

Sunday, 18 November 2012
Sessions A – E

Sunday Morning, 18 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
A1. Fluid Structure Interactions I Room: Room: 22 Chair: K. Shoele, RE Vision Consulting	A1.01 Limits of the potential flow model for obstacle detection using a lateral line <i>A. Maertens, G. Weymouth, M. Triantafyllou</i>	A1.02 A finite volume algorithm for fluid-structure interaction problems using unstructured meshes <i>B. Basara</i>	A1.03 A numerical framework for modelling floating wind turbines <i>A. Vire, J. Xiang, M. Piggott, J. Latham, C. Pain</i>	A1.04 Dynamic evolution of a flow to localized, kinetics-driven ablation or coagulation <i>D. Hagan, R. Crocker, Y. Dubief</i>	A1.05 High Order Solution of the Incompressible Navier-Stokes Equations in Immersed Domains <i>J. Nave, A. Marques, R. Rosales</i>	A1.06 Numerical Capture of Wing-tip Vortex Using Vorticity Confinement <i>B. Zhang, J. Lou, C. Kang, A. Wilson, J. Lundberg, R. Bensow</i>
A2. Convection and Buoyancy-Driven Flows I: Rayleigh-Benard Convection Room: Room: 23A Chair: E. Brown, U. of California, Merced	A2.01 Comparison between 2D and 3D turbulent Rayleigh-Benard convection <i>E. van der Poel, R. Stevens, D. Lohse</i>	A2.02 Supercritical Quasi-conduction States and Multiple Stable Flows in Stochastic Rayleigh-Benard Convection <i>D. Venturi, G. Karniadakis</i>	A2.03 Geometry-dependence of dynamics of the large-scale circulation in turbulent Rayleigh-Benard convection <i>E. Brown, R. Hawkins</i>	A2.04 Comparison between rough and smooth plates within the same Rayleigh-Benard cell <i>E. Rusaouen, J. Salort, F. Seychelles, J. Tisserand, M. Creyssels, O. Liot, B. Castaing, F. Chilla</i>	A2.05 Lagrangian tracking of an instrumented particule in Rayleigh-Benard flow <i>F. Seychelles, X. Riedinger, J. Salort, E. Rusaouen, M. Gibert, Y. Gasteuil, O. Liot, B. Castaing, F. Chilla</i>	A2.06 Spatial Dependence of Boundary Layers in Simulations of Rayleigh-Benard Convection <i>J. Scheel, J. Munoz</i>
A3. Multiphase Flows: Cavitation Room: Room: 23B Chair: M. Wosnik, U. of New Hampshire	A3.01 Velocimetry in both phases of a cavitating flow by fast X-ray imaging <i>O. Coutier-Delgosha, I. Khlifa, M. Hocevar, S. Fuzier, A. Vabre, K. Fezzaa</i>	A3.02 Time Resolved 2D X-ray Densitometry of a Cavitating Wedge <i>S. Makiharju, H. Ganesh, S. Ceccio</i>	A3.03 Large eddy simulation of cavitating mixing layer: the effect of splitter plate <i>K. Anupindi, D. Shetty, S. Frankel</i>	A3.04 Towards DNS/LES of cavitating flows in complex geometries <i>A. Gnanaskandan, K. Mahesh</i>	A3.05 Cavitation Characteristics of a NACA 63-424 Hydrofoil and Performance Comparison with a Bidirectional Version of the Foil <i>I. Nedyalkov, M. Wosnik</i>	A3.06 Large Eddy Simulation of cavitation in turbulence <i>S. Chumakov, D. Cook, F. Ham, U. Iben</i>
A4. Drops I Room: Room: 23C Chair: S. Morris, U. of California, Berkeley	A4.01 Effects of microscale inertia on heat or mass transfer from a drop <i>D. Krishnamurthy, G. Subramanian</i>	A4.02 When a water drop freezes before it solidifies <i>P. Kavehpour, S. Davis, F. Tavakoli</i>	A4.03 Fluid Dynamics of Condensed Droplets on Hybrid Surfaces <i>C. Yao, J. Alvarado, C. Marsh, A. Jacobi</i>	A4.04 Evaporation control of a drop on fibers <i>C. Duprat, A. Bick, H. Stone</i>	A4.05 Directional motion of evaporating droplets on gradient surfaces <i>S. Yao, L. Xu, Z. Li</i>	A4.06 Apparent contact angle of an evaporating drop <i>S. Morris</i>
A5. Computational Fluid Dynamics I Room: Room: 24A Chair: G. Iaccarino, Stanford U.	A5.01 An Improved Advection Scheme for Implicit Interfaces on Cartesian Grids <i>Z. Qin, K. Delaney, A. Riaz, E. Balaras</i>	A5.02 The immersed interface method for simulating two-fluid flows <i>S. Xu, M. Uhl</i>	A5.03 Interface-tracking using a compressive advection method and a compositional modelling approach <i>D. Pavlidis, J. Gomes, C. Pain, O. Matar</i>	A5.04 Interface-tracking electro-hydrodynamic model for droplet coalescence <i>L. Crowl Erickson, D. Noble</i>	A5.05 Numerical simulation in 3D of atomizing coaxial gas-liquid jets <i>G. Agbaglah, D. Fuster, G. McBain, S. Popinet, S. Zaleski</i>	A5.06 An Optimization-Based Lagrangian Particle Method for Navier-Stokes <i>P. Covington, F. Ham, P. Moin</i>
A6. Electrokinetics I Room: Room: 24B Chair: W. Ristenpart, U. of California, Davis	A6.01 Modeling the Transport of Colloids to Electrode Strips During Electrophoretic Deposition <i>A. Pascall, K. Sullivan, J. Kuntz</i>	A6.02 Electrohydrodynamic interactions of spherical particles under Quincke rotation <i>D. Das, D. Saintillan</i>	A6.03 Electro-orientation as a facile way to characterize the electrical properties of nanowires <i>C. Akin, J. Yi, J. Shan, Q. Chen, W. Xu, Y. Shi</i>	A6.04 Accurate predictions of dielectrophoretic force and torque on particles with strong mutual field, particle, and wall interactions <i>Q. Liu, K. Reifsnider</i>	A6.05 Role of Solution Conductivity in Reaction Induced Charge Auto-Electrophoresis <i>J. Moran, J. Posner</i>	A6.06 Reservoir-based dielectrophoresis (rDEP) for continuous separation of particles based upon surface charge <i>X. Xuan, S. Patel, S. Qian</i>
A7. Microfluidics: Methods and Devices I Room: Room: 24C Chair: A. Hirs, Rensselaer Polytechnic Institute	A7.01 Microfluidic synthesis of crimped fibers <i>J. Nunes, H. Constantin, T. Al-Housseiny, H. Stone</i>	A7.02 The use of sequences of pillars to engineer fluid cross-sectional shape via inertial flow deformations <i>H. Amini, M. Masaeli, E. Sollier, Y. Xie, B. Ganapathysubramanian, H. Stone, D. Di Carlo</i>	A7.03 Using in-fiber fluid instabilities for the scalable production of structured spherical particles <i>A. Abouraddy, J. Kaufman, G. Tao, S. Shabahang, E. Banaei, D. Deng, X. Liang, S. Johnson, Y. Fink</i>	A7.04 Flow-induced protein crystallization: Macroscopic effects on 2D crystals <i>J. Young, D. Posada, A. Hirs, J. Lopez</i>	A7.05 The Correlated Dynamics of a Pair of Tethered Microcantilevers in a Viscous Fluid <i>B. Robbins, M. Radium, J. Walz, W. Ducker, M. Paul</i>	A7.06 Measuring ultralow interfacial tensions with magnetic particles in microchannels <i>S. Tsai, J. Wexler, J. Wan, H. Stone</i>
A8. Particles: Gravity and Settling Room: Room: 25A Chair: K. Riger, U. of Maryland	A8.01 Settling Regimes of Inertial Particles in Turbulence <i>G. Good, P. Ireland, E. Saw, G. Bewley, E. Bodenschatz, Z. Warhaft</i>	A8.02 Dynamics of gravity-driven, particle-laden thin-film flows <i>A. Mavroustaki, A. Bertozzi</i>	A8.03 Dynamics of particle settling and resuspension in viscous liquid films <i>A. Bertozzi, N. Murisic, B. Pausader, D. Peschka</i>	A8.04 Effect of gravity on the preferential concentration of heavy particles <i>Y. Park, C. Lee</i>	A8.05 A Voronoi Analysis of Preferential Concentration of Heavy Particles in Active Grid Generated Turbulence <i>M. Obligado, A. Cartellier, M. Bourgoin</i>	A8.06 How gravity and size affect the acceleration statistics of bubbles in turbulence <i>V. Prakash, Y. Tagawa, E. Calzavarini, J. Martinez Mercado, F. Toschi, D. Lohse, C. Sun</i>
A9. Interfacial/Thin Film Instability I Room: Room: 25B Chair: T. Ward, North Carolina State U.	A9.01 Gas-driven displacement of a non-Newtonian liquid in a radial Hele-Shaw cell <i>A. White, T. Ward</i>	A9.02 Wave Structure and Velocity Profiles in Downwards Gas-Liquid Annular Flows <i>I. Zadrazil, G. Hewitt, O. Matar, C. Markides</i>	A9.03 Wave structure in Upwards Gas-Liquid Annular Flows <i>Y. Zhao, G. Hewitt, O. Matar, C. Markides</i>	A9.04 Viscous liquid thin-film flow inside a tube <i>H. Ogrosky, R. Camassa, M. Forest, C. Joy, J. Kim, J. Olander</i>	A9.05 Reconstruction of a Slippery Undulated bottom Substrate for a thin film flow over it with a Prescribed Spatially Periodic Free Surface <i>U. Ranganathan</i>	A9.06 Dynamics of turbulent falling films <i>L. O'Naraigh, O. Matar</i>
A10. Instability: Jets, Wakes and Shear Layers I Room: Room: 25C Chair: C. Caulfield, BP Institute and DAMTP Cambridge	A10.01 Nonlinear destabilization of stably stratified shear flow <i>N. Mkhinini, T. Dubos, P. Drobinski</i>	A10.02 On the dynamics of shear layers formed on the interface between a porous strip and a clear fluid <i>P. Antoniadis, M. Papalexandris</i>	A10.03 Oblique laminar-turbulent interfaces in plane shear flows <i>Y. Duguet, P. Schlatter</i>	A10.04 Gravity, surfactants and interfacial instabilities of shear flows <i>D. Halpern, A. Frenkel, A. Schweiger</i>	A10.05 Trailing edge effect on fast mixing in forced confined mixing layers <i>W. Zhao, G. Wang</i>	A10.06 Transient perturbation growth in time-dependent mixing layers <i>C. Caulfield, C. Arratia, J. Chomaz</i>

Sunday Morning, 18 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
A11. Bubbles I Room: Room: 26A Chair: F. Pereira, CNR-INSEAN, The Italian Ship Model Basin	A11.01 Formation of Micro-Scale Gas Pockets From Underwater Wall Orifices <i>F. Pereira, M. Gharib</i>	A11.02 Writing bubbles <i>S. Wildeman, H. Lhuissier, C. Sun, A. Prosperetti, D. Lohse</i>	A11.03 The Influence of Injection Angle on Bubble Formation from a Micro-Pillar <i>F. Houshmand, D. Elcock, Y. Peles</i>	A11.04 Highly time-resolved measurement for bubble nucleation induced by femtosecond laser pulses <i>Y. Mizushima, T. Saito</i>	A11.05 Simulated Collapse of Small Bubble Clusters on a Wall <i>A. Tiwari, C. Pantano, J. Freund</i>	A11.06 Simulations of surfactant effects on the coalescence of drops and bubbles <i>D. Martin, F. Blanchette</i>
A12. Vortex I Room: Room: 26B Chair: A. Banerjee, Lehigh U.	A12.01 Accuracy of current actuator-line modeling methods in predicting blade loads and wakes of wind turbines <i>P. Jha, M. Churchfield, P. Moriarty, S. Schmitz</i>	A12.02 Vertical Axis Wind Turbine flows using a Vortex Particle-Mesh method: from near to very far wakes <i>S. Backaert, P. Chatelain, G. Winckelmans, S. Kern, T. Maeder, D. von Terzi, W. van Rees, P. Koumoutsakos</i>	A12.03 Three dimensional visualization of the interaction between energetic coherent motions and tip vortices in the wake of an axial-flow marine turbine <i>D. Troolin, L. Chamorro, S. Lee, R. Arndt, F. Sotiropoulos</i>	A12.04 Flow Behavior Around Coupled, Rotating Turbines in Steady Flow <i>M. Fu, J. Dabiri</i>	A12.05 Breaking the Symmetry with Flexible Blades <i>J. Cosse, D. Kim, M. Gharib</i>	A12.06 Optimum design of Hydrokinetic turbine based on Fluid structure interaction analysis <i>N. Kolekar, A. Banerjee</i>
A13. Geophysical: General I Room: Room: 27A Chair: P. Linden, U. of Cambridge	A13.01 Numerical Simulation of the tidal effects on estuarine circulation in the San Juan Bay <i>E. Garcia, M. Canals, J. Capella, J. Morell, S. Leonardi</i>	A13.02 Cross-shore thermally-driven exchange on two coral reef shorelines <i>G. Pawlak, L. Tuthill, W. Judith, M. Merrifield, S. Monismith</i>	A13.03 Wave, Current and Bottom Topographical Interactions in the Coastal Ocean Bottom Boundary Layer <i>A. Nayak, C. Li, D. Choi, J. Katz</i>	A13.04 Applications the Lagrangian description in aperiodic flows <i>C. Mendoza, A. Mancho</i>	A13.05 Formation and fate of contaminant particles controlled by turbulent coherent structures and geochemistry in a reactive river confluence <i>C. Escuriaga, C. Gonzalez, P. Guerra, P. Pasten, G. Pizarro</i>	A13.06 Water-wave diffraction by small undulation on a porous ocean-bed in the presence of surface tension in a two-layer fluid <i>S. Martha, S. Panda</i>
A14. General Experiments I Room: Room: 27B Chair: G. Spedding, U. of Southern California	A14.01 Multi-variable calibration of temperature estimation in individual non-encapsulated thermo liquid crystal micro particles <i>R. Segura, C. Cierpka, M. Rossi, C. Kähler</i>	A14.02 Laboratory investigation of the erosion of cohesive sediments under oscillatory flows using a synchronized imaging technique <i>I. Sou, J. Calantoni, A. Reed, Y. Furukawa</i>	A14.03 A new method to determine the yield stress of diluted polymeric solutions <i>E. Soto, S. Ruiz, M. Cordova Aguilar</i>	A14.04 Plasma Adaptive Optics Characterization using Dispersive FTIR Interferometry <i>B. Neiswander, E. Matlis, T. Corke</i>	A14.05 Visualization of Capsule Reentry Vehicle Heat Shield Ablation using Naphthalene Planar Laser-Induced Fluorescence Imaging <i>C. Combs, N. Clemens, P. Danehy</i>	A14.06 Development of a Digital Fringe Projection Technique to Quantify the Transient Behavior of Wind-Driven Surface Droplet/Rivulet Flows <i>K. Zhang, S. Zhang, H. Hu</i>
A15. Biofluids: Micro-PIV Room: Room: 28A Chair: D. Webster, Georgia Institute of Technology	A15.01 Metachronal Propulsion, Hovering, and Signaling: High-Speed Tomographic PIV Measurements of Swimming Antarctic Krill <i>J. Yen, D. Murphy, D. Webster</i>	A15.02 Application of micro-PIV to the study of staphylococci bacteria bio-film dynamics <i>E. Sherman, K. Bayles, D. Moormeier, T. Wei</i>	A15.03 Roll and Yaw of Paramecium swimming in a viscous fluid <i>S. Jung, S. Jana, M. Giarra, P. Vlachos</i>	A15.04 Employing an Internal Wavemaker to Simulate Sensory Cues in the Plankton <i>A. True, D. Webster, M. Weissburg, J. Yen</i>	A15.05 High Speed Tomographic PIV Measurements of Copepod Escape Jumps <i>D. Webster, D. Murphy, J. Yen</i>	A15.06 High-Speed Hopping: Time-Resolved Tomographic PIV Measurements of Water Flea Swimming <i>D. Murphy, D. Webster, J. Yen</i>
A16. Biofluids: Valves, Stents and Devices Room: Room: 28B Chair: M. Vukicevic, Clemson U.	A16.01 Transcatheter valve implantation can alter fluid flow fields in aortic sinuses and ascending aorta <i>N. Saikrishnan, A. Yoganathan</i>	A16.02 Integrating bio-prosthetic valves in the Fontan operation - Novel treatment to control retrograde flow in caval veins <i>M. Vukicevic, T. Conover, J. Zhou, T. Hsia, R. Figliola</i>	A16.03 Finite Element CURVIB method for fluid-structure interaction simulations of tissue heart valves <i>A. Gilmanov, H. Stolarski, T. Le, F. Sotiropoulos</i>	A16.04 Experimental investigation of the effects of inserting a bovine venous valve in the inferior vena cava of Fontan circulation <i>A. Santhanakrishnan, J. Johnson, M. Kotz, E. Tang, R. Khiabani, A. Yoganathan, K. Maher</i>	A16.05 Mitigation of Shear-Induced Blood Damage of Mechanical Bileaflet Heart Valves using Embedded Vortex Generators <i>P. Hidalgo, S. Arjunon, N. Saikrishnan, A. Yoganathan, A. Glezer</i>	A16.06 Simulations of pulsatile suspension flow through bileaflet mechanical heart valves to quantify platelet damage <i>B. Yun, C. Aidun, A. Yoganathan</i>
A17. Biofluids: Flapping and Flying I Room: Room: 28C Chair: H. Choi, Seoul National U.	A17.01 Flying in Two Dimensions <i>M. Prakash, T. Bardon</i>	A17.02 Axial flow effects on robustness of vortical structures about actively deflected wings in flapping flight <i>A. Medina, J. Kweon, H. Choi, J. Eldredge</i>	A17.03 Quasi-Steady Limit of Flow Structure on Flapping Wing in Mean Flow <i>M. Bross, C. Ozen, D. Rockwell</i>	A17.04 Inline Motion in Flapping Foils for Improved Force Vectoring Performance <i>J. Izraelevitz, G. Weymouth, M. Triantafyllou</i>	A17.05 Three-dimensional flow measurements of a differentially driven flapping wing mechanism <i>E. Hardester, S. Thomson, T. Truscott</i>	A17.06 Flight simulations of a two-dimensional flapping wing by the IB-LBM <i>T. Inamura, Y. Kimura, K. Suzuki</i>
A18. Biofluids: General Room: Room: 28D Chair: L. Brandt, KTH, Stockholm	A18.01 Fluid fragmentation and disease transmission <i>L. Bourouiba, J. Bush</i>	A18.02 The fluid dynamics of human birth <i>A. Lehn, M. Leftwich</i>	A18.03 Evolution of a pre and post lens tear film with a contact lens <i>M. Gerhart, D. Anderson</i>	A18.04 A Model Problem for Tear Film Distribution on a Moving Rectangular Domain <i>Q. Deng, T. Driscoll, R. Braun</i>	A18.05 Modeling Tear Film Dynamics on a 2-D Eye-shaped Domain <i>L. Li, R. Braun, K. Maki, W. Henshaw</i>	A18.06 Two Layer Model for Local Tear Film Dynamics <i>N. Gewecke, R. Braun, C. Breward, E. King-Smith</i>
A19. Mini-Symposium: High-Speed, High-Energy Multimaterial Flows Room: Room: 28E Chair: G. Jacobs, San Diego State U.	A19.01 Development of a multiscale Eulerian-Lagrangian method for high-speed multi-material flows <i>U. Kumar</i>		A19.02 Toward Rigorous Modeling of Extreme Compressible Multiphase Flows <i>Y. Ling, M. Parmar, S. Annamalai, S. Balachandrar, D. Frost</i>		A19.03 Closure Models for Turbulent Particle-laden Flows from Particle-resolved Direct Numerical Simulation <i>S. Subramaniam, S. Tenneti, M. Mehrabadi, R. Garg</i>	
A20. Turbulent Boundary Layers I: Large Structures Room: Room: 30A Chair: N. Hutchins, U. of Melbourne	A20.01 The large-scale wall-to-wall interaction in fully developed turbulent channel flow <i>Y. Kwon, K. Chauhan, C. de Silva, J. Monty, N. Hutchins</i>	A20.02 Experimental investigation of coherent structures in turbulent pipe flow using a large-scale pipe flow facility <i>D. Dennis</i>	A20.03 Study of very-large-scale motions in turbulent pipe flow <i>J. Lee, H. Sung</i>	A20.04 Structural organization of large and very-large scales in turbulent pipe flow simulation <i>J. Baltzer, R. Adrian, X. Wu</i>	A20.05 Amplitude modulation by a synthetic very large-scale motion (VLSM) in the turbulent boundary layer <i>I. Jacobi, B. McKeon</i>	A20.06 Conditional analysis of the statistics near the turbulent/non-turbulent interface of turbulent boundary layers <i>H. Ogasawara, T. Ishihara</i>

Sunday Morning, 18 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
A21. Separated Flows I Room: Room: 30B Chair: A. Domaradzki, U. of Southern California	A21.01 Numerical simulation of flow over three-dimensional dunes <i>U. Piomelli, M. Omidyeganeh</i>	A21.02 Numerical simulation of the flow over Barchan dunes <i>M. Omidyeganeh, U. Piomelli, K. Christensen, J. Best</i>	A21.03 LES of a ducted propeller with rotor and stator in crashback <i>H. Jang, K. Mahesh</i>	A21.04 An investigation of the dynamics of marine propeller tip vortices using large-eddy simulations <i>S. Schroeder, E. Balaras</i>	A21.05 Large Eddy Simulation of a Gas-Turbine Model Combustor <i>Y. See, M. Ihme</i>	A21.06 LES of Separated Flows Over an Airfoil at Moderate Reynolds Numbers <i>G. Castiglioni, J. Domaradzki, M. Grilli, S. Hickel</i>
A22. Turbulence Modeling: LES/RANS Room: Room: 30C Chair: A. Staples, Virginia Polytechnic Institute and State U.	A22.01 A posteriori analysis of spatial filters for approximate deconvolution large eddy simulations of homogeneous incompressible flows <i>A. Staples, O. San</i>	A22.02 A "true" Unsteady RANS model of turbulence with inherent forcing <i>S. Jakirlic, R. Maduta</i>	A22.03 A-priori analysis of subgrid scalar flux models for turbulent high Schmidt number passive scalar mixing <i>S. Verma, G. Blanquart</i>	A22.04 Implicit LES of turbulent flows with a high order discontinuous Galerkin method <i>S. Gremmo, C. Carton de Wiart, B. Gorissen, K. Hillewaert, G. Winckelmans, G. Coussement, L. Bricteux</i>	A22.05 Blending regularization and eddy viscosity models for large eddy simulation <i>R. Verstappen</i>	A22.06 Model Invariance as a Basis for Hybrid LES-RANS Techniques <i>S. Woodruff</i>
A23. Turbulence Theory: Isotropic Turbulence Room: Room: 30D Chair: S. Almalkie, U. of Massachusetts Amherst	A23.01 Invariants of the reduced velocity gradient tensor in turbulent flows <i>J. Cardesa, D. Mistry, L. Gan, J. Dawson</i>	A23.02 Evolution of the velocity gradient invariants of fractal-generated turbulence <i>R. Fernandes, B. Ganapathisubramani, C. Vassilicos</i>	A23.03 The Forward-Backward Time Asymmetry in Shape Deformation of Tetrahedra in Fully Developed Turbulence <i>J. Mutschall, H. Xu, A. Pumir, E. Bodenschatz</i>	A23.04 Intense dissipative mechanisms of strong thin shear layers in high Reynolds number turbulence <i>T. Ishihara, J. Hunt, Y. Kaneda</i>	A23.05 On the angle between relative velocity and relative acceleration between two fluid particles in turbulence <i>H. Xu, A. Pumir, E. Bodenschatz</i>	A23.06 Wind tunnel measurements of scale-by-scale energy transfer, dissipation, advection and production/transport in equilibrium and nonequilibrium decaying turbulence <i>P. Valente, C. Vassilicos</i>
A24. Acoustics I: Turbulence and Aerodynamics Room: Room: 30E Chair: D. Bodony, U. of Illinois at Urbana-Champaign	A24.01 Discrete tones around airfoils: a global stability analysis. <i>M. Fosas de Pando, P. Schmid, D. Sipp</i>	A24.02 Noise prediction from external flows using Ffowcs-Williams and Hawkings techniques <i>Z. Nitzkorski, K. Mahesh</i>	A24.03 Numerical investigation of acoustic radiation from vortex-airfoil interaction <i>A. Legault, M. Ji, M. Wang</i>	A24.04 Effects of step non-compactness and free-stream convection on step noise <i>J. Hao, A. Eltaweel, M. Wang</i>	A24.05 Low Mach number prediction of the acoustic signature of fractal-generated turbulence <i>S. Laizet, V. Fortuné, E. Lamballais, C. Vassilicos</i>	A24.06 Mechanisms of "crackle" acoustic radiation from high speed turbulence <i>A. Anderson, J. Freund</i>
A25. Flow Control: General I Room: Room: 31A Chair: J. Little, U. of Arizona	A25.01 Maximum-entropy principle as Galerkin modelling paradigm <i>B. Noack, R. Niven, C. Rowley</i>	A25.02 Optimal mode decomposition for unsteady and turbulent flows <i>A. Wynn, D. Pearson, B. Ganapathisubramani, P. Goulart</i>	A25.03 The Influence of Relative Humidity on Dielectric Barrier Discharge Plasma Flow Control Actuator Performance <i>M. Wicks, F. Thomas, T. Corke, M. Patel</i>	A25.04 Turbine blade cooling using Coulomb repulsion <i>R. Breidenthal, J. Colaninno, J. Dees, D. Goodson, I. Krichtafovitch, T. Prevo</i>	A25.05 On Optimal Model Identification in Hydrodynamics <i>B. Protas, V. Bukshytnov, B. Noack, M. Morzynski</i>	A25.06 Global Model Reduction for Fluid-Structure System <i>M. Wei, M. Xu, T. Yang</i>
A26. Reactive Flows I: Turbulent Combustion Experiments Room: Room: 31B Chair: T. Lieuwen, Georgia Institute of Technology	A26.01 Dynamics of a Variable Density Ratio, Reacting Jet Issuing into a Vitiated Crossflow <i>B. Wilde, J. Seitzman, T. Lieuwen</i>	A26.02 Simultaneous krypton PLIF, LII and PIV measurements in a sooting non-premixed jet flame <i>O. Buxton, R. Burns, N. Clemens</i>	A26.03 Experimental investigation of self-turbulent flames <i>C. Almarcha, J. Quinard</i>	A26.04 Turbulent Premixed Combustion in V-flames: Statistics of Flame Front Position <i>S. Keirikhah, Gülder</i>	A26.05 Vortex Breakdown in a Swirl-Stabilized Combustor <i>Z. Rusak, C. Umeh, E. Gutmark</i>	A26.06 High speed OH-PLIF measurement of self-excited circumferential instabilities in an annular combustion chamber <i>N. Worth, J. Dawson</i>
A27. Rarefied Gases Room: Room: 31C Chair: J. Sader, California Institute of Technology	A27.01 The Effect of Rotational Non-equilibrium on Chemical Reaction Rates Predicted by the Quantum-Kinetic (Q-K) Model for Direct Simulation Monte Carlo (DSMC) Simulations <i>M. Gallis, J. Torczynski</i>	A27.02 Asymptotic analysis of the Boltzmann-BGK equation for oscillatory gas flows with application to thermal creep <i>J. Nassios, J. Sader</i>	A27.03 Numerical study of oscillatory Couette flow in rarefied gas <i>Y. Yap, J. Sader, Y. Shi</i>	A27.04 Modeling fluid flows in micro devices: the challenge of Knudsen-layer behavior <i>N. Dongari, Y. Zhang, J. Reese</i>	A27.05 Exploiting coupled heat and momentum transfer in nanostructured gas-filled channels <i>T. Baier, S. Hardt</i>	A27.06 Flow of a rarefied gas around moving vanes in Crookes radiometer: Numerical analysis of a model problem <i>S. Taguchi, K. Aoki</i>
A28. Free-Surface Flows I Room: Room: 32A Chair: E. Ramos, Center for Energy Research, National Autonomous U. of Mexico	A28.01 The Rotating Polygon Instability of a Swirling Free Surface Flow <i>T. Bohr, L. Tophøj, J. Mougel, D. Fabre</i>	A28.02 Interfacial Instabilities in Torsional Flows <i>C. Lai, Y. Sun, C. Chang, Y. Chen, P. Arratia, J. Tsai</i>	A28.03 Liquid metal stirring by rotating localized magnetic field in a cylindrical container <i>S. Cuevas, M. Rivero, E. Ramos</i>	A28.04 Dynamics of interface separating two fluids under AC electric fields <i>A. Esmaeili</i>	A28.05 Numerical Flow Analysis of Planing Boats <i>K. Brucker, T. O'Shea, D. Dommermuth, T. Fu</i>	A28.06 Nonlinearity, Viscosity and Air-Compressibility Effects on the Helmholtz Resonant Wave Motion Generated by an Oscillating Twin Body in a Free Surface <i>P. Ananthkrishnan</i>
A29. Porous Media Flows I Room: Room: 32B Chair: R. Juanes, Massachusetts Institute of Technology	A29.01 Nonlinear Taylor dispersion in gravity currents in porous media <i>M. Szulczewski, R. Juanes</i>	A29.02 Flow through a free-moving porous cylinder within a rotating cylindrical vessel <i>M. Dalwadi, S. Waters</i>	A29.03 Convective Shutdown in a Porous Medium <i>J. Lister, D. Hewitt, J. Neufeld</i>	A29.04 Interfacial Motion and Convective Shutdown <i>D. Hewitt, J. Neufeld, J. Lister</i>	A29.05 Scaling of convective dissolution in porous media <i>J. Hidalgo, L. Cueto-Felgueroso, J. Fe, R. Juanes</i>	A29.06 Coarsening dynamics of 3D convective dissolution in porous media <i>X. Fu, L. Cueto-Felgueroso, R. Juanes</i>
A30. Nanofluids: Experiments Room: Room: 33A Chair: A. Siria, U. of Lyon	A30.01 Fluid-Induced Nanomechanical Fluctuations of an Elastic Membrane <i>C. Lissandrello, V. Yakhot, K. Ekinci</i>	A30.02 Focused electrojetting for nanoscale 3-D fabrication <i>M. Lee, H. Kim</i>	A30.03 In situ SAXS measurement of nanoparticles filtered with a thin film of macromolecules <i>F. de Jong, A. Buffet, G. Herzog, M. Schwartzkopf, J. Perlich, V. Koerstgens, M. Mecklenburg, T. Schnoor, P. Mueller-Buschbaum, S. Roth, K. Schulte, M. Schlueter</i>	A30.04 Carbon Nanotube Micro-Needles for Rapid Transdermal Drug Delivery <i>B. Lyon, A. Aria, A. Gat, J. Cosse, L. Montemayor, M. Beizaie, M. Gharib</i>	A30.05 Brownian Diffusion of Nanoparticles in Confined Geometries <i>S. Pouya, M. Koochesfahani</i>	A30.06 How surface functional groups influence fracturation in nanofluids droplets dry-outs <i>D. Brutin, F. Carle</i>

Sunday Morning, 18 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
A31. Focus Session: Interfacial Engineering in Thermal-Fluids I Room: Room: 33B Chair: N. Patankar, Northwestern U.	A31.01 <u>Droplet Interaction with Lubricant Impregnated Surfaces</u> <i>R. Dhiman, J. Smith, S. Anand, R. Cohen, G. McKinley, K. Varanasi</i>	A31.02 <u>Simulating Interfaces in Two-Fluid Flows</u> <i>S. Akhami</i>	A31.03 <u>The Leidenfrost transition for drops on micro- and nano-textures</u> <i>H. Kwon, J. Bird, K. Varanasi</i>	A31.04 <u>Impact, Spreading and Bouncing of Water Drops on Steel Surfaces with U and V Grooves</u> <i>K. R. C. S</i>	A31.05 <u>Hotspot Cooling with Self-Propelled Jumping Condensate</u> <i>X. Qu, J. Boreyko, F. Liu, C. Chen</i>	A31.06 <u>Direct visualization and self-similarity of contact line depinning</u> <i>A. Paxson, K. Varanasi</i>
A32. Focus Session: Vortex Dynamics in Fluid-Structure Interactions I Room: Room: 33C Chair: S. Llewellyn Smith, U. of California, San Diego	A32.01 <u>Dynamics of Multiple Cylinders in an Inviscid Fluid</u> <i>A. Leonard, A. Tchieu</i>	A32.02 <u>Seal whisker-inspired circular cylinders reduce vortex-induced vibrations</u> <i>H. Beem, M. Triantafyllou</i>	A32.03 <u>An experimental study of vortex induced vibrations of inclined flexible cylinders</u> <i>B. Seyed-Aghazadeh, Y. Modarres-Sadeghi</i>	A32.04 <u>Interaction of vortices with flexible piezoelectric beams</u> <i>O. Goushcha, H. Akaydin, N. Elvin, Y. Andreopoulos</i>	A32.05 <u>VIV experiments with a semi-immersed vertical flexible cylinder driven by top motion</u> <i>R. Goncalves, G. Franzini, C. Pesce, A. Fujarra, P. Mendes</i>	A32.06 <u>Collision of a flexible filament with a point vortex</u> <i>S. Alben</i>

Sunday Morning, 18 November 2012			
Session	09:18	09:31	9:45
A1. Fluid Structure Interactions I Room: Room: 22 Chair: K. Shoele, RE Vision Consulting	A1.07 Implementation of a Phase-Lagged Boundary Condition for Turbomachinery <i>A. Wouden, J. Cimbala, B. Lewis</i>	A1.08 Characterization of the Boundary Conditions at the Test Section Inlet for a Combustion Rig <i>C. Ruscher, J. Dannenhoffer, III, M. Glauser, B. Sekar, V. Belovich</i>	Refreshment Break, 9:45–10:00 Ballroom D
A2. Convection and Buoyancy-Driven Flows I: Rayleigh-Benard Convection Room: Room: 23A Chair: E. Brown, U. of California, Merced	A2.07 Reynolds number measurements for turbulent Rayleigh-Bénard convection with $0.17 < Pr < 0.88$ <i>J. Hogg, G. Ahlers</i>	A2.08 Heat transport by turbulent Rayleigh-Bénard convection for $Pr \simeq 0.8$ and $4 \times 10^{11} < Ra < 2 \times 10^{14}$; ultimate-state transition for aspect ratio $\Gamma = 1.00$ <i>D. van Gils, X. He, D. Funfschilling, G. Ahlers, E. Bodenschatz</i>	
A3. Multiphase Flows: Cavitation Room: Room: 23B Chair: M. Wosnik, U. of New Hampshire	A3.07 Axisymmetric, Ventilated Supercavitation in Unsteady, Horizontal Flow <i>E. Kawakami, S. Lee, R. Arndt</i>		
A4. Drops I Room: Room: 23C Chair: S. Morris, U. of California, Berkeley	A4.07 Thermal Effects of the Substrate on Water Droplet Evaporation <i>B. Sobac, D. Brutin</i>	A4.08 Dropwise condensation on a cold gradient substrate <i>A. Macner, S. Daniel, P. Steen</i>	
A5. Computational Fluid Dynamics I Room: Room: 24A Chair: G. Iaccarino, Stanford U.	A5.07 Particle Gradient-Augmented Level Set in Multiphase Flow Problems <i>O. Mercier, J. Nave, R. Rosales, B. Seibold</i>	A5.08 Lagrangian Coherent Structure Visualizations in High-Resolution DNS <i>D. Nelson</i>	
A6. Electrokinetics I Room: Room: 24B Chair: W. Ristenpart, U. of California, Davis	A6.07 The Effect of Electrophoresis and Electroosmosis on Colloid Dynamics at a Micro-Nano-Channel Junction <i>G. Yossifon, Y. Green</i>	A6.08 Rapid annealing of polycrystalline domains with a hexatic-to-disorder transition in colloidal crystals near electrodes <i>C. Dutcher, N. Talken, T. Woehl, W. Ristenpart</i>	
A7. Microfluidics: Methods and Devices I Room: Room: 24C Chair: A. Hirs, Rensselaer Polytechnic Institute	A7.07 Ferrodrops: a Global Clock for Droplet Microfluidics <i>G. Katsikis, M. Prakash</i>		
A8. Particles: Gravity and Settling Room: Room: 25A Chair: K. Kiger, U. of Maryland	A8.07 Modeling Gravitational Settling of Inertial Particles in Turbulent Like Flow <i>S. Ayyalasomayajula, S. Banerjee, Z. Warhaft</i>	A8.08 Effect of ambient flow inhomogeneity on shear-induced lift on a sphere at finite Reynolds number <i>J. Kim</i>	
A9. Interfacial/Thin Film Instability I Room: Room: 25B Chair: T. Ward, North Carolina State U.	A9.07 Linear stability of a liquid film on a slipping surface with nonuniform slip length <i>E. Gatapova, V. Ajaev, O. Kabov</i>	A9.08 On the instability of a circular hydraulic jump <i>H. Ait Abderrahmane, A. Kasimov</i>	
A10. Instability: Jets, Wakes and Shear Layers I Room: Room: 25C Chair: C. Caulfield, BP Institute and DAMTP Cambridge	A10.07 Minimal seeds in mixing layers <i>S. Rabin, C. Caulfield, R. Kerswell</i>	A10.08 The mixing layer downstream of a "A"-notched splitter plate <i>L. Taubert, E. Suehiro, I. Wygnanski</i>	

Sunday Morning, 18 November 2012			
Session	09:18	09:31	9:45
A11. Bubbles I Room: Room: 26A Chair: F. Pereira, CNR-INSEAN, The Italian Ship Model Basin	A11.07 <u>Large Bubble Rupture Sparks Fast Liquid Jet</u> <i>T. Seon, A. Antkowiak</i>	A11.08 <u>Coalescence cascade of bubbles</u> <i>F. Zhang, P. Taborek, S. Thoroddsen</i>	Refreshment Break, 9:45–10:00 Ballroom D
A12. Vortex I Room: Room: 26B Chair: A. Banerjee, Lehigh U.	A12.07 <u>The Influence of Spanwise Flow on Leading-Edge Vortex Growth</u> <i>J. Wong, J. Kriegseis, D. Rival</i>	A12.08 <u>Global Vorticity Shedding on Rectangular and Streamlined Foil Geometries</u> <i>S. Steele, J. Dahl, G. Weymouth, M. Triantafyllou</i>	
A13. Geophysical: General I Room: Room: 27A Chair: P. Linden, U. of Cambridge	A13.07 <u>Gravity currents in strongly stratified fluids</u> <i>B. Maurer, P. Linden</i>	A13.08 <u>A radar backscattering mechanism of ocean surface in response to rainfall</u> <i>X. Liu, Q. Zheng, R. Liu, J. Duncan</i>	
A14. General Experiments I Room: Room: 27B Chair: G. Spedding, U. of Southern California	A14.07 <u>Surface tension profiles in vertical soap films: an intrusive measurement</u> <i>N. Adami, S. Dorbolo, H. Caps</i>	A14.08 <u>Measuring bubbles in a bubbly wake flow</u> <i>S. Lee, E. Kawakami, R. Arndt</i>	
A15. Biofluids: Micro-PIV Room: Room: 28A Chair: D. Webster, Georgia Institute of Technology	A15.07 <u>Ontogenetic propulsive transitions from viscous to inertial flow regimes in the medusae <i>Sarsia tubulosa</i></u> <i>K. Katija, H. Jiang, S. Colin, J. Costello</i>	A15.08 <u>3D-PTV measurement of the phototactic movement of algae in shear flow</u> <i>T. Maeda, T. Ishikawa, H. Ueno, K. Numayama-Tsuruta, Y. Imai, T. Yamaguchi</i>	
A16. Biofluids: Valves, Stents and Devices Room: Room: 28B Chair: M. Vukicevic, Clemson U.	A16.07 <u>Bio-inspired, low-cost, self-regulating valves for drip irrigation in developing countries</u> <i>P. Zimoch, E. Tixier, A. Hosoi, A. Winter</i>		
A17. Biofluids: Flapping and Flying I Room: Room: 28C Chair: H. Choi, Seoul National U.	A17.07 <u>Numerical modeling of flexible insect wings using volume penalization</u> <i>T. Engels, D. Kolomenskiy, K. Schneider, J. Sesterhenn</i>	A17.08 <u>A flight control through unstable flapping flight</u> <i>M. Ima, N. Yokoyama, N. Hirai, K. Senda</i>	
A18. Biofluids: General Room: Room: 28D Chair: L. Brandt, KTH, Stockholm	A18.07 <u>On conjoining pressures in the tear film</u> <i>J. Siddique, N. Gewecke, R. Braun</i>	A18.08 <u>Convective transport resistance in the vitreous humor</u> <i>A. Penkova, S. Sadhal, K. Ratanakijsumtonn, R. Moats, Y. Tang, P. Hughes, M. Robinson, S. Lee</i>	
A19. Mini-Symposium: High-Speed, High-Energy Multimaterial Flows Room: Room: 28E Chair: G. Jacobs, San Diego State U.	A19.04 <u>Modeling Detonation of Heterogeneous Explosives with Embedded Inert Particles Using Detonation Shock Dynamics: Normal and Divergent Propagation in Regular and Simplified Microstructure</u> <i>S. Stewart</i>		
A20. Turbulent Boundary Layers I: Large Structures Room: Room: 30A Chair: N. Hutchins, U. of Melbourne	A20.07 <u>The Turbulent/Non-turbulent Interface and Entrainment in a Boundary Layer</u> <i>K. Chauhan, J. Philip, N. Hutchins, C. De Silva, I. Marusic</i>	A20.08 <u>Net Force Spectra of Wall Turbulence</u> <i>R. Adrian, J. Baltzer</i>	

Sunday Morning, 18 November 2012			
Session	09:18	09:31	9:45
A21. Separated Flows I Room: Room: 30B Chair: A. Domaradzki, U. of Southern California	A21.07 DNS and LES of Separated Flows at Moderate Reynolds Numbers <i>F. Cadieux, J. Domaradzki, T. Sayadi, S. Bose, F. Duchaine</i>	A21.08 Aero-optical analysis of a separated shear layer using large-eddy simulation <i>K. Wang, M. Wang</i>	Refreshment Break, 9:45–10:00 Ballroom D
A22. Turbulence Modeling: LES/RANS Room: Room: 30C Chair: A. Staples, Virginia Polytechnic Institute and State U.	A22.07 Integral Methods for Validating RANS Models <i>D. Israel</i>	A22.08 Computational and Experimental Investigations of Flow past Spinning Cylinders <i>I. Mehmedagic, L. Buckley, P. Carlucci, D. Carlucci, E. Aljalis, S. Thangam</i>	
A23. Turbulence Theory: Isotropic Turbulence Room: Room: 30D Chair: S. Almalkie, U. of Massachusetts Amherst	A23.07 The Reynolds number dependence of classical grid turbulence <i>E. Bodenschatz, G. Bewley, M. Sinhuber, M. Vallikivi, M. Hultmark, A. Smits</i>	A23.08 Local and distant interactions in the Batchelor regime of scalar turbulence <i>R. Rubinstein, W. Bos</i>	
A24. Acoustics I: Turbulence and Aerodynamics Room: Room: 30E Chair: D. Bodony, U. of Illinois at Urbana-Champaign	A24.07 Modeling Unsteady Lift and Radiated Sound Generated by a 2-D Airfoil in an Intermittent Flow <i>M. Ross, S. Morris</i>	A24.08 Poroelastic Trailing Edge Noise and the Silent Flight of the Owl <i>J. Jaworski, N. Peake</i>	
A25. Flow Control: General I Room: Room: 31A Chair: J. Little, U. of Arizona	A25.07 Mixing Layer Excitation by Dielectric Barrier Discharge Plasma Actuators <i>R. Ely, J. Little</i>	A25.08 Passive control and sensitivity analysis of thermo-acoustic systems via adjoint equations <i>L. Magri, M. Juniper</i>	
A26. Reactive Flows I: Turbulent Combustion Experiments Room: Room: 31B Chair: T. Lieuwen, Georgia Institute of Technology	A26.07 Turbulent Flame Speed Scaling for Positive Markstein Number Expanding Flames in Near Isotropic Turbulence <i>S. Chaudhuri, F. Wu, C. Law</i>	A26.08 Oscillatory Flame Response in Acoustically Driven Fuel Droplet Combustion <i>C. Sevilla, A. Edoh, J. Wegener, A. Sung, K. Chen, B. Lopez, O. Smith, A. Karagozian</i>	
A27. Rarefied Gases Room: Room: 31C Chair: J. Sader, California Institute of Technology	A27.07 Thermal transpiration of a slightly rarefied gas through a horizontal straight pipe in the presence of weak gravitation <i>T. Doi</i>	A27.08 Lattice Boltzmann simulations of genuinely multidimensional rarefied flows in microchannels <i>P. Dellar, T. Reis</i>	
A28. Free-Surface Flows I Room: Room: 32A Chair: E. Ramos, Center for Energy Research, National Autonomous U. of Mexico	A28.07 Subharmonic surface waves in a horizontally vibrated container <i>J. Perez-Gracia, J. Porter, F. Varas, J. Vega</i>	A28.08 The water entry of streamlined bodies <i>K. Bodily, T. Truscott</i>	
A29. Porous Media Flows I Room: Room: 32B Chair: R. Juanes, Massachusetts Institute of Technology	A29.07 Chaotic Advection in a Bounded 3-Dimensional Potential Flow <i>G. Metcalfe, L. Smith, D. Lester</i>	A29.08 Galerkin Dynamical Modeling of Porous Medium Convection using an Eigenbasis from Upper Bound Theory <i>B. Wen, N. Dianati, G. Chini, C. Doering</i>	
A30. Nanofluids: Experiments Room: Room: 33A Chair: A. Siria, U. of Lyon	A30.07 Electrodeless electro-hydrodynamic printing of nano-suspensions for personalized medicines <i>E. Elele, Y. Shen, R. Boppana, A. Afolabi, E. Bilgili, B. Khusid</i>	A30.08 Experimental Nanofluidics in an individual Nanotube <i>A. Siria, P. Poncharal, A. Bianco, R. Fulcrand, S. Purcell, L. Bocquet</i>	

Sunday Morning, 18 November 2012			
Session	09:18	09:31	9:45
A31. Focus Session: Interfacial Engineering in Thermal-Fluids I Room: Room: 33B Chair: N. Patankar, Northwestern U.	A31.07 <u>Biphilicity and Superbiphilicity for Wettability Control of Multiphase Heat Transfer</u> <i>D. Attinger, A. Betz, T. Schutzius, J. Jenkins, C. Kim, C. Megaridis</i>	A31.08 <u>Staying dry under water</u> <i>P. Jones, E. Cruz-Chu, C. Megaridis, J. Walther, P. Koumoutsakos, N. Patankar</i>	Refreshment Break 9:45–10:00, Ballroom D
A32. Focus Session: Vortex Dynamics in Fluid-Structure Interactions I Room: Room: 33C Chair: S. Llewellyn Smith, U. of California, San Diego	A32.07 <u>Simulation of the structural response of a cable immersed in a uniform flow: comparison of three different methodologies</u> <i>B. Carmo, R. Gioria, A. Lima, J. Meneghini</i>		

Sunday Morning, 18 November 2012

Session B1.01: Awards Presentations, followed by the Fluid Dynamics Prize and Corrsin Award Lectures

10:00 – 10:25, Room: Ballroom 20ABC

Chair: Kenny Breuer, Brown University

Welcome, Presentation Of Awards And DFD Fellowships

Session B1.02: Awards Presentations, followed by the Fluid Dynamics Prize and Corrsin Award Lectures

10:25 – 10:50, Room: Ballroom 20ABC

Chair: Kenny Breuer, Brown University

Fluid Dynamics Prize Lecture John F. Brady, California Institute of Technology

Session B1.03: Awards Presentations, followed by the Fluid Dynamics Prize and Corrsin Award Lectures

10:50 – 11:15, Room: Ballroom 20ABC

Chair: Kenny Breuer, Brown University

Stanley Corrsin Award Lecture Daniel Lathrop, University of Maryland

Lunch Break

12:00 – 13:30

Invited Session C33

13:30 – 14:05, Room: Ballroom 20A

Chair: Eric Lauga, University of California, San Diego

Synchronization Of Eukaryotic Flagella Raymond E. Goldstein, University of Cambridge

Invited Session C34

13:30 – 14:05, Room: Ballroom 20BC

Chair: Juan Carlos del Alamo, University of California, San Diego

The Logarithmic Layer Of Wall-bounded Turbulent Flows Javier Jiménez, Universidad Politecnica Madrid

Sunday Afternoon, 18 November 2012

Session	14:15	14:28	14:41	14:54	15:07	15:20
D1. Geophysical: Atmospheric I Room: Room: 22 Chair: J. Kleissl, U. of California, San Diego	D1.01 Velocity statistics and spectra over a forested site measured with a tall mast <i>A. Segalini, H. Alfredsson, E. Dellwik, J. Arqvist, H. Bergström</i>	D1.02 Large eddy simulation analysis of thermally stratified atmospheric boundary layer interacting with large wind farms <i>A. Sescu, C. Meneveau</i>	D1.03 Collective phenomena in large-eddy simulations of extended wind farms <i>R. Stevens, C. Meneveau</i>	D1.04 Wind farms and scalar fluxes over a farmland, a Large Eddy Simulation study <i>M. Calaf, C. Higgins, M. Parlange</i>	D1.05 Energetic Large-Scale Structures found in Urban-type Boundary Layers <i>B. Monnier, C. Wark, B. Shaw, M. Cortes, S. Kandala, D. Rempfer</i>	D1.06 Insight on Gust/Turbulence Characteristics in an Urban-type Boundary Layer <i>C. Wark, B. Monnier, M. Cortes, B. Shaw, S. Kandala, D. Rempfer</i>
D2. Convection and Buoyancy-Driven Flows II: Rayleigh-Benard Convection Room: Room: 23A Chair: B. Behringer, Duke U.	D2.01 Temperature fluctuations in turbulent Rayleigh-Bénard convection for Ra up to 2×10^{14} and $Pr \approx 0.8$ <i>X. He, D. van Gils, E. Bodenschatz, G. Ahlers</i>	D2.02 Logarithmic temperature profiles in turbulent Rayleigh-Bénard convection <i>G. Ahlers, X. He, D. Funfschilling, D. van Gils, E. Bodenschatz</i>	D2.03 Describing Chaotic Dynamics in Rayleigh-Benard Convection Using Persistent Homology Theory <i>J. Tithof, M. Schatz, K. Mischaikow, M. Kramar, V. Nanda, M. Paul, M. Xu</i>	D2.04 Heat Transport Processes in Turbulent Rayleigh-Bénard Convection described with PDF equations: Numerics and Models <i>J. Luelff, M. Wilczek, R. Stevens, R. Friedrich, D. Lohse</i>	D2.05 Logarithmic temperature profiles in DNS of turbulent convection <i>R. Verzicco, R. Stevens, D. Lohse, S. Grossmann</i>	D2.06 Three-dimensional instability of cylindrical Rayleigh-Benard convection <i>D. Sun, B. Wang, D. Ma</i>
D3. Multiphase Flows: Bubble Dynamics Room: Room: 23B Chair: G. Tryggvason, Notre Dame U.	D3.01 Bubble Dynamics in Bubbly Medium <i>J. Ma, C. Hsiao, G. Chahine</i>	D3.02 Numerical study of wave breaking and bubble generation in turbulent two-phase Couette flow <i>D. Kim, A. Mani, P. Moin</i>	D3.03 Bouncing vs penetration of a particle through fluid interface <i>A. Kotsch, S. Lee, S. Jung</i>	D3.04 Turbulence modulation by microbubbles in channel flow <i>C. Marchioli, D. Molin, A. Soldati</i>	D3.05 The importance of bubble deformability for strong drag reduction in bubbly turbulent Taylor-Couette flow <i>D. Narezo Guzman, D. van Gils, C. Sun, D. Lohse</i>	D3.06 Volume Displacement Effects in Bubble-laden Flows <i>A. Cihonski, J. Finn, S. Apte</i>
D4. Drops II Room: Room: 23C Chair: O. Basaran, Purdue U.	D4.01 Collision and coalescence of liquid drops in a dynamically active ambient fluid <i>K. Sambath, H. Subramani, O. Basaran</i>	D4.02 PIV-Analysis of collapsing toroidal droplets <i>E. Pairam, E. Berger, A. Fernandez-Nieves</i>	D4.03 Droplet collisions in a liquid <i>G. Oldenzel, R. Delfos, G. Elsinga, J. Westerweel</i>	D4.04 Simulations of Droplet Coalescence in Simple Shear Flow <i>O. Shardt, J. Derksen, S. Mitra</i>	D4.05 Wettability effects on droplet coalescence <i>P. Graham, D. De Pauw, A. Dolatabadi</i>	D4.06 Self-Propelled Jumping Drops on Leidenfrost Surfaces: Experiments and Simulations <i>F. Liu, G. Ghigliotti, J. Feng, C. Chen</i>
D5. Computational Fluid Dynamics II Room: Room: 24A Chair: E. Balaras, George Washington U.	D5.01 Tweed Relaxation: a new multigrid smoother for stretched structured grids <i>T. Bewley, A. Mashayekhi</i>	D5.02 A new explicit projection method for incompressible flows <i>S. Park, C. Lee</i>	D5.03 Tetrahedralization of Isosurfaces with Guaranteed-Quality by Edge Rearrangement (TIGER) <i>S. Walker</i>	D5.04 On a robust ALE method with the discrete primary and secondary conservation properties <i>S. Kang, N. Hur</i>	D5.05 Wavelet-based adaptive numerical simulation of unsteady 3D flow around a bluff body <i>G. De Stefano, O. Vasilyev</i>	D5.06 Adaptive Wavelet Collocation Method in Shallow Water Model: Validation Study <i>S. Reckinger, O. Vasilyev, B. Fox-Kemper</i>
D6. Electrokinetics II Room: Room: 24B Chair: D. Salac, SUNY Buffalo	D6.01 Multiscale simulation of electroosmotic flows <i>L. Guo, M. Robbins, S. Chen, J. Liu</i>	D6.02 Colloidal Trapping within a Second Kind Electroosmotic Vortex Pair at a Microchamber-Nanoslot Interface <i>Y. Green, G. Yossifon</i>	D6.03 Effect of Electro-Osmotic Flow on Energy Conversion on Superhydrophobic Surfaces <i>S. Gowrishankar, T. Baier</i>	D6.04 Electroosmotic Flow of Power-Law Fluids in a Cylindrical Microcapillary <i>M. Saidi, A. Babaie, A. Sadeghi</i>	D6.05 Measurements of Induced-Charge Electroosmotic Flow Around a Metallic Rod <i>A. Beskok, C. Canpolat</i>	D6.06 Nonlinear electrokinetic repulsion effects in combined electroosmotic and Poiseuille flow through microchannels <i>N. Cevheri, M. Yoda</i>
D7. Microfluidics: Methods and Devices II Room: Room: 24C Chair: M. Prakash, Stanford U.	D7.01 Simultaneous measurement of the geometry and the internal 3D velocity field of a micron sized droplet confined in a channel using Astigmatism-PTV <i>T. Mack, C. Cierpka, C. Kähler</i>	D7.02 Correlation Force Spectroscopy for Single Molecule Measurements <i>M. Radiom, B. Robbins, J. Walz, M. Paul, W. Ducker</i>	D7.03 Micro-Particle Image Velocimetry using Microfabricated Diode Lasers <i>N. Judy</i>	D7.04 WITHDRAWN	D7.05 Simple and inexpensive micro-capillary devices for generating composite emulsions <i>E. Li, J. Zhang, S. Thoroddsen</i>	D7.06 Pumpless Transport of Low Surface Tension Liquids in Surface Tension Confined (STC) Tracks <i>C. Megaridis, T. Schutzius, M. Elsharkawy, M. Tiwari</i>
D8. Particles: Experimental Room: Room: 25A Chair: G. Voth, Wesleyan U.	D8.01 In situ calibration of volume concentration measurements using PTV correlation for particle-laden flows <i>R. Mulinti, K. Corfman, K. Kiger</i>	D8.02 Using direct numerical simulation to improve experimental measurements of inertial particle radial relative velocities <i>P. Ireland, L. Collins</i>	D8.03 Rotation in turbulence of aquatic organisms modeled as particles <i>E. Variano, M. Byron, G. Bellani</i>	D8.04 Turbulence modulation by Taylor-scale particles: in search of a universal parameter <i>G. Bellani, J. Semigran, M. Byron, E. Variano</i>	D8.05 Particle behavior in linear shear flow: an experimental and numerical study <i>N. Fathi, M. Ingber, P. Vorobieff</i>	D8.06 Measuring the effects of finite length of rods on rotation rate in turbulent flow <i>S. Parsa, G. Voth</i>
D9. Interfacial/Thin Film Instability II: Fingering Room: Room: 25B Chair: S. Kieweg, U. of Kansas	D9.01 Viscous fingering with production of surfactant by chemical reaction in a Hele-Shaw cell <i>M. Fujimura, Y. Nagatsu</i>	D9.02 Viscous fingering involving disappearance of precipitation by a chemical reaction in a Hele-Shaw cell <i>Y. Ishii, Y. Tada, Y. Nagatsu</i>	D9.03 Experimental Investigation of the Growth of Mixing Zone in Miscible Viscous Fingering <i>S. Malhotra, E. Lehman, M. Sharma</i>	D9.04 Acoustowetting: Film Spreading, Fingering Instabilities and Soliton-Like Wave Propagation <i>O. Manor, A. Rezk, J. Friend, L. Yeo</i>	D9.05 Anomalous structure formation in the zero surface tension limit of viscous fingering <i>I. Bischofberger, R. Ramachandran, S. Nagel</i>	D9.06 Fingering instabilities for a thin liquid film flowing down the outside of a vertical cylinder <i>S. McCue, L. Mayo, T. Moroney</i>
D10. Instability: Jets, Wakes and Shear Layers II: Wakes I Room: Room: 25C Chair: A. Ekmekci, U. of Toronto	D10.01 The response of the wake past a bullet-shaped body to axisymmetric ZNMF forcing at high Reynolds numbers <i>G. Rigas, A. Morgans, J. Morrison</i>	D10.02 Modification of mean wake flow behind very slender axially symmetric bodies by nonlinear convectively unstable helical modes <i>J. Liu, K. Lee</i>	D10.03 Transitions to chaos in the wake of an axisymmetric bluff body <i>Y. Bury, T. Jardin</i>	D10.04 The turbulent wake of a submarine model at varying pitch and yaw angle <i>A. Ashok, A. Smits</i>	D10.05 On the Control of Flow past a Circular Cylinder: Use of a Single Spanwise Protrusion <i>A. Ekmekci, T. Aydin, A. Joshi</i>	D10.06 POD Analysis of the Wake Behind a Foamed and a Finned Cylinder <i>M. Khashehchi, K. Hooman, T. Roesgen, A. Ooi</i>

Sunday Afternoon, 18 November 2012

Session	14:15	14:28	14:41	14:54	15:07	15:20
D11. Microfluidics: Mixing Room: Room: 26A Chair: N. Aubry, Carnegie Mellon U.	D11.01 A Mapping method for mixing with diffusion <i>C. Schlick, I. Christov, P. Umbanhowar, J. Ottino, R. Lueptow</i>	D11.02 Advective-diffusive mixing in microchannels <i>O. Gorodetskiy, M. Speetjens, P. Anderson</i>	D11.03 Effect of viscosity contrast on mixing and dispersion in a capillary tube <i>A. Pahlavan, B. Jha, L. Cueto-Felgueroso, R. Juanes, G. McKinley</i>	D11.04 Chaotic fluid mixing by alternating microparticle topologies to enhance biochemical reactions <i>Y. Gao, A. van Reenen, M. Hulsen, A. de Jong, M. Prins, J. den Toonder</i>	D11.05 Mixing Diagnostics in Confined, High-Speed Droplet Collisions <i>B. Carroll, C. Hidrovo</i>	D11.06 3D mixing near the surface of actuated beads <i>N. Moharana, M. Speetjens, R. Trieling, H. Clercx</i>
D12. Vortex II Room: Room: 26B Chair: S. Khatri, U. of North Carolina	D12.01 Vortex roll-up in a stratified fluid <i>S. Shaw, J. McHugh</i>	D12.02 Experiments and numerical simulations of dense-core vortex rings in a sharply stratified environment <i>R. McLaughlin, R. Camassa, S. Khatri, K. Mertens, C. Viotti</i>	D12.03 Structure of a vorticity patch bounded by a vortex sheet in strain <i>D. Freilich, S. Llewellyn Smith</i>	D12.04 Interactions of two unequal co-rotating vortices in the presence of external shear <i>P. Folz, K. Nomura</i>	D12.05 On the Anti-Symmetric Modes of Crow Instability by a General Instability Analysis Method <i>Z. Zheng, J. Hardin</i>	D12.06 Lifetime and layering of vortices in rotating stratified fluids <i>O. Aubert, M. Le Bars, P. Le Gal</i>
D13. Geophysical: General II Room: Room: 27A Chair: C. Cenedese, Wood Hole Oceanographic Institution	D13.01 Nonlinear Scale Interactions and Energy Pathways in the Ocean <i>M. Hecht, H. Aluie, G. Vallis, K. Bryan, M. Maltrud, R. Ecke, B. Wingate</i>	D13.02 How Do You Determine Whether The Earth Is Warming Up? <i>J. Restrepo, D. Comeau, H. Flaschka</i>	D13.03 Mechanical energy budget for horizontal convection <i>B. Gayen, R. Griffiths, G. Hughes, J. Saenz</i>	D13.04 The Hydrodynamics of Iceberg Capsize Near a Glacier Terminus <i>J. Burton, L. Cathles, D. MacAyeal, W. Zhang, J. Amundson, S. Correa-Legisos</i>	D13.05 Laboratory experiments investigating the influence of fjord circulation on submarine melting of Greenland's Glaciers <i>C. Cenedese</i>	D13.06 3D Baroclinic Vortices in Rotating Stratified Shear: from an Orange Great Red Spot to Planet Formation <i>P. Hassanzadeh, P. Marcus</i>
D14. General Experiments II Room: Room: 27B Chair: R. Miorini, The Johns Hopkins U.	D14.01 Novel Method to Characterize Superhydrophobic Coatings <i>G. Tepper, M. Samaha, H. Vahedi Tafreshi, M. Gad-el-Hak</i>	D14.02 Measuring Cavitation with Synchrotron X-Rays <i>D. Duke, A. Kastengren, C. Powell</i>	D14.03 The Effect of Dead Time in Random Sampling of the LDA <i>C. Velte, P. Buchhave, W. George</i>	D14.04 3D effects in axisymmetric reconstructions <i>H. Makaruk, C. Tomkins</i>	D14.05 Performance of hot-wire probes designed to simultaneously measure three velocity components <i>R. Ebner, C. Morrill-Winter, R. Baidya, P. Vukoslavcevic, J. Klewicki, J. Wallace, N. Hutchins</i>	D14.06 Reconstructing dominant three-dimensional flow structures in the wakes of cylindrical bodies using planar velocity measurements <i>C. Morton, S. Yarusevych</i>
D15. Biofluids: Large Swimmers I Room: Room: 28A Chair: E. Longmire, U. of Minnesota	D15.01 Dynamics of a self-propelled undulating swimmer <i>S. Ramananarivo, M. Dana, B. Thiria, R. Godoy-Diana</i>	D15.02 Fluid dynamics of forward swimming and turning for jellyfish <i>L. Miller</i>	D15.03 Learning from real and tissue-engineered jellyfish: How to design and build a muscle-powered pump at intermediate Reynolds numbers <i>J. Nawroth, H. Lee, A. Feinberg, C. Ripplinger, M. McCain, A. Grosberg, J. Dabiri, K. Parker</i>	D15.04 Viscous flow around a rapidly collapsing cylinder as a model of animal locomotion <i>G. Weymouth, M. Triantafyllou</i>	D15.05 Numerical investigation of the high Reynolds number 3D flow field generated by a self-propelling manta ray <i>J. Pederzani, H. Haj-Hariri</i>	D15.06 A Three-Dimensional Multi-Domain Immersed Boundary Method, with Application to a Pitching Wing <i>C. Wang, J. Eldredge</i>
D16. Biofluids: Arteries Room: Room: 28B Chair: M. Plesniak, The George Washington U.	D16.01 Detection of multi-scale secondary flow structures using anisotropic 2D Ricker wavelets in a bent tube model for curved arteries <i>D. Plesniak, K. Bulusu, M. Plesniak</i>	D16.02 Perturbation-induced secondary flow structures due to fractured stents in arterial curvatures <i>K. Bulusu, C. Popma, L. Penna, M. Plesniak</i>	D16.03 A regime map for secondary flow structures under physiological and multi-harmonic inflow through a bent tube model for curved arteries <i>S. Callahan, K. Caldwell, K. Bulusu, M. Plesniak</i>	D16.04 A viscoelastic model of shear-induced blood damage <i>G. Arwatz, A. Smits</i>	D16.05 Volumetric lattice Boltzmann simulation for blood flow in aorta arteries <i>D. Deep, H. Yu, S. Teague</i>	D16.06 Patient specific flow dynamic simulations of flow in diseased coronary artery <i>C. Moreno, K. Bhaganagar</i>
D17. Biofluids: Microswimmers and Hydrodynamic Interactions Room: Room: 28C Chair: R. Goldstein, U. of Cambridge	D17.01 <i>E. coli</i> in a wall bounded shear flow <i>M. Molaei, J. Sheng</i>	D17.02 Bacteria motility at oil-water interfaces <i>G. Juarez, S. Smirga, V. Fernandez, R. Stocker</i>	D17.03 Accumulation of swimming bacteria near an interface <i>J. Tang, G. Li</i>	D17.04 Bacterial trapping in shear <i>R. Rusconi, J. Guasto, R. Stocker</i>	D17.05 Swimming of <i>E. coli</i> near micro-structured surfaces <i>V. Kantsler, J. Dunkel, R. Goldstein</i>	D17.06 Helical swimming in confined geometries <i>K. Breuer, B. Liu, T. Powers</i>
D18. Biofluids: Complex Interaction Room: Room: 28D Chair: R. Bouffanais, Singapore U. of Technology and Design	D18.01 The effect of extracellular conductivity on electroporation-mediated molecular delivery <i>M. Yu, M. Sadik, J. Li, H. Lin</i>	D18.02 The compliance of vascular endothelial cells (VECs) change after exposure to cyclic, uniaxial stretch <i>K. Osterday, T. Chew, L. Phillip, J. Haga, M. Gomez-Gonzalez, J. del Alamo, S. Chien</i>	D18.03 Fluid coupling in continuum modeling of microtubule motility assays <i>C. Hohenegger, T. Shinar</i>	D18.04 Modeling Cell Desiccation with Glass Formation <i>C. Vogl, M. Mksis, S. Davis, D. Salac</i>	D18.05 Analogy between slow flow in channels with porous walls and flexure of simply suspended plates under uniform load <i>K. Jensen</i>	D18.06 The influence of cell crawling onto cell-cell chemical signaling <i>R. Bouffanais</i>
D19. Surface Tension I Room: Room: 28E Chair: S. Kumar, U. of Minnesota	D19.01 Liquid Contact Line on Visco-Elastic Gels: Stick-Slip vs Continuous Motions <i>T. Kajiya, A. Daerr, T. Narita, L. Royon, F. Lequeux, L. Limat</i>	D19.02 Self-cleaning of superhydrophobic surfaces by spontaneously jumping condensate drops <i>K. Wisdom, J. Watson, G. Watson, C. Chen</i>	D19.03 Interaction between counterpropagating Rossby and capillarity waves in planar jets and wakes <i>L. Biancofiore, F. Gallaire, F. Laure</i>	D19.04 The dynamics of three-dimensional liquid bridges with pinned and moving contact lines <i>S. Kumar, S. Dodds, M. Carvalho</i>	D19.05 Onset of Dynamic Wetting Failure: The Influence of the Displaced Fluid <i>E. Vandre, M. Carvalho, S. Kumar</i>	D19.06 Pinching of a liquid ligament under surface tension <i>J. Hoepffner</i>
D20. Turbulent Boundary Layers II: Structures Room: Room: 30A Chair: P. Schlatter, KTH	D20.01 Time-resolved evolution of coherent structures in turbulent channels <i>A. Lozano-Duran, J. Jimenez</i>	D20.02 On the near-wall vortical structures at high Reynolds numbers <i>P. Schlatter, R. Orlu, Q. Li, F. Hussain, D. Henningson</i>	D20.03 Merging and auto-generation of vortices in wall bounded flow <i>G. Elsinga, M. Goudar Vishwanathappa, W. Breugem</i>	D20.04 Identification of Thermally-Tagged Coherent Structures in the Zero Pressure Gradient Turbulent Boundary Layer <i>R. Rought, B. McKeon, S. Gordyev</i>	D20.05 Application of vortex identification schemes to DNS data of transitional boundary layer <i>B. Pierce, P. Moin, T. Sayadi</i>	D20.06 Development and Interaction of Artificially Generated Hairpin Vortices <i>D. Sabatino, C. McKenna</i>

Sunday Afternoon, 18 November 2012

Session	14:15	14:28	14:41	14:54	15:07	15:20
D21. Turbulence Simulation: Isotropic/Homogenous Shear Room: Room: 30B Chair: J. Riley, U. of Washington	D21.01 On the kinematics of scalar iso-surfaces in turbulent flow <i>W. Wang, J. Riley, J. Kramlich</i>	D21.02 Local topology of energy transport in isotropic turbulence <i>J. Boschung, C. Meneveau</i>	D21.03 Scaling of Lyapunov Exponents in Homogeneous, Isotropic DNS <i>N. Fitzsimmons, M. Lee, N. Malaya, R. Moser</i>	D21.04 ABSTRACT MOVED TO M17.00010 <i>n. none</i>	D21.05 Inverse energy cascade in rotational turbulence <i>H. Yu, R. Chen, H. Wang</i>	D21.06 Simulation of Homogeneous Turbulence Subjected to Plane Strain <i>C. Zusi, J. Perot</i>
D22. Turbulence Modeling: LES Wall Models Room: Room: 30C Chair: D. Pullin, California Institute of Technology	D22.01 LES of a turbulent channel flow with a predictive wall model <i>M. Inoue, D. Pullin, I. Marusic, R. Mathis</i>	D22.02 Turbulent boundary layer, wall shear-stress statistics using a predictive wall-model combined with LES <i>D. Pullin, M. Inoue, R. Mathis, I. Marusic</i>	D22.03 Total shear stress boundary condition at upper boundary of RANS in wall-modeled large eddy simulation <i>C. Sung, J. Lee, H. Choi</i>	D22.04 A nested-LES wall-modelling approach for high Reynolds number wall-bounded turbulence <i>Y. Tang, R. Akhavan</i>	D22.05 Mean wall shear stress boundary condition for large eddy simulation with coarse mesh near the wall <i>J. Lee, M. Cho, H. Choi</i>	D22.06 Computing transitional flows using wall-modeled large eddy simulation <i>J. Bodart, J. Larsson</i>
D23. Turbulence Theory: General I Room: Room: 30D Chair: G. Eyink, Johns Hopkins U.	D23.01 Analytical Model for Pair Dispersion in Gaussian Models of Eulerian Turbulence <i>G. Eyink, D. Benveniste</i>	D23.02 Deviations from Kolmogorov-Kraichnan similarity theory in the energy cascade of two-dimensional alpha turbulence <i>B. Burgess, T. Shepherd</i>	D23.03 On the decay of homogeneous nearly isotropic turbulence behind active fractal grids <i>A. Thormann, C. Meneveau</i>	D23.04 Can a flow be turbulent in microfluidics with Reynolds number in the order of 1? <i>G. Wang, F. Yang, W. Zhao</i>	D23.05 On the collision of small particles in isotropic turbulence <i>S. Yokojima, T. Mashiko, K. Baba, T. Miyahara</i>	D23.06 Turbulent 2-Particle Dispersion Laws in Kinematic Simulations <i>D. Benveniste, G. Eyink</i>
D24. Acoustics II: Jets and Cavities Room: Room: 30E Chair: M. Wang, U. of Notre Dame	D24.01 Near and Far Field Acoustic Pressure Skewness in a Heated Supersonic Jet <i>E. Gutmark, P. Mora, J. Kastner, N. Heeb, K. Kailasath, J. Liu</i>	D24.02 The Sudden Onset of Acoustic Effects with Increasing Nozzle-Chevron Length In a Mach 0.9 Jet <i>R. Fontaine, J. Austin, G. Elliott, J. Freund</i>	D24.03 Far-field noise predictions of imperfectly expanded jet flows <i>J. Liu, K. Kailasath, N. Heeb, D. Munday, E. Gutmark</i>	D24.04 Noise source detection and measurement in a supersonic air jet using Ultra-high Speed Rainbow Schlieren Deflectometry <i>M. Rajora, A. Agrawal, W. Mitchell, P. Kolhe</i>	D24.05 Unstructured Large Eddy Simulations of Hot Supersonic Jets from a Chevron Nozzle <i>G. Brès, J. Nichols, S. Lele, F. Ham</i>	D24.06 Acoustic response of heated jets to nozzle-upstream perturbations <i>M. Ihme, Y. See, G. Amini</i>
D25. Flow Control: Aerodynamics Room: Room: 31A Chair: A. Glezer, Georgia Institute of Technology	D25.01 Rotorcraft Fuselage Flow Control Using Plasma Streamwise Vortex Generators <i>D. Coleman, F. Thomas</i>	D25.02 Numerical simulations of a vertical tail of a commercial aircraft with active flow control <i>M. Rasquin, J. Martin, K. Jansen</i>	D25.03 Lift enhancement with extremum seeking control for a low-aspect-ratio wing <i>K. Taira, C. Rowley, T. Colonius</i>	D25.04 Aerodynamic Control of a Pitching Airfoil using Distributed Active Bleed <i>J. Kearney, A. Glezer</i>	D25.05 Transitory Control of Three Dimensional Mechanisms in Impulse Actuated Stall Control <i>S. Haering, R. Moser</i>	D25.06 Numerical Study of Three Dimensional Mechanisms in Impulse Actuated Stall Control <i>S. Haering, R. Moser</i>
D26. Reactive Flows II: Turbulent Combustion Modelling Room: Room: 31B Chair: T. Echehki, North Carolina State U.	D26.01 Numerical Investigation of a Piloted Premixed Jet Burner <i>Y. Chen, M. Ihme</i>	D26.02 Verification and Validation of a Chemical Reaction Solver Coupled to the Piecewise Parabolic Method <i>N. Attal, P. Ramaprabhu, J. Hossain, V. Karkhanis, S. Roy, J. Gord, M. Uddin</i>	D26.03 Nonlinear Principal Component Analysis for Combustion Large-Eddy Simulation <i>H. Mirgolbabaei, T. Echehki</i>	D26.04 A Novel Principal Component Analysis-Based Acceleration Scheme for LES-ODT: An A Priori Study <i>T. Echehki, H. Mirgolbabaei</i>	D26.05 LES-ODT Simulations of Turbulent Reacting Shear Layers <i>A. HOFFIE, T. Echehki</i>	D26.06 Novel Strategies for Coupling 3D LES with ODT Solutions Based on Wavelet and Assimilation Methods <i>Y. Fu, T. Echehki</i>
D27. Supersonic Flows I Room: Room: 31C Chair: X. Zhong, U. of California, Los Angeles	D27.01 Characterization of the Shear Layer in a Mach 3 Shock/Turbulent Boundary Layer Interaction <i>C. Helm, S. Priebe, P. Dupont, P. Martin</i>	D27.02 Shock Boundary Layer Interaction Sensitivity to Upstream Geometric Perturbations <i>L. Campo, D. Helmer, J. Eaton</i>	D27.03 LES Study of Shock Wave and Turbulent Boundary Layer Interaction <i>J. Li, S. Priebe, P. Martin</i>	D27.04 Large-Eddy Simulation of a Shock Train in a Duct with Side Walls <i>B. Morgan, K. Duraisamy, S. Lele</i>	D27.05 Toluene PLIF temperature and pressure imaging in supersonic flows <i>V. Miller, M. Gamba, M. Mungal, R. Hanson</i>	D27.06 A Multi-Zone and Cut-Cell Method for High-Order Numerical Simulations of Compressible Flow Over Arbitrary Geometries <i>P. Greene, J. Eldredge, X. Zhong, J. Kim</i>
D28. Free-Surface Flows II Room: Room: 32A Chair: J. Rodriguez-Rodriguez, Carlos III U. of Madrid	D28.01 Numerical simulations of transient air entrainment by rough and smooth plunging jets <i>K. Kiger, N. Kharoua, L. Khezzer</i>	D28.02 Lagrangian observations of acceleration and bubble dynamics in plunging breakers <i>M. Canals, A. Amador</i>	D28.03 An Experimental Study of Droplets Produced by Plunging Breakers <i>D. Wang, D. Dai, X. Liu, J. Duncan</i>	D28.04 Quantification of air entrainment in a turbulent breaker from Bubble Image Velocimetry (BIV) data <i>J. Rodriguez-Rodriguez, J. Lasheras</i>	D28.05 Laminar jet impingement and hydraulic jump behavior on a superhydrophobic surface with isotropic slip <i>J. Vanderhoff, J. Prince, D. Maynes</i>	D28.06 Computational Study of Air Entrainment by Plunging Jets – Influence of Jet Inclination <i>S. Deshpande, M. Trujillo</i>
D29. Porous Media Flows II Room: Room: 32B Chair: D. Papavassiliou, U. of Oklahoma	D29.01 Distribution of flow-induced stresses in the pore space of random porous media <i>D. Papavassiliou, N. Pham</i>	D29.02 The porous medium permeability and effective diffusion coefficient direct correlation <i>B. Markicevic</i>	D29.03 Capillary pinning of immiscible gravity currents in porous media <i>B. Zhao, C. MacMinn, M. Szulczewski, H. Huppert, R. Juanes</i>	D29.04 Fluid Drainage from Porous Reservoirs <i>Z. Zheng, B. Soh, H. Huppert, H. Stone</i>	D29.05 A Solutal Fingering Instability during Capillary Imbibition in Porous Media <i>W. Ristenpart, N. Young, C. Guido</i>	D29.06 Wicking and evaporation of liquid droplets in multi-layered porous materials <i>A. Vahdani, A. Gat, H. Navaz, M. Gharib</i>
D30. Nanofluids: Computations I Room: Room: 33A Chair: N. Priezjev, Michigan State U.	D30.01 Controlling Surface Roughness to Enhance Mass Flow Rates in Nanochannels <i>M. Zimon, D. Emerson, J. Reese</i>	D30.02 Properties of Water/Gold Nanofluids <i>G. Pulleti, S. Paolucci, M. Sen</i>	D30.03 Nitrogen Flow in a Nanonozzle with Heat Addition <i>S. Averkin, Z. Zhang, N. Gatsonis</i>	D30.04 Molecular Dynamics Simulation of Gas Separation using Nanoporous Graphene <i>H. Au, M. Boullier, P. Poesio, N. Hadjiconstantinou, R. Karnik</i>	D30.05 Polarization as a field variable from molecular dynamics simulations <i>K. Mandadapu, J. Templeton, J. Lee</i>	D30.06 Thermal Resistance and Temperature Jumps at Liquid/Solid Interfaces: Insights from Molecular Dynamics Simulations <i>M. Pucci, S. Troian</i>

Sunday Afternoon, 18 November 2012

Session	14:15	14:28	14:41	14:54	15:07	15:20
D32. Focus Session: Vortex Dynamics in Fluid-Structure Interactions II Room: Room: 33C Chair: D. Crowdy, Imperial College London	D32.01 <u>Analytical solutions for hollow vortex pairs in a channel</u> <i>C. Green, D. Crowdy</i>	D32.02 <u>Hollow Vortices in Flow Past a Flat Plate</u> <i>A. Elcrat, L. Zannetti</i>	D32.03 <u>Vortex Dynamics at Early Time Stages of Viscous Flow past a Finite Plate</u> <i>L. Xu, M. Nitsche</i>	D32.04 <u>Frequency spectrum and scale dependence of a propulsive self-excited vortex generator</u> <i>R. Whittlesey, J. Dabiri</i>	D32.05 <u>Three-Dimensional Vortex Design by Hydrofoil Acceleration</u> <i>M. Scheeler, D. Kleckner, W. Irvine</i>	D32.06 <u>An Experimental Investigation on the Interference of the Multiple Wind Turbines with Different Layout Patterns in Atmospheric Boundary Layer Winds</u> <i>H. Hu, W. Tian, A. Ozbay</i>

Sunday Afternoon, 18 November 2012					
Session	15:33	15:46	15:59	16:12	16:25
D1. Geophysical: Atmospheric I Room: Room: 22 Chair: J. Kleissl, U. of California, San Diego	D1.07 Numerical Simulations of the Urban-Type Boundary Layer Experiment <i>S. Kandala, D. Rempfer, M. Bruno, C. Wark</i>	D1.08 An Improved Simulation of the Diurnally Varying Street Canyon Flow <i>N. Yaghoobian, J. Kleissl, K. Paw U</i>	D1.09 Flushing of a dense pollutant from a square 2D street canyon <i>N. Kaye, Z. Baratian</i>	D1.10 Experimental investigation of the flow over periodic hills <i>C. Cierpka, S. Scharnowski, M. Ehlert, M. Manhart, C. Kähler</i>	Refreshment Break, 16:25-16:45 Ballroom D
D2. Convection and Buoyancy-Driven Flows II: Rayleigh-Benard Convection Room: Room: 23A Chair: B. Behringer, Duke U.	D2.07 An experimental study of flow reversals in turbulent Rayleigh-Bénard convection in rectangular cells <i>S. Huang, R. Ni, K. Xia</i>	D2.08 Natural convection inside a cylindrical container with a free upper surface <i>G. Ramirez-Zúñiga, G. Hernández, G. Hernández-Cruz, J. Núñez, E. Ramos</i>	D2.09 Non- Oberbeck- Boussinesq effects in Poiseuille- Rayleigh- Bénard turbulent channel flow <i>A. Soldati, F. Zonta</i>		
D3. Multiphase Flows: Bubble Dynamics Room: Room: 23B Chair: G. Tryggvason, Notre Dame U.	D3.07 On the importance of the Mesler entrainment mechanism in turbulent breaking waves <i>M. Mortazavi, V. Le Chenadec, D. Kim, A. Mani</i>	D3.08 Efficient Time-Stepping Scheme for Incompressible Two-Phase Flows with Large Density Ratios <i>S. Dong</i>	D3.09 Experimental investigation of the motion of bubble clusters and the flow structures with the clusters <i>M. Date, K. Maeda, T. Ogasawara, S. Takagi, Y. Matsumoto</i>	D3.10 DNS of Bubbly Flows in Vertical Channels <i>J. Lu, S. Dabiri, G. Tryggvason</i>	
D4. Drops II Room: Room: 23C Chair: O. Basaran, Purdue U.	D4.07 Symmetric and Asymmetric Coalescence of Drops on a Substrate <i>F. Hernandez-Sanchez, L. Lubbers, A. Eddi, J. Snoeijer</i>	D4.08 Spontaneous penetration of a non-wetting drop into an exposed pore <i>P. Yue, Y. Renardy</i>	D4.09 Drop Impingement on Highly Wetting Porous Thin Films: Theoretical Justification for the Washburn-Reynolds Number <i>C. Buie, Y. Joung</i>	D4.10 Fluid dynamics following flow shut-off in bottle filling <i>S. Thete, S. Appathurai, H. Gao, O. Basaran</i>	
D5. Computational Fluid Dynamics II Room: Room: 24A Chair: E. Balaras, George Washington U.	D5.07 On the POD based reduced order modeling of high Reynolds flows <i>F. Behzad, B. Helenbrook, G. Ahmadi</i>	D5.08 Projection of Discontinuous Galerkin Variable Distributions During Adaptive Mesh Refinement <i>C. Ballesteros, M. Herrmann</i>	D5.09 A Spectral Adaptive Mesh Refinement Method for Homogenous Isotropic Turbulence <i>L. Nasr Azadani, A. Staples</i>	D5.10 Adaptive Mesh Redistribution for Hyperbolic Conservation Laws <i>H. Pathak</i>	
D6. Electrokinetics II Room: Room: 24B Chair: D. Salac, SUNY Buffalo	D6.07 Electrokinetic investigations of uniformly dissociated polymer films <i>A. Barbati, B. Kirby</i>	D6.08 Streaming Potential of an Electrolyte in a Microchannel with an Axial Temperature Gradient <i>M. Dietzel, S. Hardt</i>	D6.09 Ion Altered Fluorescence Imaging (IAFI): A Non-invasive, Visualization Method Which Simultaneously Images Scalar Fields and Quantifies Local Ion Concentration <i>V. Shkolnikov, J. Santiago</i>	D6.10 Diffusion of molecules along incompressible interfaces due to electric fields <i>E. Kolahdouz, D. Salac</i>	
D7. Microfluidics: Methods and Devices II Room: Room: 24C Chair: M. Prakash, Stanford U.	D7.07 Selective pumping in a network: A novel bioinspired flow transport paradigm <i>Y. Aboelkassem, A. Staples</i>	D7.08 Hand-powered microfluidics: A membrane pump with a patient-to-chip syringe interface <i>B. MacDonald, M. Gong, T. Nguyen, D. Sinton</i>	D7.09 Digitally controlled droplet microfluidic system based on electrophoretic actuation <i>D. Im, B. Yoo, M. Ahn, D. Moon, I. Kang</i>	D7.10 Puch Card Programmable Microfluidics <i>G. Korir, M. Prakash</i>	
D8. Particles: Experimental Room: Room: 25A Chair: G. Voth, Wesleyan U.	D8.07 Lagrangian Measurements of Vorticity and the Rotational Dynamics of Anisotropic Particles in Turbulence <i>G. Geyer, S. Parsa, S. Kramel, G. Voth</i>	D8.08 WITHDRAWN	D8.09 Simultaneous 3D measurement of the translation and rotation of finite size particles and the flow field in a fully developed turbulent water flow <i>M. Gibert, S. Klein, E. Bodenschatz</i>	D8.10 Hydrodynamic alignment of Nano-Fibrillated Cellulose in extensional flow <i>K. Håkansson, F. Lundell, L. Prah Wittberg, L. Wågberg, D. Söderberg</i>	
D9. Interfacial/Thin Film Instability II: Fingering Room: Room: 25B Chair: S. Kieweg, U. of Kansas	D9.07 Contact line instability of gravity-driven flow of power-law fluids <i>B. Hu, S. Kieweg</i>	D9.08 Inhibition of viscous fluid fingering: A variational scheme for optimal flow rates <i>J. Miranda, E. Dias, E. Alvarez-Lacalle, M. Carvalho</i>	D9.09 Modelling the suppression of radial fingering in elastic Hele-Shaw cells <i>D. Pihler-Puzovic, R. Perillat, M. Heil, A. Juel</i>	D9.10 Thin-film flows without precursors <i>R. Juanes, L. Cueto-Felgueroso, M. Szulczewski</i>	
D10. Instability: Jets, Wakes and Shear Layers II: Wakes I Room: Room: 25C Chair: A. Ekmekci, U. of Toronto	D10.07 Experimental sensitivity analysis of the global mode frequency of cylindrical bodies with blunt trailing edges at large Re <i>O. Cadot, M. Grandemange, V. Parezanovic</i>	D10.08 Experimental investigation of flow instabilities behind a cube <i>L. Klotz, S. Goujon-Durand, J. Wesfreid</i>			

Sunday Afternoon, 18 November 2012					
Session	15:33	15:46	15:59	16:12	16:25
D11. Microfluidics: Mixing Room: Room: 26A Chair: N. Aubry, Carnegie Mellon U.	D11.07 An Experimental Study of Molecular Mixing Enhancement in a Small Shear Layer Facility <i>R. Nehe, M. Koochesfahani</i>	D11.08 Numerical study of elastic turbulence in a 3D curvilinear micro-channel <i>H. Zhang, T. Kunugi, F. Li</i>	D11.09 Electrothermal blinking vortices for chaotic mixing <i>S. Loire, P. Kauffmann, P. Gimenez, C. Meinhart, I. Mezic</i>	D11.10 Experimental Study of Electrothermal 3D Mixing using 3D microPIV <i>P. Kauffmann, S. Loire, C. Meinhart, I. Mezic</i>	
D12. Vortex II Room: Room: 26B Chair: S. Khatri, U. of North Carolina	D12.07 A bypass transition in the Lamb-Oseen vortex <i>L. Bisanti, P. Brancker, C. Airiau</i>	D12.08 Formation of type II vortex streets <i>I. Kim, X. Wu</i>	D12.09 From a Desingularized Vortex Sheet Model to a Turbulent Mixing Layer <i>U. Paul, R. Narasimha</i>	D12.10 Vortex Dynamics in High Reynolds number, Acoustically Forced, Reacting Wakes near the Global Stability Boundary <i>B. Emerson, K. Murphy, T. Lieuwen</i>	
D13. Geophysical: General II Room: Room: 27A Chair: C. Cenedese, Wood Hole Oceanographic Institution	D13.07 Zonal turbulence driven by baroclinic instabilities in the thermal quasigeostrophic equations <i>E. Warnford, P. Dellar</i>	D13.08 Zonal winds and flows generated by harmonic forcing in planetary atmospheres, subsurface oceans and cores <i>A. Sauret, D. Cebron, M. Le Bars, S. Le Dizès, P. Le Gal</i>	D13.09 Coherent structures and warm-core rings in the Gulf of Mexico <i>D. Lipinski, K. Mohseni</i>	D13.10 An experimental and numerical study of cyclones produced by suction in rotating stratified flows <i>P. Le Gal, P. Hassanzadeh, O. Aubert, M. Le Bars, P. Marcus</i>	
D14. General Experiments II Room: Room: 27B Chair: R. Miorini, The Johns Hopkins U.	D14.07 In measurements of spatial distribution of surface deformation in studies of flow induced vibration <i>C. Zhang, R. Miorini, J. Katz</i>	D14.08 Development of Luminescent Imaging for Capturing Cavitation in Water on Solid Surface <i>A. Aikawa, J. Ando, H. Sakaue</i>	D14.09 Global Temperature Measurement of Supercooled Water under Icing Conditions using Two-Color Luminescent Images and Multi-Band Filter <i>M. Tanaka, K. Morita, S. Kimura, H. Sakaue</i>	D14.10 Lifetime Characterization of Electro-Luminescence Based Pressure-Sensitive Paint System for Unsteady Flow Field Measurements <i>Y. Iijima, H. Sakaue</i>	
D15. Biofluids: Large Swimmers I Room: Room: 28A Chair: E. Longmire, U. of Minnesota	D15.07 Modeling an elastic swimmer driven at resonance <i>P. Yeh, A. Alexeev</i>	D15.08 Applying IR Tomo PIV and 3D Organism Tracking to Study Turbulence Effects on Oceanic Predator-Prey Interactions <i>D. Adhikari, M. Hallberg, B. Gemmill, E. Longmire, E. Buskey</i>	D15.09 Quantitative analysis of the role of symmetry in biomimetic propulsive wakes <i>V. Raspa, R. Godoy-Diana, B. Thiria</i>	D15.10 Effect of longitudinal ridges on the aerodynamic performance of a leatherback turtle model <i>K. Bang, J. Kim, H. Kim, S. Lee, H. Choi</i>	
D16. Biofluids: Arteries Room: Room: 28B Chair: M. Plesniak, The George Washington U.	D16.07 Numerical Investigation of Heat Transfer and Flow Characteristics of non-Newtonian Blood Flow in Atherosclerosis Coronary Artery: the Effect of Magnetic Field <i>S. Ghaffari, S. Alizadeh, M. Karimi</i>	D16.08 Wall Shear Stress in Aorta with Coarctation and Post-Stenotic Dilatation - Scale Resolved Simulation of Pulsatile Blood Flow <i>R. Gardhagen, M. Karlsson</i>	D16.09 Blood flow characteristics in the aortic arch <i>L. Prah Wittberg, S. van Wyk, M. Mihaescu, L. Fuchs, E. Gutmark, P. Backeljauw, I. Gutmark-Little</i>	D16.10 Fluid-structure interaction analysis on the effect of vessel wall hypertrophy and stiffness on the blood flow in carotid artery bifurcation <i>S. Lee, H. Choi, J. Yoo</i>	
D17. Biofluids: Microswimmers and Hydrodynamic Interactions Room: Room: 28C Chair: R. Goldstein, U. of Cambridge	D17.07 Hydrodynamic synchronization of flagella on the surface of the colonial alga <i>Volvox carterii</i> <i>D. Brumley, M. Polin, R. Goldstein, T. Pedley</i>	D17.08 Do proximate, C. elegans swimmers synchronize their gait? <i>J. Yuan, D. Raizen, H. Bau</i>	D17.09 Simulations of artificial swimmers in confined flows <i>L. Brandt, L. Zhu, E. Gjølberg</i>	D17.10 Hydrodynamical entrapment of ciliates at the air-liquid interface <i>J. Ferracci, H. Ueno, K. Numayama-Tsuruta, Y. Imai, T. Yamaguchi, T. Ishikawa</i>	
D18. Biofluids: Complex Interaction Room: Room: 28D Chair: R. Bouffanais, Singapore U. of Technology and Design	D18.07 Multiscale Modeling of Virus Entry via Receptor-Mediated Endocytosis <i>J. Liu</i>	D18.08 Interaction between endothelial cells and albumin encapsulated droplets in Poiseuille flow <i>R. Seda, J. Fowlkes, J. Bull</i>	D18.09 Modeling Lymphoma Growth in an Evolving Lymph Node Using a Diffuse Domain Approach <i>Y. Chuang, V. Cristini, Y. Chen, X. Li, H. Frieboes, J. Lowengrub</i>		
D19. Surface Tension I Room: Room: 28E Chair: S. Kumar, U. of Minnesota	D19.07 Physics, mathematics and numerics of particle adsorption on fluid interfaces <i>M. Schmuck, G. Pavliotis, S. Kalliadasis</i>	D19.08 Double-diffusive Marangoni convection around exothermic chemical fronts <i>L. Rongy, P. Assemat, A. De Wit</i>	D19.09 Optically controlled Marangoni Tweezers <i>S. Hardt, S. Nambodiri, S. George, T. Baier, M. Ewald, M. Biesalski</i>	D19.10 Harnessing Compositional Marangoni Flows in Depositing Nanoparticle Films <i>M. Majumder, M. Pasquali</i>	
D20. Turbulent Boundary Layers II: Structures Room: Room: 30A Chair: P. Schlatter, KTH	D20.07 Two-point correlations for zero-pressure-gradient turbulent boundary layers and channels at $Re_\tau \approx 1000 - 2000$ <i>J. Sillero, J. Jiménez, R. Moser</i>	D20.08 Near-wall turbulent fluctuation in the absence of the wide outer motions <i>Y. Hwang</i>	D20.09 A comparison of spanwise vorticity fluctuations statistics over $\delta^+ = 350 - 8000$ <i>C. Morrill-Winter, R. Ebner, R. Baijya, P. Vukoslavcevic, J. Klewicki, J. Wallace, I. Marusic</i>	D20.10 Small-scale statistics in direct numerical simulation of turbulent channel flow up to $Re_\tau = 5120$ <i>K. Morishita, T. Ishihara, Y. Kaneda</i>	

Refreshment Break, 16:25-16:45
Ballroom D

Sunday Afternoon, 18 November 2012					
Session	15:33	15:46	15:59	16:12	16:25
D21. Turbulence Simulation: Isotropic/Homogenous Shear Room: Room: 30B Chair: J. Riley, U. of Washington	D21.07 The effect of aspect ratio on statistically-stationary homogeneous shear flow <i>S. Dong, A. Sekimoto, J. Jiménez</i>	D21.08 Direct numerical simulations of statistically-stationary homogeneous shear turbulence <i>A. Sekimoto, S. Dong, J. Jiménez</i>	D21.09 Turbulence generation through concentrated momentum sources <i>A. Maqui, D. Donzis</i>	D21.10 Mechanism of axis-switching in low aspect-ratio rectangular jets <i>N. Chen, H. Yu</i>	Refreshment Break, 16:25–16:45 Ballroom D
D22. Turbulence Modeling: LES Wall Models Room: Room: 30C Chair: D. Pullin, California Institute of Technology	D22.07 Dynamic wall-modeling for LES of shock/boundary-layer interacting separated flow at high Reynolds number <i>S. Kawai, J. Larsson</i>	D22.08 Near-Wall Modeling for Large Eddy Simulation of Convective Heat Transfer in Turbulent Boundary Layers <i>H. Park, K. Moon, E. Oztekin, R. McDermott, C. Lee, J. Choi</i>			
D23. Turbulence Theory: General I Room: Room: 30D Chair: G. Eyink, Johns Hopkins U.	D23.07 Turbulence modulation through the interface of a deformable drop <i>L. Scarbolo, D. Molin, A. Soldati</i>	D23.08 Turbulence close to the critical point of a fluid <i>G. Verhille, C. Lachize, P. Le Gal</i>	D23.09 Chaos Synchronization in Navier-Stokes Turbulence <i>C. Lalescu, C. Meneveau, G. Eyink</i>		
D24. Acoustics II: Jets and Cavities Room: Room: 30E Chair: M. Wang, U. of Notre Dame	D24.07 Active Control of Jet Noise Using Observable Inferred Decomposition and Large Window PIV <i>Z. Berger, M. Berry, K. Low, L. Cordier, B. Noack, S. Gogineni, M. Glauser</i>	D24.08 Scaling model for nonlinear supersonic jet noise <i>W. Baars, C. Tinney</i>	D24.09 Large-eddy simulation of crackle in heated supersonic jets <i>J. Nichols, S. Lele, F. Ham, S. Martens, J. Spyropoulos</i>	D24.10 Predicting Acoustic Wave Generation and Amplification inside a Rectangular Cavity <i>R. Schmit, J. Grove</i>	
D25. Flow Control: Aerodynamics Room: Room: 31A Chair: A. Glezer, Georgia Institute of Technology	D25.07 Feedback control of a pitching and plunging airfoil via direct numerical simulation <i>S. Dawson, S. Brunton, C. Rowley</i>	D25.08 The Transient Aerodynamic Forces Effected by Trailing Edge Active Flow Control <i>D. Brzozowski, J. Culp, A. Glezer</i>	D25.09 Parametric Investigation of Nanosecond Pulse Driven Dielectric Barrier Discharge Plasma Actuators for Aerodynamic Flow Control <i>R. Dawson, J. Little</i>	D25.10 On least-order flow decompositions for aerodynamics and aeroacoustics <i>M. Schlegel, B. Noack, P. Jordan</i>	
D26. Reactive Flows II: Turbulent Combustion Modelling Room: Room: 31B Chair: T. Echekki, North Carolina State U.	D26.07 FDF Simulation of a Realistic Gas Turbine Combustor <i>N. Ansari, P. Piscuineri, P. Strakey, P. Givi</i>	D26.08 Petascale FDF Large Eddy Simulation of Reacting Flows <i>P. Piscuineri, S. Yilmaz, P. Givi</i>	D26.09 Filtered Density Function for Large Eddy Simulation of Local Entropy Generation in Turbulent Reacting Flows <i>M. Safari, M. H. Sheikh</i>	D26.10 LES-CMC Approach for Dilute Reacting Sprays <i>S. De, B. Chen, S. Kim</i>	
D27. Supersonic Flows I Room: Room: 31C Chair: X. Zhong, U. of California, Los Angeles	D27.07 Rainbow Schlieren Deflectometry Measurements With a Pulse Detonation Engine <i>C. DeSio, C. Stevens, R. Johnson, S. Olcmen</i>	D27.08 Planar Imaging of Mach 3 Hypermixer Flowfields with Varying Geometry <i>R. Burns, N. Clemens</i>	D27.09 Numerical investigation of non-equilibrium effects in hypersonic turbulent boundary layers <i>P. Kim, J. Kim, X. Zhong, J. Eldredge</i>	D27.10 Transition within a hypervelocity boundary layer on a 5-degree half-angle cone in freestream air/CO ₂ mixtures <i>J. Jewell, R. Wagnild, I. Leyva, G. Candler, J. Shepherd</i>	
D28. Free-Surface Flows II Room: Room: 32A Chair: J. Rodriguez-Rodriguez, Carlos III U. of Madrid	D28.07 Laminar Jet Impingement and Hydraulic Jump Behavior on a Horizontal Surface with Anisotropic Slip <i>J. Prince, M. Johnson, J. Vanderhoff, D. Maynes</i>	D28.08 Flow visualization of the water impact problem <i>H. Mayer, R. Krechetnikov</i>	D28.09 Origin of ejecta in the water impact problem <i>R. Krechetnikov</i>	D28.10 Three-dimensional oblique water-entry problems at small deadrise angles <i>M. Moore, S. Howison, J. Ockendon, J. Oliver</i>	
D29. Porous Media Flows II Room: Room: 32B Chair: D. Papavassiliou, U. of Oklahoma	D29.07 Capillary trapping in rocks: impact of pore connectivity <i>Y. Tanino, M. Blunt</i>	D29.08 Scaling laws for the imbibition of textured surfaces comprising short pillars with rounded edges <i>K. Okumura, M. Obara, M. Hamamoto-Kurosaki</i>	D29.09 Imbibition in porous media <i>B. Levache, D. Bartolo, M. Bourrel</i>	D29.10 Oil drainage in model porous media by viscoelastic fluids <i>J. Beaumont, H. Bodiguel, A. Colin</i>	
D30. Nanofluids: Computations I Room: Room: 33A Chair: N. Priezjev, Michigan State U.	D30.07 A multiscale method for modeling high-aspect-ratio micro/nano flows <i>D. Lockerby, M. Borg, J. Reese</i>	D30.08 Influence of Slip Boundary Conditions and Confinement on Molecular Diffusion in Nanochannels: A Molecular Dynamics Simulation Study <i>A. Kharazmi, N. Priezjev</i>	D30.09 Molecular dynamics simulations of oscillatory Couette flows with slip boundary conditions <i>N. Priezjev</i>	D30.10 Effective Translational Diffusion of Nanorotors as Rotary Powered Random Walkers <i>A. Nourhani, P. Lammert, A. Borhan, V. Crespi</i>	

Sunday Afternoon, 18 November 2012					
Session	15:33	15:46	15:59	16:12	16:25
D32. Focus Session: Vortex Dynamics in Fluid-Structure Interactions II Room: Room: 33C Chair: D. Crowdy, Imperial College London	D32.07 Von Kármán vortex streets: analytical solutions with distributed vorticity <i>D. Crowdy, C. Green</i>	D32.08 Structure and stability of the finite-area von Karman street <i>P. Luzzatto-Fegiz, C. Williamson</i>	D32.09 Nonholonomic Mechanics and Fluid-Body Interactions <i>S. Kelly, P. Tallapragada</i>	D32.10 Fluid structure interaction with low and high order flexibility using volume penalization <i>J. Sheng, T. Engels, D. Kolomenskiy, K. Schneider</i>	Break 16:25–16:45 Ballroom D

Sunday Afternoon, 18 November 2012

Session	16:45	16:58	17:11	17:24	17:37	17:50
E1. Geophysical: Ocean I Room: Room: 22 Chair: S. Balachandar, U. of Florida	E1.01 Quantifying Suspended Sediment Diffusion Through Direct <i>in situ</i> Measurements of Turbulent Schmidt Number <i>I. Tse, E. Variano</i>	E1.02 High-Schmidt-number mass transport mechanisms from a turbulent flow to absorbing sediments <i>C. Scalo, U. Piomelli, L. Boegman</i>	E1.03 Sedimentation of porous and solid particles in stratified fluids <i>S. Khatri, C. Arnosti, R. Camassa, C. Falcon, X. He, R. McLaughlin, J. Prairie, B. White, S. Yu, K. Ziervogel</i>	E1.04 Numerical simulation on fine sediment transport in steady and oscillatory boundary layer – The role of rheology <i>X. Yu, E. Ozdemir, T. Hsu, S. Balachandar</i>	E1.05 Mechanisms of complete turbulence suppression in turbidity currents <i>M. Shringarpure, M. Cantero, S. Balachandar</i>	
E2. Convection and Buoyancy-Driven Flows III: Rayleigh-Benard Convection Room: Room: 23A Chair: Y. Feldman, California Institute of Technology	E2.01 Turbulent thermal convection with polymer additives and with smooth and rough top and bottom plates <i>K. Xia, P. Wei, R. Ni, X. Li</i>	E2.02 On Laminar and Turbulent Free Convection in Thin Spherical Shells <i>Y. Feldman, T. Colonius</i>	E2.03 Natural convection in a partially heated cylindrical container <i>J. Nuñez, E. Ramos</i>	E2.04 Constant- flux discrete heating in a unit aspect-ratio annulus <i>J. Lopez, S. Mani, Y. Do, F. Marques</i>	E2.05 Heat transfer through suspensions of particles in turbulent convection <i>A. Scagliarini, A. Gyllfason, F. Toschi</i>	
E3. Multiphase Flows: Boiling Room: Room: 23B Chair: P. Taborek, U. of California Irvine	E3.01 Lattice Boltzmann Simulation of Thermal Multiphase Flows with Dynamic Wall Interactions <i>M. Ikeda, L. Schaefer</i>	E3.02 Computations of Nucleate Boiling <i>G. Tryggvason, J. Lu</i>	E3.03 Transient two-phase flow in microfluidics and nanofluidics <i>A. Velasco, A. Song, S. Friedman, M. Pevarnik, Z. Siwy, P. Taborek</i>			
E4. Drops III Room: Room: 23C Chair: J. Vanderhoff, Brigham Young U.	E4.01 Influence of Flow on Longevity of Superhydrophobic Coatings <i>M. Samaha, H. Vahedi Tafreshi, M. Gad-el-Hak</i>	E4.02 Use of the string method to find minimal energy paths of droplets on superhydrophobic surfaces <i>K. Petersen</i>	E4.03 Characterization of heat transfer from superhydrophobic substrates to water droplets <i>R. Hays, J. Vanderhoff, D. Maynes</i>	E4.04 Two-Pronged Jet Formation Caused by Droplet Impact on Anisotropic Superhydrophobic Surfaces <i>J. Pearson, D. Maynes, D. Bilodeau, B. Webb</i>	E4.05 Spreading of liquid drop on superhydrophilic micropillar array <i>S. Kim, M. Moon, K. Lee, H. Kim</i>	
E5. Computational Fluid Dynamics III Room: Room: 24A Chair: C. Pantano, U. of Illinois at Urbana-Champaign	E5.01 Simulation of Turbulence using Quasi Equilibrium Lattice Boltzmann Method <i>C. Thantapanally, D. Patil, S. Succi, S. Ansumali</i>	E5.02 Hybrid Lattice-Boltzmann model for Thermally Coupled Fluid-Solid Problem <i>L. Chen, L. Schaefer</i>	E5.03 Navier-Stokes adjoint accuracy for aeroacoustic flow control and analysis <i>R. Vishnampet, J. Freund, D. Bodony</i>	E5.04 CFD-based derivative-free optimization using polyharmonic splines, Part 1 <i>P. Beyhaghi, D. Cavaglieri, T. Bewley</i>	E5.05 CFD-based derivative-free optimization using polyharmonic splines, Part 2 <i>D. Cavaglieri, P. Beyhaghi, T. Bewley</i>	
E6. Electrokinetics III Room: Room: 24B Chair: A. Mani, Stanford U.	E6.01 Electroosmosis in a potassium chloride aqueous solution in a silica nanochannel with counter-charged surface patches <i>H. Zambrano, M. Pinti, A. Conlisk, S. Prakash</i>	E6.02 Effect of divalent ions on electroosmotic transport in a sodium chloride aqueous solution confined in an amorphous silica nanochannel <i>A. Conlisk, H. Zambrano, N. Cevheri, M. Yoda</i>	E6.03 Electrowetting of electrolyte solution in a nanoslit with overlapped electric double layer: continuum approach <i>I. Kang, J. Lee</i>	E6.04 Nonlinear electrokinetic transport in networks of microscale and nanoscale pores <i>S. Alizadeh, M. Andersen, A. Mani</i>	E6.05 Large Apparent Electric Size of Solid-State Nanopores Obtained by Focused Ion Beam Milling <i>R. Fulcrand, C. Lee, L. Joly, A. Siria, A. Bianco, L. Bocquet</i>	
E7. Suspensions I Room: Room: 24C Chair: J. Goddard, U. of California, San Diego	E7.01 Microstructure and Rheology of Particle Suspension in a Yield Stress Fluid <i>S. Deboeuf, L. Ducloué, N. Lenoir, G. Ovarlez</i>	E7.02 Effect of sheared-induced diffusion on the transfer of heat across a sheared suspension <i>B. Metzger, X. Yin</i>	E7.03 Effects of inertia on the steady shear rheology of concentrated emulsions: sign reversal of normal stress differences <i>P. Srivastava, K. Sarkar</i>	E7.04 Buckling of particle-laden interfaces <i>T. Kassuga, J. Rothstein</i>	E7.05 Suspensions with a tunable effective viscosity <i>P. Peyla, S. Rafai, L. Jibuti</i>	
E8. Particles: Collisions Room: Room: 25A Chair: J. Wang, Cornell U.	E8.01 Computing Particle Collisions in Fluids by Incorporating the Lubrication Theory in the Immersed Interface Method <i>A. El Yacoubi, S. Xu, Z. Wang</i>	E8.02 The Importance of Collisions in the Simulation of Lunar Soil Ejection during Spacecraft Landing <i>K. Berger, P. Metzger, C. Hrenya</i>	E8.03 Rheology of colloidal suspensions measured by dragging a probe <i>X. Du, P. Habas, R. Zia, E. Weeks</i>	E8.04 Stability of bed particles near the critical threshold of motion <i>J. Simeonov, J. Calantoni</i>	E8.05 Observation of the Sling Effect <i>G. Bewley, E. Saw, E. Bodenschatz</i>	
E9. Aerodynamics I Room: Room: 25B Chair: K. Mohseni, U. of Florida	E9.01 Aerodynamic Improvements to Cargo Carrying Rail Cars due to Roof Modifications <i>R. Condie, D. Maynes</i>	E9.02 Flow over a Ram-Air Parachute Canopy <i>A. Eslambolchi, H. Johari</i>	E9.03 Flow in the near wake of hemispherical parachute shapes <i>J. Young, M. Carnasciali, M. Kandis</i>	E9.04 A lifting surface approximation for roll stall of Micro Aerial Vehicles <i>M. Shields, K. Mohseni</i>		
E10. Instability: Jets, Wakes and Shear Layers III: Wakes II Room: Room: 25C Chair: S. Maslowe, McGill U.	E10.01 Hub vortex helical instability as the origin of wake meandering in the lee of a model wind-turbine <i>F. Viola, G. Iungo, S. Camarri, F. Porte-Agel, F. Gallaire</i>	E10.02 Inviscid Instability of a Trailing Vortex <i>S. Maslowe, J. Feys</i>	E10.03 Reflectional symmetry breaking of the separated flow over 3D bluff bodies <i>M. Grandemange, M. Gohlke, O. Cadot</i>	E10.04 Three-dimensional nonlinear stability analysis of a circular cylinder wake using a reduced model based on the Ginzburg-Landau equation <i>J. Meneghini, B. Carmo, J. Aranha</i>	E10.05 Oscillation, bifurcation and growth of modal instability in bluff-body wakes: a new understanding <i>A. Sau</i>	

Sunday Afternoon, 18 November 2012

Session	16:45	16:58	17:11	17:24	17:37	17:50
E21. Turbulence Simulation: Compressible/Hypersonic Room: Room: 30B Chair: S. Girimaji, Texas A&M U.	E21.01 Direct numerical simulation of compressible Kolmogorov flow <i>R. Bertsch, S. Girimaji, G. Kumar</i>	E21.02 Reynolds and Mach number scaling in compressible isotropic turbulence <i>S. Jagannathan, D. Donzis</i>	E21.03 Turbulence statistics with quantified uncertainty in cold-wall supersonic channel flow <i>R. Ulerich, R. Moser</i>	E21.04 Strong shock and turbulence interactions w/ or w/o thermochemical non-equilibrium effects <i>X. Wang, P. Rawat, X. Zhong</i>	E21.05 Large Eddy Simulation of Shock / Turbulence Interactions <i>N. Grube, J. Li, P. Martin</i>	
E22. Turbulence Modeling: LES Room: Room: 30C Chair: J. McDonough, U. of Kentucky	E22.01 Compressible Explicitly Filtered Large-Eddy Simulation Subgrid-Scale Models Based on the Poor Man's Navier-Stokes Equations <i>J. McDonough, J. Strdtbeck</i>	E22.02 Constrained Large Eddy Simulation of Wall-bounded Turbulent Flows with Massive Separations <i>Z. Xia, Y. Shi, Z. Xiao, S. Chen</i>	E22.03 Nonequilibrium energy spectrum in subgrid-scale one-equation model in LES <i>K. Horiuti, T. Tamaki</i>	E22.04 WITHDRAWN	E22.05 WITHDRAWN	
E23. Turbulence Theory: 2D Turbulence Room: Room: 30D Chair: M. Farge, LMD-IPSL-CNRS ENS	E23.01 Spatial structure of spectral transport in two-dimensional flow <i>Y. Liao, N. Ouellette</i>	E23.02 Fokker-Planck description of the inverse cascade in two-dimensional turbulence <i>O. Kamps, M. Vosskuhle</i>	E23.03 Simple invariant solutions embedded in 2D Kolmogorov turbulence <i>R. Kerswell, G. Chandler</i>	E23.04 Exponential decay of a passive tracer variance in a two-dimensional Navier-Stokes flow <i>F. Ait Chaalal</i>	E23.05 Comparison of turbulent mixing and chaotic advection in a two-dimensional wall-bounded domain <i>B. Kadoch, W. Bos, K. Schneider</i>	
E24. Acoustics III Room: Room: 30E Chair: S. Mandre, Brown U.	E24.01 An Experimental Study of a Nonlinear Acoustic Lens Interfaced with Water <i>C. Donahue, P. Anzel, T. Keller, C. Daraio</i>	E24.02 Multiple Scales Analysis of a Thermoacoustic Heat Pump <i>M. Miller, S. Mandre</i>	E24.03 Improved parabolization of the compressible Euler equations <i>A. Towne, T. Colonius</i>	E24.04 Experimental evaluation of sound produced by two cylinders in a cross flow in various configurations <i>M. Bilka, P. Kerrian, S. Morris</i>	E24.05 Sensitivity of meteor infrasound to atmospheric uncertainties <i>C. Millet, C. Haynes</i>	
E25. Flow Control: Jets Room: Room: 31A Chair: D. Henningson, KTH	E25.01 Modeling Forced Jets with Parabolized Stability Equations <i>A. Sinha, T. Colonius</i>	E25.02 Effect of Orifice Angle on Synthetic Jet Actuators <i>P. Kabiri, D. Bohl</i>	E25.03 Spatio-Temporal Flow Structure over a NACA-0015 Airfoil under the influence of ZNMF Jet Flow Control <i>C. Atkinson, N. Buchmann, J. Soria</i>	E25.04 Using a wall-normal jet to modify the large-scale structures in a turbulent boundary layer <i>M. Talluru, B. Bishop, N. Hutchins, C. Manzie, I. Marusic</i>	E25.05 Synthetic Jet Control of a Yawing Axisymmetric Body <i>T. Lambert, B. Vukasinovic, A. Glezer</i>	
E26. Reactive Flows III: Supersonic Combustion and Theory Room: Room: 31B Chair: H. Pitsch, Stanford U.	E26.01 A priori and a posteriori analyses of the flamelet/progress variable approach for supersonic combustion <i>A. Saghafian, H. Pitsch</i>	E26.02 The bifurcation of scramjet unstart <i>I. Jang, J. Nichols, P. Moin</i>	E26.03 Quantification of multiple types of uncertainties in the HyShot II scramjet <i>J. Larsson, M. Emory, P. Constantine, N. Kseib, J. Urzay, F. Palacios, C. Gorle, G. Iaccarino</i>	E26.04 Flame front as hydrodynamic discontinuity <i>Y. Fukumoto, S. Abarzhi</i>	E26.05 The effect of the Darrieus-Landau instability on statistically planar turbulent flames <i>N. Fogla, M. Matalon, F. Creta</i>	
E27. Renewable Energy Room: Room: 31C Chair: M. Raessi, U. of Massachusetts, Dartmouth	E27.01 Energy harvesting of fluttering piezoelectric flags <i>O. Doare, S. Michelin, J. Chen, Y. Xia</i>	E27.02 Flexible Beams in Turbulent Boundary Layers for Piezoelectric Energy Harvesting <i>H. Akaydin, N. Elvin, Y. Andreopoulos</i>	E27.03 On the effects of energetic coherent motions on power and wake dynamics of an axial-flow marine turbine in an open channel <i>C. Hill, L. Chamorro, V. Neary, B. Gunawan, R. Arndt, F. Sotiropoulos</i>	E27.04 Computational simulation of ocean wave energy converters using the fast fictitious domain method <i>A. Ghasemi, A. Pathak, M. Raessi</i>	E27.05 An experimental study of small-scale flexible wind turbine blades <i>P. Pourazarm, Y. Modarres-sadeghi, M. Lackner</i>	
E28. Free-Surface Flows III Room: Room: 32A Chair: N. Ribe, Laboratoire FAST, Orsay	E28.01 Bound-state formation in falling liquid films <i>P. Nguyen, M. Pradas, S. Kalliadasis, V. Bontozoglou</i>	E28.02 Deformation of a Thin Film by a Wall Jet <i>N. Hammoud, T. Al-Housseiny, H. Stone</i>	E28.03 High spatio-temporal resolution PIV of laminar boundary layer relaxation instability at the free surface of a jet <i>M. Andre, P. Bardet</i>	E28.04 Torricelli's curtain: morphology of horizontal laminar jets under gravity <i>N. Ribe, G. Paternoster, M. Rabaud</i>	E28.05 Spatial Coherence Resonance for Maximizing Self-Organization and Pattern Fidelity in Free Surface Films <i>S. Troian, N. Liu</i>	
E29. Porous Media Flows III Room: Room: 32B Chair: M. Roper, U. of California, Los Angeles	E29.01 Film formation in a vertical Hele-Shaw cell <i>T. Ward, E. Finley, D. Wilkins, M. Sullivan</i>	E29.02 Pattern formation in poroelastic systems <i>C. MacMinn, J. Wettlaufer, E. Dufresne</i>	E29.03 Inertial flow on micropatterned surfaces: Modeling polygonal water bells <i>E. Dressaire, L. Courbin, A. Delancy, M. Roper, H. Stone</i>	E29.04 Universality Results for Multi-Layer Hele-Shaw and Porous Media Flows <i>P. Daripa</i>	E29.05 A generalized non-linear response analysis of short-time dispersion dynamics – extracting hydrodynamic permeability <i>T. Brosten, R. Maier</i>	
E30. Nanofluids: Computations II Room: Room: 33A Chair: J. Templeton, Sandia National Laboratories	E30.01 Fluid flows in nano/micro network configurations: a multiscale molecular-continuum approach <i>M. Borg, D. Lockerby, J. Reese</i>	E30.02 Realistic molecular dynamics simulations of water flow through carbon nanotube membranes <i>J. Reese, W. Nicholls, M. Borg, D. Lockerby</i>	E30.03 Combined Temperature/Momentum Boundary Conditions for Molecular Dynamics Simulations of Flow in Nanofluidic Systems <i>J. Templeton, R. Jones</i>	E30.04 Comparing Molecular Dynamics Models for Electrolyte Solutions in Nanochannels <i>J. Lee, J. Templeton</i>	E30.05 Bouncing, splashing and disintegrating nanodrops <i>J. Koplik, R. Zhang</i>	E30.06 Nanodrop impact on rough and textured surfaces <i>R. Zhang, J. Koplik</i>

Sunday Afternoon, 18 November 2012

Session	16:45	16:58	17:11	17:24	17:37	17:50
E11. Rotating Flows I: Rotating Convection Room: Room: 26A Chair: A. Rubio, U. of Colorado	E11.01 Generation of a large-scale barotropic circulation in rotating convection <i>A. Rubio, K. Julien, J. Weiss</i>	E11.02 Acceleration PDFs of particles in rotating turbulent convection <i>H. Clercx, P. Perlekar, V. Lavezzo, F. Toschi</i>	E11.03 Low Rossby number heat transport in rotating Rayleigh-Bénard convection <i>K. Julien, A. Rubio, G. Vasil, E. Knobloch</i>	E11.04 Heat Transport and Local Temperature Measurements of Geostrophic Rotating Thermal Convection <i>R. Ecke, S. Backhaus, S. Balasubramanian</i>	E11.05 Flow structure in turbulent rotating Rayleigh-Bénard convection <i>R. Kunnen, Y. Corre, H. Clercx</i>	E11.06 DNS of turbulent co- and counterrotating Taylor Couette flow up to $Re=30,000$ <i>B. Eckhardt, H. Brauckmann</i>
E12. Vortex III Room: Room: 26B Chair: E. Fonda, U. of Maryland	E12.01 Vortex Motion in Superfluid ^4He : Reformulation in the Extrinsic Vortex Filament Coordinate Space <i>B. Shivamoggi</i>	E12.02 Visualizing helium II counterflow turbulence around a cylinder <i>T. Chagovets, S. Van Sciver</i>	E12.03 Frozen particles as cryogenic fluid tracers: observation of Kelvin waves in superfluid helium <i>E. Fonda, D. Meichle, N. Ouellette, K. Sreenivasan, D. Lathrop</i>	E12.04 Experimental characterization of Kelvin waves on quantized vortices following reconnection <i>D. Meichle, E. Fonda, N. Ouellette, D. Lathrop</i>		
E13. Geophysical: General III Room: Room: 27A Chair: J. Rottman, U. of California, San Diego	E13.01 Trapped subsurface oil plumes and critical escape phenomena <i>C. Tzou, R. Camassa, Z. Lin, R. McLaughlin, K. Mertens, B. White</i>	E13.02 Numerical simulation of jets generated by a sphere moving vertically in stratified fluids <i>H. Hanazaki, S. Nakamura</i>	E13.03 On the validity of Kraichnan scalings for forced two-dimensional turbulence <i>J. Fontane, D. Dritschel, R. Scott</i>	E13.04 Perturbations from 2D Navier-Stokes: rapidly rotating and weakly stratified Boussinesq flow <i>J. Whitehead, B. Wingate</i>		
E14. Experiments: Turbulence Room: Room: 27B Chair: J. Eaton, Stanford U.	E14.01 Transition to Turbulence in Oscillatory Flow for Pulse Tube Cryocoolers <i>M. McNulty, B. Jewell, T. Fraser</i>	E14.02 Time-Resolved, Two-Dimensional Imaging of Scalar Mixing in Turbulent Gas-Phase Jets <i>M. Papageorge, J. Sutton</i>	E14.03 On investigating wall shear stress in two-dimensional plane turbulent wall jets <i>F. Mehdi, G. Johansson, C. White, J. Naughton</i>	E14.04 Turbulent Dispersion of Film Coolant in a Turbine Vane Cascade <i>S. Yapa, C. Elkins, J. Eaton</i>	E14.05 Turbulent inflow and wake of a marine hydrokinetic turbine, including effects of wave motion <i>T. Dewhurst, M. Rowell, J. DeCew, K. Baldwin, R. Swift, M. Wosnik</i>	
E15. Biofluids: Large Swimmers II Room: Room: 28A Chair: H. Haj-Hajiri, U. of Virginia	E15.01 Passive synchronization of finite dipoles in a doubly periodic domain <i>A. Tsang, E. Kanso</i>	E15.02 Optimal schooling formations using a potential flow model <i>A. Tchieu, M. Gazzola, A. De Brauer, P. Koumoutsakos</i>	E15.03 Modeling of flapping-fin propulsion with Stuart-Landau oscillator equation <i>A. Hellum, P. Bandyopadhyay</i>	E15.04 Role of Strouhal number (St) in free swimming <i>M. Saadat, H. Haj-Hariri</i>		
E16. Biofluids: Cardiovascular Simulations and Devices Room: Room: 28B Chair: P. McGah, U. of Washington	E16.01 Experimental Flow Characterization of a Flow Diverting Device <i>E. Sparrow, R. Chow, G. Campbell, A. Divani, J. Sheng</i>	E16.02 Transitional Flow in an Arteriovenous Fistula: Effect of Wall Distensibility <i>P. McGah, D. Leotta, K. Beach, A. Aliseda</i>	E16.03 A CFD study of steady flow of a Newtonian and non-Newtonian fluid through a mildly curved tube with stent-like wall protrusions patterns <i>C. Prince, S. Peterson</i>	E16.04 In vitro characterization of the technique of portal vein embolization by injection of a surgical glue <i>A. Salsac, M. Sandulache, C. Lancon, K. El Kadri Benkara</i>	E16.05 Endovascular Treatment of Thoracic Aortic Dissection: Hemodynamic Shear Stress Study <i>Y. Tang, S. Lai, S. Cheng, K. Chow</i>	
E17. Biofluids: Plants Room: Room: 28C Chair: D. Whitaker, Pomona College	E17.01 Scalings of drag reduction by elastic or brittle reconfiguration in plants <i>E. de Langre, S. Michelin, D. Lopez</i>	E17.02 Morphological changes in kelp result in reduced drag and increased stability <i>J. Rominger, H. Nepf</i>	E17.03 Inertial particle transport from peat moss vortex rings <i>S. Whitehead, E. Chang, D. Whitaker</i>	E17.04 Aerodynamics of puffball mushroom spore dispersal <i>G. Amador, A. Barberie, D. Hu</i>	E17.05 Effect of multi-ions on active flow regulation in plants <i>J. Ryu, S. Ahn, S. Kim, H. Oh, T. Kim, S. Lee</i>	E17.06 How the Venus flytrap actively snaps: hydrodynamic measurements at the cellular level <i>M. Colombani, Y. Forterre</i>
E18. Biofluids: Vesicles Room: Room: 28D Chair: M. Miksis, Northwestern U.	E18.01 Lipid Bilayer Vesicle Dynamics in DC Electric Fields <i>L. McConnell, P. Vlahovska, M. Miksis</i>	E18.02 Asymmetric Vesicle Instability in Extensional Flow <i>A. Spann, H. Zhao, E. Shaqfeh</i>	E18.03 A transient solution and scaling laws for vesicle electrodeformation and relaxation <i>H. Lin, J. Zhang, J. Zahn</i>	E18.04 The dynamics of a vesicle during adhesion processes <i>M. Blount, M. Miksis, S. Davis</i>	E18.05 The dynamics of adhesion of a pair of vesicles <i>J. Walter, L. Leal</i>	
E19. Thin Films Room: Room: 28E Chair: R. Ewoldt, U. of Illinois at Urbana-Champaign	E19.01 Interaction model between a liquid film and a spherical probe <i>R. Ledesma Alonso, D. Legendre, P. Tordjeman</i>	E19.02 Dynamics of precursor films <i>M. Franken, C. Poelma, J. Westerweel</i>	E19.03 Lubrication analysis of the nanometric coating film deposited during gravure printing <i>U. Ceyhan, R. Kitsomboonloha, S. Morris, V. Subramanian</i>	E19.04 Experimental study of the residue film in direct gravure printing of electronics <i>R. Kitsomboonloha, U. Ceyhan, S. Morris, V. Subramanian</i>	E19.05 Nanometer-scale free surface flow of molten polyethylene from a heated atomic force microscope tip <i>R. Ewoldt, J. Felts, S. Somnath, W. King</i>	
E20. Turbulent Boundary Layers III: Theory Room: Room: 30A Chair: M. Jovanovic, U. of Minnesota	E20.01 Dynamics of Streak and Roll Structures in Turbulent Plane Couette Flow <i>D. Gayme, B. Farrell, P. Ioannou, B. Lieu, M. Jovanovic</i>	E20.02 Coherent structure, amplitude modulation and higher order statistics in wall turbulence <i>B. McKeon, A. Sharma</i>	E20.03 Scaling of normal stresses in the turbulent boundary layer <i>P. Monkewitz, H. Nagib</i>	E20.04 A mean profile formulation for canonical wall-bounded turbulent flows consistent with the mean momentum equation <i>J. Phillip, I. Marusic, J. Klewicki</i>	E20.05 A new theory for the streamwise turbulent fluctuations in pipe flow <i>M. Hultmark</i>	

Sunday Afternoon, 18 November 2012

Session	16:45	16:58	17:11	17:24	17:37	17:50
E31. Focus Session: Interfacial Engineering in Thermal-Fluids II Room: Room: 33B Chair: K. Varanasi, Massachusetts Institute of Technology	E31.01 <u>Condensation enhancement using Liquid Impregnated Surfaces</u> <i>S. Anand, A. Paxson, R. Dhiman, J. Smith, K. Varanasi</i>	E31.02 <u>Novel microfluidic diodes: one-way wicking in open micro-channels controlled by channel topography</u> <i>J. Feng, J. Rothstein</i>	E31.03 <u>Leidenfrost Vapor Layer Stabilization on Superhydrophobic Surfaces</u> <i>I. Vakarelski, N. Patankar, J. Marston, D. Chan, S. Thoroddsen</i>	E31.04 <u>Viscoelasticity measurement of gel formed at the liquid-liquid reactive interfaces</u> <i>T. Ujiie</i>	E31.05 <u>Seeing Below the Drop: Direct Nano-to-microscale Imaging of Complex Interfaces Involving Solid, Liquid, and Gas Phases</u> <i>K. Rykaczewski, T. Landin, M. Walker, J. Scott, K. Varanasi</i>	
E32. Focus Session: Vortex Dynamics in Fluid-Structure Interactions III Room: Room: 33C Chair: S. Alben, U. of Michigan	E32.01 <u>Numerical Simulation of the Dynamic FSI Response and Stability of a Flapping Foil in a Dense Fluid</u> <i>E. Chae, D. Akcabay, Y. Young</i>	E32.02 <u>A parametric study of thrust and efficiency of an oscillating airfoil</u> <i>A. Mackowski, C. Williamson</i>	E32.03 <u>Aerodynamic cause of the asymmetric wing deformation of insect wings</u> <i>H. Luo, F. Tian, J. Song, X. Lu</i>	E32.04 <u>Aerodynamic performance of membrane wings with adaptive compliance</u> <i>O. Curet, A. Carrere, A. Pande, K. Breuer</i>	E32.05 <u>Vortex interactions with membrane wings</u> <i>R. Waldman, K. Breuer</i>	

Monday, 19 November 2012
Sessions G – L

Monday Morning, 19 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
G1. Geophysical: Atmospheric II Room: Room: 22 Chair: A. Aliseda, U. of Washington	G1.01 Rain-induced dissipation in hurricanes <i>T. Sabuwala, G. Gioia, P. Chakraborty</i>	G1.02 Impact of the asymmetric dynamical processes of the structure and intensity change of two-dimensional hurricane-like vortices <i>K. Menelaou, M. Yau, Y. Martinez</i>	G1.03 Radiatively Driven Turbulence at the Cloud Top <i>A. de Lozar, J. Mellado</i>	G1.04 Large-eddy simulations of contrail-to-cirrus transition in atmospheric turbulence <i>R. Paoli, O. Thouroun, J. Picot, D. Cariolle</i>	G1.05 On the evolution of stratified turbulent clouds <i>A. Maffioli, P. Davidson, S. Dalziel, N. Swaminathan</i>	G1.06 Effect of inertia of water droplets on a turbulent cloud: a toy model <i>R. Govindarajan, R. Sivaramkrishnan</i>
G2. Convection and Buoyancy-Driven Flows IV Room: Room: 23A Chair: H. Clercx, Technical U. Eindhoven	G2.01 Horizontal convection with mechanical stirring <i>R. Griffiths, K. Stewart, G. Hughes</i>	G2.02 The Effects of Surface Stress on Horizontal Convection <i>K. Matusik, S. Llewellyn Smith</i>	G2.03 Advection and buoyancy-induced turbulent diffusion in a narrow vertical tank <i>D. van Sommeren, C. Caulfield, A. Woods</i>	G2.04 Simulation of highly-unsteady hydrothermal convection above the critical temperature in the deep sea <i>S. Komurasaki</i>	G2.05 A Computational Investigation of Mixed Convection in Microscale Flows <i>R. Bilyalov, J. Baker</i>	G2.06 Buoyancy-driven instability of a miscible horizontal displacement in a Hele-Shaw cell <i>F. Haudin, L. Riolfo, B. Knaepen, A. De Wit</i>
G3. Multiphase Flows: Numerical Methods I Room: Room: 23B Chair: C. Coimbra, U. of California, San Diego	G3.01 Effect of gravity on particle dispersion in upward gas turbulent channel flow <i>Y. Mito</i>	G3.02 A numerical investigation of liquid-gas wall-bounded turbulence <i>J. McCaslin, O. Desjardins</i>	G3.03 Dynamics of a cylinder plunging into liquid: a numerical study <i>H. Ding</i>	G3.04 A conservative volume of fluid method for general grids in three dimensions <i>C. Ivey, P. Moin</i>	G3.05 Improved connectivity free front tracking method for modeling contact lines in multiphase flow <i>C. Wang, L. Zhang</i>	G3.06 Shock-driven formation of a cloud from particles swept off a surface <i>P. Wayne, T. Bernard, C. Corbin, G. Kuehner, P. Vorobieff, C. Truman, H. Smyth, A. Maloney</i>
G4. Drops IV Room: Room: 23C Chair: S. Thoroddsen, King Abdullah U. of Science and Technology, Saudi Arabia	G4.01 The breakup of thin air films caught under impacting drops <i>M. Thoraval, S. Thoroddsen, M. Thoraval, K. Takehara, T. Etoh</i>	G4.02 Toroidal bubble entrapment under an impacting drop <i>M. Thoraval, S. Thoroddsen, K. Takehara, T. Etoh</i>	G4.03 Bouncing and walking droplets <i>J. Molacek, J. Bush</i>	G4.04 A trajectory equation for walking droplets <i>A. Oza, R. Rosales, J. Bush</i>	G4.05 Bouncing droplets in quantized orbits <i>M. Labousse, S. Perrard, M. Miskin, E. Fort, Y. Couder, J. Bush</i>	G4.06 Hydrodynamic quantum analogues: droplets walking on the impossible pilot wave <i>J. Bush</i>
G5. Computational Fluid Dynamics IV Room: Room: 24A Chair: A. Cook, Lawrence Livermore National Laboratory	G5.01 Large-eddy simulations of coherent vortices embedded in an impinging jet <i>W. Wu, U. Piomelli</i>	G5.02 Numerical simulation of supersonic water vapor jet impinging on a flat plate <i>K. Kuzuu, J. Aono, E. Shima</i>	G5.03 A New Formulation for Volume-of-Fluid Simulations of Drops on Solid Surfaces: Inclusion of Adhesion Force <i>C. Chang, A. Criscione, S. Jakirlic, C. Tropea, A. Amirfazli</i>	G5.04 WITHDRAWN	G5.05 Turbulent Flows Over Three-Dimensional Shark Skin <i>A. Boomsma, L. Wen, G. Lauder, F. Sotiropoulos</i>	G5.06 Three-dimensional simulation of jellyfish by the penalty immersed boundary method <i>S. Park, C. Chang, H. Sung</i>
G6. Microfluidics: General I Room: Room: 24B Chair: F. Gallaire, EPFL	G6.01 Effect of Secondary Flows on convection-dominated dispersion <i>A. Adrover, E. Vega</i>	G6.02 Geometry-Influenced Slippage on a Bubble Mattress in Microfluidics <i>E. Karatay, S. Haase, C. Visser, C. Sun, D. Lohse, P. Tsai, R. Lammertink</i>	G6.03 Mass transfer through laminar boundary layer in 2-d microchannels with nonuniform cross section: the effect of wall curvature <i>A. Pedacchia, A. Adrover</i>	G6.04 The Effective Slip Length of a Flow of a Fluid in Cassie State along a Structured Surface <i>C. Schönecker, T. Baier, S. Hardt</i>	G6.05 Studying Droplet dynamics by depth-averaged simulation <i>M. Nagel, F. Gallaire</i>	G6.06 Creeping three-dimensional flow around a immobile penny-shaped cylindrical droplet <i>F. Gallaire</i>
G7. Suspensions II Room: Room: 24C Chair: S. Rafai, Grenoble U.	G7.01 Cahn-Hilliard modeling of particles suspended in two-phase flows <i>P. Anderson, Y. Choi</i>	G7.02 Effect of the History Force on Particle Trajectories within an Oscillatory Rotating Flow <i>S. Xu, A. Nadim</i>	G7.03 Taylor-Aris dispersion in the presence of shear-enhanced diffusion and variable mean flow <i>G. Rubinstein, I. Christov, H. Stone</i>	G7.04 Dispersion of suspension plugs in microchannels <i>M. Maxey, G. Azadi, A. Tripathi, K. Yeo</i>	G7.05 Hydrodynamics of confined suspensions <i>N. Desreumaux, R. Jeanneret, J. Caussin, E. Lauga, D. Bartolo</i>	G7.06 Hydrodynamic particle interactions in sheared microflows <i>A. Marin, M. Rossi, M. Zurita-Gotor, C. Kähler</i>
G8. Drops V Room: Room: 25A Chair: P. Steen, Cornell U.	G8.01 Surface Patterns of Parametrically-Excited Sessile Drops <i>C. Chang, J. Bostwick, S. Daniel, P. Steen</i>	G8.02 Sessile Rayleigh drop instability <i>P. Steen, J. Bostwick</i>	G8.03 Motion and coalescence of sessile drops driven by substrate wetting gradient and external flow <i>M. Ahmadlouydarab, J. Feng</i>	G8.04 Measuring the force of drag on air sheared sessile drops <i>A. Milne, B. Fleck, A. Amirfazli</i>	G8.05 Drop Stability on Leaves <i>W. Blackmore, Y. Chen, C. Hinojosa, R. Jenson, D. Nguyen, A. Wollman, M. Weislogel</i>	G8.06 Evaporative flows near the contact line of a liquid bridge <i>T. Yu, J. DiBenedetto, K. Breuer</i>
G9. Interfacial/Thin Film Instability III Room: Room: 25B Chair: D. Conroy, Imperial College London	G9.01 Electrosprays: cone-jet breakup in the presence of DC electric fields <i>O. Matar, D. Conroy, R. Craster, D. Papageorgiou, H. Chang</i>	G9.02 On the minimum size of drops composing the type of monodisperse microemulsions obtained via tip streaming <i>J. Gordillo, A. Sevilla, E. Castro-Hernandez</i>	G9.03 Simulating the capillary breakup of a liquid torus <i>H. Mehrabian, J. Feng</i>	G9.04 Marangoni convection in a thin film: Formation of a fractal hierarchy of droplets <i>A. Straube, A. Ashmanov, S. Shklyayev, A. Pikovsky</i>	G9.05 The effect of charge regulation on the stability of electrolyte films <i>C. Ketelaar, V. Ajaev</i>	G9.06 Self-similar rupture of thin heated viscous sheets <i>M. Bowen, B. Tilley</i>
G10. Instability: Jets, Wakes and Shear Layers IV Room: Room: 25C Chair: M. Juniper, U. of Cambridge	G10.01 Resonant Oscillations of Shallow Flow Past a Cavity: Exchange Coefficients and Depthwise Variations <i>B. Tuna, E. Tinar, D. Rockwell</i>	G10.02 Shallow Flow Past a Cavity: Self-Excited Oscillations due to Resonant Coupling <i>M. Wolfinger, D. Rockwell, C. Ozen</i>	G10.03 LES Investigation of instabilities in cavity flow with a top boundary <i>A. Sekaran, G. Morrison</i>	G10.04 Modeling of a non-linear Kelvin-Helmholtz type instability <i>A. Orazzo, G. Coppola, L. de Luca</i>	G10.05 Kelvin-Helmholtz instability in a confined geometry <i>P. Boniface, L. Lebon, M. Receveur, F. Bouillet, L. Limat</i>	G10.06 Evolution of inviscid Kelvin-Helmholtz instability from a piecewise linear shear layer <i>A. Guha, M. Rahmani, G. Lawrence</i>

Monday Morning, 19 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
G11. Bubbles II Room: Room: 26A Chair: S. Dabiri, U. of Notre Dame	G11.01 Motion of a bubble ring in a viscous fluid <i>J. Lou, M. Cheng, T. Lim</i>	G11.02 Rising of Taylor Bubble through a Liquid-Liquid Interface <i>T. Lim, R. Jaiman, H. Sha</i>	G11.03 Modeling the drainage of viscous bubbles <i>C. Bartlett, M. Santin, J. Bird</i>	G11.04 Measuring axisymmetric drainage of large viscous bubbles <i>J. Bird, C. Bartlett, M. Santin</i>	G11.05 DNS of rising bubbles in a vertical homogeneous shear flow <i>S. Dabiri</i>	G11.06 Size-differentiated lateral migration of bubbles in Couette flow of two-dimensional foam <i>H. Mohammadigoushki, J. Feng</i>
G12. Vortex IV Room: Room: 26B Chair: P. Hamlington, U. of Colorado	G12.01 Listening to the horseshoe vortex system: interpretation of turbulent coherent structures by Parameter Mapping Sonification <i>J. Caceres, C. Escauriaza</i>	G12.02 A flow visualization and volumetric particle-image velocimetry study on low Reynolds number inclined rectangular jets <i>Y. Khoo, T. New, W. Lai</i>	G12.03 Ellipsoidal vortices beyond the quasi-geostrophic approximation <i>Y. Tsang, D. Dritschel, J. Reinard</i>	G12.04 On Optimal Vortex Structures for Palinstrophy Generation <i>D. Ayala, B. Protas</i>	G12.05 A highly adaptive three dimensional hybrid vortex method for inviscid flows <i>D. Lucas, D. Dritschel</i>	G12.06 2D FTLE in 3D Flows: The accuracy of using two-dimensional data for Lagrangian analysis in a three-dimensional turbulent channel simulation <i>M. Rockwood, M. Green</i>
G13. Geophysical: General IV Room: Room: 27A Chair: A. Scotti, U. of North Carolina	G13.01 Erosion sculptures <i>L. Ristroph, M. Moore, S. Childress, M. Shelley, J. Zhang</i>	G13.02 Simulation of Sediment Wave Generation and Maintenance <i>G. Hoffmann, E. Meiburg, M. Nasr-Azadani</i>	G13.03 Self-similarity of an eroding body <i>M. Moore, L. Ristroph, S. Childress, M. Shelley, J. Zhang</i>	G13.04 Numerical simulation of turbulence and sand-bed morphodynamics in natural waterways under live bed conditions <i>A. Khosronejad, F. Sotiropoulos</i>	G13.05 Spectral description of migrating bedforms and sediment transport <i>M. Guala, N. BadHeartBull, A. Singh, E. Fofoula-Georgiou</i>	G13.06 Entraining gravity currents <i>C. Johnson, A. Hogg</i>
G14. Experiments: PIV I Room: Room: 27B Chair: B. Smith, Utah State U.	G14.01 A super-resolution approach for uncertainty estimation of PIV measurements <i>B. Wieneke, A. Sciacchitano, F. Scarano</i>	G14.02 Mean-flow reconstruction by data-assimilation techniques from PIV-measurements of flow over an idealized airfoil <i>N. Dovetta, D. Foures, D. Sipp, P. Schmid, B. McKeon</i>	G14.03 Volumetric PIV with a Plenoptic Camera <i>B. Thurow, T. Fahringer</i>	G14.04 Autocorrelation based estimate of particle image density in PIV <i>S. Warner, B. Smith, P. Vlachos</i>	G14.05 PIV Uncertainty Roadmap <i>B. Smith, S. Beresh, P. Vlachos</i>	G14.06 Method to Determine the Minimum Random Uncertainty in PIV Based on Real Images <i>K. Jones, B. Smith</i>
G15. Biofluids: Large Swimmers III Room: Room: 28A Chair: D. Hu, Georgia Institute of Technology	G15.01 Thrust and power measurements of Olympic swimmers <i>T. Wei, V. Wu, S. Hutchison, R. Mark</i>	G15.02 Effects of flexibility on bio-inspired aquatic propulsion <i>P. Dewey, B. Boschitsch, A. Smits</i>	G15.03 Thrust production of free-to-pivot plates at low Reynolds number <i>K. Granlund, M. Ol, L. Bernal</i>	G15.04 Swimming Near the Wall <i>D. Quinn, K. Moored, P. Dewey, G. Lauder, A. Smits</i>	G15.05 On the efficiency of fish like swimming <i>M. Bergmann, A. Iollo</i>	G15.06 The Effects of Limb Coordination on the Swimming Efficiency of Crayfish <i>R. Guy, J. Zhang, Q. Zhang, T. Lewis</i>
G16. Biofluids: Aneurysms and Thrombosis Room: Room: 28B Chair: S. Shadden, Illinois Institute of Technology	G16.01 Flow topology in patient-specific abdominal aortic aneurysms during rest and exercise <i>A. Arzani, S. Shadden</i>	G16.02 Virtual Treatment of Basilar Aneurysms Using Shape Memory Polymer Foam <i>J. Ortega, J. Hartman, J. Rodriguez, D. Maitland</i>	G16.03 PIV Measurement of Wall Shear Stress and Flow Structures within an Intracranial Aneurysm Model <i>R. Chow, E. Sparrow, G. Campbell, A. Divani, J. Sheng</i>	G16.04 CFD-based Thrombotic Risk Assessment in Kawasaki Disease Patients with Coronary Artery Aneurysms <i>D. Sengupta, E. Kung, A. Kahn, J. Burns, A. Marsden</i>	G16.05 Mechanisms of thrombolysis acceleration by cavitation <i>H. Weiss, P. Selvaraj, G. Ahadi, A. Voie, T. Hoelscher, K. Okita, Y. Matsumoto, A. Szeri</i>	G16.06 Evaluation Of Hemolysis Models Using A High Fidelity Blood Model <i>H. Ezzeldin, M. de Tullio, S. Solares, E. Balaras</i>
G17. Biofluids: Microswimmers Experiments I Room: Room: 28C Chair: S. Kwon Cho, U. of Pittsburgh	G17.01 Experiments and models of low Reynolds number flows generated by a precessing rod over a plane <i>J. Martindale, R. Camassa, R. McLaughlin, L. Vicci, L. Zhao</i>	G17.02 Microscale underwater propulsion by oscillating air bubble columns <i>J. Feng, S. Cho</i>	G17.03 Performance of three different artificial swimmers in Newtonian and complex fluids <i>F. Godinez, R. Zenit, E. Lauga</i>	G17.04 Swimming of <i>Chlamydomonas reinhardtii</i> in weakly elastic fluids <i>J. Yang, J. Gollub, P. Arratia</i>	G17.05 Tracing the run-flip motion of an individual bacterium <i>B. Liu, M. Morse, J. Tang, T. Powers, K. Breuer</i>	G17.06 Characterization of gyrotactic swimmers using digital holographic microscopy <i>M. Barry, W. Durham, A. Chengala, J. Sheng, R. Stocker</i>
G18. Biofluids: Speech and Vocal Room: Room: 28D Chair: M. Krane, Penn State U.	G18.01 Aeroacoustic measurements in a human airway model <i>M. McPhail, E. Campo, M. Krane</i>	G18.02 Aeroacoustic behavior of vocal fold models from acoustic measurements <i>M. Krane, E. Campo, M. McPhail</i>	G18.03 Empirical estimates of aeroacoustic source behavior for vocal fold models having male and female geometry <i>E. Campo, M. McPhail, M. Krane</i>	G18.04 Vocal Folds Simulations with Contact Algorithm <i>J. Yang, L. Zhang</i>	G18.05 A coupled experimental-numerical framework for fluid-structure interaction studies: towards a pseudo-self-oscillating vocal fold facility <i>D. Sommer, S. Peterson</i>	G18.06 Three-Dimensional Flow Separation Induced by a Model Vocal Fold Polyp <i>K. Stewart, B. Erath, M. Plesniak</i>
G19. Surface Tension II Room: Room: 28E Chair: K. Daniels, North Carolina State U.	G19.01 Surfactant-driven fracture of gels: Initiation <i>J. Bostwick, M. Schillaci, K. Daniels</i>	G19.02 Surfactant-driven fracture of gels: Growth <i>K. Daniels, M. Schillaci, J. Bostwick</i>	G19.03 Hole-Closing of a Surfactant Layer on a Thin Fluid Film <i>R. Levy, M. Hin, M. Sayanagi, E. Autry, J. Wong, K. Daniels</i>	G19.04 The Adventures of the Diving-Bell Spider <i>R. Thevenin, G. Dupeux, K. Piroird, C. Clanet, D. Quere</i>	G19.05 Tension induced phase transitions in biomimetic fluid membranes <i>M. Shapiro, P. Vlahovska</i>	G19.06 Wicking flow in optimized capillary channels <i>B. Figliuzzi, C. Buie</i>
G20. Turbulent Boundary Layers IV: Scaling, logarithmic layer Room: Room: 30A Chair: R. Panton, U. of Texas	G20.01 Fluctuating vorticity in Turbulent Boundary Layers <i>R. Panton</i>	G20.02 Von Karman re-visited <i>D. McEligot, K. Nolan, E. Walsh</i>	G20.03 The quest for the von Kármán constant <i>P. Alfredsson, R. Örlü, A. Segalini</i>	G20.04 A universal logarithmic region in wall turbulence <i>I. Marusic, J. Monty, M. Hultmark, A. Smits</i>	G20.05 Unified description of logarithmic profiles in a turbulent channel and pipe <i>Z. She, X. Chen, F. Hussain</i>	G20.06 Spectral analogue of the law of the wall <i>G. Gioia, C. Zuniga Zamalloa, P. Chakraborty</i>

Monday Morning, 19 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
G21. Turbulence Simulation: Wall Bounded Room: Room: 30B Chair: O. Flores, Universidad Carlos III de Madrid	G21.01 Slow Growth Formulation for DNS of Chemically Reacting Temporal Boundary Layers with Forcing <i>V. Topalian, T. Oliver, R. Moser</i>	G21.02 Direct Numerical Simulation of two superposed viscous fluids in a channel with cavities on the wall <i>S. Leonardi, P. Orlandi</i>	G21.03 Aspect ratio effects in turbulent duct flows studied with DNS <i>R. Vinuesa, A. Noorani, A. Lozano-Durán, P. Schlatter, P. Fischer, H. Nagib</i>	G21.04 Direct numerical simulation for turbulent channel flow at high Reynolds number <i>M. Lee, N. Malaya, R. Moser</i>	G21.05 Application of mean wall shear stress boundary condition to complex turbulent flows using a wall-modeled large eddy simulation <i>M. Cho, J. Lee, H. Choi</i>	G21.06 Off-wall boundary conditions for turbulent flows obtained from buffer-layer minimal flow units <i>R. Garcia-Mayoral, B. Pierce, J. Wallace</i>
G22. Turbulence Mixing I: Mixing in Jets Room: Room: 30C Chair: G. Mungal, Stanford U.	G22.01 Density and Velocity Ratios Effects on the Structure of Transverse Jets in Supersonic Crossflow <i>M. Gamba, V. Miller, M. Mungal</i>	G22.02 Numerical Study on Cryogenic Co-flowing Jets under Transcritical Conditions <i>H. Tani, S. Teramoto, K. Okamoto, N. Yamanishi</i>	G22.03 Large-eddy-simulation and measurements of turbulent transport and mixing in a confined rectangular jet <i>J. Hill, K. Nilsen, B. Kong, M. Olsen, R. Fox</i>	G22.04 Gradient trajectory analysis of the scalar superlayer in a jet flow <i>M. Gampert, P. Schaefer, N. Peters</i>	G22.05 Variable Density Turbulent Jet Mixing <i>S. Gerashchenko, K. Prestridge</i>	G22.06 Effect of LES models on the entrainment characteristics in a turbulent planar jet <i>D. Chambel Lopes, C. da Silva, V. Raman</i>
G23. General Fluids I Room: Room: 30D Chair: P. Weidman, U. of Colorado	G23.01 Obliquely-intersecting Hiemenz stagnation-point flows <i>P. Weidman</i>	G23.02 A numerical study of the motion of a neutrally buoyant cylinder in two dimensional shear flow <i>T. Pan, S. Huang, S. Chen, C. Chu, C. Chang</i>	G23.03 An analysis of the "accidental painting" technique of D.A. Siqueiros: the Rayleigh Taylor instability as a tool to create explosive textures <i>S. Zetina, R. Zenit</i>	G23.04 Data Reduction Modeling of a Graphite Nitridation Experiment <i>P. Bauman, R. Moser</i>	G23.05 Fluid flow and ponding on elastic beams <i>J. Neufeld, R. Bonnebaigt</i>	G23.06 Void collapse under distributed dynamic loading near material interfaces <i>G. Shpuntova, J. Austin</i>
G24. Aerodynamics II Room: Room: 30E Chair: D. Maynes, Brigham Young U.	G24.01 How Cristiano Ronaldo performs his knuckleball? <i>C. Cohen, B. Darbois Texier, D. Quere, C. Clanet</i>	G24.02 Nuances between flags fluttering in horizontal and vertical flows <i>E. Viot, P. Hemon, X. Amandolese</i>	G24.03 Why historical east deviation experiments are so difficult to perform? <i>B. Darbois Texier, C. Cohen, D. Quere, C. Clanet</i>	G24.04 Linearized boundary conditions at a rough surface <i>P. Luchini</i>	G24.05 On the lift induced drag in viscous flows <i>R. Tognaccini, C. Marongiu, M. Ueno</i>	G24.06 Drag and near wake characteristics of flat plates normal to the flow with fractal edge geometries <i>J. Nedec, B. Ganapathisubramani, C. Vassilicos</i>
G25. Flow Control: Wakes Room: Room: 31A Chair: P. Lavoie, U. of Toronto	G25.01 Optimal open-loop control of the recirculation length in the wake of a cylinder <i>E. Boujo, F. Gallaire</i>	G25.02 Dynamic Mode Decomposition of PIV measurements for the cylinder wake flow in turbulent regime <i>L. Cordier, G. Tissot, N. Benard, B. Noack</i>	G25.03 Characterization of an Actively Controlled Three-Dimensional Turret Wake <i>P. Shea, M. Glauser</i>	G25.04 Flow Visualization of a von Kármán Ogive Forebody with Plasma Actuation <i>J. Farnsworth, Z. Francis, R. Witt, C. Porter, T. McLaughlin</i>	G25.05 Feedback control of vortex shedding: An explanation of the gain window <i>S. Illingworth, H. Naito, K. Fukagata</i>	G25.06 A Comparative Study of Spatially Modulated Forcing of Cylinder Wake with Segmented Plasma Actuators of Different Wavelengths <i>S. Bhattacharya, J. Gregory</i>
G26. Reactive Flows IV: Detonations Room: Room: 31B Chair: K. Kailasanath, Naval Research Laboratory	G26.01 Multiplicity of detonation regimes in systems with a multi-peaked thermicity <i>M. Radulescu, F. Zhang</i>	G26.02 Detonation and Transition to Detonation in Horizontal Water-Filled Pipes <i>N. Bitter, J. Shepherd</i>	G26.03 Front Structure of Three-Dimensional Detonations in Gaseous Mixtures <i>B. Khoo, H. Dou</i>	G26.04 Pressure Feedback in Rotating Detonation Engines <i>D. Schwer, K. Kailasanath</i>	G26.05 The exhaust flow field of a rotating detonation-wave engine <i>K. Kailasanath, D. Schwer</i>	G26.06 Capturing the Dynamics of Unsteady Inviscid and Viscous Hydrogen-Air Detonations <i>C. Romick, T. Aslam, J. Powers</i>
G27. Separated Flows II Room: Room: 31C Chair: M. Koochesfahani, Michigan State U.	G27.01 Shock wave unsteadiness in an over-expanded nozzle <i>B. Olson, S. Lele</i>	G27.02 Sensitivity of an asymmetric three-dimensional diffuser to inlet condition perturbations <i>E. Sayles, S. Grundmann, C. Elkins, J. Eaton</i>	G27.03 Triple deck solutions for supersonic flow past obstacles <i>R. Yapalparvi, P. Lagree</i>	G27.04 An experimental study of flow past a rotationally oscillating cylinder. <i>S. Kumar, C. Lopez, O. Probst, D. Askari, Y. Yang</i>	G27.05 Shear-Layer Interactions Between Surface-Mounted Obstacles at Varying Streamwise Spacings <i>T. Kim, J. Best, K. Christensen</i>	G27.06 Generalised phase average with applications to sensor-based flow estimation of the wall-mounted square cylinder wake <i>R. Martinuzzi, J. Bourgeois, B. Noack</i>
G28. Waves I Room: Room: 32A Chair: K. Brucker, SAIC	G28.01 The Influence of surface waves on marine current turbine performance <i>E. Lust, K. Flack, L. Luznik</i>	G28.02 Laboratory study of the structure of the airflow and separation above surface waves <i>F. Veron, M. Buckley</i>	G28.03 Impact of Plunging Breaking Wave on a Partially Submerged Cube <i>A. Wang, C. Ikeda, J. Duncan</i>	G28.04 Crosswaves induced by the vertical oscillation of a fully immersed vertical plate <i>F. Moisy, G. Michon, M. Rabaud, E. Sultan</i>	G28.05 Numerical Simulation of a Seaway with Breaking <i>D. Dommermuth, T. O'Shea, K. Brucker, D. Wyatt</i>	G28.06 PIV measurements of the interaction between a surface wave and a moving sphere <i>A. Rydalch, E. Maxeiner, I. Savelyev</i>
G29. Porous Media Flows IV Room: Room: 32B Chair: E. Villermaux, Aix Marseille U.	G29.01 Self-similarity in coupled Brinkman \ Navier-Stokes flows <i>I. Battiato</i>	G29.02 Application of method of volume averaging coupled with time resolved PIV to determine transport characteristics of turbulent flows in porous bed <i>V. Patil, J. Liburdy</i>	G29.03 Dispersive and mixing characteristics for turbulent porous media flows based on local length and time scale measurements <i>J. Liburdy, V. Patil</i>	G29.04 DNS of turbulent flow in a porous unit cell <i>S. Apte, J. Finn, B. Wood, J. Liburdy</i>	G29.05 Transport in Porous Fins From Laminar to Turbulent Regime <i>F. Coletti, K. Muramatsu, B. Furcinitti, C. Elkins, J. Eaton</i>	G29.06 Instability onset and mixing by diffusive Rayleigh-Benard Convection in a Hele-Shaw Cell <i>D. Ehyaei, K. Kiger</i>
G30. Nanofluids: Theory Room: Room: 33A Chair: R. Sadr, Texas A&M U. at Qatar	G30.01 Spatial Diffusion of Water in Carbon Nanotubes <i>A. Barati Farimani, N. Aluru</i>	G30.02 Transient response at the microchannel-nanochannel interface: chronopotentiometry, chronoamperometry, and electrochemical impedance <i>J. Schiffbauer, Y. Green, S. Park, G. Yossifon</i>	G30.03 Orientation selection of block copolymer lamellar phases under oscillatory shear <i>C. Yoo, J. Vinals</i>	G30.04 An analytical model of heat transfer in sheared flows of dilute nanofluids <i>O. Rudenko, V. Lvov, I. Procaccia, F. Toschi</i>	G30.05 Continuum-based coarse-grained water potentials for structural prediction in confined environments <i>S. Mashayak, N. Aluru</i>	G30.06 On the Effects of Brownian particle Movement on the Overall Fluid Velocity Distribution <i>W. Cheng, A. Baby, R. Sadr</i>

Monday Morning, 19 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
G31. Wind Energy I Room: Room: 33B Chair: L. Castillo, Texas Tech U.	G31.01 <u>Grid Sensitivity Analysis of Simulations of a Flow around a Single Rotating Wind Turbine Blade</u> <i>B. Kaiser, M. Snider, S. Poroseva, R. Hovsapian</i>	G31.02 <u>Coupling meso- and micro-scale fluid dynamics codes for wind-energy computing</u> <i>I. Satkauskas, M. Sprague, M. Churchfield</i>	G31.03 <u>LES of turbulent flow past axial flow turbines and turbine arrays: Model development and validation</u> <i>F. Sotiropoulos, S. Kang, X. Yang, L. Chamorro, C. Hill</i>	G31.04 <u>The Penn State "Cyber Wind Facility"</u> <i>J. Bresseur, G. Vijayakumar, A. Lavelly, T. Nandi, B. Jayaraman, P. Jha, A. Dunbar, J. Motta-Mena, S. Haupt, B. Craven, R. Campbell, S. Schmitz, E. Paterson</i>	G31.05 <u>Proper Orthogonal Decomposition analysis of kinetic energy entrainment in large wind farms</u> <i>C. Verhulst, C. Meneveau</i>	G31.06 <u>An improved effective roughness height model for optimization of wind farm layout</u> <i>X. Yang, F. Sotiropoulos</i>
G32. Granular Flows I Room: Room: 33C Chair: Y. Fan, Northwestern U.	G32.01 <u>A modified kinetic theory for frictional granular flows in dense and dilute regimes</u> <i>S. Chialvo, S. Sundaresan</i>	G32.02 <u>Homogeneous Cooling Granular Gases of Cohesive Particles</u> <i>E. Murphy, S. Subramaniam</i>	G32.03 <u>Axisymmetric Column Collapse in a Rotating System</u> <i>J. Warnett, P. Thomas, P. Dennisenko</i>	G32.04 <u>On the Collapse of Granular Columns in Different Gravities</u> <i>H. Tapia-McClung, R. Zenit</i>	G32.05 <u>Collapse of a granular column: discrete element simulations and continuum modelling</u> <i>L. Lacaze, E. Izard, R. Kerswell</i>	G32.06 <u>The hour-glass: comparisons of discrete granular flow and continuum plastic flow.</u> <i>P. Lagree, L. Staron, A. Grabsh, S. Popinet</i>
G33. Mini-Symposium: Complex Fluid Flows in Memory of Daniel D. Joseph I Room: Room: 29A Chair: H. Hu, U. of Pennsylvania	G33.01 <u>Daniel D. Joseph, a Life in Fluid Dynamics</u> <i>J. Feng</i>	G33.02 <u>Loss of deformability of malaria-infected red blood cells</u> <i>S. Hosseini, J. Feng</i>	G33.03 <u>Thermal convection, energy stability theory, viscous fingering, and capillary attraction: a 40 year interaction with Dan Joseph</u> <i>G. Homsy</i>	G33.04 <u>Some surprising results on convective transport in the Sun</u> <i>K. Sreenivasan, S. Hanasoge, T. Duvall, Jr.</i>		

Monday Morning, 19 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
G1. Geophysical: Atmospheric II Room: Room: 22 Chair: A. Aliseda, U. of Washington	G1.07 Preferential accumulation, enhanced relative velocity and gravitational settling due to inertial droplet interactions with turbulence <i>C. Bateson, A. Aliseda</i>	G1.08 E-epsilon turbulence closure for sea spray-laden marine atmospheric boundary layer in high wind conditions <i>Y. Rastigejev, S. Suslov</i>	G1.09 Wave-induced mean flow at an interface <i>J. McHugh, R. Sharman</i>	G1.10 Modes in rotating troposphere with a leak <i>L. Chumakova, R. Rosales, E. Tabak</i>	Refreshment Break, 10:10-10:30 Ballroom D
G2. Convection and Buoyancy-Driven Flows IV Room: Room: 23A Chair: H. Clercx, Technical U. Eindhoven	G2.07 Thermal convection in a nonlinear non-Newtonian magnetic fluid <i>H. Pleiner, D. Laroze</i>	G2.08 Simulation of the flow and heat exchange in a cylindrical solar chemical reactor <i>M. Ramirez-Cabrera, E. Ramos</i>	G2.09 New type of thermal waves in a vertical layer of magneto-polarizable nano-suspension: theory and experiment <i>S. Suslov, A. Bozhko, G. Putin, A. Sidorov</i>	G2.10 DEP thermal convection in annular geometry under microgravity conditions <i>H. Yoshikawa, O. Crumeyrolle, I. Mutabazi</i>	
G3. Multiphase Flows: Numerical Methods I Room: Room: 23B Chair: C. Coimbra, U. of California, San Diego	G3.07 A multiphase flow solver with adaptive mesh refinement <i>K. Delaney, E. Balaras, Z. Qin, A. Riaz</i>	G3.08 A lattice based approach for simulation of multiphase flows with phase transitions <i>A. Aliat, P. Vedula</i>	G3.09 Behaviour of a binary circulating liquid-fluidized bed: experiments and CFD modeling <i>M. Rotondi, L. Mazzei, P. Lettieri, R. Di Felice</i>	G3.10 WITHDRAWN	
G4. Drops IV Room: Room: 23C Chair: S. Thoroddsen, King Abdullah U. of Science and Technology, Saudi Arabia	G4.07 Splashing of droplets on liquid surfaces <i>M. Chemama, S. Mandre, M. Brenner</i>	G4.08 Numerical investigation of microbubble formation in liquid-liquid impact events <i>S. Mirjalili, A. Mani</i>	G4.09 Droplet impact on a liquid pool: air bubble entrainment <i>T. Tran, H. de Maleprade, C. Sun, D. Lohse</i>	G4.10 Drop impact on a non-miscible liquid <i>H. Lhuissier, C. Sun, A. Prosperetti, D. Lohse</i>	
G5. Computational Fluid Dynamics IV Room: Room: 24A Chair: A. Cook, Lawrence Livermore National Laboratory	G5.07 Evaluation of Wind Turbine Wake Interaction Models in a RANS Framework <i>J. Wilson, K. Venayagamoorthy</i>	G5.08 CFD simulation of Urban Environment to study building energy and Urban Heat Island (UHI) implications <i>N. Nazarian, J. Kleissl</i>	G5.09 Large Eddy Simulation of Dilute Sediment Suspension in an Open Channel Flow <i>G. Agegnehu, H. Smith</i>	G5.10 A three dimensional numerical simulation of current induced sediment processes - A comparison to experimental work <i>M. Burkow</i>	
G6. Microfluidics: General I Room: Room: 24B Chair: F. Gallaire, EPFL	G6.07 Taylor-Aris dispersion of droplets (point concentrations) <i>S. Vedel, E. Hovad, H. Bruus</i>	G6.08 Does slippage within a superhydrophobic channel always reduce drag? <i>A. Lee, M. Moon, H. Kim</i>	G6.09 Criterion of wetting failure in a Couette flow <i>P. Gao</i>	G6.10 Probing slip boundaries by bubble fingering <i>H. Wei, Y. Liao</i>	
G7. Suspensions II Room: Room: 24C Chair: S. Rafai, Grenoble U.	G7.07 The Effect of Particle Deformation on the Collective Dynamics of Confined Rigid Spheres and Deformable Drops <i>J. Blawdziewicz, M. Loewenberg, P. Janssen, M. Baron, P. Anderson, E. Wajnryb</i>	G7.08 Shape asymmetric particles self-assemble under flow in quasi-two-dimensional microchannels <i>W. Uspal, H. Eral, P. Doyle</i>	G7.09 Rheological measurements in liquid-solid mixtures <i>E. Linares-Guerrero, M. Hunt</i>	G7.10 Particle Migration and Interaction in Confined Flows <i>K. Tuley, S. Lee, M. Roper</i>	
G8. Drops V Room: Room: 25A Chair: P. Steen, Cornell U.	G8.07 The shape of a drop between two rigid fibers <i>S. Protiere, C. Duprat, H. Stone</i>	G8.08 A closed-form analytical solution for both hanging and sitting droplets <i>J. Gomba, C. Perazzo</i>			
G9. Interfacial/Thin Film Instability III Room: Room: 25B Chair: D. Conroy, Imperial College London	G9.07 Capillary structures formed with viscous threads in microchannels <i>S. Darvishi, T. Cubaud</i>	G9.08 Application of Stress Jumps in Free Surface Films for Noise-Free and Controlled Growth of 3D Microarrays <i>N. Liu, S. Troian</i>	G9.09 Dynamics of a moving liquid sheet in the presence of acoustics <i>M. Tirumkudulu, M. Paramati, P. Schmid</i>	G9.10 Thin Film Behavior Under External Vibrations <i>M. Bestehorn, Q. Han</i>	
G10. Instability: Jets, Wakes and Shear Layers IV Room: Room: 25C Chair: M. Juniper, U. of Cambridge	G10.07 3D optimal perturbations developing in homogeneous mixing layers in presence of subharmonic vortex-pairing <i>A. Lopez-Zazueta, L. Joly, J. Fontane</i>	G10.08 Methodologies for solving Vortex Wave Interaction problems to obtain edge states <i>A. Isoni, H. Blackburn, P. Hall, S. Sherwin</i>	G10.09 Identifying instability mechanisms in swirling shear flows by using all components of the structural sensitivity <i>M. Juniper, U. Qadri</i>	G10.10 Experimental Study of LES Models in Turbulent Stratified Flows <i>D. Xu, J. Chen</i>	

Monday Morning, 19 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
G11. Bubbles II Room: Room: 26A Chair: S. Dabiri, U. of Notre Dame	G11.07 Numerical simulations of bubble dynamics at high Reynolds numbers <i>S. Piedra, E. Ramos</i>	G11.08 Bubble Transport through Micropillar Arrays <i>K. Lee, O. Savas</i>	G11.09 Bubbles dancing in a vortex: trapping air at a T-junction <i>D. Vigolo, N. Tyrell, S. Radl, H. Stone</i>		
G12. Vortex IV Room: Room: 26B Chair: P. Hamlington, U. of Colorado	G12.07 Numerical simulation of the velocity field and vorticity in a flow occurring in a channel and an open domain with periodic forcing <i>E. Lopez-Sanchez, G. Ruiz-Chavarria</i>	G12.08 A Bathtub Vortex under the Influence of a Taylor Column in a Rotating Tank <i>S. Huang, Y. Chen, Z. Li, C. Chu, C. Chang</i>	G12.09 Unbounded Immersed Interface solver, also for use in Vortex Particle-Mesh methods <i>Y. Marichal, P. Chatelain, G. Winckelmans</i>	G12.10 Buoyancy-Induced Columnar Vortices <i>M. Simpson, A. Glezer</i>	
G13. Geophysical: General IV Room: Room: 27A Chair: A. Scotti, U. of North Carolina	G13.07 Numerical simulation of reversing buoyancy gravity currents <i>S. Radhakrishnan, E. Lenk, M. Boekels, E. Meiburg</i>	G13.08 Power-law for gravity currents produced from instantaneous sources propagating on inclined boundaries in the deceleration phase <i>A. Dai</i>	G13.09 Laminar flow of constant-flux released gravity currents: Friction factor-Reynolds number relationship <i>F. Testik, N. Yilmaz, M. Chowdhury</i>	G13.10 Shallow-water analysis of gravity currents in non-rectangular cross-area channels <i>M. Ungarish</i>	
G14. Experiments: PIV I Room: Room: 27B Chair: B. Smith, Utah State U.	G14.07 3D reconstruction and velocity fields of a flame <i>J. Pendlebury, D. Tree, T. Truscott</i>	G14.08 Microscopic Light Field Particle Image Velocimetry <i>T. Truscott, B. McEwen, J. Belden</i>	G14.09 Applying Tomographic PIV to Turbulent Taylor-Couette Flows <i>D. Borrero-Echeverry, D. Webster, M. Schatz</i>	G14.10 Propagation of Instantaneously Varying Systematic and Random Uncertainties into the Measurement Mean, Variance, and Covariance <i>B. Wilson, B. Smith</i>	
G15. Biofluids: Large Swimmers III Room: Room: 28A Chair: D. Hu, Georgia Institute of Technology	G15.07 Model of skin friction enhancement in undulatory swimming <i>U. Ehrenstein, C. Eloy</i>	G15.08 Optimal number of waves for ribbon fin propulsion <i>R. Bale, A. Bhalla, M. MacIver, N. Patankar</i>	G15.09 Shark Skin Bristling: A Passive Flow-Actuated Separation Control Mechanism <i>A. Lang, J. Smith, M. Bradshaw, J. Wheelus, P. Motta, M. Habegger, J. Davis, R. Hueter</i>	G15.10 Underlying principles of flexible bio-inspired propulsion: Hydrodynamic wake resonance analysis <i>K. Moored, P. Dewey, A. Smits, H. Haj-Hariri</i>	
G16. Biofluids: Aneurysms and Thrombosis Room: Room: 28B Chair: S. Shadden, Illinois Institute of Technology	G16.07 A non-discrete method for residence time calculation as an indicator of thrombus formation in cardiovascular applications <i>M. Esmaily Moghadam, A. Marsden</i>	G16.08 Computational Study of Non-Physiological Hemodynamics in the Cephalic Arch <i>K. Cassel, M. Boghosian, S. Mahmoudzadeh, M. Hammes</i>	G16.09 Quantifying Turbulent Kinetic Energy in an Aortic Coarctation with Large Eddy Simulation and Magnetic Resonance Imaging <i>J. Lantz, T. Ebberts, M. Karlsson</i>	G16.10 Multiscale Simulation for the Initial Stage of Thrombus Formation <i>S. Takagi, S. Li, S. Shiozaki, N. Shimamoto, K. Sugiyama, Y. Matsumoto</i>	
G17. Biofluids: Microswimmers Experiments I Room: Room: 28C Chair: S. Kwon Cho, U. of Pittsburgh	G17.07 ABSTRACT MOVED TO E17.00006 <i>n. none</i>	G17.08 Experimental Study on the <i>Euglena gracilis</i> for Micro-Transportation using a Phototactic Control <i>J. Kim, V. Nguyen, D. Byun</i>	G17.09 The effect of shear thinning viscosity on the performance of low Reynolds number swimmers <i>R. Zenit, F. Godinez, C. Belleville, E. Lauga</i>	G17.10 Flow visualization study on the near-surface motility of a flagellar propeller <i>D. Yim, J. Cho, S. Jin, J. Yoo</i>	
G18. Biofluids: Speech and Vocal Room: Room: 28D Chair: M. Krane, Penn State U.	G18.07 Resolving pressure from DPIV measurements in a dynamically scaled-up vocal fold model <i>L. Lambert, M. Krane, E. Sherman, T. Wei</i>	G18.08 Natural and forced asymmetries in flow through a vocal fold model <i>B. Drain, L. Lambert, M. Krane, T. Wei</i>	G18.09 In Vitro Microfluidic Models of Mucus-Like Obstructions in Small Airways <i>M. Mulligan, J. Grotberg, J. Sznitman</i>	G18.10 Yield Stress Effects on Mucus Plug Rupture <i>Y. Hu, S. Bian, J. Grotberg, S. Takayama, J. Grotberg</i>	
G19. Surface Tension II Room: Room: 28E Chair: K. Daniels, North Carolina State U.	G19.07 Capillary rise within superhydrophilic channel <i>J. Kim, M. Moon, L. Mahadevan, H. Kim</i>	G19.08 Capillary-driven interface oscillations of cryogenic liquids under non-isothermal boundary conditions <i>N. Kulev, M. Dreyer</i>	G19.09 Capillary interactions between spherical Janus particles at liquid-liquid interfaces <i>H. Rezvantalab, S. Shojaei-Zadeh</i>	G19.10 The Short-range Capillary Force on Floating Objects <i>A. He, K. Nguyen, S. Mandre</i>	
G20. Turbulent Boundary Layers IV: Scaling, logarithmic layer Room: Room: 30A Chair: R. Panton, U. of Texas	G20.07 Mesolayer analysis in a turbulent boundary layer and DNS data <i>N. Afzal</i>	G20.08 Model-based scaling and prediction of streamwise energy spectrum at high Reynolds numbers <i>R. Moarref, A. Sharma, J. Tropp, B. McKeon</i>	G20.09 Multi-layer prediction of mean velocity profiles in turbulent boundary layers <i>X. Chen, F. Hussain, Z. She</i>	G20.10 A new scaling for the streamwise broadband turbulence intensity profiles of ZPG turbulent boundary layers <i>V. Kulandaivelu, N. Hutchins</i>	

Refreshment Break, 10:10-10:30
Ballroom D

Monday Morning, 19 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
G21. Turbulence Simulation: Wall Bounded Room: Room: 30B Chair: O. Flores, Universidad Carlos III de Madrid	G21.07 <u>Effect of thermal boundary condition on wall-bounded, stably-stratified turbulence</u> <i>O. Flores, M. Garcia-Villalba</i>	G21.08 <u>The influence of viscosity stratification on boundary-layer turbulence</u> <i>J. Lee, S. Jung, H. Sung, T. Zaki</i>	G21.09 <u>Statistics of Stagnation Points in Turbulent Channel Flows with Wavy Walls</u> <i>F. Hennig, M. Gauding, J. Goebbert, N. Peters</i>	G21.10 <u>Turbulent wall jets over rough surfaces</u> <i>R. Banyassady, U. Piomelli</i>	Refreshment Break, 10:10-10:30 Ballroom D
G22. Turbulence Mixing I: Mixing in Jets Room: Room: 30C Chair: G. Mungal, Stanford U.	G22.07 <u>Large eddy simulation study of mixing in stratified jets</u> <i>N. Ghaisas, D. Shetty, S. Frankel</i>	G22.08 <u>Rapid Confined Mixing with Transverse Jets Part 1: Single Jet</u> <i>D. Salazar, D. Forliti</i>	G22.09 <u>Rapid Confined Mixing Using Transverse Jets Part 2: Multiple Jets</u> <i>D. Forliti, D. Salazar</i>	G22.10 <u>Two-point statistics for turbulent relative dispersion in quasi-two-dimensional turbulent jets</u> <i>J. Landel, C. Caulfield, A. Woods</i>	
G23. General Fluids I Room: Room: 30D Chair: P. Weidman, U. of Colorado	G23.07 <u>Fog-harvesting Mesh Surfaces</u> <i>K. Park, S. Chhatre, S. Srinivasan, R. Cohen, G. McKinley</i>	G23.08 <u>Inertial Lubrication Theory</u> <i>M. Argentina, N. Rojas, E. Cerda, E. Tirapegui</i>	G23.09 <u>An Experimental Study of Soft Lubrication</u> <i>Q. Wu, T. Gacka, R. Nathan, L. Wu</i>		
G24. Aerodynamics II Room: Room: 30E Chair: D. Maynes, Brigham Young U.	G24.07 <u>Slipping through the water: A study of superhydrophobic hydrofoils</u> <i>R. Daniello, K. Del Valle, J. Rothstein</i>	G24.08 <u>Flow over slippery liquid-infused porous surfaces</u> <i>B. Rosenberg, G. Arwatz, J. Shang, A. Smits</i>	G24.09 <u>Drag Control through Wrinkling on Curved Surfaces</u> <i>D. Terwagne, P. Reis</i>	G24.10 <u>Vorticity Transport on a Rotating Blade</u> <i>C. Wojcik, J. Buchholz</i>	
G25. Flow Control: Wakes Room: Room: 31A Chair: P. Lavoie, U. of Toronto	G25.07 <u>Open loop control of an axisymmetric turbulent wake using periodic jet blowing</u> <i>J. Morrison, A. Oxlade</i>	G25.08 <u>Single frequency lock-on of wake behind a circular cylinder using oscillatory actuation</u> <i>P. Munday, K. Taira</i>	G25.09 <u>Wake Control of a Blunt Trailing Edge Profiled Body Using Dielectric Barrier Discharge Plasma Actuators</u> <i>A. Naghib-Lahouti, P. Lavoie</i>	G25.10 <u>Scaling Relations for Plasma Streamwise Vortex Generators</u> <i>F. Thomas, M. Wicks, T. Corke, M. Patel</i>	
G26. Reactive Flows IV: Detonations Room: Room: 31B Chair: K. Kailasanath, Naval Research Laboratory	G26.07 <u>Developing Subgrid Models for Shock-to-Detonation Mesoscale Simulations</u> <i>T. Jackson</i>	G26.08 <u>A model for shock wave chaos</u> <i>L. Faria, A. Kasimov, R. Rosales</i>	G26.09 <u>On gaseous detonation in a radially expanding flow</u> <i>A. Kasimov, S. Korneev</i>	G26.10 <u>Numerical Simulations of Detonation Wave - Magnetic Field Interactions</u> <i>L. Cole, A. Karagozian</i>	
G27. Separated Flows II Room: Room: 31C Chair: M. Koochesfahani, Michigan State U.	G27.07 <u>Low-Reynolds-number vortex dynamics around moving wings</u> <i>R. Jantzen, K. Taira, M. OI, K. Granlund</i>	G27.08 <u>Wake Modes and Heat Transfer from Rotationally Oscillating Cylinder</u> <i>P. Sellappan, T. Pottebaum</i>	G27.09 <u>Effect of approach flow on the bluff body wake behind a ship superstructure</u> <i>C. Brownell, L. Luznik, H. Kang, M. Snyder</i>	G27.10 <u>Reducing the Drag and Damage of a High-Speed Train by Analyzing and Optimizing its Boundary Layer Separation and Roll-up into Wake Vortices</u> <i>C. Jiang, P. Marcus</i>	
G28. Waves I Room: Room: 32A Chair: K. Brucker, SAIC	G28.07 <u>On the unsteady free surface wave pattern found behind a localized pressure distribution moving at speeds just below the minimum phase speed of linear gravity capillary waves</u> <i>N. Masnadi, J. Duncan</i>	G28.08 <u>Spatial focusing and breaking of surface waves</u> <i>G. Ruiz-Chavarria, P. Le Gal, M. Le Bars</i>	G28.09 <u>Mechanisms for wave generation in a turbulent air-water flow</u> <i>F. Zonta, M. Onorato, A. Soldati</i>	G28.10 <u>Observation of star-shaped surface gravity waves</u> <i>J. Rajchenbach, D. Clamond, A. Leroux</i>	
G29. Porous Media Flows IV Room: Room: 32B Chair: E. Villermaux, Aix Marseille U.	G29.07 <u>Mixing properties of stationary flows in porous media</u> <i>M. Kree, E. Villermaux</i>	G29.08 <u>Macroscopic model of unstable two-phase flow in a Hele-Shaw cell</u> <i>L. Cueto-Felgueroso, R. Juanes</i>			
G30. Nanofluids: Theory Room: Room: 33A Chair: R. Sadr, Texas A&M U. at Qatar	G30.07 <u>Electron Beam Artifacts in Liquid-Cell Electron Microscopy</u> <i>J. Grogan, F. Ross, H. Bau</i>	G30.08 <u>Surface tension relaxation time in liquid-gas and liquid-solid interfaces of simple LJ liquids</u> <i>A. Lukyanov, A. Likhman</i>	G30.09 <u>Mobility of a Semiflexible Chain in a Nanochannel</u> <i>D. Tree, Y. Wang, K. Dorfman</i>		

Monday Morning, 19 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
G31. Wind Energy I Room: Room: 33B Chair: L. Castillo, Texas Tech U.	G31.07 <u>Wind Turbine Wakes with Actuator Line Aerodynamics</u> <i>Y. Peet</i>	G31.08 <u>Computational investigation of hydrokinetic turbine arrays in an open channel using an actuator disk-LES model</u> <i>S. Kang, X. Yang, F. Sotiropoulos</i>	G31.09 <u>Vertical Mean Kinetic Energy Entrainment in a Scaled Wind Turbine Array</u> <i>A. Newman, D. Drew, L. Castillo</i>	G31.10 <u>Measurements in an axisymmetric turbulent wake with rotation downstream of a model wind turbine</u> <i>N. Dufresne, M. Wosnik</i>	Refreshment Break 10:10–10:30, Ballroom D
G32. Granular Flows I Room: Room: 33C Chair: Y. Fan, Northwestern U.	G32.07 <u>A study of Force chain statistics in quasi-2D granular systems</u> <i>J. Zhang, L. Zhang, Y. Wang, R. Ecke, R. Behringer</i>	G32.08 <u>Kinematics of segregating granular mixtures in quasi-2D heaps</u> <i>Y. Fan, P. Umbanhowar, J. Ottino, R. Lueptow</i>	G32.09 <u>Stratification, segregation and mixing of bi-disperse granular materials in quasi-2D heaps</u> <i>R. Lueptow, Y. Fan, P. Umbanhowar, J. Ottino</i>	G32.10 <u>Resolving a paradox of anomalous scalings in the diffusion of granular materials</u> <i>I. Christov, H. Stone</i>	
G33. Mini-Symposium: Complex Fluid Flows in Memory of Daniel D. Joseph I Room: Room: 29A Chair: H. Hu, U. of Pennsylvania	G33.05 <u>Forming adjustable monolayers via particle assembly at electrified liquid-fluid interfaces</u> <i>N. Aubry, P. Singh, M. Janjua, S. Nudurupati</i>		G33.06 <u>Dan Joseph's contributions to disperse multiphase flow</u> <i>A. Prosperetti</i>		

Monday Morning, 19 November 2012

Session	10:30	10:43	10:56	11:09	11:22	11:35
H1. Geophysical: Ocean II Room: Room: 22 Chair: A. Tejada-Martinez, U. of South Florida	H1.01 Large-eddy simulation of open channel flow with surface cooling <i>R. Walker, A. Tejada-Martinez, G. Martinat, C. Grosch</i>	H1.02 Evaluation of turbulence models in RANS of wind-driven flow with full-depth Langmuir circulation <i>N. Sinha, A. Tejada-Martinez, C. Grosch, G. Martinat</i>	H1.03 Scalar transport in large-eddy simulation of Langmuir turbulence in shallow water <i>A. Tejada-Martinez, C. Akan, C. Grosch, G. Martinat</i>	H1.04 Numerical Simulations of an Asymptotically Reduced Model of Anisotropic Langmuir Turbulence <i>Z. Zhang, G. Chini, K. Julien, E. Knobloch</i>	H1.05 Numerical Simulations of a Multiscale Model of Stratified Langmuir Circulation <i>Z. Malecha, G. Chini, K. Julien</i>	H1.06 POD analysis of Langmuir circulation interacting with a crossed pressure gradient driven flow <i>G. Martinat, C. Grosch, A. Tejada-Martinez</i>
H2. Convection and Buoyancy-Driven Flows V: Exchange Flows Room: Room: 23A Chair: R. Griffiths, Australian National U.	H2.01 Internal Waves Generated by Mixed Region Collapse in the Ocean <i>A. Holdsworth, B. Sutherland</i>	H2.02 On the spreading and instability of gravity current fronts of arbitrary shape <i>N. Zgheib, T. Bonometti, S. Balachandrar</i>	H2.03 Filling box stratification fed by a gravity current <i>C. Hogg, H. Huppert, J. Imberger</i>	H2.04 The hydraulics of exchange flow between adjacent confined building zones <i>S. Nabi, M. Flynn</i>	H2.05 Buoyancy driven turbulent flows over irregular rough surfaces <i>R. Chowdhury, E. Ruiz, K. Bhaganagar</i>	H2.06 Direct numerical simulations of gravity currents on a slope with sedimentation and resuspension <i>H. Anjum, J. McElwaine, C. Caulfield</i>
H3. Multiphase Flows: Numerical Methods II Room: Room: 23B Chair: M. Herrmann, Arizona State U.	H3.01 Computation of dendritic crystal growth in supercooled water using a level-set method <i>A. Criscione, D. Kintea, I. Roisman, S. Jakirlic, Z. Tukovic, C. Tropea</i>	H3.02 Direct numerical simulation of the Leidenfrost Effect <i>L. Rueda Villegas, S. Tanguy</i>	H3.03 Gradient Augmented Level Set Reinitialization Approach <i>L. Anumolu, M. Trujillo</i>	H3.04 A Quadrature-Free Conservative Level Set RKDG for Simulating Atomization <i>Z. Jibben, M. Herrmann</i>	H3.05 A mass-conserving volume of fluid method for DNS of droplet-laden isotropic turbulence <i>A. Ferrante, M. Dodd</i>	H3.06 Effect of bubble-bubble interaction on mass transfer in bubbly flow using a multi-scale approach <i>B. Aboulhasanzadeh, G. Tryggvason</i>
H4. Drops VI Room: Room: 23C Chair: S. Zaleski, Institut D'Alembert, CNRS and UPMC	H4.01 Effect of the liquid/solid friction on the drop impact dynamics <i>C. Pirat, H. Lastakowski, A. Bianche, C. Ybert</i>	H4.02 An aerodynamical mechanism for droplet splashing <i>C. Josserand, Z. Jian, S. Popinet, P. Ray, S. Zaleski</i>	H4.03 Splash Criteria for Liquid Drop Impact on Smooth, Dry Surfaces <i>C. Stevens, S. Nagel</i>	H4.04 Substrate topography-mediated air film collapse below an impacting drop <i>J. de Ruiter, D. van den Ende, F. Mugele</i>	H4.05 Drop impact of suspensions <i>F. Boyer, J. Snoeijer, F. Dijkstra, D. Lohse</i>	H4.06 Dynamic Leidenfrost temperature for impact of droplets on micro-structured surfaces <i>H. Staat, T. Tran, A. Susarrey Arce, T. Foertsch, A. van Houselt, H. Gardeniers, A. Prosperetti, D. Lohse, C. Sun</i>
H5. Computational Fluid Dynamics V Room: Room: 24A Chair: S. Apte, Oregon State U.	H5.01 Multi-scale Numerical Simulations of Magnetic Fluids <i>P. Yecko, R. Scardovelli, H. Timme, A. Trubatch</i>	H5.02 LES of turbulent boundary layer flow over irregular and multiscale topographies, and comparison with experimental data <i>W. Anderson, K. Christensen</i>	H5.03 Numerical Study of Nusselt Number in a Heated Pipe With the Use of Variable-Order Resolution <i>K. Davis, P. Fischer</i>	H5.04 Parallel performance of iterative Poisson Solvers for Uniform and Structured Adaptive Grids on a Cray XT5 (Kraken) <i>M. Vanella, E. Balaras</i>	H5.05 Comparative Efficiency of Implicit, Explicit and Implicit-Explicit Strong Stability Preserving Methods <i>G. Moraes, R. Teixeira, L. Alves</i>	H5.06 Superimposition of external oscillation to enhance heat transfer from objects in cross flow <i>R. Bourisli</i>
H6. Microfluidics: General II Room: Room: 24B Chair: D. Saintillan, U. of Illinois at Urbana-Champaign	H6.01 Development of a modified Hess-Murray law for non-Newtonian fluids in bifurcating micro-channels <i>D. Emerson, R. Barber</i>	H6.02 Fluidic Control by Capillary and Maxwell Stresses for Liquid Printing of Small Metallic Structures <i>G. Della Rocca, S. Troian</i>	H6.03 The hydrodynamic interaction between a soft particle and a permeable surface <i>G. Ramon, H. Huppert, H. Stone</i>	H6.04 Numerical analysis of radiation- and streaming-induced microparticle acoustophoresis <i>R. Barnkob, P. Muller, H. Bruus, M. Jensen</i>	H6.05 Experimental analysis of radiation- and streaming-induced microparticle acoustophoresis <i>M. Rossi, A. Marin, C. Kähler, P. Augustsson, T. Laurell, P. Muller, R. Barnkob, H. Bruus</i>	H6.06 Inertial particle trapping and transport in viscous streaming <i>K. Chong, J. Eldredge</i>
H7. Non-Newtonian Flows I Room: Room: 24C Chair: A. Hosoi, Massachusetts Institute of Technology	H7.01 Rheological hysteresis in soft glassy materials <i>T. Divoux, V. Grenard, S. Manneville</i>	H7.02 Interface Oscillation in the Side-by-Side (SBS) Tape Casting of Functionally Graded Ceramics (FGCs) <i>M. Jabbari, R. Bulatova, J. Hattel, C. Bahl</i>	H7.03 Surface Characterization of pNIPAM Under Varying Absolute Humidity <i>A. Chhabra, R. Kanapuram, H. Leva, J. Trejo, T. Kim, C. Hidrovo</i>	H7.04 Particle Image Velocimetry During Injection Molding <i>T. Bress, D. Dowling</i>	H7.05 Quantitative analysis of the debonding structure of soft adhesives <i>M. Nicoli, F. Tanguy, C. Creton</i>	H7.06 Shear Banding in Polymer Solutions with a Monotonic Constitutive Curve <i>M. Cromer, M. Villet, G. Fredrickson, G. Leal</i>
H8. Drops VII Room: Room: 25A Chair: S. Mitra, U. of Alberta	H8.01 Coffee Stain Effect with Liquid Droplets <i>S. Mitra, S. Das</i>	H8.02 The dynamics of drops coating the underside of a flexible wall <i>C. Richard, A. Wray, D. Papageorgiou, O. Matar</i>	H8.03 Slip or not slip? A comparison of models applied to contact line motion <i>N. Sawa, D. Sibley, S. Kalliadasis</i>	H8.04 The Effect of Droplet Inertia on Combined Gravitational and Thermocapillary Interactions of Contaminated Spherical Drops <i>M. Rother</i>	H8.05 Spreading of a surfactant-laden droplet down an inclined and pre-wetted plane - Numerics, Asymptotics and Linear Stability Analysis <i>J. Goddard</i>	H8.06 Effects of surface wettability and edge geometry on drop motion through an orifice <i>A. Bordoloi, E. Longmire</i>
H9. Interfacial/Thin Film Instability IV Room: Room: 25B Chair: J. Seiwert, Institut de Physique de Rennes	H9.01 Influence of Heat Transfer on Stability of Newtonian and Non-Newtonian Extending Films <i>Z. Zheng, O. Boratav, C. Zhou</i>	H9.02 Fluid pumping in thin films using thermal waves <i>A. Alexeev, W. Mao, A. Oron</i>	H9.03 Two-phase investigation of hydrothermal waves in saturated atmospheres <i>K. Sefiane, P. Saenz, P. Valluri, G. Karapetsas, O. Matar</i>	H9.04 Thermocapillary driven instabilities in thin liquid layers subject to long-wave analysis <i>A. Narendranath, J. Hermanson, A. Struthers, R. Kolkka, J. Allen</i>	H9.05 Instability of a fluctuating membrane driven by an AC electric field <i>J. Seiwert, P. Vlahovska</i>	H9.06 Electrostatically induced long-wave dynamics in moderately conducting annular flows <i>A. Wray, D. Papageorgiou, O. Matar</i>
H10. Instability: Jets, Wakes and Shear Layers V Room: Room: 25C Chair: T. Schneider, Max Planck Institute for Dynamics and Self-Organization	H10.01 Local and global states in a reduced model for shear flows <i>M. Chantry, R. Kerswell</i>	H10.02 Sensitivity analysis of the periodic orbits of plane Couette flow <i>O. Semeraro, F. Giannetti, L. Brandt</i>	H10.03 The edge in models of shear flows <i>N. Lebovitz, G. Mariotti</i>	H10.04 Infinity-norm optimal perturbations in 2D plane Poiseuille flow <i>D. Foures, C. Caulfield, P. Schmid</i>	H10.05 Localization in shear flow turbulence <i>T. Schneider, J. Gibson, J. Burke</i>	H10.06 New exact coherent states in plane Poiseuille flow <i>M. Nagata, K. Deguchi</i>

Monday Morning, 19 November 2012

Session	10:30	10:43	10:56	11:09	11:22	11:35
H11. Bubbles III Room: Room: 26A Chair: M. Smith, Georgia Institute of Technology	H11.01 Bubble contraction in free-boundary Hele-Shaw flow with surface tension and kinetic undercooling regularisation <i>M. Dallaston, S. McCue</i>	H11.02 Cavitation propagation in water under tension <i>X. Noblin, Y. Yip Cheung Sang, M. Pellegrin</i>	H11.03 Vortex Cavitation on Delta-Wings <i>H. Ganesh, S. Ceccio</i>	H11.04 Enhancing cavitation with micromachined surfaces <i>D. Fernandez Rivas, L. Stricker, A. Zijlstra, H. Gardeniers, D. Lohse, A. Prosperetti</i>	H11.05 Instability arisen on condensing vapor bubble <i>I. Ueno, R. Hosoya, C. Hong</i>	H11.06 The behavior of vapor bubbles during boiling enhanced with acoustics and open microchannels <i>T. Boziuk, M. Smith, A. Glezer</i>
H12. Vortex V Room: Room: 26B Chair: M. Stremmer, Virginia Polytechnic Institute and State U.	H12.01 Vortex evolution behind tandem cylinders under forced vibration <i>Y. Yang, T. Aydin, A. Ekmekci</i>	H12.02 Characterization of vortex-induced vibration of a flexible cylinder <i>J. Shang, H. Stone, A. Smits</i>	H12.03 In-line and cross-flow multi-frequency vortex-induced vibrations of a long flexible cylinder are phase-locked under wake-body synchronization <i>R. Bourguet, G. Karniadakis, M. Triantafyllou</i>	H12.04 Enhancing Vortex Induced Vibration of a Circular Cylinder by Using Roughness Strips <i>A. Vinod, A. Banerjee</i>	H12.05 Use of targeted energy transfer to delay Kármán vortex shedding and suppress vortex-induced vibration in flow past a cylinder <i>R. Tumkur, R. Calderer, L. Bergman, A. Vakakis, A. Masud, A. Pearlstein</i>	H12.06 Using LCS to identify vortex shedding on a cylinder in cross-flow <i>M. Green</i>
H13. Rayleigh-Taylor Instability I Room: Room: 27A Chair: A. Lawrie, U. of Bristol	H13.01 Hydrodynamic instabilities and Boundary Value Problem <i>S. Abarzhi</i>	H13.02 Direct Numerical Simulations of Rayleigh-Taylor instability with gravity reversal <i>D. Livescu, T. Wei</i>	H13.03 Numerical investigations of Rayleigh-Taylor instability development from an initially isotropic turbulent velocity field <i>P. Movahed, B. Fryxell, E. Johnsen</i>	H13.04 Efficient mixing in stratified flows: Rayleigh-Taylor instability within a stable stratification <i>M. Davies Wykes, S. Daiziel</i>	H13.05 Estimates of molecular mixing in confined Rayleigh-Taylor instability <i>A. Lawrie, S. Dalziel</i>	H13.06 Evaluation of the Predictions of a Four-Equation Reynolds-Averaged Navier-Stokes Model Applied to Rayleigh-Taylor Instability-Induced Mixing <i>K. Mackay, O. Schilling</i>
H14. General Experiments III Room: Room: 27B Chair: J. Chen, Purdue U.	H14.01 Validity of Molecular Tagging Velocimetry in a Cavitating Flow for Turbopump Analysis <i>K. Kuzmich, D. Bohl</i>	H14.02 An Approach for Correcting the Velocity Bias Error in One-Component Molecular Tagging Velocimetry: Theoretical Analysis <i>A. Naguib, P. Hammer, S. Pouya, M. Koochesfahani</i>	H14.03 An Approach for Correcting the Velocity Bias Error in One-Component Molecular Tagging Velocimetry: Experimental Demonstration <i>P. Hammer, S. Pouya, A. Naguib, M. Koochesfahani</i>	H14.04 Error Reduction in Molecular Tagging Velocimetry (MTV) Processing Using Image Filtering <i>D. Bohl, M. Caso</i>	H14.05 Voltage-Current Characteristics of Plasma Pressure Sensor <i>E. Mattis, T. Corke, C. Marshall, S. Gogineni</i>	H14.06 Global Pressure Measurement of Unsteady-State Flow and Motion on Fluttering Airfoil <i>T. Okabe, T. Miyazaki, K. Saitoh, H. Sakaue</i>
H15. Biofluids: Animals Room: Room: 28A Chair: J. Bush, Massachusetts Institute of Technology	H15.01 Drinking strategies in nature <i>W. Kim, J. Bush</i>	H15.02 Numerical and experimental hydrodynamic analysis of suction cup bio-logging tag designs for marine mammals <i>M. Murray, A. Shorter, L. Howle, M. Johnson, M. Moore</i>	H15.03 Modeling huddling penguins <i>F. Blanchette, A. Waters, A. Kim</i>	H15.04 Robot locomotion on weak ground <i>F. Qian, C. Li, P. Umbanhowar, D. Goldman</i>	H15.05 How does a Tiger beetle catches its prey? <i>Z. Wang, A. Haselsteiner, C. Gilbert</i>	H15.06 Impact and intrusion of the foot of a lizard running rapidly on sand <i>C. Li, T. Hsieh, P. Umbanhowar, D. Goldman</i>
H16. Biofluids: Heart Ventricles and Assist Devices Room: Room: 28B Chair: R. Mittal, Johns Hopkins U.	H16.01 Simulating Pediatric Ventricular Assist Device Operation Using Fluid Structure Interaction <i>C. Long, Y. Bazilevs, A. Marsden</i>	H16.02 Heart Rate and AV delay modify left ventricular filling vortex properties <i>J. del Alamo, Y. Benito, J. Bermejo, M. Alhama, R. Yotti, C. Perez del Villar, P. Martinez-Legazpi, A. Gonzalez Mansilla, F. Fernandez-Aviles</i>	H16.03 On the clinical characterization of impulse and suction force contributions by the diastolic left ventricular vortex <i>P. Martinez-Legazpi, M. Alhama, Y. Benito, J. Bermejo, R. Yotti, E. Perez-David, A. Barrio, C. Perez-del-Villar, A. Gonzalez-Mansilla, F. Fernandez-Aviles, J. del Alamo</i>	H16.04 High-resolution numerical simulation of Left Ventricular Hemodynamics Guided by in-vivo Cardiac Magnetic Resonance Data <i>T. Le, F. Sotiropoulos, L. Mirabella, B. Chaffins, A. Santhanakrishnan, J. Oshinski, A. Yoganathan</i>	H16.05 Right Ventricular Hemodynamics in Patients with Pulmonary Hypertension <i>J. Browning, B. Fenster, J. Hertzberg, J. Schroeder</i>	H16.06 Computational Modeling of the Effects of Myocardial Infarction on Left Ventricular Hemodynamics <i>V. Vedula, J. Seo, R. Mittal, S. Fortini, G. Querzoli</i>
H17. Biofluids: Micro-swimming Theory I Room: Room: 28C Chair: J. Rodrigo Velez-Cordero, U. of California, San Diego	H17.01 Unsteady swimming of small organisms <i>S. Wang, A. Ardekani</i>	H17.02 Advective effects on the propulsion of phoretic micro-swimmers <i>S. Michelin, D. Bartolo</i>	H17.03 Achiral rigid magnetically actuated swimmers <i>H. Fu, U. Cheang, F. Meshkati, M. Kim</i>	H17.04 Propulsion in a generalized Newtonian fluid <i>J. Vélez-Cordero, E. Lauga</i>	H17.05 Diffusion of torqued active particles <i>M. Sandoval, E. Lauga</i>	H17.06 Nematode swimming and turning: locomotion of <i>C. Elegans</i> in bulk fluid and thin fluid layers <i>A. Bilbao, V. Padmanabhan, K. Rumbaugh, S. Vanapalli, J. Blawdziewicz</i>
H18. Biofluids: Flapping and Flying II Room: Room: 28D Chair: F. Shu, New Mexico State U.	H18.01 Three-dimensional flow about penguin wings <i>F. Noca, B. Sudki, M. Lauria</i>	H18.02 Numerical simulation of self-propulsion of flapping flexible plates <i>X. Lu, R. Hua</i>	H18.03 Measuring and Analyzing the Birds Flight <i>A. Friedl, C. Kähler</i>	H18.04 Improving Vortex Models via Optimal Control Theory <i>M. Hemati, J. Eldredge, J. Speyer</i>	H18.05 Unsteady lift of a flapping rectangular wing with spanwise stretching-and-retracting <i>S. Wang, G. He, T. Liu, X. Zhang</i>	H18.06 Effect of gust on force generation around a robotic hummingbird wing <i>E. Marquez, R. Tian, F. Shu</i>
H19. Multiphase Flows: General I Room: Room: 28E Chair: R. Arndt, U. of Minnesota	H19.01 Forced drainage and imbibition in microfluidic porous media <i>H. Tann, E. Dressaire, J. Lee, H. Stone</i>	H19.02 Regarding Multispecies Diffusion and Gradient Driven Transport <i>E. Vold</i>	H19.03 Modeling of the Longitudinal Motion of a High Speed Supercavitating Vehicle <i>D. Escobar, G. Balas, R. Arndt</i>	H19.04 Experimental Validation of Control Systems for a high Speed Supercavitating Vehicle <i>R. Arndt, D. Escobar, E. Kawakami, G. Balas</i>	H19.05 Experimental study on gas-liquid bubbly turbulent flow in a large square duct <i>H. Sun, T. Kunugi, H. Nakamura</i>	H19.06 Circumventing Imprecise Geometric Information and Development of a Unified Modeling Technique for Various Flow Regimes in Capillary Tubes <i>B. Abbasi</i>
H20. Turbulent Boundary Layers V: Experiments Room: Room: 30A Chair: K. Flack, United States Naval Academy	H20.01 Skin-friction and Reynolds number scaling of turbulent channel flow <i>M. Schultz, K. Flack</i>	H20.02 Measurements of the wall-normal velocity component in very high Reynolds number pipe flow <i>M. Vallikivi, M. Hultmark, A. Smits</i>	H20.03 Experimental study of the boundary layer properties in ultimate Taylor-Couette flow <i>S. Huisman, R. van der Veen, C. Sun, D. Lohse</i>	H20.04 New insight on flow development and two-dimensionality of turbulent channel flows <i>H. Nagib, R. Vinuesa, E. Bartrons, M. Muñoz, G. Subashki, Y. Suzuki</i>	H20.05 Multi-component measurements in high Reynolds number turbulent boundary layers <i>R. Baidya, J. Philip, N. Hutchins, J. Monty, I. Marusic</i>	H20.06 Turbulent convection velocities in a turbulent boundary layer <i>R. de Kat, B. Ganapathisubramani</i>

Monday Morning, 19 November 2012

Session	10:30	10:43	10:56	11:09	11:22	11:35
H21. Turbulence Simulation: Sensitivity/Uncertainty Room: Room: 30B Chair: Q. Wang, Massachusetts Institute of Technology	H21.01 <u>Stabilized sensitivity analysis of scalar mixing in laminar and turbulent jet in crossflow</u> <i>R. Chen, Q. Wang, P. Blonigan</i>	H21.02 <u>Impact of numerical errors on the turbulent mixing of high Schmidt number passive scalars</u> <i>Y. Xuan, S. Verma, G. Blanquart</i>	H21.03 <u>Adjoint Sensitivity Computation for Unsteady, Periodic Fluid Flows</u> <i>S. Gomez, Q. Wang</i>	H21.04 <u>Estimating Uncertainties in Statistics Computed from DNS</u> <i>N. Malaya, R. Ulerich, T. Oliver, R. Moser</i>	H21.05 <u>Representing Turbulence Model Uncertainty with Stochastic PDEs</u> <i>T. Oliver, R. Moser</i>	H21.06 <u>Breakdown of Sensitivity Analysis in Chaotic, Turbulent Fluid Flows</u> <i>Q. Wang, P. Blonigan, J. Gao</i>
H22. Turbulence Mixing II: Heat Transport Room: Room: 30C Chair: S. Leonardi, U. of Puerto Rico	H22.01 <u>Direct Numerical Simulations (DNS) of the thermal field in a turbulent channel flow with spanwise sinusoidal blowing/suction</u> <i>C. Liu, G. Araya, L. Castillo, S. Leonardi</i>	H22.02 WITHDRAWN	H22.03 <u>Devising scaling parameters for wall bounded turbulent thermal transport</u> <i>C. Srinivasan, D. Papavassiliou</i>	H22.04 <u>Preliminary Results in an Ablation Wind Tunnel</u> <i>M. Allard, C. White, Y. Dubief</i>	H22.05 <u>A POD analysis of rough surface pressure and temperature fluctuations in a spatially developing turbulent boundary layer</u> <i>L. Castillo, J. Newman, R. Adrian, Y. Chen</i>	H22.06 <u>Effect of surface heating on the drag crisis of sphere</u> <i>M. Muto, H. Watanabe, M. Tsubokura</i>
H23. Turbulent Boundary Layers VI: Compressible Room: Room: 30D Chair: K. Mahesh, U. of Minnesota	H23.01 <u>Measurement in a Hypersonic Turbulent Boundary Layer Using PIV</u> <i>O. Williams, A. Smits</i>	H23.02 <u>Predictive Inner-Outer Model for Turbulent Boundary Layers Applied to Supersonic DNS</u> <i>P. Martin, C. Helm</i>	H23.03 <u>Direct Numerical Simulation of a Mach 2.25 Turbulent Boundary Layer Over A Compliant Surface</u> <i>C. Ostoich, D. Bodony, P. Geubelle</i>	H23.04 <u>DNS of a Mach 3 and Mach 7 Turbulent Boundary Layer: Statistical Description and Scale Decomposed Physics</u> <i>I. Beekman, P. Martin</i>	H23.05 <u>Mach-number-invariant mean velocity profile of compressible turbulent boundary layers</u> <i>Y. Zhang, W. Bi, Z. She, F. Hussain, X. Li</i>	H23.06 <u>Direct numerical simulation of a hypersonic shock wave/turbulent boundary layer interaction</u> <i>S. Priebe, P. Martin</i>
H24. Aerodynamics III Room: Room: 30E Chair: F. Liu, U. of California, Irvine	H24.01 <u>Multiple Solutions of Transonic Flow over NACA0012 Airfoil</u> <i>J. Xiong, Y. Liu, F. Liu, S. Luo, Z. Zhao, X. Ren, C. Gao</i>	H24.02 <u>Stability of Inviscid Flow over Airfoils Admitting Multiple Numerical Solutions</u> <i>Y. Liu, J. Xiong, F. Liu, S. Luo</i>	H24.03 <u>Parametric study on separation control by DBD plasma actuator over NACA0012 and NACA0015 airfoil at Reynolds number 63,000</u> <i>M. Sato, T. Nonomura, H. Aono, K. Okada, K. Fujii</i>	H24.04 <u>Separation Control by External Acoustic Excitation on a Finite Wing at Low Reynolds Numbers</u> <i>S. Yang, G. Spedding</i>	H24.05 <u>Linear reduced-order models of unsteady flow over a wing at high angles of attack</u> <i>C. Bahri, C. Rowley, L. Martinelli</i>	H24.06 <u>On The Symmetry of Proper Orthogonal Decomposition Modes of a Flapping Foil</u> <i>Z. Liang, H. Dong</i>
H25. Flow Control: Internal flow Room: Room: 31A Chair: M. Amitay, Rensselaer Polytechnic Institute	H25.01 <u>Feedback stabilization of vortex flows in a finite-length straight pipe</u> <i>S. Wang, R. Gong, Z. Rusak, L. Xu, S. Taylor, L. Jeng</i>	H25.02 <u>Design of Servo-Driven Actuators for Spanwise-Varying Control of a Backward-Facing Step Flow</u> <i>M. Schostek, L. Sigurdson</i>	H25.03 <u>High Amplitude Forcing Dependence of Control of a Backward-Facing Step Flow</u> <i>L. Sigurdson, M. Schostek</i>	H25.04 <u>Feed-forward control of the flow over a backward-facing step</u> <i>F. Juliet, P. Schmid, B. McKeon</i>	H25.05 <u>Experimental Investigation of Flow Control in a Compact Inlet Duct</u> <i>B. Debronsky, M. Amitay</i>	H25.06 <u>The valveless impedance pump and the unexpected effect of convection in tight spaces</u> <i>J. Woodcock, J. Sader, I. Marusic</i>
H26. Reactive Flows V: Numerical Approaches to Turbulent Combustion Room: Room: 31B Chair: V. Raman, U. of Texas at Austin	H26.01 <u>A novel methodology for simulating low Mach number combustion</u> <i>A. Abdighanie, J. Riley, O. Flores, R. Moser</i>	H26.02 <u>Vorticity dynamics in variable density flows</u> <i>P. Hamlington, A. Poludnenko, E. Oran</i>	H26.03 <u>Discontinuous Galerkin Method for Combustion</u> <i>Y. Lv, M. Ihme</i>	H26.04 <u>Empirical low-dimensional manifolds in composition space</u> <i>Y. Yang, S. Pope, J. Chen</i>	H26.05 <u>An Adjoint Approach for Determining Sensitivity of Combustion Simulations to Model Parameters</u> <i>K. Braman, V. Raman</i>	H26.06 <u>Relating filtered and unfiltered quantities in large eddy simulation of turbulent combustion</u> <i>V. Raman, C. Heye</i>
H27. Separated Flows III Room: Room: 31C Chair: S. Kumar, U. of Texas at Brownsville	H27.01 <u>A numerical study of the influence of wall effects on the onset of unsteadiness in the three dimensional flow over a backward-facing step</u> <i>N. Malamataris</i>	H27.02 <u>Direct Numerical Simulation of laminar separation bubbles</u> <i>O. Ramesh, S. Patwardhan, A. Mitra</i>	H27.03 <u>Negative production of turbulent kinetic energy in a turbulent separation bubble</u> <i>H. Abe, Y. Mizobuchi, Y. Matsuo, P. Spalart</i>	H27.04 <u>Direct measurement of wall shear stress in a backward facing step flow by using a photonic wall shear stress sensor</u> <i>U. Ayaz, T. Ioppolo, V. Otugen</i>	H27.05 <u>Unsteady separation in a forward-facing step flow</u> <i>D. Pearson, P. Goulart, B. Ganapathisubramani</i>	H27.06 <u>Evolution of coherent vortical structures in turbulent flow over backward-facing step</u> <i>P. Nadge, R. Govardhan</i>
H28. Waves II Room: Room: 32A Chair: J. Duncan, U. of Maryland	H28.01 <u>Internal Wave Attractors: Topographic effects on wave reflection and energy propagation</u> <i>R. Sutton, S. Dalziel</i>	H28.02 <u>A Cloak of Invisibility Against Ocean Waves</u> <i>R. Alam</i>	H28.03 <u>Resonant collisions of internal gravity wave beams</u> <i>H. Karimi, T. Akylas</i>	H28.04 <u>An extended application for strongly nonlinear two-layer model</u> <i>S. Chen, R. Camassa, W. Choi, R. Tiron</i>	H28.05 <u>Bottom Boundary Layer Turbulence under an Internal Solitary Wave of Depression: Effects of Barotropic Current</u> <i>T. Sakai, P. Diamentis, G. Jacobs</i>	H28.06 <u>Waves and Currents: Hawking radiation in the hydraulics laboratory?</u> <i>G. Lawrence, S. Weinfurter, E. Tedford, M. Penrice, W. Unruh</i>
H29. Porous Media Flows V Room: Room: 32B Chair: P. Arratia, U. of Pennsylvania	H29.01 <u>Impacts of Transport Properties of Porous Corrosion Product Layer on Effective Corrosion Rate</u> <i>X. Li, D. Cook</i>	H29.02 <u>Overlimiting current and water purification in porous materials</u> <i>D. Deng, W. Aouad, S. Schlumpberger, M. Bazant</i>	H29.03 <u>Thermoregulation and adaptation in honeybee swarms</u> <i>S. Ocko, L. Mahadevan</i>	H29.04 <u>Ion transport through a charged cylindrical membrane pore contacting stagnant diffusion layers</u> <i>M. Andersen, P. Biesheuvel, M. Bazant, A. Mani</i>	H29.05 <u>Reactive geochemical transport modeling of CO₂ in porous media</u> <i>M. Alizadeh Nomeli, A. Riaz</i>	H29.06 <u>Relevance of Linear Stability Results to Enhanced Oil Recovery</u> <i>X. Ding, P. Daripa</i>
H30. Colloids and Fibers Room: Room: 33A Chair: A. Khair, Carnegie Mellon U.	H30.01 <u>Direct Measurements of Colloidal Hydrodynamics near Flat Boundaries</u> <i>Pak, C. Ha, D. Ou-Yang, D. Lee</i>	H30.02 WITHDRAWN	H30.03 <u>Phase transition in non-brownian fiber suspensions</u> <i>A. Franceschini, E. Filippidi, E. Guazzelli, D. Pine</i>	H30.04 <u>Rotational motion of a thin axisymmetric disk in a low Reynolds number linear flow</u> <i>V. Singh, D. Koch, G. Subramanian, A. Stroock</i>	H30.05 <u>Vorticity alignment of rigid fibers in oscillatory flow</u> <i>J. Butler, B. Snook</i>	H30.06 <u>The onset of particle-dominated convection regime in colloidal suspensions</u> <i>L. Hadji, M. DarAssi</i>

Monday Morning, 19 November 2012

Session	10:30	10:43	10:56	11:09	11:22	11:35
H31. Particle Laden Flows IV Room: Room: 33B Chair: S. Elghobashi, U. of California, Irvine	H31.01 <u>Near-surface sea spray dynamics via simulations of particle-laden, turbulent Couette flow</u> <i>D. Richter, P. Sullivan</i>	H31.02 <u>Numerical study of the boundary conditions in particulate suspensions with the lattice Boltzmann method</u> <i>L. Xu, L. Schaefer</i>	H31.03 <u>DNS of particle dispersion in a spatially developing turbulent boundary layer</u> <i>M. Dodd, K. Webster, A. Ferrante</i>	H31.04 <u>Modeling near-wall interphase exchanges for particle-laden flows</u> <i>O. Desjardins, J. Capecelatro</i>	H31.05 <u>Particle equilibrium in 3D-channel flow for one and two particles</u> <i>J. Klinkenberg, H. de Lange, W. Breugem, L. Brandt</i>	H31.06 <u>Particle Dynamics in Rotating Flow inside Coaxial Cylinder</u> <i>A. Kim, S. Lee</i>
H32. Granular Flows II Room: Room: 33C Chair: Y. Ding, Georgia Institute of Technology	H32.01 <u>Drag and lift forces in granular flows</u> <i>F. Guillard, O. Pouliquen, Y. Forterre</i>	H32.02 <u>From antinode clusters to node clusters: The concentration dependent transition of floaters on a standing Faraday wave</u> <i>C. Sanli, D. Lohse, D. van der Meer</i>	H32.03 <u>Force and flow response of granular matter to simultaneous intruders</u> <i>P. Umbanhowar, L. London, D. Goldman</i>	H32.04 <u>Nonlinear granular electrostatics</u> <i>T. Shinbrot</i>	H32.05 <u>Force measurements on an intruder in pre-fluidized sand</u> <i>T. Homan, D. Lohse, D. van der Meer</i>	H32.06 <u>A resistive force model for complex intrusion in granular media</u> <i>T. Zhang, C. Li, D. Goldman</i>
H33. Mini-Symposium: Complex Fluid Flows in Memory of Daniel D. Joseph II Room: Room: 29A Chair: H. Hu, U. of Pennsylvania	H33.01 <u>Linear Instabilities in Simple Shear Flow of Polymer Solutions Driven by Stress-gradient/Concentration Coupling</u> <i>G. Leal, M. Cromer, M. Villet, G. Fredrickson</i>	H33.02 <u>Brownian Swimming via Taylor Dispersion</u> <i>J. Goddard, E. Lauga</i>	H33.03 <u>Active Nematic Flows</u> <i>G. Forest, Q. Wang, R. Zhou</i>	H33.04 <u>Apparent viscosity during unyielding of a thixotropic yield stress fluid</u> <i>Y. Renardy, K. Maki</i>	H33.05 <u>A universal constraint-based formulation for freely moving immersed bodies in fluids</u> <i>N. Patankar</i>	H33.06 <u>Computationally and experimentally assessed base-flow, stability, and sensitivity differences between shear dominated (negligible gravity) and gravity assisted internal condensing flows</u> <i>A. Narain, R. Naik, S. Mitra, M. Kivisalu</i>

Monday Morning, 19 November 2012					
Session	11:48	12:01	12:14	12:27	12:30
H1. Geophysical: Ocean II Room: Room: 22 Chair: A. Tejada-Martinez, U. of South Florida	H1.07 Langmuir circulation in sheared shallow waters <i>W. Phillips</i>	H1.08 Interfacial flux in wetlands predicted using surface divergence measurements <i>C. Poindexter, E. Variano</i>	H1.09 On similarity of wind-waves spectral shapes in laboratory and in ocean <i>L. Shemer, A. Zavadsky, D. Liberzon</i>		
H2. Convection and Buoyancy-Driven Flows V: Exchange Flows Room: Room: 23A Chair: R. Griffiths, Australian National U.	H2.07 Steady rotating density currents on a slope <i>W. Moon, G. Manucharyan, F. Sevellec, A. Wells, J. Zhong, J. Wettlaufer</i>	H2.08 Flushing of passive contaminants through ship ballast tanks <i>Z. Qi, I. Eames, A. Greig</i>	H2.09 The Competition Between a Localised and Distributed Source of Buoyancy <i>J. Partridge, P. Linden</i>		
H3. Multiphase Flows: Numerical Methods II Room: Room: 23B Chair: M. Herrmann, Arizona State U.	H3.07 Homogeneous and isotropic turbulence laden with particles of different Stokes numbers <i>G. Mallouppas, B. van Wachem, W. George</i>	H3.08 On the direct numerical simulation of moderate-Stokes-number turbulent particulate flows using algebraic-closure-based and kinetic-based moments methods <i>A. Vie, E. Masi, O. Simonin, M. Massot</i>	H3.09 Simulating Primary Atomization at Arbitrary Density Ratios: a Stable and Conservative Framework <i>V. Le Chenadec, H. Pitsch</i>		
H4. Drops VI Room: Room: 23C Chair: S. Zaleski, Institut D'Alembert, CNRS and UPMC	H4.07 Impact of droplet on superheated surfaces <i>D. Lohse, H. Staat, T. Tran, A. Prosperetti, C. Sun</i>	H4.08 Microdroplet impact at very high velocity <i>C. Visser, Y. Tagawa, C. Sun, D. Lohse</i>	H4.09 How Does Air Evolve into a Bubble During Drop Impact? <i>J. Lee, B. Weon, S. Park, J. Kim, J. Pyo, J. Je, K. Fezzaa</i>	H4.10 Pinning of a perfectly wetting volatile liquid at a sharp edge - experiment and theory <i>Y. Tsoumpas, S. Dehaeck, A. Rednikov, M. Galvagno, U. Thiele, P. Colinet</i>	
H5. Computational Fluid Dynamics V Room: Room: 24A Chair: S. Apte, Oregon State U.	H5.07 Statistic fluid dynamic of multiphase flow <i>H. Lim, J. Glimm, Y. Zhou, X. Jiao</i>	H5.08 Comparative Study of Reynolds Averaged and Embedded Large Eddy Simulations of a High Pressure Turbine Stage <i>A. Jemcov, T. Williams, T. Corke</i>	H5.09 Aerodynamic Improvements of an Empty Timber Truck can Have the Potential of Significantly Reducing Fuel Consumption <i>M. Andersson, S. Marashi, M. Karlsson</i>		
H6. Microfluidics: General II Room: Room: 24B Chair: D. Saintillan, U. of Illinois at Urbana-Champaign	H6.07 Drops subjected to surface acoustic waves: flow dynamics <i>P. Brunet, M. Baudoin, O. Bou Matar</i>	H6.08 Surface Acoustic Wave (SAW) based Microfluidics for Particle and Droplet Manipulation <i>Y. Ai, B. Marrone</i>	H6.09 Buckling and Transport of Semiflexible Filaments in Cellular Flows <i>H. Manikantan, D. Saintillan</i>		
H7. Non-Newtonian Flows I Room: Room: 24C Chair: A. Hosoi, Massachusetts Institute of Technology	H7.07 Flow structure of polymer solutions close to walls, at less than one correlation length <i>P. Tabeling, Z. Li, M. Yonger, F. Monti, E. Terriac, C. Lee</i>	H7.08 Structure evolution in electrorheological fluids <i>B. Qian, A. Helal, M. Telleria, M. Murphy, M. Strauss, G. McKinley, A. Hosoi</i>	H7.09 Experimental Study of Settling of Spherical Particles in Unbounded and Confined Shear Thinning Viscoelastic Fluids <i>M. Sharma, S. Malhotra</i>	H7.10 Micro-Macro Simulation of Viscoelastic Fluids in Three Dimensions <i>A. Rüttgers, M. Griebel</i>	
H8. Drops VII Room: Room: 25A Chair: S. Mitra, U. of Alberta	H8.07 A theory of wall-induced lateral migration of a drop in shear: effects of drop inclination and viscoelasticity <i>K. Sarkar</i>	H8.08 Computational investigation of spreading and arrest of molten liquid on a solid substrate <i>R. Baghaei Lakeh, F. Tavakoli, P. Kavehpour</i>	H8.09 Physics of Spreading and Arrest of Molten Liquid on Solid Substrates <i>F. Tavakoli, S. Davis, P. Kavehpour</i>		
H9. Interfacial/Thin Film Instability IV Room: Room: 25B Chair: J. Seiwert, Institut de Physique de Rennes	H9.07 Control of complex dynamics in highly conducting thin annular films <i>D. Papageorgiou, A. Wray, O. Matar</i>	H9.08 Phase separation patterns in irradiated thin liquid films due to optical interference effects <i>F. Saeki, S. Fukui, H. Matsuoka</i>	H9.09 The Nanoworld Beyond Bénard Instability: Comparison Between Theory and Experiment <i>K. Fiedler, S. Troian</i>	H9.10 Thermocapillary motion of a droplet on an inclined plate <i>G. Karapetsas, K. Sahu, O. Matar</i>	
H10. Instability: Jets, Wakes and Shear Layers V Room: Room: 25C Chair: T. Schneider, Max Planck Institute for Dynamics and Self-Organization	H10.07 Phase transition to sustained turbulence in pipe flow <i>M. Vasudevan, M. Vassallo, B. Hof</i>	H10.08 Evolution of K- and H-type structures in a spatially evolving channel flow <i>A. Kucala, S. Biringen, S. Waggy</i>			

Lunch Break, 12:30–14:00

Monday Morning, 19 November 2012					
Session	11:48	12:01	12:14	12:27	12:30
H11. Bubbles III Room: Room: 26A Chair: M. Smith, Georgia Institute of Technology	H11.07 Development of a GPU and multi-CPU accelerated non-isothermal, multiphase, incompressible Navier-Stokes solver with phase-change C. Forster, A. Glezer, M. Smith	H11.08 Heat transfer enhancement in turbulent thermal convection close to the boiling point: Numerical simulations R. Lakkaraju, R. Stevens, P. Oresta, F. Toschi, C. Sun, R. Verzicco, A. Prosperetti, D. Lohse	H11.09 Numerical Investigation of Boiling M. Sagan, S. Tanguy, C. Colin		
H12. Vortex V Room: Room: 26B Chair: M. Stremmer, Virginia Polytechnic Institute and State U.	H12.07 Experiments on the flow around yawed and fixed cylinder: Forces and Flow measurements G. Franzini, R. Gioria, I. Korkischko, J. Meneghini, A. Fujarra	H12.08 Flow around an inclined cylinder with different end plates boundary conditions R. Gioria, G. Franzini, J. Meneghini, A. Fujarra	H12.09 Reorientation of Vorticity on a Rapidly Accelerating Finite Aspect Ratio Plate J. Kriegseis, M. Kinzel, D. Rival		
H13. Rayleigh-Taylor Instability I Room: Room: 27A Chair: A. Lawrie, U. of Bristol	H13.07 Large Eddy Simulations of the Tilted Rig Experiment: A Two-dimensional Rayleigh-Taylor Instability Case B. Rollin, N. Denissen, J. Reisner, M. Andrews	H13.08 RANS Simulations of the Tilted Rig Experiment: A Two-dimensional Rayleigh-Taylor Instability Case N. Denissen, B. Rollin, J. Reisner, M. Andrews	H13.09 The Dynamics of Rayleigh-Taylor Stable and Unstable Contact Discontinuities with Anisotropic Thermal Conduction D. Lecoanet, I. Parrish, E. Quataert		
H14. General Experiments III Room: Room: 27B Chair: J. Chen, Purdue U.	H14.07 Performance of an untethered micro-optical pressure sensor T. Ioppolo, M. Manzo, P. Krueger	H14.08 Simultaneous measurement of morphological shape and 3D motion of objects using digital holographic microscopy K. Seo, S. Lee	H14.09 Automatic characterization of particle fields using digital holography J. Gao, J. Chen, D. Gueldenbecher, P. Reu		
H15. Biofluids: Animals Room: Room: 28A Chair: J. Bush, Massachusetts Institute of Technology	H15.07 Ground resistance influences lizard burial in dry and wet sand S. Sharpe, R. Kuckuk, D. Goldman	H15.08 Lift-enhancement in the gliding paradise tree snake A. Krishnan, L. Barba	H15.09 Jumping of water striders on water E. Yang, J. Son, P. Jablonski, H. Kim		
H16. Biofluids: Heart Ventricles and Assist Devices Room: Room: 28B Chair: R. Mittal, Johns Hopkins U.	H16.07 A Methodology for Quantifying Heart Function in the Embryonic Zebrafish B. Johnson, D. Garrity, L. Dasi	H16.08 Human Aorta Is a Passive Pump N. Pahlevan, M. Gharib	H16.09 Characterization of human left ventricle flow patterns using ultrasound and Lagrangian coherent structures S. Hendabadi, J. del Alamo, Y. Benito, R. Yotti, J. Bermejo, S. Shadden		
H17. Biofluids: Micro-swimming Theory I Room: Room: 28C Chair: J. Rodrigo Velez-Cordero, U. of California, San Diego	H17.07 Simulation of micro-organisms swimming near ciliated surfaces H. Shum, A. Tripathi, J. Yeomans, A. Balazs	H17.08 Chemotaxis of crawling and swimming <i>Caenorhabditis Elegans</i> A. Patel, A. Bilbao, V. Padmanabhan, Z. Khan, A. Armstrong, K. Rumbaugh, S. Vanapalli, J. Blawdziewicz	H17.09 The Fidelity of Adaptive Phototaxis I. Tuval, K. Drescher, R. Goldstein	H17.10 Granular resistive force theory explains the neuromechanical phase lag during sand-swimming Y. Ding, S. Sharpe, D. Goldman	
H18. Biofluids: Flapping and Flying II Room: Room: 28D Chair: F. Shu, New Mexico State U.					
H19. Multiphase Flows: General I Room: Room: 28E Chair: R. Arndt, U. of Minnesota	H19.07 PIV in the two phases of hydrodynamic cavitation in a venturi type section S. Fuzier, S. Coudert, O. Coutier Delgosha	H19.08 High-order accurate interface-capturing schemes for gas-liquid flows: pressure and temperature considerations E. Johnsen	H19.09 Direct numerical simulation of turbulent supercritical flow and heat transfer of water in a vertical pipe J. Yoo, S. Lee, J. Bae		
H20. Turbulent Boundary Layers V: Experiments Room: Room: 30A Chair: K. Flack, United States Naval Academy	H20.07 Correction of Pressure Data Close to the Wall in Turbulent Boundary Layer Y. Tsuji, Y. Yamamoto	H20.08 Turbulent boundary layer investigation at large Re with micron resolution C. Kaehler, C. Cierpka, S. Scharnowski	H20.09 Canonical boundary layer properties at high Reynolds number as measured in the UNH Flow Physics Facility P. Vincenti, C. Morrill-Winter, J. Klewicki, C. White, M. Wosnik		

Lunch Break, 12:30–14:00

Monday Morning, 19 November 2012					
Session	11:48	12:01	12:14	12:27	12:30
H21. Turbulence Simulation: Sensitivity/Uncertainty Room: Room: 30B Chair: Q. Wang, Massachusetts Institute of Technology	H21.07 <u>New Methods for Sensitivity Analysis in Chaotic, Turbulent Fluid Flows</u> <i>P. Blonigan, Q. Wang</i>	H21.08 <u>Quantification of epistemic uncertainties in RANS turbulence models</u> <i>M. Salvetti, L. Margheri, M. Meldi, P. Sagaut</i>	H21.09 <u>Evaluation and Quantification of Uncertainty of RANS turbulence and turbulent mixing models for a separated flow</u> <i>C. Gorle, R. Rossi, G. Iaccarino</i>		
H22. Turbulence Mixing II: Heat Transport Room: Room: 30C Chair: S. Leonardi, U. of Puerto Rico					
H23. Turbulent Boundary Layers VI: Compressible Room: Room: 30D Chair: K. Mahesh, U. of Minnesota	H23.07 <u>Wall-modeled large-eddy simulations of shock/turbulent-boundary layer interaction in a duct</u> <i>I. Bermejo-Moreno, J. Larsson, L. Campo, J. Bodart, D. Helmer, F. Ham, J. Eaton</i>	H23.08 <u>Direct Numerical Simulations of Turbulent Boundary Layers Over A Circular Aperture</u> <i>Q. Zhang, D. Bodony</i>	H23.09 <u>Large Eddy Simulation of a Film Cooling Technique with a Plenum</u> <i>S. Dharmarathne, N. Sridhar, G. Araya, L. Castillo, S. Parameswaran</i>	H23.10 <u>Turbulence Structure and its Signature in Hypersonic Turbulent Boundary Layers</u> <i>Y. Kan, P. Martin</i>	
H24. Aerodynamics III Room: Room: 30E Chair: F. Liu, U. of California, Irvine	H24.07 <u>Vorticity forces on a delta wing from the perspective of a force element theory</u> <i>C. Hsieh, J. Lee, C. Chang, C. Chu</i>	H24.08 <u>Hydrodynamic characteristics for flow around wavy wings</u> <i>M. Kim, H. Yoon</i>	H24.09 <u>Effects of Dynamic Pitching on Wind Turbine Blade Performance</u> <i>J. Naughton, A. Babbitt, J. Strike, M. Hind, A. Magstadt, P. Nikooyeyan</i>		
H25. Flow Control: Internal flow Room: Room: 31A Chair: M. Amitay, Rensselaer Polytechnic Institute	H25.07 <u>Transient Dynamics Modeling of Experimental Hypersonic Inlet Unstart</u> <i>K. Hutchins, M. Szmuk, N. Clemens, M. Akella, J. Donbar, S. Gogineni</i>	H25.08 <u>Closed-loop control of a turbulent mixing layer - experimental study</u> <i>V. Parezanovic, J. Delville, C. Fourment, L. Cordier, B. Noack, T. Shaqarin</i>			
H26. Reactive Flows V: Numerical Approaches to Turbulent Combustion Room: Room: 31B Chair: V. Raman, U. of Texas at Austin	H26.07 <u>PDF investigations of turbulent non-premixed jet flames with thin reaction zones</u> <i>H. Wang, S. Pope</i>	H26.08 <u>Modeling local extinction in turbulent combustion using an embedding method</u> <i>R. Knaus, C. Pantano</i>	H26.09 <u>Numerical simulation of turbulent stratified flame propagation in a closed vessel</u> <i>C. Gruselle, G. Lartigue, P. Peplot, V. Moureau, Y. D'Angelo</i>	H26.10 <u>Evaluation of a Consistent LES/PDF Method Using a Series of Experimental Spray Flames</u> <i>C. Heye, V. Raman</i>	
H27. Separated Flows III Room: Room: 31C Chair: S. Kumar, U. of Texas at Brownsville	H27.07 <u>Experimental investigation of the leading edge vortex on vertical axis wind turbine blades</u> <i>R. Dunne, B. McKeon</i>	H27.08 <u>Unsteady Cavity Induced Vibrations of Flexible Hydrofoils</u> <i>D. Akcabay, E. Chae, Y. Young</i>			
H28. Waves II Room: Room: 32A Chair: J. Duncan, U. of Maryland	H28.07 <u>Spatio-temporal characterization of Capillary Wave Turbulence</u> <i>M. Berhanu, E. Falcon</i>	H28.08 <u>Direct numerical simulations of gravity-capillary wave turbulence</u> <i>L. Deike, D. Fuster, M. Berhanu, E. Falcon</i>	H28.09 <u>An Experiment on Two-Dimensional Interaction of Solitary Waves in Shallow Water System</u> <i>H. Tsuji, K. Yufu, K. Marubayashi</i>	H28.10 <u>On the spatial periodicity of waves over arbitrary periodic topographies</u> <i>J. Yu</i>	
H29. Porous Media Flows V Room: Room: 32B Chair: P. Arratia, U. of Pennsylvania	H29.07 <u>Sustained Reaction Waves Against Flow in Porous Medium: Frozen Fronts</u> <i>D. Salin, S. Atis, H. Auradou, S. Saha, L. Talon</i>	H29.08 <u>The "coffee-ring effect" as a way to remove pollutants and control drying rate in porous media</u> <i>E. Keita, P. Faure, S. Rodts, D. Weitz, P. Coussot</i>			
H30. Colloids and Fibers Room: Room: 33A Chair: A. Khair, Carnegie Mellon U.	H30.07 <u>The influence of frequency dependent impedance properties on electrohydrodynamic aggregation of colloidal particles</u> <i>T. Woehl, C. Dutcher, N. Talken, W. Ristenpart</i>	H30.08 <u>Richardson Dispersion in Brownian Motion</u> <i>E. Villiermaux, J. Duplat</i>	H30.09 <u>Advective symmetry breaking in phoretic motion of colloidal particles</u> <i>A. Khair</i>		

Lunch Break, 12:30–14:00

Monday Morning, 19 November 2012					
Session	11:48	12:01	12:14	12:27	12:30
H31. Particle Laden Flows IV Room: Room: 33B Chair: S. Elghobashi, U. of California, Irvine	H31.07 Numerical studies of the effects of neutrally buoyant large particles on turbulent channel flow at the friction Reynolds number up to 395 <i>Z. Yu, Y. Wang, X. Shao</i>	H31.08 Four-way coupling simulation of particle-laden turbulent channel flow <i>J. Lee, C. Lee</i>	H31.09 Behavior of particles in turbulence over a wavy wall <i>H. Lee, C. Lee</i>		Lunch Break, 12:30–14:00
H32. Granular Flows II Room: Room: 33C Chair: Y. Ding, Georgia Institute of Technology	H32.07 Sidewinding snakes on sand <i>H. Marvi, D. Dimenichi, R. Chrystal, J. Mendelson, D. Goldman, D. Hu</i>	H32.08 Lift-off performance of a jumping robot on hard and soft ground <i>J. Aguilar, A. Lesov, K. Wiesenfeld, D. Goldman</i>			
H33. Mini-Symposium: Complex Fluid Flows in Memory of Daniel D. Joseph II Room: Room: 29A Chair: H. Hu, U. of Pennsylvania	H33.07 A New Model for Instantaneous Coal and Gas Outbursts <i>K. Chen</i>	H33.08 Transient Flow due to the Adsorption of Particles <i>P. Singh, N. Musunuri, B. Dalal, I. Fischer, D. Codjoe</i>	H33.09 Thermal Dielectrophoretic (T-DEP) Force <i>H. Hu, B. Shararenko, H. Bau</i>		

Monday Afternoon, 19 November 2012

Invited Session J33

14:00 – 14:35, Room: Ballroom 20A

Chair: Sutanu Sarkar, University of California, San Diego

Boundary Layers In Favourable Pressure Gradients Ugo Piomelli, Queen's University, Kingston (ON)

Invited Session J34

14:00 – 14:35, Room: Ballroom 20BC

Chair: Tom Bewley, University of California, San Diego

Control Of Oscillator And Amplifier Flows Peter Schmid, LadHyX, Ecole Polytechnique

Mini Break

14:35 – 14:40

Invited Session K33

14:40 – 15:15, Room: Ballroom 20A

Chair: Juan Lasheras, University of California, San Diego

Numerical Investigations Of Turbidity Currents Eckart Meiburg, UC Santa Barbara

Invited Session K34

14:40 – 15:15, Room: Ballroom 20BC

Chair: Geno Pawlak, University of California, San Diego

Tipstreaming And Other Methods Of Producing Fine Fluid Threads Shelley Anna, Carnegie Mellon University

Refreshment Break

15:15 – 15:35

Monday Afternoon, 19 November 2012

Session	15:35	15:48	16:01	16:14	16:27	16:40
L1. Geophysical: Atmospheric III Room: Room: 22 Chair: J. Pedro Mellado, Max Planck Meteorological Institute	L1.01 Experimental study of turbulence induced wall temperature fluctuations <i>A. Garai, J. Kleissl</i>	L1.02 Surface-Pressure Fluctuations due to Coherent Microscale Processes in the Atmospheric Boundary Layer <i>G. Lyons, N. Murray</i>	L1.03 On the characterization of coherent structures within a neutrally-stratified atmospheric boundary layer <i>G. Rosi, B. le Bastide, J. Gaebler, M. Kinzel, D. Rival</i>	L1.04 Nested large-eddy simulations of nighttime shear-instability waves and transient warming in a steep valley <i>B. Zhou, F. Chow</i>	L1.05 Delay in convection in nocturnal boundary layer due to aerosol-induced cooling <i>D. Singh, V. Ponnulakshmi, G. Subramanian, K. Sreenivas</i>	L1.06 Direct Numerical Simulation of the Convective Boundary Layer <i>J. Garcia, J. Mellado</i>
L2. Convection and Buoyancy-Driven Flows VI: Plumes Room: Room: 23A Chair: A. Wells, U. of Oxford	L2.01 Collapsing plumes and resurrecting fountains <i>T. van den Bremer, G. Hunt</i>	L2.02 The rise heights of fountains and pinched-off vortices <i>H. Burridge, G. Hunt</i>	L2.03 A Comparison of Single and Multiphase Turbulent Jets, Pure and Forced Plumes at Moderate Reynolds Numbers. <i>G. Taub, S. Balachandar, F. Plourde</i>	L2.04 Instability of plumes driven by localized heating <i>F. Marques, J. Lopez, Y. Do</i>	L2.05 Laminar plume formation by high pressure CO2 <i>F. Nadal, P. Meunier, B. Pouligny, E. Laurichesse</i>	L2.06 Self-similarity of Boussinesq Miscible Thermals: an Experimental Study <i>B. Zhao, A. Lai, A. Law, E. Adams</i>
L3. Multiphase Flows: Atomization and Droplets Room: Room: 23B Chair: O. Desjardins, Cornell U.	L3.01 Droplet Jumping Induced by Focused Surface Acoustic Wave on Superhydrophobic Surface <i>M. Darmawan, K. Jeon, D. Byun</i>	L3.02 Convective Air Mass Transfer in Submerged Superhydrophobic Surfaces <i>C. Barth, M. Samaha, H. Vahedi Tafreshi, M. Gad-el-Hak</i>	L3.03 Effect of Charge Relaxation in Three-Dimensional Numerical Simulations of Turbulent Primary Atomization of Electrically Charged Liquid Jets <i>E. Courtine, B. Van Poppel, J. Daily, O. Desjardins</i>	L3.04 Efficient High-Fidelity Simulation of Pressure Swirl Injection <i>M. Owkes, O. Desjardins</i>	L3.05 High fidelity simulation of transcritical injection <i>M. Soteriou, H. Gao, X. Li, D. Davis</i>	L3.06 Vaporization of Deforming Droplets <i>Y. Wang, X. Chen, D. Ma, V. Yang</i>
L4. Drops VIII Room: Room: 23C Chair: F. Higuera, E.T.S. Ingenieros Aeronauticos, UPM	L4.01 Measurement of interfacial tension of ionic liquid-dielectric liquid system using the shape of an electrically deformed droplet <i>D. Lee, D. Im, I. Kang</i>	L4.02 Charge Transfer into Aqueous Droplets via Kilo-volt Potentials <i>B. Hamlin, E. Rosenberg, W. Ristenpart</i>	L4.03 Numerical and asymptotic analysis of an electrified jet <i>S. Ibañez, F. Higuera</i>	L4.04 Periodic emission of droplets from an electrified meniscus <i>A. Hijano, I. Loscertales, S. Ibanez, F. Higuera</i>	L4.05 Electro-deformation of a surfactant-laden viscous drop <i>H. Nganguia, Y. Young, P. Vlahovska, J. Zhang, H. Lin</i>	L4.06 Whipping in electrified liquid jets <i>J. Guerrero Millan, V. Gundabala, A. Fernandez-Nieves</i>
L5. Computational Fluid Dynamics VI Room: Room: 24A Chair: R. Moser, U. of Texas at Austin	L5.01 Periodic Cavitation in a High-Speed Water Inducer at an Off-Design Flow Coefficient <i>R. Lundgreen, R. Cluff, D. Maynes, S. Gorrell, K. Oliphant</i>	L5.02 Comparison: on-design and off-design flow through a high speed turbo pump inducer <i>R. Cluff, R. Lundgreen, S. Gorrell, D. Maynes, K. Oliphant</i>	L5.03 Optimal design of solenoid valve to minimize cavitation by numerical analysis <i>S. Ko, I. Jang, S. Song</i>	L5.04 Transient High-Pressure Fuel Injection Processes <i>D. Jarrabashi, W. Sirignano</i>	L5.05 Effect of a Magnetic Field on Turbulent Flow in Continuous Casting Mold <i>R. Singh, P. Vanka, B. Thomas</i>	L5.06 Adjoint Airfoil Optimization of Darrieus-Type Vertical Axis Wind Turbine <i>R. Fuchs, H. Nordborg</i>
L6. Microfluidics: Capillary I Room: Room: 24B Chair: P. Kavehpour, U. of California, Los Angeles	L6.01 Breakup of liquid filaments on a partially wetting solid substrate <i>G. Ghigliotti, C. Zhou, J. Feng</i>	L6.02 Movement of a droplet on a structured substrate: a dissipative particle dynamics simulation <i>G. Hu, Y. Yao</i>	L6.03 Investigation of drag reduction properties of liquid impregnated micro-textured surfaces <i>V. Spandan, G. McKinley, S. Das</i>	L6.04 Wetting transitions on silicon nanowires with different surface functionalizations <i>X. Xu, G. Vereecke, E. van den Hoogen, J. Smeers, S. Armini, T. Delande, H. Struyf</i>	L6.05 Wetting and spreading behaviors of impinging microdroplets on textured surfaces <i>D. Kwon, S. Lee</i>	L6.06 Precipitation of salt in saline water drop on superhydrophobic surface <i>B. Shin, M. Moon, H. Kim</i>
L7. Non-Newtonian Flows II Room: Room: 24C Chair: A. Morozov, U. of Edinburgh	L7.01 Dynamics of non Newtonian vortex rings <i>C. Palacios-Morales, C. Barbosa, R. Zenit</i>	L7.02 Flow Behavior near the Liquid-to-Solid Transition <i>H. Winter</i>	L7.03 Bending and buckling of viscoplastic threads <i>I. Hewitt, N. Balmforth</i>	L7.04 Dynamics of Viscoplastic Sheets <i>N. Balmforth</i>	L7.05 Transient Non-Newtonian Screw Flow <i>N. Khorasani</i>	L7.06 Numerical Simulation of Nanoparticle Clustering with Experimental Validation <i>Z. Feng, G. Sloan, K. Bhaganagar, D. Banerjee</i>
L8. Drops IX Room: Room: 25A Chair: Y. Sun, Drexel U.	L8.01 Bag Breakup of Viscous Drops <i>V. Kulkarni, D. Guildenbecher, S. Firehammer, P. Sojka</i>	L8.02 Self-similar breakup of near-inviscid liquids <i>A. Castrejón-Pita, J. Castrejón-Pita, J. Lister, E. Hinch, I. Hutchings</i>	L8.03 The Breakup of Water Cylinders Behind Normal Shocks <i>J. Meng, T. Colonius</i>	L8.04 Impact force of a falling drop <i>D. Soto, C. Clanet, D. Quere</i>	L8.05 Fabrication of nano-emulsions by bursting bubble at a liquid-liquid interface <i>J. Feng, M. Roché, D. Vigolo, L. Arnaudov, S. Stoyanov, H. Stone</i>	L8.06 Drop impact on a hydrophobic elastic beam <i>S. Gart, K. Norris, D. Chique, S. Jung</i>
L9. Interfacial/Thin Film Instability V: Evaporation Room: Room: 25B Chair: O. Matar, Imperial College London	L9.01 Stability of evaporating liquid layer with insoluble surfactant <i>A. Mikishev, A. Nepomnyashchy</i>	L9.02 Influence of evaporation on a thin binary liquid film flowing down a heated inclined plate <i>J. Kamrak, B. Scheid, P. Colinet</i>	L9.03 Solutal Marangoni instability in a binary liquid layer evaporating into air: the importance of transients in the gas for highly unstable cases <i>H. Machrafi, A. Rednikov, P. Colinet, P. Dauby</i>	L9.04 Experimental studies of a volatile simple fluid subject to a horizontal temperature gradient <i>Y. Li, B. Chan, M. Yoda</i>	L9.05 Numerical studies of a volatile simple fluid subject to a horizontal temperature gradient <i>T. Qin, R. Grigoriev</i>	L9.06 Experimental studies of volatile binary fluids subject to a horizontal temperature gradient <i>M. Yoda, Y. Li, B. Chan</i>
L10. Instability: Jets, Wakes and Shear Layers VI: Jets Room: Room: 25C Chair: A. Karagozian, U. of California, Los Angeles	L10.01 Experimental Study of Axial Forcing on a Swirling Jet <i>A. McCleney, P. Bardet</i>	L10.02 Unsteady Surface-Pressure Measurements and Time-Resolved Flow Visualization of a Normally and Obliquely Impinging Jet <i>M. Al-Aweni, A. Naguib</i>	L10.03 Convective and Absolute Instability of Liquid Jets under Gravity Effects <i>G. Amini, M. Ihme, A. Dolatabadi</i>	L10.04 WITHDRAWN	L10.05 Preferred modes in jets: comparison between different measures of the receptivity <i>X. Garnaud, L. Lesshafft, P. Schmid, P. Huerre</i>	L10.06 Structural Variation in Convectively and Absolutely Unstable Jets in Crossflow <i>D. Getsinger, L. Gevorkyan, O. Smith, A. Karagozian</i>

Monday Afternoon, 19 November 2012

Session	15:35	15:48	16:01	16:14	16:27	16:40
L11. Bubbles IV and Drug Delivery Room: Room: 26A Chair: K. Sarkar, George Washington U.	L11.01 Simulation of Magnetic Particles in the Bloodstream for Magnetic Drug Targeting Applications <i>E. Cherry, J. Eaton</i>	L11.02 Highly-focused high-speed impact on soft material: Application for needle-free injection device <i>Y. Tagawa, N. Oudalov, C. Visser, C. Sun, D. Lohse</i>	L11.03 Mapping the acoustic scattering behavior of spherical microbubble clouds <i>M. Parrales, J. Fernandez, M. Perez-Saborid</i>	L11.04 Acoustic Excitation of a Micro-bubble Inside a Rigid Tube <i>A. Qamar, R. Samtaney</i>	L11.05 Stably Levitated Large Bubbles in Vertically Vibrating Liquids <i>T. O'Hern, B. Shelden, L. Romero, J. Torczynski</i>	L11.06 Nonlinear dynamics of PLA (poly-lactic acid) encapsulated ultrasound contrast microbubbles <i>S. Paul, K. Sarkar, M. Wheatley</i>
L12. Vortex VI Room: Room: 26B Chair: J. Kriegseis, U. of Calgary	L12.01 Flow Structure on a Delta Wing of Moderate Sweep Angle During and After Pitch-Up Maneuver <i>A. Celik, I. Ozturk, H. Tunc, M. Yavuz</i>	L12.02 The suppression of wing rock of wing/body configurations <i>X. Deng, Y. Wang</i>	L12.03 Vortex Interactions on Plunging Airfoil and Wings <i>A. Eslam Panah, J. Buchholz</i>	L12.04 Aircraft wake two-vortex system at turbulent equilibrium <i>G. Winckelmans, I. De Visscher, L. Bricteux</i>	L12.05 Force Production from Near- and Far-Field Vortices on Flapping Wings <i>H. Wan, Z. Liang, H. Dong</i>	L12.06 Modeling the dynamics of four-vortex bluff body wakes <i>S. Basu, M. Stremier, T. Schnipper, A. Andersen</i>
L13. Rayleigh-Taylor/Richtmyer-Meshkov Instability Room: Room: 27A Chair: J. Jacobs, U. of Arizona	L13.01 Turbulent mixing driven by a spherical converging shock <i>M. Lombardini, D. Pullin, D. Meiron, R. Gore</i>	L13.02 Experiments on the Rayleigh-Taylor instability of gas-gas interfaces accelerated by an expansion wave <i>R. Morgan, O. Likhachev, J. Jacobs</i>	L13.03 Progress on experimental investigation of RT instability at high Atwood numbers <i>B. Akula, D. Ranjan</i>	L13.04 Miscible and immiscible, forced and unforced experiments on the Rayleigh-Taylor instability <i>M. Roberts, M. Mokler, J. Jacobs</i>	L13.05 Effects of Initial Conditions on Rayleigh-Taylor Instability in Elastic-Plastic Materials <i>P. Roach, A. Banerjee</i>	L13.06 Compressibility and Stratification Effects on Single-Mode Rayleigh-Taylor Instability <i>S. Reckinger, D. Livescu, O. Vasilyev</i>
L14. Experiments: PIV II Room: Room: 27B Chair: D. Frakes, Arizona State U.	L14.01 PIV Measurement of velocity and acceleration fields using multi-pulse technology <i>L. Ding, R. Adrian, S. Gogineni</i>	L14.02 A Further PIV Validation: The Topological Rule <i>J. Foss, D. Neal</i>	L14.03 Multi-planar velocimetry for 3D reconstruction of the flow <i>A. Falahatpisheh, G. Pedrizzetti, A. Kheradvar</i>	L14.04 Tomographic PIV using pulsed, high power LED illumination <i>C. Willert, N. Buchmann, J. Soria</i>	L14.05 Hands-On Particle Image Velocimetry Experience for Bioengineering Students Using the Interactive Flowcoach System to Understand Aneurysm Hemodynamics <i>B. Roszelle, M. Okcay, B. Oztekin, D. Frakes</i>	L14.06 Development of refractively matched hydrogels for PIV applications <i>M. Byron, E. Variano</i>
L15. Biofluids: Insect Flight Room: Room: 28A Chair: T. Truscott, Brigham Young U.	L15.01 Low Reynolds Number Drag Alteration Inspired by Butterfly Scales <i>B. LaForte, C. Kronenberger, A. Lang</i>	L15.02 Rock and Roll - How Do Flies Recover From Serial Stumbles? <i>T. Beatus, J. Guckenheimer, I. Cohen</i>	L15.03 Scales affect performance of Monarch butterfly forewings in autorotational flight <i>A. Demko, A. Lang</i>	L15.04 Flow Modulation and Force Control in Insect Fast Maneuver <i>C. Li, H. Dong, W. Zhang, K. Gai</i>	L15.05 On the Optimal Dynamic Camber Formation in Insect Flight <i>Y. Ren, H. Dong</i>	L15.06 Quantifying Dragonfly Kinematics During Unsteady Free-Flight Maneuvers <i>J. Melfi, H. Lin, M. Mischiati, A. Leonardo, Z. Wang</i>
L16. Biofluids: Blood Transport Room: Room: 28B Chair: J. Freund, U. of Illinois at Urbana-Champaign	L16.01 The flow of red cells through spleen-like filtering slits <i>J. Freund</i>	L16.02 Dynamics of monocytes flowing in a model pulmonary capillary bed <i>A. Viallat, J. Dupire</i>	L16.03 The effect of polymer additives on flowing cells through capillaries <i>L. Zhu, L. Brandt</i>	L16.04 Transport of diseased red blood cells in the spleen <i>Z. Peng, I. Pivkin, M. Dao</i>	L16.05 Analysis of Red Blood Cell Behavior in a Narrow Tube <i>H. Hosaka, T. Omori, Y. Imai, T. Yamaguchi, T. Ishikawa</i>	L16.06 Mechanistic insights into flow induced segregation in blood and other multicomponent suspensions <i>A. Kumar, M. Graham</i>
L17. Biofluids: Microswimmers and Elasticity Room: Room: 28C Chair: C. Eloy, Aix-Marseille U. IRPHE	L17.01 Optimal pumping kinematics of a cilium <i>C. Eloy, E. Lauga</i>	L17.02 Sperm Motility in Flow <i>J. Guasto, G. Juarez, R. Stocker</i>	L17.03 Helical bodies swim slower... and faster... through a viscoelastic fluid <i>S. Spagnolie, B. Liu, T. Powers</i>	L17.04 Modeling the swimming of microbes in anisotropic fluids <i>M. Krieger, S. Spagnolie, T. Powers</i>	L17.05 Direct micro-mechanical measurements of the material properties and motility of <i>C. elegans</i> <i>M. Backholm, W. Ryu, K. Dalnoki-Veress</i>	L17.06 Effect of rotational diffusion on the collective behavior of swimming microorganisms in viscoelastic fluids <i>Y. Bozorgi, P. Underhill</i>
L18. Biofluids: Respiratory and Aerosols Room: Room: 28D Chair: A. Marsden, U. of California, San Diego	L18.01 Geometrical influence of pulmonary acinar models on respiratory flows and particle deposition <i>P. Hofemeier, J. Sznitman</i>	L18.02 Direct Numerical Simulation of the Flow in the Human Upper Airway <i>Y. Wang, S. Elghobashi</i>	L18.03 Numerical investigation of pulmonary drug delivery under mechanical ventilation conditions <i>A. Banerjee, T. Van Rhein</i>	L18.04 Effect of Pressure Controlled Waveforms on Flow Transport and Gas mixing in a Patient Specific Lung Model during Invasive High Frequency Oscillatory Ventilation <i>M. Alzahrany, A. Banerjee</i>	L18.05 A Comprehensive Breath Plume Model for Disease Transmission via Expiratory Aerosols <i>S. Halloran, A. Wexler, W. Ristenpart</i>	L18.06 Correlation among regional ventilation, airway resistance and particle deposition in normal and severe asthmatic lungs <i>S. Choi, E. Hoffman, M. Tawhai, C. Lin</i>
L19. Surface Tension III Room: Room: 28E Chair: B. Cullen, Massachusetts Institute of Technology	L19.01 Elastocapillary Flows in Flexible Tubes <i>T. Hoberg, E. Verneuil, A. Hosoi</i>	L19.02 Sandwiched drops and magnified substrate deformations <i>J. Wexler, H. Stone</i>	L19.03 Capillary forces on elastic solids measured in molecular dynamics <i>J. Weijs, A. Marchand, B. Andreotti, J. Snoeijer</i>	L19.04 An elastic meniscus <i>A. Antkowiak, M. Rivetti</i>	L19.05 Contact angles on a soft solid: from Young's law to Neumann's law <i>J. Snoeijer, A. Marchand, S. Das, B. Andreotti</i>	L19.06 Dynamics of ultrasound-driven two-dimensional microbubbles <i>C. Wang, B. Rallabandi, S. Hilgenfeldt</i>
L20. Turbulent Boundary Layers VII: Rough Walls I Room: Room: 30A Chair: K. Christensen, U. of Illinois at Urbana-Champaign	L20.01 Structural Aspects of Flow Over Highly Irregular Roughness Revealed from Wall-Normal-Spanwise Plane Stereo PIV Measurements <i>J. Barros, K. Christensen</i>	L20.02 Roughness effects in turbulent channel flow for the transitionally rough regime <i>K. Flack, M. Schultz</i>	L20.03 Effects of increased entrainment in turbulent boundary layers <i>G. Borrelli, J. Jimenez</i>	L20.04 Time Resolved Tomographic PIV Measurements of Rough-Wall Turbulent Channel Flow <i>R. Miorini, C. Zhang, P. Luckett, D. Patel, J. Katz</i>	L20.05 Large-Scale Secondary Flows in a Turbulent Boundary Layer Caused by Highly Ordered and Directional Surface Roughness <i>B. Nugroho, N. Hutchins, J. Monty</i>	L20.06 Investigation of wall-bounded turbulence over regularly distributed roughness <i>M. Placidi, B. Ganapathisubramani</i>

Monday Afternoon, 19 November 2012

Session	15:35	15:48	16:01	16:14	16:27	16:40
L21. Turbulent Boundary Layers VIII: Rough Walls II Room: Room: 30B Chair: B. McKeon, California Institute of Technology	L21.01 Roughness effects on the control of laminar separated boundary layers <i>A. Gul Gungor, M. Simens</i>	L21.02 Direct numerical simulation of turbulent boundary layer separation under unsteady pressure gradients <i>W. Bromby, D. You</i>	L21.03 Turbulent flow around a wall mounted square cylinder: evaluating the LES and Reynolds Stress turbulence models in predicting the negative turbulence productions upstream the obstacle <i>B. Tavakoli, G. Ahmadi</i>	L21.04 Large eddy simulation of channel flows with strip roughness <i>N. Saito, D. Pullin</i>	L21.05 Direct numerical simulations in turbulent boundary layers over cube-roughened walls with varying spanwise spacing <i>J. Ahn, J. Lee, H. Sung</i>	L21.06 Large Eddy Simulation of fully developed turbulent flow over a moving wavy surface <i>L. Sun, S. Cao</i>
L22. Turbulence Mixing III Room: Room: 30C Chair: K. Sreenivasan, New York U.	L22.01 Turbulent mixing of substances which are highly diffusive <i>K. Sreenivasan, P. Yeung</i>	L22.02 Turbulent mixing of highly diffusive substances in the presence of a uniform mean gradient <i>P. Yeung, K. Iyer, K. Sreenivasan</i>	L22.03 Turbulent mixing in microfluidics with Reynolds number in the order of 1 <i>F. Yang, W. Zhao, G. Wang</i>	L22.04 Spinodal turbulence enhances heat transfer in micro devices <i>S. Farisé, P. Poesio, G. Beretta</i>	L22.05 Spectral transfer and scale locality characteristics in turbulent mixing over a wide range of Schmidt numbers <i>D. Buaría, P. Yeung, J. Domaradzki</i>	L22.06 Extreme responses of a coupled scalar-particle system during turbulent mixing <i>J. Schumacher, B. Kumar, R. Shaw</i>
L23. Turbulent Boundary Layers IX: Rough / Wavy / Bent Walls Room: Room: 30D Chair: J. Naughton, U. of Wyoming	L23.01 Index-Matched PIV Measurements of Turbulence inside a Fractal-Tree Canopy <i>K. Bai, J. Katz, C. Meneveau</i>	L23.02 On the routes to inertial mean dynamics in smooth- and rough-wall turbulent boundary layers <i>J. Klewicki, F. Mehdí</i>	L23.03 Investigation of Turbulence Modification by Momentum Injection Into Turbulent Flow Over a Rough Surface <i>M. Miller, A. Martin, S. Bailey</i>	L23.04 Coherent structures and associated sub-grid scale energy transfer in a rough-wall turbulent channel flow <i>J. Hong, J. Katz, C. Meneveau, M. Schultz</i>	L23.05 Effect of Immersed Wall-Bounded Cylinders on Turbulent Boundary Layer Structure <i>S. Zheng, E. Longmire, M. Hallberg, M. Ryan</i>	L23.06 Experimental test of the spectral analogue of the law of the wall in rough-pipe flows <i>C. Zuniga Zamalloa, G. Gioia, P. Chakraborty</i>
L24. Aerodynamics IV Room: Room: 30E Chair: J. Hubner, U. of Alabama	L24.01 The Role of Free Stream Turbulence on the Aerodynamic Performance of a Wind Turbine Blade <i>V. Maldonado, A. Thormann, C. Meneveau, L. Castillo</i>	L24.02 Investigation of the rotational flow effects in a pitching airfoil genetically optimized for vertical axis wind turbines <i>D. Ragni, L. Vitale, A. Ianiro, B. Geurts, C. Ferreira</i>	L24.03 High resolution velocimetry near the trailing edge of rigid and flexible airfoils undergoing unsteady motion <i>D. Olson, A. Naguib, M. Koochesfahani</i>	L24.04 Drag coefficient measurements of spheres with different surface patterns <i>H. Heisselmann, D. Strutz, J. Peinke, M. Hoelling</i>	L24.05 Comparison of Aerodynamic Coefficients from Low Aspect Ratio Membrane Wings and their Time-Averaged Shape <i>N. Martin, A. Wrist, Z. Zhang, J. Hubner</i>	L24.06 Coupled Fluid and Structure Measurements over a Low Aspect Ratio Membrane Wing <i>L. Ukeiley, M. Arce, A. Timpe, Z. Zhang, J. Hubner</i>
L25. Flow Control: Boundary layer Room: Room: 31A Chair: C. Rowley, Princeton U.	L25.01 Numerical investigation of the AFRODITE transition control strategy <i>S. Camarri, J. Fransson, A. Talamelli</i>	L25.02 Controller Selection and Placement in a Compressible Boundary Layer <i>D. Bodony, M. Natarajan</i>	L25.03 Exploring the Potential of Turbulent Flow Control Using Vertically Aligned Nanowire Arrays <i>S. Bailey, J. Calhoun, C. Guskey, M. Seigler, A. Koka, H. Sodano</i>	L25.04 Effects of actuators and sensors on feedback control of transition in the 2D Blasius boundary layer <i>B. Belson, C. Rowley, O. Semeraro</i>	L25.05 Shock Wave Boundary Layer Interaction Control Using Pulsed DBD Plasma Actuators <i>A. Likhanskii, K. Beckwith</i>	L25.06 Stability analysis of Boundary Layer in Poiseuille Flow through a modified Orr-Sommerfeld equation <i>J. Chabi Orou, V. Monwanou, C. Miwadinou</i>
L26. Reactive Flows VI: Fire, Soot, and Spray Combustion Room: Room: 31B Chair: K. Seshadri, U. of California, San Diego	L26.01 Effects of buoyancy on heat transfer under an inclined flat plate <i>M. Gollner, A. Sanchez, F. Williams</i>	L26.02 A Numerical Study on Effects of Pressure and Gravity on Opposed Flow Flame Spread Rate over Thin Fuels <i>R. Shukla, A. Kumar</i>	L26.03 Physics-based Modeling of Shrub Fires: Study of Distribution of Bulk Density and Moisture Content <i>A. Dahale, B. Shotorban, S. Mahalingam</i>	L26.04 Wind Effects on Flame Tilt Angles in Wildland Fires <i>S. Padi, A. Dahale, B. Shotorban, S. Mahalingam</i>	L26.05 Mathematical Modeling of Wildfire Dynamics <i>K. Del Bene, D. Drew</i>	L26.06 Flamelet Radiation Modeling <i>J. Doom, K. Mahesh</i>
L27. Boundary-Layer Instability I Room: Room: 31C Chair: M. Malik, NASA Langley Research Center	L27.01 Evolution of wavepacket over short compliant panels in a Blasius boundary layer <i>I. Bori, K. Yeo, H. Dou, X. Zhao</i>	L27.02 Nonlinear intrinsic streaks in the flat plate boundary layer <i>C. Martel, J. Martin</i>	L27.03 Dynamic mode decomposition of H-type transition to turbulence <i>T. Sayadi, J. Nichols, P. Schmid, P. Moin</i>	L27.04 Self-sustained localized structures in a boundary-layer flow identified by edge tracking <i>D. Henningson, Y. Duguet, P. Schlatter, B. Eckhardt</i>	L27.05 Global stability and receptivity of swept attachment line boundary layer <i>G. Meneghella, P. Schmid, P. Huerre</i>	L27.06 Effect of low freestream turbulence on crossflow instability <i>M. Hosseini, A. Hanifi, D. Henningson</i>
L28. Industrial Applications I: Turbines and Engines Room: Room: 32A Chair: J. Cimbala, The Pennsylvania State U.	L28.01 POD- Mapping and analysis of hydroturbine exit flow dynamics <i>M. Kjeldsen, P. Finstad</i>	L28.02 Caution: Precision Error in Blade Alignment Results in Faulty Unsteady CFD Simulation <i>B. Lewis, J. Cimbala, A. Wouden</i>	L28.03 Effect of Marine Hydrokinetic array configuration on power extraction <i>M. Volpe, M. Beninati, M. Krane, A. Fontaine</i>	L28.04 Numerical modeling of the effects of a free surface on the operating characteristics of Marine Hydrokinetic Turbines <i>S. Adamski, A. Aliseda</i>	L28.05 Experimental study of the lift and drag characteristics of a cascade of flat plates in a configuration of interest for tidal energy converters <i>F. Fedoul, L. Parras, C. del Pino, R. Fernandez-Feria</i>	L28.06 RANS simulations of a flow over a rotating disk: grid sensitivity analysis <i>S. Poroseva, M. Snider</i>
L29. Chaos, Fractals, and Dynamical Systems I: Lagrangian Coherent Structures Room: Room: 32B Chair: W. Tang, Arizona State U.	L29.01 Lagrangian Coherent Structures separate dynamically distinct regions <i>D. Kelley, M. Allshouse, N. Ouellette</i>	L29.02 Particle manipulation using vibrating cilia <i>P. Tallapragada, S. Kelly</i>	L29.03 Passive scalar statistics and its dependence on Lagrangian coherent structures in stochastic flows <i>W. Tang, P. Walker, M. Allshouse, D. del-Castillo-Negrete</i>	L29.04 Finite-time statistics of scalar diffusion in Lagrangian coherent structures <i>P. Walker, W. Tang</i>	L29.05 Efficient and robust detection of transport barriers using the geodesic approach <i>M. Allshouse, J. Thiffeault, T. Peacock</i>	L29.06 Integrated computation of Lagrangian coherent structures during DNS of unsteady and turbulent flows <i>J. Finn, S. Apte</i>
L30. Fluid Education Room: Room: 33A Chair: F. Jacobitz, U. of San Diego	L30.01 The Fluid Dynamics Demo Kit: Part I <i>K. Flack, P. Underhill, K. Prestridge</i>	L30.02 The Fluid Dynamics Demo Kit: Part II <i>P. Underhill, H. Fix, T. Haines, K. Prestridge, K. Flack</i>	L30.03 Water bottle rocket in undergraduate laboratory <i>W. Schultz</i>	L30.04 Fluid Mechanics: The Pamphlet <i>E. Viano</i>	L30.05 Experience revising an advanced-undergraduate/beginning-graduate fluid mechanics textbook <i>D. Dowling</i>	L30.06 Applying the results of education research to help students learn more: an update <i>R. Pepper, C. Baily, M. Caballero, S. Chasteen, B. Wilcox, K. Perkins, S. Pollock</i>

Monday Afternoon, 19 November 2012

Session	15:35	15:48	16:01	16:14	16:27	16:40
L31. Particle Laden Flows V Room: Room: 33B Chair: A. Ferrante, U. of Washington	L31.01 Monte Carlo Simulation of Spherical Microparticle Removal and Resuspension from Substrate in Fluid Flow <i>I. Goldasteh, G. Ahmadi, A. Ferro</i>	L31.02 Turbulent flow computations for high speed shock dominated flows with a one-equation turbulence model <i>J. Ekaterinaris</i>	L31.03 Radiation-induced turbulence in particle-laden buoyant flows <i>R. Zamansky, F. Coletti, M. Massot, A. Mani</i>	L31.04 Particle-laden turbulence subject to radiation <i>M. Pour Ansari, M. Mortazavi, A. Mani</i>	L31.05 Effect of initial cloud shape and orientation on particle dispersion in the accelerated flow behind a shock <i>S. Davis, G. Jacobs</i>	L31.06 Computational Meso-Scale Study of Representative Unit Cubes for Inert Spheres Subject to Intense Shocks <i>C. Stewart, F. Najjar, D. Stewart, J. Bdzil</i>
L32. Granular Flows III Room: Room: 33C Chair: M. Alam, JNCASR	L32.01 Dynamics of Concentrated Soft Spheres: Internal Imaging and Steady-state Rheology <i>J. Huang, M. Chou, P. Huang, C. Chang, J. Tsai</i>	L32.02 Rheology and segregation of a heterogeneous cohesive granular material <i>P. Jop, C. Voivret, E. Gouillart</i>	L32.03 Rearrangements and Rheology in Soft Glassy 2D Material <i>N. Keim, P. Arratia</i>	L32.04 Dynamical Slowing Down for Sheared Granular Materials <i>S. Farhadi, R. Behringer</i>	L32.05 Gradient and Vorticity Banding Phenomena in a Sheared Granular Fluid <i>M. Alam, P. Shukla</i>	L32.06 Vibrations and stress relaxation in two-dimensional granular solids <i>T. Bertrand, C. MacMinn, C. O'Hern, J. Wettlaufer, M. Shattuck, E. Dufresne</i>

Monday Afternoon, 19 November 2012				
Session	16:53	17:06	17:19	17:32
L1. Geophysical: Atmospheric III Room: Room: 22 Chair: J. Pedro Mellado, Max Planck Meteorological Institute	L1.07 DNS of stratified spatially-developing turbulent thermal boundary layers <i>G. Araya, L. Castillo, K. Jansen</i>	L1.08 Wind Tunnel Simulation of the Atmospheric Boundary Layer <i>T. Hohman, A. Smits, L. Martinelli</i>	L1.09 Global Intermittency in Stably Stratified Turbulent Ekman Layers <i>S. Shah, C. Meneveau, E. Bou-Zeid</i>	L1.10 The critical layer for gravity waves in sheared rotating stratified flows <i>C. MILLET, F. Lott</i>
L2. Convection and Buoyancy-Driven Flows VI: Plumes Room: Room: 23A Chair: A. Wells, U. of Oxford	L2.07 The velocity field of laboratory fire whirls <i>K. Harfil, S. Guo, A. Smits</i>	L2.08 Laboratory-Scale Simulation of Spiral Plumes in the Mantle. <i>A. Sharifulin, A. Poludnitsin</i>	L2.09 Meltwater-plume dynamics under an evolving ice shelf <i>A. Wells</i>	L2.10 Generation of gravity waves by convective plumes <i>M. Le Bars, S. Perrard, P. Huck, A. Aubert, P. Le Gal</i>
L3. Multiphase Flows: Atomization and Droplets Room: Room: 23B Chair: O. Desjardins, Cornell U.	L3.07 Isogeometric analysis of drop deformation in isoviscous shear flow <i>A. Ahmadi Joneidi, C. Verhoosel, P. Anderson</i>	L3.08 Impact of Liquid Fuel Boundary Condition and Nozzle Geometry on Liquid Jet in Crossflow Atomization <i>S. Ghods, M. Herrmann</i>	L3.09 Measurement of liquid film flow on nuclear rod bundle in micro-scale by using very high speed camera system <i>S. Pham, Z. Kawara, T. Yokomine, T. Kunugi</i>	
L4. Drops VIII Room: Room: 23C Chair: F. Higuera, E.T.S. Ingenieros Aeronauticos, UPM	L4.07 Magnetic actuation of immersed coupled droplets: Experiments and simulations <i>J. Olles, A. Hirs, K. Sambath, O. Basaran</i>	L4.08 Electrohydrodynamics of suspension of liquid drops in AC fields <i>M. Abdul Halim, A. Esmaeeli</i>	L4.09 Electrohydrodynamic suspension of liquid drops in microgravity <i>A. Behjatian, A. Esmaeeli</i>	L4.10 Influencing the In-flight Shape and Velocity of a Ferrofluid Drop by a Magnetic Field: Case of a Falling Drop Towards a Surface <i>A. Amirfazli, J. Wu, M. Cabrerizo-Vilchez</i>
L5. Computational Fluid Dynamics VI Room: Room: 24A Chair: R. Moser, U. of Texas at Austin	L5.07 Simulation of a valveless pump with an elastic tube <i>S. Shin, C. Chang, H. Sung</i>	L5.08 Numerical Study of Thermoacoustic Spontaneous Oscillations in an Axisymmetric Closed Tube <i>K. Ishii, S. Kitagawa, K. Shirai, S. Adachi</i>	L5.09 Numerical Analysis of Transport Phenomena for the Design of the Ejector in a PEM Fuel Cell <i>E. Hosseinzadeh, M. Jabbari, M. Rokni</i>	L5.10 Numerical Study of 3D Flow and Mixing Properties in the Rotated Arc Mixer <i>E. Demissie, M. Speetjens, H. Clercx, G. Metcalfe</i>
L6. Microfluidics: Capillary I Room: Room: 24B Chair: P. Kavehpour, U. of California, Los Angeles	L6.07 Pressure and Heating Effects on Superhydrophobic Friction Reduction <i>T. Kim, S. Hann, C. Hidrovo</i>	L6.08 Facile fabrication of super-hydrophobic surfaces with 3D pillar structures <i>S. Zhai, H. Zhao, Y. Jiang</i>	L6.09 Friction Reduction and Robustness for Laminar Fluid Flow on Spray-Coated Superhydrophobic Mesh Surfaces <i>S. Srinivasan, W. Choi, K. Park, S. Chhatre, R. Cohen, G. McKinley</i>	L6.10 Spreading of Emulsions on Glass Substrates <i>A. Mohammad Karim, P. Kavehpour</i>
L7. Non-Newtonian Flows II Room: Room: 24C Chair: A. Morozov, U. of Edinburgh	L7.07 Numerical modeling of flowing soft materials <i>F. Toschi, R. Benzi, M. Bernaschi, P. Perlekar, M. Sbragaglia, S. Succi</i>	L7.08 Brownian Dynamics Simulations of Flow Induced Conformation of Single Polymer Chains <i>A. Oztekin, E. Webb, F. Zhang, X. Cheng</i>	L7.09 Computational modeling of dilute biomass slurries <i>M. Sprague, J. Stickel, P. Fischer, J. Lischeske</i>	L7.10 Stability of streamwise vortices in shear flows of viscoelastic fluids <i>A. Morozov</i>
L8. Drops IX Room: Room: 25A Chair: Y. Sun, Drexel U.	L8.07 Impact, Rebound, and Deflection of High-Velocity Continuous Droplet Streams <i>P. Chiarot, J. Donovan, W. Doak</i>	L8.08 Oscillation and recoil of single and consecutively printed droplets <i>X. Yang, V. Chhasatia, Y. Sun</i>	L8.09 Breakup of impulsively actuated jets from thin films <i>C. Brasz, M. Brown, Y. Ventikos, C. Arnold</i>	L8.10 Coalescence, evaporation and particle deposition of consecutively printed colloidal drops <i>V. Chhasatia, X. Yang, J. Shah, Y. Sun</i>
L9. Interfacial/Thin Film Instability V: Evaporation Room: Room: 25B Chair: O. Matar, Imperial College London	L9.07 Numerical studies of a volatile binary fluid subject to a horizontal temperature gradient <i>R. Grigoriev, T. Qin</i>	L9.08 On phase change in thermocapillary flows <i>P. Saenz, P. Valluri, K. Sefiane, G. Karapetsas, O. Matar</i>	L9.09 Evaporative Instability in Binary Mixtures <i>R. Narayanan, E. Uguz</i>	
L10. Instability: Jets, Wakes and Shear Layers VI: Jets Room: Room: 25C Chair: A. Karagozian, U. of California, Los Angeles	L10.07 Mixing Characteristics of Convectively and Absolutely Unstable Jets in Crossflow <i>L. Gevorkyan, D. Getsinger, O. Smith, A. Karagozian</i>	L10.08 Effect of dilatant additive on stability of waterjet <i>N. Ashrafi</i>	L10.09 Vortex breakdown in a coaxial swirling jet with a density difference: an experimental study <i>A. Bin Khairi, H. Gotoda</i>	L10.10 DNS of the transition from absolute to convective instability for transverse jets <i>E. Mussoni, P. Iyer, K. Mahesh</i>

Monday Afternoon, 19 November 2012				
Session	16:53	17:06	17:19	17:32
L11. Bubbles IV and Drug Delivery Room: Room: 26A Chair: K. Sarkar, George Washington U.	L11.07 Microbubbles as drug-delivery vectors: steering ultrasound contrast agents in arterial flow using the Bjerknes force <i>A. Aliseda, A. Clark</i>	L11.08 The Short Time Scale Events of Acoustic Droplet Vaporization <i>D. Li, O. Kripfgans, J. Fowlkes, J. Bull</i>	L11.09 An Experimental Review on Microbubble Generation to Be Used in Echo-PIV Method to Determine the Pipe Flow Velocity <i>A. Salari, M. Shafii, S. Shirani</i>	L11.10 Development of microbubbles generator using microchannel toward biomedical applications <i>H. Kaji, R. Masuda, K. Inoue, M. Ichihyanagi, I. Kinofuchi, S. Takagi, Y. Matumoto</i>
L12. Vortex VI Room: Room: 26B Chair: J. Kriegseis, U. of Calgary	L12.07 Effect of Relative Submergence on the Flow Structure in the Wake of Wall-Mounted Spherical Obstacle <i>S. Hajimirzaie, A. Tsakiris, J. Buchholz, A. Papanicolaou</i>	L12.08 Wake dynamics and hydrodynamic forces on a perforated circular plate in cross-flow <i>F. Huera-Huarte</i>	L12.09 Influence of diameter ratio and aspect ratio on wake development of a dual step cylinder <i>S. Yarusevych, C. Morton</i>	L12.10 Vortical Structures in the Near-Wake of an Oscillating Control Surface <i>K. Keller, A. Brandt</i>
L13. Rayleigh-Taylor/Richtmyer-Meshkov Instability Room: Room: 27A Chair: J. Jacobs, U. of Arizona	L13.07 Nonlinear evolution of Richtmyer-Meshkov and Rayleigh-Taylor instabilities in a domain of a finite size <i>A. Qamar, S. Abarzhi</i>	L13.08 Progress with Incline-Interface Richtmyer-Meshkov Experiments <i>J. McFarland, C. McDonald, D. Reilly, J. Greenough, D. Ranjan</i>	L13.09 Velocity measurements within a shock and reshock induced air/SF6 turbulent mixing zone <i>J. Haas, G. Bouzgarrou, Y. Bury, S. Jamme, L. Joly</i>	
L14. Experiments: PIV II Room: Room: 27B Chair: D. Frakes, Arizona State U.	L14.07 Development and Evaluation of an Echo Particle Image Velocimetry (EPIV) System <i>N. DeMarchi, C. White</i>	L14.08 On the extraction of pressure fields from PIV velocity measurements in turbines <i>A. Villegas, F. Diez</i>	L14.09 Coherent structure evolution in a turbulent round-jet using scanning tomographic particle image velocimetry <i>T. Casey, J. Sakakibara, S. Thoroddsen</i>	L14.10 Tomographic PIV measurement in complex geometries of nasal cavity <i>S. Im, H. Sung, S. Kim</i>
L15. Biofluids: Insect Flight Room: Room: 28A Chair: T. Truscott, Brigham Young U.	L15.07 Whole-field, time resolved velocity measurements of flow structures on insect wings during free flight <i>K. Langley, S. Thomson, T. Truscott</i>	L15.08 Mosquito flight failure in heavy fog <i>A. Dickerson, L. Telljohann, L. Thornton, C. Moyer, D. Hu</i>	L15.09 Numerical study of insect free hovering flight <i>D. Wu, K. Ye, T. Lim</i>	L15.10 Numerical Simulation of Drosophila Flight Based on Arbitrary Lagrangian-Eulerian Method <i>B. Erzincanli, M. Sahin</i>
L16. Biofluids: Blood Transport Room: Room: 28B Chair: J. Freund, U. of Illinois at Urbana-Champaign	L16.07 Gradient diffusion of red blood cells in blood flow through a Y-shape microchannel <i>C. Chuang, T. Ishikawa, H. Ueno, K. Numayama, Y. Imai, T. Yamaguchi</i>	L16.08 Depletion induced clustering of red blood cells in microchannels <i>C. Wagner, M. Brust, T. Podgorski, G. Couplier</i>	L16.09 Off-plane motion of a non-spherical capsule in simple shear flow <i>T. Omori, T. Ishikawa, Y. Imai, T. Yamaguchi</i>	L16.10 Shear induced diffusion in a red blood cell suspension <i>T. Podgorski, X. Grandchamp, A. Srivastav, G. Couplier</i>
L17. Biofluids: Microswimmers and Elasticity Room: Room: 28C Chair: C. Eloy, Aix-Marseille U. IRPHE	L17.07 Propulsion with a Reciprocal Stroke Enabled by Nonlinear Rheology <i>P. Arratia, X. Shen, N. Keim</i>	L17.08 Simulations of micro-swimmer scattering by soft elastic filaments <i>R. Ledesma-Aguilar, J. Yeomans</i>	L17.09 Dynamics of Purcell's three-link microswimmer with a passive elastic tail <i>E. Passov, Y. Or</i>	
L18. Biofluids: Respiratory and Aerosols Room: Room: 28D Chair: A. Marsden, U. of California, San Diego	L18.07 Numerical simulation of non-equilibrium transient flow during inhalation <i>O. Marxen, T. Magin</i>	L18.08 Multiscale Airflow Model and Aerosol Deposition in Healthy and Emphysematous Rat Lungs <i>J. Oakes, A. Marsden, C. Grandmont, C. Darquenne, I. Vignon-Clementel</i>	L18.09 Measurement of ciliary flow generated on the surface of tracheal lumen <i>K. Kiyota, H. Ueno, T. Ishikawa, K. Numayama-Tsuruta, Y. Imai, T. Omori, T. Yamaguchi</i>	L18.10 Particle Image Velocimetry Measurements in Anatomically-Accurate Models of the Mammalian Nasal Cavity <i>C. Rumpel, J. Richter, B. Craven, M. Krane</i>
L19. Surface Tension III Room: Room: 28E Chair: B. Cullen, Massachusetts Institute of Technology	L19.07 Oscillations of a cylindrical bubble attached to a wall <i>B. Rallabandi, C. Wang, S. Hilgenfeldt</i>	L19.08 Straight contact lines on a soft solid <i>L. Limat</i>	L19.09 Multiple equilibria and evaporation in elastocapillary systems <i>K. Singh, M. Taroni, D. Vella, T. Kim, H. Kim</i>	L19.10 Capillary rise of oil in an aqueous foam <i>K. Piroird, Lorenceau</i>
L20. Turbulent Boundary Layers VII: Rough Walls I Room: Room: 30A Chair: K. Christensen, U. of Illinois at Urbana-Champaign	L20.07 Drag and Turbulence Production by Random Roughness <i>R. Leighton, K. Christensen, K. bhaganagar</i>	L20.08 Holographic particle tracking elucidates coherent structures in the roughness sublayer of a channel flow <i>S. Talapatra, J. Katz</i>	L20.09 Extraction of very-large scale structures in turbulent boundary layer <i>S. Roux, F. Kerhervé, M. Stanislas, J. Foucaut, J. Delville</i>	

Monday Afternoon, 19 November 2012				
Session	16:53	17:06	17:19	17:32
L21. Turbulent Boundary Layers VIII: Rough Walls II Room: Room: 30B Chair: B. McKeon, California Institute of Technology				
L22. Turbulence Mixing III Room: Room: 30C Chair: K. Sreenivasan, New York U.	L22.07 Lyapunov exponents of inertial particles in isotropic turbulence <i>L. Guo, G. Jin, D. Li, G. He</i>			
L23. Turbulent Boundary Layers IX: Rough / Wavy / Bent Walls Room: Room: 30D Chair: J. Naughton, U. of Wyoming	L23.07 Measurement of turbulent flow upstream and downstream of a circular pipe bend <i>J. Sakakibara, N. Machida</i>	L23.08 Evolution of turbulence characteristics from straight to curved pipes <i>G. El Khoury, A. Noorani, P. Schlatter, P. Fischer</i>	L23.09 Secondary motions induced by a 90° bend in turbulent pipe flow <i>L. Hellström, A. Smits</i>	
L24. Aerodynamics IV Room: Room: 30E Chair: J. Hubner, U. of Alabama	L24.07 Formulation for Time-resolved Aerodynamic Damping in Dynamic Stall <i>T. Corke, P. Bowles, D. Coleman, F. Thomas</i>	L24.08 Static versus dynamic stall development <i>K. Mulleners, M. Raffel</i>	L24.09 Large-Scale High-Resolution Cylinder Wake Measurements in a Wind Tunnel using Tomographic PIV with sCMOS Cameras <i>D. Michaelis, A. Schroeder</i>	L24.10 Transient Response of a Separated Flow over a Two-Dimensional Wing to a Short Duration Pulse <i>D. Williams, T. Albrecht, T. Weier, G. Gerbeth</i>
L25. Flow Control: Boundary layer Room: Room: 31A Chair: C. Rowley, Princeton U.	L25.07 Time-resolved PIV of a turbulent boundary layer over a spanwise-oscillating surface <i>K. Gouder, J. Morrison</i>	L25.08 Closed-Loop Control of Unsteady Transient Growth Disturbances in a Blasius Boundary Layer using DBD Plasma Actuators <i>P. Lavoie, R. Hanson, K. Bade, A. Naguib, B. Belson, C. Rowley</i>	L25.09 Numerical study of linear feedback control for form-drag reduction <i>J. Dahan, A. Morgans</i>	L25.10 Linear modeling of turbulent skin-friction reduction due to spanwise wall motion <i>C. Duque-Daza, M. Baig, D. Lockerby, S. Chernyshenko, C. Davies</i>
L26. Reactive Flows VI: Fire, Soot, and Spray Combustion Room: Room: 31B Chair: K. Seshadri, U. of California, San Diego	L26.07 DNS of soot formation in three-dimensional turbulent non-premixed jet flames <i>A. Attili, F. Bisetti, M. Mueller, H. Pitsch</i>	L26.08 Validation of an LES Model for Soot Evolution against DNS Data in Turbulent Jet Flames <i>M. Mueller</i>	L26.09 Direct numerical simulations of temporally developing turbulent reacting liquid-fueled jets <i>S. Shashank, H. Pitsch</i>	L26.10 Droplet evaporation and vapor mixing characteristics in a high-speed liquid jet spray <i>J. Shinjo, A. Umemura</i>
L27. Boundary-Layer Instability I Room: Room: 31C Chair: M. Malik, NASA Langley Research Center	L27.07 Linear Stability Analysis of Fully Three-Dimensional Boundary-Layers <i>W. Liao, M. Malik, F. Li, M. Choudhari, C. Chang</i>	L27.08 Effect of Surface Imperfections and Excrescences on the Crossflow Instability <i>M. Tufts, G. Duncan, Jr., B. Crawford, H. Reed, W. Saric</i>	L27.09 Computations of Crossflow Transition in Supersonic Swept Wing Boundary Layers <i>L. Duan, M. Choudhari, F. Li, M. Wu</i>	
L28. Industrial Applications I: Turbines and Engines Room: Room: 32A Chair: J. Cimbala, The Pennsylvania State U.	L28.07 Evaluating Fuel-Air Mixing in a Direct-Injection Hydrogen-Fueled Internal Combustion Engine <i>A. Ebadi, C. White</i>	L28.08 Swirling flow in model of large two-stroke diesel engine <i>K. Meyer, K. Ingvorsen, S. Mayer, J. Walther</i>		
L29. Chaos, Fractals, and Dynamical Systems I: Lagrangian Coherent Structures Room: Room: 32B Chair: W. Tang, Arizona State U.	L29.07 Visualization of invariant sets in incompressible fluid flows from Lagrangian data <i>M. Budišić, I. Mezić</i>	L29.08 Short- and Long-Time Transport Structures in a Three Dimensional Time Dependent Flow <i>R. Chabreyrie, S. Llewellyn Smith</i>	L29.09 The role of filamentation and vortex merging in coastal particle accumulation and transport <i>C. Harrison, D. Siegel, S. Mitarai</i>	
L30. Fluid Education Room: Room: 33A Chair: F. Jacobitz, U. of San Diego	L30.07 An intensive short course in fluid dynamics <i>G. Homsy, B. Sutherland</i>	L30.08 Expanding Student International Awareness Through Short-Term Study Abroad Courses With Substantial Engineering Technical Content <i>F. Jacobitz, T. Schubert</i>	L30.09 Computational Fluid Dynamics - Applications in Manufacturing Processes <i>M. Beninati, A. Kathol, C. Ziemian</i>	L30.10 Teaching CFD as a Black Box: A Validation and Verification Approach <i>J. Hertzberg</i>

Monday Afternoon, 19 November 2012				
Session	16:53	17:06	17:19	17:32
L31. Particle Laden Flows V Room: Room: 33B Chair: A. Ferrante, U. of Washington	L31.07 Segregation of particles in incompressible random flows: singularities, intermittency and random uncorrelated motion <i>M. Reeks, E. Meneguz</i>	L31.08 Heavy particles in compressible homogeneous isotropic turbulence <i>Y. Yang, J. Wang, Y. Shi, Z. Xiao, X. He, S. Chen</i>	L31.09 Direct numerical simulation of the erosion of particle beds <i>Z. Borden, L. Maurin, E. Meiburg, Y. Kanarska, M. Glinsky</i>	L31.10 Particle Interaction in Stratified Fluids <i>A. Ardekani, A. Doostmohammadi</i>
L32. Granular Flows III Room: Room: 33C Chair: M. Alam, JNCASR	L32.07 Reynolds Pressure and Relaxation in a Homogeneous Sheared Granular System <i>J. Ren, J. Dijkstra, R. Behringer</i>	L32.08 Ratcheting of Granular Polymer with a Spatial Gradient of Excitation <i>Y. Lin, C. Chang, J. Huang, W. Juan, J. Tsai</i>	L32.09 Jamming of quasi-2D emulsion droplets: Analogies with granular jamming <i>E. Weeks, K. Desmond, P. Young, D. Chen</i>	L32.10 Patterns, Segregation and Hysteresis in Vertically Vibrated Granular Mixtures <i>I. Ansari, M. Alam</i>

Tuesday, 20 November 2012
Sessions M – R

Tuesday Morning, 20 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
M1. Geophysical: Ocean III Room: Room: 22 Chair: B. Sutherland, U. of Alberta	M1.01 A model for internal bores in continuously stratified fluids <i>B. White</i>	M1.02 Mixing by internal waves impinging on a slope <i>V. Chalamalla, S. Sarkar</i>	M1.03 Transport by Internal Waves Near the Boundary of a Lake <i>C. Rehmann, D. Wain</i>	M1.04 Gravity Currents and Internal Solitary Waves Approaching Slopes <i>B. Sutherland, D. Polet, G. Ivey</i>	M1.05 Three-dimensional structure of vortex shedding beneath internal solitary waves of depression in a two-layered system <i>P. Aghsaee, L. Boegman</i>	M1.06 Experimental Study of Parametric Subharmonic Instability in Stratified Fluids <i>B. Bourget, S. Joubaud, P. Odier, T. Dauxois</i>
M2. Convection and Buoyancy-Driven Flows VII Room: Room: 23A Chair: A. Cotel, U. of Michigan	M2.01 Turbulent acidic jets and plumes injected into an alkaline environment <i>H. Ulpre</i>	M2.02 Convection in a stratified atmosphere: from isolated thermals to the convective boundary layer <i>C. van Heerwaarden, J. Mellado</i>	M2.03 Turbulent Free Convection Over a Heated Plate <i>J. Mellado</i>	M2.04 Numerical simulation of buoyant jet issuing from a seabed <i>A. Nakayama, H. Rahai, J. Bricker</i>	M2.05 Asymmetric character of Rayleigh-Taylor and double-diffusive fingers in reactive systems <i>L. Lemaigre, M. Budroni, L. Riolfo, P. Grosfilis, A. De Wit</i>	M2.06 Transport Processes in GaN Deposition in a Chemical Vapor Deposition Reactor <i>Y. Jaluria, J. Meng, S. Wong</i>
M3. Multiphase Flows: Confined Flows Room: Room: 23B Chair: V. Ajaev, Southern Methodist U.	M3.01 Pressure drop and void fraction during flow boiling in minichannels at different gravity levels <i>V. Ajaev, D. Brutin, L. Tadrif</i>	M3.02 A mathematically-consistent formulation for evaporation of menisci in microchannels <i>R. Monazami, H. Haj-Hariri</i>	M3.03 On the stability of two-layer channel flow <i>A. Kaffel</i>	M3.04 Experimental Investigation of Fluid and Particle Motion in Shear-Induced Scour <i>Z. An, P. Krueger</i>	M3.05 Simulations of Multiphase Flow in a T-junction and Distributor Header <i>J. Horwitz, P. Kumar, P. Vanka</i>	M3.06 Rotation of a spheroidal particle in Couette flow: effects of fluid and particle inertia <i>T. Rosen, F. Lundell, M. Do-Quang, C. Aidun</i>
M4. Drops X Room: Room: 23C Chair: E. Johnsen, U. of Michigan	M4.01 Motions of capillary Leidenfrost drops on micro-ratchets <i>K. Stephanoff, P. Steen, H. Lhuissier, D. Lohse</i>	M4.02 Explosion of Leidenfrost Droplets <i>F. Moreau, P. Colinet, S. Dorbolo</i>	M4.03 Experimental study of the oscillating interface of a falling drop <i>S. Choi, T. Ward</i>	M4.04 Instabilities over a Droplet Surface in High Speed Flows <i>K. Mehravaran, M. Jalaal</i>	M4.05 Interaction of droplets in recirculation regions within microfluidic systems <i>N. Ghazi, A. Hosseini, S. Shojaei-Zadeh</i>	M4.06 Experimental Investigation of Gravity- and Wind-Forced Drop Stability <i>J. Schmucker, E. White</i>
M5. Computational Fluid Dynamics VII Room: Room: 24A Chair: T. Colonius, California Institute of Technology	M5.01 A numerical method for Stokes flow in a complex geometry coupled to dynamic rigid structures and filaments <i>T. Shinar, M. Shelley</i>	M5.02 Coupled level-set CURVIB method for fluid-structure interaction simulations of arbitrarily complex floating rigid bodies <i>A. Calderer, S. Kang, F. Sotiropoulos</i>	M5.03 The immersed interface method without interface parametrization <i>G. Pearson, S. Xu</i>	M5.04 Fully resolved immersed electrohydrodynamics for target-detection, particle motion, and self propulsion <i>A. Bhalla, B. Griffith, N. Patankar</i>	M5.05 A local grid refinement curvilinear immersed boundary method for multi-resolution simulations of complex turbulent flows <i>D. Angelidis, F. Sotiropoulos</i>	M5.06 A Numerical study of ablative flow driven by thermodynamics and kinetics <i>R. Crocker, Y. Dubief, C. White</i>
M6. Microfluidics: Capillary II Room: Room: 24B Chair: T. Cubaud, Stony Brook U.	M6.01 Dynamics of a small number of droplets moving in microfluidic Hele-Shaw cells <i>B. Shen, M. Leman, P. Tabeling, M. Reyssat</i>	M6.02 Multiple bubble propagation modes in Hele-Shaw cells of variable depth <i>A. Thompson, A. Juel, A. Hazel</i>	M6.03 Modeling sessile droplets on hydrophobic surfaces with spatially varying contact angle <i>O. Wind-Willassen, M. Sorensen</i>	M6.04 Modification of the effective contact angle by means of particle collection and the generation of armored bubbles <i>F. Zoueshiagh, M. Baudoin</i>	M6.05 Capillary Rise in Tubes with Interior Corners <i>M. Weislogel, T. Millhem, B. Oaks</i>	M6.06 Thermocapillary Levitation of Nanoliter-Volume Droplets and Extension to Two-Phase Systems <i>J. Black, G. Neitzel</i>
M7. Geophysical: General V Room: Room: 24C Chair: H. Pham, U. of California, San Diego	M7.01 Buoyancy effects in the spatially-evolving wake of a sphere at $Re=3,700$ <i>M. de Stadler, S. Sarkar</i>	M7.02 The Lagrangian energetics of stably stratified turbulence in the Boussinesq approximation with non-linear equation of state <i>S. Jo, K. Nomura, J. Rottman</i>	M7.03 A zero-equation closure model for wall-bounded stably stratified flows <i>F. Karimpour, S. Venayagamoorthy</i>	M7.04 Pathways to dissipation in strongly rotating and stratified turbulent systems <i>E. Deusebio, E. Lindborg</i>	M7.05 A model for turbulence in moderately stratified flows <i>J. Jefferson, C. Rehmann</i>	M7.06 Evolution of deep-cycle turbulence in an Equatorial Undercurrent Model <i>H. Pham, S. Sarkar, K. Winters</i>
M8. Drops XI Room: Room: 25A Chair: A. Ramchandran, U. of Toronto	M8.01 Spontaneous Capillarity-Driven Droplet Ejection <i>D. Wollman, T. Snyder, D. Pettit, M. Weislogel</i>	M8.02 The effect of interfacial slip on the rheology of a dilute emulsion of drops for small capillary numbers <i>A. Ramchandran, L. Leal</i>	M8.03 Droplet generation at the critical Weber number <i>L. Tanguy, D. Liang, R. Zengerle, P. Koltay</i>	M8.04 How to freeze drop oscillations with powders <i>J. Marston, Y. Zhu, I. Vakarelski, S. Thoroddsen</i>	M8.05 Flow induced by membraneless osmosis between a droplet and a bath <i>M. Roche, C. Tréguet, B. Sun, H. Stone</i>	M8.06 Universal deformation of soft substrates near contact line reveals solid surface stresses <i>R. Style, J. Wettlaufer, L. Wilen, E. Dufresne</i>
M9. Interfacial/Thin Film Instability VI Room: Room: 25B Chair: M. Gad-el-Hak, Virginia Commonwealth U.	M9.01 Electrohydrodynamic instabilities in thin viscoelastic films: AC and DC fields <i>L. Espin, A. Corbett, S. Kumar</i>	M9.02 Dynamics of a thin ferrofluid film subjected to a magnetic field <i>D. Conroy, A. Wray, D. Papageorgiou, R. Craster, O. Matar</i>	M9.03 Nonlinear traveling waves in confined ferrofluids <i>S. Lira, J. Miranda</i>	M9.04 Sustainability of Superhydrophobicity Under Pressure <i>H. Vahedi Tafreshi, M. Samaha, M. Gad-el-Hak</i>	M9.05 Effects of Hydrostatic Pressure on the Drag Reduction of Submerged Aerogel-Particle Coatings <i>M. Gad-el-Hak, H. Vahedi Tafreshi, M. Samaha</i>	M9.06 Dynamics of an inclined film in the presence of soluble surfactants <i>A. Georgantaki, G. Karapetsas, V. Bontozoglou</i>
M10. General Instability I Room: Room: 25C Chair: B. Houchens, Rice U.	M10.01 Stability of Miscible Displacements in Porous Media for Time-Dependent Injection Velocities <i>Q. Yuan, J. Azalez</i>	M10.02 Stability and sensitivity analyses of the engulfment regime in a three dimensional T-shaped micromixer <i>A. Fani, S. Camarri, C. Galletti, M. Salvetti</i>	M10.03 Investigation of Linear Stability Theory for Wavy Interface in Magnetic Pulse Welding <i>A. Nassiri, G. Chini, B. Kinsey</i>	M10.04 Analysis of Float-Zone Crystal Growth Instabilities Through Linear Stability Analysis and 3D Spectral Element Simulations <i>B. Houchens, K. Davis, Y. Huang</i>	M10.05 Sheared Electroconvective Instability <i>R. Kwak, V. Pham, K. Lim, J. Han</i>	M10.06 A localized relaxation scheme for the computation of steady flows <i>J. Chomaz, X. Garnaud</i>

Tuesday Morning, 20 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
M11. Viscous Flows Room: Room: 26A Chair: K. Kamrin, Massachusetts Institute of Technology	M11.01 Viscous Added Mass of a Moving Solid Object in a Closed Liquid-Filled Container <i>J. Torczynski, L. Romero</i>	M11.02 The effect of the torsion on the axial flow in helical pipes <i>D. D'Ambrosio, M. Germano</i>	M11.03 Analytical approach to study mass transfer due to axial membrane vibration in a hollow tube oxygenator <i>R. G.P., B. Dey</i>	M11.04 Flow in and geometry of microstructured optical fibres <i>Y. Stokes, D. Crowdy, H. Tronnolone, H. Ebendorff-Heidepriem</i>	M11.05 The moving contact line problem. Is there a solution? <i>D. Sibley, A. Nold, N. Savva, S. Kalliadasis</i>	M11.06 Using Simple Flows to Tie Knots in Flexible Fibers <i>S. Kuei, C. Sadlej, H. Stone</i>
M12. Vortex VII Room: Room: 26B Chair: D. Kleckner, U. of Chicago	M12.01 Relative equilibria in rotating shallow water layer: a real fluid case of point vortex theory <i>M. Fayed, H. Ait Abderrahmane, H. Ng, G. Vattistas</i>	M12.02 WITHDRAWN	M12.03 Regenerative centrifugal instability on a vortex column <i>E. Stout, F. Hussain</i>	M12.04 Stirring vortices with vorticity holes <i>O. Velasco Fuentes</i>	M12.05 Three-dimensional vortex analysis and aeroacoustic source characterization of jet core breakdown <i>D. Violato, F. Scarano</i>	M12.06 Partial reconnection of orthogonal vortices <i>L. Dufresne, G. Beardsell, G. Dumas</i>
M13. Richtmyer-Meshkov Instability I Room: Room: 27A Chair: S. Abarzhi, U. of Chicago	M13.01 Richtmyer-Meshkov growth of a granular layer <i>S. Dalziel</i>	M13.02 Richtmyer-Meshkov instability induced by strong shocks <i>M. Stanic, R. Stellingvert, J. Cassibry, S. Abarzhi</i>	M13.03 Scale coupling in Richtmyer-Meshkov flows induced by strong shocks <i>R. Stellingvert, M. Stanic, J. Cassibry, S. Abarzhi</i>	M13.04 Three-dimensional modeling of Richtmyer-Meshkov instability <i>M. Anderson, P. Vorobieff, C. Truman, S. Kumar</i>	M13.05 Integrated study of non-uniform structures in Richtmyer-Meshkov unstable flows by means of theoretical analysis, Lagrangian and Eulerian numerical simulations, and experiments <i>J. Cassibry, M. Stanic, R. Stellingvert, J. McFarland, D. Ranjan, R. Bonazza, S. Abarzhi</i>	M13.06 Numerical simulations of cylindrical Richtmyer-Meshkov instability at a solid-gas interface <i>A. López Ortega, M. Lombardini, P. Barton, D. Pullin, D. Meiron</i>
M14. Rotating Flows II: Taylor-Couette Flow Room: Room: 27B Chair: P. Meunier, Aix Marseille U.	M14.01 Experimental study of the statistics of a gravity-wave instability in a Taylor-Couette system with free surface <i>J. Martinez Mercado, C. Arratia, N. Mujica</i>	M14.02 Transitions and Reynolds number scaling in quasi-Keplerian Taylor-Couette flow <i>H. Nordsieck, D. Lathrop</i>	M14.03 Reynolds Number Effects on Turbulent Characteristics of Taylor-Couette Flow <i>J. Park, N. Fukushima, M. Shimura, M. Tanahashi, T. Miyauchi</i>	M14.04 New considerations for centrifugal buoyancy effects in fast rotating flows <i>J. Lopez Alonso, F. Marques, M. Avila</i>	M14.05 Symmetry-breaking Hopf bifurcations to 1-, 2-, and 3-tori in small-aspect-ratio counter-rotating Taylor-Couette flow <i>S. Altmeyer, Y. Do, F. Marques, J. Lopez</i>	M14.06 Influence of Rotation Number to Coherent Structures and Torque Scaling in Turbulent Taylor-Couette Flow <i>S. Tokgoz, G. Elsinga, R. Delfos, J. Westerweel</i>
M15. Biofluids: Microswimmer Suspensions Room: Room: 28A Chair: S. Spagnolie, U. of Wisconsin	M15.01 Concentrated active suspensions: Kinetic theory, linear stability and numerical simulations <i>B. Ezhilan, M. Shelley, D. Saintillan</i>	M15.02 Simulation and continuum modelling of a non-uniform suspension of spherical squirmers <i>T. Pedley, T. Ishikawa</i>	M15.03 Out-of-Equilibriumness of Light Activated Colloids <i>J. Palacci, S. Sacanna, A. Preska-Steinberg, D. Pine, P. Chaikin</i>	M15.04 Extensive active suspension <i>A. Jhang, M. Shelley</i>	M15.05 Flow of active suspensions and biased swimming <i>S. Rafai, P. Peyla, X. Garcia, G. Kitenbergs, M. Garcia</i>	M15.06 Spontaneous Circulation of Confined Active Suspensions <i>F. Woodhouse, R. Goldstein</i>
M16. Biofluids: Blood Cells Room: Room: 28B Chair: P. Bagchi, Rutgers U.	M16.01 Orbital drift of capsules and red blood cells <i>D. Cordasco, P. Bagchi</i>	M16.02 Mechanical Response of Red Blood Cells Entering a Constriction: Influence of Oxidative Stress <i>N. Zeng, W. Ristenpart</i>	M16.03 Skeleton deformation of red blood cells during tank treading motions <i>Q. Zhu, Z. Peng</i>	M16.04 Deformation of a single red blood cell in bounded Poiseuille flows <i>L. Shi, T. Pan, R. Glowinski</i>	M16.05 On the oscillating motion of a red blood cell in bounded Poiseuille flows <i>Y. Yu, L. Shi, R. Glowinski, T. Pan</i>	M16.06 Simulation of the Effect of Red Blood Cell Collisions on Platelet Adsorption <i>S. Fitzgibbon, H. Zhao, E. Shaqfeh</i>
M17. Biofluids: Microswimmers Experiments II Room: Room: 28C Chair: R. Stocker, Massachusetts Institute of Technology	M17.01 Swimming simply: Minimal models and stroke optimization for biological systems <i>L. Burton, J. Guasto, R. Stocker, A. Hosoi</i>	M17.02 How synthetic microswimmers move, turn, flip, and spread <i>D. Takagi, A. Braunschweig, J. Zhang, M. Shelley</i>	M17.03 Evolved to fail: Bacteria induce flagellar buckling to reorient <i>K. Son, J. Guasto, R. Stocker</i>	M17.04 Aerotaxis in Bacterial Turbulence <i>V. Fernandez, A. Bisson, C. Bitton, N. Waisbord, S. Smriga, R. Rusconi, R. Stocker</i>	M17.05 Undulatory Swimming in Shear-thinning Fluids <i>X. Shen, D. Gagnon, P. Arratia</i>	M17.06 Interaction of bacteria and a chemically patterned surface <i>M. Jalali, M. Molaei, J. Sheng</i>
M18. Particle Laden Flows VI: Turbulence Room: Room: 28D Chair: S. Rani, U. of Alabama in Huntsville	M18.01 On Pair Diffusion and Preferential Concentration of High Stokes Number Particles in Isotropic Turbulence <i>S. Rani, D. Koch</i>	M18.02 A stochastic model of particle dispersion in turbulent reacting gaseous environments <i>G. Sun, D. Lignell, J. Hewson</i>	M18.03 Eulerian models for particle trajectory crossing in turbulent flows over a large range of Stokes numbers <i>R. Fox, A. Vie, F. Laurent, C. Chalons, M. Massot</i>	M18.04 Turbulence effects on particle dispersion in free-surface flow <i>S. Lovecchio, C. Marchioli, A. Soldati</i>	M18.05 A subgrid model for inertial particle clustering in large-eddy simulations of turbulence <i>B. Ray, A. Bragg, L. Collins</i>	M18.06 A comparison of theoretical models for the spatial clustering of inertial particles in homogeneous, isotropic turbulence <i>A. Bragg, L. Collins</i>
M19. Non-Newtonian Flows III Room: Room: 28E Chair: G. McKinley, Massachusetts Institute of Technology	M19.01 Flow-induced structures in polymer-colloid mixtures with attractive interactions <i>P. Underhill, R. Radhakrishnan</i>	M19.02 On singularity of the UCM and Oldroyd-B models in viscoelastic fluids: resolving the high-Weissenberg number problem <i>R. Myong</i>	M19.03 Flow of a viscous nematic fluid around a microsphere <i>M. Gomez-Gonzalez, J. del Alamo</i>	M19.04 Experiments on Rearrangements and Forces in 2D Emulsion Hopper Flow <i>X. Hong, K. Desmond, D. Chen, E. Weeks</i>	M19.05 Response of a two-dimensional liquid foam to air injection: swelling rate, fingering and fracture <i>B. Dollet, I. Ben Salem, I. Cantat</i>	M19.06 Sedimentation of solid spheres and Newtonian drops in a viscoplastic medium <i>O. Lavrenteva, Y. Holenberg, U. Shavit, A. Nir</i>
M20. Turbulent Boundary Layers X: Drag Reduction Room: Room: 30A Chair: J. Brasseur, Pennsylvania State U.	M20.01 Effects of Superhydrophobic Surface on Laminar and Turbulent Flows <i>H. Park, J. Kim</i>	M20.02 Direct measurement of turbulent skin-friction reduction on superhydrophobic surfaces <i>H. Park, G. Sun, C. Kim</i>	M20.03 Direct numerical simulation of turbulent flows over superhydrophobic surfaces with gas pockets using linearized boundary conditions <i>J. Seo, S. Bose, R. Garcia-Mayoral, A. Mani</i>	M20.04 Pressure Drop Measurements for Turbulent Channel Flow over Superhydrophobic Surfaces with Superimposed Riblets <i>R. Perkins, J. Prince, J. Vanderhoff, D. Maynes</i>	M20.05 Dual-plane stereoscopic PIV measurements of turbulence statistics in drag-reducing pipe flows with surfactant additive <i>Y. Naka, S. Nuka, M. Shimura, N. Fukushima, M. Tanahashi, T. Miyauchi</i>	M20.06 New approaches to turbulent skin-friction drag reduction in wall flows based on the mechanism of drag reduction of polymer additives <i>R. Akhavan, D. Lee</i>

Tuesday Morning, 20 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
M21. Turbulence Shear Layer Room: Room: 30B Chair: J. Katz, Johns Hopkins U.	M21.01 Exploring the Different Behavior of Swirling and Non-Swirling Jets using Turbulence Energy Budgets <i>S. Toutiaei, J. Naughton</i>	M21.02 Momentum balance in wall jets <i>T. Johansson, F. Mehdi, J. Naughton</i>	M21.03 Statistics of the local turbulent/nonturbulent interface thickness in jets and boundary layers <i>R. Taveira, C. da Silva, G. Borrell, J. Jimenez</i>	M21.04 Eulerian and lagrangian statistics across the turbulent/non-turbulent interface in turbulent jets <i>J. Diogo, R. Taveira, C. da Silva</i>	M21.05 Small scale entrainment characteristics in variable density turbulent jets <i>P. Costa, C. da Silva</i>	M21.06 Extreme events in a vortex gas simulation of a turbulent half-jet <i>S. Suryanarayanan, G. Pathikonda, R. Narasimha</i>
M22. Turbulence Mixing IV Room: Room: 30C Chair: D. Donzis, Texas A&M U.	M22.01 Experimentally Informed Turbulent Diffusivity Modeling for an Angled Jet in Cross-Flow <i>J. Ling, F. Coletti, S. Yapa, G. Iaccarino, J. Eaton</i>	M22.02 Large-eddy simulation of short-range dispersion from localized sources in an urban-like canopy <i>D. Philips, R. Rossi, G. Iaccarino</i>	M22.03 Small-scale statistics of passive scalars released from concentrated sources in turbulent channel flow <i>L. Mydlarski, E. Germaine, L. Cortelezzi</i>	M22.04 Local structure of scalar flux in turbulent passive scalar mixing <i>A. Konduri, D. Donzis</i>	M22.05 Universality of spectrum of passive scalar variance at very high Schmidt number in isotropic steady turbulence <i>T. Gotoh</i>	M22.06 Statistical and Geometrical Properties of the Scalar Gradient in Homogeneous Isotropic Turbulence <i>M. Gauding, J. Goebbert, F. Hennig, N. Peters</i>
M23. Turbulence Theory: General II Room: Room: 30D Chair: D. Xu, Purdue U.	M23.01 Experimental Test of Revised Similarity Hypotheses without Taylor's Hypothesis <i>J. Chen, D. Xu</i>	M23.02 An infinity of microscales for turbulence <i>W. George</i>	M23.03 Experimental test of a missing spectral link in turbulence <i>P. Chakraborty, H. Kellay, T. Tran, W. Goldburg, N. Goldenfeld, G. Gioia</i>	M23.04 Linear stability analysis of homogeneous three-dimensional turbulent flows <i>A. Mishra, S. Girimaji</i>	M23.05 Multiscale Characterisation of Helical Properties in Homogeneous Turbulence <i>W. Bos, F. Jacobitz, K. Schneider, M. Farge</i>	M23.06 Measurements of Anisotropy in Turbulence using SO(3) decomposition <i>G. Voth, S. Wijesinghe</i>
M24. Compressible Flows I Room: Room: 30E Chair: O. Vasilyev, U. of Colorado at Boulder	M24.01 A molecular dynamics simulation demonstrating the invalidity of the Navier-Stokes Fourier (NSF) equations for compressible gaseous continua at all Knudsen numbers <i>H. Brenner, N. Dongari, J. Reese</i>	M24.02 A comprehensive theory for the response of gases to localized, transient heat addition <i>D. Kassoy</i>	M24.03 Delta-Measure Perturbations of a Contact Discontinuity <i>R. Baty</i>	M24.04 Effect of Large Bulk Viscosity on Two-Dimensional Transonic Flow <i>M. Cramer</i>	M24.05 Effect of Large Bulk Viscosity on High-Speed Separation <i>F. Bahmani, M. Cramer</i>	M24.06 Modeling of the subgrid scale viscous/scalar dissipation in compressible turbulence <i>N. Vaghefi, M. Nik, P. Pisciuneri, P. Givi, C. Madnia</i>
M25. Flow Control: External flows Room: Room: 31A Chair: T. Corke, U. of Notre Dame	M25.01 Distributed forcing of the flow past a blunt-based axisymmetric bluff body <i>T. Jardin, Y. Bury</i>	M25.02 Bio-Inspired Pressure Sensing for Active Yaw Control of Underwater Vehicles <i>A. Gao, M. Triantafyllou</i>	M25.03 Large eddy simulation of the flow past a twisted cylinder <i>J. Jung, H. Yoon, C. Choi</i>	M25.04 Flow Separation Control with Rotating Cylinders <i>J. Schulmeister, J. Dahl, G. Weymouth, M. Triantafyllou</i>	M25.05 Optimization of Feedback Control of Flow over a Circular Cylinder <i>D. Son, E. Kim, H. Choi</i>	M25.06 Control of the Shock-Induced Flow Separation over Convex Surfaces <i>A. Gissen, B. Vukasinovic, A. Glezer</i>
M26. Reactive Flows VII Room: Room: 31B Chair: A. L. Snchez, U. Carlos III de Madrid	M26.01 Rate Ratio Asymptotic Analysis of the Influence of Hydrogen on the Structure and Mechanisms of Extinction of Methane Flames in Laminar Nonpremixed Flows <i>K. Seshadri, X. Bai, F. Williams</i>	M26.02 Explosions in uncertain hydrogen-oxygen mixtures <i>J. Urzay, N. Kseib, D. Davidson, G. Iaccarino, R. Hanson</i>	M26.03 The simulation of a hydrogen-bubble reaction due to shock ignition <i>T. Grenga, S. Paolucci</i>	M26.04 Numerical study of a jet-in-hot-coflow burner with hydrogen-addition using the Flamelet Generated Manifolds technique <i>S. Abtahizadeh, J. van Oijen, P. de Goey</i>	M26.05 Numerical analysis and simulation of diffusion-free ignition delay times of unreacted pockets <i>J. Regele</i>	M26.06 Numerical simulation of autoigniting flames <i>R. Asailthambi, K. Mahesh</i>
M27. Boundary-Layer Instability II Room: Room: 31C Chair: J. Klentzman, U. of Arizona	M27.01 Receptivity of high-speed boundary layers with real gas effects <i>J. Klentzman, A. Tumin</i>	M27.02 Statistical inverse analysis of supersonic boundary-layer transition <i>G. Serino, O. Marxen, F. Pinna, P. Constantine, C. Gorle, G. Iaccarino</i>	M27.03 Stability of hypersonic compression cones <i>H. Reed, J. Kuehl, E. Perez, T. Kocian, N. Oliviero</i>	M27.04 Azimuthal hotwire measurements in a transitional boundary layer on a flared cone in a Mach 6 quiet wind tunnel <i>J. Hofferth, W. Saric</i>	M27.05 Surface roughness effects on a blunt hypersonic cone <i>N. Sharp, J. Hofferth, E. White</i>	M27.06 Characteristics of a streak disturbance induced by an isolated roughness element <i>K. Bade, A. Naguib</i>
M28. Industrial Applications II Room: Room: 32A Chair: S. Song, Hanyang U.	M28.01 Flow and Heat Transfer Characteristics of the Staggered Slotted Semi Cylinders in a Cross Flow Heat Exchangers <i>S. Yayla, S. Beyin, A. Oztekin</i>	M28.02 High speed imaging in icing windtunnel tests <i>D. De Pauw, P. Graham, A. Dolatabadi</i>	M28.03 Development of MEMS-based thermal flow sensors for high sensitivity and wide range of flow rate <i>W. Kang, H. Choi, Y. Choi</i>	M28.04 Experimental Investigation of Flow and Thermal Patterns in the Rotated Arc Mixer <i>O. Baskan, M. Speetjens, G. Metcalfe, H. Clercx</i>	M28.05 Novel Model to Predict Minimum Coating Thickness for High Speed Slot Coating <i>I. Jang, S. Song</i>	M28.06 Macro analysis of the electro adsorption process in a capacitive desalination cell during water desalination at developing and fully developed concentration regimes <i>C. Rios Perez, O. Demirel, R. Clifton, R. Naylor, C. Hidrovo</i>
M29. Chaos, Fractals, and Dynamical Systems II Room: Room: 32B Chair: T. Solomon, Bucknell U.	M29.01 Efficient Compaction of Aerosols by Merging Vortices <i>E. Hicks, A. Motter</i>	M29.02 Dynamical behavior of flame front instability induced by radiative heat loss <i>H. Gotoda, T. Ikawa, K. Maki, T. Miyano</i>	M29.03 The nonlinear behaviour of a ducted premixed flame <i>K. Kashinath, I. Waugh, S. Hemchandra, M. Juniper</i>	M29.04 Front propagation in steady cellular flows: A large-deviation approach <i>A. Tzella, J. Vanneste</i>	M29.05 Experimental studies of stationary reaction fronts in a chain of vortices <i>C. Boyer, T. Solomon</i>	M29.06 Burning invariant manifolds and pinning of reaction fronts in spatially-disordered fluid flows <i>T. Solomon, M. Najarian</i>
M30. General Fluids II Room: Room: 33A Chair: P. Schmid, LadHyX, Ecole Polytechnique	M30.01 Dominant frequency and growth rate of unstable interfacial waves in air-water mixing layers <i>T. Boeck, T. Otto, M. Rossi</i>	M30.02 Wetting and partially wetting rivulets: the role of Reynolds number and boundary conditions <i>P. Vorobieff, N. Fathi, V. Putkaradze, K. Mertens</i>	M30.03 Measurements of longitudinal surface waves in a soluble surfactant solution <i>N. Washuta, X. Liu, G. Korenowski, J. Duncan</i>	M30.04 Water wave metamaterials <i>P. Petitjeans, C. Palacios, A. Maurel, V. Pagneux</i>	M30.05 Bouncy Fluid Jets <i>N. Wadhwa, S. Jung, P. Vlachos</i>	M30.06 Hydrodynamic Mass of Bluff Bodies with a Cavity <i>M. Elgabali, K. Desabrais, H. Johari</i>

Tuesday Morning, 20 November 2012

Session	08:00	08:13	08:26	08:39	08:52	09:05
M31. Wind Energy II Room: Room: 33B Chair: R. Cal, Portland State U.	M31.01 <u>Spatial characterization of the turbulent structure of a model wind turbine: high speed PIV measurements</u> <i>J. Sheng, L. Chamorro, S. Lee, R. Arndt, F. Sotiropoulos</i>	M31.02 <u>Turbulence effects on a full-scale 2.5 MW horizontal axis wind turbine</u> <i>L. Chamorro, S. Lee, D. Olsen, C. Milliren, J. Marr, R. Arndt, F. Sotiropoulos</i>	M31.03 <u>A wind tunnel study on the effects of complex topography on wind turbine performance</u> <i>K. Howard, S. Hu, L. Chamorro, M. Guala</i>	M31.04 <u>PIV and Acoustic Investigation for a 2D Wind Turbine Airfoil</u> <i>G. Wang, M. Glauser</i>	M31.05 <u>Efficiency and flow structure of vertical-axis turbines with an upstream deflecting plate</u> <i>D. Kim, M. Gharib</i>	M31.06 <u>Start-up dynamics of vertical axis turbines</u> <i>K. Taylor, J. Dabiri</i>
M32. Granular Flows IV Room: Room: 33C Chair: E. Guazzelli, Aix Marseille U.	M32.01 <u>What is the granular response to a high-speed impact?</u> <i>A. Clark, L. Kondic, R. Behringer</i>	M32.02 <u>Particles impacting on a granular bed</u> <i>J. Hinch</i>	M32.03 <u>Flow-mediated coupling on projectiles falling in a superlight granular medium</u> <i>G. Caballero-Robledo, J. Solano-Altamirano, V. Kamphorst, F. Pacheco-Vázquez, J. Ruiz-Suárez</i>	M32.04 <u>Force measurements after granular impact using instrumented spheres</u> <i>S. Joubaud, T. Homan, Y. Gasteuil, D. Lohse, D. van der Meer</i>	M32.05 <u>Fill-level symmetry and minimization of energy states in rotating tumblers with polygonal cross-sections</u> <i>N. Pohlman, D. Paprocki, Jr., Y. Si</i>	M32.06 <u>Slow axial drift in three dimensional tumblers</u> <i>Z. Zaman, U. D'Ortona, P. Umbanhowar, J. Ottino, R. Lueptow</i>

Tuesday Morning, 20 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
M1. Geophysical: Ocean III Room: Room: 22 Chair: B. Sutherland, U. of Alberta	M1.07 <u>Mixing by internal waves</u> <i>P. Odier, B. Bourget, S. Joubaud, T. Dauxois</i>	M1.08 <u>Reflection of an internal gravity wave beam off a horizontal free-slip surface</u> <i>Q. Zhou, P. Diamessis</i>	M1.09 <u>Internal waves in the Petacalco canyon, Mexico</u> <i>A. Ruiz-Angulo, J. Zavala-Hidalgo</i>	M1.10 <u>Settling dynamics of a non-neutrally buoyant particle in stratified fluids</u> <i>A. Doostmohammadi, S. Dabiri, A. Ardekani</i>	Refreshment Break, 10:10–10:30 Ballroom D
M2. Convection and Buoyancy-Driven Flows VII Room: Room: 23A Chair: A. Cotel, U. of Michigan	M2.07 <u>Inertial effects in an incompressible stratified Euler fluid in a channel</u> <i>G. Ortenzi, R. Camassa, S. Chen, G. Falqui, M. Pedroni</i>	M2.08 <u>Characterization of Mixing Between Water and Biofuels</u> <i>A. Cotel, E. Green, M. Acevedo, M. Otero, A. Demond</i>	M2.09 <u>Flux variation and layering in turbulent stratified Taylor-Couette flow</u> <i>R. Oglethorpe, C. Caulfield, A. Woods</i>	M2.10 <u>Entrainment and mixing dynamics of surface-stress-driven linearly stratified flow in a cylinder</u> <i>G. Manucharyan, C. Caulfield</i>	
M3. Multiphase Flows: Confined Flows Room: Room: 23B Chair: V. Ajaev, Southern Methodist U.	M3.07 <u>Discrete Population Balance Multiphase Mixture Modeling of Fragmentation in Fully Developed Turbulent Duct Flow</u> <i>A. Jayanthi, J. Peddieson</i>	M3.08 <u>On the effect of turbulence on bubbles in a horizontal channel flow</u> <i>J. Westerweel, M. Harleman, R. Delfos, T. van Tervisga</i>	M3.09 <u>Linear stability of double-diffusive two-fluid channel flow</u> <i>K. Sahu, R. Govindarajan</i>	M3.10 <u>Experimental investigation on rigid rod-like particles suspensions in archetypal flows by means of Particle Image Velocimetry</u> <i>A. Capone, A. Soldati, G. Romano</i>	
M4. Drops X Room: Room: 23C Chair: E. Johnsen, U. of Michigan	M4.07 <u>Physics of drop formation at a step</u> <i>Z. Li, S. Metais, A. Leshansky, L. Pismen, P. Tabeling</i>	M4.08 <u>Janus droplet motion in an external flow</u> <i>S. Shklyaev, A. Ivantsov, M. Diaz, U. Cordova-Figueroa</i>	M4.09 <u>Drag and deformation of a drop moving through converging-diverging tubes</u> <i>S. Quan</i>	M4.10 <u>Air Entrapment for Liquid Drops Impacting a Solid Substrate</u> <i>Y. Liu, P. Tan, L. Xu</i>	
M5. Computational Fluid Dynamics VII Room: Room: 24A Chair: T. Colonius, California Institute of Technology	M5.07 <u>An Immersed Boundary Method for the Incompressible Navier-Stokes Equations Based on the Lattice Green's Function Method</u> <i>S. Liska, T. Colonius</i>	M5.08 <u>Multi-Implicit Blob Projection Method</u> <i>L. Fovargue</i>	M5.09 <u>A sharp, robust, conservative cut-cell immersed boundary technique</u> <i>P. Brady, O. Desjardins</i>	M5.10 <u>An improved direct-forcing immersed boundary method for fluid-structure interaction of a flexible filament</u> <i>X. Zhang, X. Zhu</i>	
M6. Microfluidics: Capillary II Room: Room: 24B Chair: T. Cubaud, Stony Brook U.	M6.07 <u>Microfluidic dissolution of CO₂ bubbles in viscous oils</u> <i>M. Sauzade, T. Cubaud</i>	M6.08 <u>Phase-locked confocal micro-PIV measurement of three dimensional flow structure of transient droplet formation mechanism in T-shaped micro junction</u> <i>M. Oishi, H. Kinoshita, T. Fujii, M. Oshima</i>	M6.09 <u>Formation of partially wetting droplets in square microchannels</u> <i>B. Jose, T. Cubaud</i>		
M7. Geophysical: General V Room: Room: 24C Chair: H. Pham, U. of California, San Diego	M7.07 <u>Parameterization of turbulent diffusivity in stratified flows using microstructure observations and DNS</u> <i>B. Mater, S. Venayagamoorthy</i>	M7.08 <u>Turbulent Viscosity in Ekman Flow</u> <i>C. Ansgore, J. Mellado</i>			
M8. Drops XI Room: Room: 25A Chair: A. Ramchandran, U. of Toronto	M8.07 <u>The stability of viscous liquid filaments</u> <i>T. Driessen, R. Jeurissen, H. Wijshoff, D. Lohse</i>	M8.08 <u>Contraction dynamics of planar liquid filaments</u> <i>N. Devlin, K. Sambath, M. Harris, O. Basaran</i>	M8.09 <u>Disk impact on an oil-water bilayer</u> <i>D. van der Meer, I. Peters, M. Madonia, D. Lohse</i>	M8.10 <u>Mesler entrainment in alcohols</u> <i>J. Saylor, R. Sundberg</i>	
M9. Interfacial/Thin Film Instability VI Room: Room: 25B Chair: M. Gad-el-Hak, Virginia Commonwealth U.	M9.07 <u>Thin soap films are quasi-2D fluids and thick soap films are not</u> <i>S. Vivek, E. Weeks</i>	M9.08 <u>Thin film dynamics of viscoelastic fluids</u> <i>L. Lebon, L. Limat</i>	M9.09 <u>Fluid displacement under elastic membranes: Dynamics and interfacial instabilities</u> <i>T. Al-Housseiny, I. Christov, A. Juel, H. Stone</i>	M9.10 <u>Elastically-driven surface plumes in rimming flow of a non-Newtonian fluid</u> <i>G. Seiden, V. Steinberg</i>	
M10. General Instability I Room: Room: 25C Chair: B. Houchens, Rice U.	M10.07 <u>A spectral representation of oscillators</u> <i>S. Bagheri</i>	M10.08 <u>Criterion of Turbulent Transition in Pressure Driven Flows</u> <i>H. Dou, B. Khoo</i>	M10.09 <u>Experimental Study of Transition to Turbulence in a Kolmogorov-Like Flow</u> <i>B. Suri, J. Tithof, R. Mitchell, R. Grigoriev, M. Schatz</i>	M10.10 <u>On the added-mass effects of mean compressible and incompressible flows in fluid-solid interaction</u> <i>R. Jaiman, M. Parmar</i>	

Tuesday Morning, 20 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
M11. Viscous Flows Room: Room: 26A Chair: K. Kamrin, Massachusetts Institute of Technology	M11.07 Inlet Jet Interaction in Horizontal Pipe Flow <i>P. Jha, C. Smith, R. Metcalfe</i>	M11.08 Streamline Patterns and Eddies in Slipping Stokes Flow <i>D. Palaniappan</i>	M11.09 Analysis of Slip Boundary Condition in Single and Multi-Phase Flows <i>J. Thalakkottor, K. Mohseni</i>	M11.10 Effective slip identities for viscous flow over arbitrary patterned surfaces <i>K. Kamrin, P. Six</i>	Refreshment Break, 10:10-10:30 Ballroom D
M12. Vortex VII Room: Room: 26B Chair: D. Kleckner, U. of Chicago	M12.07 Phase space pattern formation: the single-wave model <i>P. Morrison, N. Balmforth, J. Thiffeault</i>	M12.08 Creation and Dynamics of Knotted Vortices <i>D. Kleckner, M. Scheeler, W. Irvine</i>	M12.09 The Formation Number of Accelerating and Variable Diameter Jet Flows, and a Review of Pinch-Off Criteria <i>M. Krieg, K. Mohseni</i>		
M13. Richtmyer-Meshkov Instability I Room: Room: 27A Chair: S. Abarzhi, U. of Chicago	M13.07 Shock-accelerated gas cylinder: a Mach number study <i>T. Bernard, P. Wayne, C. Corbin, C. Truman, P. Vorobieff, S. Kumar, M. Anderson</i>	M13.08 Characteristics of Richtmyer Meshkov Instability in a Spherical Geometry <i>A. Nelson, P. Ramaprabhu</i>	M13.09 RANS Initialization and Validation in Shock-Driven Turbulent Mixing <i>F. Grinstein, B. Haines, J. Schwarzkopf</i>	M13.10 Reacting H2-O2 Richtmyer-Meshkov Instability Simulations Using Detailed Chemistry <i>P. Ramaprabhu, N. Attal, S. Roy, J. Gord</i>	
M14. Rotating Flows II: Taylor-Couette Flow Room: Room: 27B Chair: P. Meunier, Aix Marseille U.	M14.07 Experimental studies of turbulence lifetimes in differentially rotating flows <i>E. Edlund, Z. Yan, E. Spence, A. Roach, J. Rhoads, H. Ji</i>	M14.08 Bifurcation, thin film structure and collapse in Newton's bucket <i>S. Mukhopadhyay, J. Dijkstra, T. Witelski, R. McLaughlin, R. Camassa, B. Behringer</i>	M14.09 Stability of solution branches in infinite rotating disk flow <i>K. van Eeten, J. van der Schaaf, G. van Heijst, J. Schouten</i>		
M15. Biofluids: Microswimmer Suspensions Room: Room: 28A Chair: S. Spagnolie, U. of Wisconsin	M15.07 Simulations of bacterial chemotaxis in the turbulent ocean <i>R. Watteaux, J. Taylor</i>	M15.08 Meso-scale turbulence in living fluids <i>J. Dunkel, R. Wensink, S. Heidenreich, K. Drescher, R. Goldstein, H. Loewen, J. Yeomans</i>	M15.09 Discrete population dynamics in flows <i>P. Perlekar, R. Benzi, L. Biferale, H. Clercx, S. Pigolotti, M. Jensen, D. Nelson, F. Toschi</i>	M15.10 Mixing by individual swimmers <i>D. Pushkin, H. Shum, J. Yeomans</i>	
M16. Biofluids: Blood Cells Room: Room: 28B Chair: P. Bagchi, Rutgers U.	M16.07 Microfluidic approach of Sickled Cell Anemia <i>M. Abkarian, E. Loiseau, G. Massiera</i>	M16.08 Mechanism of vaso-occlusion in sickle cell anemia <i>H. Lei, G. Karniadakis</i>	M16.09 How does confinement affect the dynamics of viscous vesicles and red blood cells? <i>B. Kaoui, T. Kruger, J. Harting</i>	M16.10 Desiccation of a pool of blood: from fluid mechanics to forensic investigations <i>C. Nicloux, D. Brutin</i>	
M17. Biofluids: Microswimmers Experiments II Room: Room: 28C Chair: R. Stocker, Massachusetts Institute of Technology	M17.07 Hydrodynamic behavior of shaking flasks used for producing a recombinant protein by filamentous bacteria <i>M. Cordova Aguilar, M. Garcia, M. Trujillo-Foldan, G. Ascanio, R. Zenit, E. Soto</i>	M17.08 Scalar transport by planktonic swarms <i>M. Martinez-Ortiz, J. Dabiri</i>	M17.09 Myco-fluidics: The fluid dynamics of fungal chimerism <i>M. Roper, P. Hickey, E. Dressaire, S. Roch</i>	M17.10 Turbulence from a microorganism's perspective: Does the open ocean feel different than a coral reef? <i>R. Pepper, E. Variano, M. Koehl</i>	
M18. Particle Laden Flows VI: Turbulence Room: Room: 28D Chair: S. Rani, U. of Alabama in Huntsville	M18.07 A novel state-space based method for direct numerical simulation of particle-laden turbulent flows <i>R. Ranjan, C. Pantano</i>	M18.08 Spatial effects of flow straining on inertial particles in turbulence <i>C. Lee, P. Perlekar, F. Toschi, A. Gyllfason</i>	M18.09 Particle tracking in LES flow fields: Lagrangian conditional statistics of filtering error <i>M. Tesone, M. Salvetti, C. Marchioli, S. Chibbaro, A. Soldati</i>	M18.10 A numerical investigation of cluster fall velocity in vertical particle-laden turbulent pipe flow <i>J. Capecelatro, O. Desjardins</i>	
M19. Non-Newtonian Flows III Room: Room: 28E Chair: G. McKinley, Massachusetts Institute of Technology	M19.07 Dynamics of Non-Newtonian Liquid Droplet Collision <i>X. Chen, V. Yang</i>	M19.08 Lateral migration of a viscoelastic drop in a shear flow near a wall <i>S. Mukherjee, K. Sarkar</i>	M19.09 The effects of low Reynolds number viscoelasticity on linked sphere swimmers <i>M. Curtis, E. Gaffney</i>	M19.10 Droplet Size Distributions in Atomization of Dilute Viscoelastic Solutions <i>B. Keshavarz, G. McKinley, E. Houze, J. Moore, M. Pottiger, P. Cotts</i>	
M20. Turbulent Boundary Layers X: Drag Reduction Room: Room: 30A Chair: J. Brasseur, Pennsylvania State U.	M20.07 The spectral link for frictional drag in non-uniform turbulent soap-film flows <i>C. Liu, R. Cerbus, W. Goldberg, G. Gioia, P. Chakraborty</i>	M20.08 Drag reduction in Turbulent Channel Flow with Longitudinal Arrays of Slip/no-slip Stripes on the Walls <i>A. Rastegari, R. Akhavan</i>	M20.09 Experimental investigation for drag reduction effect by traveling wave-like wall deformation in turbulent channel flow <i>H. Mamori, Y. Ishiwata, K. Iwamoto, A. Murata</i>	M20.10 Equilibrium turbulent boundary layers with wall suction/blowing and pressure gradients <i>S. Patwardhan, O. Ramesh</i>	

Tuesday Morning, 20 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
M21. Turbulence Shear Layer Room: Room: 30B Chair: J. Katz, Johns Hopkins U.	M21.07 A revisit of the low-frequency flapping mechanism in an open cavity shear layer flow <i>X. Liu, J. Katz</i>	M21.08 Linear analysis and temporal DNS of compressible mixing layers <i>M. Karimi, S. Girimaji</i>	M21.09 Time-resolved PIV measurements of flow around and through a permeable rectangular prism <i>G. Blois, J. Barros, J. Best, K. Christensen</i>	M21.10 Measurement of the flow past a cactus-inspired cylinder <i>G. Oweis, A. El-Makdah</i>	Refreshment Break, 10:10-10:30 Ballroom D
M22. Turbulence Mixing IV Room: Room: 30C Chair: D. Donzis, Texas A&M U.	M22.07 ILES of Passive Scalar Mixing in Forced Isotropic Turbulence <i>A. Wachtor, F. Grinstein, R. DeVore, R. Ristorcelli, L. Margolin</i>	M22.08 Passive scalar mixing in variable-density, buoyant turbulent flows <i>P. Carroll, G. Blanquart</i>			
M23. Turbulence Theory: General II Room: Room: 30D Chair: D. Xu, Purdue U.	M23.07 Mean shear regulates the intermittency of energy dissipation rate <i>K. Morshed, L. Dasi</i>	M23.08 Energy spectrum in the wavenumber-frequency domain from Kraichnan's random sweeping hypothesis with mean flow <i>M. Wilczek, Y. Narita</i>	M23.09 Scaling of the mean length of streamline segments in various turbulent flows <i>P. Schäfer, M. Gampert, J. Boschung, N. Peters</i>	M23.10 Turbulence theory and infrared images falsify the 2011 Nobel Prize in Physics <i>C. Gibson</i>	
M24. Compressible Flows I Room: Room: 30E Chair: O. Vasilyev, U. of Colorado at Boulder	M24.07 A Characteristic-Based Volume Penalization Method for Compressible Viscous Flows in Complex Geometries <i>E. Brown-Dymkoski, N. Kasimov, O. Vasilyev</i>	M24.08 A Characteristic-Based Volume Penalization Method for Compressible Inviscid Flows in Complex Geometries <i>N. Kasimov, E. Brown-Dymkoski, O. Vasilyev</i>	M24.09 Numerical modeling of a compressible multiphase flow through a nozzle <i>U. Niedzielska, J. Rabinovitch, G. Blanquart</i>		
M25. Flow Control: External flows Room: Room: 31A Chair: T. Corke, U. of Notre Dame	M25.07 Aero-thermal optimization of film cooling flow parameters on the suction surface of a high pressure turbine blade <i>C. El Ayoubi, I. Hassan, W. Ghaly</i>	M25.08 Numerical Investigation of Active Flow Control on Wind Turbines under Yaw Misalignment <i>S. Tran, D. Corson, O. Sahní</i>	M25.09 Feasibility Study of Using Gurney Flaps for Flow Control of Wind Turbine Blades <i>P. Nikoueeyan, A. Magstadt, J. Strike, J. Naughton</i>	M25.10 Creation and Optimization of Compliant Flow for an Existing Wind Turbine Rotor Geometry <i>T. Williams, T. Corke, J. Cooney</i>	
M26. Reactive Flows VII Room: Room: 31B Chair: A. L. Snchez, U. Carlos III de Madrid	M26.07 Investigation of ignition dynamics in a mixing layer with a vortex <i>S. Menon, G. Blanquart</i>	M26.08 A Priori Analysis of an Unsteady Flamelet Formulation for Reacting Jet in Cross Flows <i>W. Chan, M. Ihme, H. Kolla, J. Chen</i>	M26.09 Collisional-Radiative Kinetics in Monatomic Gases <i>H. Le, A. Karagozian</i>	M26.10 A Multiphase, Multicomponent Model for Combustion in the Titanium-Boron System <i>S. Kumar, J. Bdzil, M. Matalon, D. Stewart</i>	
M27. Boundary-Layer Instability II Room: Room: 31C Chair: J. Klentzman, U. of Arizona	M27.07 Boundary-Layer Receptivity to Cylindrical Roughness Elements <i>J. Monschke, E. White</i>	M27.08 Two dimensional roughness effects on hypersonic boundary layer instability <i>K. Fong, X. Wang, X. Zhong</i>			
M28. Industrial Applications II Room: Room: 32A Chair: S. Song, Hanyang U.	M28.07 Near-Critical CO2 Flow Measurements and Visualization <i>F. Kazemifar, D. Kyriasis</i>	M28.08 Study of fluid parameters in high pressure descaling valves <i>P. Adhikari, Y. Panta</i>	M28.09 Electrowetting climbing of inclined water surfaces <i>J. Yuan, S. Cho</i>		
M29. Chaos, Fractals, and Dynamical Systems II Room: Room: 32B Chair: T. Solomon, Bucknell U.	M29.07 Pinning fronts in advection-reaction-diffusion systems: a dynamical systems approach <i>K. Mitchell, J. Mahoney, J. Li</i>	M29.08 An FTLE analysis for reaction-diffusion fronts in fluid flows <i>J. Mahoney, K. Mitchell</i>	M29.09 Uncertainty propagation using spectral methods and flow map composition <i>D. Luchtenburg, S. Brunton, C. Rowley</i>	M29.10 Noise-induced complexity in active nonlinear spatially extended systems <i>M. Pradas, S. Kalliadasis, D. Tseluiko, D. Papageorgiou, G. Pavliotis</i>	
M30. General Fluids II Room: Room: 33A Chair: P. Schmid, LadHyX, Ecole Polytechnique	M30.07 Explosion cavities <i>A. Benusiglio, C. Clanet, D. Quere</i>	M30.08 Rarefied gas correction for the bubble entrapment singularity in drop impacts <i>L. Duchemin, C. Josserand</i>	M30.09 The meandering instability of a partial wetting rivulet <i>S. Couvreur, A. Daerr</i>	M30.10 Sparsity-promoting Dynamic Mode Decomposition <i>M. Jovanovic, P. Schmid</i>	

Tuesday Morning, 20 November 2012					
Session	09:18	09:31	09:44	09:57	10:10
M31. Wind Energy II Room: Room: 33B Chair: R. Cal, Portland State U.	M31.07 <u>The Influence of Rotor Configurations on the Energy Production in an Array of Vertical-Axis Wind Turbines</u> <i>M. Kinzel, D. Araya, J. Dabiri</i>	M31.08 <u>Effect of turbulence intensity on power generation in a 4x3 wind turbine array</u> <i>M. Tutkun, E. Camp, R. Cal</i>	M31.09 <u>Direct power measurements on wind turbine array configurations</u> <i>D. DeLucia, R. Cal</i>	M31.10 <u>On the characteristic features of wind-turbine tip vortices: A wind tunnel experiment</u> <i>D. Green, L. Chamorro, R. Arndt, F. Sotiropoulos, J. Sheng</i>	Break 10:10–10:30 Ballroom D
	M32. Granular Flows IV Room: Room: 33C Chair: E. Guazzelli, Aix Marseille U.	M32.07 <u>Competing segregating effects of gravity and shear rate gradients in dense granular flows in a drum: theory and simulations</u> <i>K. Hill, D. Tan</i>	M32.08 <u>Investigation of the mobile granular layer in bed-load transport</u> <i>E. Guazzelli, P. Aussillous, J. Chauchat, M. Pailha, M. Medale</i>	M32.09 <u>Shear-Induced Diffusion in a Dense Frictional Disk Packing</u> <i>J. Dijkstra, J. Ren, R. Behringer</i>	

Tuesday Morning, 20 November 2012

Invited Session N33

10:30 – 11:05, Room: Ballroom 20A

Chair: Kraig Winters, University of California, San Diego

Waves And Wave-driven Flow On A Coral Reef Stephen Monismith, Stanford University

Invited Session N34

10:30 – 11:05, Room: Ballroom 20BC

Chair: Stefan Llewellyn Smith, University of California, San Diego

Simulation-based Planning Of Surgical Interventions In Pediatric Cardiology Alison Marsden, University of California San Diego

Mini Break

11:05 – 11:10

Session P33: Andreas Acrivos Dissertation Award Lecture

11:10 – 11:35, Room: Ballroom 20A

Chair: Shelley Anna, Carnegie Mellon University

Andreas Acrivos Dissertation Prize Lecture: Phytoplankton In Flow William M. Durham, Department of Zoology, University of Oxford

Session P34: Francois Frenkiel Award Lecture

11:10 – 11:35, Room: Ballroom 20BC

Chair: P.K. Yeung, Georgia Tech

Francois Frenkiel Award Lecture: Folded Micro-threads: Role Of Viscosity And Interfacial Tension Thomas Cubaud, Stony Brook University

Lunch Break

11:30 – 13:00

Tuesday Afternoon, 20 November 2012

Session	13:00	13:13	13:26	13:39	13:52	14:05
R1. Geophysical: Ocean IV Room: Room: 22 Chair: C. Rehman, Iowa State U.	R1.01 The effects of a shear flow on lee waves <i>M. Patterson, S. Dalziel, C. Caulfield, S. Le Brun</i>	R1.02 Spatial structure of tidally generated internal waves <i>M. Paoletti, A. Dettner, M. Drake, H. Swinney</i>	R1.03 Energy flux of internal waves generated by tidal flow over topography beneath a turning depth <i>M. Drake, M. Paoletti, F. Lee, P. Morrison, H. Swinney</i>	R1.04 Generation of internal waves and boundary currents by tidal flow over 2D topography <i>A. Dettner, M. Paoletti, H. Swinney</i>	R1.05 Tidal conversion by a periodic array of ridges <i>L. Zhang, M. Paoletti, H. Swinney</i>	R1.06 Calculating viscous internal gravity waves <i>S. Llewellyn Smith</i>
R2. Convection and Buoyancy-Driven Flows VIII Room: Room: 23A Chair: R. Wittenberg, Simon Fraser U.	R2.01 Spatial localization due to the interaction between convection and a large scale mode <i>H. Kao, E. Knobloch</i>	R2.02 Conservative bounds on heat transport in turbulent convection <i>R. Wittenberg, J. Whitehead</i>	R2.03 Localized structures in two-dimensional rotating convection <i>C. Beaulieu, A. Bergeon, H. Kao, E. Knobloch</i>	R2.04 Pattern formation in nonlinear solutal Marangoni convection: three-dimensional simulations vs. experiments <i>T. Koellner, K. Schwarzenberger, K. Eckert, T. Boeck</i>	R2.05 Weakly nonlinear stability of Marangoni convection in a liquid bridge <i>K. Fujimura</i>	R2.06 Transient diffusive boundary layers in porous media: optimal perturbations <i>D. Daniel, N. Tilton, A. Riaz</i>
R3. Multiphase General II Room: Room: 23B Chair: S. Hilgenfeldt, U. of Illinois at Urbana-Champaign	R3.01 Light Field Imaging of Turbulent Liquid Sheet Breakup in Air <i>B. Scharfman, A. Tchech</i>	R3.02 Solid-Fluid flows using a variant of Immersed Boundary method in Gerris <i>P. Shui, S. Popinet, P. Valluri, S. Zaleski, M. Crapper</i>	R3.03 On the mixture model of two-phase proppant transport in 1D fracturing flows <i>W. Li</i>	R3.04 A GPU-accelerated interfacial flow solver with advected normals: Application to contact line problems <i>A. Pathak, M. Raessi</i>	R3.05 Jump Conditions for the Stokes Equations with Discontinuous Viscosity and an Incompressible Interface with Singular Forces in 3D <i>D. Salac, P. Gera</i>	R3.06 A study of pressure-driven displacement flow of two immiscible liquids using a multiphase lattice Boltzmann approach <i>P. Redapangu, P. Vanka, K. Sahu</i>
R4. Foams Room: Room: 23C Chair: P. Stewart, U. of Oxford	R4.01 Surface waves in a foam <i>A. Le Goff, P. Cobelli, G. Lagubeau</i>	R4.02 The effect of gravity on drainage and rupture in surfactant-free foams <i>M. Davis, P. Stewart, S. Davis</i>	R4.03 Coalescence driven coarsening in surfactant-free foams <i>P. Stewart, S. Davis</i>	R4.04 Particle-tracking velocimetry analysis of liquid drainage within individual Plateau borders in aqueous foam <i>M. Kennedy, M. Conroy, R. Ananth, J. Fleming</i>	R4.05 Self healing: solid spheres impacting soap bubbles <i>T. Killian, J. Bryson, J. Huey, J. Bird, J. Nave, T. Truscott</i>	R4.06 Numerical Modeling of Nanocellular Foams Using Classical Nucleation Theory and Influence Volume Approach <i>I. Khan, S. Costeux, S. Bunker, J. Moore, K. Kar</i>
R5. Computational Fluid Dynamics VIII Room: Room: 24A Chair: H. Rahai, California State U., Long Beach	R5.01 A high order solver for the unbounded Poisson equation with specific application to the equations of fluid kinematics <i>M. Hejlesen, J. Rasmussen, P. Chatelain, J. Walther</i>	R5.02 A fully spectral efficient algorithm for Stokes suspension simulations in doubly periodic confined geometries <i>J. Park, D. Saintillan</i>	R5.03 Multithreaded Implicitly Dealiasing Convolutions for Pseudospectral Simulations <i>M. Roberts, J. Bowman</i>	R5.04 A spectral multi domain decomposition method for computing the 2D backward facing step flow <i>A. Jagannathan, M. Dhanak, R. Mohan</i>	R5.05 A deformed spectral quadrilateral multi-domain penalty model for the incompressible Navier-Stokes equations <i>S. Joshi, P. Diamessis</i>	R5.06 Direct Numerical Simulation of Compressible Turbulent Flows with Weighted Non-Linear Compact Schemes <i>D. Ghosh, S. Medida, J. Baeder</i>
R6. Microfluidics: Capillary III Room: Room: 24B Chair: S. Pillapakam, Temple U.	R6.01 Trapping and release of bubbles from a linear pore <i>A. Juel, G. Dawson, S. Lee</i>	R6.02 Direct measurements of air layer profiles under impacting droplets using high-speed color interferometry <i>R. van der Veen, T. Tran, D. Lohse, C. Sun</i>	R6.03 Encapsulating Ellipsoids in Drops <i>M. Norton, T. Brugarolas, J. Chou, H. Bau, D. Lee</i>	R6.04 Experimental study of adsorption of particles at two-fluid interfaces <i>V. Linevich, S. Pillapakam, P. Singh</i>	R6.05 Dissipative particle dynamics simulation of a liquid meniscus confined between atomic force microscope tip and substrate <i>Z. Li, C. Lan, Y. Ma</i>	R6.06 Capillary-Driven Flow through Optimal Wick Structures for Heat Pipe Applications <i>Y. Liu, M. Sigurdson, C. Meinhart</i>
R7. Geophysical: General VI Room: Room: 24C Chair: J. Taylor, U. of Cambridge	R7.01 Mixing efficiency of turbulent stratified flows: Not all flows are created equal <i>A. Scotti, B. White</i>	R7.02 Instability Mechanisms in a Stratified and Rotating Shear Layer with Horizontal Shear <i>E. Arobone, S. Sarkar</i>	R7.03 Transition in Energy Spectra and Vortex Structures in Stably Stratified Turbulence <i>Y. Kimura, J. Herring</i>	R7.04 Large Eddy Simulations of Kelvin-Helmholtz Instabilities in Stratified Ocean Flows <i>D. Brown, L. Goodman, M. Raessi</i>	R7.05 Instabilities of pancake vortices modelled by rotating ellipsoids in a stratified fluid <i>P. Meunier</i>	R7.06 Unstable modes of a sheared pycnocline above a stratified layer <i>S. Wunsch, K. Keller</i>
R8. Drops XII Room: Room: 25A Chair: A. Pearlstein, U. of Illinois at Urbana-Champaign	R8.01 Internal flow and deformation of a liquid CO ₂ drop rising through water <i>L. Steytler, A. Pearlstein</i>	R8.02 3D Droplet velocities and sizes in the Ranque-Hilsch vortex tube <i>R. Liew, J. Zeegers, J. Kuerten, W. Michalek</i>	R8.03 The Polarization of a Diffuse Soft Particle Subjected to an Alternating Current Field <i>S. Uppapalli, H. Zhao</i>	R8.04 Preventing droplet deformation during dielectrophoretic centering of a compound emulsion droplet <i>G. Randall, B. Blue</i>	R8.05 Pilot-wave dynamics in confined geometries <i>D. Harris, J. Bush</i>	R8.06 Viscosity Measurement via Drop Coalescence: A Space Station Experiment <i>B. Antar</i>
R9. Magnetohydrodynamics Room: Room: 25B Chair: K. Schneider, Aix-Marseille U.	R9.01 WITHDRAWN	R9.02 Turbulent transfer and secondary flow patterns in transitional MHD duct flows under the non-uniform magnetic field <i>H. Kobayashi, Y. Okuno</i>	R9.03 Experimental Investigation on Liquid Metal Flow Distribution in Insulating Manifold under Uniform Magnetic Field <i>M. Miura, Y. Ueki, T. Yokomine, T. Kunugi</i>	R9.04 Numerical investigation of the turbulent MHD flow in a circular pipe with transverse magnetic field <i>X. Dechamps, M. Rasquin, G. Degrez</i>	R9.05 Instabilities in Turbulent Magnetized Spherical Couette Flow <i>M. Adams, D. Zimmerman, S. Triana, D. Lathrop</i>	R9.06 Numerical Study for the MHD Homogeneous Decaying Turbulence under the System Rotation <i>M. Okamoto, D. Nakajima</i>
R10. General Instability II Room: Room: 25C Chair: A. Cros, Universidad de Guadalajara	R10.01 Elasto-Capillary Coalescence of Multiple Parallel Sheets <i>A. Gat, M. Gharib</i>	R10.02 Influence of gravity on flutter of cantilevered pipes conveying fluid <i>J. Rivero, M. Perez-Saborid</i>	R10.03 Capillary Instability and Dynamical Collapse of An Array of Elastic Lamellae <i>Z. Wei, T. Schneider, J. Kim, H. Kim, L. Mahadevan</i>	R10.04 Sky dancer: the threshold of the buckling instability <i>A. Cros, R. Ibarra Nuño, B. Michon</i>	R10.05 Study of Waving of grass using soap film <i>R. Singh, S. Mandre, A. Mahadevan, L. Mahadevan, M. Bandi</i>	R10.06 Falling styles of disks <i>J. Magnaudet, F. Auguste, D. Fabre</i>

Tuesday Afternoon, 20 November 2012

Session	13:00	13:13	13:26	13:39	13:52	14:05
R11. Microfluidics: Particles Room: Room: 26A Chair: A. Alexeev, Georgia Institute of Technology	R11.01 <u>Three dimensional open cavity flow for the continuous separation of suspended particles</u> <i>J. Bernate, C. Paul, C. Liu, L. Lagae, K. Konstantopoulos, Z. Gagnon, G. Drazer</i>	R11.02 <u>Microfluidic separation of motile sperm with millilitre-scale sample capacity</u> <i>R. Nosrati, M. Vollmer, L. Eamer, K. Zeidan, M. San Gabriel, A. Zini, D. Sinton</i>	R11.03 <u>Single-stream inertial focusing of microparticles across laminar streamlines through geometry-induced secondary flows</u> <i>A. Chung, D. Pulido, J. Oka, M. Masaeli, H. Amini, D. Di Carlo</i>	R11.04 <u>Size-based dielectrophoretic particle sorting in a microfluidic device with thermal effects</u> <i>B. Shaparenko, H. Chuang, H. Hu, H. Bau</i>	R11.05 <u>Particle collision dynamics in periodic asymmetric microfluidic obstacle arrays for rare cell capture</u> <i>J. Smith, J. Gleghorn, B. Kirby</i>	R11.06 <u>Size based separation of micro-particles using adhesive ciliated surfaces</u> <i>A. Tripathi, A. Bhattacharya, A. Balazs</i>
R12. Vortex VIII Room: Room: 26B Chair: P. Krueger, Southern Methodist U.	R12.01 <u>A Fluid-solid Numerical Model for the Analysis of Bio-inspired UUV</u> <i>S. Mitra, N. Krishnamurthy, D. Tafti, S. Priya</i>	R12.02 <u>Vortex formation analysis of a piston-cylinder apparatus with passively varying output inspired by jellyfish</u> <i>A. Villanueva, S. Priya</i>	R12.03 <u>Perturbation response of model vortex rings and dipoles</u> <i>C. O'Farrell, J. Dabiri</i>	R12.04 <u>Experimental Investigation of a Fluidic Oscillator for Application to Pulsed-Jet Propulsion</u> <i>A. Vahedipour, P. Krueger</i>	R12.05 <u>Dynamics of a Vortex Pair Impinging on a Horizontal Ground Plane</u> <i>D. Asselin, C. Williamson</i>	R12.06 <u>Impact of a vortex dipole with a semi-infinite plate</u> <i>S. Peterson, M. Porfiri</i>
R13. Richtmyer-Meshkov Instability II Room: Room: 27A Chair: O. Schilling, Lawrence Livermore National Laboratory	R13.01 <u>Mixing at shocked interfaces with known perturbations</u> <i>A. Cook, C. Weber, R. Bonazza, B. Cabot</i>	R13.02 <u>Simultaneous Measurements of Density and Velocity Fields in Single-interface Richtmyer-Meshkov Instabilities</u> <i>R. Mejia-Alvarez, B. Wilson, K. Prestidge</i>	R13.03 <u>Investigating Mach number dependence on Richtmyer-Meshkov mixing with high resolution velocity and density measurements</u> <i>G. Orlicz, S. Balasubramanian, K. Prestidge</i>	R13.04 <u>Turbulent Mixing in Late-Time Richtmyer-Meshkov Instability Experiments</u> <i>C. Weber, N. Haehn, J. Oakley, D. Rothamer, R. Bonazza</i>	R13.05 <u>Evolution of the density self-correlation in developing RM turbulence</u> <i>C. Tomkins, B. Balakumar, G. Orlicz, K. Prestidge, J. Ristorcelli</i>	R13.06 <u>Evaluation of the Predictive Capability of a Reynolds-Averaged Navier-Stokes Model Applied to Reshocked Richtmyer-Meshkov Instability</u> <i>T. Moran-Lopez, J. Holloway, O. Schilling</i>
R14. Rotating Flows III Room: Room: 27B Chair: S. Kurien, Los Alamos National Laboratory	R14.01 <u>Flow Characterization in a Spinning Film Apparatus</u> <i>A. Alvarado-Savarain, E. Longmire</i>	R14.02 <u>Layer formation in rotating and stratified flows</u> <i>S. Kurien, L. Smith</i>	R14.03 <u>Density Stratification of Rotating Flow in Coaxial Cylinder</u> <i>S. Lee, H. Son, A. Kim</i>	R14.04 <u>Transitions in turbulent plane Couette flow with rotation</u> <i>M. Salewski, B. Eckhardt</i>	R14.05 <u>Stability and transition in rotating plane Couette flow</u> <i>C. Daly, N. Peake</i>	R14.06 <u>Rotating plane Couette flow at high rotation number</u> <i>A. Suryadi, N. Tillmark, P. Alfredsson</i>
R15. Biofluids: Flying and Swimming Room: Room: 28A Chair: P. Bardet, The George Washington U.	R15.01 <u>Flow structures in the wake of heaving and pitching foils</u> <i>D. Najdzin, E. Pardo, M. Leftwich, P. Bardet</i>	R15.02 <u>Force measurement in heaving and pitching foils</u> <i>E. Pardo, D. Najdzin, M. Leftwich, P. Bardet</i>	R15.03 <u>3D Synthetic Aperture PIV of a Freely Swimming Fish</u> <i>L. Mendelson, A. Techet</i>	R15.04 <u>Hydrodynamic performance of multiple bodies swimming in an in-line configuration</u> <i>B. Boschitsch, P. Dewey, A. Smits</i>	R15.05 <u>Dynamics of a heaving flexible foil in a uniform flow</u> <i>F. Paraz, C. Eloy, L. Schouveiler</i>	R15.06 <u>Experimental investigation of 2D flexible plunging hydrofoil</u> <i>R. Tian, R. Mitchell, F. Shu</i>
R16. Biofluids: Biofilms and Membranes Room: Room: 28B Chair: H. Stone, Princeton U.	R16.01 <u>Biofilm streamers cause rapid clogging of flow systems</u> <i>Y. Shen, K. Drescher, N. Wingreen, B. Bassler, H. Stone</i>	R16.02 <u>The "Swiss cheese" instability of bacterial biofilms</u> <i>H. Jang, R. Rusconi, R. Stocker</i>	R16.03 <u>(How) do biofilms control their morphology?</u> <i>A. Seminara, N. Sinha, J. Wilking, D. Weitz, M. Brenner</i>	R16.04 <u>Morphological Approach toward Elucidating Transport and Shear Behavior of Biofilms</u> <i>A. Kumar, P. Barai, P. Mukherjee</i>	R16.05 <u>Reflection and refraction of flexural waves in membranes with complex geometry</u> <i>A. Evans, B. Bhaduri, R. Tapping, G. Popescu, A. Levine</i>	R16.06 <u>Deformation and stability of biomimetic membranes in DC electric pulses</u> <i>P. Salipante, P. Vlahovska</i>
R17. Biofluids: Micro-swimming Theory II Room: Room: 28C Chair: J. Guasto, Massachusetts Institute of Technology	R17.01 <u>Studies of Ciliated Microorganism Swimming with and against a Magnetic Field Tuned Apparent Weight Force</u> <i>I. Jung, H. Mickalide, J. Valles Jr.</i>	R17.02 <u>Micropropulsion and microrheology in complex fluids via symmetry breaking</u> <i>O. Pak, L. Zhu, L. Brandt, E. Lauga</i>	R17.03 <u>A Numerical Study of Muco-Ciliary Transport under the condition of Primary Ciliary Dyskinesia</u> <i>P. Jayathilake, W. Lee, D. Le, H. Lee, B. Khoo</i>	R17.04 <u>Dynamics of artificial bacterial flagella</u> <i>Y. Man, E. Lauga</i>	R17.05 <u>Analysis of the orbits of particles generating one-dimensional dynamic coherent structures</u> <i>D. Melnikov, D. Pushkin, V. Shevtsova</i>	R17.06 <u>Optimal shapes of surface-slip driven self-propelled swimmers</u> <i>A. Vilfan, N. Osterman</i>
R18. Particle Laden Flows VII: Room: Room: 28D Chair: J. Barranco, San Francisco State U.	R18.01 <u>Dust Settling in Protoplanetary Disks with a Terminal Velocity Approach</u> <i>J. Barranco, D. Madera</i>	R18.02 <u>On Predicting the Relative Velocity Statistics of Inertial Particles</u> <i>E. Saw, G. Bewley, E. Bodenschatz</i>	R18.03 <u>Numerical and experimental approaches to simulate soil clogging in porous media</u> <i>Y. Kanarska</i>	R18.04 <u>Modeling Particle-Laden Compressible Flows Using Lattice-Boltzmann Simulation</u> <i>O. Ayala, J. Thomas, L. Wang</i>	R18.05 <u>Equation of Motion for a Drop or Bubble in Viscous Compressible Flows</u> <i>M. Parmar, S. Balachandar, A. Haselbacher</i>	R18.06 <u>ABSTRACT MOVED TO M10.00010</u> <i>n. none</i>
R19. Non-Newtonian Flows IV: Turbulence Room: Room: 28E Chair: Y. Dubief, U. of Vermont	R19.01 <u>The onset of elasto-inertial turbulence</u> <i>B. Hof, D. Samanta, Y. Dubief, M. Holzner, C. Schafer, A. Morozov, C. Wagner, J. Gallardo Ruiz</i>	R19.02 <u>A new state of turbulence: Elasto-inertial turbulence</u> <i>Y. Dubief, D. Samanta, M. Holzner, C. Schafer, A. Morozov, C. Wagner, B. Hof, V. Terrapon, J. Soria</i>	R19.03 <u>Experimental measurements of turbulent polymer solutions</u> <i>A. de Chaumont Quiry, D. Kelley, N. Ouellette</i>	R19.04 <u>Nonlinear dynamics of turbulent drag reduction by polymers</u> <i>M. Graham, S. Wang, F. Hahn</i>	R19.05 <u>Elastic turbulence of polymer solutions at low Re in a straight channel</u> <i>L. Martinie, J. Beaumont, H. Bodiguel, H. Kellay, A. Colin</i>	R19.06 <u>Energy spectra in polymer-doped turbulent soap films</u> <i>R. Cerbus, W. Goldburg, P. Chakraborty, N. Flynn, C. Liu</i>
R20. Turbulent Boundary Layers XI: Nonequilibrium and Transition Room: Room: 30A Chair: U. Piomelli, Queen's U.	R20.01 <u>Osborne Reynolds' pipe flow: Direct computation from laminar through bypass transition to fully-developed turbulence</u> <i>X. Wu, P. Moin, R. Adrian, J. Baltzer, J. Hickey</i>	R20.02 <u>Effects of mean and fluctuating pressure gradients on turbulence in boundary layers</u> <i>P. Joshi, X. Liu, J. Katz</i>	R20.03 <u>Investigation of the Spreading Mechanism of Turbulent Wedges and Spots</u> <i>J. Chu, D. Goldstein</i>	R20.04 <u>Development of Turbulent Spots in Bypass Transition</u> <i>K. Nolan, T. Zaki</i>	R20.05 <u>Measurement of entropy generation within bypass transitional flow</u> <i>R. Skilton, R. Budwig, D. McEligot, J. Crepeau</i>	R20.06 <u>Simulations of equilibrium accelerating turbulent boundary layers over rough walls</u> <i>J. Yuan, U. Piomelli</i>

Tuesday Afternoon, 20 November 2012

Session	13:00	13:13	13:26	13:39	13:52	14:05
R21. General Fluids V Room: Room: 30B Chair: B. Shotorban, U. of Alabama	R21.01 Spectral characteristics of atmospheric surface layer turbulence in Qatar <i>R. Sadr, A. Singha</i>	R21.02 Spray Characterization of Gas-to-Liquid Synthetic Jet Fuels <i>K. Kannaiyan, R. Sadr</i>	R21.03 Optical properties of nanofluids and its implication in nPIV measurements <i>A. Kanjirakat, R. Sadr</i>	R21.04 Compressible cavitation with stochastic field method <i>A. Class, J. Dumond</i>	R21.05 WITHDRAWN	R21.06 Surface manifestations of an underlying turbulent flow <i>P. Gutierrez, S. Aumaitre</i>
R22. Turbulence Modeling Room: Room: 30C Chair: K. Venayagamoorthy, Colorado State U.	R22.01 In Marriage of Model and Numerics, Glimpses of the Future <i>A. Nejadmalayeri, O. Vasilyev, A. Vezolainen</i>	R22.02 Detached-Eddy Simulation Based on the v^2 - f Model <i>S. Jee, K. Shariff</i>	R22.03 Finite-dimensional Asymptotics and Degrees-of-Freedom Estimation for Turbulence Models Incorporating Spectral Subgrid-scale Viscosity <i>J. Avrin</i>	R22.04 Invariant turbulence models <i>A. Bihlo, E. Dos Santos Cardoso-Bihlo, J. Nave, R. Popovich</i>	R22.05 Kolmogorov hypotheses for variable-resolution turbulence simulations <i>D. Reyes, S. Girimaji</i>	R22.06 Differential filtering on unstructured grids with application to grid adaptation <i>S. Bose, P. Moin, F. Ham</i>
R23. Turbulence Theory: Rotating/Stratified/Compressible Room: Room: 30D Chair: G. Matheou, Jet Propulsion Laboratory	R23.01 Anisotropy statistics in homogeneous stratified sheared turbulence <i>G. Matheou, D. Chung</i>	R23.02 Small-scale turbulence in stably stratified flows <i>S. Almalkie, S. de Bruyn Kops</i>	R23.03 Acceleration Statistics in Rotating and Sheared Turbulence <i>F. Jacobitz, K. Schneider, W. Bos, M. Farge</i>	R23.04 Scale locality and the inertial range in compressible turbulence <i>H. Aluie</i>	R23.05 The role of helicity in stratified turbulence <i>C. Roral, D. Rosenberg, A. Pouquet, P. Mininni</i>	R23.06 Modeling various effects of compressibility on the pressure Hessian tensor <i>S. Suman, S. Girimaji</i>
R24. Compressible Flows II Room: Room: 30E Chair: J. Austin, U. of Illinois at Urbana-Champaign	R24.01 Planar Reflection of Detonations Waves <i>J. Damazo, J. Shepherd</i>	R24.02 Shock-boundary layer interaction and transonic flutter <i>P. Tumkur Karnick, K. Venkatraman</i>	R24.03 Detailed Simulations and Analysis of Shock Bifurcation <i>Y. Sun, M. Ihme, R. Deiterding</i>	R24.04 Investigation of a transonic axisymmetric backward-facing step flow by means of time-resolved PIV and PSP <i>S. Scharnowski, M. Bitter, C. Kähler</i>	R24.05 Evolution of Imposed Vortices Over Concave Surfaces in Hypervelocity Flow <i>W. Flaherty, J. Austin</i>	R24.06 Shock focusing in water by convergent shell structures <i>C. Wang, V. Eliasson</i>
R25. Flow Control: General II Room: Room: 31A Chair: H. Johari, California State U. at Northridge	R25.01 Robustness of Input Shaping for Liquid Sloshing Suppression in a Horizontally Accelerating Container <i>D. Kim, S. Hong, K. Kim</i>	R25.02 Estimation of the Concentration from a Gaseous Moving Source Using Collaborating Sensing Aerial Vehicles <i>T. Egorova, M. Demetriou, N. Gatsonis</i>	R25.03 Cavitation on Hydrofoils with Leading Edge Protuberances <i>D. Custodio, C. Henoeh, H. Johari</i>	R25.04 An improved algorithm for balanced proper orthogonal decomposition using analytic tails <i>J. Tu, C. Rowley</i>	R25.05 Large-Eddy Simulations of Plasma Control for Separated Supersonic Flow <i>N. Bisek, J. Poggie</i>	R25.06 Control of Shock-Induced Boundary Layer Separation by using Pulsed Plasma Jets <i>B. Greene, N. Clemens, D. Micka</i>
R26. Aerodynamics V Room: Room: 31B Chair: M. Wei, New Mexico State U.	R26.01 Low Reynolds Number Wing Transients in Rotation and Translation <i>A. Jones, K. Schlueter</i>	R26.02 Unsteady Lift Response and Energy Extraction in Gusting Flows <i>J. Choi, T. Colonius, D. Williams</i>	R26.03 Transient Vortex Structures in the Near Wake of a Wing during Pitch Up/Down Maneuvers <i>E. Graff, M. Grivel, D. Williams</i>	R26.04 Effects of wing flexibility on aerodynamic performance in hovering flight <i>T. Yang, M. Wei</i>	R26.05 Optimization of the airfoil stroke in a high Reynolds number flow for energy harvesting <i>X. Guo, S. Mandre</i>	R26.06 Experimental and Numerical investigations of flapping flight <i>S. Krithivasan, S. Ansumali, S. KR</i>
R27. Computational Fluid Dynamics IX Room: Room: 31C Chair: O. Sahn, Rensselaer Polytechnic Institute	R27.01 Non-isothermal 3D SDDP Simulations <i>J. Yang, R. Potami, N. Gatsonis</i>	R27.02 Comparison study of meshfree methods for viscous flow <i>Z. He, L. Rossi</i>	R27.03 Scale-bridging schemes based on the material point method <i>S. Mao, X. Ma, V. DuPont, D. Zhang</i>	R27.04 Artificial Compressibility with Entropic Damping <i>J. Clausen, S. Roberts</i>	R27.05 Solving Navier-Stokes' equation using Castillo-Grone's mimetic difference operators on GPUs <i>M. Abouali, J. Castillo</i>	R27.06 Mathematical modelling of backflushing in membrane separation <i>F. Vinther</i>
R28. General Fluids III Room: Room: 32A Chair: A. Ganan-Calvo, ESI, Universidad de Sevilla	R28.01 Thermodynamics of continuous media with permanent electric polarisation and magnetisation <i>S. Brechet, J. Ansermet</i>	R28.02 Physical symmetries of Taylor cone-jets: foundations of scaling laws <i>A. Ganan-Calvo, J. Montanero, N. Rebollo-Munoz</i>	R28.03 The Minimum Flow Rate Scaling in Taylor Cone-Jets <i>W. Scheideler, C. Chen</i>	R28.04 Stability of a viscous pinching thread <i>J. Eggers</i>	R28.05 Laboratory experiments on stratified flow through a suspended porous fence <i>S. Delavan, R. Nokes, D. Plew</i>	R28.06 Solutions to separated and quasi-laminarized pressure gradient boundary layers via similarity analysis <i>R. Hopkins, R. Cal</i>
R29. Chaos, Fractals, and Dynamical Systems III Room: Room: 32B Chair: N. Ouellette, Yale U.	R29.01 Almost cyclic sets, topological chaos, and mixing in a lid-driven cavity flow <i>P. Rao, M. Gheisarieha, S. Ross, M. Stremler</i>	R29.02 Acceleration feature points of unsteady shear flows <i>J. Kasten, J. Reininghaus, I. Hotz, H. Hege, B. Noack, G. Daviller, P. Comte, M. Morzyński</i>	R29.03 Perturbation of coherent structures in three-dimensional laminar flows: predictions versus experimental observations <i>F. Wu, M. Speetjens, D. Vainchtein, R. Trieling, H. Clercx</i>	R29.04 Effect of the forcing on "steady" turbulent states <i>B. Saint-Michel, G. Mancel, B. Dubrulle, Herbert, F. Daviaud</i>	R29.05 Streamline and vorticity topology of eruption from a boundary layer induced by a 2D vortex patch <i>M. Andersen, M. Brons, M. Thompson</i>	R29.06 Bifurcations in bifurcations: a dynamical analysis of an impacting T-junction flow <i>K. Chen, C. Rowley, H. Stone, D. Vigolo, S. Radl</i>
R30. General Fluids IV Room: Room: 33A Chair: R. Camassa, U. of North Carolina	R30.01 Are the wake angles of a duck and a ship really the same? <i>M. Rabaud, F. Moisy</i>	R30.02 At the end of a moving string <i>J. Hanna, C. Santangelo</i>	R30.03 Flow-induced oscillations of non-uniform pipes conveying fluid <i>G. Chang, Y. Modarres-Sadeghi</i>	R30.04 Unsteady flow near front and rear stagnation points <i>D. Kolomenskiy, K. Moffatt, M. Farge, K. Schneider</i>	R30.05 General Multi-Species Dynamical Density Functional Theory <i>B. Goddard, A. Nold, N. Savaş, G. Pavliotis, S. Kalliadasis</i>	R30.06 Controlling the Dynamics of the 2-D Navier-Stokes Equations <i>N. Smaoui, M. Zribi</i>

Tuesday Afternoon, 20 November 2012

Session	13:00	13:13	13:26	13:39	13:52	14:05
R31. Wind Energy III Room: Room: 33B Chair: J. Dabiri, California Institute of Technology	R31.01 <u>Thermal stratification effects on a 4x3 wind turbine array boundary layer</u> <i>E. Camp, M. Tutkun, R. Cal</i>	R31.02 <u>Statistical analysis of kinetic energy entrainment in a model wind turbine array boundary layer</u> <i>R. Cal, N. Hamilton, H. Kang, C. Meneveau</i>	R31.03 <u>Effects of downstream and cross-stream spacings in an array of aligned wind turbines</u> <i>D. Houck, M. Melius, R. Cal</i>	R31.04 <u>Flow development comparison in two-bladed and three-bladed model wind turbine arrays</u> <i>C. McKeon, J. Sullivan, E. Camp, M. Melius, D. Delucia, R. Cal, L. Castillo</i>	R31.05 <u>Markovian properties of wind turbine wakes within a 3x3 array</u> <i>M. Melius, M. Tutkun, R. Cal</i>	R31.06 <u>Low-order flow modeling of vertical-axis wind turbine arrays</u> <i>D. Araya, A. Craig, J. Dabiri</i>
R32. Granular Flows V Room: Room: 33C Chair: T. Shinbrot, Rutgers U.	R32.01 <u>A numerical study of unsteady shear flows of fluid-saturated granular materials in the presence of gravity</u> <i>C. Varsakelis, M. Papalexandris</i>	R32.02 <u>Erosion dynamics of a wet granular medium</u> <i>G. Lefebvre, P. Jop</i>	R32.03 <u>An introduction to the Hele-Shaw beach experiments</u> <i>A. Thornton, B. Van der Horn, D. Van der Meer, W. Zweers, O. Bokhove</i>	R32.04 <u>Multiphase flow description of material pulverization</u> <i>D. Zhang, X. Ma, B. Jayaraman</i>	R32.05 <u>Fast X-ray Imaging Applications for Granular Physics</u> <i>Y. Wang, Y. Cao, C. Xia, B. Kou, H. Sun, X. Xiao, K. Fezzaa</i>	R32.06 <u>Two-level hierarchical structure in nano-powder agglomerates in gas media</u> <i>L. de Martin, W. Bouwman, J. van Ommen</i>

Tuesday Afternoon, 20 November 2012					
Session	14:18	14:31	14:44	14:57	15:10
R1. Geophysical: Ocean IV Room: Room: 22 Chair: C. Rehman, Iowa State U.	R1.07 Forcing of oceanic mean flows by dissipating internal tides <i>N. Grisouard, O. Buhler</i>	R1.08 Effect of slope criticality and tidal forcing on internal tide energetics at a model ridge <i>N. Rapaka, B. Gayen, S. Sarkar</i>	R1.09 Numerical Simulation of Internal Tide Generation at a Continental Shelf Break <i>L. Brandt, J. Rottman, K. Brucker, D. Dommermuth</i>		
R2. Convection and Buoyancy-Driven Flows VIII Room: Room: 23A Chair: R. Wittenberg, Simon Fraser U.	R2.07 Transient diffusive boundary layers in porous media: The linear transition region <i>N. Tilton, D. Daniel, A. Riaz</i>	R2.08 Evaporation dynamics of ethanol drops under terrestrial and reduced gravity levels <i>F. Carle, B. Sobac, D. Brutin</i>	R2.09 Leidenfrost levitated liquid tori <i>S. Perrard, M. Labousse, E. Fort, J. Bush, Y. Couder, L. Limat</i>	R2.10 Hydrodynamic Instabilities Produced by Evaporation <i>J. Romo-Cruz, S. Hernandez-Zapata, G. Ruiz-Chavarria</i>	
R3. Multiphase General II Room: Room: 23B Chair: S. Hilgenfeldt, U. of Illinois at Urbana-Champaign	R3.07 Double diffusive effects between two miscible fluid flows in a channel <i>M. Mishra, A. De Wit, K. Sahu</i>	R3.08 Microscopic aspects of Liquid Foam Fracture <i>S. Hilgenfeldt, P. Stewart, S. Davis</i>	R3.09 Multiphase flow of miscible liquids: drops and jets <i>T. Walker, A. Logia, G. Fuller</i>	R3.10 Numerical Study of Crossflow Enhanced Microfiltration of Oil-in-Water Emulsions <i>T. Darvishzadeh, N. Priezjev, V. Tarabara</i>	
R4. Foams Room: Room: 23C Chair: P. Stewart, U. of Oxford	R4.07 A novel method of producing stable emulsions via electrified W/O interfaces <i>B. Sadr, P. Tabatabaee-Hosseini, B. Vajdi Hokmabad, m. Rezayati Charan, E. Esmaeilzadeh</i>				
R5. Computational Fluid Dynamics VIII Room: Room: 24A Chair: H. Rahai, California State U., Long Beach	R5.07 DNS of homogeneous turbulent shear flow using a hybrid Pseudospectral-WENO Method <i>P. Sukheswalla, T. Vaithianathan, L. Collins</i>	R5.08 A High Order Volume Penalty Method <i>D. Shirokoff, J. Nave</i>	R5.09 Assessing the Recovery-based Discontinuous Galerkin Method for Turbulence Simulations <i>A. Nair, E. Johnsen, S. Varadan</i>	R5.10 Approach for robustly simulating supercritical fluid mixing with large density contrast using high-order schemes <i>H. Terashima, M. Koshi</i>	
R6. Microfluidics: Capillary III Room: Room: 24B Chair: S. Pillakkam, Temple U.	R6.07 Droplets interacting with structured microchannel walls <i>R. de Ruiter, M. Duits, F. Mugele</i>	R6.08 Lattice Boltzmann Simulations of Finite-Sized Particles in Interfaces <i>K. Connington, T. Lee, J. Morris</i>			
R7. Geophysical: General VI Room: Room: 24C Chair: J. Taylor, U. of Cambridge	R7.07 Inertial instability of oceanic submesoscale vortices: linear analysis, marginal stability criterion and laboratory experiments <i>A. Lazar, A. Stegner, E. Heifetz</i>	R7.08 The Easily Excitable Baroclinic Critical Layers in Rotating, Horizontally Shearing, Vertically Stratified Flows and Their Roll-up into Vortices <i>P. Marcus, S. Pei, C. Jiang, P. Hassanzadeh</i>	R7.09 Self-Similar, Self-Replicating, Critical Layers and Vortices in Rotating, Horizontally Shearing, Vertically-Stratified Flows <i>S. Pei, C. Jiang, P. Marcus, P. Hassanzadeh</i>	R7.10 Turbulence, submesoscales, and the spin down of ocean fronts <i>J. Taylor</i>	
R8. Drops XII Room: Room: 25A Chair: A. Pearlstein, U. of Illinois at Urbana-Champaign	R8.07 Frictional effects on liquid marbles <i>G. Lagubeau, A. Rescaglio, F. Melo, C. Clanet, D. Quéré</i>	R8.08 Holy Balls!: Part Deux <i>J. Belden, M. Jandron, T. Truscott</i>	R8.09 The effects of the impact velocity of water droplets on the surface features in a rain field <i>R. Liu, X. Liu, J. Duncan</i>	R8.10 Characterization of dense spray nozzles for engine research <i>W. Lai, J. Cui</i>	
R9. Magnetohydrodynamics Room: Room: 25B Chair: K. Schneider, Aix-Marseille U.	R9.07 Coherent vorticity and current density simulation of three-dimensional magnetohydrodynamic turbulence using orthogonal wavelets <i>K. Yoshimatsu, N. Okamoto, Y. Kawahara, K. Schneider, M. Farge</i>	R9.08 Intrinsic rotation of toroidally confined magnetohydrodynamics <i>J. Morales, W. Bos, K. Schneider, D. Montgomery</i>	R9.09 Experimental investigation of heat transfer in free-surface MHD flow <i>J. Rhoads, A. Katzenstein, E. Edlund, P. Sloboda, E. Spence, H. Ji</i>	R9.10 Falling-Ball Rheometry of Magnetized Ferrofluids in the Presence of Magnetic Particle Threads <i>A. Cali, A. Trubatch, P. Yecko</i>	
R10. General Instability II Room: Room: 25C Chair: A. Cros, Universidad de Guadalajara	R10.07 Vortex shedding experiments with Ekman friction <i>P. Fontana, E. Brasseale, J. Goertz, D. Raschko, J. Shim</i>	R10.08 On the dynamics of gaseous detonation in porous inert media <i>R. Semenko, A. Kasimov, B. Ermolaev</i>	R10.09 Unstable Homogeneous Boiling <i>S. Ramachandran, A. Esmaeeli</i>		

Tuesday Afternoon, 20 November 2012					
Session	14:18	14:31	14:44	14:57	15:10
R11. Microfluidics: Particles Room: Room: 26A Chair: A. Alexeev, Georgia Institute of Technology	R11.07 <u>Size-dependent cell separation and enrichment using double spiral microchannels</u> <i>G. Hu, C. Liu, J. Sun, X. Jiang</i>	R11.08 <u>Thin films with self-assembled monolayers embedded on their surfaces</u> <i>M. Hossain, B. Dalal, S. Gurupatham, I. Fischer, N. Aubry, P. Singh</i>	R11.09 <u>Characterization of nanoparticle delivery in a mimetic microfluidic chip</u> <i>Y. Liu, A. Thomas, J. Tan</i>	R11.10 <u>Using chiral structures to enhance particle deposition in microfluidic devices</u> <i>Y. Gu, Z. Mills, A. Alexeev</i>	
R12. Vortex VIII Room: Room: 26B Chair: P. Krueger, Southern Methodist U.	R12.07 <u>Interaction of a Vortex Ring with a Thin Porous Surface</u> <i>J. Hrynuk, D. Bohl</i>	R12.08 <u>Dynamics of the collision of a vortex ring with a vertical heated wall</u> <i>G. Gelderblom, C. Palacios-Morales, R. Zenit, F. Solorio-Ordaz</i>	R12.09 <u>A numerical study of vorticity-enhanced heat transfer</u> <i>X. Wang, S. Alben</i>	R12.10 <u>Dynamics of SQG Point Vortices and Passive Scalar Transport</u> <i>C. Keppel, S. Llewellyn Smith</i>	
R13. Richtmyer-Meshkov Instability II Room: Room: 27A Chair: O. Schilling, Lawrence Livermore National Laboratory	R13.07 <u>Simulations of Material Mixing in a Laser-Driven Reshock Experiment</u> <i>B. Haines, F. Grinstein, L. Welser-Sherrill, J. Fincke</i>	R13.08 <u>Comparative Study of the Predictions of Four-Equation Reynolds-Averaged Navier-Stokes Models Applied to Richtmyer-Meshkov Instability-Induced Mixing</u> <i>O. Schilling</i>	R13.09 <u>Numerical investigation of three-dimensional effects in Richtmyer-Meshkov induced mixing processes</u> <i>N. Adams, V. Tritschler</i>	R13.10 <u>High Resolution Numerical Investigation of Turbulence in a Reshocked Richtmyer Meshkov Unstable Curtain of Dense Gas</u> <i>S. Shankar, S. Lele</i>	
R14. Rotating Flows III Room: Room: 27B Chair: S. Kurien, Los Alamos National Laboratory	R14.07 <u>Nonlinear evolution of the elliptical instability</u> <i>A. Barker, Y. Lithwick</i>	R14.08 <u>Experimental evidence of a triadic resonance of plane inertial waves in a rotating fluid</u> <i>T. Dauxois, G. Bordes, F. Moisy, P. Cortet</i>	R14.09 <u>Earth rotation prevents exact solid body rotation of fluids in the laboratory</u> <i>P. Cortet, J. Boisson, D. Cébron, F. Moisy</i>	R14.10 <u>A fluid Foucault pendulum: the impossibility of achieving solid-body rotation on Earth</u> <i>R. Blum, D. Zimmerman, S. Triana, D. Lathrop</i>	
R15. Biofluids: Flying and Swimming Room: Room: 28A Chair: P. Bardet, The George Washington U.	R15.07 <u>Performance of a wing with nonuniform deformability in hovering flight</u> <i>K. Shoele, Q. Zhu</i>	R15.08 <u>Rotational inertial effects on flexible wing</u> <i>D. Qi, R. Gordnier</i>	R15.09 <u>Sectional lift coefficient of a rotating wing at low Reynolds number</u> <i>J. Kim, J. Kweon, H. Choi</i>	R15.10 <u>Aerodynamic effect of alula in avian flight</u> <i>S. Lee, J. Lee, H. Park, P. Jablonski, H. Choi</i>	
R16. Biofluids: Biofilms and Membranes Room: Room: 28B Chair: H. Stone, Princeton U.	R16.07 <u>Influence of membrane viscosity on dynamics of capsules and red blood cells</u> <i>A. Yazdani, P. Bagchi</i>	R16.08 <u>Pair-collision between heterogeneous capsules in simple shear: Effect of membrane stiffness and membrane constitutive laws</u> <i>R. Singh, K. Sarkar</i>	R16.09 <u>Complex viscoelasticity of shape changes of confined lipid bilayers: The dynamics of protrusions</u> <i>M. Rahimi, M. Arroyo, M. Staykova, H. Stone</i>	R16.10 <u>Curling dynamics of naturally curved ribbons from high to low Reynolds numbers</u> <i>O. Albaran Arriagada, G. Massiera, M. Abkarian</i>	
R17. Biofluids: Micro-swimming Theory II Room: Room: 28C Chair: J. Guasto, Massachusetts Institute of Technology	R17.07 <u>Study of propulsion of microorganisms using viscous slender-body theory</u> <i>S. Toppaladoddi, N. Balmforth</i>	R17.08 <u>Hydrodynamic Contributions to Amoeboid Cell Motility</u> <i>O. Lewis, R. Guy</i>	R17.09 <u>Gyrotactic Bioconvection in Density-Stratified Fluids</u> <i>A. Karimi, A. Ardekani</i>	R17.10 <u>Asymmetry and stability of shape kinematics in microswimmers' motion</u> <i>Y. Or</i>	
R18. Particle Laden Flows VII: Room: Room: 28D Chair: J. Barranco, San Francisco State U.	R18.07 <u>Particle-laden flow in a spiral separator</u> <i>S. Lee, Y. Stokes, A. Bertozzi</i>	R18.08 <u>Bi-disperse particle-laden flows in the Stokes regime</u> <i>G. Urdaneta, S. Meguerdijian, K. Allison, T. Crawford, W. Rosenthal, S. Lee, A. Mavromoustaki, A. Bertozzi</i>	R18.09 <u>Characterization of Oscillatory Boundary Layer Over a Closely Packed Bed of Sediment Particles</u> <i>J. Skitka, S. Apte</i>		
R19. Non-Newtonian Flows IV: Turbulence Room: Room: 28E Chair: Y. Dubief, U. of Vermont	R19.07 <u>Elastic Energy Transfer in Turbulence of Dilute Polymer Solution</u> <i>H. Xi, E. Bodenschatz, H. Xu</i>	R19.08 <u>Direct Numerical Simulation of Elastically Modified Turbulent Taylor-Couette Flow</u> <i>N. Liu, B. Khomami</i>	R19.09 <u>Mechanics and characteristics of transition to turbulence in elasto-inertial turbulence</u> <i>V. Terrapon, J. Soria, Y. Dubief</i>	R19.10 <u>Studying the Topology and Dynamics of Elasto-inertial Channel Flow Turbulence Using the Invariants of the Velocity Gradient Tensor and Dynamic Mode Decomposition</u> <i>J. Soria, V. Terrapon, Y. Dubief</i>	
R20. Turbulent Boundary Layers XI: Nonequilibrium and Transition Room: Room: 30A Chair: U. Piomelli, Queen's U.	R20.07 <u>Non-stationary boundary layers and energy dissipation in incompressible flows</u> <i>M. Farge, R. Nguyen van yen, K. Schneider</i>	R20.08 <u>Tow-tank investigation of the developing zero-pressure-gradient turbulent boundary layer</u> <i>J. Lee, Y. Kwon, J. Monty, N. Hutchins</i>	R20.09 <u>Onset of turbulent mean dynamics in boundary layer flow</u> <i>C. Hamman, T. Sayadi, P. Moin</i>		

Tuesday Afternoon, 20 November 2012					
Session	14:18	14:31	14:44	14:57	15:10
R21. General Fluids V Room: Room: 30B Chair: B. Shotorban, U. of Alabama	R21.07 Dissolution without shrinking: a microfluidic study of multicomponent gas bubble dissolution <i>S. Shim, J. Wan, S. Hilgenfeldt, H. Stone</i>	R21.08 Generation and self-assembly of multiple droplets inside microchannels <i>J. Guzowski, P. Korczyk, S. Jakiela, P. Garstecki</i>			
R22. Turbulence Modeling Room: Room: 30C Chair: K. Venayagamoorthy, Colorado State U.	R22.07 Hermite Methods for Aeroacoustic Modeling of Turbulent Jets <i>M. Inkman, D. Appelo, T. Hagstrom, C. Jang, T. Colonius</i>	R22.08 Low order oscillatory modeling of the inner layer of turbulent boundary layers <i>P. Bandyopadhyay, A. Hellum</i>	R22.09 Computational modeling of scalar transport and buoyancy effects in turbulent flows using ODTLES <i>A. Kerstein, C. Glawe, H. Schmidt, R. Klein, E. Gonzalez-Juez, R. Schmidt</i>	R22.10 Commutative Recursive Filters for Explicit-Filter Large-Eddy Simulation of Turbulent Flows <i>M. Kim, D. Yoon, D. You</i>	
R23. Turbulence Theory: Rotating/Stratified/Compressible Room: Room: 30D Chair: G. Matheou, Jet Propulsion Laboratory	R23.07 Small-scale intermittency and shocks in high Reynolds number compressible turbulence <i>D. Donzis</i>	R23.08 A simple model for space-time correlation in compressible isotropic turbulence <i>D. Li, L. Guo, X. Zhang, G. He</i>	R23.09 Statistics for One-dimensional Compressible Turbulence with Large-scale Forcing <i>Q. Ni, S. Chen</i>	R23.10 On the cascade of kinetic energy in three-dimensional compressible turbulence <i>J. Wang, Y. Yang, Y. Shi, Z. Xiao, X. He, S. Chen</i>	
R24. Compressible Flows II Room: Room: 30E Chair: J. Austin, U. of Illinois at Urbana-Champaign	R24.07 Particle Image Velocimetry of a Supersonic Flow over a Finite-Width Rectangular Cavity <i>S. Beresh, J. Wagner, B. Pruett</i>	R24.08 Nitric oxide emission spectroscopy measurements in a hypervelocity post-shock flow field <i>A. Swantek, J. Austin</i>	R24.09 Shock Tube Investigation of Quasi-Steady Drag in Shock-Particle Interactions <i>J. Wagner, S. Beresh, S. Kearney, B. Pruett, E. Wright</i>		
R25. Flow Control: General II Room: Room: 31A Chair: H. Johari, California State U. at Northridge	R25.07 4D-Var identification of POD Reduced-Order Models <i>L. Cordier, G. Tissot, B. Noack</i>				
R26. Aerodynamics V Room: Room: 31B Chair: M. Wei, New Mexico State U.	R26.07 The aerodynamic cost of flight in bats—comparing theory with measurement <i>R. von Busse, R. Waldman, S. Swartz, K. Breuer</i>	R26.08 Flow Structure on a Flapping Wing: Quasi-Steady Limit <i>C. Ozen, D. Rockwell</i>	R26.09 Thrust Enhancement of Flapping Wings in Tandem and Biplane Configurations by Pure Plunging Motion <i>S. Yilmaz, M. Sahin, M. Unal</i>	R26.10 Flight Stabilization with Flapping Wings in Gusty Environments <i>C. Zhang, L. Zheng, T. Hedrick, R. Mittal</i>	R26.11 Adjoint-based optimization for flapping wings <i>M. Xu, M. Wei</i>
R27. Computational Fluid Dynamics IX Room: Room: 31C Chair: O. Sahn, Rensselaer Polytechnic Institute	R27.07 Size-Dependent Couple-Stress Fluid Mechanics and Application to the Lid-Driven Square Cavity Flow <i>A. Hajesfandiari, G. Dargush, A. Hajesfandiari</i>	R27.08 Fluctuating hydrodynamics for coarse-grained implicit solvent models of soft materials <i>P. Atzberger</i>	R27.09 Development of a Computational Tool for Inductively Coupled Plasma Flow Over Test Samples <i>M. Dougherty, D. Fletcher</i>	R27.10 Coalescence of two colliding liquid droplets with lattice Boltzmann method <i>Y. Wei, Y. Qian</i>	
R28. General Fluids III Room: Room: 32A Chair: A. Ganan-Calvo, ESI, Universidad de Sevilla	R28.07 Surface waves generated by a moving electromagnetic force on electrolytes <i>G. Alcalá, S. Cuevas</i>	R28.08 Avoid Earth Extinction <i>D. Cao</i>			
R29. Chaos, Fractals, and Dynamical Systems III Room: Room: 32B Chair: N. Ouellette, Yale U.	R29.07 Collective motion of interacting particles in spatially coherent flow <i>N. Khurana, N. Ouellette</i>	R29.08 Efficient POD-based ROMs to approximate bifurcation diagrams <i>F. Terragni, J. Vega</i>	R29.09 Identifying Oscillatory Modes Using Harmonically Averaged Equations <i>J. Qi, J. Tu, C. Rowley, R. Mittal</i>	R29.10 Developing flexible but efficient software for dynamical systems analysis of fluid flow <i>S. Ameli, Y. Desai, S. Shadden</i>	R29.11 Analysis of Fluid Flows via Spectral Properties of the Koopman Operator <i>I. Mezić</i>
R30. General Fluids IV Room: Room: 33A Chair: R. Camassa, U. of North Carolina	R30.07 A New Approach to Model Order Reduction of the Navier-Stokes Equations <i>M. Balajewicz, E. Dowell, B. Noack</i>	R30.08 Single series skewness representation for passive scalar advection in laminar pipe and channel flow <i>R. Camassa, F. Bernardi, R. McLaughlin, K. Mertens</i>	R30.09 Friction drag reduction by air cavities <i>O. Zverkhovskiy, R. Delfos, T. van Terwisga, J. Westerweel</i>		

Tuesday Afternoon, 20 November 2012					
Session	14:18	14:31	14:44	14:57	15:10
R31. Wind Energy III Room: Room: 33B Chair: J. Dabiri, California Institute of Technology	R31.07 <u>Low dimensional model of energy reconstruction for inline and offset wind turbine arrays</u> <i>N. Hamilton, M. Tutkun, R. Cai</i>	R31.08 <u>Experimental study of flow around scaled wind turbine arrays</u> <i>R. Chavez Alarcon, B. Balakumar, F. Shu</i>	R31.09 <u>Performance and wake measurements for a cross-flow axis lift-driven turbine</u> <i>P. Bachant, M. Wosnik</i>		
R32. Granular Flows V Room: Room: 33C Chair: T. Shinbrot, Rutgers U.	R32.07 <u>Shock Wave Instability in Dissipative Granular Gases</u> <i>N. Sirmas, M. Radulescu</i>	R32.08 <u>Clustering Instabilities in Homogeneously Cooling Particulate Flows</u> <i>P. Mitrano, S. Dahl, J. Zenk, C. Ewasko, C. Hrenya</i>			