Sunday, July 26th 2009

12:00 PM	**ICLASS - Americas Board Meeting (Blue Sky Room)**
5:00 PM	**Registration (Registration Desk**
6:00 PM	**Opening Reception / Exhibitors / Poster Session (Grand Ballroom A-F)**

Monday, July 27th 2009

7:30 AM		**Registration**			
8:30 AM		ICLASS 2009 Opening Remarks			
8:45 AM		Plenary Lecture: **Current progress in atomization and spray technology for medical applications** Muh-Rong Wang, Professor INSTITUTE OF AERONAUTICS AND ASTRONAUTICS NATIONAL CHENG KUNG UNIVERSITY Tainan, Taiwan, ROC			
9:45 AM		**Mini-Symposium on Cavitation**	**Mini-Symposium on Diesel Sprays**	**Mini-Symposium on Simulation & Validation**	**Droplets & Turbulence I**
		Session Chairs: Akira Sou and Sadegh Dabiri **Grand Ballroom (Salon G-J)**	**Session Chairs:** Scott Parrish and Vince Mc Donell **Grand Ballroom (Salon F)**	**Session Chairs:** Josette Bellan and Bret Van Poppel **Blue Sky**	**Session Chairs:** Madjid Boukra and Antonio Cavaliere **Sun Down**
10:00 AM	Paper 1	Paper Number: 235 Paper Title: Modeling of Cavitation Phenomenon inside a Nozzle Under High Fuel Pressure Condition Paper Authors: Y. Moriyoshi and K. Suga Affiliation: Department of Mechanical Engineering Chiba University	Paper Number: 039 Paper Title: Modeling sub-grid scale mixing of vapor in diesel sprays using jet theory Paper Autohors: Neerav Abani and Rolf D. Reitz Affiliation: Engine Research Center, University of Wisconsin-Madison	Paper Number: 091 Paper Title: Large Eddy Simulation of Fuel Sprays using the Eulerian Mesoscopic Approach. Validations in realistic engine conditions Paper Authors: L. Martinez1, A. Vie1, S. Jay[1], A. Benkenida[1] and B. Cuenot[2] Affiliation: 1. IFP, France 2. CERFACS, France	Paper Number:110 Paper Title: Effect of Combustion Air Temperature on Combustion Characteristics of New Type Combustor with Upward Swirl Paper Authors: Tomohiko Furuhata, Toru Sasaki and Masataka Arai Affiliation: Department of Mechanical System Engineering, Gunma University
10:25 AM	Paper 2	Paper Number:197 Paper Title: Comparison of Flow and Cavitation Processes in Conventional and Group-Hole Diesel Injector Nozzles using Numerical Simulations Paper Authors: W. G. Lee and R. D. Reitz Affiliation: Research Center, University of Wisconsin-Madison	Paper Number: 228 Paper title: Stochastic model of the near-to-injector spray formation in Diesel-like conditions Paper authors: M. Gorokhovski[1] and A. Chtab-Desportes[2] Affiliation:1 Laboratory of Fluid Mechanics and Acoustics, UMR France. CD-Adapco, France	Paper Number: 302 Paper Title: An experimental investigation of spray formation as affected by sprinkler geometry Paper Authors: Xiangyang Zhou and Hong-Zeng Yu Affiliation: FM Global, Norwood, MA	Paper Number: 126 Paper Title: Interactions between evaporating droplets in a monodisperse stream Paper Authors: Bruno Frackowiak[1], Gérard Lavergne[2,] Cameron Tropea[1], Alain Strzelecki[2] Affiliation: 1: Technische Universität Darmstadt, Germany. 2: ONERA, DMAE, , France
10:50 AM	Paper 3	Paper Number: 112 Paper Title: Effect of Cavitation inside Nozzle on Liquid Jet Paper Authors: M. Daikoku[1] and S. Ogasawara[2] Affiliation: 1.Department of Mechanical Engineering, Hachinohe Institute of Technology, 2.Department of Intelligent Machines and System Engineering, Hirosaki University	Paper Number: 057 Paper Title: Computed and Measured Fuel Vapor Distribution in a Full-Cone Spray at High Chamber Pressure and Temperature Paper Authors: John Abraham [1,2]; Lyle M. Pickett[2] Affiliation: 1.Purdue University 2.Sandia National Laboratories,Livermore, CA	Paper Number: 051 Paper Title: Discharge and Dispersion in Water-Mist Sprays: Experimental and Numerical Analysis Paper Autohors: Paolo E. Santangelo[1], Paolo Tartarini[1], Beatrice Pulvirenti[2], Paolo Valdiserri[2] Affiliation: 1 Università degli Studi di Modena e Reggio Emilia, Italy, 2.Alma Mater Studiorum – Università di Bologna, Italy	Paper Number: 230 Paper Title: Thermal and Evaporative Spray Plume Characteristics Using Computational Fluid Dynamics Paper Authors: W. Kalata, K. Brown, K. M. Bade and R. J. Schick Affiliation: Spray Analysis and Research Services Spraying Systems Co.
11:15 AM	Paper 4	Paper Number: 180 Paper Title: Investigating the Effect of the Injector Length/Diameter ratio on the Primary Breakup of Liquid Jets using X-ray Diagnostics Paper Authors: Anu R. Osta1, Jaiho Lee[1], Khaled A. Sallam[1], and Kamel Fezzaa[2] Affiliation: Mechanical and Aerospace Engineering, Oklahoma State University, 2 Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois.	Paper Number: 155 Paper Title: Single-Shot Ultra-Fast Phase-Contrast X-ray Imaging of High-Pressure Diesel Fuel Sprays Paper Authors: Zunping Liu[1], Kyoung-Su Im[1], Xingbin Xie[2], Yujie Wang[1], Kamel Fezzaa[1], Ming-Chia Lai[2], and Jin Wang[1] Affiliation: [1]X-Ray Science Division, Argonne National Laboratory, 9700 South Cass Ave., Argonne, IL 60439-4800; [2]Department of Mechanical Engineering, Wayne State University, 5050 Anthony Wayne Dr, Detroit, MI 48202.	Paper Number: 005 Paper title: Validation and Initial Application of a Novel Spray Combustion Chamber Representative of Large Two-Stroke Diesel Engine Combustion Systems Paper authors: K. Herrmann[1], A. Kyrtatos[1], R. Schulz1 and G. Weisser[1] B. von Rotz[2], B. Schneider[2] and K. Boulouchos[2] Author affiliation: 1. Wärtsilä Switzerland 2.Aerothermochemistry and Combustion Systems Laboratory Zurich, Switzerland	Paper Number: 090 Paper Title: Validation of the Eulerian Mesoscopic Approach in Particle-Charged Homogeneous Isotropic Decaying Turbulence in the scope of Large Eddy Simulation of Fuel Sprays Paper Authors: A. Vie[1], L. Martinez1, S. Jay[1], A. Benkenida1 and B. Cuenot[2] Affiliation: 1 IFP, Cedex – France 2.CERFACS, Cedex 1 - France
11:40 AM	**Lunch** (Colorado Ballroom) / Exhibitors (Grand Ballroom)				

Monday, July 27th 2009 continued AFTER LUNCH…

		Mini-Symposium on Cavitation	Mini-Symposium on Diesel Sprays	Mini-Symposium on Simulation & Validation	Droplets & Turbulence I
		Session Chairs: Masataka Arai and Jim Drallmeier **Grand Ballroom (Salon G-J)**	**Session Chairs:** Terry Parker and Sage Kokjohn **Grand Ballroom (Salon F)**	**Session Chairs:** Olivier Desjardins and Matt Opgenorth **Blue Sky**	**Session Chairs:** Eva Gutheil and Kyle Bade **Sun Down**
12:40 PM	Paper 5	Paper Number: 086 Paper Title: The Performance of a Pressure Atomizer with Upstream Flow Obstructions Paper Authors: P. A. Corber and S. Tavoularis Affiliation: Institute for Aerospace Research, University of Ottawa	Paper Number: 109 Paper Title: Spray Development for Low Temperature Combustion in an HSDI Optical Diesel Engine using Multiple Injection Strategies Paper Authors: Tiegang Fang[1], Robert E. Coverdill[2], Chia-fon Lee[2], and Robert A. White[2] Affiliation:1.North Carolina State University 2.University of Illinois at Urbana-Champaign	Paper Number: 303 Paper Title: Lagrangian Spray Drift Ground Exposure Modeling With Wind Tunnel Droplet Size and Flux Source Data Paper Authors: Andrew Hewitt,[1] Rob Connel,[1] Harold Thistle,[2] Paul Miller,[3] Milton Teske,[4] Ewing, NJ[5], and Gary Dorr [5] Affiliation:1. Lincoln Ventures, New Zealand 2. USDA Forest Service, Morgantown, WV 3. TAG, Silsoe, UK 4. Continuum Dynamics, Inc. 5. The University of Queensland, Gatton, Australia	Paper Number: 210 Paper title: Binary water droplet collision study under conditions typical for nuclear reactors Paper authors: Christophe Rabe[1], Jeanne Malet[1], François Feuillebois[2] Author affiliation: 1: IRSN, Institut de Radioprotection et de Sûreté Nucléaire France. 2: °LPMMH - UMR CNRS France
1:05 PM	Paper 6	Paper Number: 019 Paper Title: Dimensionless Numbers on Cavitation in a Nozzle of a Plain Orifice Atomizer Paper Autohors: Akira Sou, Shigeo Hosokawa and Akio Tomiyama Affiliation: Kobe University	Paper Number: 222 Paper Title: Experimental and Numerical Analysis of Marine Diesel Engine Injection Sprays under Cold and Evaporative Conditions Paper Authors: C. Fink, M. Frobenius, E. Meindl, H. Harndorf Affiliation: Rostock University, Deutschland	Paper Number: 028 Paper Title: APPROPRIATE DATA FOR VALIDATION OF LARGE EDDY SIMULATION OF FLOWS WITH EVAPORATING DROPS Paper Authors: S. Radhakrishnan[1] and J. Bellan[1,2] Affiliation: 1.Jet Propulsion Laboratory[1]California Institute of Technology. 2. Mechanical Engineering Department[2] California Institute of Technology	Paper Number: 081 Paper Title: Dispersion of a fuel spray in a heated channel with controlled turbulence: characterization of droplet temperature and fuel vapour distribution. Paper Authors: V. Deprédurand[1], A. Delcon te[1], M. Orain[2], B. Rossow[2], F. Grisch[2], F. Lemoine[1] Affiliation: 1 LEMTA, CNRS, 2. ONERA, PALAISEAU CEDEX
1:30 PM	Paper 7	Paper Number: 178 Paper Title: Cavitation Bubbles in Shear Flow Paper Authors: Dabiri[1], William A. Sirignano[1], Daniel D. Joseph[1,2] Affiliation: 1.University of California, Irvine, 2.University of Minnesota	Paper Number: 006 Paper Title: Theoretical and Experimental Analysis of the Fuel Stream in GDI Engine Paper Authors: Mariusz Cygnar[1], Karina Janisz[1], Marek Aleksander[1], Grzegorz Budzik[2] Affiliation: 1. State Hihger Vocational School, Poland. 2. Rzeszow University of Technology, Poland	Paper Number: 064 Paper Title: Improvement of the grid dependency of the momentum coupling and the droplet collision modeling in the Arbitrary Lagrangian-Eulerian method for spray simultaions Paper Authors: Sayop Kim and Chang Sik Lee Affiliation: Department of Mechanical Engineering, Graduate School of Hanyang	Paper Number: 209 Paper Title: Flow Field and Mass Flux Measurements Near the Exit Plane of Spray Jets Paper Authors: J. D. Gounder and A. R. Masri Affiliation: School of Aerospace, Mechanical and Mechatronic Engineering The University of Sydney Australia
1:55 PM	Paper 8	Paper Number: 083 Paper Title: Effects of Cavitation in a Nozzle Hole on Atomization of Spray and Development of High-Efficiency Atomization Enhancement Nozzle Paper Authors: N. Tamaki Affiliation: Department of Mechanical Engineering, Kinki University	Paper Number: 015 Paper Title: Investigation of the fuel influence on the injection and mixture process for short injection periods under different diesel engine conditions Paper Authors: Diana Martin, Manuel Reddemann, Reinhold Kneer Affiliation: Institute of Heat and Mass Transfer, RWTH Aachen University, Germany	Paper Number: 053 Paper Title: Detailed numerical investigation of turbulent atomization of liquid jets Paper Authors: Olivier Desjardins Affiliation:	Paper number:134 Paper title: Experimental investigation of evaporating bi-component droplets in a turbulent channel flow Paper authors: Virginel Bodoc[1], Florian Moreau[2], Yves Biscos[1], Rudy Basile[2] and Gerard Lavergne[1] Author affiliation: 1. Département Modèles pour l'Aérodynamique et l'Energétique, ONERA, France 2. Institut de Mecanique des Fluides de Toulouse France
2:20 PM	**Break**				

Monday, July 27th 2009 continued AFTER BREAK…

		Mini-Symposium on Cavitation	Mini-Symposium on Diesel Sprays	Mini-Symposium on Simulation & Validation	Agricultural Sprays
		Session Chairs: David Schmidt and Andrew Hewitt **Grand Ballroom (Salon G-J)**	**Session Chairs:** Mikhael Gorokhovski and Chris Powell **Grand Ballroom (Salon F)**	**Session Chairs:** Mario Trujillo and Senthilkumaran Radhakrishnan **Blue Sky**	**Session Chairs:** Ken Giles and Zbigniew Czaczykz **Sun Down**
2:45 PM	Paper 9	Paper Number: 102 Paper Title: Thermal and Inertial Equilibrium in Small, High-Speed, Cavitating Nozzle Simulations Paper Author: David P. Schmidt Sukanta Rakshit, and Kshitij Neroorkar Affiliation: Department of Mechanical and Industrial Engineering, University of Massachusetts	Paper Number: 055 Paper Title: Effect of Extreme Compression on Diesel Spray Penetration and Dispersion Paper Author: M. N. Svrcek, S.L. Miller, and C. F. Edwards Affiliation: Department of Mechanical Engineering, Stanford University	Paper Number: 020 Paper Title: Spray characterization of pneumatic concentric nebulizer used in Inductively Coupled Plasma – Mass Spectrometry (ICP-MS) Paper Authors: A. Kashani, D. Bandura, J. Mostaghimi Affiliation: Department of Mechanical and Industrial Engineering, University of Toronto	Paper Name: 040 Paper Title: Effect of Surfactants and Their Concentrations Against Phalaris Minor Control in Wheat (Triticum aestivum) Paper Authors: A.S.Tomar and V.R.Thakre Affiliations: Division of Bioscience, Institute of Pesticide Formulation Technology
3:10 PM	Paper 10	Paper Number: 132 Paper Title: Experimental Study about internal Cavitating Flow and Primary Atomization of a Large-Scaled VCO Diesel Injector with Eccentric Needle Paper Authors: T. Oda, Y. Goda, S. Kanaike, K. Aoki and K. Ohsawa Affilation: Tottori University Japan, Mitsubishi Motors Corporation, West Japan Railway Company	Paper Number: 082 Paper Title: A Modeling Study of Charge Preparation in an HCCI Engine Using a Variable Pressure Pulse (VPP) Injection System and Optimized PRF Blends Paper Authors: Sage L. Kokjohn and Rolf D. Reitz Affiliation: Engine Research Center, University of Wisconsin - Madison	Paper Number: 131 Paper Title: Dynamics of Droplets Impulsively Accelerated by Gaseous Flow: A Numerical Investigation Paper Authors: Shaoping Quan Affiliation: Large-Scale Complex Systems, Institute of High Performance Computing, Singapore, 138632	Paper number: 088 Paper title: Development of a Protocol for Characterizing Sprays Generated Under Simulated Aerial Conditions Paper authors: B. R.Collett, J. P. Fife, M. J. Shaw, M. C. Shell, and C. L. Scott Author affiliation: Battelle Memorial Institute, Columbus, Ohio
3:35 PM	Paper 11	Paper Number: 089 Paper Title: Evaluation of New Criteria for Cavitation Inception in Diesel Injectors Paper Authors:S. Som[1], A.I. Ramirez[1], Alejandro M. Briones[2], and S. K. Aggarwal[1] Affiliation:1.Department of Mechanical and Industrial Engineering University of Illinois at Chicago, 2.University of Dayton Research Institute Dayton, OH	Paper Number: 234 Paper Title: Effect of High Ambient Pressure on Behavior and Structure of Diesel Spray Paper Authors: Yuta Manaka, Takayuki Ohta, Masahiro Saito, Tomohiko Furuhata and Masataka Arai Affiliation: Department of Mechanical System Engineering, Gunma University	Paper- Number: 059 Paper Title: Optimization of a 2D Particle Separator – 2009 Paper Authors: M. J. Opgenorth, W. E. McDermott and C. S. Lengsfeld Department of Mechanical and Materials Engineering, University of Denver	Paper Number: 154 Paper Title: Atomization Modeling for an Agricultural Hollow Cone Nozzle Paper Authors: A. Belhadef, A. Vallet Affilation: Cemagref, Agricultural and Environmental Engineering Research Centre
4:00 PM	Paper 12	Paper Number: 080 Paper Title: Integrated Computation of Micro-Cavitation in Gasoline Injector Atomization Paper Authors: Jun Ishimoto Affiliation: Institute of Fluid Science, Tohoku University	Paper number: 221 Paper title: Liquid Spray Penetration Under HCCI Conditions Paper authors: S. L. Post[1], R. J. Stocker[2] and S. Dara[3] Author affiliation: 1. Bradley University, 2.Caterpillar, 3. Bradley University	Paper Number: 114 Paper Title: Numerical Simulations of Spontaneous Ignition of Mono-disperse Fuel Spray in Lean Premixed Gas Paper Authors: O. Moriue, Y. Kawaida, H. Kato and E. Murase Affiliation: Department of Mechanical Engineering, Kyushu University	Paper Number: 256 Paper Title: Vibrational Excitation and Analysis of Fluids to Predict Atomization Characteristics Paper Authors: D.K, Giles and R.L. Stocker Affiliation: Department of Biological and Agricultural Engineering, University of California-Davis
4:25 PM	Paper 13	Paper Number:168 Paper Title: Effects of Internal Cavitation on Breakup of High-Pressure Diesel Sprays Paper Authors: Kyoungsu IM, Seong-Kyun Cheong, Christopher F. Powell, Xin Liu, and Jin Wang Affiliation:	Paper Number: 118 Paper Title: Investigation on the cavitating flow of biodiesel fuel within the nozzle passage according to the nozzle geometry Paper Authors: Su Han Park[1], Bong Woo Ryu[1], Hyung Jun Kim[1], and Chang Sik Lee[2] Affiliation: 1. Department of Mechanical Engineering, Graduate School of Hanyang University 2. Department of Mechanical Engineering, Hanyang University	Paper Number: 218 Paper Title: An algorithm to evaluate interfacial area and sharp surface tension force in unstructured meshes for level-set method in multiphase flow modeling Paper Authors: Amir Pourmousa, Hanif Montazeri, Javad Mostaghimi Affiliation: University of Toronto, Canada	Page Number: 041 Paper Title: Effect of Adjuvant on the Rainfastness and Herbicidal Activity of Glyphosate Against Cynodon dactylon and Cyperus rotundus Weeds Paper Authors: A.S.Tomar and S.P.Singh Affiliations: Division of Bioscience, Institute of Pesticide Formulation Technology
4:50 PM	Paper 14	No Paper Scheduled	No Paper Scheduled	No Paper Scheduled	Paper: 054 Paper Title: Drift reducing nozzle systems for space cultures Paper Authors: Zb. Czaczyk[1] and G. Bäcker[2] Affiliations: 1Institute of Agricultural Engineering, Poznań University of Life Sciences Poland, 2Department of Viticultural Engineering, Geisenheim Research Center, Germany.
6:00 PM	**ICLASS International Board Meeting**				