

Wednesday, July 29th 2009

7:30 AM		Breakfast/Exhibitors			
8:30 AM		Plenary Lecture: The physics of Electro spray, Flow Focusing and Flow Blurring: a revision of three ultra-fine liquid atomization systems Alfonso M. Ganan Calvo, Chair of Fluid Mechanics, ESI, Universidad de Sevilla			
9:30 AM		Breakfast/Exhibitors			
		Mini-Symposium on Modeling	Mini-Symposium on AeroJet and Rocket Sprays	Mini-Symposium on Diagnostics	Automotive Gasoline I
		Session chair : Marcus Herrmann and Oliver Desjardins	Session chair: Arvind Jasuja and Adel Mansour	Session chair : William Bachalo and Terrence Meyer	Session chair: Yasuo Moriyoshi and David Hung
		Grand Ballroom (Salon G-J)	Grand Ballroom (Salon F)	Blue Sky	Sun Down
9:45 AM	Paper 1	Paper Number: 219 Paper Title: A Particle-Based Method Coupled with Finite Volume Solver for Interfacial Flows Paper Authors: Sourabh V. Apte Affiliation: Oregon State University	Paper number: 224 Paper title: Behaviour of Dense, Industrial Sprays: A Comparative Assessment under High Air Density Conditions Paper Author: A K Jasuja Affiliation: School of Engineering, Cranfield University, England	Paper Number: 026 Paper Title: Velocity Analysis of Fluid Structures from Ballistic Images in the Near Field of an Aerated Spray Paper Authors: D. L. Sedarsky ¹ , J. Gord ² , B. Kiel ² , T. Meyer ³ , M. A. Linne ^{1,4} Affiliation: 1. Department of Physics, Lund University, Lund, Sweden, 2. Air Force Research Laboratory, Wright-Patterson AFB, 3. Iowa State University, Ames, 4. Department of Applied Mechanics, Chalmers University, Gothenburg, Sweden	Paper Number: 172 Paper Title: Experimental and Computational Analysis of Fuel Mixing in a Low Pressure Direct Injection Gasoline Engine Paper Authors: Shalabh Srivastava, Farhad A. Jaber, Harold J. Schock, David L.S. Hung Affiliation: Michigan State University
10:10 AM	Paper 2	Paper Number: 182 Paper Title: Modeling of polydisperse sprays using a high order method for numerical advection of size moments Paper Authors: D. Kah ¹ , S. Jay ¹ , M. Massot ² , F. Laurent ² Affiliation: 1. Institut Français du Pétrole, France, 2. Laboratoire EM2C, Ecole Centrale Paris France	Paper Number: 162 Paper Title: Atomization Process of an Annular Liquid Sheet assisted by an Inner Gas Jet Paper Authors: N. Leboucher, F. Roger, J. L. Carreau and Alain Clavier Affiliation: Laboratoire de Combustion et de Détonique, France	Paper Number: 035 Paper Title: 2-D Spatial Distribution of Droplets in a Diesel Spray by Means of Direct Photography with Super High Resolution Paper Authors: H. Gen Fujimoto, T. Hori, K. Katsuta, H. Adachi, and J. Senda Affiliation: Department of Mechanical Engineering, Doshisha University	Paper Number: 189 Paper Title: Application of laser-induced fluorescence for imaging sprays of model fuels emulating gasoline and gasoline/ethanol blends Paper Authors: Mats Andersson ¹ and Jonas Wärnberg ² Affiliation: 1) Department of Applied Mechanics, Chalmers University of Technology, 41296 Göteborg, Sweden 2) General Motors Powertrain – Sweden
10:35 AM	Paper 3	Paper Number: 184 Paper Title: A Numerical Method for Detailed Simulations of Atomization in Non-Isothermal Environments Paper Authors: P. Brady ¹ , M. Herrmann ¹ , and J. M. Lopez ² Affiliation: 1. Department of Mechanical and Aerospace Engineering, Arizona State University, 2. Department of Mathematics and Statistics, Arizona State University	Paper Number: 304 Paper Title: Effect of Phase Angle of Transverse Acoustics on Shear Coaxial Jets for Two Geometries Paper Authors: Juan Rodriguez, Ivett Leyva, Doug Talley Affiliation: Air Force Research Laboratory AFRL, Space and Missile Propulsion Division, Aerophysics Branch (RZSA), Edwards AFB, CA	Paper Number: 136 Paper Title: Analysis of the SLIPI technique for multiple scattering suppression in planar imaging of fuel sprays Paper Authors: E. Berrocal ¹ , E. Kristensson ¹ , D. Sedarsky ¹ , M. Linne ^{1,2} Affiliation: 1. Department of Physics, Lund University, Sweden, 2. Department of Applied Mechanics, Chalmers University, Sweden	Paper Number: 225 Paper Title: Trajectory of a Liquid Jet in High Pressure and High Temperature Subsonic Air Crossflow Paper Authors: A. Amighi, M. Eslamian, N. Ashgriz Affiliation: Department of Mechanical and Industrial Engineering, University of Toronto
11:00 AM	Paper 4	Paper Number: 227 Paper Title: Simulation of jets with a finite element Navier-Stokes solver and a multilevel VOF approach Paper Authors: A. Cervone, S. Manservigi and R. Scardovelli Affiliation: DIENCA, Laboratorio di Montecuccolino, University of Bologna, Italy	Paper Number: 010 Paper Title: Small Angle X-Ray Scattering (SAXS) on Droplet Size and Liquid Contents of Condensed Supercritical Ethylene Jets Paper Authors: Kuo-Cheng Lin ¹ , Michael Ryan ² , Campbell Carter ³ , Alec Sandy ⁴ , Suresh Narayanan ⁴ , Jan Ilavsky ⁵ , and Jin Wang ⁴ Affiliation: 1. Taitech, Inc., 2. Universal Technology Corporation, 3. Air Force Research Laboratory, 4. Argonne National Laboratory	Paper Number: 085 Paper Title: Fuel vapor concentration measurements by Infra-Red Extinction – A comparison to Laser Induced Fluorescence on a mono disperse droplet stream Paper Authors: Bernhard Wagner ^{1,3} , Bruno Frackowiak ² , Pierre Gajan ³ and Alain Strze ¹ . Iecki ³ Affiliation: Cerfacs/CFD Toulouse, 2. TU-Darmstadt/SLA, 3. ONERA Toulouse/DMAE	Paper Number: 153 Paper Title: Experimental and Numerical Characterization of the Fuel Distribution by a GDI Multi-Hole Injector for Spark Ignition Engines Paper Authors: L. Allocca, M. Costa, A. Montanaro Affiliation: Istituto Motori - CNR, Viale Marconi 8 - 80125 Napoli - ITALY
11:25 AM	Paper 5	Paper Number: 290 Paper title: Spray Collision Modeling of Immiscible Droplets in Direct Water Injection Paper authors: Daisuke Tsuru ¹ , Satoshi Kawauchi ² , Kousuke Okazaki ¹ and Hiroshi Tajima ¹ Affiliation 1 Interdisciplinary Graduate School of Engineering Sciences, Kyushu University 2 National Maritime Research Institute, Japan	Paper Number: 275 Paper Title: Generation and Pressure Atomization of Water-in-Oil Emulsions for Gas Turbines Paper Authors: C.D. Bolszo, A.A. Narvaez, S. Abbilian, A. Jepsen, D. Dunn-Rankin, V.G. McDonnell, and W.A. Sirignano ⁷ Affiliation: Department of Aerospace and Mechanical Engineering, University of California, Irvine	Paper Number: 297 Paper Title: Gate time effects on ballistic imaging of Diesel sprays Paper Authors: S. Duran, C. Dreyer, and T. E. Parker Affiliation: Colorado School of Mines	Paper number: 077 Paper title: Numerical Investigation of Lagrangian Single-Component Liquid Film Evaporation models Paper authors: V. Ebrahimi ¹ , C. Habchi ¹ and B. Cuenot ² Author affiliation: 1 IFP, France; 2 CERFACS Toulouse France
11:50 AM		Lunch / ICLASS-Americas Annual Business Meeting (Colorado Ballroom) - Exhibitors (Grand Ballroom)			

Wednesday, July 29th 2009 continued AFTER LUNCH...

		Mini-Symposium on Modeling	Mini-Symposium on AeroJet and Rocket Sprays	Mini-Symposium on Diagnostics	Automotive Gasoline II
		Session Chair : Alain Berlemont and Hiroshi Tajima	Session Chair : Oskar Haidn and Michael Bejamin	Session Chair: Edouard Berrocal and Hiro Hiroyasu	Session Chair: David Hung and Lee Markle
		Grand Ballroom (Salon G-J)	Grand Ballroom (Salon F)	Blue Sky	Sun Down
12:50 PM	Paper 6	Paper Number: 205 Paper Title: A Large Eddy Simulation Subgrid Model for Turbulent Phase Interface Dynamics Paper Authors: M. Herrmann ¹ and M. Gorokhovski ² Affiliation: 1.Department of Mechanical and Aerospace Engineering, Arizona State University, Tempe; 2. Laboratoire de Mecanique des Fluides et Acoustique, Ecole Central de Lyon, France	Paper Number: 042 Paper Title: Evaluation of Simulation Strategies for Multipoint Injection Systems in Aero-Engines on the Example of a Liquid Jet in a Gaseous Crossflow Paper Authors: F. Jaegle ¹ , J.M. Senoner ¹ , M. Garcia ¹ , C. Jimenez ² , B. Cuenot ¹ , T. Poinso ¹ Affiliation: 1CERFACS, Toulouse, France; 2.Clema, Modeling and Numerical Simulation Group, Energy Dept., 28040 Madrid, Spain	Paper Number: 047 Paper Title: Liquid Spray Morphological Information from Laser-Diffraction Measurements Paper Authors: Christophe Dumouchel ¹ , Sébastien Grout ¹ , Bertrand Leroux ² , Xavier Paubel ² Affiliation: 1CNRS UMR 6614 – CORIA, Université de Rouen 76801 Saint Etienne du Rouvray, France; 2.Air Liquide, Centre de Recherche France	Paper Number: 048 Paper Title: On the Effect of GDI Injector Configuration on Charge Preparation. Paper Authors: M D Bejoy, Shamit Bakshi, A. Ramesh Affiliation: Internal Combustion Engines Laboratory, Department of Mechanical Engineering, IIT Madras, Chennai – 600036, India
1:15 PM	Paper 7	Paper Number: 250 Paper Title: LES of atomization: From the resolved liquid surface to the subgrid scale spray Paper Authors: J. Chesnel ¹ , J. Réveillon ² , T. Ménard ² , M. Doring ² , A. Berlemont ² & F.X. Demoulin ² Affiliation: 1CORIA & Renault SA, Direction des Technologies Avancées de l'Automobile, France 2.CORIA, France	Paper Number: 008 Paper Title: Spray Nonuniformities in Gas-Centered Swirl-Coaxial Injectors Paper Authors: Malissa D.A. Lightfoot and Stephen A. Danczyk Affiliation: Air Force Research Laboratory, Edwards AFB	Paper Number: 147 Paper Title: TIR-LIF: a Validation Tool for Spray Impact Models Paper Authors: M. Alonso ¹ , P.J. Kay ¹ , P.J. Bowen ¹ , R. Gilchrist ² and S. Sapsford ² Affiliation: 1 Cardiff School of Engineering; 2. Ricardo UK	Paper Number: 156 Paper Title: GDI Multi-Hole Injector: Particle Size and Velocity Distribution for Single and Jet-to-Jet Evolution Analysis Paper Authors: L. Allocca, S. Alfuso, L. Marchitto, G. Valentino Affiliation: Istituto Motori, CNR - Via Marconi, 8 - 80125 Napoli, ITALY
1:40 PM	Paper 8	Paper Number: 038 Paper Title: Numerical Study of Multi-Component Spray Combustion with a Discrete Multi-Component Fuel Model Paper Authors: Y. Ra, and R. D. Reitz Affiliation: Engine Research Center, University of Wisconsin-Madison	Paper Number: 071 Paper Title: Study of Two Dimensional Transverse Liquid Injection into Subsonic Air Stream Paper Authors: D. P. Mishra, S. Das, P.K. Mohapatra, Affiliation: Indian Institute of Technology, Kanpur	Paper Number: 246 Paper Title: Simultaneous Planar Fluorescence, Phosphorescence, and Mie Scattering in Pressure-Atomized Sprays Paper Authors: Barry V. Kiel ¹ James R. Gord ² , Jacob B. Schmidt ² , Joseph D. Miller ² , and Terrence R. Meyer ² Affiliation: 1.Air Force Research Laboratory, Propulsion Directorate Wright-Patterson AFB, OH ;2. Department of Mechanical Engineering Iowa State University, Ames, IA	Paper Number: 240 Application of a Micro Nozzle Array Fuel Injector to Cold-Start Experiments of a 4 Stroke-cycle Gasoline Engine Paper Authors: Mikiya ARAKI ¹ , Tomio OBOKATA, Tsuneaki ISHIMA ¹ and Seichi SHIGA ¹ Masahiko MASUBUCHI ² and Tomojiro SUGIMOTO ² Affiliation: Department of Mechanical Engineering, Gunma University, Japan; 2.Power Train Development Division Toyota Motor Corporation Susono, Japan
2:05PM	Paper 9	Paper Number: 037 Paper Title: Simulation of primary breakup for diesel spray with phase transition Paper Authors: Peng Zeng ¹ , Bernd Binnering ¹ , Norbert Peters ¹ , Marcus Herrmann Affiliation: 1. RWTH Aachen University, 2.Arizona State University	Paper Number: 121 Paper Title: Review of Atomization: Current Knowledge and Recent Trends for Propulsion Combustors Paper Authors: M. Arienti ¹ , M. Benjamin ² and R. J. Jensen ³ Affiliation: 1.United Technologies Research Center, 2.General Electric Aviation 3.Pratt & Whitney Rocketdyne	Paper Number: 116 Paper Title: A Study of the Primary Breakup Process and Macroscale Characteristics of Impinging Diesel Spray Nozzles Paper Authors: Jian Gao ¹ , Rolf D. Reitz ¹ , Jaal B. Gandhi ¹ , Jin Wang ² , Zunping Liu ² Affiliation: 1 Engine Research Center, Department of Mechanical Engineering, Univ. of Wisconsin-Madison, Madison, 2 Advance Photon Source, Argonne National Laboratory, Argonne, IL	No Paper Scheduled at this Time
2:30PM	Paper 10	Paper number: 301 Paper title: Spray Collision Modeling of Immiscible Droplets in Direct Water Injection Paper authors: Daisuke Tsuru ¹ , Satoshi Kawauchi ² , Kousuke Okazaki ¹ and Hiroshi Tajima ¹ Affiliation: 1 Interdisciplinary Graduate School of Engineering Sciences, Kyushu University. 2 National Maritime Research Institute, Japan	Paper Number: 012 Paper Title: Numerical Investigation of Methane/Oxygen and Methane/LOX Counterflowing Spray Flames at Elevated Pressure Paper Authors: D. Urzica, E. Gutheil Affiliation: Interdisciplinary Center for Scientific Computing, Heidelberg University, Germany	Paper Number: 072 Paper Title: Experimental Study of an Internally Mixed Liquid Atomizer for an Air-breathing Engine Application Paper Authors: D. P. Mishra* and G. Singh Affiliation: Department of Aerospace Engineering, Indian Institute of Technology-Kanpur India	No Paper Scheduled at this Time
2:55 PM	Break/Exhibitors				

Wednesday, July 29th 2009 continued AFTER BREAK...

		Mini-Symposium on Modeling	Mini-Symposium on AeroJet and Rocket Sprays	Mini-Symposium on Diagnostics	Alternative Fuels
		Session chair: Sourabh Apte and Guillermo Aguilar	Session chair: Malissa Lightfoot and Robert Jensen	Session chair: Keiya Nishida and Sean Duran	Session chair: Soo Young No and Mina Rohani
		Grand Ballroom (Salon G-J)	Grand Ballroom (Salon F)	Blue Sky	Sun Down
3:20PM	Paper 11	Paper Number: 052 Paper Title: Adaptive spectral re nement for accurate simulations of turbulent multiphase flows Paper Authors: Olivier Desjardins Affiliations: Department of Mechanical Engineering, University of Colorado	Paper Number: 146 Paper Title: Characteristic Study of Two phase Unlike Impinging Injectors Paper Authors: Rakesh P., B.N.Raghunandan Affiliation: Department of Aerospace Engineering, Indian Institute of Science, Bangalore, India	Paper Number: 062 Paper Title: Numerical analysis of ballistic imaging for revealing liquid breakup in dense sprays Paper Authors: D. L. Sedarsky ¹ , Edouard Berrocal ¹ and M. A. Linne ^{1,2} Affiliation: 1. Department of Physics, Lund University, Lund, Sweden; 2. Department of Applied Mechanics, Chalmers University, Gothenburg, Sweden	Paper Number: 014 Paper Title: Impact of alternative fuels physical properties on combustor performance Paper Authors: Patrick Le Clercq and Manfred Aigner Affiliations: DLR, German Aerospace Center, Institute of Combustion Technology, Stuttgart, Germany
3:45 PM	Paper 12	Paper Number: 079 Paper Title: An Extended Moment Method for Crossing Polydisperse Sprays Paper Authors: L. Schneidera, N. Le Lostecb, P. Villedieub, A. Sadiki Affiliations: Department of Mechanical Engineering, EKT, Technical University of Darmstadt, ONERA	Paper Number: 011 Paper Title: Studies of Pure- and Aerated-Liquid Jets Using the X-Ray Phase Contrast Imaging Paper Authors: Kuo-Cheng Lin ¹ , Campbell Carter ² , Kamel Fezzaa ³ , Zunping Liu ³ , and Jin Wang ³ Affiliation: 1. Taitech, Inc.; 2. Air Force Research Laboratory, 3. Argonne National Laboratory	Paper Number: 137 Paper Title: Ultra-fast Structured Laser Illumination Planar Imaging (SLIPI) for single-shot imaging of dense sprays Paper Authors: Elias Kristensson, Edouard Berrocal, Mattias Richter and Marcus Aldén Affiliations: Department of Combustion Physics, Lund University, Sweden	Paper Number: 157 Paper Title: Investigation of Entrainment during Combustion of Biodiesel Sprays Paper Authors: Yifeng Wu ¹ , Ronghua Huang ¹ and Chia-fon F. Lee ² Affiliation: 1. School of Energy and Power Engineering Huazhong University of Science and Technology Wuhan, China; 2. Department of Mechanical Science and Engineering University of Illinois at Urbana Champaign
4:10PM	Paper 13	Paper number: 232 Paper title: Dynamics of the Cavity Generated in a Liquid Film by Drop Impact Paper authors: M. Budakli ¹ , T. Gambaryan-Roisman ¹ , N. van Hinsberg ² , I. V. Roisman ² , P. Stephan ¹ , C. Tropea ² Author affiliation: 1. Chair of Technical Thermodynamics, Technische Universität Darmstadt, Germany 2. Chair of Fluid Mechanics and Aerodynamics, Technische Universität Darmstadt Germany	Paper Number: 133 Paper Title: Effect of the initial droplet size distribution of the liquid phase combined with transport phenomena on the resulting airblast spray in the far field Paper Authors: Fabrice Giuliani ¹ , Christoph Hennig ¹ , Thomas Leitgeb ¹ and Christoph Hassa ² Affiliations: ¹ Combustion Department, Graz University of Technology (TU Graz), Austria ² Combustor Department, Institute of Propulsion Technology, German Aerospace Center (DLR),	Paper Number: 084 Paper Title: Phase Doppler Interferometry Volume Flux Calculation Optimization and Comparison with Nominally Point Mechanical Patternation Techniques Paper Authors: K. M. Bade and R. J. Schick Affiliations: Spray Analysis and Research Services, Spraying Systems Co.	Paper Number: 017 Paper Title: Experimental Investigation of Spray Propagation and Mixture Formation of Tailor-Made Fuels under Engine-Relevant Conditions Paper Authors: M. A. Reddemann, F. Mathieu, D. Martin and R. Kneer Affiliations: Institute of Heat and Mass Transfer, RWTH Aachen University, Germany
4:35 PM	Paper 14	No Paper Scheduled at this Time	No Paper Scheduled at this Time	Paper Number: 073 Paper Title: Two-color Laser-Induced Fluorescence thermometry applied to droplets: investigation of the droplet's size influence Paper Authors: V. Depredurand ¹ , A. Labergue ^{1*} , A. Delconte ¹ , F. Lemoine ¹ Affiliations: 1. LEMTA 2, Avenue de la Forêt de Haye, BP 160 54504 Vandœuvre-les-Nancy Cedex France	Paper Number: 106 Paper Title: The Effects of MVCO Injections and Conventional Fuel Injections in a High Speed Direction Injection Engine Paper Authors: Way Lee Cheng ¹ and Chia-Fon F. Lee ¹ , Deyang Hou ² Affiliation: 1. Department of Mechanical Science Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois 2. QuantLogic Corporation Texas,
5:00 PM	Paper 15	No Paper Scheduled at this Time	No Paper Scheduled at this Time	Paper number: 191 Paper title: High-Speed Internal Nozzle Flow Visualization of Flashing Jets Paper Authors: Henry Vu and Guillermo Aguilar Affiliation: Department of Mechanical Engineering, University of California, Riverside	