, Japan	***Three-dimensional simulation of a red blood cell in shear flow (FM01-020)*** Weixi Huang, Cheong Bong Chang, Hyung Jin Sung, China	***Effect of wing deformation on the flapping flight of butterflies (FM01-021)*** Lingxiao Zheng, Rajat Mittal, USA
FM04: Compressible flow Chairs: Daniel Bodony, USA Carlos Pantano, USA **Room: 206A+B**	***A new method for measuring specific heat ratio of combustion gases in hypersonic flow (FM04-019)*** Tiejin Wang, Jun Chen, China	***Visualization experimental and numerical investigation on the muzzle flow (FM04-020)*** Zeqing Guo, Xiaohai Jiang, Yang Wang, Zhihua Chen, Hongzhi Li, China	***Experimental study on vortex / bow shock interaction at Mach number of 6 (FM04-022)*** Andrey Shmakov, Andrey Shevchenko, Anatoly Kharitonov, Russia
FS05: Electro- and magnetomechanical systems Chairs: Wanlin Guo, China Zhenbang Kuang, China **Room: 208A+B**	***Surface and size effects of low-dimensional ferroelectrics via multiscale electromechanically coupled computational methods (FS05-004, invited lecture)*** Daining Fang, Yihui Zhang, China	***Waves in pyroelectric materials (FS05-006)*** Zhenbang Kuang, Zhidong Zhou, China	***Mechanics of epidermal electronics (FS05-002)*** Shuodao Wang, Jian Wu, Yonggang Huang, John A. Rogers, USA

Session	*17:00*	*17:20*	*17:40*
FM06: Drops, bubbles and multiphase flows Chairs: Peter Spelt, France Chao Sun, The Netherlands **Room: Ballroom A**	***Evolution and breakup of viscous rotating drops (FM06-036)*** Marco A. Fontelos, Victor J. Garcia-Garrido, Ultano Kindelan, Spain	***From passive tracer to bubbles dispersion in Taylor-Couette flows (FM06-039)*** Eric Climent, Marouan Nemri, Agathe Chouippe, Celine Gabillet, Sophie Charton, Dominique Legendre, France	***Bubble dynamics in a compressible viscoelastic medium (FM06-040)*** Eric Johnsen, Chengyun Hua, Lauren Mancia, USA
SM16: Vibrations and control of structures Chairs: Viktor Berbyuk, Sweden Dengqing Cao, China **Room: Ballroom B**	***Rectilinear motions of multi-module vibration-driven systems: effects of the phase shifts among internal motions (SM16-019)*** Hongbin Fang, Jian Xu, China	***Synchronization of pendula rotating in different directions (SM16-020)*** Krzysztof Czolczynski, Przemyslaw Perlikowski, Andrzej Stefanski, Tomasz Kapitaniak, Poland	***Modal interaction in the inextensional beams on the elastic foundations (SM16-015)*** Jianjun Ma, Jian Peng, Lianhua Wang, Yueyu Zhao, China
FM07: Flow instability and transition Chairs: Sebastian Altmeyer, South Korea Jean-christophe Robinet, France **Room: Ballroom C**	***Shear layer instabilities in variable density transverse jets (FM07-017)*** Daniel Getsinger, Levon Gevorkyan, Cory Hendrickson, Owen I. Smith, Ann R. Karagozian, USA	***Stability of axisymmetric convection in cylinders heated from below (FM07-018)*** Bofu Wang, Dongjun Ma, Dejun Sun, China	***Transition delay of a two-dimensional channel flow due to longitudinal wall osicillation (FM07-020)*** Takashi Atobe, Japan
SM05: Fracture mechanics Chairs: Leslie Banks-Sills, Israel Alberto Carpinteri, Italy **Room: Function Hall A**	***Delamination between a unidirectional and woven composite (SM05-004)*** Leslie Banks-Sills, Maya Gohfeld, Rami Eliasi, Israel	***Molecular simulations of the uniaxial tension on PVDF: from a single molecular chain to an amorphous cell (SM05-013)*** Fanlin Zeng, Yi Sun, Yizhi Liu, China	***Molecular dynamics simulation of crazing in amorphous glassy polymers (SM05-028)*** Sudarkodi Venkatesan, Sumit Basu, India
SM15: Structural optimization Chairs: Xu Guo, China Pauli Pedersen, Denmark **Room: Function Hall B**	***Piecewise constant level set approach to structural optimization of contact problems (SM15-032)*** Andrzej Myslinski, Poland	***Topology optimization of hyperelastic bodies by maximizing the equilibrium potential energy (SM15-017)*** Anders Klarbring, Niclas Strömberg, Sweden	***Surrogate-based optimum design for non-uniform grid-stiffened shells with adaptive sampling (SM15-047)*** Bo Wang, Peng Hao, Gang Li, China
MS06: Effects of small size scales in materials modeling Chairs: William A. Curtin, Switzerland Baohua Ji, China **Room: Function Hall C**	***Atomistic investigation of enhanced tensile ductility of metallic glass matrix composite with crystalline second phase (MS06-016)*** Shaoxing Qu, Haofei Zhou, China	***Microstructure-dependent mechanical behaviors of SiC nanowires (MS06-017)*** Jun Wang, Chunsheng Lu, Qi Wang, Pan Xiao, Fujiu Ke, Yilong Bai, Yaogen Shen, Xiaozhou Liao, Huajian Gao, Australia	***An experimental and theoretical study of size effects in the torsion of micro-sized metallic wires (MS06-018)*** Dabiao Liu, Yuming He, Peng Hu, Zhipeng Gan, China
FS01: Acoustics Chairs: Camille Perrot, France Xiaodong Wang, Canada **Room: 203A+B**	***Acoustoelastic theory for a fluid-saturated porous media (FS01-006)*** Jiayong Tian, Huaqing Wang, China	***The analytic study of elastic metamaterials with negative mass and modulus (FS01-017)*** Xiaodong Wang, Canada	***Band gaps of phononic crystals with smooth contact interfaces (SM07-052)*** Fenglian Li, Yuesheng Wang, Chuanzeng Zhang, Guilan Yu, China
FM01: Biological fluid dynamics Chairs: Kamran Mohseni, USA Jane Wang, USA **Room: 205A+B**	***A numerical study of swimming micro-organisms inside a capillary tube (FM01-023)*** Lailai Zhu, Eric Lauga, Luca Brandt, Sweden	***Boundary element analysis of propulsive force and torque of a dinoflagellate symbiodinium (FM01-025)*** Tonau Nakai, Ikuko Shihira-Ishikawa, Atsushi Miyawaki, Tomonobu Goto, Japan	***Osmotically driven flows in plants (FM01-026)*** Tomas Bohr, Kaare Hartvig Jensen, Denmark
FM04: Compressible flow Chairs: Daniel Bodony, USA Carlos Pantano, USA **Room: 206A+B**	***Inviscid quasistatic modelling for unsteady shock reflections with separation (FM04-025)*** Lionel Agostini, Lionel Larchevêque, Pierre Dupont, France	***Disturbance evolution in a Mach 4.8 boundary layer with separation (FM04-026)*** Olaf Marxen, Thierry Magin, Gianluca Iaccarino, Belgium	
FS05: Electro- and magnetomechanical systems Chairs: Wanlin Guo, China Zhenbang Kuang, China **Room: 208A+B**	***Theoretical model and finite element simulation of the effective electromechancial properties of cellular piezoelectret film (FS05-003)*** Yongping Wan, Longtao Xie, Liangliang Fan, Zheng Zhong, China	***The effct of electrostatic tractions on the fracture behavior (FS05-007)*** Tong-Yi Zhang, Tao Xie, Hong Kong, China	***Nonuniform ferroelectric domain switching criterion and related toughening driven by two-parameter crack-tip stress field (FS05-008)*** Yuanqing Cui, China

Welcome reception: 19:00 – 21:00, Terrace outside, 4th floor

Session	*16:00*	*16:20*	*16:40*
FS06: Fluid structure interactions Chairs: Hyung Jin Sung, South Korea Moubin Liu, China **Room: 209A+B**	***Flutter instability of cantilever beams in viscous flow (FS06-025, invited lecture)*** Deniz T. Akcabay, Yin L. Young, USA	***Efficient methods to take into account the fluid lag in hydraulic fracturing simulations through a variational inequality formulation (FS06-003)*** Yongxing Shen, Spain	***Influence of mean flow on transmission loss of sandwich structure with porous material core (FS06-007)*** Han Meng, Fengxian Xin, Tianjian Lu, China
FM02: Boundary layers Chairs: Alfred Kluwick, Austria Anatoly Ruban, UK **Room: 207**	***Effects of streaks on second-instability in boundary-layer transition (FM02-027)*** Hui Guo, Yulong Feng, Haiwen Wang, Ziteng Liu, China	***On the definition of logarithmic region in zero pressure gradient turbulent boundary layers (FM02-010)*** Yuki Wada, Katsuki Goto, Jun Yoshida, Yoshiyuki Tsuji, Japan	***Mean topological evolution in compressible turbulent boundary layer (FM02-009)*** Youbiao Chu, Xiyun Lu, China
MS03: Fluid-structure interactions in biological systems Chairs: Paulo Arratia, USA Andrejs Cebers, Latvia **Room: 210A**	***Beating of artificial microcilia (MS03-021, invited lecture)*** Nais Coq, Antoine Bricard, Francois-Damien Delapierre, Laurent Malaquin, Olivia Du Roure, Marc Fermigier, Denis Bartolo, France	***Multiscale modeling of pseudomonas aeruginosa swarming (MS03-007)*** Huijing Du, Zhiliang Xu, Joshua D. Shrout, Mark Alber, USA	***Modeling the beating of ATP-powered natural flagella (MS03-020)*** S. Namdeo, P. R. Onck, The Netherlands
MS04: Mechanics of transport in microfluidic devices Chairs: Dino Di Carlo, USA Henrik Bruus, Denmark **Room: 210B**	***Nature-inspired microfluidic propulsion using magnetically-driven artificial cilia (MS04-007)*** Syed N. Khaderi, Patrick R. Onck, The Netherlands	***Cell membrane dynamics during sonoporation investigated by microfluidic single-cell analysis (MS04-009)*** Nilanjana Bose, Dario Carugo, Tapas K. Maiti, Suman Chakraborty , Xunli Zhang, UK	***Electro-elasto-capillarity: electric field driven unwrapping of water drop with elastic film (MS04-011)*** Yapu Zhao, Ziqian Wang, Fengchao Wang, China
FM09: Geophysical and environmental fluid dynamics Chairs: Remi Tailleux, UK Grae Worster, UK **Room: 211**	***On the dynamics of turbulence near a stress-free surface (FM09-021, invited lecture)*** James J. Riley, Oscar Flores, Alexander R. Horner-Devine, USA	***Weakly nonlinear bores in laminar high Reynolds number two layer fluids (FM02-002)*** Alfred Kluwick, Rene Szeywerth, Stefan Braun, Edward E. Cox, Austria	***An exact 3D tornado-like vortex solution (FM09-001)*** Liang Sun, China
FS03: Experimental methods in mechanics Chairs: Xue-Feng Yao, China Zhengdao Wang, China **Room: 212A**	***Experimental investigation of stress concentration for FGMs using CGS (FS03-021)*** Xuefeng Yao, Yinji Ma, Wenfeng Hao, Jinjun Zhang, China	***Nano sensors for strain measurement by micro-Raman spectroscopy (FS03-025)*** Wei Qiu, Qiu Li, Zhenkun Lei, Yilan Kang, China	***Deformation observation of closed-cell aluminum foams in the split Hopkinson pressure bar test (FS03-027)*** Yiping Liu, Liqun Tang, Zejia Liu, Daining Fang, China
SM11: Multibody and vehicle dynamics Chairs: Jorge Ambrosio, Portugal Dieter Bestle, Germany **Room: 212B**	***Cases of integrability in dynamics of a rigid body interacting with a resistant medium (SM11-024)*** Maxim V. Shamolin, Russia	***Study on the pantograph characteristics affecting the overhead contact system for high speed trains (SM11-023)*** João C. Pombo, Jorge A. Ambrosio, Portugal	***Influence of liquid sloshing on road tanker dynamics and loading (SM11-027)*** Alexandr O. Shimanovsky, Maryna G. Kuzniatsova, Artur V. Putsiata, Yuri M. Pleskachevskii, Belarus
MS05: Dynamics and control of morphing structures Chairs: Zhichun Yang, China Michael Sinapius, Germany **Room: 213A**	***Realization and aeroelastic characteristics of a variable planform morphing wing (MS05-014, invited lecture)*** Zhichun Yang, Jiang Xie, China	***Active flutter suppression for high-dimensional aeroelastic system via delayed control (MS05-005)*** Haiyan Hu, Rui Huang, Yonghui Zhao, China	***Design of piezoelectric hydraulic pump based on MEMS valve (MS05-016)*** Jian Sun, Yanju Liu, Jinsong Leng, China

Session	*17:00*	*17:20*	*17:40*
FS06: Fluid structure interactions Chairs: Hyung Jin Sung, South Korea Moubin Liu, China **Room: 209A+B**	***Wingtip trajectory of a flapping micro-air-vehicle in its forward flight (FS06-010)*** Lung-Jieh Yang, Taiwan, China	***Orbital motion of a long flexible cylinder subject to vortex-induced vibrations (FS06-013)*** Rémi Bourguet, George E. Karniadakis, Michael S. Triantafyllou, France	***Micro-blowing effect on two coupled wakes behind two square cylinders (FS06-015)*** Shengjin Xu, Pengchuan Zhang, Weiguo Zhang, China
FM02: Boundary layers Chairs: Alfred Kluwick, Austria Anatoly Ruban, UK **Room: 207**	***Comparison of turbulent pipe and boundary layer flows (FM02-011)*** Jae Hwa Lee, Hyung Jin Sung, South Korea	***Prediction of skin-friction reduction by opposition control in turbulent channel flow (FM02-023)*** Bingqing Deng, Chunxiao Xu, Weixi Huang, Guixiang Cui, China	***Experimental investigation of the flow around a circular cylinder in the turbulent boundary layer (FM02-021)*** Zhanqi Tang, Nan Jiang, China
MS03: Fluid-structure interactions in biological systems Chairs: Paulo Arratia, USA Andrejs Cebers, Latvia **Room: 210A**	***Structure-based modelling of human left ventricle using an extended FE-IB method (MS03-031)*** Hao Gao, Xiaoyu Luo, Boyce Griffith, Christie McComb, Colin Berry, UK	***Magnetic field driven microdevices (MS03-009)*** Rūdolfs Livanovičs, Andrejs Cēbers, Latvia	***Self-propulsion & swimming in viscoelastic fluids (MS03-008)*** Xiao Nin Shen, Paulo E. Arratia, USA
MS04: Mechanics of transport in microfluidic devices Chairs: Dino Di Carlo, USA Henrik Bruus, Denmark **Room: 210B**	***Rotation of non-spherical particles in square chambers using ultrasonic standing waves (MS04-012)*** Thomas Schwarz, Guillaume Petit-Pierre, Jurg Dual, Switzerland	***Ultrasonic collection of particles at an air/liquid interface (MS04-021)*** Priscilla Rogers, Ian Gralinski, Adrian Neild, Australia	
FM09: Geophysical and environmental fluid dynamics Chairs: Remi Tailleux, UK Grae Worster, UK **Room: 211**	***Analytical and numerical bedrock reconstruction in glacier flows from free surface elevation data (FM09-009)*** Mathieu. Sellier, A. Gessese, C. Heining, New Zealand	***Measurements and computational simulations of the effects of sand-fixing forest on the wind flow over two underlying surfaces (FM09-010)*** Kejie Zhan, Ning Huang, China	***Entrainment and intermittency in the response of a quasi-geostrophic oceanic double gyre to seasonal external forcing (FM09-012)*** Shinya Shimokawa, Tomonori Matsuura , Japan
FS03: Experimental methods in mechanics Chairs: Xuefeng Yao, China Zhengdao Wang, China **Room: 212A**	***Experimental fringe analysis by compressive sensing (FS03-031)*** Howard Yuanhao Huang, George Barbastathis, Singapore		
SM11: Multibody and vehicle dynamics Chairs: Jorge Ambrosio, Portugal Dieter Bestle, Germany **Room: 212B**	***Impulse-based simulation of particle flow during subsurface block-cave mining (SM11-028)*** Xuhai Tang, Adriana R. Paluszny, Robert W. Zimmerman, UK	***Dynamic analysis of multi-body vehicle fitted with controlled limited-slip differential using MSC.ADAMS/Car (SM11-030)*** Mohit Goel, Nalinaksh S. Vyas, India	***Experimental and numerical study on load sharing behavior of gear system actuated by multiple pinions simultaneously (SM11-031)*** Haidong Yu, Chunzhang Zhao, Yong zhao, Xinmin Lai, China
MS05: Dynamics and control of morphing structures Chairs: Zhichun Yang , China Michael Sinapius, Germany **Room: 213A**	***Vibration isolation and control of an impact oscillator (MS05-018)*** James Ing, Elena Sitnikova, Ekaterina Pavlovskaia, Yang Liu, Marian Wiercigroch, UK	***Variable stiffness behavior investigation of filament wound tubes (MS05-022)*** Yijin Chen, Jian Sun, Yanju Liu, Jinsong Leng, China	

Welcome reception: 19:00 – 21:00, Terrace outside, 4th floor

Tuesday, 21 August 2012

Session	***8:30 – 9:15***
Sectional Lecture Chairs: Henrik Bruus, Denmark Jing Fan, China **Room: Ballroom C**	***Droplet splashing (SL03)*** Michael Brenner, USA
Sectional Lecture Chairs: Bhushan Karihaloo, UK Shouwen Yu, China **Room: Ballroom B**	***Scale interaction and ordering effects at fracture (SL08)*** Robert Goldstein, Russia
Sectional Lecture Chairs: Youshi Hong, China Henryk Petryk, Poland **Room: Ballroom A**	***Nanomechanics of graphenes and nano-crystals (SL16)*** Wei Yang, China
Sectional Lecture Chairs: Peter Schmid, France Gertjan van Heijst, The Netherlands **Room: Function Hall A**	***Direct numerical simulation of multiphase flows with volume of fluid methods (SL17)*** Stéphane Zaleski, France

Session	*9:20*	*9:40*	*10:00*
FM06: Drops, bubbles and multiphase flows Chairs: Eric Climent, France Xiaolong Deng, USA **Room: Ballroom A**	***Curvature singularity and film-skating during drop impact (FM06-041)*** Laurent Duchemin, Christophe Josserand, France	***Large bubble rupture sparks fast liquid jet (FM06-043)*** Thomas Seon, Arnaud Antkowiak, France	***Transient break-up, saturated pulsations and static/dynamic buckling of insonated contrast agents - effect of the constitutive law and characterization (FM06-045)*** Nikos Pelekasis, Kostas Tsiglifis, Greece
FS02: Computational methods in mechanics Chairs: Elias Cueto, Spain Michael Ortiz,USA **Room: Ballroom B**	***Drops and bubbles simulations using volume of fluid and octree adaptative refinement (FS02-048, invited lecture)*** Stéphane Zaleski, Stéphane Popinet, New Zealand	***Approximations of incompressible large deformation elastic problems: some unresolved issues! (FS02-054)*** Ferdinando Auricchio, Lourenco Beirao da Veiga, Carlo Lovadina, Alessandro Reali, Robert L. Taylor, Peter Wriggers, Italy	***A new front tracking method for simulation of high-velocity impact problems (FS02-018)*** Shiyu Wu, Kaixin Liu, China
FM05: Convection Chairs: Mitsuaki Funakoshi, Japan Ronald du Puits, Germany **Room: Ballroom C**	***Onset of asymmety and three-dimensionality in transitional round fountains in a homogeneous fluid (FM05-003, invited lecture)*** Tao Liu, Wenxian Lin, Wenfeng Gao, Steven W. Armfield, China	***Boundary layer structure in turbulent Rayleigh-Bénard convection (FM05-001)*** Nan Shi, Mohammad S. Emran, Joerg Schumacher, Germany	***Influences of modest rotation on the large-scale circulation in turbulent Rayleigh-Benard convection (FM05-002)*** Jinqiang Zhong, China
SM15: Structural optimization Chairs: Tadeusz Burczynski, Poland George Rozvany, Hungary **Room: Function Hall A**	***Bolt thread stress optimization (SM15-014)*** Niels Leergaard Pedersen, Denmark	***Structural optimization by using different level models (SM15-030)*** Vasily Chedrik, Russia	***Generation of set of vanishing elements in topology optimization (SM15-031)*** Vladimir Uskov, Russia
FS04: Chaos and pattern formation Chairs: Jay Fineberg, Italy Dwight Barkley, UK **Room: Function Hall B**	***Continous and discret material modelling and the onset of criticality (FS04-013, invited lecture)*** Andrei Constantinescu, Lev Truskinovsky, France	***Fast fracture in slow motion: Dynamic fracture in brittle gels (FS04-001)*** Jay Fineberg, Tami Goldman, Eran Bouchbinder, Israel	***Characterization of chaos in polycrystal/foam microstructures and related issues (FS04-002)*** Victor L. Berdichevsky, USA
FM16: Waves in fluids Chairs: Sergei Badulin, Russia W. Kendall Melville, USA **Room: Function Hall C**	***On the generalized phillips' spectra for wind waves (FM16-014, invited lecture)*** Sergei I. Badulin, Vladimir E. Zakharov, Russia	***Attenuation of sea waves by a vegetation canopy (FM16-028)*** Chiang C. Mei, Benlong Wang, Xiaoyu Guo, China	***Propagation of interfacial solitary water waves in presence of surfactants (FM16-003)*** Paul W. Hammerton, Andrew P. Bassom, UK
FS08: Granular materials and flows Chairs: Detlef Lohse, The Netherlands Thorsten Poeschel, Germany **Room: 202A+B**	***Basal friction of a dry and a saturated granular mass in unsteady avalanche via high-speed imaging and control volume analysis (FS08-014)*** Yun-ta Huang, F.-L. Yang, Taiwan, China	***In-situ and image-based force measurement of a dry granular flow down an incline (FS08-015)*** Fuling Yang, Minghe Jiang, Taiwan, China	***Classical and cosserat elasto-plastic constitutive equations for pressure-dependent yield (FS08-016)*** David Harris, UK
FM10: Low Reynolds number flow Chairs: Dominique Barthes-Biesel, France John Brady, USA **Room: 203A+B**	***Reaction-induced motion: chemical swimming, sailing and surfing (FM10-023)*** Sergey Shklyaev, Ubaldo M. Cordova-Figueroa, John F. Brady, USA	***Passage of a DDS nano-particle through the cleft of capillary wall with glyco-chains (FM10-019)*** Keiko Asayama, Masato Makino, Satoshi Itoh, Osamu Sano, Japan	***Slipping stokes flow about a solid particle (FM10-021)*** Antoine Sellier, France
FS06: Fluid structure interactions Chairs: Liqun Chen, China Yinlu Young, USA **Room: 205A+B**	***Superlyophilic spreading of a droplet on the forest of pillar arrays (MS06-043)*** Quanzi Yuan, Yapu Zhao, China	***Numerical simulation of fluid-strcture interactions with a direct-forcing fictitious domain method (FS06-016)*** Zhaosheng Yu, Xueming Shao, China	***Oblique waves lift the flapping flag (FS06-018)*** Jérôme Hoepffner, Yoshitsugu Naka, France
FS05: Electro- and magnetomechanical systems Chairs: Yonggang Huang, USA Zheng Zhong, China **Room: 206A+B**	***Models for actuation, failure and tearing of electroactive materials (FS05-015, invited lecture)*** Robert M. McMeeking, USA	***Mechanical-electric-magnetic coupling effects in functional nanomaterials (FS05-014)*** Wanlin Guo, Zhuhua Zhang, China	

Session	*10:20*	*10:40 – 11:00*
FM06: Drops, bubbles and multiphase flows Chairs: Eric Climent, France Xiaolong Deng, USA **Room: Ballroom A**	***Gas solubility effects on slug flow (FM06-046)*** Juliana B. R. Loureiro, Atila P. Silva Freire, Brazil	***Coffee Break*** ***Main Lobby, 1st floor***
FS02: Computational methods in mechanics Chairs: Elias Cueto, Spain Michael Ortiz,USA **Room: Ballroom B**	***A fast subspace iteration procedure for improving automated multi-level substructuring (SM16-040)*** Jiacong Yin, Heinrich Voss, Pu Chen, China	
FM05: Convection Chairs: Mitsuaki Funakoshi, Japan Ronald du Puits, Germany **Room: Ballroom C**	***Boundary layer visualization in turbulent Rayleigh-Bénard convection in air (FM05-004)*** Ronald du Puits, Johannes Rilk, Christian Resagk, André Thess, Germany	
SM15: Structural optimization Chairs: Tadeusz Burczynski, Poland George Rozvany, Hungary **Room: Function Hall A**	***A topology optimization procedure based on a phase field approach and an active set strategy (SM15-027)*** Mathias Wallin, Matti Ristinmaa, Sweden	
FS04: Chaos and pattern formation Chairs: Jay Fineberg, Italy Dwight Barkley, UK **Room: Function Hall B**	***Disentangling multi-level systems: Averaging, correlations, memory (FS04-005)*** Valerio Lucarini, Jeroen Wouters, Germany	
FM16: Waves in fluids Chairs: Sergei Badulin, Russia W. Kendall Melville, USA **Room: Function Hall C**	***Nonlinear long waves over a muddy beach (FM16-007)*** Chiang C. Mei, Erell-Isis Garnier, Zhenhua Huang, USA	
FS08: Granular materials and flows Chairs: Detlef Lohse, The Netherlands Thorsten Poeschel, Germany **Room: 202A+B**	***Spreading of a cohesive granular matter on a smooth inclined plane submitted to vibration (FS08-019)*** Arnaud Benedetti, Philippe Sornay, Blanche Dalloz, Maxime Nicolas, France	
FM10: Low Reynolds number flow Chairs: Dominique Barthes-Biesel, France John Brady, USA **Room: 203A+B**	***Motion of a microswimmer in Poiseuille flow (FM10-022)*** Andreas Zöttl, Holger Stark, Germany	

Session	*9:20*	*9:40*	*10:00*
SM10: Mechatronics Chairs: Viktor Berbyuk, Sweden David Limebeer, UK **Room: 208A+B**	***Aerodynamic control of long-span suspension bridges (SM10-006, invited lecture)*** David J. N. Limebeer, J. Michael R. Graham, Xiaowei Zhao, UK	***Unique and stable parameters of human motion used for the identification of individuals (SM10-004)*** Mircea Mihalcica, Sorin Vlase, Romania	***Mechanical force modulation with permanent magnets at small scale (SM10-002)*** Lionel Flaction, Bandar Hakim, Jan Sandtner, Vitali Verin, Hannes Bleuler, Switzerland
FM03: Combustion and flames Chairs: Peter Lindstedt, UK Chunde Yao, China **Room: 209A+B**	***Fuel droplet combustion in the presence of acoustic excitation (FM03-004)*** Jeffrey Wegener, Sophonias Teshome, Cristhian Sevilla, Owen I. Smith, Ann R. Karagozian, USA	***Diesel/methanol dual fuels combustion - a mode controlled by both chemical kinetic and physical process (FM03-021)*** Chunde Yao, Hanjun Xu, Guanglan Xu, China	***Combustion initiation by palladium catalysts (FM03-015)*** M. Bonanni, R. P. Lindstedt, UK
FM02: Boundary layers Chairs: Viktor Kozlov, Russia Xiyun Lu, China **Room: 207**	***Receptivity of the boundary layer on a wing surface to elastic vibrations of the wing surface (FM02-026)*** Anatoly I. Ruban, David Pryce, UK	***Several measurement results on the wall-bounded turbulent boundary layer utilizing tomographic TR-PIV technology (FM02-015)*** Shaoqiong Yang, Nan Jiang, China	***Transition route of Klebanoff type in hypersonic boundary layers (FM02-025)*** Min Yu, Jisheng Luo, Xuesong Wu, China
FM04: Compressible flow Chairs: Sergey Leonov, Russia Peter Schmid, France **Room: 210A**	***Physical analysis of compressibility effects in the transonic flow around a supercritical airfoil at high Reynolds number by numerical simulation (FM04-029)*** Damien Szubert, Fernando Grossi, Marianna Braza, Yannick Hoarau, Gilles Harran, Alain Sevrain, France	***Mach number similarity of large-scale structures in compressible channel flows (FM14-028)*** Jun Chen, Jie Pei, Fazle Hussain, Zhensu She, China	***Effect of thermal actuators on drag reduction in a Mach 8 bow shock (FM04-030)*** Hong Yan, Xiaojing Yu, Jijun Yu, China
FM17: General fluid mechanics Chairs: Jinjun Wang, China Tsutomu Kambe, Japan **Room: 210B**	***Heat transfer and boiling of liquid helium oscillation in narrow rectangular duct (FM17-009***) Yasuhide Eikoku, Kazuma Ishida, Kazuki Wada, Akihumi Iwamoto, Yoshiyuki Tsuji, Japan	***Stability of pressure-driven flow in open fluidic channels (FM17-016)*** Jue Nee Tan, Adrian Neild, Australia	***Space-time characteristics of compliant wall in turbulent channel flow (FM17-019)*** Euiyoung Kim, Haecheon Choi, South Korea
FM13: Stirring and mixing Chairs: Mark Andrew Stremler, USA Juan-Pedro Mellado, Germany **Room: 211**	***Mean shear effects at the cloud-top boundary (FM13-005, invited lecture)*** Juan Pedro Mellado, Bjorn Stevens, Heiko Schmidt, Germany	***Large-scale flow structures and their role in mass transfer rate enhancement behind an orifice (FM13-013, invited lecture)*** Feng Shan, Atsushi Fujishiro, Masashi Tatematsu, Retsu Kojo, Masaya Kondo, Yoshiyuki Tsuji, Japan	***Intermittent flow in stirred yield stress fluids slows down chaotic mixing (FM13-004)*** Dawn M. Wendell, Ianis Lallemand, Pierre Jop, Emmanuelle Gouillart, France
MS01: Mechanical challenges in energy Chairs: Jens Nørkær Sørensen, Denmark Fernando Porte-Agel, Switzerland **Room: 212A**	***Control of flow separation on a swept wing at low Reynolds numbers (MS01-010, invited lecture)*** Ilya D. Zverkov, Viktor V. Kozlov, Aleksey V. Kryukov, Alexsandr M. Pavlenko, Russia	***Lithium-assisted plastic deformation of silicon electrodes in lithium-ion batteries (MS01-003)*** Kejie Zhao, Weili Wang, Joost Vlassak, Zhigang Suo, Efthimios Kaxiras, USA	***Instability of high-energy-density insulating polymers (MS01-005)*** Xuanhe Zhao, USA
MS02: Mechanics of natural disasters Chairs: Huimin Jing, China Hans Von Storch, Germany **Room: 212B**	***Scenarios of local tsunamis in China seas (MS02-021)*** Hua Liu, Xi Zhao, Yousheng He, China	***Verification and validation of SEC-HY21 model for tsunami inundation (MS02-022)*** Chiang-An Hsu, Chin-Pin Ko, Min-Ching Chiou. Taiwan, China	***Simulation of non-breaking and breaking solitary wave run-up and impact by SPH method (MS02-023)*** Haihua Xu, My Ha Dao, Pavel Tkalich, Eng Soon Chan, Singapore
MS03: Fluid-structure interactions in biological systems Chairs: C. Alberto Figueroa, UK Moshe Rosenfeld, Israel **Room: 213A**	***A fluid structure interaction model of porcine aortic valve with phsyologic tissues properties and flow boundary conditions (MS03-006)*** Gil Marom, Hee-Sun Kim, Rami Haj-Ali, Ehud Raanani, Hans-Joachim Schäfers, Moshe Rosenfeld, Israel	***Low-order modeling of biologically-inspired flight mechanics (MS03-011)*** Jeff D. Eldredge, Chengjie Wang, USA	***Wetting and deformation of arrays of elastic fibers (MS03-013)*** Camille Duprat, Suzie Protiere, Howard A. Stone, USA
MS05: Dynamics and control of morphing structures Chairs: Jinhao Qiu, China James Ing, UK **Room: 213B**	***Novel morphing skin structures based on smart materials and structures (MS05-017, invited lecture)*** Jinsong Leng, China	***Design of morphing sma aerostructures by computational modeling (MS05-029, invited lecture)*** Stephen Oehler, Darren Hartl, Richard Malak, Dimitris Lagoudas, USA	***Experimental investigation on unsteady aerodynamic behaviors of a variable camber airfoil (MS05-026)*** Wenchao Yang, Jianting Yang, Jin Wang, Jiming Yang, Shumin Xu, Peng Ling, China

Session	*10:20*	*10:40 – 11:00*
SM10: Mechatronics Chairs: Viktor Berbyuk, Sweden David Limebeer, UK **Room: 208A+B**	***On the control of friction induced vibrtions through an additional sequential friction-spring (SM10-001)*** Alexander Fidlin, Hartmut Hetzler, Germany	***Coffee Break*** ***Main Lobby, 1st floor***
FM03: Combustion and flames Chairs: Peter Lindstedt, UK Chunde Yao, China **Room: 209A+B**	***DNS of turbulent swirling premixed flame and pressure oscillations in a micro combustor (FM03-025)*** Kotaro Kuchiki, Masayasu Shimura, Naoya Fukushima, Mamoru Tanahashi, Toshio Miyauchi, Japan	
FM13: Stirring and mixing Chairs: Mark Andrew Stremler, USA Juan-Pedro Mellado, Germany **Room: 211**	***Topological chaos and mixing in fluids stirred by almost-cyclic sets (FM13-012)*** Mark A. Stremler, Pradeep Rao, Shane D Ross, USA	
MS01: Mechanical challenges in energy Chairs: Jens Nørkær Sørensen, Denmark Fernando Porte-Agel, Switzerland **Room: 212A**	***In situ strain measurement in anodes for lithium-ion batteries (MS01-013)*** Elizabeth M. C. Jones, Nancy R. Sottos, Scott R. White, USA	
MS02: Mechanics of natural disasters Chairs: Huimin Jing, China Hans Von Storch, Germany **Room: 212B**	***Muliphysics modelling of flowslides initiation (MS02-024)*** Lorenzo Sanavia, Ronel Ngaradoumbe Nanhornguè, Bernhard A. Schrefler, Italy	
MS03: Fluid-structure interactions in biological systems Chairs: C. Alberto Figueroa, UK Moshe Rosenfeld, Israel **Room: 213A**	***Mathematical modelling of aortic dissection (MS03-032)*** Steven M. Roper, N. A. Hill, Beibei Li, Lei Wang, Xiaoyu Luo, UK	
MS05: Dynamics and control of morphing structures Chairs: Jinhao Qiu, China James Ing, UK **Room: 213B**	***Study on dynamic hysteresis and linear modeling of the sliding-skin variable-sweep morphing wing aerodynamics (MS05-013)*** Peng Bai, Qian Chen, Xinyu Liu, Feng Li, China	

Session	*11:00*	*11:40*	*12:20*
MS01 Mechanical challenges in energy (Introductory Lectures) Chairs: Dongxiao Zhang, China Jens Nørkær Sørensen, Denmark **Room: Ballroom A**	***Interaction between large wind farms and the atmospheric boundary layer (MS01-016)*** Fernando Porté-Agel, Yu-Ting Wu, Hao Lu, Switzerland	***Failure of solid oxide fuel cells by electrochemically generated internal pressure (MS01-024)*** Anil Virkar, USA	***Nano-mechanics foundations and experimental methodologies for multiphysics prognosis of functional behavior in heterogenous functional materials (heterofoams) (MS01-001)*** Kenneth Reifsnider, Qianlong Liu, Prasun Majumdar, Fazle Rabbi, Rassel Raihan, Yanhai Du, Jon Michael Adkins, USA
MS02 Mechanics of natural disasters (Introductory Lectures) Chairs: Yasuo Onishi, Japan Bernhard Schrefler, Italy **Room: Ballroom B**	***Initiation, transport and deposition of granular avalanches: current progress and future challenges (MS02-004)*** Roger P. Denlinger, USA	***Storm surges (MS02-002)*** Hans von Storch, Germany	***On the modelling of tsunami generation and tsunami inundation (MS02-001)*** Frederic Dias, Ireland
MS03 Fluid-structure interactions in biological systems (Introductory Lectures) Chairs: Howard A. Stone,USA Xiaoyu Luo, UK Denis Bartolo, France **Room: Ballroom C**	***Flow-plant interactions, ecology and biomimetics (MS03-002)*** Emmanuel de Langre, France	***Pressure wave propagation in full-body arterial models: a gateway to exploring aging and hypertension (MS03-010)*** C. Alberto Figueroa, Jay D. Humphrey, UK	***Active biological fluids (MS03-025)*** Michael Shelley, USA
MS04: Mechanics of transport in microfluidic devices (Introductory Lectures) Chairs: Henrik Bruus, Denmark Minoru Seki, Japan **Room: Function Hall A**	***Inertial microfluidics: high-throughput cell and particle manipulation (MS04-016)*** Dino Di Carlo, USA	***Acoustophoresis in life science applications (MS04-019)*** Thomas Laurell, Sweden	
MS05 Dynamics and control of morphing structures (Introductory Lectures) Chairs: Jinsong Leng, China Jonathan Cooper, UK **Room: Function Hall B**	***DLR's morphing activities within the european network (MS05-021)*** Michael Sinapius, Monner Hans Peter, Kintscher Markus, Riemenschneider Johannes, Germany	***Smart skins and actuators for morphing structures (MS05-025)*** Jinhao Qiu, Hongli Ji, China	
MS06 Effects of small size scales in materials modeling (Introductory Lectures) Chairs: Marc Geers, The Netherlands Lallit Anand, USA **Room: Function Hall C**	***Multiscale plasticity: reductionism or emergence? (MS06-021)*** Erik Van der Giessen, The Netherlands	***Stress-gradient plasticity: concept and application (MS06-055)*** Srinath S. Chakrvarthy, William A. Curtin, Benjamin Szajewski, Switzerland	***Size effects of materials surface roughness for wetting and transportation: from nature to experiments and models (MS06-057)*** Quanshui Zheng, Cunjing Lü, China

Lunch: 12:40 – 13:40, Exhibition Hall 5, underground floor

Session	*14:00*	*14:03*	*14:06*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**		***Numerical investigation of the effects of large particles on turbulent channel flow (FM06-023)*** Xueming Shao, Tenghu Wu, Zhaosheng Yu, China	***Modeling of gravitational convection in disperse systems: Instabilities, vortex generation, and boycott effect (FM06-003)*** Alexander Osiptsov, Yurii Nevskii, Russia
FM07: Flow instability and transition Chairs: Gianluca Iaccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***On the dual roles of viscosity to the flow instability (FM07-005)*** Huashu Dou, Boo Cheong Khoo, China	***Hydrodynamic instability of the spiral flow (FM07-007)*** Evgeny G. Bord, Valery Ya. Rudyak, Russia	***Comparison between experimental and numerical analysis of stability of liquid columns in an axial gravitational field rotating around an eccentric axis (FM07-014)*** Jacobo Rodriguez, Victoria Lapuerta, Ana Laverón-Simavilla, Spain
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**		***A non-smooth model of gear vibration (SM16-050)*** Jianming Wen, Xiangrong Zhou, Yiqiang Sun, China	***Thickness-shear vibrations of rectangular plates with free edges by the extended kantorovich method (FS07-019)*** Ji Wang, Bo Liu, Jianke Du, China
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***Generation of Leaky Lamb waves by a piezoelectric wafer active sensor in a fluid-loaded anisotropic plate (FS06-017)*** Ying Luo, Baiqiang Xu, Chenguang Xu, Guidong Xu, China	***Simulation for gas-structure interaction in inflatable membrane beams (FS06-023)*** Jianzheng Wei, Huifeng Tan, Jianxin Yu, Xingwen Du, China	***Optical-force-induced migration of an elastic capsule in a uniform flow (FS06-024)*** Cheong Bong Chang, Wei-Xi Huang, Hyung Jin Sung, Korea
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***A discrete vortex strip method for vortex induced vibration analysis (FS02-056)*** Li Zhou, Zhi Zong, China	***Flow around an obstacle between parallel walls (FM06-074)*** Wenchao Yu, Lionel Le Penven, Ivana Vinkovic, Marc Buffat, France	***A skew-symmetric formulation for the simulation of multiphase turbulent flows (FM14-026)*** Daniel Fuster, France
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***Numerical simulation of three-dimensional separated flow over bodies with some vortex method (FM15-025)*** Alexey Setukha, Russia	***Application of mosaic-skeleton approximations method to accelerate calculations in the problems of modeling flows past bodies with discrete vortices method (FM15-031)*** Andrey Aparinov, Russia	***Application of discrete vortex singularities method to the aeroelastic problems in parachute constructing (FM15-033)*** Vladimir Aparinov, Alexey Setukha, Russia
MS06: Effects of small size scales in materials modeling Chairs: Christian Niordson, Denmark Ron Peerlings, The Netherlands **Room: 202A+B**	***Strain gradient solutions for half-space contact problems (MS06-011)*** Xinlin Gao, Songsheng Zhou, USA	***Size-dependent behavior in nano-dielectric Bernoulli-Euler beam (MS06-013)*** Xu Liang, Shengping Shen, China	***Atomistic simulation of compression deformation behavior in magnesium single crystal (MS06-030)*** Xiaozhi Tang, Yafang Guo, Honggang Qi, Yuesheng Wang, China
FM12: Non-Newtonian and complex fluids Chairs: James Lee, USA Wenchang Tan, China **Room: 203A+B**	***A numerical study of the MPS method for simulating non-Newtonian free surface flows (FM12-005)*** Hao Xiang, Bin Chen, China	***Micropolar theory and its application to nematic liquid crystal (FM12-001)*** James D. Lee, Jiaoyan Li, USA	***A new microfluidic drive and control method based on the liquid crystalline backflow (FM12-002)*** Chunbo Liu, Yanfang Guan, China
FM05: Convection Chairs: Emily SC Ching, Hong Kong, China Yongxiang Huang, China **Room: 205A+B**	***Borehole heat exchanger modelling: Validation and system parameters evaluation (FM05-006)*** Georgios Florides, Paul Christodoulides, Panayiotis Pouloupatis, Vassilios Messaritis, Cyprus	***Dynamics of sheet plumes in turbulent convection (FM05-007)*** G.S.Gunasegarane, Baburaj A. Puthenveettil, India	***Equations for convection in binary mixture: Symmetry analysis and exact solutions (FM05-009)*** Viktor K. Andreev, Irina V. Stepanova, Russia

Session	*14:09*	*14:12*	*14:15*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Capillary transport of cryogenic liquids in porous media (FM06-004)*** Ming Zhang, Michael Dreyer, Germany	***Investigation on particle-fluid energy transfer in turbulent channel flow (FM06-006)*** Lihao Zhao, Helge I. Andersson, Jurriaan J. J. Gillissen, Norway	***A moving mesh method for three-phase flows with triple junction points (FM06-009)*** Jie Li, UK
FM07: Flow instability and transition Chairs: Gianluca Iaccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***Effects of surface corrugation on boundary layer instability (FM07-022)*** Mochamad Dady Mamun, Masahito Asai, Ayumu Inasawa, Masahiro Shigeta, Japan	***Investigation of correlation-based transition model coupled with Spalart-Allmaras turbulence model (FM07-031)*** Ke Zhao, Zhenghong Gao, Jiangtao Huang, China	***The reliability of the improved e-N method for boundary layer transition prediction on a flat plate (FM07-035)*** Caihong Su, China
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Noise sensitivity of balance with delayed on-off control (FS09-004)*** Jiaxing Wang, Rachel Kuske, David Simpson, China	***Nonlinear forced vibrations of in-plane translating viscoelastic plates with 3:1 internal resonance (MS05-001)*** Youqi Tang, Liqun Chen, China	***Optimal bounded control of the randomly excited nonlinear oscillators containing fractional derivative damping (SM16-005)*** Lincong Chen, Weiqiu Zhu, China
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***FENSAP-ICE: numerical simulation of rotor blade icing (FM06-093)*** Isik A. Ozcer, Guido S. Baruzzi, Thomas Reid, Habib Fouladi, Wagdi G. Habashi, Canada	***Dynamics of resonance of a floating body in a channel with application to wave power extraction (FS06-004)*** Emiliano Renzi, Frederic Dias, Ireland	***Forced nonlinear vibration of pipes conveying supercritical fluid (FS06-006)*** Liqun Chen, Yanlei Zhang, Guoce Zhang, Hu Ding, China
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***An improved lattice Boltzmann model for incompressible flow (FS02-001)*** Lianggi Zhang, Zhong Zeng, Haiqiong Xie, Gongyou Liang, Hiroshi Mizuseki, Yoshiyuki Kawazoe, China	***A separation variable quadrature element method for thickness-shear vibrations of rectangular crystal plates (FS02-003)*** Bo Liu, Yufeng Xing, China	***An enriched finite element for bimaterial interfacial cracks (FS02-005)*** Weian Yao, Xiaofei Hu, China
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***An experimental study on the stability of the tip vortices behind a small-scale model turbine (FM15-014)*** Ylva Odemark, Jens H.M. Farnsson, Sweden	***Separated vortical flow control by idealized partial-slip boundary (FM15-015)*** Jiezhi Wu, Fanglin Zhu, Yantao Yang, China	***Nonlinear motion of current-vortex sheets in magnetohydrodynamic flows with density stratification (FM15-016)*** Chihiro Matsuoka, Japan
MS06: Effects of small size scales in materials modeling Chairs: Christian Niordson, Denmark Ron Peerlings, The Netherlands **Room: 202A+B**	***A computational study on overall mechanical behavior of nanocrystalline and ultra-fine polycrystalline metals (MS06-033)*** Li Chen, Yueguang Wei, China	***Molecular mechanics study on size-dependent electro-mechanical properties of boron nitride nanotubes (MS06-039)*** Lai Jiang, Wanlin Guo, China	***Mechanics of damping and energy dissipation in low-dimensional graphitic nanostructures (MS06-047)*** Dong Qian, Zhong Zhou, USA
FM12: Non-Newtonian and complex fluids Chairs: James Lee, USA Wenchang Tan, China **Room: 203A+B**	***Onset of thermal convection in a viscoelastic fluid-saturated porous medium between coaxial rotating cylinders (FM12-004)*** Jianhong Kang, Ceji Fu, Wenchang Tan, China	***The linear stability of plane creeping Poiseuille and Cuette flow of Burgers fluid (FM12-006)*** Kaixin Hu, Jie Peng, Keqin Zhu, China	***Shear strengthening viscosity and shear-rate-dependent modulus model for a waxy crude oil (FM12-008)*** Shuxin Huang, Wenxiang Wu, Ying Zou, Xin Chen, Chuanjing Lu, China
FM05: Convection Chairs: Emily SC Ching, Hong Kong, China Yongxiang Huang, China **Room: 205A+B**	***Onset of three-dimensional thermal convection in an inclined rectangular or cubic cavity (FM05-012)*** Yoshinari Fukazawa, Mitsuaki Funakoshi, Japan	***Laboratory simulation of the influence of geothermal heating on the global oceanic circulation (FM05-014)*** Shengqi Zhou, Xiaozheng Zhao, China	***Unsteady coupled thermal boundary layers (FM05-021)*** Feng Xu, John Patterson, Chengwang Lei, China

Session	*14:18*	*14:21*	*14:24*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Evaporating-freezing phenomena of water droplets during quick depressurization (FM06-010)*** Wangfang Du, Jianfu Zhao, Kai Li, China	***Turbulent particulate pipe flow at constant Reynolds number (FM06-015)*** Alexander Kartushinsky, Efstathios Michaelides, Ylo Rudi, Sergei Tisler, Estonia	***Visualization study on transient liquid film behavior and inner gas flow after rupture of a soap bubble (FM06-026)*** Dong Kim, Chung Hyun Lee, Seung Jai Yi, Hyun Dong Kim, Kyung Chun Kim, Korea
FM07: Flow instability and transition Chairs: Gianluca Laccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***An experimental study on the Richtmyer-Meshkov instability of a minimum-surface interface with sinusoidal boundaries (FM07-036)*** Xiansheng Wang, Ting Si, Xisheng Luo, Jiming Yang, China	***Variational formulation of continuum mechanics based on the Lagrangian with the friction force (FM07-040)*** Frantisek Marsik, Pavel Novotny.Czech Republic	***Magnetic field effects on three dimensional stability of natural convection flows in differentially heated cavities (FM07-044)*** Dimitrios Dimopoulos, Nikos Pelekasis, Greece
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Free vibration of the water-filled double-walled carbon nanotubes based on a three shell-potential flow model (SM16-006)*** Yan Yan, Wenquan Wang, China	***Elastic vibrations of nanoparticles with the effects of surface stress and surface inertia (SM16-007)*** Ganyun Huang, Jipeng Liu, China	***The periodic solution analysis of a smooth and discontinuous (SD) oscillator (SM16-012)*** Zhixin Li, Qingjie Cao, Alain Pierre Leger, China
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***An unique nonlinear vibration phenomenon of a liquid - elastic shell coupled system (FS06-008)*** Chunyan Zhou, Dajun Wang, China	***Numerical investigation of interactions between two particles with different sizes (FS06-012)*** Liang Wang, Zhaoli Guo, Jianchun Mi, Chuguang Zheng, China	***Simulation of the interaction between compressible fluid and thin elastic plate by the modified ghost fluid method (FS06-019)*** Liang Xu, Tiegang Liu, Zhaoyong Ni, China
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***Effect of charge on mechanical properties of elastomeric proteins (FS02-006)*** Ravi Kappiyoor, Ganesh Balasubramanian, Daniel M. Dudek, Ishwar K. Puri, USA	***Simulation of anisotropic Savage-Hutter model using gas kinetic scheme (FS02-008)*** W. C. Chen, C. Y. Kuo, K. M. Shyue, Y. C. Tai, Taiwan, China	***The mathematica package BVPh 1.0 for nonlinear problems (FS02-017)*** Shijun Liao, China
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***The origin of flow asymmetry formation over slender body of revolution at high angle of attack (FM15-017)*** Yiding Zhu, Cunbiao Le, China	***Sound generation in the interaction of two isentropic vortices (FM15-018)*** Shuhai Zhang, China	***Influence of geometric layout and blockage on the performance of vortex shedding flowmeter (FM15-027)*** Abdelkader Zaaraoui, Sofiane Khelladi, Farid Bakir, Florent Margnat, Florent Ravelet, Algeria
MS06: Effects of small size scales in materials modeling Chairs: Christian Niordson, Denmark Ron Peerlings, The Netherlands **Room: 202A+B**	***Molecular dynamics based study on ductility enhancement effect and temperature dependence of nanocrystalline metals with nanoscale void (MS06-054)*** Shin Taniguchi, Toshihiro Kameda, Toshiyuki Fujita, Japan	***The effect of surface elasticity on morphological instability of a stressed solid (MS06-056)*** Mikhail A. Grekov, Sergey A. Kostyrko, Russia	
FM12: Non-Newtonian and complex fluids Chairs: James Lee, USA Wenchang Tan, China **Room: 203A+B**	***Time periodic EOF of power-law fluid in a cylindrical microcapillary (FM12-011)*** Shuyan Deng, Qingyong Zhu, China	***An experimental study of non Newtonian fluids in pipe flow (FM12-021)*** Abdelhakim Benslimane, Pierre François, Fabrice Lawniczak, Karim Bekkour, France	***The surface deformation effect in the process of anomalous thermo-viscous liquid flow (FM12-025)*** Victor Kireev, Said Urmancheev, Iskander Akhatov, Russia
FM05: Convection Chairs: Emily SC Ching, Hong Kong, China Yongxiang Huang, China **Room: 205A+B**	***Effects of material properties on liquid flow and heat transfer in rectangular microchannels (FM05-024)*** Yan Pang, Zhaomiao Liu, China	***Model for effect of plumes in turbulent free convection boundary layers (FM05-025)*** Jaywant H. Arakeri, Ramesh D.S. Chandra, Navneet Kumar, India	***Generalized autocorrelation function in Rayleigh-Benard convection (FM05-026)*** Yongxiang Huang, China

Session	*14:27*	*14:30*	*14:33*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Visualization study on the impingement of liquid droplets on a hot surface (FM06-027)*** Dongyeon Kim, Seung Jai Yi, Hyun Dong Kim, Kyung Chun Kim, Korea	***Capillary penetration via a mean-field lattice Boltzmann model for multiphase flow (FM06-028)*** Gang Wan, Baoming Li, Junfeng Zhang, Daniel Kwok, Canada	***Impacting on breakup process of free round jet by man-made pulsation (FM06-030)*** Zhenyan Xia, Li Ping He, China
FM07: Flow instability and transition Chairs: Gianluca Iaccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***Contribution to the Taylor-Couette flow control using the inner cylinder cross-section variation (FM07-047)*** Hamid Oualli, Mohamed Lebbi, Samir Hanchi, Ahcene Bouabdallah, Algeria	***Linear stability analysis of lid-driven cavity flow using a spectral element method (FM07-049)*** Huan Mei, Zhong Zeng, Zhouhua Qiu, Liangqi Zhang, Zu'an Tian, Linmao Yin, China	***The key role played by the swift change of the stability characteristic of mean flow in bypass transition (FM07-050)*** Ming Dong, China
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Optimised progression rates by means of vibro-impact motion (SM16-016)*** Si Chung Jong, Vincent C. C. Lee, Ko Choong Woo, Malaysia	***Parametric instability of slender beams with unilateral winkler support: an application to riser dynamics (SM16-017)*** Carlos E. N. Mazzilli, Andre L. Mansur, Guilherme C. Monticelli, Fernando Y. Sakamoto, Brazil	***Dodekapod as universal intelligent structure for adaptive parallel spatial self-moving modular robots (SM16-021)*** Sergey N. Sayapin, Alexander V. Siniov, Russia
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***Computations of drag force on cylinder in oscillatory viscous flow, and comparison to experiments (FS06-021)*** John Grue, Magnus Vartdal, Norway	***An adaptive immersed boundary method for fluid structure interaction with boundary mass (FS06-022)*** Wenquan Wang, Dongwei Hao, Yan Yan, China	***Investigation of traveling wave in vortex-induced vibrations of long flexible cylinders (FS06-026)*** Xiaodong Wu, Fei Ge, Youshi Hong, China
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***Development of convolution quadrature boundary element method for 2D poroelastic wave propagation (FS02-022)*** Takahiro Saitoh, Fumika Chikazawa, Sohichi Hirose, Japan	***Stress analysis of multilayered coating systems using a new meshless boundary collocation method (FS02-024)*** Yan Gu, Wen Chen, China	***Nonconforming isogeometric analysis using TC++ splines (FS02-027)*** Xuefeng Zhu, Zhengdong Ma, Ping Hu, China
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***Applications of vortex dynamics in multiply connected domains (FM15-028)*** Takashi Sakajo, Rhodri Nelson, Japan	***Interaction of a wall jet with a wake flow-vortex statistics (FM15-029)*** Arindam Singha, Md Abdullah Al Faruque, Ram Balachandar, USA	***Numerical study of a vortex ring impacting on a circular cylinder (FM15-030)*** Heng Ren, Xiyun Lu, China
MS03: Fluid-structure interactions in biological systems Chairs: Emmanuel de Langre, France Xiaoyu Luo, UK **Room: 202A+B**		***Reorientation of a non-spherical micro-capsule in shear flow (MS03-001)*** Takuji Ishikawa, Toshihiro Omori, Yohsuke Imai, Takami Yamaguchi, Japan	***Multiscale modelling of avascular tumour growth under hypoxic microenvironment (MS03-003)*** Yan Cai, Shixiong Xu, Quan Long, China
FM14: Turbulence Chairs: Guowei He, China Keith Moffatt, UK **Room: 203A+B**			***Moving particle semi-implicit method based on large eddy simulation (FM14-006)*** Guangtao Duan, Bin Chen, China
FM05: Convection Chairs: Emily SC Ching, Hong Kong, China Yongxiang Huang, China **Room: 205A+B**	***Unsteady natural convection in a reservoir induced by ramped isothermal surface heating (FM05-029)*** Yadan Mao, Chengwang Lei, John Patterson, China	***Complexity of direct numerical simulations of turbulent natural convection (FM05-030)*** Olga Shishkina, Germany	***Conjugated convective-conductive heat transfer in micro channels on polymeric nanocomposite substrate (FM05-040)*** Diego C. Knupp, Carolina P. Naveira-Cotta, Renato M. Cotta, Brazil

Session	*14:36*	*14:39*	*14:42*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Directed motion of carbon nanotube in water driven by non-uniform electric field (FM06-033)*** Zhen Xu, Guohui Hu, Zhiliang Wang, Zhewei Zhou, China	***The concept of self-consistent field applied to the inviscid suspensions (FM06-034)*** Oleg B. Gus'kov, Russia	***Rotation of ellipsoids in canonical flows: effects of particle and fluid inertia (FM06-042)*** Fredrik Lundell, Tomas Rosen, Sweden
FM07: Flow instability and transition Chairs: Gianluca Iaccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***Stability analysis of compressible swirling jets (FM07-052)*** Zhenhua Wan, Lin Zhou, Dejun Sun, China	***Transient growth of perturbation in rotating Poiseuille flow (FM07-055)*** Zhiwei Guo, Bofu Wang, Dejun Sun, China	***Spectral broadening and flow randomization in free shear layers (FM07-056)*** Xuesong Wu, Feng Tian, China
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Research advances of exact solutions for free vibrations of plates and shells (SM16-026)*** Yufeng Xing, Bo Liu, China	***Rectilinear motion of a two-mass point system in a resistive medium (SM16-030)*** Klaus Zimmermann, Igor Zeidis, Mikhail Pivovarov, Germany	***Existence of periodic orbits for the CR3BP under a new frame (SM16-033)*** Fabao Gao, Wei Zhang, Jianen Chen, China
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***Wave interaction with two elastically mounted vertical cylinders (FS06-028)*** Wei Su, Jie-min Zhan, Yok-sheung Li, China	***A theoretical solution of a water- spherical shell-damping layer interaction system for underwater noise reductions (FS06-035)*** Jingtang Xing, Weikang Jiang, Mingyi Tan, UK	***SPH simulation of free surface flows with moving objects (FS06-036)*** Moubin Liu, China
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***Symplectic time-subdomain iterative method for nonlinear dynamic equation (FS02-028)*** Weihua Li, Yu Wang, En Luo, China	***An advantage of spectral element method for solving incompressible Navier-Stokes equations (FS02-031)*** Zhouhua Qiu, Zhong Zeng, Huan Mei, Hiroshi Mizuseki, Yoshiyuki Kawazoe, China	***Convolution quadrature boundary element method for 3D elastodynamic analysis of general anisotropic elastic solids (FS02-032)*** Akira Furukawa, Yukumo Tanaka, Takahiro Saitoh, Sohichi Hirose, Chuanzeng Zhang, Japan
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***Interaction of two coaxial Dyson's vortex rings inside a circular cylinder (FM15-032)*** Vyacheslav V. Meleshko, Alexandre A. Gourjii, Stanislav A. Dovgiy, Alexander N. Trofimchyk, Ukraine	***The circulation model of vortex flow of a viscid wall layer (FM15-034)*** Vyacheslav V. Meleshko, Dmytro I. Cherniy, Stanislav A. Dovgiy, Ukraine	***The studies of flow mechanism and suppression of wing rock motion (FM15-036)*** Xueying Deng, Jun Zhu, Yankiu Wang, Baofeng Ma, China
MS03: Fluid-structure interactions in biological systems Chairs: Emmanuel de Langre, France Xiaoyu Luo, UK **Room: 202A+B**	***Comparison between fluid-structure interaction and fluid dynamic simulations of stented coronary arteries (MS03-004)*** Mauro Malvè, Claudio Chiastra, Stefano Morlacchi, Miguel A. Martinez, Francesco Migliavacca, Spain	***Probability of contact of a self-propelled marine larva with a protruding collector (MS03-012)*** Gregory Zilman, Julia Novak, Alex Liberzon, Shimrit Perkol-Finkel, Yehuda Benayahu, Israel	***Mechanical aspects of cell division (MS03-015)*** Noah Langowitz, Chehang Yu, Manqi Deng, Daniel Needleman, USA
FM14: Turbulence Chairs: Guowei He, China Keith Moffatt, UK **Room: 203A+B**	***Numerical investigation and analysis of RAE2822 airfoil in ground effect (FM14-003)*** Shaowei Li, Peiqing Liu, Qiulin Qu, Baodong Guo, China	***Turbulent modeling of wall-bounded flow with memory effects (FM14-014)*** Xiang Qiu, Gilmar Mompean, Francois G. Schmitt, Roney L. Thompson, China	***A multi-layer description of subgrid-scale effects (FM14-024)*** Ning Hu, Huan Liu, Zhensu She, China
FM05: Convection Chairs: Emily SC Ching, Hong Kong, China Yongxiang Huang, China **Room: 205A+B**	***Stability of a natural convection flow inside a cylindrical cavity partially heated on the side (FM05-042)*** Joše Núñez, Eduardo Ramos, Juan M. Lopez, Mexico	***Heat transfer in developed compressible convection (FM05-046)*** Krzysztof A. Mizerski, Chris A. Jones, Poland	***Measurement of the temperature field in a Rayleight-Bénard turbulent convection cell by light induced fluorescence (FM05-047)*** Denis Funfschilling, Guillaume Castanet, Nicolas Rimbert, Huai-Zhi Li, France

Session	*14:45*	*14:48*	*14:51*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Breath figure of water and oil and the structure pattern formation (FM06-044)*** José Guadarrama-Cetina, Wenceslao González-Viñas, Spain	***Surface stability of an encapsulated bubble in an ultrasound field (FM06-051)*** Yunqiao Liu, Kazuyasu Sugiyama, Shu Takagi, Yoichiro Matsumoto, China	***An investigation of droplet impingement on liquid film considering the effect of evaporation of liquid (FM06-053)*** Jiahong Guo, Xiaoyong Wang, China
FM07: Flow instability and transition Chairs: Gianluca Iaccarino, USA Laurette Tuckerman, France **Room: Ballroom B**	***Stabilization and universality in Hele-Shaw flows with many interfaces (FM07-057)*** Prabir Daripa, USA	***Wave patterns on fluid interface subjected to the horizontal vibrations (FM07-060)*** Tatyana Lyubimova, Dmitriy Lyubimov, Grigoriy Khilko, Andrey Ivantsov, Russia	***Experimental investigation on later transition stage of laminar streak (FM07-061)*** Chong Pan, Jinjun Wang, China
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Theory and experiment on nonlinear trends of composite laminated plate (SM16-034)*** J. E. Chen, W. Zhang, F. B. Gao, China	***Examinations of nonlinear isolators using power flow approach (SM16-037)*** Jian Yang, Ye P. Xiong, Jing T. Xing, UK	***Response amplitude of nonlinear self-excited microcantilever probe (SM16-044)*** Masataka Kasagawa, Masaharu Kuroda, Hiroshi Yabuno, Japan
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***The simulation of fluid-structure interaction on two flexible cylinders subjected to an annular flow (FS06-040)*** Zhengang Liu, Yang Liu, Jian Lu, Hong Kong, China	***Dynamic characteristics of rigid cylindrical container with multiple elastic annular baffles and partially filled with liquid (FS06-041)*** Ding Zhou, Jiadong Wang, Weiqing Liu, China	***Hamiltonian dynamics of a particle subject to time-varying gyroscopic and potential forces (FS06-042)*** Scott David Kelly, USA
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***Overset grid based simulation of moving body in viscous flows with free surface (FS02-036)*** Decheng Wan, Zhirong Shen, China	***Geometric interpretation of discretized symmetric-conservative metric for higher-order finite-difference scheme (FS02-038)*** Yoshiaki Abe, Nobuyuki Iizuka, Taku Nonomura, Kozo Fujii,Japan	***Accurate boundary conditions for one-dimensional atomic chains (FS02-041)*** Gang Pang, Shaoqiang Tang, China
FM15: Vortex dynamics Chairs: Stéphane Le Dizès, France GertJan van Heijst, The Netherlands **Room: Function Hall C**	***Wall effect on the critical spacing for flow past two tandem cylinders (FM15-038)*** Renjie Jiang, Jianzhong Lin, China	***Stability, resonances and instability of the steady rotation of a system of three equidistant vortices outside a circle (FM15-040)*** Leonid Kurakin, Russia	***Theoretical relations between quantities at a water surface and the instantaneous subsurface flowfield (FM15-046)*** John C. Wells, USA
MS03: Fluid-structure interactions in biological systems Chairs: Emmanuel de Langre, France Xiaoyu Luo, UK **Room: 202A+B**	***Thrust production of a flexible low-aspect-ratio foil (MS03-027)*** Haoxiang Luo, Hu Dai, Paulo Ferreira de Sousa, USA	***Effect of chemical signaling on the swimming behavior of Vibrio fischeri (MS03-029)*** Sandeep S. Suravajhala, Prabhu R. Nott, India	
FM14: Turbulence Chairs: Guowei He, China Keith Moffatt, UK **Room: 203A+B**	***Selective reduction of triad interaction in hall magnetohydrodynamic turbulence (FM14-027)*** Keisuke Araki, Hideaki Miura, Japan	***The flow around Bypass Crossover Sub in fracturing process of horizontal wells Ida experiment (FM14-030)*** Yan Xu, Zunce Wang, Sen Li, Fengxia Lü, Yuejuan Yan, Houzhen Wen, China	***Experimental investigation of hypersonic boundary layer instability and transition by wavelet transform (FM14-036)*** Nan Jiang, Jian Han, China

Session	*14:54*	*14:57*	*15:00*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Interaction of rising bubble and particle in oscillating liquid (FM06-054)*** Dmitriy Lyubimov, Lyudmila Klimenko, Tatyana Lyubimova, Lev Filippov, Russia	***Effect of liquid precursors on powder vaporization in an RF plasma spray (FM06-058)*** Lijuan Qian, Jianzhong Lin, China	***Experimental study on nonlinear phenomenon of liquid sloshing in a circular cylindrical tank with spherical bottom (FM06-061)*** X. F. Yan, L. Lei, X. X Lu, X. B. Ren, C. Han, W. Wang, China
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Stationary response of Bouc-Wen hysteretic system under poisson white noise excitation (SM16-046)*** Yan Zeng, Gang Li, China	***Responses of axially moving viscoelastic beam under narrow-band random excitation (SM16-051)*** Di Liu, Wei Xu, Yong Xu, China	***Approximations of nonlinear differential equation solutions (SM16-053)*** Hedrih R. (Stevanović) Katica, Serbia and Montenegro
FS06: Fluid structure interactions Chairs: Jerome Hoepffner, France Stelios Kyriakides, USA **Room: Function Hall A**	***Stability and stabilization of motion of the rigid body with elastic compartments containing an ideal fluid (SM16-036)*** Volodymyr P. ShevChenko, Yuriy N. Kononov, Nikolay K. Didok, Alina Yu. Karnaukh, UKraine		
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***The flow past a lattice of airfoils and the determination of separation points in a viscous fluid (FS02-044)*** Alexander G. Petrov, Russia	***3D modeling of in-flight ice break-up (FS02-050)*** Shiping Zhang, Rooh A. Khurram, Wagdi G. Habashi, Canada	***An improved surface tension model for numerical simulation of interfacial flow by smoothed particle hydrodynamics method (FS02-053)*** Mingyu Zhang, Shudao Zhang, China
FM14: Turbulence Chairs: Guowei He, China Keith Moffatt, UK **Room: 203A+B**	***Time correlations in compressible isotropic turbulence (FM14-041)*** Dong Li, Guowei He, Xing Zhang, China	***Representative flow structure behind an ahmed vehicle model (FM14-042)*** Xiao Wen Wang, Yat Fan Pin, Yu Zhou, Hong Kong, China	

Session	*15:03*	*15:06*	*15:09*
FM06: Drops, bubbles and multiphase flows Chairs: Guohui Hu, China Jean-Philippe Matas, France **Room: Ballroom A**	***Droplet impact on a hydrophobic substrate with circular grooves (FM06-063)*** Hang Ding, Kai Mu, China	***Numerical simulation of fragmentation of liquid jet in vacuum based on lattice Boltzmann method (FM06-072)*** Lei Li, Xiaobing Ren, Xiaoxia Lu, China	
SM16: Vibrations and control of structures Chairs: Carlos Mazzilli, Brazil Oded Gottlieb, Israel **Room: Ballroom C**	***Thermoelastic damping of the axisymmetric vibration of bilayered circular plate resonators (SM16-057)*** Yuxin Sun, Jialing Yang, Hua Liu, Yan Jiang, China	***Novel method for three-dimensional velocity and acceleration detection FBG arrays (SM16-068)*** Lunwei Zhang, Haifeng Wei, Guobiao Yang, China	
FS02: Computational methods in mechanics Chairs: Naoshi Nishimura, Japan Stéphane Zaleski, France **Room: Function Hall B**	***Improved adams linear multi-step method based on extended precise integration method (MS05-007)*** Shujun Tan, Zhigang Wu, Wanxie Zhong, China	***Multi-material eulerian method and its large-scale computation for 3D explosion and shock problems (FS02-059)*** Jian G. Ning, Tian B. Ma, Guang L. Fei, China	

Poster display and discussion: 15:10 – 16:10, South Lobby, 1st floor

Coffee Break: 15:50 – 16:10, Main Lobby, 1st floor

Session	*14:00*	*14:03*	*14:06*
FS07: Smart materials Chairs: Gal de Botton, Israel Santosh Kapuria, India **Room: 206A+B**	***A mathematical model of an MR fluid in operational conditions of a damper's work (FS07-040)*** Pawel Skalski, Poland	***Large displacement SMA electro-morphing plate for wind tunnel experiments (FS06-044)*** Maxime Chinaud, Amar Boussaid, Jean Francois Rouchon, Eric Duhayon, Enrico Deri, Thomas de Faramond, Marianna Braza, Thibault Deloze, France	***In situ observation of electric field induced crack propagation in $BaTiO_3$ crystals along loading direction (FS07-002)*** Yingwei Li, Faxin Li, China
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA **Room: 208A+B**	***Fatigue crack growth analysis of short cracks in concrete (SM05-060)*** Sonalisa Ray, Kishen J. M. Chandra, India	***Saturated dislocations transient propagation-evolution in olivine structure under ultra high-coupled thermal-force fields (FS10-003)*** Bojing Zhu, Yaolin Shi, Chang Liu, China	***Physical mechanisms of magnetostrictive or electrostrictive interfacial fracture in a bi-layered multiferroic composite (SM05-003)*** Hao Zhao, Feixiang Feng, Yongdong Li, China
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***The route to simultaneous high stregnth and high ductility metals through engineered nanocrystalline interlayers (SM08-003)*** X. Guo, G. J. Weng, A. K. Soh, Hong Kong, China	***Local buckling of sandwich materials with non-orthogonal plain woven composite facesheets (SM08-010)*** Long Du, Xiaojun Huang, Bin Ye, China	***Investgation on transient heat transfer of 3D braided composites (SM08-011)*** Suyang Zhong, Licheng Guo, China
SM01: Biomechanics and biomaterials Chairs: Mian Long, China Gang Bao, USA **Room: 207**	***Growth and mechanical responses of the arterial wall (SM01-003)*** Jiusheng Ren, China	***Modeling calcium wave based on anomalous subdiffusion of calcium sparks in cardiac myocytes (SM01-015)*** Xi Chen, Ceji Fu, Wenchang Tan, China	***Axial fatigue of MP35N coils used as conductors in implantable medical devices (SM01-022)*** Haitao Zhang, Bernard Q. Li, Peter Zhang, Bruce Behymer, Nu Zosel, Chris Canton, USA
FS11: Foams and cellular materials Chairs: Dora Karagiozova, Bulgaria Stelios Kyriakides, USA **Room: 210A**	***Image based stochastic multiscale analysis of metal foam (FS11-014)*** Carsten Proppe, Germany		
MS04: Mechanics of transport in microfluidic devices Chairs: Henrik Bruus, Denmark Dino Di Carlo, USA **Room: 210B**	***Improving the wetting stability on submersed superhydrophobic surfaces for drag reduction applications using hierarchical structures (MS04-002)*** Yahui Xue, Shigan Chu, Pengyu Lv, Huiling Duan, China	***Time-averaged acoustic forces acting on a circular cylinder in a viscous fluid (MS04-003)*** Jingtao Wang, Jurg Dual, Switzerland	***Nanoscale vortices in transport of salty solution through a graphene nanopore (MS04-004)*** Guohui Hu, Mao Mao, Sandip Ghosal, China
SM12: Nanostructures and MEMS Chairs: Ole Sigmund, Denmark Changhong Ke, USA **Room: 211**	***Modeling carbon nanotube as a real-time mass sensor in viscous fluid (SM12-003)*** Ivo Stachiv, Kevin Sheng, Yeng-Long Chen, Taiwan, China	***Wetting phenomenon in cavitations of electronic packaging materials (SM12-012)*** Yue Mei, Xiaohu Yao, China	***Small-size and surface effects on the axially buckling of carbon nanotubes (SM12-013)*** Yugang Sun, Xiaohu Yao, China
SM02: Contact and friction mechanics Chairs: Zhao Zhang, China Xin Wang, USA **Room: 212A**	***A new algorithm for collision force between two cable-connected ships (SM02-002)*** Feng Jiang, Qi Feng, China	***Plane nonstationary contact problems of the impact of rigid and deformable strikers on an elastic half-space (SM02-011)*** Grigory V. Fedotenkov, Olga A. Afanasieva, Russia	***Some analytical models of frictional heating during braking (SM02-014)*** Aleksander Yevtushenko, Michal Kuciej, Poland

Session	*14:09*	*14:12*	*14:15*
FS07: Smart materials Chairs: Gal de Botton, Israel Santosh Kapuria, India **Room: 206A+B**	***Designing microstructures for desired functional materials and local fields (FS07-005)*** Liping Liu, USA	***Size and temperature effect on $BaTiO_3$ nanocrystallines and potential applications in energy storage (FS07-007)*** Jackie Li, USA	***Effects of surface maxwell stresses on piezoelectric fracture (FS07-014)*** Cunfa Gao, Haopeng Song, China
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA ***Room: 208A+B***	***The weight function for cracks in three-dimensional quasicrystals (SM05-017)*** Yang Gao, Andreas Ricoeur, China	***The relation between spatial and temporal effectsof deformation and fracture of quasi-brittle materials (SM05-018)*** Chengzhi Qi, Mingyang Wang, Qihu Qian, Jianjie Chen, China	***Analysis of the influence of stress gradient on the non-propagating fatigue crack (SM05-019)*** Hao Wu, China
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***Three-dimensional piezoelasticity solution for hybrid piezoelectric laminated plates featuring viscoelastic interfaces (SM08-021)*** Amit Kumar, Santosh Kapuria, N. K. Gupta, India	***Synthesis and formation mechanism of carbon-encapsulated copper nanoparticles in detonation process (SM08-022)*** Ning Luo, Kaixin Liu, Xiaojie Li, China	***Electromechanical transition in a dielectric elastomer: giant linear deformation and failure modes (SM08-031)*** Jian Zhu, Zhigang Suo, Matthias Kollosche , Guggi Kofod, USA
SM01: Biomechanics and biomaterials Chairs: Mian Long, China Gang Bao, USA **Room: 207**	***Embryogenesis of intestinal tissues: anisotropic growth and secondary bifurcations (SM01-025)*** Fei Jia, Pasquale Ciarletta , Martine Ben Amar, China	***Anomalous flexural behaviors of microtubules (SM01-027)*** Jizeng Wang, China	***Experimental investigation on mechanical properties of meshed titanium plate structures for reinforcement tricalcium phosphate bone implants (SM01-028)*** Ryoichi Abiko, Kyoshiro Zama, Jianmei He, Shigeki Suzuki, Japan
SM04: Elasticity Chairs: Zaoyang Guo, China Davide Bigoni, Italy **Room: 210A**	***Three-dimensional thermal-stress analysis of non-homogeneous elastic composites (SM04-009)*** Yuriy V. Tokovyy, Chien-Ching Ma, UKraine	***Determination of the engineer constants of piezoelectric thin film based on the piezoelectric constitution (SM04-011)*** Shutao Song, Xuejun Zheng, Wei Liu, China	***Comparision of non-Euclidean continuum model with strain gradient theory (SM04-012)*** Mikhail Guzev, Russia
MS04: Mechanics of transport in microfluidic devices Chairs: Henrik Bruus, Denmark Dino Di Carlo, USA A **Room: 210B**	***Dynamic properties of confined water molecules in nano-scale systems (MS04-010)*** Guangchao Zuo, Rong Shen, Wanlin Guo, China	***Particle transport with continuous frequency sweeping and acoustic radiation forces (MS04-013)*** Dirk Möller, Emian Furger, Jurg Dual, Switzerland	***Migration of flexible fibers entrained by Poiseuille flow in a microchannel (MS04-015)*** Agnieszka M. Slowicka, Eligiusz Wajnryb, Maria L. Ekiel-Jezewska, Poland
SM12: Nanostructures and MEMS Chairs: Ole Sigmund, Denmark Changhong Ke, USA **Room: 211**	***Nonlocal vibration of nanoplate on viscoelastic foundation (SM12-015)*** S. Ahmad Fazelzadeh, Saleh Pouresmaeeli, Iran	***Frictional characteristics of graphene and its derivatives (SM12-026)*** Qunyang Li, Robert W. Carpick, Xin-Z. Liu, Changgu Lee, James Hone, Jeremy T. Robinson, Paul E. Sheehan, China	***Piezoelectric and electrostrictive displacements of (1-x)$Na_{0.5}Bi_{0.5}TiO_3$-x$K_{0.5}Bi_{0.5}TiO_3$ thin films under the bipolar driving filed (SM12-027)*** Jiaoyun Liu, Xuejun Zheng, China
SM02: Contact and friction mechanics Chairs: Zhao Zhang, China Xin Wang, USA **Room: 212A**	***The approximated analytical solutions of axisymmetric contact problems for the coatings of complicated structure (SM02-017)*** Sergey Aizikovich, Igor Sevostianov, Andrey Vasiliev, Sergey Volkov, Russia	***Contact stiffness of bodies with fractal roughness: comparison of 3D bem results and reduction method (SM02-030)*** Roman Pohrt, Valentin L. Popov, Alexander E. Filippov, Germany	***Extended JKR theory on adhesive contact between layered elastic spheres (SM02-032)*** Choi Seung Tae, Republic of Korea

Session	*14:18*	*14:21*	*14:24*
FS07: Smart materials Chairs: Gal de Botton, Israel Santosh Kapuria, India **Room: 206A+B**	***Sliding dynamics in ZnO piezoelectric nanogenerator (FS07-016)*** Yongsheng Leng, Yajie Lei, USA	***Magnetoelectric coupling of multiferroic Pb ($Zr_{0.52}Ti_{0.48}$)O_3- $CoFe_2O_4$ composite thin film with sandwich structure (FS07-022)*** Shuhong Xie, Yun Ou, Feiyue Ma, Jiangyu Li, China	***Temperature oscillation under cyclic phase transition of NiTi shape memory alloy (FS07-026)*** Hao Yin, Yongjun He, Qingping Sun, Hong Kong, China
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA **Room: 208A+B**	***Thermal shock analysis of a functionally graded plate using interaction energy integral method (SM05-020)*** Yanyan Zhang, Licheng Guo, Fengnan Guo, Yang Jiao, China	***Weight functions of a crack in a two-dimensional micropolar solid (SM05-032)*** Yuri A. Antipov, USA	***The scaled boundary finite element method for 2D fracture analysis of piezoelectric materials (SM05-033)*** Chao Li, Hou Man, Chongmin Song, Wei Gao, Australia
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***Tuning electromagnetic properties of metamaterials by mechanical deformation (SM08-038)*** Shengqiang Cai, Nicholas X. Fang, USA	***Upper and lower limits in the elastic properties of low-shrink sheet molding compounds (SM08-039)*** Horatiu Teodorescu-Draghicescu, Sorin Vlase, Romania	***Modeling of composites with different physical and geometrical connectivities by effective modules and finite element methods (SM08-045)*** Andrey V. Nasedkin, Russia
SM01: Biomechanics and biomaterials Chairs: Mian Long, China Gang Bao, USA **Room: 207**	***Elastic and geometrical effects in the evolution of living materials: a configurational analysis of growth and mass transport (SM01-029)*** Pasquale Ciarletta, Luigi Preziosi, Gérard Maugin, France	***Atheroma plaque vulnerability prediction using machine learning techniques (SM01-043)*** Myriam Cilla, Javier Martínez, Estefanía Peña, Miguel Angel Martinez, Spain	***Mobility analysis of human gait as underactuated mechanical system (SM01-057)*** Ricardo E. Ramirez, Colombia
SM04: Elasticity Chairs: Zaoyang Guo, China Davide Bigoni, Italy **Room: 210A**	***A point-force elastic problem for exponential functionally graded coatings (SM04-023)*** Roberta Sburlati, Italy	***An equilibrium problems of a rectangle in the Cosserat elasticity (SM04-025)*** Grigoriev Yuri, Russia	***The resonant phenomena in the elastic oil pipeline, spent to sea water and subjected to impulse stressing (SM04-029)*** Anatoly Egorov, Murat Baimukhametov, Kazakhstan
MS04: Mechanics of transport in microfluidic devices Chairs: Henrik Bruus, Denmark Dino Di Carlo, USA **Room: 210B**	***Rapid cell separation in double spiral microfluidic channels (MS04-017)*** Chao Liu, Jiashu Sun, Xingyu Jiang, Guoqing Hu, China	***A hybrid computational model to predict separation of cells in hydrodynamic metamaterials (MS04-020)*** Wentao Wang, Yi-Kuen Lee, Hong Kong, China	
SM12: Nanostructures and MEMS Chairs: Ole Sigmund, Denmark Changhong Ke, USA **Room: 211**	***Molecular simulations of the formation of gold-molecule-gold junctions in moletronics device (SM12-036)*** Huachuan Wang, Yongsheng Leng, USA	***Numerical modeling of laser-induced picoseconds ultrasound in micro-nano thin films (SM12-030)*** Baiqiang Xu, Ying Luo, Chenguang Xu, Guidong Xu, Xiaoping Yang, China	***A model for the energy harvesting performance of shear mode piezoelectric cantilever (SM12-014)*** Liang Zhou, Jing Sun, Xuejun Zheng, Jihe Zhao, Shutao Peng, Yong Zhang, China
SM02: Contact and friction mechanics Chairs: Zhao Zhang, China Xin Wang, USA **Room: 212A**	***Influence of structural parameters on abrasion in multiphase matrix–cement materials (SM02-035)*** Natalya V. Makarova, Russia	***A second-order cone complementarity approach for numerical solution of 3D elastoplastic contact problems with orthotropic friction law (SM02-041)*** J. Y. Li, H. SMW. Zhang, China	***Numerical simulation on Painlevé paradox during frictional impact of a flexible bar (SM02-042)*** Yunian Shen, Jinhong Gu, China

Session	*14:27*	*14:30*	*14:33*
FS07: Smart materials Chairs: Gal de Botton, Israel Santosh Kapuria, India **Room: 206A+B**	***Fabrication of complex smart microstructures by capillary forming of nanoscale filaments (FS07-028)*** Wei Lu, USA	***A micro-macro description for magnetorheological (FS07-032)*** Chunwei Zhao, Xianghe Peng, China	***Optimum structure design of a multilayer piezo-composite disk for control of thermal stress (FS07-033)*** Ahmed M. Elsawaf, Fumihiro Ashida, Sei-ichiro Sakata, Japan
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA **Room: 208A+B**	***Microstructure-based evaluation of material fracture toughness (SM05-034)*** Yan Li, Min Zhou, USA	***Experimental investigations on the mixed-mode essential fracture work of PC/ABS alloy (SM05-048)*** Huimin Li, Qinzhi Fang, Tiejun Wang, China	***Critical intensity of singular stress for adhesibe joints (SM05-050)*** Nao-Aki Noda, Kengo Michinaka, Xin Lan, Yu Zhang, Japan
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***Stress-strain relation of $Bi_2Sr_2CaCu_2O_x$/AgMg superconducting round wires based on fractal characterization of the rough surfaces of individual filaments (SM08-048)*** Xiaofan Gou, Justin Schwartz, China	***Quasi- static indentation tests on closed-cell Al foam (SM08-053)*** Xinzhu Wang, Xianghe Peng, Zaoyang Guo, China	***Numerical study on the effects of equi-biaxial residual stress on mechanical properties of nickel film by means of nanoindentation (SM08-054)*** Shiguo Long, Lizeng Ling, Zengsheng Ma, Xu Liang, China
SM01: Biomechanics and biomaterials Chairs: Mian Long, China Gang Bao, USA **Room: 207**	***A multiple-patch model of microtubules (SM01-061)*** Shuo Feng, Haiyi Liang, China	***Coarse-grained modeling of receptor-mediated endocytosis of nanoparticles (SM01-051)*** Sulin Zhang, Changjin Huang, Yao Zhang, USA	
SM04: Elasticity Chairs: Zaoyang Guo, China Davide Bigoni, Italy **Room: 210A**	***Mechanical properties of cellular structures with rigid square rotations (SM04-043)*** Hiro Tanaka, Satoshi Izumi, Shinsuke Sakai, Japan	***Analytical solution of transverse crack problem under a thin layer (SM04-044)*** Boris Smetanin, Boris Sobol, Alexander Krasnoschekov, Russia	***Material characterization of polycrystals through hyperspace (SM04-049)*** Shoji Imatani, Japan
FS05: Electro- and magnetomechanical systems Chairs: Katie Bertoldi, USA Yongdong Pan, China **Room: 210B**		***A pathway of hardness enhancement in transition-metal borides (FS05-001)*** Zhao Fu, Yongcheng Liang, Zheng Zhong, China	***Directly resolving particles in an electric field and applications to heterogeneous dielectric materials and biomedical engineering (FS05-005)*** Qianlong Liu, Kenneth L. Reifsnider, USA
SM02: Contact and friction mechanics Chairs: Zhao Zhang, China Xin Wang, USA **Room: 212A**	***Torsion of elastic transversely isotropic half-space with inhomogeneous coating (SM02-029)*** Andrey Vasiliev, Sergey Aizikovich, Russia		

Session	*14:36*	*14:39*	*14:42*
FS07: Smart materials Chairs: Gal de Botton, Israel Santosh Kapuria, India **Room: 206A+B**	***Structure and rheology of self-assembled micelle-nanoparticle plasmonic nanogels: experiments and molecular dynamics simulations (FS07-037)*** Tao Cong, Abhinanden Sambasivam, Georo Zhou, Ashish Sangwai, Radhakrishna Sureshkumar, USA		
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA **Room: 208A+B**	***Numerical modeling of fracture in concrete using fractals theory and comparison with AE based b - value (SM05-058)*** R. Vidya Sagar, B. K. Raghu Prasad, India	***Mixed-mode mechanical strength and failure of Ni/Al2O3 interface from first-principles (SM05-067)*** Xiancong Guo, Fulin Shang, China	***Study of Griffith crack nucleation in a disclinated nanowire with a continuum model (SM05-074)*** Jun Luo, Junpeng Zhou, China
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***A higher order solution for cylindrical bending vibrations of functionally graded plates (SM08-060)*** S. M. Shiyekar, Tarun Kant, India	***A unified constitutive model for interface debonding and friction (SM08-062)*** Irene Guiamatsia, Giang Nguyen, Australia	***The statistical second-order two-scale analysis for thermo-elastic coupled performance of the composite structure with consistent random distribution of grains (SM08-066)*** Zihao Yang, Junzhi Cui, China
SM04: Elasticity Chairs: Zaoyang Guo, China Davide Bigoni, Italy **Room: 210A**	***Calculation of elastic constants of the torsion bars with helical anisotropy using the methods of optimization theory (SM04-050)*** Anna D. Perechesova, Russia		
FS05: Electro- and magnetomechanical systems Chairs: Katie Bertoldi, USA Yongdong Pan, China **Room: 210B**	***A vibration analysis of quartz crystal resonators with nonlinear Mindlin plate theory (FS05-011)*** Ji Wang, Rongxing Wu, Yangyang Chen, Jianke Du, Yuantai Hu, Wei Yan, Dejin Huang, Tingfeng Ma, China	***SH wave propagation in one piezoelectric laminate (FS05-012)*** Yongdong Pan, Jinfeng Zhao, Lei Liu, Zheng Zhong, China	***A tristable mechanism using combination of magnetic mechanisms and compliant beams (FS05-017)*** Jian Zhao, Lei Niu, Guoxi Chen, Yu Huang, Renjing Gao, China
MS02: Mechanics of natural disasters Chairs: Chiang-An Hsu, Taiwan, China Qingyuan Wang, China **Room: 211**	***Ductility reduction factor for MDOF system with vertical irregularities subjected to strong earthquake action (MS02-003)*** Huiying Wang, Jing Zhou, Jian Cai, China	***On the effect of tsunamis on nearshore wave energy converters (MS02-006)*** Paul Christodoulides, Laura O'Brien, Emiliano Renzi, Frédéric Dias, Cyprus	***Research on the wind damage of wind vulnerable structures considering local wind field (MS02-015)*** Xiaoqiu Ai, Tong Qin, China
SM06: Geophysics and geomechanics Chairs: K. T. Chau, UK Jens Tympel, Germany **Room: 212A**	***A numerical study of structural evolution inside the shear band in quasi-static simple shear tests (SM06-008)*** Xiaoxing Liu, Aurélie Papon, Hans Muhlhaus, Australia	***Thermogradient model of formation of oil and gas traps at salt diapirism (SM06-013)*** Baimukhametov Abay, Martynov Nikolay, Tanirbergenov Amanzhol, Kazakhstan	***The competition between grain melting and solidification during shear heating in simulated faults (SM06-017)*** Yixiang Gan, Itai Einav, Australia

Session	*14:45*	*14:48*	*14:51*
FS08 Granular materials and flows Chairs: Amy ReChenmacher, USA Jin Sun, UK **Room: 206A+B**	***Description of permeability anisotropy of granular materials with anisotropic porosity distribution (FS08-025)*** Peijun Guo, Canada	***Penetrating process simulation of a ball in granular media (FS08-006)*** Wenzhen Zhong, Fan Wang, Ze Xiangbo, Wei Xia, China	***Vorticity banding and stress localization in a granular fluid (FS08-011)*** Meheboob Alam, Priyanka Shukla, India
SM05: Fracture mechanics Chairs: Fumio Narita, Japan Xuanhe Zhao, USA **Room: 208A+B**	***Analytical and numerical investigations of the character of stresses in the vicinity of singular points in the framework of the classical and asymmetric theory of elasticity (SM05-056)*** Valeriy Korepanov, Tatiana Korepanova, Valeriy Matveenko, Natalia Sevodina, Igor Shardakov, Russia		
SM08: Mechanics of multi-component materials and composites Chairs: Shaker A. Meguid, Canada Qingsheng Yang, China **Room: 209A+B**	***Influence of friction between the contacting phases of the fiber composite on its stress-strain condition (SM08-068)*** Halina Kuziomkina, Volha Yakubovich, Belarus	***A micromechanical model for the effective viscoelastic response of semi-crystalline polymer-clay nanocomposites (SM08-067)*** Kokou Anoukou, Fahmi Zaïri, Gregory Stoclet, Moussa Naït-Abdelaziz, Ali Zaoui, Jean-Michel Gloaguen, Jean-Marc Lefebvre, France	
FS05: Electro- and magnetomechanical systems Chairs: Katie Bertoldi, USA Yongdong Pan, China **Room: 210B**	***Effects of magnetic lubricant in a rotor-bearing system (FS05-018)*** Anna Perek, Włodzimierz Kurnik, Piotr M. Przybyłowicz, Poland	***Electro-mechanical-magnetic coupling in multiferroic heterostructures: phase-field modeling and device applications (FS05-022)*** Jiamian Hu, Zheng Li, Longqing Chen, Cewen Nan, China	***Electro-acoustic couplings in nematic liquid crystals (FS05-023)*** Antonio DiCarlo, Italy
SM06: Geophysics and geomechanics Chairs: K. T. Chau, UK Jens Tympel, Germany **Room: 212A**	***A nonlinear homogenizationmodel for a clayey rock having a plastic porous matrix (SM06-025)*** Wanqing Shen, Jianfu Shao, Djimedo Kondo, France	***Three dimensional analytical solution for brazilian test (SM06-032)*** K. T. Chau, X. X. Wei. Hong Kong, China	***Experimental and numerical study on rock fall impact on a flexible rock-shed structure (SM07-039)*** Shaoqing Shi, Min Wang, Xiongqi Peng, Youkui Yang, China

Session	*14:54*	*14:57*	*15:00*
FS08 Granular materials and flows Chairs: Amy ReChenmacher, USA Jin Sun, UK **Room: 206A+B**	***Pattern formation of granular avalanches simulated by particle method with hydrodynamics interaction (FS08-013)*** Hirofumi Niiya, Akinori Awazu, Hiraku Nishimori, Japan	***Diffuse failure in granular media: influence of the loading path (SM06-020)*** Ali Daouadji, Mohamad Jrad, Salim Belouettar, Beena Sukumaran, Felix Darve, France	

Poster display and discussion: 15:10 – 16:10, South Lobby, 1st floor

Coffee Break: 15:50 – 16:10, Main Lobby, 1st floor

Session	*16:10*	*16:30*	*16:50*
FM06: Drops, bubbles and multiphase flows Chairs: Adrian Daerr, France Jianfu Zhao, China **Room: Ballroom A**	***Instabilities and encapsulation in a gas-cored compound liquid jet (FM06-048)*** Takao Yoshinaga, Japan	***Drag of laminar flow over trapped bubbles (FM06-059)*** Angela Busse, Neil D. Sandham, UK	***Effect of wall on the lifetime of nanobubbles (FM06-060)*** Shunsuke Kohno, Sadayoshi Toh, Japan
FS02: Computational methods in mechanics Chairs: Xu Guo, China Stefanie Reese, Germany **Room: Ballroom B**	***Optimal transportation meshfree approximation schemes for fluid and plastic flows (FS02-063, invited lecture)*** Michael Ortiz, USA	***Efficient simulation of multiscale non-continuum transport (FS02-009)*** Nicolas G. Hadjiconstantinou, Gregg Radtke, Jean-Philippe Peraud, USA	***Efficient numerical approaches to challenging problems in the frontier of mechanics and biology (FS02-013)*** Elias Cueto, Francisco Chinesta, Spain
SM16: Vibrations and control of structures Chairs: Tomasz Kapitaniak, Poland Qingjie Cao, China **Room: Ballroom C**	***Control of torsional vibrations in drill-strings via decomposition of traveling waves (SM16-027)*** Edwin J. Kreuzer, Michael Steidl, Germany	***Probabilistic solution of the stochastic oscillators with nonzero mean response (SM16-023)*** Guo-Kang Er, Siu-Siu Guo, Vai Pan Iu. Macau, China	***Probability density evolution analysis of multidimensional nonlinear stochastic dynamical systems (SM16-029)*** Jianbing Chen, Jun Xu, Jie Li, China
FM07: Flow instability and transition Chairs: Bruno Eckhardt, Germany Jianjun Tao, China **Room: Function Hall A**	***A weakly nonlinear mechanism for mode selection in swirling jets (FM07-026)*** Philippe Meliga, Francois Gallaire, Jean-Marc Chomaz, France	***Instabilities of a cylinder wake in a stratified fluid (FM07-025)*** Mickaël Bosco, Patrice Meunier, France	***Transition in rotating annulus with thermal gradient (FM07-094)*** Raphaël Guillerm, Arnaud Prigent, Clément Savaro, Satish Malik, Innocent Mutabazi, Dong-Hyeog Yoon, Chang-Woo Kang, Kyung-Soo Yang, France
SM05: Fracture mechanics Chairs: Yuri Petro, USA Chengzhi Qi, China **Room: Function Hall B**	***The influence of surface effects on strength and stability of Kirsch plates (SM05-036)*** Mikhail Grekov, Nikita F. Morozov,Stanislava Kashtanova, Anna Yazovskaya, Russia	***Structural-temporal approach for milti-scale fracture dynamics (SM05-043)*** Yuri V. Petrov, Russia	***Destruction of thin films with a damaged substrate as a result of waves localization (SM05-044)*** Andrey K. Abramyan, Sergey A. Vakulenko , Dmitry A. Indeitsev, Russia
MS06: Effects of small size scales in materials modeling Chairs: Yong-Wei Zhang, Singapore Quanshui Zheng, China **Room: Function Hall C**	***Discrete dislocation analyses of size effects in plasticity (MS06-050)*** A. Amine Benzerga, Shyam M. Keralavarma, P.J. Guruprasad, USA	***Understanding the size effect in the mechanical properties of (MS06-019)*** Zhaoxuan Wu, Yong-Wei Zhang, David J. Srolovitz, Singapore	***Eeffect of vacancies on the ultimate tensile strain of zno nanowires (MS06-023)*** Pan Xiao, Jun Wang, Min Zhou, Fujiu Ke, Yilong Bai, China
FM01: Biological fluid dynamics Chairs: Tomas Bohr, Denmark Xing Zhang, China **Room: 202A+B**	***The dynamics of insect flight and maple seeds (FM01-028)*** Jane Wang, USA	***Shape and motion optimization of 3d self-propelled swimmers (FM01-029)*** Wim M. van Rees, Mattia Gazzola, Petros Koumoutsakos, Switzerland	***Viscoelastic properties of vascular endothelial cells exposed to stretch (FM01-031)*** Kathryn Osterday, Thomas Chew, Phillip Loury, Jason Haga, Manuel Gómez-González, Juan Carlos Del álamo, Shu Chien, USA
FS01: Acoustics Chairs: Weiqiu Chen, China Victor Kopiev, Russia **Room: 203A+B**	***Wave motion and resonances in damaged periodically layered composites (FS01-024, invited lecture)*** Chuanzeng Zhang, Mikhail V. Golub, Yue-Sheng Wang, Germany	***Elastic wave propagation in multilayered Bragg cells (FS01-019)*** Yongqiang Guo, Daining Fang, China	***Membranes in the 3D cellular solid model provide the micro-/macro scaling for the long-wavelength acoustics of real foam samples (FS01-029)*** Camille Perrot, Minh Tan Hoang, Guy Bonnet, Fabien Chevillotte, Arnaud Duval, France
FS04: Chaos and pattern formation Chairs: Martine Ben Amar, France John Gibson, USA **Room: 205A+B**	***Critical point for pipe flow, and beyond (FS04-014, invited lecture)*** Dwight Barkley, Kerstin Avila, David Moxey, Alberto de Lozar, Marc Avila, Bjoern Hof, UK	***Fractal cracking pattern characterization in heterogeneous materials under compression (FS04-007)*** Alberto Carpinteri, Mauro Corrado, Giuseppe Lacidogna, Italy	***Transition to sustained turbulence in plane Couette flow (FS04-008)*** Liang Shi, Marc Avila, Bjoern Hof, Germany

Session	*17:10*	*17:30*	*17:50*
FM06: Drops, bubbles and multiphase flows Chairs: Adrian Daerr, France Jianfu Zhao, China **Room: Ballroom A**	***Study of liquid destabilization and stripping in a liquid-gas mixing layer (FM06-062)*** Jean-Philippe Matas, Sylvain Marty, Alain Cartellier, France	***Experiments in diffusive gas-bubble growth (FM06-064)*** Oscar R. Enriquez, Devaraj van der Meer, Chao Sun, Andrea Prosperetti, Detlef Lohse,The Netherlands	***Supersonic controlled microjet (FM06-065)*** Yoshiyuki Tagawa, Nikolai Oudalov, Claas Willem Visser, Ivo R. Peters, Devaraj van der Meer, Chao Sun, Andrea Prosperetti, Detlef Lohse, The Netherlands
FS02: Computational methods in mechanics Chairs: Xu Guo, China Stefanie Reese, Germany **Room: Ballroom B**	***A computational electromechanical model for the myocardium including fiber and sheet disarray (FS02-014)*** Gerhard A. Holzapfel, Thomas S. E. Eriksson, Gerhard Sommer, Anton J. Prassl , Gernot Plank, Austria	***A two-scale approach for the transition from homogenization to localization in multi-phase materials (FS02-016)*** Marc G. D. Geers, Varvara G. Kouznetsova, Emanuela Bosco, Erica W. C. Coenen, The Netherlands	***Second order accurate derivatives and integration schemes for meshfree methods (FS02-034)*** Qinglin Duan, Ted Belytschko, Xikui Li, China
SM16: Vibrations and control of structures Chairs: Tomasz Kapitaniak, Poland Qingjie Cao, China **Room: Ballroom C**	***Dynamics of oscillators with continuous and discontinuous nonlinearities by harmonic balancing and path following (SM16-035)*** S. Narayanan, B. Santhosh, C. Padmanabhan, India	***Noise aided control of rotor-stator system dynamics（SM16-038)*** Nicholas A. Vlajic, Xianbo Liu, Xinhua Long, Balakumar Balachandran, USA	***Some researches for the delayed feedback control of flexible structures (SM16-041)*** Longxiang Chen, Guoping Cai, China
FM07: Flow instability and transition Chairs: Bruno Eckhardt, Germany Jianjun Tao, China **Room: Function Hall A**	***Instability of films flowing over topography with eddies (FM07-002)*** Thilo Pollak, Nuri Aksel, Germany	***Highly dissipative perturbations in a Couette flow (FM07-030)*** Stefania Cherubini, Pietro De Palma, Italy	***Multiple buckling states of falling viscous threads (FM07-041)*** N. M. Ribe, M. Habibi, Y. Rahmani, H. Hosseini, M Khatami, D Bonn, France
SM05: Fracture mechanics Chairs: Yuri Petro, USA Chengzhi Qi, China **Room: Function Hall B**	***R-curve behavior of ferroelectric materials: A semi-analytical approach (SM05-046)*** Roman Gellmann, Andreas Ricoeur, Germany	***Mechanics of edge cracks due to a phase transformation (SM05-053)*** Bharat Penmecha, Kaushik Bhattacharya, USA	***Determination of stress intensity factor for interface crack under uniform heat flow by crack tip stress method (SM05-054)*** Kazuhiro Oda, Ryuta Aoki, Nao-Aki Noda, Japan
MS06: Effects of small size scales in materials modeling Chairs: Yong-Wei Zhang, Singapore Quanshui Zheng, China **Room: Function Hall C**	***Mechanical properties of irradiated metal nanowires (MS06-026)*** Weina Li, Lixin Sun, Jianming Xue, Jianxiang Wang, Huiling Duan, China	***Atomistic simulations and modeling of plastic deformation and fracture in nanotwinned metals (MS06-027)*** Xiaoyan Li, Huajian Gao, USA	***Mechanics of chirality transfer in bio- and nano-materials (MS06-028)*** Jianshan Wang, Xiqiao Feng, Jun Xu, Yilan Kang, China
FM01: Biological fluid dynamics Chairs: Tomas Bohr, Denmark Xing Zhang, China **Room: 202A+B**	***Vorticity production over an accelerating rotating wing (FM10-015)*** Yossef Elimelech, Dmitry Kolomenskiy, Keith Moffatt, UK	***Aerodynamics of hovering flight in bat (FM01-036)*** Shizhao Wang, Guowei He, Xing Zhang, China	***Unsteady swimming of small organisms (FM01-035)*** Shiyan Wang, Arezoo Ardekani, USA
FS01: Acoustics Chairs: Weiqiu Chen, China Victor Kopiev, Russia **Room: 203A+B**	***Wave propagation in piezoelectric cylinders with surface effect (FS01-018)*** Weiqiu Chen, China	***Attenuation of sound wave radiated by spinning acoustic dipoles in a circular duct with an inserted impedance surface (FS01-036)*** Lixi Huang, Chen Wang, China	***A method for calculating the elastic wave band structure of two-dimensional phononic crystals with interface/surface stress effect (FS01-037)*** Wei Liu, Xianyue Su, China
FS04: Chaos and pattern formation Chairs: Martine Ben Amar, France John Gibson, USA **Room: 205A+B**	***On the growth and morphology of icicles (FS04-010)*** Antony Szu-Han Chen, Stephen W. Morris, Canada	***Attributes of hyperbolic attractors in non-smooth mechanical oscillators (FS04-011)*** Andrzej Stefanski, Jerzy Wojewoda, Agnieszka Chudzik, Tomasz Kapitaniak, Poland	***Revealing the geometry of turbulent pipe flow attractor by symmetry reduction (FS04-012)*** Predrag Cvitanovic, Ashley P. Willis, Marc Avila, USA

IUTAM General Assembly: 18:30 – 21:30, Function Hall A, 1st floor

Session	*16:10*	*16:30*	*16:50*
SM13: Plasticity, viscoplasticity and creep Chairs: Christian F. Niordson, Denmark Farid Abed, USA **Room: 206A+B**	***Finite-temperature simulation of nanovoid growth by dislocation emission (SM13-032)*** M. P. Ariza, Mauricio Ponga, Michael Ortiz, Spain	***Modeling of nanocrystalline metals based on competing grain boundary and grain interior deformation mechanisms (SM13-049)*** Ercan Gürses, Tamer El Sayed, Turkey	***Mechanics of high strain rate behavior of elastomeric random copolymers (SM13-034)*** Hansohl Cho, Mary C. Boyce, Mock Jr. Willis, USA
SM08: Mechanics of multi-component materials and composites Chairs: Yaning Li, USA Shengqiang Cai, USA **Room: 208A+B**	***Collapse mechanisms of a blast-resistant UHMwPE composite beam (SM08-052)*** Norman A. Fleck, G. Liu, Vikram S. Deshpande, Michael D. Thoules, UK	***Stress-strain curve of a fiber network (SM08-027)*** Svetlana Borodulina, Artem Kulachenko, Mikael Nygårds, Sweden	***Modelling of anisotropic composites by newly developed HFS-FEM (SM08-016)*** Changyong Cao, Qinghua Qin, Aibing Yu, Australia
FM09: Geophysical and environmental fluid dynamics Chairs: Paul Linden, UK Jin-Song von Storch, Germany **Room: 207**	***Can energetics really constrain the oceanic stirring by wind and tides? (FM09-034, invited lecture)*** Remi Tailleux, UK	***Gravity-driven flows in stratified fluids (FM09-016)*** Paul F. Linden, Benjamin D. Maurer, UK	***The evolution and stability of axisymmetric intrusions (FM09-017)*** Bruce R. Sutherland, Colm-cille P. Caulfield, Justine M. McMillan, Canada
FM10: Low Reynolds number flow Chairs: Howard Stone, USA Ehud Yariv, Italy **Room: 210A**	***Dispersion of particles on fluid-liquid interfaces (FM10-024, invited lecture)*** Pushpendra Singh, Ian Fischer, Bhavin Dalal, Sathish Gurupatham, Md.Shahadat Hossain , Naga Musunuri, USA	***Evolution of suspension drops settling under gravity in a viscous fluid near a vertical wall (FM10-026)*** Maria L. Ekiel-Jezewska, Anna Mylyk, Poland	***Stokeslet induced slip flows in a spherical container (FM10-029)*** B. Sri Padmavati Bhavaraju, Debarjoyti Choudhuri, D. Palaniappan, India
FM16: Waves in fluids Chairs: Tatyana Krasnopolskaya, Ukraine Chiang C. Mei, USA **Room: 210B**	***Equilibrium dynamics and statistics of gravity-capillary waves (FM16-012)*** W. Kendall Melville, Alexey V. Fedorov, USA	***Internal waves and boundary layers in a density-stratified fluid (FM16-013)*** Bruno Voisin, Sylvain Joubaud, Thierry Dauxois, France	***Direct energy transform to cross-waves in a rectangular channel of finite dimensions (FM16-015)*** Tatyana S. Krasnopolskaya, Viacheslav M. Spektor, Ukraine
FS06: Fluid structure interactions Chairs: Scott Kelly, USA Michael Ortiz, USA **Room: 211**	***Fluid-structure-contact-interaction between liquid droplets and rough surfaces (FS06-020)*** Roger A. Sauer, Muhammad Osman, Raheel Rasool, Germany	***On reducing scouring by controlling junction flow (FS06-037)*** Tsung-chow Su, Bing Chen, Hua Zhang, Tao Hu, ZhongYu Yang, USA	***Simulation of divergence and flutter instabilitis of elastic plate in subsonic and supersonic gas flow (FS06-043)*** Anastasia Shishaeva, Vasily Vedeneev, Konstantin Kuznetsov, Andrey Aksenov, Russia
FS08: Granular materials and flows Chairs: David Harris, UK Herbert Huppert, UK **Room: 212A**	***Effect of grain shape on micromechanical behavior of sheared granular layers (FS08-020)*** Amy L. Rechenmacher, Andrés D. Orlando, USA	***Structure of granular packings (FS08-024)*** Thorsten Pöschel, Jason A. C. Gallas, Nikola Topic, Germany	***Steady channels and avalanches of dense granular flow down a slope (FS08-026)*** Daisuke Takagi, Jim N McElwaine, Herbert E. Huppert, UK
SM10: Mechatronics Chairs: Chaofeng Lu, China Heinz Ulbrich, Germany **Room: 212B**	***Vertical angular momemtum minimization for biped robots with kinematically redundant joints (SM10-007, invited lecture)*** Markus Schwienbacher, Thomas Buschmann, Heinz Ulbrich, Germany	***Operation mechanism for tunable hemispherical eyeball cameras (SM04-052)*** Chaofeng Lu, Jianliang Xiao, Yonggang Huang, John A. Rogers, China	***Effects of inertance in railway vehicles with active control (SM10-010)*** Alejandra Z. Matamoros-Sanchez, Jason Z. Jiang, Roger M. Goodall, Malcolm C. Smith, UK
SM11: Multibody and vehicle dynamics Chairs: Wei Zhang, China Maxim V. Shamolin, Russia **Room: 213A**	***Modeling sticking, stick-slip and sliding in multi-body systems with many frictional contacts (SM11-009)*** Markus Filippi, Thorsten Schindler, Heinz Ulbrich, Germany	***Multibody model for planetary gearbox of 500 kW wind turbine (SM11-012)*** Martin F. Jørgensen, Niels L. Pedersen, Jens N. Sørensen, Denmark	***Robust design of an all-wheel steering car (SM11-021)*** Dieter Bestle, Jochen Busch, Germany

Session	*17:10*	*17:30*	*17:50*
SM13: Plasticity, viscoplasticity and creep Chairs: Christian F. Niordson, Denmark Farid Abed, USA **Room: 206A+B**	***Debonding analyses in anisotropic materials with strain-gradient effects (SM13-018)*** Brian Nyvang Legarth, Denmark	***Analysis of kink-fold deformation based on disclination theory (SM13-039)*** Akihiro Nakatani, Japan	***Micromechanical modelling of the deformation kinetics of semicrystalline polymers (SM13-043)*** Johannes A.W. van Dommelen, Amin Sedighiamiri, Leon E. Govaert, The Netherlands
SM08: Mechanics of multi-component materials and composites Chairs: Yaning Li, USA Shengqiang Cai, USA **Room: 208A+B**	***Necessary conditions and approximate self-consistent estimates for the overall creep function of viscoelastic heterogeneous materials (SM08-013)*** Renald Brenner, Pierre Suquet, France	***Chiral effect in planar isotropic micropolar elasticity (SM08-017)*** Xiaoning Liu, Guoliang Huang, Gengkai Hu, China	***Bounds on the effective elastic moduli of three-phase composites with coated spherical inclusions (SM08-019)*** Linzhi Wu, China
FM09: Geophysical and environmental fluid dynamics Chairs: Paul Linden, UK Jin-Song von Storch, Germany **Room: 207**	***Release of pollutants from particles and pore water due to sediment resuspension (FM09-018)*** Daozeng Wang, Hongwei Zhu, China	***Internal wave focussing by horizontal oscillations of a torus (FM09-023)*** Eugeny Ermanyuk, Natalia Shmakova, Jan-Bert Flor, Russia	***Experimental investigation of sand velocity on barchans in windblown sand transport in the wind tunnel (FM09-025)*** Wenhai Sun, Ning Huang, China
FM10: Low Reynolds number flow Chairs: Howard Stone, USA Ehud Yariv, Italy **Room: 210A**	***Lagrangian tori induced by precessing bent rods in viscous dominated flows (FM10-031)*** Roberto Camassa, James Martindale, Richard M. McLaughlin, Leandra Vicci, Longhua Zhao, USA		
FM16: Waves in fluids Chairs: Tatyana Krasnopolskaya, Ukraine Chiang C. Mei, USA **Room: 210B**	***Long wave generation above a cylindrical sill (FM16-017)*** Themistoklis S. Stefanakis, Frédéric Dias, Ireland	***Airflow separation over surface gravity waves (FM16-018)*** Marc Buckley, Fabrice Veron, USA	***Internal seiches of large amplitude in the elongated lakes and phenomenon of "loch ness monster" (FM16-010)*** Kateryna Terletska, Vladimir Maderich, Igor Brovchenko, Kyung Jung, UKraine
FS06: Fluid structure interactions Chairs: Scott Kelly, USA Michael Ortiz, USA **Room: 211**	***Flutter supression via delayed feedback control (SM16-031)*** Zaihua Wang, Miao Li, China	***Modelling of vortex induced vibrations of slender marine structures (SM16-058)*** Ekaterina Pavlovskaia, Marko Keber, Andrey Postnikov, Marian Wiercigroch, UK	
FS08: Granular materials and flows Chairs: David Harris, UK Herbert Huppert, UK **Room: 212A**	***A micromechanical study on the shear strength in granular materials: The role of particle shape (FS10-008)*** Jidong Zhao, Ning Guo. Hong Kong China	***Crossover in dynamics of granular packings under cyclic shear (FS08-023)*** Wolfgang Losert, Mitch Mailman, USA	
SM10: Mechatronics Chairs: Chaofeng Lu, China Heinz Ulbrich, Germany **Room: 212B**	***A nonlinear vibration-based magnetoelectric energy harvester (SM10-009)*** Yang Zhu, Jean Zu, Canada		
SM11: Multibody and vehicle dynamics Chairs: Wei Zhang, China Maxim V. Shamolin, Russia **Room: 213A**	***Coupled multibody system dynamics and its application on self-propelled artillery system (SM11-018)*** Xiaoting Rui, China	***Rail vehicle response to carbody excitations imitating crosswind (SM11-016)*** Dirk Thomas, Mats Berg, Diedrichs Ben, Stichel Sebastian, Sweden	***Roller chain drives multibody models using a generalized revolute clearance joint formulation (SM11-022)*** Jorge Ambrosio, Candida Pereira, Amilcar Ramalho, Portugal

IUTAM General Assembly: 18:30 – 21:30, Function Hall A, 1st floor

Wednesday, 22 August 2012

Session	***8:30***
Rodney Hill Prize Lecture Chair: Viggo Tvergaard, Denmark **Room: Ballroom C**	***Probing mechanical principles of cell-nanomaterial interactions*** Huajian Gao, USA

Session	***9:30***
G.K. Batchelor Prize Lecture Chair: Paul Linden, UK **Room: Ballroom C**	***Fully developed Rayleigh-Bénard and Taylor-Couette turbulence*** Detlef Lohse, The Netherlands

Coffee Break: 10:30 – 10:50, Main Lobby, 1st floor

Session	*10:50*	*11:10*	*11:30*
FM06: Drops, bubbles and multiphase flows Chairs: Jacques Magnaudet, France Zhewei Zhou, China **Room: Ballroom A**	***General mechanism for the meandering instability of rivulets of Newtonian fluids (FM06-100, invited lecture)*** Adrian Daerr, Stéphanie Couvreur, Jens Eggers, Laurent Limat, Nadine Valade, France	***Efficient coefficient of restitution and Lattice-Boltzmann simulation of gravitational settling and rebound in a viscous fluid (FM06-067)*** Guodong Jin, Guowei He, Hui Gao, Lianping Wang, Jian Zhang, China	***Simulations of aerodynamics and interfacial instabilities of droplets exposed to high-speed gas flows (FM06-070)*** Chih-Hao Chang, Xiaolong Deng, Theo G. Theofanous, USA
FM07: Flow instability and transition Chairs: Stephane Le Dizes, France Sanjiva K. Lele, USA **Room: Ballroom C**	***Influence of parameters in electrohydrodynamic interfacial instabilities for microfluidic applications (FM07-051)*** Nadine Aubry, A. Kerem Uguz, USA	***Localization in transitional shear flows (FM07-053)*** Tobias M. Schneider, John F. Gibson, John Burke, Evan Brand, John Platt, USA	***The Faraday instability in deformable domains (FM06-090)*** Giuseppe Pucci, Emmanuel Fort, Martine Ben Amar, Yves Couder, France
SM05: Fracture mechanics Chairs: Yasuhide Shindo, Japan Fenghua Zhou, China **Room: Function Hall A**	***Composite toughening by layering (SM05-063)*** Giovanni Noselli, Vikram S. Deshpande, Norman A. Fleck, UK	***Weight function for an elliptical crack in piezoelectric media (SM05-061)*** Tushar K. Saha, Samir Saha, Arabinda Roy, India	***Dynamical effects in the problem of film delamination (SM05-062)*** Dmitry A. Indeitsev, Yulia A. Mochalova, Boris N. Semenov, Russia
SM16: Vibrations and control of structures Chairs: Sadagopan Narayanan, India Marian Wiercigroch, UK **Room: Function Hall B**	***Railway vehicle vibration dynamics and optimized bogie damping to enhance safety and comfor (SM16-045)*** Viktor Berbyuk, Albin Johnsson, Sweden	***Effects of variable bearing stiffness on the stability of milling processes (SM16-048)*** Dehao Meng, Xinhua Long, Guang Meng, China	***Synchronization motion of networked harmonic oscillators under local instantaneous interaction (SM16-049)*** Hua Zhang, Jin Zhou, Zengrong Liu, China
MS06: Effects of small size scales in materials modeling Chairs: Horacio Espinosa, USA Zhiping Xu, China **Room: Function Hall C**	***Size matters: size-dependent mechanical properties of metallic systems (MS06-008, invited lecture)*** Julia R. Greer, Dongchan Jang, Andrew Jennings, USA	***Approaches to remove size effect due to indenter roundness in nano-indentation (MS06-035)*** Rong Yang, Taihua Zhang, Qun Zhang, Yilong Bai, China	***Defects interaction conditions in near-field of grain boundaries (MS06-036)*** Yoji Shibutani, Tomohito Tsuru, Akihiro Nakano, Japan
FM05: Convection Chairs: Olga Shishkina, Germany Keqing Xia, China **Room: 202A+B**	***Scaling of the locally averaged thermal dissipation rate in turbulent Rayleigh-Bénard convection (FM05-011, invited lecture)*** Penger Tong, Xiaozhou He, Emily S. C. Ching. Hong Kong, China	***Velocity space-time correlations in turbulent thermal convection (FM05-008)*** Quan Zhou, China	***Vortex motions in soft and hard 2-D turbulent Rayeigh-Bénard convection (FM05-016)*** Yun Bao, Hongyue Zou, Jun Chen, Xi Chen, Zhensu She, China
FS07: Smart materials Chairs: Daining Fang, China Zhigang Suo, USA **Room: 203A+B**	***Theory and experiments of dielectric elastomers (FS07-021, invited lecture)*** Zhigang Suo, USA	***Thermomechanical coupling and transformation-induced stress-relaxation effects in TiNi shape memory alloy (FS07-001)*** Elzbieta A. Pieczyska, Hisaaki Tobushi, Kohei Takeda, Karol Kulasinski, Jerzy Luckner, Poland	***Experiments and modeling of magnetorheological elastomers with particle-chain microstructures (FS07-011)*** Kostas Danas, Sundeep V. Kankanala, Nick Triantafyllidis, France
SM04: Elasticity Chairs: Fumihiro Ashida, Japan Reinhold Kienzler, Germany **Room: 205A+B**	***On variational dimension-reduction methods to derive shell theories (SM04-020, invited lecture)*** Paolo Podio-Guidugli, Italy	***Mechanics of liquid crystals and quasicrystals (SM04-013)*** Tianyou Fan, China	***Discrete element modelling of elastic modulus of a granular porous mixture (FS10-018)*** Shunying Ji, Ying Yan, China

Session	*11:50*	*12:10*	*12:30*
FM06: Drops, bubbles and multiphase flows Chairs: Jacques Magnaudet, France Zhewei Zhou, China **Room: Ballroom A**	***Jet formation from bubble collapse at a free surface (FM06-068)*** Krishnan Sangeeth, Baburaj A. Puthenveettil, Emil J. Hopfinger, India	***The rebound of a bubble with a solid surface: surface waves as an additional dissipation mechanism (FM06-073)*** Roberto Zenit, Dominique Legendre, Mexico	***Dilation stability analysis of evaporating liquid-gas interface and simulation of primary atomization of evaporating spray (FM06-078)*** Peng Zeng, Heinz Pitsch, Bernd Binninger, Norbert Peters, Germany
FM07: Flow instability and transition Chairs: Stephane Le Dizes, France Sanjiva K. Lele, USA **Room: Ballroom C**	***Renewable energy from flow-induced vibration (FM07-048)*** Justin S. Leontini, Mark C. Thompson, Australia	***Vortices stability and inverse cascades in a 3D turbulent von Kármán flow (FM07-042)*** Miguel Lopez-Caballero, Javier Burguete, Spain	***Chemically-driven miscible viscous fingering: how can a reaction destabilize typically stable fluid displacements? (FM07-043)*** Luis Atilio Riolfo, Yuichiro Nagatsu, Shohei Iwata, Renaud Maes, Philip M. J. Trevelyan, Anne De Wit, Belgium
SM05: Fracture mechanics Chairs: Yasuhide Shindo, Japan Fenghua Zhou, China **Room: Function Hall A**	***Effect of microstructure and loading condition on very-high-cycle fatigue life of high-strength steels (SM05-055)*** Chengqi Sun, Youshi Hong, China	***Dynamic analysis of interface cracks in layered piezoelectric materials with non-linear crack-face boundary conditions under impact loading (SM05-066)*** Michael Wünsche, Chuanzeng Zhang, Germany	***Experimental and computational investigation of debonding at the interface of two L-shaped PMMA beams (SM05-076)*** Denizhan Yavas, Burak Gozluklu, Demirkan Coker, Turkey
SM16: Vibrations and control of structures Chairs: Sadagopan Narayanan, India Marian Wiercigroch, UK **Room: Function Hall B**	***Dispersion relation estimation for the guided wave using time-freuqency representation based method (SM16-082)*** Yang Yang, Zhike Peng, Guang Meng, China	***Resonance enhanced drilling (SM16-060)*** Marian Wiercigroch, Ekaterina Pavlovskaia, James Ing, Jerzy Wojewoda, UK	***Effect and compensation of time delay on semiactively controlled cable (SM16-061)*** Jian Peng, Jianjun Ma, Lianhua Wang, Yueyu Zhao, China
MS06: Effects of small size scales in materials modeling Chairs: Horacio Espinosa, USA Zhiping Xu, China **Room: Function Hall C**	***Modeling of inelastic microstructure development and inhomogeneous material behaviour via non-convex rate-dependent gradient plasticity (MS06-040)*** Bob Svendsen, Benjamin Klusemann, Tuncay Yalcinkaya, Marc Geers, Germany	***On the size-dependent mechanical properties of five-fold twined fcc Fe nanowires (MS06-041)*** Jianyang Wu, Shijo Nagao, Jianying He, Zhiliang Zhang, Norway	***Modeling size-effects in single crystals at finite strains: indentation of FCC crystals (MS06-044)*** Christian Niordson, Denmark
FM05: Convection Chairs: Olga Shishkina, Germany Keqing Xia, China **Room: 202A+B**	***Lagrangian measurements in turbulent thermal convection (FM05-018)*** Keqing Xia, Rui Ni, Shidi Huang, Hong Kong, China	***Comparison between rough and smooth plates within the same Rayleigh-Bénard cell at high Rayleigh numbers (FM05-019)*** Jen-Christophe Tisserand, Mathieu Creyssels, Yohan Gasteuil, Mathieu Gibert, Hervé Pabiou, Olivier Liot, Julien Salort, Eleonore Rusaouen, Francesca Chillà, Bernard Castaing, France	
FS07: Smart materials Chairs: Daining Fang, China Zhigang Suo, USA **Room: 203A+B**	***High-frequency resonant characteristics of triple-layered piezoceramic bimorphs (FS07-004)*** Yu-Hsi Huang, Chien-Ching Ma, Ching-Kong Chao, Taipei, China	***Extended Kantorovich method for three-dimensional piezoelasticity solution of piezoelectric plates (FS07-006)*** Santosh Kapuria, Poonam Kumari, India	***A theoretical model of a thermal-sensitive gel particle with core-shell structure (FS07-009)*** Zhen Wu, Zheng Zhong, China
SM04: Elasticity Chairs: Fumihiro Ashida, Japan Reinhold Kienzler, Germany **Room: 205A+B**	***Band-gap of eigenfrequency due to nonlocality in elastic string (SM04-016)*** Zaixing Huang, China	***Stable trivial configuration of elastic systems after bifurcation (SM04-015)*** Francesco Dal Corso, Davide Bigoni, Federico Bosi, Diego Misseroni, Italy	***Dislocations and inclusions in prestressed elastic materials (SM04-010)*** Davide Bigoni, Luca Argani, Gennady Mishuris, Italy

Lunch: 12:50 – 13:50, Exhibition Hall 5, underground floor

Wednesday Afternoon Excursion to the Great Wall: 14:00 – 18:00, depart from the CNCC

IUTAM General Assembly: 14:00 – 17:00, Function Hall A, 1st floor

Session	*10:50*	*11:10*	*11:30*
FS02: Computational methods in mechanics Chairs: Ferdinando Auricchio, Italy Petros Koumoutsakos, Switzerland **Room: 206A+B**	***A separate quasi-particle multiscale method (FS02-037)*** Zhenqing Wang, Zengjie Yang, Qinghua Meng, China	***A carving technique with the aid of polyhedral elements and smoothed integration for complex structures (FS02-039)*** Dongwoo Sohn, Jihoon Han, Young-Sam Cho, Seyoung Im, Republic of Korea	***A periodic FMM and Calderon's preconditioning for acoustic-elastodynamic coupled problems (FS02-040)*** Hiroshi Isakari, Naoshi Nishimura, Japan
SM13: Plasticity, viscoplasticity and creep Chairs: Pilar Ariza, Span Zhuping Huang, China **Room: 208A+B**	***In-situ investigations of small strain plasticity in dual-phase steel (SM13-044)*** C. Cem Tasan, Stefan Zaefferer, Dierk Raabe, The Netherlands	***A new constitutive formulation in finite thermo-viscoelasticity (SM13-053)*** Zhuping Huang, China	***Steady state crack propagation in layered material systems displaying visco-plastic behaviour (SM13-015)*** Kim Lau Nielsen, Denmark
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Andrzej Myslinski, Poland Niels Leergaard Pedersen, Denmark **Room: 209A+B**	***Issues related to topology optimization of snap-through problems (SM15-016)*** Esben Lindgaard, Jonas Dahl, Denmark	***Minimization of structure-borne noise in lightweight buildings (SM15-044)*** Bin Niu, Niels Olhoff, Denmark	***Topological design of acoustic microstructure (SM15-020)*** Jianbin Du, Ruizhen Yang, China
FM09: Geophysical and environmental fluid dynamics Chairs: Henk Dijkstra, The Netherlands James Riley, USA **Room: 207**	***Atmospheric coherent structures and biological invasions (FM09-029)*** Shane D. Ross, USA	***Long-term variations and abrupt changes in a strong eastward jet in a double-gyre ocean forced by seasonally varying wind stress (FM09-014)*** Tomonori Matsuura, Shinya Shimokawa, Japan	***Immersed boundary approach for wind forecasting over complex terrain using GPU clusters (FM09-031)*** Inanc Senocak, Rey DeLeon, USA
FM16: Waves in fluids Chairs: Paul Hammerton, UK Nobumasa Sugimoto, Japan **Room: 210A**	***Diffusive effects on acoustic wave propagation in a gas-filled channel subject to temperature gradient (FM16-021)*** Sugimoto Nobumasa, Hyodo Hiroaki, Japan	***Numerical study of period-tripling state in Faraday waves (FM16-022)*** Kentaro Takagi, Takeshi Matsumoto, Japan	***Simulation-based study of wave-turbulence interaction (FM16-025)*** Xin Guo, Lian Shen, USA
FS04: Chaos and pattern formation Chairs: Victor Berdichevsky, USA Lev Truskinovsky, France **Room: 210B**	***Buckling and cusp formation in gel swelling and tissue growth (FS04-018)*** Martine Ben Amar, Julien Dervaux, Pasquale Ciarletta, France	***Twisted plateau borders and the collapse of a Möbius strip soap film (FS04-015)*** Raymond E. Goldstein, Keith Moffatt, Adriana I. Pesci, Renzo L. Ricca, UK	***Surface wave patterns: Faraday waves and cross-waves (FS04-016)*** Jeff Porter, Ignacio Tinao, Ana Laveron-Simavilla, Spain
MS03: Fluid-structure interactions in biological systems Chairs: Paul Watton, UK Michael Shelley, USA **Room: 211**	***Mode switching and synchronization in Chlamydomonas flagella (MS03-016)*** Kirsty Y. Wan, Kyriacos C. Leptos, Raymond E. Goldstein, UK	***Spanwise stretching and collapse motions stabilize leading-edge vortex in slow-flying bats (MS03-030)*** Shizhao Wang, Guowei He, Xing Zhang, China	***Fluid transport induced by a flexible oscillating flapper in creeping flow (MS03-023)*** Roberto Zenit, Roger Arco, Eric Lauga, Mexico
FS01: Acoustics Chairs: Wolfgang Schroeder, Germany Chuanzeng Zhang, Germany **Room: 212A**	***Numerical modeling of laser generation of ultrasound by coupled thermoelasticity (SM07-011)*** István A. Veres, Thomas Berer, Dieter M. Profunser, Peter Burgholzer, Austria	***Singular boundary method for radiation and wave scattering: numerical aspects and applications (FS01-014)*** Zhuojia Fu, Wen Chen, Ching-Shyang Chen, China	***Simulation of the seismo-electromagnetic field during an earthquake (FS01-030)*** Hengshan Hu, Yongxin Gao, Zhi Wang, China
SM08: Mechanics of multi-component materials and composites Chairs: Lifeng Wang, USA Anthony Waas, USA **Room: 212B**	***Recent progress in multi-functional soft smart materials and their applications (SM08-070, invited lecture)*** Jinsong Leng, Liwu Liu, Yanju Liu, China	***Damage propagation of composite material reinforced by randomly-dispersed particles (SM08-005)*** Jiaoyan Li, James D. Lee, Ken P. Chong, USA	***Multifunctional nano-tailored composites for in situ self-health monitoring of aircraft structures (SM08-055)*** Jacob M. Wernik, Shaker A. Meguid, Canada
SM12: Nanostructures and MEMS Chairs: Marc Geers, The Netherlands Harley Johnson, USA **Room: 213A**	***Mixed-mode fracture at the molecular level (SM12-008, invited lecture)*** Kenneth M. Liechti, Seung R. Na, Yves Chabal, Oliver Seitz, USA	***The influence of atomic defects on the mechanical properties and breaking behaviors of gold nanowires (SM12-047)*** Fenying Wang, Yanfeng Dai, Qianjin Li, Jianwen Zhao, China	***Interface fracture energies of individual carbon nanofibers (SM12-046)*** Ioannis Chasiotis, Tanil Ozkan, USA

Session	*11:50*	*12:10*	*12:30*
FS02: Computational methods in mechanics Chairs: Ferdinando Auricchio, Italy Petros Koumoutsakos, Switzerland **Room: 206A+B**	***Interpretation of a fracture phase field model using discrete configurational forces (FS02-042)*** Ralf Mueller, Charlotte Kuhn, Germany	***Quasi-conforming isogeometric analysis for geometrically complicated domains (FS02-043)*** Xuefeng Zhu, Ping Hu, Zhengdong Ma, China	***Multiresolution simulations using remeshed particles (FS02-046)*** Petros Koumoutsakos, Switzerland
SM13: Plasticity, viscoplasticity and creep Chairs: Pilar Ariza, Span Zhuping Huang, China **Room: 208A+B**	***Mechanical characterization of foils with compression in their planes (SM13-022)*** Giuseppe Cocchetti, Mohammad R. Mahini, Giulio Maier, Italy	***Hydrogen embrittlement in high strength steels (SM13-006)*** Can Ayas, Vikram S. Deshpande, Norman A. Fleck, UK	***Thermo-mechanical responces of metals on the fast-transient process in small volumes (SM13-008)*** George Z. Voyiadjis, Danial Faghihi, USA
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Andrzej Myslinski, Poland Niels Leergaard Pedersen, Denmark **Room: 209A+B**	***Singular phenomenon of integrated size and topology optimization of frame structures with exact frequency constraints (SM15-011)*** Jun Yan, Changhui Ni, Gengdong Cheng, Xu Guo, China	***Topology optimization based method for coil arrangement for homogeneous magnetic field (SM15-040)*** Shutian Liu, Qi Wang, China	***Rectification of classical misconceptions in recent solutions of exact structural topology optimization problems (SM15-004)*** George Rozvany, Tomasz Sokol, Hungary
FM09: Geophysical and environmental fluid dynamics Chairs: Henk Dijkstra, The Netherlands James Riley, USA **Room: 207**	***Experimental study on particle distribution in lock-exchange gravity currents (FM09-032)*** Ming Peng, Huijing Yuan, Cunbiao Lee, China	***Predicting sudden changes in pollutant plumes using LCS-CORE analysis (FM09-036)*** Maria J. Olascoaga, George Haller, USA	***A new mechanism for deep mixing: internal waves emitted by the eddying circulation in the deep ocean (FM16-002)*** Jin-Song von Storch, Germany
FM16: Waves in fluids Chairs: Paul Hammerton, UK Nobumasa Sugimoto, Japan **Room: 210A**	***The effects of surfactants and light-winds on spilling breakers (FM16-033)*** Xinan Liu, James H. Duncan, USA		
FS04: Chaos and pattern formation Chairs: Victor Berdichevsky, USA Lev Truskinovsky, France **Room: 210B**	***Coherent structures in turbulence: a dynamical-systems perspective (FS04-017)*** John F. Gibson, Predrag Cvitanovic, Jonathan Halcrow, Divakar Viswanath, Evan Brand, USA		
MS03: Fluid-structure interactions in biological systems Chairs: Paul Watton, UK Michael Shelley, USA **Room: 211**	***Settling induced formation of membrane tube on a vesicle (MS03-024)*** Gwenn Boedec, Marc Jaeger, Marc Leonetti, France		
SM08: Mechanics of multi-component materials and composites Chairs: Lifeng Wang, USA Anthony Waas, USA **Room: 212B**	***Steel short fiber reinforced concrete (SFRC) strength and post cracking behaviour appreciation by fibers motion prediction in fresh concrete during casting (SM08-057)*** Andrejs Krasnikovs, Olga Kononova, Arturs Machanovskis, Vitalijs Lusis, Latvia	***Mesomechanical model of reticulate CNT/polymer composites to bridge atom and continuum scales (SM08-065)*** Qingsheng Yang, Xia Liu, China	***Modeling failure mechanisms of 3D orthogonal interlock hybrid textile composites in flexure (SM08-064)*** Dianyun Zhang, Anthony Waas, Chian Yen, USA
SM12: Nanostructures and MEMS Chairs: Marc Geers, The Netherlands Harley Johnson, USA **Room: 213A**	***Radial deformability of carbon and boron nitride nanotubes (SM12-009)*** Meng Zheng, Xiaoming Chen, Cheol Park, Changhong Ke, USA	***The flexing of locally isostatic periodic structures (SM17-023)*** Simon D. Guest, UK	***Nonlinear mechanical behaviour in curved graphene sheets (SM12-035)*** Fabrizio Scarpa, UK

Lunch: 12:50 – 13:50, Exhibition Hall 5, underground floor

Wednesday Afternoon Excursion to the Great Wall: 14:00 – 18:00, depart from the CNCC

IUTAM General Assembly: 14:00 – 17:00, Function Hall A, 1st floor

Thursday, 23 August 2012

Session	*8:30*	*Session*	*9:15*
Sectional Lecture Chairs: Erik van der Giessen, The Netherlands Michael Ortiz, USA **Room: Ballroom A**	***Defects in crystalline solids: Manifestation of quantum mechanics at continuum scales (SL01)*** Kaushik Bhattacharya, USA	***Sectional Lecture*** Chairs: Jorge Ambrosio, Portugal Xiaojing Zheng, China **Room: Ballroom B**	***Particles – bridging the gap between solids and fluids (SL05)*** Peter Eberhard, Germany
Sectional Lecture Chairs: Dick van Campen, The Netherlands Gengdong Cheng, China **Room: Ballroom B**	***Multi-scale mechanics and evolving discontinuities: computational issues (SL02)*** René de Borst, The Netherlands	***Sectional Lecture*** Chairs: Kenneth Liechti, USA William A. Curtin, Switzerland **Room: Ballroom A**	***Cohesive surface modeling (SL12)*** Alan Needleman, USA
Sectional Lecture Chairs: James Grotberg, USA Emmanuel de Langre, France **Room: Function Hall A**	***Lessons for bio-inspired engineering: fluid mechanics of embryonic heart (SL06)*** Morteza Gharib, USA	***Sectional Lecture*** Chairs: Detlef Lohse, The Netherlands Bruno Eckhardt, Germany **Room: Ballroom C**	***Cool stuff at cold temperatures (SL13)*** Katepalli Sreenivasan, USA
Sectional Lecture Chairs: Herbert Huppert, UK Jiachun Li, China **Room: Ballroom C**	***Dynamics of marine ice sheets (SL15)*** Grae Worster, UK	***Sectional Lecture*** Chairs: Pierre Ladevèze, France Tianjian Lu, China **Room: Function Hall A**	***Mechanics of polycrystalline and heterogeneous materials at different scales (SL14)*** Pierre Suquet, France

Coffee Break: 10:00 – 10:20, Main Lobby, 1st floor

Session	*10:20*	*10:40*	*11:00*
FM07: Flow instability and transition Chairs: Javier Burguete, Spain François Gallaire, Switzerland **Room: Ballroom A**	***Turbulence transition in the asymptotic suction boundary layer (FM07-063)*** Bruno Eckhardt, Tobias Kreilos, Gregor Veble, Tobias M. Schneider, Germany	***Turbulent-laminar banded patterns in plane Poiseuille flow (FM07-059)*** Laurette S. Tuckerman, France	***High-fidelity simulations of flow transition on a wind turbine blade (FM07-062)*** Sungmin Ryu, Gianluca Iaccarino, Dario Buono, USA
SM01: Biomechanics and biomaterials Chairs: Wilbur Lam, USA Haiyi Liang, China **Room: Ballroom B**	***Cellular biomechanical systems for studying and diagnosing hematologic diseases (SM01-010, invited lecture)*** David R. Myers, Wilbur A. Lam, USA	***Force-induced internalization of magnetic nanoparticles into living cells (SM01-024)*** Sheng Tong, Gang Bao, USA	***Substrate stiffness dependent cell migration behaviors (SM01-053)*** Yuan Zhong, Baohua Ji, China
SM05: Fracture mechanics Chairs: Ahmed Benallal, France Blaise Bourdin, USA **Room: Ballroom C**	***Recent advances of structural-continual approach in fracture theory (SM05-077)*** Arseny Kashtanov, Russia	***Towards reliable and efficient algebraic coarse-graining of parametric problems in fracture mechanics (SM05-078)*** Pierre Kerfriden, Stephane Bordas, UK	***Circular edge singularities and edge stress intensity functions for the elasticity system in 3-D domains (SM01-033)*** Zohar Yosibash, Samuel Shannon, Israel
SM16: Vibrations and control of structures Chairs: Stefano Lenci, Italy Giuseppe Rega, Italy **Room: Function Hall A**	***The probabilistic solution of nonlinear Euler-Bernoulli beam excited by Poisson white noise (SM16-063)*** Guokang Er, China	***Dynamic modelling for thermoelastic cosserat rod (SM16-071)*** Dengqing Cao, Mitao Song, Robin W. Tucker, Weidong Zhu, Dongsheng Liu, Wenhu Huang, China	***Singularity analysis on stochastic P-bifurcations (SM16-073)*** Zhiqiang Wu, China
FM15: Vortex dynamics Chairs: Yasuhide Fukumoto, Japan Jens Norkaer Sorensen , Denmark **Room: Function Hall B**	***Analysis of different vortex breakdown states (FM15-035, invited lecture)*** Jens Norkaer Sorensen, Valery L. Okulov, Denmark	***Stability of cyclones and anticyclones in a 5-layer quasi-geostrophic model with application to Mediterranean water eddies (FM15-006)*** Ana Aguiar, Aude Tychensky, Bach Lien Hua, Claire Menesguen, Mikhail Sokolovskiy, Xavier Carton, France	***Stationary vortex states in a two-layer rotating fluid (FM15-007)*** Mikhail A. Sokolovskiy, Jacques Verron, Xavier Carton, Russia
MS06: Effects of small size scales in materials modeling Chairs: Oliver Kraft, USA Lei Lu, China **Room: Function Hall C**	***Models of diamond and graphene based on moment and multybody interactions (MS06-048)*** Igor E. Berinskii, Feodor M. Borodich, Russia	***Matching boundary conditions for lattice dynamics (MS06-046)*** Xianming Wang, Shaoqiang Tang, China	***Molecular model of skeletal muscle contraction (MS06-051)*** Bin Chen, Huajian Gao, Singapore
SM04: Elasticity Chairs: Zaixing Huang, China Paolo Podio-Guidugli, Italy **Room: 202A+B**	***Effects of large specific torsion angles, constrained anticlastic curvature and shear warping in wide beams (SM04-040)*** Jacob P. Meijaard, The Netherlands	***Analysis of shear deformation of polymer encapsulates for laminates (SM04-001)*** H. Altenbach, K. Naumenko, S.-H. Schulze, M. Pander, Germany	***Identification of crack parameters and stress intensity factors using the body force technique (SM04-005)*** Ramdane Boukellif, Andreas Ricoeur, Germany
FS07: Smart materials Chairs: Robert M. McMeeking, USA Greg Carman, USA **Room: 203A+B**	***Electric potential distribution in indentation-pre-cracked $BaTiO_3$ single crystal (FS07-041, invited lecture)*** X. Sun, Yanjing Su, Tong-Yi Zhang, Hong Kong, China	***A phase field study on the domain patterns and hysteresis loops of free-standing ferroelectric nano-thin films (FS07-023)*** Yu Su, George J. Weng, USA	***Three-dimensional crack analysis in ferroelectrics using configurational forces concept (FS07-012)*** Benjamin Nassauer, Marco Enderlein, Meinhard Kuna, Germany
SM06: Geophysics and geomechanics Chairs: Yves M. Leroy, France Richard Wan, Canada **Room: 205A+B**	***Temporal and spatial organisation of faulting in frictional wedges (SM06-007, invited lecture)*** Yves M. Leroy, Baptiste C.L. Mary, Bertrand Maillot, France	***The role of water on the pressure dip in sand piles (SM06-011)*** Tong Shan, Jidong Zhao, Hong Kong, China	***Micromechanical formulation of force transport in wet granular media and strength issues (SM06-019)*** Richard Wan, Sarah Khosravani, Mehdi Pouragha, Canada
SM07: Impact mechanics and wave propagation Chairs: Odd Sture Hopperstad, Norway Krishnaswamy Ravi-Chandar, USA **Room: 206A+B**	***Strain rate and loading complexity effects on the crushed stainless steel tubes behavior (SM07-045)*** H. Akrum Abdul-Latif, M. Rachid Baleh, M. Ahmed Ishell, France	***Parametric studies of the penetration into multilayer targets (SM07-001)*** Weifang Xu, Xicheng Huang, Zhiming Hao, Yuze Chen, Shicheng Ren, Yang Wang, Yuanming Xia, China	***Experiments and modeling of HMX granular explosives subjected to drop-weight impact (SM07-008)*** Yanqing Wu, Fenglei Huang, China
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Niels Olhoff, Denmark Niclas Strömberg, Spain **Room: 208A+B**	***Some investigation on the shape optimization of complex nonlinear structures (SM15-002)*** Zhenhan Yao, Yingtao Wei, China	***Design for maximum band-gaps in beam structures (SM15-018)*** Niels Olhoff, Bin Niu, Gengdong Cheng, Denmark	***Structural topology optimization based on analysis mesh-independent density interpolation (SM15-049)*** Zhan Kang, Yiqiang Wang, China

Session	*11:20*	*11:40*	*12:00*
FM07: Flow instability and transition Chairs: Javier Burguete, Spain François Gallaire, Switzerland **Room: Ballroom A**	***Optimal suppression of unsteadiness in incompressible flow (FM07-054)*** Xuerui Mao, Hugh M. Blackburn, Spencer J. Sherwin, Australia	***Numerical search for the hairpin vortex solution in moderate Reynolds number (FM07-067)*** Tomoaki Itano, Sotos C. Generalis, John P. Fletcher, Takeshi Akinaga, Masako Sugihara-Seki, Japan	***Homotopy of exact coherent structure between planar, cylindrical and circular cross-sectional shear flows: single and double layer structure (FM07-065)*** Kengo Deguchi, Masato Nagata, Japan
SM01: Biomechanics and biomaterials Chairs: Wilbur Lam, USA Haiyi Liang, China **Room: Ballroom B**	***Cell entry of one-dimensional nanomaterials (SM01-016)*** Xinghua Shi, Annette von dem Bussche, Robert H. Hurt, Agnes B. Kane, Huajian Gao, China	***Probing mechanical principles of cell-matrix focal adhesion: A coupled stochastic-elastic framework (SM01-039)*** Jin Qian, Jizeng Wang, Yuan Lin, Bin Chen, Huajian Gao, USA	***Modeling the influence of mechanical factors on longitudinal bone growth (SM01-031)*** Leah L. Sharipova, Alexander Freidin, Gérard Maugin, Russia
SM05: Fracture mechanics Chairs: Ahmed Benallal, France Blaise Bourdin, USA **Room: Ballroom C**	***The rapidest unloading in brittle fragmentation process (SM05-070)*** Fenghua Zhou, Lina Guo, Lili Wang, China		
SM16: Vibrations and control of structures Chairs: Stefano Lenci, Italy Giuseppe Rega, Italy **Room: Function Hall A**	***Model update of large complex spacecraft with modal data (SM16-074)*** Zhong Zhang, Dejun Liu, Haibo Li, Yong Lug, China	***Rotating eigenmodes on an imperfect circular plate (SM16-075)*** Johannes Hengstler, Jurg Dual, Switzerland	***Periodic oscillations and stability of thin variable stiffness composite laminated plates (SM16-078)*** Pedro Ribeiro, Hamed Akhavan, Portugal
FM15: Vortex dynamics Chairs: Yasuhide Fukumoto, Japan Jens Norkaer Sorensen , Denmark **Room: Function Hall B**	***Passive scalar advection in the vicinity of ellipsoidal vortex in a deformation flow (FM15-008)*** V. V. Zhrnur, E. A. Ryzhov, K. V. Koshel, Russia	***Effects of axial flow on the curvature instability of a helical vortex tube: modal analysis (FM15-009)*** Yuji Hattori, Yasuhide Fukumoto, Japan	***Vorticity force on an impulsively started finite wing at low Reynolds numbers (FM15-012)*** Chien C. Chang, Jian-Jhih Lee, Cheng-Ta Hsieh, Chin-Chou Chu, Taiwan, China
SM04: Elasticity Chairs: Zaixing Huang, China Paolo Podio-Guidugli, Italy **Room: 202A+B**	***On the theory of elasticity with residual surface stresses with applications at the micro- and nanoscale (SM04-006)*** Victor A. Eremeyev, Holm Altenbach, Germany	***Nonlinear resonant ultrasound spectroscopy for one-dimensional hyperelastic solid (SM04-014)*** Ryuichi Tarumi, Yoji Shibutani, Japan	***Theory of ferromagnetic micropolar elastic thin shells, plates and bars (SM04-018)*** Samvel Sargsyan, Armenia
FS07: Smart materials Chairs: Robert M. McMeeking, USA Greg Carman, USA **Room: 203A+B**	***Phase field modeling heterogeneous multiferroics (FS07-017)*** Yong Ni, Linghui He, Armen G. Khachaturyan, China	***Understanding mechanoresponsive polymers via microstructurally-based models (FS07-020)*** Meredith N. Silberstein, Cassandra M. Kingsbury, Brett A. Beierman, Sharlotte B. Kramer, Kyoungmin Min, Lee D. Cremar, Todd J. Martinez, Narayan R. Aluru, Scott R. White, Nancy R. Sottos, USA	***On equilibrium domains in superelastic NiTi tubes - helix versus cylinder (FS07-029)*** Liang Dong, Qingping Sun, Hong Kong, China
SM06: Geophysics and geomechanics Chairs: Yves M. Leroy, France Richard Wan, Canada **Room: 205A+B**	***A 2D constitutive model with anisotropy for granular materials (SM06-024)*** Vanessa Magnanimo, Stefan Luding, The Netherlands	***Granular element method for computational particle mechanics (SM06-027)*** Keng-Wit Lim, Jose E. Andrade, USA	***Statically admissible stress fields in loose sand heaps under the closure of polarized principal axes (SM06-029)*** Thirapong Pipatpongsa, Japan
SM07: Impact mechanics and wave propagation Chairs: Odd Sture Hopperstad, Norway Krishnaswamy Ravi-Chandar, USA **Room: 206A+B**	***Response of a semi-infinite elastic beam to a moving pulse (SM07-014)*** Jilin Yu, Chunqiang Qian, Zhijun Zheng, Songyan Li, China	***Anisotropic fracture of quasi-brittle aluminium alloy (SM07-016)*** Odd Sture Hopperstad, Tore Børvik, Marion Fourmeau, Ketill Olav Pedersen, Ahmed Benalla, Norway	***Modelling of plugging failure in structural impact (SM07-017)*** Tore Børvik, Ahmed Benallal, Odd Sture Hopperstad, Norway
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Niels Olhoff, Denmark Niclas Strömberg, Spain **Room: 208A+B**	***Structural topology optimization using meshfree methods (SM15-036)*** Zhen Luo, Yu Wang, Nong Zhang, Australia	***Multi-scale design and optimization considering load uncertainties (SM15-019)*** Xu Guo, Guomin Sun, China	

Session	*12:20*	*12:40*	*13:00 – 13:40*
FM07: Flow instability and transition Chairs: Javier Burguete, Spain François Gallaire, Switzerland **Room: Ballroom A**	***Statistics of global flow transition in rotating fluids with free surface (FM07-066)*** Yuji Tasaka, Makoto Iima, Japan		***Lunch*** ***Exhibition Hall 5, underground floor***
SM01: Biomechanics and biomaterials Chairs: Wilbur Lam, USA Haiyi Liang, China **Room: Ballroom B**	***Computational mechanics of an adaptation model for blood vessels (SM01-014)*** Pablo Saez, Mauro Malve, Estefania Peña, Miguel Angel Martinez, Ellen Kuhl, Spain		
SM16: Vibrations and control of structures Chairs: Stefano Lenci, Italy Giuseppe Rega, Italy **Room: Function Hall A**	***On controlling of double pendulum by vibration of suspension point (SM16-080)*** Bulanchuk Pavlo, Petrov Alexander, Russia		
SM04: Elasticity Chairs: Zaixing Huang, China Paolo Podio-Guidugli, Italy **Room: 202A+B**	***A new thermodynamic framework for material surfaces (SM04-019)*** Xia-Hui Pan, Shou-Wen Yu, R. K. N. D. Rajapakse, Canada	***Effects of finite deformation in the deflection of transversely-isotropic semilinear elastic thin plate (SM04-024)*** Adegbola P. Akinola, Odunayo O. Fadodun, Bolanle A. Olokuntoye, Nigeria	
SM06: Geophysics and geomechanics Chairs: Yves M. Leroy, France Richard Wan, Canada **Room: 205A+B**	***Measurement of damage localisation in rocks using ultrasonic velocity measurements/tomography (SM06-031)*** Stephen A. Hall, Elli-Maria Charalampidou, Tuong-Lam Nguyen, Erika Tudisco, Gioacchino Viggiani, Philippe Roux, Pierre Vacher, Sergei Stanchits, Helen Lewis, Sweden		
SM07: Impact mechanics and wave propagation Chairs: Odd Sture Hopperstad, Norway Krishnaswamy Ravi-Chandar, USA **Room: 206A+B**	***Impact against offshore pipelines (SM07-018)*** Martin Kristoffersen, Tore Børvik, Magnus Langseth, Håvar Ilstad, Erik Levold, Odd Sture Hopperstad, Norway		

Session	*10:20*	*10:40*	*11:00*
SM03: Damage mechanics Chairs: Yilong Bai, China Romesh C. Batra, USA **Room: 209A+B**	***What happens beyond Drucker's proposition when damage occurs - continuous bifurcation, damage localization and catastrophic rupture (SM03-014, invited lecture)*** Yilong Bai, Guangwen Ma, Shengwang Hao, Mengfen Xia, Fujiu Ke, China	***Void size effects on the macroscopic yield strength of ductile materials with spheroidal nanocavities (SM03-024)*** Vincent Monchiet, Djimedo Kondo, France	***On the modeling of damage and ductile fracture in advanced high strength steel sheets using void cell calculations (SM03-025)*** Matthieu Dunand, Dirk Mohr, France
SM12: Nanostructures and MEMS Chairs: Kenneth Liechti, USA Teng Li, USA **Room: 207**	***Micromechanical modeling of hybrid SMA composites (SM12-034, invited lecture)*** Dimitris C. Lagoudas, Brian T. Lester, USA	***Mechanics of nanowire/nanotube in-surface buckling on elastomeric substrates (SM12-022)*** Jianliang Xiao, Seoung Yoon Ryu, Yonggang Huang, Keh-Chih Hwang, Ungyu Paik, John Rogers, USA	***Mechanics of ion-bombardment induced instability of semiconductor surfaces (SM12-044)*** Harley T. Johnson, Md. Zubaer Hossain, Jonathan B. Freund, USA
FM11: Magnetohydrodynamics Chairs: André Thess, Germany Mintian Xu, China **Room: 210A**	***Flow pattern formation in a liquid metal column by pulsed excitation of a rotating magnetic field (FM11-012, invited lecture)*** Dirk Räbiger, Tobias Vogt, Sven Franke, Jürgen Czarske, Sven Eckert, Gunter Gerbeth, Germany	***A RANS numerical model for calibration of Lorentz force flowmeter applying to metallugy industry (FM11-002)*** Xiaodong Wang, Yurii Kolesnikov, Rico Klein, Christian Karcher, Andre Thess, China	***Noncontact electromagnetic flow measurement in electrolytes (FM11-005)*** André Thess, Andre Wegfrass, Christian Diethold, Michael Werner, Thomas Froehlich, Bernd Halbedel, Falko Hilbrunner, Christian Resagk, Germany
FM12: Non-Newtonian and complex fluids Chairs: Mike Graham, USA David Saintillan, USA **Room: 210B**	***Hydrodynamic interactions in dynamical density functional theory (FM12-007, invited lecture)*** Benjamin Goddard, Andreas Nold, Petr Yatsyshin, Nikos Savva, Greg Pavliotis, Serafim Kalliadasis, UK	***Rheological properties of bubble suspensions in yield stress fluids (FM06-095)*** Xavier Chateau, Lucie Ducloue, Thi Thuy Linh Nguyen, Guillaume Ovarlez, France	***Concentration instability of sedimenting spheres in a second-order fluid (FM12-013)*** Ramanathan Vishnampet, David Saintillan, USA
FS11: Foams and cellular materials Chairs: Michael Ryvkin, Israel Hanxing Zhu, UK **Room: 211** **Please see Addendum**	***Numerical modeling of the crushing response of aluminum open-cell random foams (FS11-004, invited lecture)*** Stavros Gaitanaros, Stelios Kyriakides, Andrew M. Kraynik, USA	***Size-dependent and tunable elastic properties of hierarchical honeycombs and open-celled foams (FS11-002)*** Hanxing Zhu, UK	***Probabilistic homogenization of solid foams with application to sandwich structures (FS11-003)*** Joerg Hohe, Carla Beckmann, Germany
SM02: Contact and friction mechanics Chairs: George Adams, USA Irina Goryacheva, Russia **Room: 212A**	***A model of nanoscale friction between a carbon nanotube and a substrate (SM02-005, invited lecture)*** George Adams, USA	***Geometrically-controlled stimulus responsive surface friction (FS07-025)*** Lin Han, Lifeng Wang, Jie Yin, Khek-Khiang Chia, Robert E. Cohen, Michael F. Rubner, Christine Ortiz, Mary C. Boyce, USA	***Understanding friction and wear at the nanoscale (SM02-003)*** Z. D. Sha, P. S. Branicio, Q. X. Pei, J. Y. Zhang, V. Sorkin, Y. W. Zhang, Singapore
SM08: Mechanics of multi-component materials and composites Chairs: Jinsong Leng, China Fumio Narita, Japan **Room: 212B**	***Damage detection in CFRP bolted joints using embedded optical fiber strain distribution monitoring (SM08-020, invited lecture)*** Nobuo Takeda, Shu Minakluchi, Takeaki Nadabe, Japan	***Optimal design for hybrid composites under flexural loading (SM08-012)*** Chensong Dong, Ian J. Davies, Australia	***Modeling of compressive strength of Z-pinned fiber composites with the distorted fiber arctecture (SM08-028)*** Junqian Zhang, Shunli Xie, China
SM09: Mechanics of phase transformations Chairs: Kwang-hua Chu, China Michele Marino, Italy **Room: 213A**	***Pure bending of pseudoelastic NiTi tubes (SM09-005)*** Nathan Bechle, Stelios Kyriakides, USA	***Nearly frictionless transport of amorphous matter in nanopores (SM09-003)*** Kwang-hua Chu, China	***Phase transformation and domain morphology of strain engineered $BiFeO_3$ by scanning probe microscopy (SM09-010)*** Yunya Liu, Kai Pan, Jiangyu Li, China
SM17: General solid mechanics Chairs: Bob Svendsen, Germany Witold Kosinski, Poland **Room: 213B**	***Forced vibrations analysis and thermal fatigue life prediction for inelastic layered structures (SM17-002)*** Igor Guz, Yaroslav Zhuk, Maria Kashtalyan, UK	***On principle of stationary action for electromagnetic elastic solids (SM17-004)*** Witold Kosinski, Romuald Kotowski, Poland	***Advances in mechanics of growing solids (SM17-006)*** Alexander V. Manzhirov, Russian Federation

Session	*11:20*	*11:40*	*12:00*
SM03: Damage mechanics Chairs: Yilong Bai, China Romesh C.Batra, USA **Room: 209A+B**	***Numerical strategies for prediction of drying cracks in heterogeneous materials: Comparison upon smeared/discrete crack approach and experimental results (SM03-026)*** Farid Benboudjema, Caroline De Sa, Jean-Baptiste Colliat, France	***Damage as a presage to composite failure (SM03-007)*** Carl T. Herakovich, Nathan D. Flesher, USA	***Damage and failure in fiber-reinforced laminates (SM03-023)*** Romesh C. Batra, Gautam Gopinath, USA
SM12: Nanostructures and MEMS Chairs: Kenneth Liechti, USA Teng Li, USA **Room: 207**	***Deformation and fracture of nanocrystalline platinum micropillars (SM12-031)*** Xun Gu, Julia R. Greer, Zhaoxuan Wu, Yongwei Zhang, David J. Srolovitz, USA	***The effects of residual surface stress on the elastic fields of half-plane problems (SM12-025)*** Jiazhen Dong, Zhiqiao Wang, Jianguo Lü, Yapu Zhao, China	***Mechanical behavior of graphene using atomic-scale finite element method and molecular dynamics (SM12-033)*** Dewapriya M. A. N., Srikantha Phani A. , Rajapakse R. K. N. D., Canada
FM11: Magnetohydrodynamics Chairs: André Thess, Germany Mintian Xu, China **Room: 210A**	***Deflection of laminar liquid metal flow by a magnetic point dipole (FM11-006)*** Saskia Tympel, Thomas Boeck, Dmitry Krasnov, Jörg Schumacher, Germany	***Experimental study of turbulent spin-down flows of liquid sodium (FM11-010)*** Peter Frick, Sergey Denisov, Vitaliy Noskov, Rodion Stepanov, Russia	***Impact of soft iron impellers in the cadarache dynamo experiment (FM11-013)*** Andre Giesecke, Frank Stefani, Gunter Gerbeth, Germany
FM12: Non-Newtonian and complex fluids Chairs: Mike Graham, USA David Saintillan, USA **Room: 210B**	***A theoretical study of the effect of polymer concentration on turbulent drag reduction (FM12-017)*** Chung Yin Leung, Emily S. C. Ching, Hong Kong, China	***Role of viscoelastic stresses in turbulent boundary layer flow of drag-reducing fluid (FM12-018)*** Shinji Tamano, Michael D. Graham, Yohei Morinishi, Japan	***Finite Reynolds number effects for dense suspensions in shear flow (FM12-019)*** Francesco Picano, Luca Brandt, Wim-Paul Breugem, Sweden
FS11: Foams and cellular materials Chairs: Michael Ryvkin, Israel Hanxing Zhu, UK **Room: 211** **Please see Addendum**	***Dynamic crushing of hexagonal honeycombs with various cell-wall angles (FS11-005)*** L. L. Hu, T. X. Yu, Hong Kong, China	***Impact and blast performance of sandwich panels with cellular honeycomb and lattice cores (FS11-006)*** Hans Obrecht, Ulf Reinicke, Marcel Walkowiak, Germany	***Brittle fracture of open-cell Kelvin foam (FS11-009)*** Michael Ryvkin, Leonid Kucherov, Israel
SM02: Contact and friction mechanics Chairs: George Adams, USA Irina Goryacheva, Russia **Room: 212A**	***Multiharmonic balance analysis of a friction oscillator including a bolted joint (SM02-006)*** Dominik Süß, Kai Willner, Germany	***Effects of stress-triaxiality and surface friction on polymer scratch behaviors (SM02-010)*** Han Jiang, Jianwei Zhang, Qianhua Kan, Guozheng Kang, Yonghua Li, China	***Tool forces and deformations in friction stir welding (SM02-033)*** Zhao Zhang, Zhenyu Wan, Hongwu Zhang, China
SM08: Mechanics of multi-component materials and composites Chairs: Jinsong Leng, China Fumio Narita, Japan **Room: 212B**	***Micromechanics of fiber-crack interaction: bridging fiber (SM08-030)*** Zhenkun Lei, Quan Qang, Wei Qiu, Libo Deng, China	***On viscoelastic properties of 3-D braided composites (SM08-034)*** Huiyu Sun, Yongming Cai, China	***Analysis of effective properties of composites by the boundary element method (SM08-040)*** Piotr Fedelinski, Radoslaw Gorski, Grzegorz Dziatkiewicz, Jacek Ptaszny, Poland
SM09: Mechanics of phase transformations Chairs: Kwang-hua Chu, China Michele Marino, Italy **Room: 213A**	***The threshold stress of 90º domain switching in misfit strain-external stress phase diagram (SM09-012)*** Danshu Zhang, Zhe Zhu, Xuejun Zheng, China	***Multi-functional actuation of shape memory composite (SM09-004)*** Kohei Takeda, Hisaaki Tobushi, Yasuhiko Nishimura, Shunichi Hayashi, Japan	***Thermodynamic and micromechanical-based modelling of martensite variants reorientation in FSMAS (SM09-025)*** Xingzhe Wang, Fang Li, Xuebing Han, China
SM17: General solid mechanics Chairs: Bob Svendsen, Germany Witold Kosinski, Poland **Room: 213B**	***To united system of equations of continuum mechanics and some mathematical problems for thin-walled structures (SM17-022)*** Tamaz S. Vashakmadze, Georgia	***Investigation of non-resonant vibration behaviour by a newly developed time-averaged ESPI method (SM17-005)*** Wei-Chung Wang, Chi-Hung Hwang, I-Ling Chang, Taiwan, China	***Spontaneous propagation of self-assembly in a continuum medium (SM17-011)*** Zhouzhou Zhao, Wei Lu, USA

Session	***12:20***	***12:40 – 13:40***
SM03: Damage mechanics Chairs: Yilong Bai, China Romesh C. Batra, USA **Room: 209A+B**	***Modeling configuration and its tunability of nonlinear wrinkling-induced delamination (SM09-001)*** Kui Pan, Yong Ni, Linghui He, Rui Huang, China	***Lunch*** ***Exhibition Hall 5, underground floor***
SM12: Nanostructures and MEMS Chairs: Kenneth Liechti, USA Teng Li, USA **Room: 207**	***Buckling instability of carbon nanoscrolls and its potential applications (SM12-028)*** Teng Li, Zhao Zhang, Yinjun Huang, USA	
FM12: Non-Newtonian and complex fluids Chairs: Mike Graham, USA David Saintillan, USA **Room: 210B**	***Laboratory experiments on thermal instabilities in a yield-stress fluid (FM12-020)*** Anna Massmeyer, Anne Davaille, Blandine Gueslin, Erika Di Giuseppe, France	
FS11: Foams and cellular materials Chairs: Michael Ryvkin, Israel Hanxing Zhu, UK **Room: 211** **Please see Addendum**	***Inertia effect in the impact behaviour of cellular materials (FS11-011)*** Bing Hou, Han Zhao, Stéphane Pattofatto, Yulong Li, France	
SM02: Contact and friction mechanics Chairs: George Adams, USA Irina Goryacheva, Russia **Room: 212A**	***Three-dimensional FE model of frictional heat generation in a disc brake (SM02-016)*** Piotr Grzes, Adam Adamowicz, Aleksander Yevtushenko, Poland	
SM08: Mechanics of multi-component materials and composites Chairs: Jinsong Leng, China Fumio Narita, Japan **Room: 212B**	***Micromechanics governing the undulation patterns of inter-cellular boundaries of plant epidermis cells (SM08-041)*** Yaning Li, Narges Kaynia, Mary C. Boyce, USA	
SM09: Mechanics of phase transformations Chairs: Kwang-hua Chu, China Michele Marino, Italy **Room: 213A**	***Atomistic potential for martensitic transformations in CuAlNi (SM09-024)*** Yubao Zhen, Chengbiao Chu, China	
SM17: General solid mechanics Chairs: Bob Svendsen, Germany Witold Kosinski, Poland **Room: 213B**	***Existence of traveling wave solutions for an initial value problem of piezo-viscoelasticity (SM17-008)*** Olawanle Patrick Layeni, Ade Peter Akinola, South Africa	

Session	*13:40*	*13:43*	*13:46*
FM06: Drops, bubbles and multiphase flows Chairs: Marco A. Fontelos, Spain Daniel Kwok, Canada **Room: Ballroom A**	***An experimental study on upward air-water flow in a vertical pipe using local measurement techniques: an experimental database (FM06-082)*** Sergio Chiva, Guillem Monros, Enrique Julia, Leonor Hernandez, Antonio Vela, Salvador Torró, Raul Matinez, Josep Escrig, Spain	***Numerical study the thickness of the film that is formed between the free surface of a bubble and the cylindrical walls around the injection orifice (FM06-085)*** Abel Lopez-Villa, Abraham Medina, Carlos A. Vargas, Mexico	***Evolution of rotating charged drops subject to electric fields (FM06-094)*** Víctor J. García-Garrido, Marco A. Fontelos, Ultano Kindelán, Spain
FM07: Flow instability and transition Chairs: José Eduardo Wesfreid, France Andrey Boiko, Russia **Room: Ballroom B**	***Three-dimensional instabilities in flow past a rotating cylinder (FM07-069)*** Sanjay Mittal, Jagmohan Meena, India	***Simulation of multiple wavy and spiral Taylor-Görtler vortices in concentric spherical gaps (FM07-071)*** Li Yuan, China	***Manipulating turbulence in pipe flow (FM07-076)*** Baofang Song, Marc Avila, Björn Hof, Germany
SM16: Vibrations and control of structures Chairs: Edwin Kreuzer, Germany Ko-Choong Woo, Malaysia **Room: Ballroom C**	***Modes of vibration of damaged beams by a new p-version finite element (SM16-077)*** Vladimir Stojanovic, Pedro Ribeiro, Portugal	***Edge resonance at vibration and elastic waves excitation in three-dimentional anisotropic bodies of the hexagonal system (SM16-086)*** Valeriy Storozhev, Smoktiy Oksana, Ukraine	***The nonlinear dynamic characterisitics analysis and its application on sucker rod striings in 3D curved wellbores (SM16-087)*** Wenchang Wang, Qinfeng Di, Yibao Hu, Weiping Zhu, Feng Chen, Mingjie Wang, China
SM11: Multibody and vehicle dynamics Chairs: Joao Pombo, Portugal Xiaoting Rui, China **Room: Function Hall A**	***Semi-active control of half car vehicle model traversing rough road with magneto rheological suspension (FS07-013)*** R. S. Prabakar, C. Sujatha, S. Narayanan, India	***Impulsive synchronization motion in networked multibody systems (SM11-013)*** Xingjie Wu, Jin Zhou, China	***About control possibility of a satellite attitude (SM11-014)*** Zaure B. Rakisheva, Kazakhstan
FM03: Combustion and flames Chairs: Sebastien Candel, France Lixing Zhou, China **Room: Function Hall B**	***Numerical studies on combustion enhancement by ablative strut in a scramjet combustor (FM03-002)*** Yincheng Guo, Haijun Li, C. K. Chan, Hong Kong, China	***Self-excited self-selected combustion oscillations in a Rijke-Zhao tube (FM03-001)*** Dan Zhao, Singapore	***Large eddy simulation of a combusting droplet (FM03-005)*** Ke Li, Lixing Zhou, China
FS12: Education in mechanics Chair: Tsung-chow Su, USA **Room: Function Hall C**	***Fluid mechanics education, natural hazards and the caribbean (FS12-001)*** Gyan S. Shrivastava, Trinidad and Tobago		
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Adaptive finite element material point method and its applications in impact simulation (SM03-002)*** Yanping Lian, Xiong Zhang, Yan Liu, China	***Scattering of SH-wave by multiple cylindrical cavities and a linear crack in elastic semi-space (SM07-002)*** Hongliang Li, China	***Microstructure evolution of adiabatic shear band in ultra-fine-grained iron under dynamic shear loading (SM07-015)*** Fuping Yuan, Ping Jiang, Xiaolei Wu, China
FM08: Flow in thin films Chairs: Eugene Benilov, Ireland Alex Oron, Israel **Room: 203A+B**	***Stability of a condensing liquid film of a binary vapor mixture (FM08-006)*** Kentaro Kanatani, Japan	***Linear stability analysis of thin liquid film containing soluble surfactant heated uniformaly (FM08-011)*** Chunxi Li, Xuemin Ye, Bing Lu, China	***Spectral analysis of wavy structure of thin liquid films under strong gas shear (FM08-015)*** Sergey Alekseenko, Andrey Cherdantsev, Oksana Heinz, Sergey Kharlamov, Dmitriy Markovich, Russia
FM09: Geophysical and environmental fluid dynamics Chair: Shane Ross, USA **Room: 205A+B**	***Effect of monthly climatic variability on characteristic of atmospheric surface layer – a study in Qatar (FM09-024)*** Reza Sadr, Arindam Singha, Qatar	***Mathematical modeling of the admixture transport in free-surfaced streams (FM09-020)*** Konstantin Nadolin, Igor Zhilyaev, Russian Federation	***Simulation of shallow water flows in confluence channel using lattice boltzmann method (FM09-033)*** Qingyuan Yang, Weizhen Lu, Hong Kong, China
FM11: Magnetohydrodynamics Chairs: Xiaodong Wang, China Peter Frick, Russia **Room: 206A+B**	***Code development for numerical simulation on magnetohydrodynamic rectangular duct flows (FM11-001)*** Jie Mao, Huachen Pan, China	***Numerical modelling of melts flow and interface deformation in aluminium reduction cells (FM11-003)*** Jinsong Hua, Magne Rudshaug, Christian Droste, Norway	***Instability of unsteady streaks with streamwise magnetic field (FM11-004)*** Shuai Dong, Dmitry Krasnov, Benwen Li, Thomas Boeck, China

Session	*13:49*	*13:52*	*13:55*
FM06: Drops, bubbles and multiphase flows Chairs: Marco A. Fontelos, Spain Daniel Kwok, Canada **Room: Ballroom A**	***Numerical study of nano-particle adsorption method by lattice Boltzmann simulation (FM06-097)*** Renliang Zhang, Qinfeng Di, Xinliang Wang, Weipeng Ding, Wei Gong, China	***Direct numerical simulation of rigid particle-free surface interaction (FM06-098)*** Tong Qin, Saad Ragab, Pengtao Yue, USA	***Primary breakup of round non-Newtonian liquid turbulent jet (FM06-025)*** Liping He, Mengzheng Zhang, Qing Du, Ning Liu, Zhenyan Xia, China
FM07: Flow instability and transition Chairs: José Eduardo Wesfreid, France Andrey Boiko, Russia **Room: Ballroom B**	***Intermittent chaotic motions in penetrative convection (FM07-077)*** Daria Kuznetsova, Ilias Sibgatullin, Russia	***Effects of gravity and magnetic field on the onset of the axial instability in Taylor-Couette flow system (FM07-083)*** Mahfoud Adnane, Ahcene Bouabdallah, Algeria	***A variational framework for flow optimization using semi-norm constraints (FM07-084)*** Dimitry P. G. Foures, Colm P. Caulfield, Peter J. Schmid, UK
SM16: Vibrations and control of structures Chairs: Edwin Kreuzer, Germany Ko-Choong Woo, Malaysia **Room: Ballroom C**	***An ARMA/GARCH based approach for structural damage detection (SM16-092)*** Ling Yu, Cong Cheng, Liujie Chen, China		
SM11: Multibody and vehicle dynamics Chairs: Joao Pombo, Portugal Xiaoting Rui, China **Room: Function Hall A**	***The dynamic and robust control of space robot during capture operation (SM11-015)*** Qiuhuang Dong, Li Chen, China	***Inertia driven reduced doe mechanism for aeolian pumps (SM11-017)*** Maria Luminita I. Scutaru, Gheorghe Gh. Deliu, Dana I. Luca Motoc, Romania	***Constraints and energy projection method for dynamic equations of multibody (SM11-019)*** Jieyu Ding, Zhenkuan Pan, China
FM03: Combustion and flames Chairs: Sebastien Candel, France Lixing Zhou, China **Room: Function Hall B**	***Influence of the source energy conditions on cylindrical detonation in two-dimensional simulation (FM03-006)*** Dan Wu, Jianping Wang, China	***Thermal and kinetic effects of ozone addition on the combustion of methane/air mixtures (FM03-008)*** Peng Guo, Zheng Chen, China	***Studies on the ignition of n-decane/toluene binary fuel blends (FM03-009)*** Peng Dai, Zheng Chen, Shiyi Chen, China
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, China **Room: Function Hall C**	***Aerothermal optimization of hypersonic vehicle leading edge based on genetic algorithm (FM04-011)*** K. Cui, S. C. Hu, T.Y. Gao, X. P. Wang, G. W. Yang, China	***Development of the γ-Reθt transition model for high speed flows (FM04-018)*** Yancheng You, Germany	***Flowfield prediction of a probe entering the Martian atmosphere (FM04-003)*** Junming Lü, Qiang Wang, Xiaoli Cheng, China
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Flyer-plate impact simulations using smoothed particle hydrodynamics (SPH) (SM07-021)*** A. V. S. Siva Prasad, Sumit Basu, India	***Three-dimensional mechanism-based modeling of the failure of brittle materials under dynamic multiaxial loading (SM07-022)*** Guangli Hu , Leslie Lamberson, K. T. Ramesh, USA	***Shock wave propagation in functionally graded cellular structures under high-velocity impact (SM07-025)*** Zhijun Zheng, Xiaokai Wang, Jilin Yu, Changfeng Wang, China
FM08: Flow in thin films Chairs: Eugene Benilov, Ireland Alex Oron, Israel **Room: 203A+B**	***Capillary rise in an annular conical space (FM08-019)*** Abraham Medina, Carlos A. Vargas, Abel Lopez-Villa, Mexico	***Analysis of flow characteristics of rotationally symmetric seal gap with slip boundary conditions (FM08-014)*** Zhaomiao Liu, Guobin Wang, China	
FM09: Geophysical and environmental fluid dynamics Chair: Shane Ross, USA **Room: 205A+B**	***Stability analysis of flows in open channels partially covered with vegetation (FM09-035)*** Adriano C. de Lima, Norihiro Izumi, Japan	***Theory of waves in the ocean under an ice cover (FM09-011)*** Sergey V. Muzylev, Russia	
FM11: Magnetohydrodynamics Chairs: Xiaodong Wang, China Peter Frick, Russia **Room: 206A+B**	***Centrifugal thermomagnetic convection in an anisotropic porous medium (FM11-008)*** Saravanan Shanmugam, India	***Traveling magnetic field pump (FM11-014)*** Ruslan Khalilov, Ilya Kolesnichenko, Stanislav Khripchenko, Veniamin Dolgikh, Sergey Denisov, Russia	***An integral eqation approach to magnetic reconnection (FM11-016)*** Mingtian Xu, China

Session	*13:58*	*14:01*	*14:04*
FM07: Flow instability and transition Chairs: José Eduardo Wesfreid, France Andrey Boiko, Russia **Room: Ballroom B**	***Bifurcations for an incompressible flow passing over an open-cavity (FM07-085)*** Frederic Alizard, Jean-Christophe Loiseau, Jean-Christophe Robinet, France	***Weakly nonlinear modulated Tollmien-Schlichting waves (FM07-086)*** Marcello A. F. Medeiros, Brazil	***First and second centrifugal spanwise instabilities in an open cavity flow (FM07-087)*** Christelle Douay, Jeremy Basley, Luc R. Pastur, François Lusseyran, Yann Fraigneau, Thierry M. Faure, France
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Bo Wang, China Seonho Cho, South Korea **Room: Ballroom C**	***Optimization of prager structures by finite element method (SM15-003)*** Kemin Zhou, Ronglin Chen, China	***Gradient based optimization of periodic layered material with specific band-gap characteristics (SM15-043)*** Shutian Liu, Yu Huang, Jian Zhao, China	***Numerical performance of chaos optimization algorithms based on different maps for global optimization (SM15-006)*** Zhenjun Liu, Dixiong Yang, China
SM11: Multibody and vehicle dynamics Chairs: Joao Pombo, Portugal Xiaoting Rui, China **Room: Function Hall A**	***Electro-mechanical dyanamic simulation of overhead creans during the operation of lifting mechanism (SM11-020)*** Congmin Niu, Huajiang Ouyang, Hongwu Zhang, China	***Rollover and lateral sliding stability of three wheeled vehicles (SM11-029)*** Tukesh Soni, Nalinaksh S. Vyas, India	
FM03: Combustion and flames Chairs: Sebastien Candel, France Lixing Zhou, China **Room: Function Hall B**	***Effects of burning surface moving back on steady-state combustion of high-metal water ramjet engines (FM03-012)*** Chao Han, Zhixun Xia, Lei Li, Jianxin Hu, Yan Liu, China	***Lifted flames of n-heptane in coflow jets with initial temperature variation (FM03-013)*** Sang Kyu Choi, Suk Ho Chung, Saudi Arabia	***Studies on the laminar flame speed of binary fuel blends (FM03-020)*** Zheng Chen, China
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, China **Room: Function Hall C**	***Early-time interface instabilities in high intensity aero-breakup of liquid drop (FM04-004)*** Xiangyu Hu, Nikolaus A. Adams, Germany	***Ring-pattern formation in the rotating stellar structures (FM04-006)*** Takeshi Sugimoto, Japan	***Investigations of supersonic flow past micro ramp and vanes (FM04-010)*** Dawen Xue, Zhihua Chen, Xiaohui Sun, Yaohui Chen, China
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Analysis of wave propagation based on radial basis collocation method (SM07-027)*** Lihua Wang, Zheng Zhong, China	***A novel anti-collision facility of Wanzhou Yangtze River Road Bridge (SM07-029)*** Changqi Yang, Xiqin Ma, Kui Yu, China	***Transient responses of girder bridges with poundings under near-fault vertical earthquakes (SM07-036)*** Haibo Yang, Xiaochun Yin, China
FM16: Waves in fluids Chairs: Lian Shen, USA Fabrice Veron, USA **Room: 203A+B**			***Interaction of resonant gravity waves in water of finite depth (FM16-004)*** Dali Xu, Zhiliang Lin, Shijun Liao, China
FM10: Low Reynolds number flow Chairs: Antoine Sellier, France Pushpendra Singh, USA **Room: 205A+B**		***Drop in an unsteady uniform pure shear flow and rheological properties of emulsions (FM10-004)*** Alexander N. Tyatyushkin, Russia	***Oscillatory electroosmotic flow through a channel with slipping stripes on walls (FM10-009)*** Henry C. W. Chu, Chiu-On Ng, Hong Kong, China
FM17: General Fluid Mechanics Chairs: Viktor Kozlov, Russia Owen Tutty, UK **Room: 206A+B**			***Reciprocity among elemental relaxation and driven-flow problems for a rarefied gas (FM10-003)*** Shigeru Takata, Masashi Oishi, Japan

Session	*14:07*	*14:10*	*14:13*
FM01: Biological fluid dynamics Chairs: Yang Liu, Hong Kong, China Qingyong Zhu, China **Room: Ballroom A**	***Floquet stability analysis of hovering model insects (FM01-001)*** Mao Sun, Jiang Hao Wu, China	***Diffsion wave and signal transduction in biological cell (FM01-005)*** Tianyou Fan, Lei Fan, China	***Numerical analysis of alternate Newtonian-Cassonn blood flow in coronary artery bypass graft anastomosis (FM01-007)*** Zhaomiao Liu, Lidan Gao, Yi Shi, China
FM07: Flow instability and transition Chairs: José Eduardo Wesfreid, France Andrey Boiko, Russia **Room: Ballroom B**	***Ejection and sweep flows in transitional boundary layers (FM07-089)*** Lin Chen, Xiangjiang Yuan, China	***Nonlinear PSE for three-dimensional structures in spatially developing mixing layers (FM07-093)*** Xin Guo, Qiang Wang, China	***On the evolution of a SF_6 gas cylinder under re-shock conditions (FM07-038)*** Zhigang Zhai, Ting Si, Xisheng Luo, Jiming Yang, China
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Bo Wang, China Seonho Cho, South Korea **Room: Ballroom C**	***Continuum-based sensitivity analysis for atomistic/continuum coupling using two-dimensional bridging scale decomposition (SM15-013)*** Yunxiang Wang, Kuang-Hua Chang, USA	***Parallel simulation and multi-mode evolution genetic algorithm optimization for crashworthiness of thin-walled tube with folding patterns (SM15-021)*** Hailong Sun, Yunkang Sui, Hongling Ye, China	***Fundamental study of light-weight composite honeycomb sandwich panels as applied on radiators for space solar power system application (SM15-028)*** Hiroki Iwasaki, Jianmei He, Japan
FM13: Stirring and mixing Chairs: Jianzhong Lin, China Evgeny A. Ryzhov, Russia **Room: Function Hall A**		***Development of the full Lagrangian approach to study differential characteristics of passive admixture (FM06-089)*** Natalia A. Lebedeva, Russia	***Passive scalar advection in the vicinity of two point vortices in a deformation flow (FM13-001)*** Evgeny A. Ryzhov, Konstantin V. Koshel, Russia
FM03: Combustion and flames Chairs: Sebastien Candel, France Lixing Zhou, China **Room: Function Hall B**	***Front propagation in compressible flows (FM03-022)*** Federico Bianco, Sergio Chibbaro, Angelo Vulpiani, France	***A coupled heat transfer analysis with effects of thermal/catalytic cracking of kerosene for regenerative cooled supersonic combustor (FM05-038)*** Xi Wang, Fengquan Zhong, Lihong CHen, Xinyu Zhang, China	***On the thickness of the scalar superlayer and its contributions to the mixture fraction PDF in a jet flow (FM13-003)*** Markus Gampert, Philip Schaefer, Norbert Peters, Germany
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, Russia **Room: Function Hall C**	***Quantifying Mach number similarity of compressible turbulent boundary (FM04-014)*** Yousheng Zhang, Weitao Bi, Zhensu She, Fazle Hussain, China	***A numerical investigation of injection angle effect on lateral jet interaction for revolution body (FM04-021)*** Yuwei Liu, Zhaoyong Ni, Yaofeng Liu, China	***Nonlinear stability of the supersonic boundary layer under the consideration of receptivity to slow acoustic waves (FM04-023)*** Yihong Fang, Cuiping Li, Yifang Liu, China
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Development of a novel miniature impact test system (SM07-037)*** Zhanwei Liu, Xintao Lü, Ximin Chen, Huimin Xie, China	***Wave propagation in solids capable of phase transitions (SM07-042)*** Dmitry A. Indeitsev, Dmitry Y. Skubov, Dmitry S. Vavilov, Russia	***Study of the uniaxial dynamic behavior of salt rock under static triaxial pre-compression (SM07-049)*** Xiquan Jiang, Zheng Ruan, China
FM16: Waves in fluids Chairs: Lian Shen, USA Fabrice Veron, USA **Room: 203A+B**	***On the damping of acoustic wave propagation in fully developed turbulent pipe flow (FM16-016)*** Chenyang Weng, Susann Boij, Ardeshir Hanifi, Sweden	***Nonlinear sloshing effects on the sway motion of 2D rectangular cylinders in regular waves (FM16-019)*** Dong Young Lee, Yoon Ho Kim, Hang S. Choi, South Korea	***Interface stability analysis of magnetic fluid by using a method for general use and nonlinear response (FM16-026)*** Yo Mizuta, Japan
FM10: Low Reynolds number flow Chairs: Antoine Sellier, France Pushpendra Singh, USA **Room: 205A+B**	***Electro-osmotic flow through a 1D-screen or a 2D-array pump filter (FM10-011)*** Chun Fei Kung, Chi Yu Kuo, Chang Yi Wang, Chien C. Chang, Taiwan, China	***The evaporation-driven flow in a 2D meniscus on a moving substrate (FM10-020)*** Ching Hsueh, Frédéric Doumenc, Béatrice Guerrier, France	***Settling of a porous sphere in stratified Stokes flows (FM10-030)*** Roberto Camassa, Shilpa Khatri, Richard McLaughlin, Brian White, USA
FM17: General Fluid Mechanics Chairs: Viktor Kozlov, Russia Owen Tutty, UK **Room: 206A+B**	***Optimization of feedback control of flowover a circular cylinder (FM17-007)*** Donggun Son, Euiyoung Kim, Haecheon Choi, South Korea	***Effects of winglets on a laminar airfoil wing (FM17-011)*** Y. D. Cui, K. L. Lai, H. Mitsudharmadi, Singapore	***The effect of direction of low speed winds on the performance of a split chimney (FM17-012)*** Ahmad Sharifian, Australia

Session	*14:16*	*14:19*	*14:22*
FM01: Biological fluid dynamics Chairs: Yang Liu, Hong Kong, China Qingyong Zhu, China **Room: Ballroom A**	***Laboratory studies of ocean mixing by microorganisms (FM01-016)*** Monica Martinez-Ortiz, John O. Dabiri, USA	***Radial jet velocity components and vortex strength of a jetting jellyfish (FM01-024)*** Doug Lipinski, Michael Krieg, Kamran Mohseni, USA	***Heat transfer, fluid flow and drug transport in the anterior eye (FM01-032)*** Feng Zhang, Han Chen, Yukan Huang, China
FM02: Boundary layers Chairs: Bernhard Scheichl, Austria Xiaohua Wu, Canada **Room: Ballroom B**		***Response on the corner flow separation to plasma aerodynamic actuation in a highly loaded compressor cascade (FM01-002)*** Yun Wu, Xiaohu Zhao, Yinghong Li, Jun Li, China	***Reconsideration of the turbulent burst in boundary layers (FM02-008)*** Cunbiao Lee, China
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Bo Wang, China Seonho Cho, South Korea **Room: Ballroom C**	***Design sensitivity analysis of dynamic crack propagation using peridynamics (SM15-034)*** Youn Doh Ha, Min-Young Moon, Min-Geun Kim, Seonho Cho, South Korea	***Simulation and optimization of thin corrugated membranes (SM15-035)*** Mikhail I. Karyakin, Taisiya V. Sigaeva, Russia	***Topology optimization of damping layer in shell structures (SM15-046)*** Xiaopeng Zhang, Zhan Kang, China
FM13: Stirring and mixing Chairs: Jianzhong Lin, China Evgeny A. Ryzhov, Russia **Room: Function Hall A**	***A numerical study on the mixing characteristics of opposed jets (FM13-002)*** Peng Xu, Shuxia Qiu, Arun S. Mujumdar, China	***Lattice Boltzmann study of flow and mixing characteristics of two dimensional confined impinging streams (FM13-008)*** Wenhuan Zhang, Zhenhua Chai, Zhaoli Guo, Baochang Shi, China	***Molecular dynamics simulation of liquid-vapor binary mixture of Lennard-Jones fluids (FM13-011)*** Xia Yu, Fubing Bao, Jingxin Wang, Zhihong Mao, China
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, China **Room: Function Hall C**	***Characterization of turbulent transition and shock/boundary-layer interaction in shock tubes (FM04-024)*** Yong Sun, Matthias Ihme, Ralf Deiterding, USA	***Elementary waves of Riemann problem and interaction with a weak discontinuity (FM04-028)*** R. Radha, V.D. Sharma, India	***Steady state numerical model for critical two-phase flow in nozzle (FM06-001)*** Sylvain Martel, Yves Mercadier, Michel Dostie, Canada
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Similarity in structures subjected to impact loads when model is distorted in geometry and material (SM07-051)*** Roberto E. Oshiro, Marcilio Alves, Brazil	***Perturbation method in one-dimensional dynamics of an incompressible elastic medium under impact loading (SM07-063)*** Yulia E. Ivanova, Victoria E. Ragozina, Russia	***A comparative study of dynamic rock tensile strengths obtained from different measurement methods (SM07-065)*** Kaiwen Xia, Canada
FM16: Waves in fluids Chairs: Lian Shen, USA Fabrice Veron, USA **Room: 203A+B**	***Evolution of weak shocks in one dimensional planar and non-planar gasdynamic flows (FM16-032)*** Raghavendra Venkatraman, Vishnu D. Sharma, India		
FM17: General Fluid Mechanics Chairs: Viktor Kozlov, Russia Owen Tutty, UK **Room: 206A+B**	***The consistency between the gas kinetic unified algorithm and the DSMC method in describing the Boltzmann equation (FM17-004)*** Ming Fang, Zhihui Li, Shaoqiang Tang, China		

Session	*14:25*	*14:28*	*14:31*
FM01: Biological fluid dynamics Chairs: Yang Liu, Hong Kong, China Qingyong Zhu, China **Room: Ballroom A**	***Stochastic resonance in breathing (FM01-034)*** Yang Liu, Hong Kong, China		
FM02: Boundary layers Chairs: Bernhard Scheichl, Austria Xiaohua Wu, Canada **Room: Ballroom B**	***Nonsimilar MHD Falkner-Skan flow with localized wall heating (cooling) (FM02-012)*** Poornima Chandrashekar, Eswara Anniganahally Thammaiah Setty, India	***Strong viscous-inviscid interaction in the case of nonconstant wall temperature (FM02-022)*** Georgiy Dudin, Igor Lipatov, Mikhail Lipatov, Russia	***Direct numerical simulation of a turbulent channel flow coupled to radiative transfer (FM02-028)*** Yufang Zhang, Ronan Vicquelin, Olivier Gicquel, Jean Taine, France
SM15: Structural optimization (Co-sponsored by ISSMO) Chairs: Bo Wang, China Seonho Cho, South Korea **Room: Ballroom C**	***On robust design optimization of truss structure with bounded uncertainties (SM15-050)*** Zhan Kang, Song Bai, China		
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, China **Room: Function Hall C**	***The study of variable specific heat on the stability of hypersonic boundary layer (FM07-029)*** Wenli Jia, Wei Cao, China	***Gas-kinetic unified algorithm for three-dimensional complex flows on spacecraft re-entry using Boltzmann model equation (FM12-009)*** Zhihui Li, Junlin Wu, Aoping Peng, Hanxin Zhang, China	***The flow structures and mixing characteristics of variable density vortex rings produced by a supersonic jet (FM13-007)*** Huanhao Zhang, Zhihua Chen, Xiaohai Jiang, Junli Han, China
SM07: Impact mechanics and wave propagation Chairs: Akrum Abdul-Latif, France Guoxing Lu, China **Room: 202A+B**	***Dynamic response analysis of plane composite trusses with the method of reverberation ray matrix (SM07-012)*** Fuxing Miao, Guojun Sun, China	***Minimum weight design of close-celled metallic foam protection for low velocity impact (SM07-050)*** Binchao Li, Guiping Zhao, Tianjian Lu, China	

Session	*14:34*	*14:37*	*14:40*
FM04: Compressible flow Chairs: Takeshi Sugimoto, Japan Hong Yan, China **Room: Function Hall C**	***Large scale structures in supersonic mixing layers (FM13-010)*** Xiaotian Shi, Guiru Zhang, Weimin Zhang, China	***Investigations on shock wave attenuation by different barriers (FM16-008)*** Sha Sha, Zhihua Chen, Xiaohai Jiang, Junli Han, China	

Poster display and discussion: 14:45 – 15:45, South Lobby, 1st floor

Coffee Break: 15:20 – 15:40, Main Lobby, 1st floor

Session	*13:40*	*13:43*	*13:46*
SM14: Stability of structures Chairs: Jizhou Song, USA Jean Lerbet, France **Room: 208A+B**	***Buckling of flexible electronic structure in asymmetric checkerboard mode (SM14-008)*** Zhicheng Ou, Xiaoqing Zhang, China	***P-positive definite matrices and divergence stability of non conservative constrained systems (SM14-010)*** Jean Lerbet, Marwa Aldowaji, Noel Challamel, François Nicot, Félix Darve, France	***Numerical model for nonlinear stability analysis of spatial frames with semi-rigid connections (SM14-014)*** Goran Turkalj, Josip Brnic, Edin Merdanovic, Neven Munjas, Croatia (local name: Hrvatska)
FS03: Experimental methods in mechanics Chairs: Yiping Liu, China Yang Shang, China **Room: 209A+B**	***Coupling effects of radiation heating and acoustic field of thermal-acoustic test facility for hypersonic vehicle structures (FS03-013)*** Zhenqiang Wu, Haibo Li, Wei Zhang, Fanjin Kong, Hao Cheng, China	***Displacement measurement of inner surface of an object in water using ultrasonic speckle techniques based on genetic algorithm (FS03-006)*** Zhihua Luo, Hongmao Zhu, Jun Chu, Lei Shen, Bin Song, China	***Welding strain/slope measurements using a laser-based technique (FS03-007)*** Liang Wang, Keyu Li, Salahaddin Sanusei, Brian Munn, Zhili Feng, USA
FS09: Mechanics of materials processing Chair: Gabor Csernak, Hungary **Room: 207**	***The effect of substrate on powder concentration distribution in coaxial laser cladding (FS09-011)*** Hao Liu, Shaowei Jin, Xiuli He, Gang Yu, China	***The effect of runout on the stability of milling with variable helix tools (FS09-007)*** Andreas Otto, Günter Radons, Germany	***Advances in nonlinear model reduction & parametric modelling using the proper generalized decomposition (FS09-015)*** Adrien Leygue, Marianne Beringhier, Francisco Chinesta, France
SM10: Mechatronics Chairs: Hannes Bleuler, Switzerland Alexander Fidlin, USA **Room: 210A**	***Experiments on a new conductive structure for electrodynamic bearings (SM10-005)*** Guoping Ding, Jan Sandtner, Hannes Bleuler, China	***An accurate computation model for magnetic-mechanical based penta-stable mechanism (SM10-008)*** Jian Zhao, Guoxi Chen, Yu Huang, Renjing Gao, China	***On the similarity between the electromagnetics of microstrip antenna and the mechanics of composite substrates (SM10-011)*** Shih-Ming Yang, C.-C. Hung, Taiwan, China
SM03: Damage mechanics Chairs: Elisha Rejovitzky, Russia Matthieu Dunand , France **Room: 210B**	***Micro inhomogeneous deformation and fatigue life of a metal under symmetric strain cycle (SM03-013)*** Keshi Zhang, Yanke Shi, Siyuan Gu, Yongting Lan, Yingsong Ma, China	***Effect of crack orientation and connectivity on effective permeability of microcracked solids (FS10-004)*** Chunsheng Zhou, Wei Wang, China	***Damage model for brittle refractory materials under thermal shock conditions (SM03-003)*** Dimitri Henneberg, Andreas Ricoeur, Germany
SM13: Plasticity, viscoplasticity and creep Chairs: Giulio Maier, Italy Brian Nyvang Legarth, Denmark **Room: 211**	***Conservation laws for materials with a nonlinear power law behavior in antiplane deformation (SM05-007)*** Weichen Shi, China	***Analyticity and causality of rheological models (SM13-002)*** Nicos Makris, Greece	***General criteria of material instabilities (SM13-012)*** Wei Ma, China

Session	*13:49*	*13:52*	*13:55*
SM14: Stability of structures Chairs: Jizhou Song, USA Jean Lerbet, France **Room: 208A+B**	***A new approach for solution of buckling of functionally graded material Timoshenko beams (SM14-017)*** Shirong Li, Zeqing Wan, China	***Hill-top bifurcation analysis for a foldable structure with imperfection (SM14-018)*** I. Ario, M. Nakazawa, Japan	***Buckling of porous elastic sandwich plates (SM14-019)*** Denis Sheydakov, Russia
FS03: Experimental methods in mechanics Chairs: Yiping Liu, China Yang Shang, China **Room: 209A+B**	***Three-dimensional shape reconstruction of micro-varying liquid surface (FS03-008)*** Zhanwei Liu, Xianfu Huang, Huimin Xie, China	***Measurement of residual stress in metallic materials processed by means of smat (FS03-009)*** Long Liu, Hao Jiang, Kapo Cheung, Jian Lu, Hong Kong, China	***A high sensitivity DIC technique for chip-level packaging materials (FS03-016)*** Yonggang Wang, Wei Tong, China
FS10: Porous media Chairs: Kaixin Liu, China Changfu Wei, China **Room: 207**			***Singularity of the energy propagation in anisotropic fluid-filled porous materials (FS10-010)*** Ying Liu, Kaixin Liu, China
SM17: General solid mechanics Chairs: Pauli Pedersen, Denmark David Néron, France **Room: 210A**			***Universal deformations of growing solids (SM17-010)*** Serge Lychev, Russia
SM03: Damage mechanics Chairs: Elisha Rejovitzky, Russia Matthieu Dunand , France **Room: 210B**	***A new plasticity criterion for porous single crystals (SM03-006)*** Xu Han, Jacques Besson, Samuel Forest, Benoît Tanguy, France	***Mixed-mode cyclic fatigue delamination growth with large scale bridging in composites (SM03-009)*** Liu Liu, John W. Holmes, Bent F. Sørensen, China	***An extension of Gurson's model to arbitrary ellipsoidal voids (SM03-012)*** Komlanvi Madou, Jean-Baptiste Leblond, France
SM13: Plasticity, viscoplasticity and creep Chairs: Giulio Maier, Italy Brian Nyvang Legarth, Denmark **Room: 211**	***A proposed indentation scheme for investigating elasto-viscoplastic behaviour of materials at elevated temperatures (SM13-013)*** Chunyu Zhang, China	***Modeling of AISI L6 steel behaviour in the presence of thermo-viscoplastic coupling (SM13-016)*** Halina Egner, Wladyslaw Egner, Poland	***A new approach for analysis the elastoplastic flows (SM13-017)*** Iskakbayev Alibay, Kazakhstan

Session	*13:58*	*14:01*	*14:04*
SM14: Stability of structures Chairs: Jizhou Song, USA Jean Lerbet, France **Room: 208A+B**	***Surface effects on the wrinkles in a stiff thin film bonded to a compliant substrate (SM14-023)*** Yuhang Li, Jizhou Song, USA	***Hysteretic behavior of occurrence of strain nonuniformity in thin-walled cylinders subjected to cyclic torsion, analogous to internal buckling (SM14-031)*** Masami Kobayashi, Koji Uetani, Japan	
FS03: Experimental methods in mechanics Chairs: Yiping Liu, China Yang Shang, China **Room: 209A+B**	***Analysis of dynamic tensile testing of cement-based composites (FS03-019)*** Deju Zhu, Barzin Mobasher, S. D. Rajan, Canada	***Electro-thermal deformation measurement of micro film line on polymer membrane by geometric phase analysis (FS03-022)*** Qinghua Wang, Satoshi Kishimoto, Huimin Xie, Zhanwei Liu, Xinhao Lou, Japan	***Performance of liquid turbine flometer under low flow rate condition (FS03-023)*** Luhai Wang, Lin Zhou, Ming Xu, Yujian Zhu, Jiming Yang, Jun Li, Song Guan, China
FS10: Porous media Chairs: Kaixin Liu, China Changfu Wei, China **Room: 207**	***Phase change in porous media under constant heat flux (FM06-014)*** Xiaohu Yang, Tianjian Lu, Tongbeum Kim, China	***A new triple porosity seepage model in coalbed (FM09-037)*** Yuewu Liu, Congcong Niu, Cai Qiang, Haisheng Li, Xiangyong Men, China	***Modeling pH-sensitive hydrogel for microfluidic control (FS10-011)*** Tao He, Meie Li, Jinxiong Zhou, China
SM17: General solid mechanics Chairs: Pauli Pedersen, Denmark David Néron, France **Room: 210A**	***New methodology for lightening parts made from additive manufacturing technologies (SM17-017)*** Mario D. Monzón, Rubén Paz, Fernando Ortega, Spain	***Uniaxial compression experiments of ceramics at quasi-static and dynamic strain (SM17-021)*** Zhiyong Wang, Peifeng Li, Singapore	***Deformation transfer model of spacecraft solar cell and substrate (SM17-024)*** Wei Song, Lin-an Li, Zhiyong Wang, Shibin Wang, China
SM03: Damage mechanics Chairs: Elisha Rejovitzky, Russia Matthieu Dunand , France **Room: 210B**	***Debonding of face/core interface of a circular sandwich plate due to hail-like impact (SM03-019)*** Styven Guenette, Suresh Shrivastava, Canada		
SM13: Plasticity, viscoplasticity and creep Chairs: Giulio Maier, Italy Brian Nyvang Legarth, Denmark **Room: 211**	***Mechanical behaviour of amorphous polymers through systematic coarse-grained simulations (SM13-019)*** Sumit Basu, Nisanth Nair, India	***Multiscale constitutive model of plastic flow discontinuities at extremely low temperatures (SM13-020)*** Jan Bielski, Blazej Skoczen, Poland	***Thermo-rheological simplicity of carbon black filled rubber (SM13-024)*** Wenbo Luo, Xiaoling Hu, Xiu Liu, Chuhong Wang, China

Session	*14:07*	*14:10*	*14:13*
FS01: Acoustics Chairs: Haibo Chen, China Fernando Lund, Chile **Room: 208A+B**		***Acoustic radiation from vortex pairing in subsonic mixing layer forced by inflow instability waves with different phases (FM16-034)*** Feng Feng, Qiang Wang, China	***Transmission loss of orthogonally rib-stiffened composite plates (FS01-005)*** Cheng Shen, Fengxian Xin, Tianjian Lu, China
FS03: Experimental methods in mechanics Chairs: Yiping Liu, China Yang Shang, China **Room: 209A+B**	***Model experiments of a novel anti-collision facility for Wanzhou Yangtze River Road Bridge (FS03-028)*** Xiqin Ma, Changqi Yang, Kui Yu, Yang Liu, Hechuan Zeng, China	***An electrical resistance tomography based matrix probe for oil-water two-phase flow (FS03-029)*** Tao Li, Runhuai Yang, Jiming Yang, China	***Visualization of three phase water-assisted flow of heavy crude oil and gas (FS03-030)*** Antonio Bannwart, Jorge L. Biazussi, William M. Verde, Natache A. Sassim, Brazil
FS10: Porous media Chairs: Kaixin Liu, China Changfu Wei, China **Room: 207**	***A theoretical framework for modeling the chemo-mechanical behavior of porous media with multiphases and multispecies (FS10-012)*** Changfu Wei, Xiating Feng, China	***Thermal stresses around a cylindrical hole in a transversely isotropic poroelastic medium considering local thermal non-equilibrium (FS10-014)*** Zhihe Jin, Luwu He,China	***On some features of gas flows through porous objects with heat sources (FS10-015)*** Nickolay A. Lutsenko, Vladimir A. Levin, Russia
SM17: General solid mechanics Chairs: Pauli Pedersen, Denmark David Néron, France **Room: 210A**	***Stochastic model updating based on an efficient novel method (SM17-025)*** Q. Rui, H. Y. Wang, H. Ouyang, China	***Anticipatory systems in mechanics of continua (SM17-013)*** Peter B. Béda, Hungary	
SM09: Mechanics of phase transformations Chairs: Henryk Petryk, Poland Elena Vilchevskaya, Russia **Room: 210B**	***Dependence of the phase transformation state on fabric anisotropy in undrained behaviour of granular soil (FS08-004)*** Beibing Dai, Jun Yang, Cuiying Zhou, China	***Latent heat effect on the microstructures of single crystal shape memory alloys (SM09-008)*** Chen Xuan, Cheng Peng, Yan Yan, Yongzhong Huo, China	***A constitutive model for coupled transformation and plastic behavior of shape memory alloys (SM09-011)*** Bin Chen, X. Peng, J. Wang, H. Wang, China
SM13: Plasticity, viscoplasticity and creep Chairs: Giulio Maier, Italy Brian Nyvang Legarth, Denmark **Room: 211**	***Analysis of indentation size effects under strain gradient viscoplasticity (SM13-027)*** Suman Guha, Sandeep Sangal, Sumit Basu, India	***A modified fractional Zener model for dynamic mechanical properties of cb-filled rubber (SM13-038)*** Xiaoling Hu, Wenbo Luo, Xiu Liu, Qiang Shen, Zhuangbin Jin, China	***Constitutive relationship modeling and prediction of armor steel using an artificial neural network (SM13-041)*** Zejian Xu, Fenglei Huang, China

Session	*14:16*	*14:19*	*14:22*
FS01: Acoustics Chairs: Haibo Chen, China Fernando Lund, Chile **Room: 208A+B**	***On transformation methods for the design of metamaterials (FS01-016)*** Zhihai Xiang, China	***Natural mode analysis of elliptical cylindrical cavities with multiple elliptical cylinders by using the collocation multipole method (FS01-021)*** Wei-Ming Lee, Taiwan, China	***Acoustic imagine method of flow-induced fan noise from aircraft engine (FS01-028)*** Xun Huang, Qingkai Wei, Siyang Zhong, China
FS04: Chaos and pattern formation Chair: Stephen Morris, Canada **Room: 209A+B**			***Study on the chaotic attitude dynamics of the liquid-filled spacecraft by using Hamiltonian-Casimir theory (FS04-006)*** Baozeng Yue, Wenjun Wu, Salman Ahmad, China
FS10: Porous media Chairs: Kaixin Liu, China Changfu Wei, China **Room: 207**	***The FUPG finite element model of contaminant transportation in soil with nonlinear sorption (FS10-022)*** Zejia Liu, Jialiang Zhao, Liqun Tang, Yiping Liu, China		
SM09: Mechanics of phase transformations Chairs: Henryk Petryk, Poland Elena Vilchevskaya, Russia **Room: 210B**	***Nanoscale domain switchings of $Bi_{3.15}Dy_{0.85}Ti_3O_{12}$ thin film at the simultaneous application of polarizing voltage and loading force (SM09-019)*** Zhe Zhu, Xuejun Zheng, China	***On kinetics of chemical reactions fronts in elastic solids (SM09-022)*** Elena Vilchevskaya, Alexander Freidin, Igor Korolev, Russia	
SM13: Plasticity, viscoplasticity and creep Chairs: Giulio Maier, Italy Brian Nyvang Legarth, Denmark **Room: 211**	***Mechanism of deformation in nanocrystallized materials (SM13-045)*** Joshua Gale, Ajit Achuthan, USA	***A new strain-space microplane plastic-damage model for concrete in compression (SM13-052)*** Jianying Wu, Shilang Xu, China	***Effects of thermal ageing on the large strain viscoelastic response of epdm rubber: experiments and constitutive modeling (SM13-051)*** Mouna Ben Hassine, Fahmi Zaïri, Moussa Naït-Abdelaziz, Xavier Colin, Christophe Tourcher, Valérie Murin, Grégory Marque, France

Session	*14:25*	*14:28*	*14:31*
FS01: Acoustics Chairs: Haibo Chen, China Fernando Lund, Chile **Room: 208A+B**	***Band structures of phononic crystals with weakly bonded interfaces (FS01-031)*** Ni Zhen, Yuesheng Wang, Ch. Zhang, China	***Two-dimensional finite-difference modelling of seismoelectric logs (FS01-035)*** Wei Guan, Hengshan Hu, China	
FS04: Chaos and pattern formation Chair: Stephen Morris, Canada **Room: 209A+B**	***Computing bifurcations of dissipative systems via POD-based ROMs (FS04-019)*** Filippo Terragni, Jose M. Vega, Spain	***Chaotic thresholds for the recently proposed rotating pendulum system (SM16-066)*** Ning Han, Qingjie Cao, Yushu Chen, China	

Poster display and discussion: 14:45 – 15:45, South Lobby, 1st floor

Coffee Break: 15:20 – 15:40, Main Lobby, 1st floor

Session	*15:45*	*16:05*	*16:25*
FM07: Flow instability and transition Chairs: Frantisek Marsik, Czech Republic Tobias M. Schneider, USA **Room: Ballroom A**	***New exact coherent states in plane Poiseuille flow (FM07-064)*** Masato Nagata, Kengo Deguchi, Japan	***Transition delay and drag reduction in particle-laden channel flow (FM07-068)*** Luca Brandt, Joy Klinkenberg, Gaetano Sardina, Rick De Lange, Sweden	***The appearance of homoclinic tangle in plane Couette flow (FM07-073)*** Genta Kawahara, Lennaert van Veen, Japan
SM01: Biomechanics and biomaterials Chairs: Horacio D Espinosa, USA Jizeng Wang, China **Room: Ballroom B**	***Emergence of synchrony in cardiac cells through mechanical communication (SM01-052, invited lecture)*** Xin Tang, Piyush Bajaj, Rashid Bashir, Taher Saif, USA	***A Langevin dynamics approach for analyzing the mechanical response of bio-polymers (SM01-034)*** Yuan Lin, Vivek B. Shenoy, Hong Kong, China	***Biomechanics of abdominal aortic aneurysms: biaxial experiments and related modeling, tissue dissections and microstructural characterization (SM01-018)*** Jianhua Tong, Tina Cohnert, Peter Regitnig, Gerhard A. Holzapfel, Austria
FM06: Drops, bubbles and multiphase flows Chairs: Antonino Ferrante, USA Detlef Lohse, The Netherlands **Room: Ballroom C**	***Orthogonal wavelet analysis of particle fluctuation velocity in a horizontal gas-solid two-phase pipe flow at low gas velocity (FM06-005)*** Akira Rinoshika, Yan Zheng, Japan	***Microscopic structure influencing macroscopic splash at high Weber number (FM06-081)*** Peichun A. Tsai, Maurice H. W. Hendrix, Remko R. M. Dijkstra, Lingling Shui, Detlef Lohse, The Netherlands	***Increase of the mean velocity of a bubble rise in a viscoplastic fluid induced by an oscillating pressure field (FM06-083)*** Dionysios Photeinos, Yiannis Dimakopoulos, John Tsamopoulos, Greece
SM16: Vibrations and control of structures Chairs: Alexander Ovseevich, Russia Ekaterina Pavlovskaia, UK **Room: Function Hall A**	***Optimal control of vibrationally excited locomotion systems (SM16-014)*** Felix L. Chernousko, Nikolay N. Bolotnik, Tatiana Yu. Figurina, Russia	***Nonlinear dynamics of a drill bit under percussive activation (SM16-084)*** Alexandre F. Depouhon, Vincent Denoël, Emmanuel Detournay, Belgium	***Nonlinear spatio-temporal dynamics and stability of the scan process in non-contact atomic force microscopy (SM16-088)*** Oded Gottlieb, Sharon Hornstein, Israel
FM15: Vortex dynamics Chairs: Xueying Deng, China Mikhail Sokolovskiy, Russia **Room: Function Hall B**	***The behaviour of vortex structures near solid obstacles (FM15-043, invited lecture)*** GertJan F. van Heijst, The Netherlands	***Fuzzy coating interaction on von Kármán vortex street (FM15-021)*** Benjamin Levy, Yingzheng Liu, China	***The formation of non-axisymmetric vortex rings (FM15-022)*** Clara O'Farrell, John O. Dabiri, USA
SM07: Impact mechanics and wave propagation Chairs: Magnus Langseth, Norway Yulong Li, China **Room: Function Hall C**	***Transient response of hard and brittle armour materials: new insights from scaled experiments（SM07-020）*** Tobias Uth, Vikram S. Deshpande, UK	***Evolution of solitary waves in Mindlin type microstructured materials（SM07-056）*** Andrus Salupere, Kert Tamme, Estonia	***On the impact behavior of tetrahedral truss lattice structures (SM07-013)*** Han Zhao, Jiagui Liu, Stéphane Pattofatto, Daining Fang, France
SM04: Elasticity Chairs: Holm Altenbach, Germany Shoji Imatani, Japan **Room: 202A+B**	***Integral identities for a semi-infinite interfacial crack in 2D and 3D elasticity (SM04-026)*** Andrea Piccolroaz, Gennady Mishuris, Italy	***Modeling of thin coated plates with mismatch deformation (SM04-031)*** Antonio Di Carlo, Roberto Paroni, Raffaella Rizzoni, Italy	***Identification of small multiple defects in 3D linear elastic body (SM04-048)*** Efim I. Shifrin, Pavel S. Shushpannikov, Russia
FS07: Smart materials Chairs: Tongyi Zhang, Hong Kong, China Xue Feng, China **Room: 203A+B**	***Thin film nitinol covered stent for brain aneurysms (FS07-018)*** Greg Carman, Dan Levi, Youngjae Chun, K.P. Mohanchandra, Colin Kealey, Fernando Vinuela, USA	***Three-dimensional simulation of domain switching in ferroelectrics based on a phase field model (FS07-030)*** Bai-Xiang Xu, Ralf Mueller, Dietmar Gross, Germany	***Electroactive polymer composites - mechanical response, stability, wave propagation and band-gaps (FS07-038)*** Gal deBotton, Gal Shmuel, Stephan Rudykh, Israel
FM05: Convection Chairs: Denis Funfschilling, France Jinqiang Zhong, China **Room: 205A+B**	***High Rayleigh number convection in a long vertical tube (FM05-022)*** Shashikant S. Pawar, Jaywant H. Arakeri, India	***Optimal Taylor-Couette: numerical results (FM05-023)*** Rodolfo Ostilla Monico, Richard Stevens, Siegfried Grossman, Roberto Verzicco, Detlef Lohse, India	***Sidewall effects in Rayleigh-Benard convection (FM05-027)*** Richard J. A. M Stevens, Detlef Lohse, Roberto Verzicco, The Netherlands

Session	*16:45*	*17:05*	*17:25*
FM07: Flow instability and transition Chairs: Frantisek Marsik, Czech Republic Tobias M. Schneider, USA **Room: Ballroom A**	***Global stability of an isolated cylindrical rugosity (FM07-074)*** Jean-Christophe Loiseau, Jean-Christophe Robinet, Emmanuel Leriche, France	***Experimental scaling law for the sub-critical transition to turbulence in plane Poiseuille flow (FM07-079)*** Grégoire Lemoult, Jean-Luc Aider, Jose Eduardo Wesfreid, France	***Stability of quasi-Keplerian flow at large Reynolds numbers (FM07-080)*** Hantao Ji, Michael Burin, Eric Edlund, Christophe Gissinger, Jeremy Goodman, Austin Roach, Ethan Schartman, Erik Spence, USA
SM01: Biomechanics and biomaterials Chairs: Horacio D. Espinosa, USA Jizeng Wang, China **Room: Ballroom B**	***Coupled mechanical stimulation reveals non-linear adaptive structural response (SM01-030)*** Robert Steward Jr., Philip LeDuc, Chao-Min Cheng, USA	***Staggering and hierarchy selected by load-bearing biological materials for maximal toughness (SM01-006)*** Zuoqi Zhang, Bin Liu, Yongwei Zhang, Huajian Gao, Keh-Chih Hwang, Singapore	***Self-assembly and mechanics interplay in cyclic peptide nanotubes (SM01-050)*** Luis Ruiz, Sinan Keten, USA
FM06: Drops, bubbles and multiphase flows Chairs: Antonino Ferrante, USA Detlef Lohse, The Netherlands **Room: Ballroom C**	***A transient analysis for the electrodeformation of droplets and vesicles (FM06-084)*** Jia Zhang, Jeffery D. Zahn, Hao Lin, USA	***B3 DNS of fully-resolved droplet-laden isotropic turbulence: a mass-conserving volume of fluid method (FM06-086)*** Alberto Baraldi, Antonino Ferrante, USA	***The role of air in the dynamics of droplet impact (FM06-087)*** John M. Kolinski, Shmuel M. Rubinstein, Shreyas Mandre, Michael P. Brenner, David A. Weitz, L. Mahadevan, Israel
SM16: Vibrations and control of structures Chairs: Alexander Ovseevich, Russia Ekaterina Pavlovskaia, UK **Room: Function Hall A**	***Multiple Hopf bifurcations for a novel smooth and discontinuous oscillator with strong irrational nonlinearities (SM16-009)*** Yanwei Han, Qingjie Cao, Yushu Chen, Marian Wiercigroch, China		
FM15: Vortex dynamics Chairs: Xueying Deng, China Mikhail Sokolovskiy, Russia **Room: Function Hall B**	***A model for high Reynolds number vortex rings (FM15-024)*** Feliks Kaplanski, Yasuhide Fukumoto, Ylo Rudi, Estonia	***Erosion of the granular layer due to the collision of the vortex ring (FM15-037)*** Junya Yoshida, Osamu Sano, Japan	***Vortex-induced vibration of a diamond cylinder at different mass ratios (FM15-039)*** Jisheng Zhao, David Lo Jacono, John Sheridan, Australia
SM07: Impact mechanics and wave propagation Chairs: Magnus Langseth, Norway Yulong Li, China **Room: Function Hall C**	***On impact interactions of the damaged medium with the flow of the cavitating liquid (SM07-004)*** Alexander N. Melsitov, Vladimor A. Petushkov, Russia	***Strain rate, temperature and structure effects on the flow stress of metals and alloys under shock-wave loading (SM07-058)*** Gennady I. Kanel, Sergey V. Razorenov, Eugene B. Zaretsky, Sergey I. Ashitkov, Russia	***Waves in microstructured solids: dispersion and thermal effects (SM07-005)*** Jüri Engelbrecht, Arkadi Berezovski, Estonia
SM04: Elasticity Chairs: Holm Altenbach, Germany Shoji Imatani, Japan **Room: 202A+B**	***Complicated stress oscillations induced in functionally graded material films (SM04-035)*** Fumihiro Ashida, Sei-ichiro Sakata, Tatsuya Ohtsuka, Japan	***A constitutive model for a linearly elastic peridynamic body (SM04-042)*** Adair R. Aguiar, Roger L. Fosdick, Brazil	***A hyperelastic model of particle-reinforced Neo-Hookean composite (SM04-030)*** Zaoyang Guo, Xiaohao Shi, Xiongqi Peng, Philip Harrison, China
FS07: Smart materials Chairs: Tongyi Zhang, Hong Kong, China Xue Feng, China **Room: 203A+B**	***Light induced contraction and bending of liquid crystal elastomers (FS07-010)*** Yongzhong Huo, Lihua Jin, Yin Lin, Chen Xuan, China	***Giant voltage-induced deformation in dielectric elastomers (FS07-042)*** Tiefeng Li, Christoph Keplinger, Jiangshui Huang, Soo Jin Adrian Koh, Jian Zhu, Shaoxing Qu, Siegfried Bauer, Zhigang Suo, Wei Yang, China	***Dynamic electromechanical behavior of piezoelectric ceramics (FS07-047)*** Leslie Lamberson, K. T. Ramesh, USA
FM05: Convection Chairs: Denis Funfschilling, France Jinqiang Zhong, China **Room: 205A+B**	***Turbulent convection at high Rayleigh and Taylor numbers (FM05-031)*** Joseph J. Niemela, Italy	***Effect of polymer additives on heat transport in boundary layer flow (FM05-032)*** Emily S. C. Ching, Roberto Benzi, Vivien W.S. Chu, Hong Kong, China	***Thermal boundary layer instabilities in viscous fluids (FM05-034)*** Anne Davaille, Sophie Androvandi, Angela Limare, France

Session	*17:45*	*19:00 – 22:00*
FM07: Flow instability and transition Chairs: Frantisek Marsik, Czech Republic Tobias M. Schneider, USA **Room: Ballroom A**	***Transients states in the transition to turbulence in channels (FM07-081)*** José E. Wesfreid, Grégoire Lemoult, Jean-Luc Aider, France	***Congress Banquet*** ***Plenary Hall B, 4th floor***
SM01: Biomechanics and biomaterials Chairs: Horacio D Espinosa, USA Jizeng Wang, China **Room: Ballroom B**	***Frequency analysis of knot mass particles in oscillatory spherical net model of mouse zona pellucida (SM01-049)*** Andjelka Hedrih, Serbia and Montenegro	
FM06: Drops, bubbles and multiphase flows Chairs: Antonino Ferrante, USA Detlef Lohse, The Netherlands **Room: Ballroom C**	***A numerical experiment on breakup modes of a laminar compound jet in a co-flowing system (FM06-092)*** Truong V. Vu, John C. Wells, Hideyuki Takakura, Shunji Homma, Gretar Tryggvason, Japan	
FM15: Vortex dynamics Chairs: Xueying Deng, China Mikhail Sokolovskiy, Russia **Room: Function Hall B**	***Nonlinear geostrophic adjustment with gyroscopic waves (FM15-011)*** Grigory M. Reznik, Russia	
SM07: Impact mechanics and wave propagation Chairs: Magnus Langseth, Norway Yulong Li, China **Room: Function Hall C**	***Response of thin aluminum plates to projectile impact (SM07-024)*** Mohd. A. Iqbal, Narinder K. Gupta, India	
SM04: Elasticity Chairs: Holm Altenbach, Germany Shoji Imatani, Japan **Room: 202A+B**	***Polynomial stress functions of anisotropic materials (SM04-038)*** Yingtao Zhao, Yi Chen, Minzhong Wang, China	
FM05: Convection Chairs: Denis Funfschilling, France Jinqiang Zhong, China **Room: 205A+B**	***On the size of convection cells in an internally heated fluid layer at low Rayleigh numbers (FM05-037)*** Ryuta Abe, Yuji Tasaka, Ichiro Kumagai, Yuichi Murai, Takatoshi Yanagisawa, Anne Davaille, Japan	

Session	15:45	16:05	16:25
FS02: Computational methods in mechanics Chairs: Marc Geers, The Netherlands Gerhard Holzapfel, Austria **Room: 206A+B**	***Mechanics-based verification method - application to computational models (FS02-012)*** Ludovic Chamoin, Pierre Ladevèze, Florent Pled, France	***A new strategy for model reduction in non-linear biomechanics (FS02-047)*** Stefanie Reese, Annika Radermacher, Germany	***Mesoscale hydrodynamics of capillary imbibition under nanoconfinement (FS02-049)*** Wylie Stroberg, Sinan Keten, Wing Kam Liu, USA
FS12: Education in mechanics Chairs: Haiyan Hu, China Keith Moffatt, UK **Room: 208A+B**	***Tsien education/elite program in mechanics (FS12-008, invited lecture)*** Quanshui Zheng, Keqin Zhu, Changqing Chen, China	***Mechanics need not be boring to engineering students (FS12-002)*** Bhushan L. Karihaloo, Kai Zhang, Huiling Duan, Jianxiang Wang, UK	***Analogy study of engineering mechanics (FS12-003)*** Jianlin Liu, China
SM08: Mechanics of multi-component materials and composites Chairs: Norman A. Fleck, UK Jian Zhu, USA **Room: 209A+B**	***Advances in the comprehension of the mechanical behavior of steel corrosion products (SM08-050)*** Anita Dehoux, Yves Berthaud, Fatiha Bouchelaghem, France	***Micromechanics-based modeling of porous materials for application to elasto-plastic indentation analysis (SM08-051)*** Roland Traxl, Roman Lackner, Austria	***Periodic structural solids and composites: Mechanics and multifunctional applications (SM08-015)*** Lifeng Wang, USA
SM12: Nanostructures and MEMS Chairs: Ioannis Chasiotis, USA Alberto Corigliano, Italy **Room: 207**	***Thermal conductivity of defective graphene nanoribbons–a molecular dynamics study (SM12-019)*** Jingjie Yeo, Teng Yong Ng, Zishun Liu, Singapore	***Mechanically and thermally tunable properties of graphene materials (SM12-040)*** Yufeng Guo, Wanlin Guo, China	***Angular dependence of peeling a carbon nanotube from silicon substrate: Steered molecular dynamics simulation and theoretical analysis (SM12-006)*** Wugui Jiang, Defeng Peng, China
SM06: Geophysics and geomechanics Chairs: Jose Andrade, USA Richard Wan, Canada **Room: 210A**	***Numerical approaches to large-scale geological modeling (SM06-023, invited lecture)*** Louis Moresi, Australia	***Granular rheology: fine tuned for optimal efficiency? (SM06-006)*** Antoinette Tordesillas, Qun Lin, Australia	***Mechanic explanation to variation of fault dips under normal fault regime at shallow levels (SM05-009)*** Shunshan Xu, Angel Francisco Nieto-Samaniego, Susana Alicia Alaniz-Alvarez, Mexico
FM08: Flow in thin films Chairs: Santiago Madruga, Spain Markus Scholle, Germany **Room: 210B**	***Gradient dynamics formulation of evolution equations for thin films of complex fluids (FM08-022, invited lecture)*** U. Thiele, A. J. Archer, L. Frastia, M. Galvagno, H. Lopez, M. Plapp, D. V. Todorova, UK	***Computational and experimental studies on motion of yield stress plugs in channels (FM08-020)*** Parsa Zamankhan, Yingying Hu, Cheng-Feng Tai, Marcel Filoche, John C. Grotberg, Shiyao Bian, Shuichi Takayama, James B. Grotberg, USA	***Large drops of a power-law fluid in a thin film on a vertical fibre (FM08-002)*** Liyan Yu, John Hinch, UK
FS11: Foams and cellular materials Chairs: Patrick R. Onck, The Netherlands Ashkan Vaziri, USA **Room: 211** **Please see Addendum**	***Buckling-induced chirality in cellular structures (FS11-016, invited lecture)*** Katia Bertoldi, Sung Kang, Sicong Shan, Jongmin Shim, Wim Noorduin, Mughees Khan, Joanna Aizenberg, USA	***The charge-induced actuation of nanoporous metals (FS11-012)*** S. S. R. Saane, P. R. Onck, The Netherlands	***Velocity attenuation and force transfer in foam-filled layered claddings subjected to blast and impact (FS11-015)*** Dora Karagiozova, Bulgaria
FM14: Turbulence Chairs: Yulu Liu, China Katepalli R. Sreenivasan, USA **Room: 212A**	***Reconnection of very long vortex pairs with a transition to turbulence (FM14-012, invited lecture)*** Robert M. Kerr, UK	***A multi-layer model of roughness effect in turbulent pipes (FM14-018)*** You Wu, Xi Chen, Zhensu She, Fazle Hussain, China	***Normalization of the mean rate of energy dissipation in turbulence (FM14-004)*** Hideaki Mouri, Akihiro Hori, Yoshihide Kawashima, Kosuke Hashimoto, Japan
SM14: Stability of structures Chairs: Dennis M. Kochmann, USA Nicolas Triantafyllidis, France **Room: 212B**	***Microscopic and macroscopic instabilities in fiber-reinforced elastomers (SM14-002, invited lecture)*** Oscar Lopez-Pamies, Jean-Claude Michel, Pedro Ponte Castaneda, Nicholas Triantafyllidis, USA	***Stamping and wrinkling of elastic plates (SM14-015)*** Jeremy Hure, Benoit Roman, Jose Bico, France	***Ultra-high stiffness and damping composites and structures due to constrained mechanical instabilities (SM14-013)*** Dennis M. Kochmann, Charles S. Wojna, USA
SM13: Plasticity, viscoplasticity and creep Chairs: Yueguang Wei, China Peidong Wu, Canada **Room: 213A+B**	***The effect of the matrix tension-compression asymmetry on damage evolution in porous plastic solids (SM13-001)*** Oana Cazacu, Benoit Revil Baudard, USA	***Effect of twinning on the large strain torsion of extruded AZ31 bars (SM13-003)*** Peidong Wu, Huamiao Wang, Kenneth Neale, Canada	***Shakedown of functionally graded structures subjected to plastic strain induced phase transformation (SM13-025)*** Blazej T. Skoczen, Poland

Session	*16:45*	*17:05*	*17:25*
FS02: Computational methods in mechanics Chairs: Marc Geers, The Netherlands Gerhard Holzapfel, Austria **Room: 206A+B**	***A multiscale approach based on the PGD to solve nonlinear time-dependent problems (SM17-009)*** David Néron, Pierre Ladevèze, Massimiliano Cremonesi, Pierre-Alain Guidault, France		
FS12: Education in mechanics Chairs: Haiyan Hu, China Keith Moffatt, UK **Room: 208A+B**	***Teaching chaos for freshmen as a liberal education course (FS12-004)*** Liqun Chen, China	***Use of team assignments in engineering mechanics to educate large cohorts of undergraduate students (FS12-005)*** Michael D. Gilchrist, Ireland	***Computer laboratory for natural convection fundamentals (FS12-006)*** Michael K. Ermakov, Russia
SM08: Mechanics of multi-component materials and composites Chairs: Norman A. Fleck, UK Jian Zhu, USA **Room: 209A+B**	***Optimization of magnetoelectric effect in multiferroic composites (SM08-032)*** Hsin-Yi Kuo, Yongliang Wang, Yumin Kuo, Taiwan, China	***Three-dimensional cryomechanics analysis of satin woven carbon/polymer composites with cracks (SM08-007)*** Fumio Narita, Yasuhide Shindo , Tomo Takeda, Japan	
SM12: Nanostructures and MEMS Chairs: Ioannis Chasiotis, USA Alberto Corigliano, Italy **Room: 207**	***Analysis of free vibrations of carbon nanocones using continuum mechanics and molecular dynamic simulations (SM12-001)*** Yangao Hu, Zhengliang Li, K.M. Liew, Q. Wang, Jun Han, China	***Twin-spacing dependent yield strength in the materials with hierarchical nanostructures (SM12-011)*** Linli Zhu, Jian Lu, China	***Size-depdendent models for electrostatically actuated MEMS (SM12-020)*** Binglei Wang, Shenjie Zhou, Junfeng Zhao, Xi Chen, China
SM06: Geophysics and geomechanics Chairs: Jose Andrade, USA Richard Wan, Canada **Room: 210A**	***The influence of the stresses on the flow rate of wells and their stability (SM06-004)*** Vladimir Karev, Russia	***Numerical investigations of micro-structural phenomena inside shear localization in granular bodies using DEM (SM06-009)*** Jan Kozicki, Michal Nitka, Jacek Tejchman, Poland	***Observation of localized deformation in partially saturated sand by microfocus X-Ray CT and DIC image analysis (SM06-014)*** Yosuke Higo, Fusao Oka, Tomohiro Sato, Yoshiki Matsushima, Sayuri Kimoto, Japan
FM08: Flow in thin films Chairs: Santiago Madruga, Spain Markus Scholle, Germany **Room: 210B**	***On advancing contact lines with a 180° contact angle (FM08-003)*** Eugene Benilov, Ireland	***Self-similar thermally driven rupture of thin liquid sheets (FM08-004)*** Mark Bowen, Burt Tilley, Japan	***Stability analysis of a thin liquid film on an axially oscillating cylindrical surface in the high-frequency limit (FM08-005)*** Alexander Oron, Selin Duruk, Israel
FS11: Foams and cellular materials Chairs: Patrick R. Onck, The Netherlands Ashkan Vaziri, USA **Room: 211** **Please see Addendum**	***Hierarchical honeycombs with enhanced mechanical properties (FS11-018)*** Amin Ajdari, Babak Haghpanah Jahromi, Hamid Nayeb-Hashemi, Ashkan Vaziri, USA	***Experimentally-based modeling of trabecular bone as a complex cellular material (FS11-021)*** Iwona Jasiuk, Elham Hamed, Timothy Patterson, Jun Li, Alexander Setters, USA	***Mechanical properties and failure modes of carbon fiber composite pyramidal lattice structures (FS11-022)*** Jian Xiong, Ashkan Vaziri, Linzhi Wu, Li Ma, Zhen Cai, China
FM14: Turbulence Chairs: Yulu Liu, China Katepalli R. Sreenivasan, USA **Room: 212A**	***A multi-layer model for turbulent kinetic energy in pipe flows (FM14-009)*** Xi Chen, Fazle Hussain, Zhensu She, China	***Reynolds number effects on the spectra from a turbulent free jet of initial square cross-section and the kolmogorov isotropy "law" (FM14-015)*** Minyi Xu, Andrew Pollard, Jamie Mi, Frank Secretain, Hamed Sadeghi, Canada	***Energy dissipation in fully developed turbulence (FM14-021)*** Yulu Liu, Yongxiang Huang, China
SM14: Stability of structures Chairs: Dennis M. Kochmann, USA Nicolas Triantafyllidis, France **Room: 212B**	***A Fourier-related multi-scale analysis on membrane wrinkling: Theoretical study and numerical applications (SM14-003)*** Heng Hu, Kun Yu, Noureddine Damil, Michel Potier-Ferry, Salim Belouettar, China	***Deterministically ordered surface wrinkling micropatterns of thin polymeric films on soft substrate (SM14-024)*** Jie Yin, Jose L. Yagüe, Damien Eggenspieler, Karen K. Gleason, Mary C. Boyce, USA	***On constructing analytical solutions for the post-bifurcation states of a compressible hyperelastic tube under compression (SM14-009)*** Huihui Dai, Fanfan Wang, Jiong Wang, Jian Xu, Hong Kong, China
SM13: Plasticity, viscoplasticity and creep Chairs: Yueguang Wei, China Peidong Wu, Canada **Room: 213A+B**	***Correction of shear creep compliance determined by conical indentation (SM13-028)*** Guangjian Peng, Taihua Zhang, Yihui Feng, China	***The influence of steel fiber plasticity on kink-band formation (SM13-046)*** Lars P. Mikkelsen, R.T. Durai Prabhakaran, Denmark	***Thermodynamic consistent formulations of viscoplasticity and damage in ferrite steel (SM13-023)*** Farid Abed, UAE

Session	***17:45***	***19:00 – 22:00***
FS12: Education in mechanics Chairs: Haiyan Hu, China Keith Moffatt, UK **Room: 208A+B**	***An educative App for topology optimization (FS12-007)*** Niels Aage, Morten Nobel-Jørgensen, Casper Schousboe Andreasen, Ole Sigmund, Denmark	***Congress Banquet*** ***Plenary Hall B, 4th floor***
SM12: Nanostructures and MEMS Chairs: Ioannis Chasiotis, USA Alberto Corigliano, Italy **Room: 207**	***Mechanism of wrinkle formation in chemical vapor deposited graphene and tuning its morphology by substrates (SM12-021)*** Mario Lanza, Yan Wang, Haiyi Liang, Huiling Duan, China	
SM06: Geophysics and geomechanics Chairs: Jose Andrade, USA Richard Wan, Canada **Room: 210A**	***Secular motions of spin-down tops and planets (SM06-022)*** Yutaka Shimomura, Japan	
FM08: Flow in thin films Chairs: Santiago Madruga, Spain Markus Scholle, Germany **Room: 210B**	***Slip or not slip? A comparison of the interface formation model with conventional theories (FM08-007)*** David N. Sibley, Nikos Savva, Serafim Kalliadasis, UK	
FS11: Foams and cellular materials Chairs: Patrick R. Onck, The Netherlands Ashkan Vaziri, USA **Room: 211** **Please see Addendum**	***Quantifying the dynamic properties of metallic thin-walled hollow sphere foams (FS11-023)*** Peifeng Li, Nik Petrinic, Clive R. Siviour, Singapore	
FM14: Turbulence Chairs: Yulu Liu, China Katepalli R. Sreenivasan, USA **Room: 212A**	***Investigation of relaxation eddy viscosity model for coherent structure dynamics using tomographic PIV (FM14-019)*** Yongxia Jia, Nan Jiang, China	
SM14: Stability of structures Chairs: Dennis M. Kochmann, USA Nicolas Triantafyllidis, France **Room: 212B**	***Failure analysis of concrete gravity dam based on interface element method of discontinuous mechanics (SM14-038)*** Qing Zhang, Kang Xu, China	
SM13: Plasticity, viscoplasticity and creep Chairs: Yueguang Wei, China Peidong Wu, Canada **Room: 213A+B**	***Mullins' effect in polymer/clay nanocomposites: observations and constitutive modeling (SM13-048)*** Aleksey D. Drozdov, Rasmus Klitkou, Jesper de C. Christiansen, Denmark	

Friday, 24 August 2012

Session	***8:30 – 9:15***
Sectional Lecture Chairs: Bernhard Schrefler, Italy Zhewei Zhou, China **Room: Ballroom A**	***Microsystems and mechanics (SL04)*** Alberto Corigliano, Raffaele Ardito, Claudia Comi, Attilio Frangi, Aldo Ghisi, Stefano Mariani, Italy
Sectional Lecture Chairs: Yukio Kaneda, Japan Tomasz A. Kowalewski, Poland **Room: Ballroom B**	***Toward the multi-scale simulation for a human body using the next-generation supercomputer (SL09)*** Yoichiro Matsumoto, Japan
Sectional Lecture Chairs: Nadine Aubry, USA Haecheon Choi, South Korea **Room: Ballroom C**	***The mechanics and prediction of wall-turbulence (SL10)*** Parviz Moin, USA
Sectional Lecture Chairs: Davide Bigoni, Italy Krishnaswamy Ravi-Chandar, USA **Room: Function Hall A**	***Dynamic damage, strain localization and failure of ductile materials (SL11)*** Alain Molinari, France

Session	*9:20*	*9:40*	*10:00*
FM06: Drops, bubbles and multiphase flows Chairs: Yoichiro Matsumoto, Japan Stephane Zaleski, France **Room: Ballroom A**	***Dynamics of carbon dioxide bubble shrinkage in microchannel flow determines mass transfer in physical solvents (FM06-101)*** Milad Abolhasani, Eugenia Kumacheva, Axel Gunther, Canada	***Motion of bubble rings in viscous fluid (FM17-020)*** M. Cheng, J. Lou, T. T. Lim, Singapore	***Dynamics of a drop trapped inside a circular hydraulic jump (FM06-047)*** Luc Lebon, Alexis Duschene, Laurent Limat, France
SM01: Biomechanics and biomaterials Chairs: Chao-Min Cheng, USA Taher Saif, USA **Room: Ballroom B**	***Mechanics vs. morphogenesis (SM01-002)*** Xi Chen, USA	***Wrinkling mode evolution in hyperelastic film/substrate bilayers (SM01-036)*** Yanping Cao, John W. Hutchinson, China	***An anisotropic discrete fiber model based on a generalized strain invariant with application to soft biological tissues (SM01-001)*** Cormac Flynn, M.B. Rubin, Israel
FM05: Convection Chairs: Herman Clercx, The Netherlands Penger Tong, Hong Kong, China **Room: Ballroom C**	***Analysis of the Bolgiano length scale the bulk of turbulent Rayleigh-Bénard convection (FM05-039)*** Matthias Kaczorowski, Keqing Xia, Hong Kong, China	***Horizontal rolls in a cylindrical layer with a local heating (FM05-041)*** Sukhanovsky Andrey, Evgrafova Anna, Russia	***Boundary-layer circulation in turbulent rotating convection (FM05-043)*** Rudie Kunnen, Richard Stevens, Jim Overkamp, Chao Sun, GertJan van Heijst, Herman Clercx, The Netherlands
FM15: Vortex dynamics Chairs: Konstantin Koshel, Russia Grigory Reznik, Russia **Room: 202A+B**	***Transport of admixture in a stationary vortex flow (FM15-020)*** Yuli D. Chashechkin, T. O. Chaplina, E.V. Stepanova, Russia	***Construction and evolution of vortex-surface fields (FM15-042)*** Yue Yang, Dale I. Pullin, USA	***Tackling structural complexity by Jones' polynomials (FM15-044)*** Xin Liu, Renzo L. Ricca, Australia
FS12 Education in mechanics Chairs: Katepalli Sreenivasan, USA Bhushan Karihaloo, UK **Room: 203A+B**	***Incoprorating research into first year fluid mechanics (FS12-017, invited lecture)*** Tsung-chow Su, USA	***Hands-on research schools on nonlinear dynamics (FS12-010)*** Katepalli R. Sreenivasan, USA	***Game-based interactive software for mechanical laboratory (FS12-012)*** Mikhail I. Karyakin, Alexander A. Lyapin, Taisiya V. Sigaeva, Russia
SM02 Contact and friction mechanics Chairs: Valentin L. Popov, Germany Yonggang Zheng, China **Room: 205A+B**	***Methodology for modeling surface and subsurface damage due to contact loading (SM02-013, invited lecture)*** Kun Zhou, John H. L. Pang, Bin Song, Fei Su, Leon M. Keer, Q. Jane Wang, Singapore	***Effect of the gap conditions in sliding contact of the periodic punch on the viscoelastic foundation (SM02-026)*** Irina G. Goryacheva, Julia Yu, Makhovskaya, Alexei Shpenev, Russia	***Method of reduction of dimensionality in contact mechanics (SM02-008)*** Valentin L. Popov, Germany
SM03: Damage mechanics Chairs: Carl T. Herakovich, USA Pierre Ladevèze, France **Room: 206A+B**	***On the intra/interlaminar coupling of laminated composites: modeling, identification and validation (SM03-001, invited lecture)*** Pierre Ladevèze, Federica Daghia, Emmanuelle Abisset, France	***The damage mechanics approach of bone considering the mechanical-electric-magnetic coupling effects (SM03-008)*** Shouwen Yu, Chuanyong Qu, Xiqiao Feng, China	***Damage development in steels subjected to exploitation processes: attempt to correlate the parameters of different testing techniques (SM03-005)*** Zbigniew L. Kowalewski, Katarzyna Makowska, Jacek Szelazek, Boleslaw Augustyniak, Poland
SM07: Impact mechanics and wave propagation Chairs: Ashkan Vaziri, USA Jilin Yu, China **Room: 208A+B**	***Wave propagation in multilayered structures composed of carbon nanotubes and rigid inter-layers under small velocity impacts (SM07-030)*** Ramathasan Thevamaran, Namiko Yamamoto, Chiara Daraio, USA	***Large scale optimal transportation meshfree (OTM) simulations of hypervelocity impact (SM07-035)*** Bo Li, Luigi Perotti, Mark Adams, Jonathan Mihaly, Ares J. Rosakis, Michael Ortiz, USA	***The star shaped crack patterns of broken windows (SM07-047)*** Nicolas Vandenberghe, Romain Vermorel, Emmanuel Villermaux, France
SM14: Stability of structures Chairs: Timothy Healey, China Michel Jabbour, USA **Room: 209A+B**	***Step instabilities during thin-film epitaxial growth (SM14-037, invited lecture)*** Michel Jabbour, USA	***Stretch-induced wrinkling of hyperelastic thin sheets (SM14-001)*** Vishal Nayyar, K. Ravi-Chandar, Rui Huang, USA	***Reduced stiffness critical pressure of spherical shells having localised imperfections (SM14-007)*** Seishi Yamada, Japan
FM14: Turbulence Chairs: Song Fu, China Parviz Moin, USA **Room: 207**	***Cross-independence closure for statistical mechanics of homogeneous isotropic turbulence (FM14-005, invited lecture)*** Tomomasa Tatsumi, Japan	***Experimental study of relative velocity statistics and collisions of inertial particles in turbulence (FM14-020)*** Saw Ewe-Wei, Bewley Gregory P., Bodenschatz Eberhard , Germany	***Geometrical features of streamlines and streamline segments in turbulent flows (FM14-031)*** Philip Schaefer, Markus Gampert, Norbert Peters, Germany

Session	***10:20***	***10:40 – 11:00***
FM06: Drops, bubbles and multiphase flows Chairs: Yoichiro Matsumoto, Japan Stephane Zaleski, France **Room: Ballroom A**	***Electric field induced drop-drop interactions (FM06-050)*** Gaurav Tomar, India	***Coffee Break*** ***Main Lobby, 1st floor***
SM01: Biomechanics and biomaterials Chairs: Chao-Min Cheng, USA Taher Saif, USA **Room: Ballroom B**	***Mechanical regulation of receptor-ligand binding by controllable transport (SM01-040)*** Jin Qian, Arnold L. Ju, Cheng Zhu, USA	
FM05: Convection Chairs: Herman Clercx, The Netherlands Penger Tong, Hong Kong, China **Room: Ballroom C**	***Analysing the spatio-temporal flow behavior in RB-convection using global statistical analysis (FM05-044)*** Ulrich Hansen, Klaus Petschel, Germany	
FM15: Vortex dynamics Chairs: Konstantin Koshel, Russia Grigory Reznik, Russia **Room: 202A+B**	***Lagrangian and Eulerian hybrid method for weakly nonlinear stability of a rotating flow in a cylinder of elliptic cross-section (FM15-047)*** Yasuhide Fukumoto, Youichi Mie, Japan	
FS12 Education in mechanics Chairs: Katepalli Sreenivasan, USA Bhushan Karihaloo, UK **Room: 203A+B**	***Mechanical education for nanoscience and nanotechnology in future (FS12-013)*** Wanlin Guo, China	
SM02 Contact and friction mechanics Chairs: Valentin L. Popov, Germany Yonggang Zheng, China **Room: 205A+B**	***A nano-cheese-cutter to measure interfacial adhesion of freestanding nano-fibers (SM02-019)*** Xin Wang, Johnny Najem, Shing-Chung Wong, Kai-tak Wan, USA	
SM03: Damage mechanics Chairs: Carl T. Herakovich, USA Pierre Ladeveze, France **Room: 206A+B**	***Quantitative damage evaluation of thermal barrier coatings subjected to tensile loading using acoustic emission method (SM03-022)*** Li Yang, Zhichun Zhong, Yichun Zhou, Chunsheng Lu, China	
SM07: Impact mechanics and wave propagation Chairs: Ashkan Vaziri, USA Jilin Yu, China **Room: 208A+B**	***Dynamic failure in metal-polymer bilayers (SM07-062)*** Santiago A. Morales, Aaron B. Albrecht, Haitao Zhang, Kenneth M Liechti, Krishnaswamy Ravi-Chandar, USA	
SM14: Stability of structures Chairs: Timothy Healey, China Michel Jabbour, USA **Room: 209A+B**	***Wrinkling of stretched elastic films via global parametric bifurcation (SM14-020)*** Qingdu Li, Timothy Healey, USA	
FM14: Turbulence Chairs: Song Fu, China Parviz Moin, USA **Room: 207**	***Toward a simplified wall-modeled large eddy simulation at high Reynolds number (FM14-032)*** Minjeong Cho, Jungil Lee, Haecheon Choi, South Korea	

Session	*9:20*	*9:40*	*10:00*
FM12: Non-Newtonian and complex fluids Chairs: Radhakrishna Sureshkumar, USA Keqin Zhu, China **Room: 210A**	***Dynamics and rheology of micellar fluids from molecular dynamics simulations (FM12-023, invited lecture)*** Ashish V. Sangwai, Radhakrishna Sureshkumar, USA	***Filament stretching of pressure sensitive adhesives with gas inclusions: a 3D hyperelastic-viscoelastic model and numerical simulations (FM12-022)*** Yannis Dimakopoulos, John Papaioannou, John Tsamopoulos, Greece	***Quantifying chain reptation in entangled polymer melts: topological and dynamical mapping of atomistic simulation results onto the tube model (FM12-026)*** Chunggi Baig, Pavlos S. Stephanou, Vlasis G. Mavrantzas, South Korea
FM08 Flow in thin films Chairs: James B. Grotberg, USA Serafim Kalliadasis, UK **Room: 210B**	***Film flow over small-amplitude step topography (FM08-008)*** M. G. Blyth, D. Tseluiko, D. T. Papageorgiou, J.-M. Vanden-Broeck, UK	***Rivulet evolution in gravity-driven thin-film flows (FM08-009)*** David Slade, Sergii Veremieiev, Yeaw C. Lee, Philip H. Gaskell, UK	***A model for particle laden flow in a spiral concentrator (FM08-010)*** Sungyon Lee, Yvonne Stokes, Andrea L. Bertozzi, USA
FS09: Mechanics of materials processing Chairs: Timothy J. Burns, USA Francisco Chinesta, Spain **Room: 211**	***A simple nonlinear cutting model for the quick qualitative description of chip formation (FS09-006, invited lecture)*** Gábor Csernák, Zoltán Pálmai, Hungary	***Three-dimensional transient numerical simulation of Gaussian laser beam drilling process (FS09-010)*** Zhifu Ge, Gang Yu, Xiuli He, Guoquan Lu, Shaoxia Li, China	***Fluid flow and its driving forces in laser dissimilar welding of stainless steel and nickel (FS09-012)*** Yaowu Hu, Xiuli He, Gang Yu, China
FS10: Porous media Chairs: Tomasz A. Kowalewski, Poland Marie-Christine Néel, France **Room: 212A**	***Probing memory effects in porous media using nuclear magnetic resonance (FS10-025, invited lecture)*** V. Guillon, S. H. Rakotonasy, D. Bauer, M. Fleury, Marie-Christine Néel, France	***Experimental study of drug release system based on electrospun nanofibres (FS10-007)*** Pawel Nakielski, Tomasz Kowalczyk, Tomasz A. Kowalewski, Poland	***Thermo-poro-elastic analysis of freezing behavior of porous materials saturated with saline solution (FS10-009)*** Qiang Zeng, Kefei Li, Teddy Fen-Chong, Patrick Dangla, China

Session	*10:20*	*10:40 – 11:00*
FM08 Flow in thin films Chairs: James B. Grotberg, USA Serafim Kalliadasis, UK **Room: 210B**	***A first integral of Navier-Stokes equations: thin film flow applications (FM08-012)*** Markus Scholle, Philip H. Gaskell, Andre Haas, Germany	***Coffee Break*** ***Main Lobby, 1st floor***
FS09: Mechanics of materials processing Chairs: Timothy J. Burns, USA Francisco Chinesta, Spain **Room: 211**	***Towards an integrated approach of production systems (FS09-002)*** Francisco Chinesta, Adrien Leygue, Elias Cueto, France	
FS10: Porous media Chairs: Tomasz A. Kowalewski, Poland Marie-Christine Néel, France **Room: 212A**	***Reservoir-scale simulation for salt-deposit dissolution with a diffuse interface model (FS10-013)*** Haishan Luo, Michel Quintard, Gérald Debenest, Farid Laouafa, France	

Session	*11:00*	*11:20*	*11:40*
FM06: Drops, bubbles and multiphase flows Chairs: Shmuel Rubinstein, Israel Akira Rinoshika, Japan **Room: Ballroom A**	***Prediction of bubble sound emissions using coupled oscillators (FM06-055)*** Richard Manasseh, Andrew Ooi, Australia	***Vortex shedding for drop creation (FM06-071)*** J. John Soundar Jerome, Stéphane Zaleski, Jean-Philippe Matas, Jérôme Hoepffner, France	***About oscillation effect on the penetration depth of water drop induced vortex ring (FM06-077)*** An-Bang Wang, Tetuko Kurniawan, Pei-Hsun Tsai, Taiwan, China
SM01: Biomechanics and biomaterials Chairs: Pasquale Ciarletta, France Jin Qian, China **Room: Ballroom B**	***Binding biomechanics of recombinant human beta 2 integrin (SM01-044)*** Ning Li, Debin Mao, Yixin Gong, Shouqin Lü, Yan Zhang, Mian Long, China	***Mechanochemical model of dynamic microtubule growth (SM01-054)*** Xiangying Ji, Xiqiao Feng, China	***Biphasic fiber-reinforced modeling of cartilage with sample-specific distributed collagen fiber orientations (SM01-042)*** David M. Pierce, Tim Ricken, Gerhard A. Holzapfe, Austria
FM05: Convection Chairs: Wenxian Lin, China Quan Zhou, China **Room: Ballroom C**	***Rayleigh-Bénard convection in liquids with temperature-dependent material properties (FM05-045)*** Susanne Horn, Olga Shishkina, Claus Wagner, Germany	***PIV study of behavior of interaction of twin fountains in homogeneous fluid (FM05-048)*** Hasan Mahmud, Blair Hill, Wenfeng Gao, Wenxian Lin, Yinghe He, Steven Armfield, Australia	***Periodic and quasiperiodic temperature oscillations in mixed convection (FM05-054)*** Daniel Schmeling, Johannes Bosbach, Claus Wagner, Germany
FM07: Flow instability and transition Chairs: Luca Brandt, Sweden Masato Nagata, Japan **Room: Function Hall A**	***Exact solutions at the edge of turbulence (FM07-091)*** Alberto de Lozar, Marc Avila, Fernando Mellibovsky, Nicolas Roland, Bjoern Hof, Germany	***Three-dimensional flow instabilities on disks of different aspect ratios (FM07-082)*** Sophie Goujon-Durand, Tomasz Bobinski, José E. Wesfreid, France	***Three-dimensional finite-amplitude solutions in rotating Poiseuille flow (FM07-092)*** Darren P. Wall, Masato Nagata, Japan
FM15: Vortex dynamics Chairs: Tatiana Chaplina, Russia Jiezhi Wu, China **Room: 202A+B**	***A point vortex model of singly-periodic four-vortex wake structures (FM15-048)*** Saikat Basu, Mark A. Stremler, USA	***Experiments on vertical motions of rotating flows over variable topography (FM15-051)*** Luis Zavala Sansón, G. J. F. van Heijst, Mexico	***Experimental study of synthetic jet vortex rings impinging on a wall (FM15-052)*** Yang Xu, Lihao Feng, Jinjun Wang, China
FS12 Education in mechanics Chairs: Wanlin Guo, China Ole Sigmund, Denmark **Room: 203A+B**	***Weighting function selection problem in the Galerkin method (FS12-015)*** Eero-Matti Salonen, Reijo Kouhia, Rauno Holopainen, Finland	***Toy models illustrating complex mechanical phenomena (FS12-016)*** Keith Moffatt, Tadashi Tokieda, UK	***Challenges to present a postgraduate finite element course in structural mechanics at the university of Pretoria (FS12-018)*** Schalk Kok, Daniel Nicolas Wilke, South Africa
SM04: Elasticity Chairs: Victor Eremeyev, Germany Mikhail Guzev, Russia **Room: 205A+B**	***Consistent beam theories (SM04-051)*** Reinhold Kienzler, Patrick Schneider, Germany	***Stability of aneurysm solutions for a fluid-filled elastic membrane tube (SM04-054)*** Andrej T. Il'ichev, Yibin Fu, Russia	***On the dispersion relation between nonlocal elasticity and lattice dynamics (SM04-055)*** C. W. Lim, G. Zhang, Hong Kong, China
SM03: Damage mechanics Chairs: Djimedo Kondo, France Keshi Zhang, China **Room: 206A+B**	***Analytical relations for random fatigue of single damage variable models (SM03-031)*** Elisha Rejovitzky, Eli Altus, Israel	***Nonlocal conditions for the transition from damage to a localized failure in granular and fibre-reinforced composites under quasistatic proportional and nonproportional loading (SM03-027)*** Alexey Vyacheslavovich Zaitsev, Anton Vladimirovich Kislitsyn, Yuriy Viktorovich Sokolkin, Russia	***Simulation and validation of a concurrent fatigue crack growth model (SM03-028)*** Zizi Lu, Jifeng Xu, Yongming Liu, China
SM07: Impact mechanics and wave propagation Chairs: Narinder Kumar Gupta, India Tongxi Yu, Hong Kong, China **Room: 208A+B**	***Design of shaped charge as oil well perforator (SM07-068)*** T. Elshenawy, Q. M. Li, UK	***On the wave catching-up phenomenon in a two-layer nonlinearly elastic composite bar (SM07-067)*** Shoujun Huang, Huihui Dai, Zhen Chen, Dexing Kong, China	***Impact deformation of functionally graded cellular solids (SM07-070)*** Changjian Shen, Guoxing Lu, Tongxi Yu, Singapore
SM06: Geophysics and geomechanics Chairs: Jacek Tejchman, Poland Antoinette Tordesillas, Australia **Room: 209A+B**	***Unified peak shear strength behavior of interface shear test and direct shear test — new insights from dem simulations (SM06-035)*** Jianfeng Wang, Hong Kong, China	***Two- and three-dimensional thermo-mechanical modeling of cenozoic lithospheric deformation in the Himalaya-Tibet-Pamir-Tien Shan (SM06-036)*** Jens Tympel, Stephan Sobolev, Germany	***Dynamic effects during alternate infiltration and drainage of unsaturated granular media (hydraulic ratcheting) studied using the Lattice Boltzmann Method (SM06-026)*** Alexander Scheuermann, A. Sergio Galindo-Torres, M. Dorival Pedroso, Ling Li, J. David Williams, Australia

Session	*12:00*	*12:20*	*12:40*
FM06: Drops, bubbles and multiphase flows Chairs: Shmuel Rubinstein, Israel Akira Rinoshika, Japan **Room: Ballroom A**	***Variable topology boundary element method (VTBEM) for simulating underwater explosion (UNDEX) bubble (FM06-091)*** Zhi Zong, Li Zhou, Zhangrui Li, China	***Drop evaporation on an isothermal or a diabatic solid ourface (FM06-102)*** M. Ait Saada, S. Chikh, L. Tadrist, S. Radev, Bulgaria	
SM01: Biomechanics and biomaterials Chairs: Pasquale Ciarletta, France Jin Qian, China **Room: Ballroom B**	***The structure and mechanical property of turtle shell (SM01-008)*** Chengwei Wu, Wei Zhang, Chenzhao Zhang, Zhen Chen, China	***Effects of nano-hydroxyapatite and carbon nanotubes hybrid ratio on Ni-Co biological coating's mechanical properties and biocompatibility (SM01-047)*** Xia Zhou, Guohui Qu, Shangyu Song, China	
FM05: Convection Chairs: Wenxian Lin, China Quan Zhou, China **Room: Ballroom C**	***Numerical investigation of local Kolmogorov scales in turbulent Rayleigh-Bénard convection (FM05-055)*** Sebastian Wagner, Olga Shishkina, Claus Wagner, Germany	***A Lagrangian take on convective heat transfer (FM01-011)*** M. F. M. Speetjens, The Netherlands	***Torsional oscillation of the large-scale circulation in turbulent thermal convection with varying Prantdl number (FM05-020)*** Yichao Xie, Ping Wei, Keqing Xia, Hong Kong, China
FM07: Flow instability and transition Chairs: Luca Brandt, Sweden Masato Nagata, Japan **Room: Function Hall A**	***Inviscid instability of a stably stratified boundary layer (FM07-024)*** Stéphane Le Dizès, Julien Candelier, Christophe Miliet, France	***Tracking of spatially localized solutions by a filtering method: application to the Swift-Hohenberg equation (FM14-033)*** Toshiki Teramura, Sadayoshi Toh, Japan	***Excitation of Goertler-instability modes due to surface vibrations: theory and experiment (FM07-037)*** Andrey Boiko, Yury Nechepurenko, Andrey Ivanov, Yury Kachanov, Dmitry Mischenko, Russia
FS12 Education in mechanics Chairs: Wanlin Guo, China Ole Sigmund, Denmark **Room: 203A+B**	***The concept of holding the international engineering mechanics contest (FS12-019)*** Alexandr Shimanovsky, Belarus	***Effective methods of teaching vectors in university introductory mathematics (FS12-009)*** Akinola P. Adegbola, Layeni Olawanle P., Olagunju Michael A., Nigeria	
SM03: Damage mechanics Chairs: Djimedo Kondo, France Keshi Zhang, China **Room: 206A+B**	***On coupling of multi- and transcale damage in hierachical microstructure of solid (SM03-020)*** Gang Qi, Ming Fan, Jianyu Li, Shihai Cui, China		
SM07: Impact mechanics and wave propagation Chairs: Narinder Kumar Gupta, India Tongxi Yu, Hong Kong, China **Room: 208A+B**	***Dynamic responses of an elastic ring on viscoelastic foundation to external impact (SM07-066)*** Liming Yang, Fenghua Zhou, Tongxi Yu, Hong Kong, China		

Lunch: 13:00 – 14:00, Exhibition Hall 5, underground floor

Session	*11:00*	*11:20*	*11:40*
FM14: Turbulence Chairs: Zhensu She, China Tomomasa Tatsumi, Japan **Room: 207**	***Numerical simulation of wall-bounded turbulent flows with linear effective viscosity model: drag reduction and new mechanistic insight (FM14-034)*** Changfeng Li, Fujun Guo, Yongchen Pan, Rui Wang, Bamin Khomami, China	***Relaminarization of wall turbulence by high-pressure ramps at low Reynolds numbers (FM14-035)*** Kwonyul Song, Jovan Jovanović, Ahmed Al-Salaymeh, Cornelia Rauh, Antonio Delgado, Germany	***Energy and helicity cascades in rotating turbulence (FM14-038)*** Rodion Stepanov, Russia
FS09: Mechanics of materials processing Chairs: Günter Radons, Germany Gábor Stépán, Hungary **Room: 210A**	***Stability of the state-dependent delay model of turning with depth of cut variation (FS09-016, invited lecture)*** Pankaj Wahi, India	***Injection moulding of polymers with micro and nano scale ridge and channel features (FS09-003)*** Nan Zhang, David J. Browne, Michael D. Gilchrist, Ireland	***Transient convection-diffusion modelling of peak temperature in orthogonal cutting (FS09-008)*** Timothy J. Burns, Steven P. Mates, Richard L. Rhorer, Eric P. Whitenton, Debasis Basak, USA
FM08: Flow in thin films Chairs: Pierre Colinet, Belgium Rouslan Krechetnikov, USA **Room: 210B**	***Landau-Levich flow visualization: revealing the flow topology responsible for the film thickening phenomena (FM08-013)*** Hans C. Mayer, Rouslan Krechetnikov, USA	***Morphology and stability of free surface films of polymer blends (FM08-021)*** Santiago Madruga, Fathi Bribesh, Uwe Thiele, Spain	***On two minimalist models for moving/evaporating contact lines without slip on a macroscopically dry homogeneous substrate (FM08-023)*** Pierre Colinet, Alexey Rednikov, Belgium
SM02: Contact and friction mechanics Chairs: Han Jiang, China Kun Zhou, Singapore **Room: 211**	***On the dynamics of frictional contact layers (SM02-040)*** Georg Ostermeyer, Nils Perzborn, Germany	***A unified analysis of a micro-beam. droplet and cnt ring adhered on a substrate (SM02-004)*** Jianlin Liu, China	***Simulation of dynamic contact behaviors of saturated porous media involving large deformation with the coupling convected particle domain interpolation method (SM02-037)*** Yonggang Zheng, Hongwu Zhang, Fei Gao, China
FS10: Porous media Charis: Xikui Li, China Guzel Bulgakova, Russia **Room: 212A**	***Action micromechanism between gemini surfactant DNGs and core porous wall (FS10-017)*** Chunyuan Gu, Qinfeng Di, Xinliang Wang, Yichong Cheng, Weipeng Ding, Wei Gong, Renliang Zhang, China	***Drained and undrained plane strain compression of porous rock (FS10-020)*** Roman Makhnenko, Joseph Labuz, USA	***Large scale fluid and solid properties in the Taupo Volcanic Zone, New Zealand (FS10-023)*** Graham J. Weir, New Zealand
SM09: Mechanics of phase transformations Chairs: Sergio Turteltaub, The Netherlands Yubao Zhen, China **Room: 212B**	***Shape memory alloys and collisions (SM09-002)*** Michel Frémond, Michele Marino, Italy	***Interfacial energy effects in evolving martensitic microstructures (SM09-009)*** Henryk Petryk, Stanislaw Stupkiewicz, Poland	***Phase transformations limit surfaces construction for elastic solids based on exact energy lower bounds (SM09-015)*** Alexander B. Freidin, Mikhail A. Antimonov, Andrey V. Cherkaev, Russia
SM14: Stability of structures Chairs: Oscar Lopez-Pamies, USA Rui Huang, USA **Room: 213A**	***Snap-buckling instability of beams and shells (SM14-035)*** Douglas P. Holmes, Dominic Vella, Tarun Sinha, Howard A. Stone, USA	***Localization and loss of macroscopic ellipticity in microstructured solids (SM14-016)*** Nikolaos Triantafyllidis, Maria Paola Santisi d'Avila, France	***Buckling and crushing of expanded honeycomb (SM14-011)*** Wen-Yea Jang, Stelios Kyriakides, Taiwan, China

Session	*12:00*	*12:20*	*12:40*
FM14: Turbulence Chairs: Zhensu She, China Tomomasa Tatsumi, Japan **Room: 207**	***A non-frozen flow model for pressure space-time correlations in turbulent shear flows (FM14-040)*** Li Guo, Guowei He, Xing Zhang, China		
FS09: Mechanics of materials processing Chairs: Günter Radons, Germany Gábor Stépán, Hungary **Room: 210A**	***Experimental identification of bi-stable parameter zones in milling processes (FS09-013)*** Gábor Stépán, Zoltan Dombovari, Hungary		
SM02: Contact and friction mechanics Chairs: Han Jiang, China Kun Zhou, Singapore **Room: 211**	***Numerical solution of non-smooth multibody systems (SM02-001)*** Friedrich Pfeiffer, Germany	***Periodic patterns formed by a rigid body bouncing on a vibrated plate (SM02-012)*** Jiao Wang, Caishan Liu, China	
FS10: Porous media Charis: Xikui Li, China Guzel Bulgakova, Russia **Room: 212A**	***Coupled multiphase flow transpo RT in deformable rock with consideration of microbiology (FS10-026)*** Xiaohui Chen, Xikui Li, UK		
SM09: Mechanics of phase transformations Chairs: Sergio Turteltaub, The Netherlands Yubao Zhen, China **Room: 212B**	***Influence of texture on the effective response of multiphase steels (SM09-016)*** Sergio Turteltaub, Sourena Yadegari, Akke Suiker, The Netherlands	***Volumetric phase transitions and cavitation in polymer gels (SM09-023)*** Fernando P. Duda, Angela C. Souza, Eliot Fried, Brazil	
SM14: Stability of structures Chairs: Oscar Lopez-Pamies, USA Rui Huang, USA **Room: 213A**	***An efficient Hermite reproducing kernel meshfree method for buckling analysis of Kirchhoff plates (SM14-039)*** Dongdong Wang, Huikai Peng, China		

Lunch: 13:00 – 14:00, Exhibition Hall 5, underground floor

Session	*14:00*
Closing Lecture Chair: Norman Fleck, UK **Room: Plenary Hall B**	***Entropic forces in the mechanics of solids*** Lambert Ben Freund, USA

Coffee Break:15:00 – 15:30, South Foyer, 4th floor

Session	*15:30 –16:30*
Closing Ceremony **Room: Plenary Hall B**	

ADDENDUM

Monday, 20 August 2012

Session	***16:00***	***16:20***	***16:40***
FS11: Foams and cellular materials Chairs: Stelios Kyriakides, USA Michael Ryvkin, Israel ***Room: 213B***	***Size-dependent and tunable elastic properties of hierarchical honeycombs and open-celled foams (FS11-002)*** Hanxing Zhu, UK	***Hierarchical honeycombs with enhanced mechanical properties (FS11-018)*** Amin Ajdari, Babak Haghpanah Jahromi, Hamid Nayeb-Hashemi, Ashkan Vaziri, USA	***Numerical modeling of the crushing response of aluminum open-cell random foams (FS11-004, invited lecture)*** Stavros Gaitanaros, Stelios Kyriakides, Andrew M. Kraynik, USA
	17:00	***17:20***	***17:40***
FS11: Foams and cellular materials Chairs: Stelios Kyriakides, USA Michael Ryvkin, Israel ***Room: 213B***	***Brittle fracture of open-cell Kelvin foam (FS11-009)*** Michael Ryvkin, Leonid Kucherov, Israel	***Impact and blast performance of sandwich panels with cellular honeycomb and lattice cores (FS11-006)*** Hans Obrecht, Ulf Reinicke, Marcel Walkowiak, Germany	

Tuesday, 21 August 2012

Session	***16:10***	***16:30***	***16:50***
FS11: Foams and cellular materials Chairs: Patrick R. Onck, The Netherlands Katia Bertoldi, USA ***Room: 213B***	***Buckling-induced chirality in cellular structures (FS11-016, invited lecture)*** Katia Bertoldi, Sung Kang, Sicong Shan, Jongmin Shim, Wim Noorduin, Mughees Khan, Joanna Aizenberg, USA	***The charge-induced actuation of nanoporous metals (FS11-012)*** S. S. R. Saane, P. R. Onck, The Netherlands	***Velocity attenuation and force transfer in foam-filled layered claddings subjected to blast and impact (FS11-015)*** Dora Karagiozova, Bulgaria
	17:10	***17:30***	***17:50***
FS11: Foams and cellular materials Chairs: Patrick R. Onck, The Netherlands Katia Bertoldi, USA ***Room: 213B***	***Inertia effect in the impact behaviour of cellular materials (FS11-011)*** Bing Hou, Han Zhao, Stéphane Pattofatto, Yulong Li, France	***Quantifying the dynamic properties of metallic thin-walled hollow sphere foams (FS11-023)*** Peifeng Li, Nik Petrinic, Clive R. Siviour, Singapore	

Wednesday, 22 August 2012

Session	***10:50***	***11:10***	***11:30***
FS11: Foams and cellular materials Chairs: Iwona Jasiuk, USA Ashkan Vaziri, USA ***Room: 213B***	***Experimentally-based modeling of trabecular bone as a complex cellular material (FS11-021)*** Iwona Jasiuk, Elham Hamed, Timothy Patterson, Jun Li, Alexander Setters, USA	***Probabilistic homogenization of solid foams with application to sandwich structures (FS11-003)*** Joerg Hohe, Carla Beckmann, Germany	***Mechanical properties and failure modes of carbon fiber composite pyramidal lattice structures (FS11-022)*** Jian Xiong, Ashkan Vaziri, Linzhi Wu, Li Ma, Zhen Cai, China
	11:50	***12:10***	***12：30***
FS11: Foams and cellular materials Chairs: Iwona Jasiuk, USA Ashkan Vaziri, USA ***Room: 213B***	***Dynamic crushing of hexagonal honeycombs with various cell-wall angles (FS11-005)*** L. L. Hu, T. X. Yu, Hong Kong, China		

ADDENDUM

Tuesday, 21 August 2012

Session	***8:30 – 9:15***
Sectional Lecture Chairs: Henrik Bruus, Denmark Jing Fan, China **Room: Room: Ballroom C**	***Droplet splashing (SL03)*** Michael Brenner, USA

Wednesday, 22 August 2012

Session	***12:10***
SM12: Nanostructures and MEMS Chairs: Marc Geers, The Netherlands Harley Johnson, USA **Room: 213A**	***The flexing of locally isostatic periodic structures (SM17-023)*** Simon D. Guest, UK

Thursday, 23 August 2012

Session	***14:13***
FM07: Flow instability and transition Chairs: José Eduardo Wesfreid, France Andrey Boiko, Russia **Room: Ballroom B**	***On the evolution of a SF_6 gas cylinder under re-shock conditions (FM07-038)*** Zhigang Zhai, Ting Si, Xisheng Luo, Jiming Yang, China

Session	***12:20***
SM12: Nanostructures and MEMS Chairs: Kenneth Liechti, USA Teng Li, USA **Room: 207**	***Buckling instability of carbon nanoscrolls and its potential applications (SM12-028)*** Teng Li, Zhao Zhang, Yinjun Huang, USA

Friday, 24 August 2012

Session	***12:20***
SM02: Contact and friction mechanics Chairs: Han Jiang, China Kun Zhou, Singapore **Room: 211**	***Periodic patterns formed by a rigid body bouncing on a vibrated plate (SM02-012)*** Jiao Wang, Caishan Liu, China