

Session Start Time			Sunday, May 14th, 2023
S	5:00 PM	MDT	Registration Opens, <i>Grand Ballroom Foyer</i> Welcome Reception, <i>Salon F</i>
S	7:00 PM	MDT	Reception Lecture: "From the Nation's Nuclear Ordnance Engineering Lab to the Nation's National Security Engineering Lab" John Taylor (Sandia National Laboratories, retd.) <i>Salon A & E</i>
S	8:00 PM	MDT	Meeting Adjourn

Session Start Time			Monday, May 15th, 2023
M	7:00 AM	MDT	Breakfast with the Exhibitors <i>Salon F</i>
M	8:00 AM	MDT	Welcome and Opening Remarks <i>Salon A & E</i>
M	8:15 AM	MDT	Keynote Lecture - Dan Guildenbecher (Sandia National Laboratories) "Aerodynamic Deformation and Breakup of Liquid Drops Due to the Flow Induced by a High-Mach Projectile" <i>Salon A & E</i>
M	9:15 AM	MDT	Exhibitor Showcase <i>Salon A & E</i>
M	10:10 AM	MDT	Break with the Exhibitors
M	10:30 AM	MDT	Focus Session: High Speed Session Chairs: Alan Kastengren & Ben Halls <i>Salon E</i> Spray Applications - Biomedical and Viral Transport Session Chair: Jennifer O'Neil & James Michael <i>Salon A</i>
M	10:30 AM	MDT	9: Solubility Limit Mapping and the Effects of Injector Configuration on Spray Structures of Diesel with Dissolved Gas in High-Speed Crossflow T. Tidball, K.-C. Lin, S. Hammack Taitech Inc, Air Force Research Laboratory 16: Investigation of Insert Geometry Effect on Resulting Performance of a Jet Nebulizer C. Wollschleger, L. Villasmil-Urdaneta, J. O'Neil Rochester Institute of Technology
M	10:50 AM	MDT	54: Aero break-up of droplets in a ballistic wave system M. Arienti, E. Wenzel, D. Guildenbecher, S. Beresh Sandia National Laboratories 46: Secondary atomization of blood backspatter induced by muzzle gases J. Michael, L. Imtiaz Kaya, K. Chen, A. Yarin Iowa State University, University of Illinois Chicago

M	11:10 AM	MDT	62: Experimental Investigation of Water Droplets Interactions with Shock and Detonation Waves S. Briggs, N. Berube, D. Dyson, M. Kinzel, S. Grace, S. Vasu University of Central Florida, Boston University	56: Investigation of Jet Nebulizer Distance to Baffle on Resulting Performance C. Wollschleger, L. Villasmil-Urdaneta, J. O'Neil Rochester Institute of Technology
M	11:30 AM	MDT	39: High Weber Number Atomization from Droplet-Detonation Interactions J. Burr, J. Bennewitz, A. Kastengren Air Force Research Laboratory, University of Alabama-Huntsville, Argonne National Laboratory	35: Flat fan spray atomization of non-Newtonian fluids relevant to bloodspatter L. Imtiaz Kaya, S. Bentil, J. Michael Iowa State University
M	11:50 AM	MDT	Lunch <i>Salon G</i>	Atomization and Sprays Editorial Board Meeting <i>Santa Fe</i>
M	12:50 PM	MDT	Technical Committee Meeting <i>Physics of Atomization, Salon A</i> <i>Aerospace Propulsion, Salon E</i>	
M	1:40 PM	MDT	Break	
M	1:50 PM	MDT	Focus Session: Sustainable Fuel Sprays Session Chair: Angela Kimber & Ethan Hanson <i>Salon E</i>	Spray Characterization and Measurements I Session Chairs: Safiullah & Daniel Dyson <i>Salon A</i>
M	1:50 PM	MDT	24: Modeling and Simulation of Mixed Evaporation and Boiling: Application to Aviation Fuels at Lean Conditions E. Wenzel, M. Arienti Sandia National Laboratories	15: The Effect of Air-to-Liquid Ratio on Jet Nebulizer Performance B. Beaudry, L. Villasmil-Urdaneta, J. O'Neil Rochester Institute of Technology
M	2:10 PM	MDT	11: Modeling of Sustainable Aviation Fuels with Real-Fluid Equations of State J. Poblador-Ibanez, L. Nocivelli Argonne National Laboratory	1: Spray Drift due to Bag Breakup of Fan Sheet K. Sallam, M. S. Raza Oklahoma State University
M	2:30 PM	MDT	29: Applying motion-based detection algorithms to analyze x-ray phase contrast images of fluid spray A. Karmarkar, C.-Y. Moon, A. Kastengren, C. Powell, B. Sforzo Argonne National Laboratory	55: Effects of pressure and voltage on charge-to-mass ratio of an induction-charging electrostatic sprayer S. Post, M. Jemy, A. Hewitt Embry Riddle Aeronautical University, University of Canterbury, University of Queensland
M	2:50 PM	MDT	Break with the Exhibitors	

M	3:10 PM	MDT	Spray Applications - Aerospace Session Chair: Vince McDonell <i>Salon E</i>	Spray Applications - Industrial Session Chair: Kyle Bade & Marcus Hermann <i>Salon A</i>
M	3:10 PM	MDT	5: Comparison of non-combusting spray fields in a model combustor using shadowgraphy Y. Hicks, T. Capil, K. Tacina NASA Glenn Research Center	36: Towards Improved Simulation of an Ar/He Plasma Spray of Metal Particles A. Brown, A. Vackel, A. Cruz-Cabrera Sandia National Laboratories
M	3:30 PM	MDT	60: Development of an aerospace spray characterization program and design of a non-proprietary gas turbine engine atomizer B. Sforzo, A. Kimber, J. Moder Argonne National Laboratory, Woodward Inc, NASA Glenn Research Center	69: Understanding breakup mechanisms in electrostatic rotary bell atomizers V. Krisshna, B. Christensen, M. Owkes Montana State University
M	3:50 PM	MDT		23: A computational study of non-Newtonian liquid atomization J. Giliberto, O. Desjardins Cornell University
M	4:10 PM	MDT	Meeting Adjourn	

Session Start Time			Tuesday, May 16th, 2022	
T	7:00 AM	MDT	Breakfast with the Exhibitors <i>Salon F</i>	
T	8:00 AM	MDT	Opening Remarks <i>Salon A & E</i>	
T	8:15 AM	MDT	Keynote Lecture - Marco Arienti (Sandia National Laboratories) "The Role of DNS in Multiphase Simulations" <i>Salon A & E</i>	
T	9:15 AM	MDT	Advances in Numerical Methods Session Chairs: Xiaoyi Li & Olivier Dejjardins <i>Salon E</i>	Spray Applications - Automotive I Session Chairs: Christopher Powell & Scott Parrish <i>Salon A</i>
T	9:15 AM	MDT	10: An Improved Σ-Y Model for Diesel-Like Sprays J. Poblador-Ibanez, L. Nocivelli, G. Magnotti, L. Anumolu, B. Sforzo Argonne National Laboratory, Convergent Science Inc.	14: Development of a 3D Liquid Volume Fraction Imaging Apparatus for Hollow-Cone Sprays M. Groendyk, A. Munnannur, J. Liu Cummins Emissions Solutions

T	9:35 AM	MDT	18: A Dual Scale Approach to Modeling Sub-Filter Velocities due to Shear-Induced Instabilities A. Goodrich, M. Herrmann Arizona State University	50: Reacting spray characterization of diesel and light-distillate fuels for high injection pressure gasoline compression ignition applications S. Jouzdani, H. Schmidt, T. Tzanetakis, J. Naber, A. Zhang Michigan Technological University, Aramco Research Center
T	9:55 AM	MDT	19: A Dual Scale LES Model for Predicting Phase Change Velocities A. Goodrich, M. Herrmann Arizona State University	41: Characterization of plume-to-plume variations of Spray G Z. Buen, L. White, M. Dhanji, L. Pickett Sandia National Laboratories
T	10:15 AM	MDT	47: Near-Field Lagrangian Dispersion Model M. A. Mason Jr., M. F. Trujillo University of Wisconsin-Madison	40: A Study of Impinging Spray G on Transient Thermal Loading and Fuel Film Deposition M. Dhanji, Z. Buen, L. White, L. Pickett, J. Manin Sandia National Laboratories
T	10:35 AM	MDT	Break with the Exhibitors	
T	10:50 AM	MDT	Atomization & Spray Simulations I Session Chairs: Marco Arienti & Lorenzo Nocivelli <i>Salon E</i>	Spray Applications - Automotive II Session Chair: Chi Young Moon & Fabien Evrard <i>Salon A</i>
T	10:50 AM	MDT	2: A Quantitative Analysis of Atomization Mechanisms from High-Fidelity Simulations B. Christensen, M. Owkes Montana State University	32: Application of high-speed imaging and infrared (IR) thermography in an optical electric motor C. Idicheria, S. Parrish, R. Grover, X. Yang General Motors R&D
T	11:10 AM	MDT	38: Large-scale instabilities in the breakup of liquid sheets M. Ananth, M. Trujillo University of Wisconsin-Madison	31: Experimental and Simulation Study of Optical Oil-Cooling Electrical Motor X. Yang, C. Idicheria, R. Grover, S. Parrish General Motors R&D
T	11:30 AM	MDT	48: Simulation and modeling of the deformation and breakup of evaporating drops B. Boyd, T. Mahmood, Y. Ling University of Canterbury, Baylor University, University of South Carolina	63: Conjugate Heat Transfer Modeling of Oil Jet Impingement Cooling on Corrugated Wire Surfaces A. Waikar, D. Rowinski, A. Dahale Convergent Science Inc.

T	11:50 AM	MDT	Lunch / ILASS-Americas Annual Business Meeting <i>Salon G</i>	
T	12:50 PM	MDT	Technical Committee Meetings <i>Computation & Modeling, Salon E</i> <i>Industrial & Agricultural Sprays, Salon A</i>	
T	1:40 PM	MDT	Break with Exhibitors	
T	2:00 PM	MDT	Internal and Near Nozzle Behavior Session Chairs: Lyle Pickett & Jordi Poblador Ibanez <i>Salon E</i>	Spray Characterization and Measurements II Session Chairs: Malissa Lightfoot & Ashwini Kamarkar <i>Salon A</i>
T	2:00 PM	MDT	49: Numerical investigation of internal two-phase flows in flow-blurring atomizers Y. Ling, L. Jiang University of South Carolina, Baylor University	59: Understanding Droplet Breakup Mechanism for an Unsteady Oscillating Spray Nozzle A. Hossain, M. Cloeter, J. Theuerkauf Dow Chemical
T	2:20 PM	MDT	53: Internal mixing nozzle geometry impact on the spray process using steam as dispersing medium U. Fritsching, M. R. Barbieri, L. Achelis University Bremen	20: Film and Spray Characteristics of Water on an Airfoil Surface in High-Speed Flows S. Safiullah, B. Esquivias, B. Hickey, V. McDonell University of California-Irvine
T	2:40 PM	MDT	65: In-nozzle Multiphase Flow Patterns in Flash Boiling Atomization and Their Impacts on External Sprays S. Wang, S. Qiu, Y. Zhang, D. Hung, X. Li, M. Xu Shanghai Jiao Tong University	51: Using Holographic Imaging to Study Fuel Injection in High-Speed Flows C. D. Scott, K. A. Sallam, K.-C. Lin, S. D. Hammack, C. D. Carter Oklahoma State University, Taitech, Inc., Air Force Research Laboratory
T	3:00 PM	MDT	Technical Committee Meeting <i>Spray Measurements, Salon E</i> <i>Diesel & Automotive, Salon A</i>	
T	3:50 PM	MDT	Break	
T	5:10 PM	MDT	Travel to banquet	
T	5:30 PM	MDT	Banquet and Awards Ceremony <i>National Museum of Nuclear Science & History</i>	
T	9:00 PM	MDT	Banquet Ends	

Session Start Time			Wednesday, May 17th, 2023	
W	7:00 AM	MDT	Breakfast with the Exhibitors <i>Salon F</i>	
W	8:00 AM	MDT	Opening Remarks <i>Salon A & E</i>	
W	8:15 AM	MDT	X-Ray Diagnostics Session Chairs: Kuo-Cheng Lin & Jason Burr <i>Salon E</i>	Droplet Phenomena Session Chair: Meghnaa Dhanji & Austin Goodrich <i>Salon A</i>
W	8:15 AM	MDT	7: X-ray Radiography Measurements of Spray Impingement on High-temperature Glow Plug Ignition Assistance Systems C.-Y. Moon, A. Karmarkar, B. Sforzo, A. Kastengren, C. Powell, E. Mayhew, K. Kim, J. Temme, C.-B. Kweon Argonne National Laboratory, Army Research Laboratory	12: Modeling spherical droplet evaporation using a shell based approach A. Dahale Convergent Science Inc.
W	8:35 AM	MDT	68: Two-Color X-ray Imaging for Material Differentiation in Multiphase Flows R. La Foy, B. Halls Sandia National Laboratories	21: On the Effects of Viscosity in Aerodynamic Droplet Breakup I. Jackiw, N. Ashgriz Massachusetts Institute of Technology, University of Toronto
W	8:55 AM	MDT	6: The Advanced Photon Source Upgrade and its Impact on Synchrotron Spray Research A. Kastengren, K. Fezzaa, J. Ilavsky Argonne National Laboratory	61: Characterizing size distributions for single drop impacts at high wall superheat R. Werner, E. Mayhew, K. Kim, J. Michael Iowa State University, Army Research Laboratory
W	9:15 AM	MDT	Break with the Exhibitors	
W	9:30 AM	MDT	Advances in Spray Diagnostics Session Chair: Julien Manin <i>Salon E</i>	Atomization & Spray Simulations II Session Chairs: Mark Owkes & Ambarish Dahale <i>Salon A</i>

			52: High-Speed Quantitative Imaging of Vapor and Liquid Phase Concentration Distributions in Evaporating Fuel Spray by Means of Two-Wavelength Laser Absorption Scattering Principle S. C. Rat, S. Naito, E. Liu, Y. Ogata, M. Andersson, K. Nishida, S. Matsumura BSMRSTU University, University of Hiroshima, Chalmers University of Technology, nac Image Technology	25: Simulating interfacial flows: a farewell to planes F. Evrard, R. Chiodi, B. van Wachem, O. Desjardins Cornell University, Otto-von-Guericke-Universität Magdeburg, Los Alamos National Laboratory
W	9:30 AM	MDT		
			64: Dense-field spray droplet size quantification of flashing boiling atomization using structured laser illumination planar imaging technique Q. Shuyi, W. Shangning, Z. Yijia, L. Xuesong, H. David, X. Min Shanghai Jiao Tong University	37: Improvements to a Dual-Scale Modeling Approach for Finite Weber Numbers D. Kedelty, M. Herrmann Arizona State University
W	9:50 AM	MDT		
				33: High-Fidelity Multi-Scale Simulation of Swirled Air-blast Atomization with Comparison against Experiments L. Bruni, O. Desjardins Cornell University, University of Pisa
W	10:10 AM	MDT		
W	10:30 AM	MDT	Boxed Lunch / Exhibitor Passport Drawing / Meeting Adjourn	