



Offline AIAA schedule that is actually useful.

← Checkout the code

Checkout the AIAA online version→



Monday, 23 January

09:00 | International Student Conference Presentations

ISC-02 | In Person - Mezzanine 2

Use of Naphthalene Sublimation Technique to Study Solid Fuel Regression

Monday, 23 January 09:00 - 09:30 (UTC-5) | AIAA-2023-0008

Grace A Hall (Virginia Tech Applied Research Corporation)

Optimization of Heat Release within a Dual-Mode Ramjet Using Ignition Delay Energy Source Terms

Monday, 23 January 09:30 - 10:00 (UTC-5) | AIAA-2023-0010

Francis A Centlivre (Wright State University)

Thermodynamic analysis of nitric oxide in an optically accessible, temperature-controlled gas cell via laser absorption spectroscopy

Monday, 23 January 10:00 - 10:30 (UTC-5) | AIAA-2023-0011

Benjamin Steavenson, Joseph Hernandez-McCloskey, Daniel I Pineda (The University of Texas at San Antonio)

A Multi-Agent UAS Path-finding Algorithm for Unmanned Traffic Management Operations

Monday, 23 January 10:30 - 11:00 (UTC-5) | AIAA-2023-0012

Justin Nguyen, Mujahid Abdulrahim (University of Missouri System)

Modification of Supersonic to Hypersonic Wind Tunnel by Designing Heat Exchanger for High Enthalpy Reservoir Conditions

Monday, 23 January 11:00 - 11:30 (UTC-5) | AIAA-2023-0013

Justin Slavick (California Polytechnic State University)

Reinforcement learning based Linear quadratic Regulator for the Control of a Quadcopter

Monday, 23 January 11:30 - 12:00 (UTC-5) | AIAA-2023-0014

Vishal Kashyap, Ranjan Vepa (Queen Mary University of London)

ISC-03 | In Person - Mezzanine 1

Jovian Autonomous Sailplane for Persistent Exploration and Research (JASPER)

Monday, 23 January 09:00 - 09:30 (UTC-5) | AIAA-2023-0015

Edward Luthartio, Haley Parker, Joseph Malach, Sydney Kwitowski, Aiman Alobahi, Alexander Hertz, Sayed Asif, Javid Bayandor (University at Buffalo)

Lunar Lava Tube Exploration with CubeRover: Wandering Observer of Lunar Features (WOLF) Rover

Monday, 23 January 09:30 - 10:00 (UTC-5) | AIAA-2023-0016

Bennett Meyer, Brigid Donohue, Alina Creamer, Manuel Puyana, Felix Ewere (NC State University)

Optimization of Lenz-Type VAWT Geometries with Computational Fluid Dynamics

Monday, 23 January 10:00 - 10:30 (UTC-5) | AIAA-2023-0017

Dylan M Habig, Timothy Mayer, Trevor Ransbury, Brandon Frymire, Luke McClung, Jamie Canino (Trine University)

Design of the UTSA High-Enthalpy Shock Tube Facility

Monday, 23 January 10:30 - 11:00 (UTC-5) | AIAA-2023-0018

Joseph Hernandez-McCloskey, Connor Goodman, Daniel I Pineda (The University of Texas at San Antonio)

Design of Large-Scale 3D Printed Components for UAV Cargo Transport

Monday, 23 January 11:00 - 11:30 (UTC-5) | AIAA-2023-0019

Cody Watson, Caroline Dixon, Nathan Kuczun, Jade Morton (University of Colorado Boulder)

Design of a Lunar Architecture for Tree Traversal in Service of Cabled Exploration

Monday, 23 January 11:30 - 12:00 (UTC-5) | AIAA-2023-0020

Kaila Coimbra, Calle Junker, Lucas Pabarcus, Malcolm G. A. Tisdale, Sravani Boggaram, Robert Daigle, Nathan Ng, Parul Singh, Tomas Wexler, Soon-Jo Chung (California Institute of Technology)

ISC-01 | In Person - Mezzanine 3

Estimation of UAS Relative Position and Orientation Using Multiple Pairwise Range Measurements

Monday, 23 January 09:00 - 09:30 (UTC-5) | AIAA-2023-0001

Ezra Bregin (University of Maryland at College Park)

(continued) ISC-01 In Person - Mezzanine 3	
Design, Analysis, and Manufacture of a Vacuum Pump Sound-Dampening Enclosure	
Monday, 23 January 09:30 - 10:00 (UTC-5) AIAA-2023-0003	
Connor Goodman, Joseph Hernandez-McCloskey, Daniel I Pineda (The University of Texas at San Antonio)	
Design of an All-Terrain Aerial Robotic Interface (ATARI) as a Collaborative Platform for UAVs	
Monday, 23 January 10:00 - 10:30 (UTC-5) AIAA-2023-0002	
Rebecca Gilligan (University of Cincinnati)	
Development and Fabrication of an Ultrasonic MEMS Anemometer for Use in Low-Pressure Environments	
Monday, 23 January 10:30 - 11:00 (UTC-5) AIAA-2023-0006	
Alexander Reilly, Mark Sheplak (University of Florida)	
Experimental Verification of the USAFA 1-DOF Dynamic Stability Characterization Capability and Future 3-DOF Cross Coupling Enhancements	
Monday, 23 January 11:00 - 11:30 (UTC-5) AIAA-2023-0004	
Molly Ellinger, Jacob J Szymanski, Casey Fagley (US Air Force Academy)	
Thermal Analysis of Boron/PVDF and Boron Carbide/PVDF Mixtures	
Monday, 23 January 11:30 - 12:00 (UTC-5) AIAA-2023-0005	
Moussa Coulibaly, Joseph Kalman (California State University Long Beach)	
Symmetry-Enforced Coherent Structure Background Oriented Schlieren	
Monday, 23 January 12:00 - 12:30 (UTC-5) AIAA-2023-0007	
Daniel Smith (Monash University)	

09:30 | Technical Panel

SD-05 In Person - Chesapeake B
TF-01/EAT-01 In Person - Woodrow Wilson D
PC-01 In Person - National Harbor 13
MST-01 In Person - Baltimore 3

09:30 | Technical Paper Session

ACD-01 In Person - Woodrow Wilson A	
Aerodynamic Characterization of Wing-Wing Interactions for Distributed Lift Applications	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0030	
Nevin Jestus, Sidaard Gunasekaran (University of Dayton), Michael P Mongin, Aaron Altman (Air Force Research Laboratory)	
Extended High Lift Characteristics of Distributed Lift Configurations	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0031	
Michael P Mongin, Aaron Altman (Air Force Research Laboratory), Sidaard Gunasekaran (University of Dayton School of Engineering)	
Drag Reduction Techniques for eVTOL Configuration with Shrouded Rotors	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0032	
Wanzheng Zheng, Jason M Merret (University of Illinois Urbana-Champaign)	
Multhopp’s Method for the Pitching Moment of Bodies Revisited	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0033	
Bruno Moorthamers, Willem A Anemaat (DARcorporation)	
AFM-01 In Person - Magnolia 2	
Bandwidth Modulating Structured Compensators for Aviation Safety	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0034	
Chimpalthradi R Ashokkumar (Smartools, LLC)	
Flight Simulator Study Results on Landing Approaches with Automatic and Continuously Moving High-Lift Devices	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0035	
Pia Eichhorn, Flávio J. Silvestre (Technische Universitat Berlin)	
Modeling, simulation, and control of an aircraft with adjustable wing dihedral	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0036	
Ryan D. Fisher, Mohamed A Zakaria, Craig A Woolsey (Virginia Polytechnic Institute and State University)	

(continued) AFM-01 | In Person - Magnolia 2

Maximum Travel Speed of Dynamic Soaring Considering Atmospheric Stability Condition
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0037
Haichao Hong (Technische Universitat Munchen), Luoqin Liu (University of Science and Technology of China), Alexander Zwenig, Gottfried Sachs (Technische Universitat Munchen)
Effects of Active Wing-Morphing on Aircraft Fuel Burn along Fuel-Optimal Trajectories
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0038
Jeffrey D Taylor, Douglas F Hunsaker (Utah State University)

GNC-01 | In Person - Annapolis 2

Development and Experimental Testing of Flight Path Control using Total Energy Control and SISO Control Loops
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0104
Henrik Spark, Pedro José González Ramirez, Christopher Ruwisch, Wolfram Meyer-Brügel, Flávio J. Silvestre (Technische Universitat Berlin)
Handling Quality Improvements for the Flying-V Aircraft using Incremental Nonlinear Dynamic Inversion
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0105
Simon van Overeem, Xuerui Wang, Erik-Jan Van Kampen (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)
Attitude Control for High Altitude Long Endurance Aircraft Considering Structural Load Limits
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0106
Christian Weiser, Simon Schulz (Deutsches Zentrum für Luft- und Raumfahrt DLR Standort Oberpfaffenhofen), Arne Voß (Deutsches Zentrum für Luft- und Raumfahrt DLR Standort Gottingen), Daniel Ossmann (Hochschule Munchen)

SEN-01 | In Person - Chesapeake C

GlareNet: A Deep Learning Approach To Removing Glare From Images Taken in Proximity Operations
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0191
Sournav Sekhar S Bhattacharya, Aaron David Su, Gregory Errol Chamitoff (Texas A&M University System)
Transference of Training for a DNN to Complete the Aerial Refueling Task
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0192
Donald H Costello, Mwaffo Violet, Dillon Miller (US Naval Academy)
Uncertainty-based Sensor Fusion Architecture using Bayesian-LSTM Neural Network
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0193
Patrick Geragersian, Ivan Petrunin, Weisi Guo (Cranfield University), Raphael Grech (Spirent Communications plc)
Reinforcement Learning for Pan-Tilt-Zoom Camera Control, with Focus on Drone Tracking
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0194
Mariusz Wisniewski, Zeeshan A. Rana, Ivan Petrunin (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)
Evaluation of Machine-Learning Data Fusion Classifier Performance for Ship-Wake Detection with Modified Data Sets
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0195
Daniel Sobien, Justin A Kauffman, Erik Higgins, Laura Freeman, Jonathan S Pitt (Virginia Polytechnic Institute and State University)

HIS-01 | In Person - Chesapeake 10

A Break from Tradition: The “New” 14 C.F.R. Part 23 and Consensus Standards
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0116
Jack A Griffin, Timothy T Takahashi (Arizona State University Ira A Fulton Schools of Engineering)
Developments in the Federal Regulation of Personal Air Vehicles
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0117
Connor S Hoopes, Timothy T Takahashi (Arizona State University Ira A Fulton Schools of Engineering)

PGC-02 | In Person - National Harbor 2

Flow Characterization of a Rotating Detonation Combustor Integrated with Various Convergent Nozzles
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-1295
Ajay K Agrawal, Shaon Talukdar, Dalton Langner, Apurav Gupta (The University of Alabama)
Experimental Research on Internal Flow Structure of Cylindrical Rotating Detonation Engine Using Ethanol
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-2563
Tomoki Sato, Kazuki Ishihara, Shiro Ito, Noboru Itouyama, Akira Kawasaki, Ken Matsuoka, Jiro Kasahara (Nagoya Daigaku), Akiko Matsuo (Keio University), Ikkoh Funaki (Japan Aerospace Exploration Agency (JAXA))
Simulations of an Experimental Centerbody-less Rotating Detonation Combustor
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-2564
Douglas A Schwer, Ryan F Johnson (US Naval Research Laboratory), Ephraim Gutmark (University of Cincinnati)

(continued) PGC-02 | In Person - National Harbor 2

Effects of Injection Pressure on Rotating Detonation Engine Operation

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0174
Osman Kocaaslan (Selcuk University), Bayindir H Saracoglu (Von Karman Institute For Fluid Dynamics), Kursad Guleren (Istanbul Aydin Universitesi), Tolga Yasa (Eskisehir Teknik Universitesi)

Experimental Study of the Invariance of Pressure Gain with Respect to the Dynamics of Multiple Competing Waves in a Rotating Detonation Combustor

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1296
Alexander Feleo, Joshua Shepard, Mirko Gamba (University of Michigan)

PGC-01 | In Person - National Harbor 3

Ideal Analysis of an Unsteady Detonation Based Combustion Cycle

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0169
Robert T Fievisohn (Air Force Research Laboratory)

Validation of a Density Base Navier-Stokes solver simulating the startup deflagration to detonation process of Rotating Detonation Engine (RDE)

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0171
Bruce G Crawford, Ishan Verma, Stefano Orsino, Jean-Sébastien Cagnone (ANSYS Inc)

Parametric non-intrusive reduced-order models via operator inference for large-scale rotating detonation engine simulations

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0172
Ionut Farcas (The University of Texas at Austin Oden Institute for Computational Engineering and Sciences), Rayomand Gundevia, Ramakanth Munipalli (Edwards Air Force Base), Karen E Willcox (The University of Texas at Austin Oden Institute for Computational Engineering and Sciences)

Investigation of Three RDE Architectures for Propulsion Applications

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0173
Venkat E Tangirala, Anthony J Dean (Self)

SD-04 | In Person - Baltimore 5

Roll Maneuvers of Very Flexible Aircraft with Flared Folding Wingtips

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0186
Divya Sanghi, Carlos E Cesnik (University of Michigan), Cristina Riso (Georgia Institute of Technology)

Study of geometrical effects on slosh induced damping

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0187
Marco Pizzoli, Francesco Saltari, Giuliano Coppotelli, Franco Mastroddi (Universita degli Studi di Roma La Sapienza)

Wing nonlinear aerostatic stability analysis using an efficient modal-based approach

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0188
Miguel Rodriguez-Segade Alonso (Universidade da Coruna Escuela Tecnica Superior de Ingenieros de Caminos Canales y Puertos), Miguel Cid Montoya (Texas A&M University), Santiago Hernández (Universidade da Coruna Escuela Tecnica Superior de Ingenieros de Caminos Canales y Puertos)

Generation of Generalised Aerodynamic Forces Through CFD Based Methods for Aeroelastic Stability Analysis

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0189
Errol Hale, Vincenzo Muscarello, Pier Marzocca (RMIT University), Oleg Levinski (Defence Science and Technology Group)

An Approach for Nonlinear Aeroelastic and Flight Dynamic Analyses for Very Flexible Aircraft at Trim States of Large Deformations

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0190
Jonathan Hilger, Markus Ritter (Deutsches Zentrum fur Luft- und Raumfahrt eV)

EP-01 | In Person - Chesapeake 11

Array-scale Modeling of Electrospray Ion Plumes within AFRL Plume Simulation Tool TURF

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0063
Adler Smith, Elaine Petro (Cornell University)

The Dispersion of Lower-Hybrid Instabilities and Comparisons with Measurements Near the Front Pole of a Magnetically Shielded Hall Thruster

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0064
Ioannis G Mikellides, Alejandro Lopez Ortega, Robert B Lobbia, Vernon H Chaplin (Jet Propulsion Laboratory)

Numerical Investigation of Carbon Sputtering and Transport for the Ion Thruster Testing in the Ground Facility

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0065
Keita Nishii, Deborah A Levin (University of Illinois Urbana-Champaign)

(continued) EP-01 | In Person - Chesapeake 11

Optimal experimental design to learn reduced-fidelity models for porous electrosprays
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0066
Joshua Eckels, Collin B Whittaker, Benjamin Jorns, Alex Gorodetsky (University of Michigan)
Evaluation of Hall thruster anomalous transport models obtained via data-driven discovery
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0067
Thomas A Marks, Benjamin Jorns (University of Michigan)

AS-01 | In Person - Chesapeake 1

Exploring Geometric and Material Property Model Limitations of Magnetorheological Sandwich Beams
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0058
Christian G Vazquez, Jeffrey L Kauffman (University of Central Florida College of Engineering and Computer Science)
Transparent Piezoelectric LiNbO3-based Surface Acoustic Wave for Dust Mitigation in Space Environment
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0059
Alexander C Hatfield, Tian-Bing Xu (Old Dominion University)
Towards Mistuning Characterization of Blisk Components Through use of Piezoelectric Elements
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0060
Andres M. Rodriguez (University of Central Florida)
Fatigue damage detection in self-healing composites using macro fiber composite sensors
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0061
Nilesh J Vishe, Sankha Subhra Aditya, Sameer B Mulani, Samit Roy (The University of Alabama)

SD-03 | In Person - Chesapeake 8

Hybrid-fidelity Thermal Modeling with Domain Decomposition for Path-dependent Hypersonic Flight
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0183
Christopher S Weston, Carlos E Cesnik (University of Michigan)
Performance Analysis of Kriging and Neural Network Modelling of Hypersonic Vehicle Properties
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0184
Michael Jones, Carlos E Cesnik (University of Michigan)
Development of a High-Order Fluid-Structure Interaction Solver for Flexible Wings
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0185
Braden E Frigoletto, Vivek Ojha, Krzysztof Fidkowski, Carlos E Cesnik (University of Michigan)

AFM-02 | In Person - Camellia 2

Excitation Monitoring for Online Parameter Estimation
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0039
Simon F Hafner, Seyedbarzin Hosseini, Florian Holzapfel (Technische Universitat Munchen)
Nonlinear Dynamic Model Identification for Aircraft with Unknown Mass Properties Using Flight Data
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0040
Benjamin M Simmons, James L Gresham, Craig A Woolsey (Virginia Polytechnic Institute and State University)
System Identification of Pneumatic Dynamics for Active Flow Control Aircraft
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0041
Christian M. Griffith, Imraan Faruque (Oklahoma State University)

APA-04 | In Person - Potomac 6

Application of Active Flow Control Technologies for Improving the Stability Pitch Break Characteristics of a Generic Delta-Wing Configuration
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0052
John R Hooker (Helden Aerospace Corporation)
Feasibility of a Spinning Cylinder on the Leading and Trailing Edges of a Flap for High Lift
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0053
Antoine Francannet, Simon Prince, Davide Di Pasquale, Anderson Proenca (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)
Computational Study of Passive Flow Control for a MAV-Scale Eppler E423 Airfoil
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0054
Salman K Rahmani, Zhi Jian Wang (University of Kansas School of Engineering)

FD-02 | In Person - Chesapeake F

Surrogate-Based Exploration of Active Separation Control Parameters: An Experimental Study
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0076
Stephan Löffler, Ben Steinfurth, Julien Weiss (Technische Universität Berlin Fakultät V Verkehrs- und Maschinensysteme)
Resolvent-based estimation of laminar flow around an airfoil
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0077
Junoh Jung, Rutvij Bhagwat, Aaron Towne (University of Michigan)
Characterizing Boundary Layer Mechanisms and Recovery Following Viscous Drag Reduction
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0078
Andrew Myers, Thomas C Corke, Flint O Thomas (University of Notre Dame College of Engineering)
Low Frequency Characteristics of a Pressure-Gradient Induced Turbulent Separation Bubble
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0079
Ross Richardson, Yang Zhang, Louis N Cattafesta (Florida State University)

INPSI-01 | In Person - National Harbor 12

Variable Busemann Inlet Geometries for Hypersonic Vehicles
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0122
Laurel K Clemence, Zachary P White, Adam R Kotler, Mason Redman Thornton, Kareem A Ahmed (University of Central Florida)
Heat Transfer Augmentation with Pin Fins in the Entry Region of Circular Channels
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0123
Evan C Lundburg, Stephen P Lynch (The Pennsylvania State University), Michael Eric Lyall (Air Force Research Laboratory)

FD-03 | In Person - Chesapeake G

Characterization of Downstream Effects from a WavyWall on a Hollow Cylinder at Mach 4
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0080
James R Chism, Phillip A Kreth, John D Schmisser (The University of Tennessee Space Institute)
Effect of Ramp-Induced Shock/Boundary Layer Interaction on the Vibration of a Compliant Panel at Mach 5
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0081
Marc A Eitner, Yoo-Jin Ahn, Mustafa Nail Musta, Jayant Sirohi, Noel Clemens (The University of Texas at Austin)
Computational Study of Planar Shock Bubble Interactions
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0082
Frederick Ferguson, Dehua Feng, Yang Gao (North Carolina Agricultural and Technical State University)
Analysis of the Flow Physics of Transonic Flutter Using Energy Maps
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0083
Jacob Turner, Jung Hee Seo, Rajat Mittal (Johns Hopkins University)

FD-01 | In Person - Chesapeake E

Validation of a Hypersonic-Flow Solver within scFLOW, a Comprehensive Polyhedral-Grid CFD Package
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0072
Yusuke Higo, Yoshitaka Nakashima (Hexagon AB), Hiroaki Nishikawa (National Institute of Aerospace)
Development of a hybrid particle-continuum solver for studying plume expansion into rarefied flows
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0073
Ozgur Tumuklu (The University of Arizona), Josette R Bellan (Jet Propulsion Laboratory), Kyle M. Hanquist (The University of Arizona)
Development of a Thermodynamic Nonequilibrium and Weakly Ionized Plasma Flow Modeling Capability in Loci/CHEM
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0074
Michael R Nucci (ATA Engineering, Inc.), Matthew G MacLean (CUBRC), Eric Blades (ATA Engineering, Inc.)
Linear Theory of Hypersonic Shocks Interacting with Turbulence in Air
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0075
Alberto Cuadra Lara, Marcos Vera Coello (Universidad Carlos III de Madrid - Campus de Leganes), Mario Di Renzo (Universita del Salento Dipartimento di Ingegneria), César Huete Ruiz de Lira (Universidad Carlos III de Madrid - Campus de Leganes)

FD-07 | In Person - Chesapeake K

Ultrasonically Absorptive Silicon-Carbide Foam for Boundary-Layer Control
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0096
Benjamin L Bemis, John L Brun, C. Taber Wanstall (University of Dayton), Jonathan L Hill (Air Force Institute of Technology), Matthew P Borg (Air Force Research Laboratory Aerospace Systems Directorate), Joel J Redmond, Matteo Ruggeri (Purdue University), Karl Jantze, Carlo Scalo (HySonic Technologies LLC), Carson L Running (University of Dayton)

(continued) FD-07 | In Person - Chesapeake K

Application of Miniature Vortex Generators for Boundary Layer Transition Delay

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0097
Andre Weingaertner, Santhosh Babu Mamidala, Jens H.M. Fransson (Kungliga Tekniska Hogskolan Skolan for Teknikvetenskap)

Leading-Edge Curvature Influence on Hypersonic Boundary Layer Transition

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0098
Jonathan L Hill (Air Force Institute of Technology), Matthew P Borg, Matthew W Tufts, Elizabeth Katherine Benitez (Air Force Research Laboratory), Mark F Reeder (Air Force Institute of Technology)

Experiments on Streamwise Vortex Mitigation Using Two-Dimensional Shielding Strips

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0099
Eleazar Herrera Hernandez, William Matthews, Ezequiel Justiniano, Edward B White (Texas A&M University System), David B Goldstein, Saikishan Suryanarayanan (The University of Texas at Austin)

HSABP-01 | In Person - National Harbor 4

Investigation of a High Speed Inlet/Isolator with Global Surface Measurements and Background Oriented Schlieren

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0119
Andrew Bustard, Tatsunori Hayashi, Hannah Gillespie, Jonathan Davami, Thomas J Juliano (University of Notre Dame)

Dual-Mode Scramjet Control Using Optical Emission Sensors

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0120
Laurie A Elkowitz, Andrew J Wanchek, Robert D. Rockwell, Christopher P Goyne, Chloe E Dedic (University of Virginia), Qiang Le, Janet Walter-Williams, Darrien Hunt (Hampton University School of Science)

Development of a Swirl-Stabilized Hydrogen Vitiator

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0121
Nicholas L Strahan, Reed Geiger, Charlie H Black, Carson D Slabaugh (Purdue University)

IS-03 | In Person - Magnolia 3

Data-driven Health Management System for Multi-Spacecraft Formation Flying

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0129
Tatiana Gutierrez, Nolan Coulter, Hever Moncayo (Embry-Riddle Aeronautical University), Yashwanth Kumar Nakka, Changrak Choi, Amir Rahmani (Jet Propulsion Laboratory), Akshita Gupta (Purdue University)

Adaptive Control of a Flexible Wing for Flutter Suppression and Disturbance Rejection

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0130
Patrick S Downs, Richard J Prazenica (Embry-Riddle Aeronautical University)

A Modular Approach to Verification of Learning Components in Cyber-Physical Systems

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0131
Lijing Zhai, Aris Kanellopoulos, Filippos Fotiadis, Kyriakos G Vamvoudakis (Georgia Institute of Technology), Jérôme Hugues (Carnegie Mellon University)

Towards an Architecting Framework for the Design of Self-healing Resilient Systems, enabled by Reinforcement Learning-based Reconfiguration

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0132
Michael G Balchanos, Matthew R Rines, Olivia J Pinon-Fischer, Dimitri N Mavris (Georgia Institute of Technology)

GNC-02/IS-01 | In Person - Annapolis 4

Drone-based Automated Exterior Inspection of an Aircraft using Reinforcement Learning Technique

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0107
Yufeng Sun, Ou Ma (University of Cincinnati)

Planning Visual Inspection Tours for a 3D Dubins Airplane Model in an Urban Environment

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0108
Collin Hague, Andrew Willis, Dipankar Maity, Artur Wolek (UNC Charlotte)

Artificial Neural Network Cooperative Localization for Autonomous Systems

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0109
Robert J Geng, Travis W Moleski, Jay Wilhelm (Ohio University)

Multi-Sensor Fusion for Decentralized GPS-Denied Robotic Swarm Cooperative Navigation

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0110
Vincent Hill, Jordan Larson (The University of Alabama)

(continued) GNC-02/IS-01 | In Person - Annapolis 4

Body-Fixed Laser Range-Finder Based Multirotor Recovery

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0688
Stanislav Shougaev, Moshe Idan (Technion Israel Institute of Technology)

AA-01 | In Person - Baltimore 1

A study of Mach wave coalescence using spark sources and large-eddy simulation

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0021
William A Willis, John A Valdez (The University of Texas at Austin Applied Research Laboratories), Pierre Pineau, Christophe Bogey (Ecole Centrale de Lyon), Charles E Tinney, Mark F Hamilton (The University of Texas at Austin Applied Research Laboratories)

Single-Stream Empirical Jet-Noise Models Based on Scale-Model Data

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0022
Brenda S Henderson (NASA Glenn Research Center)

3D Nonlinear Integral Technique Based on Linearized Euler Equations for the Prediction of Supersonic Rectangular Jet Noise Sources

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0023
Benjamin J Malczewski, Reda R Mankbadi (Embry-Riddle Aeronautical University)

Effect of Nozzle Geometry on Near-Field Modal Content of a Screeching Jet

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0024
Kyle Miller, David Morata, Dimitri Papamoschou (University of California Irvine)

High Fidelity Simulations of Active Control of Coherent Structures in Axisymmetric Jet

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0025
Michael Marques Goncalves, Vladimir V Golubev (Embry-Riddle Aeronautical University), Sam Salehian (Tuskegee University), Reda R Mankbadi (Embry-Riddle Aeronautical University)

IS-02 | In Person - Annapolis 3

An iterative scheme to learn system dynamics of space objects from partial state information

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0124
Sriram Narayanan, Indranil Nayak, Mrinal Kumar (The Ohio State University)

Peaking into the Black-box: Prediction Intervals Give Insight into Data-driven Quadrotor Model Reliability

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0125
Jasper J van Beers, Coen C de Visser (Technische Universiteit Delft)

Vision-based Perception with Safety Awareness for UAS Autonomous Landing

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0126
Zhenhao Zhao, Jonathan Lee, Zongyao Li, Chung Hyuk Park, Peng Wei (The George Washington University School of Engineering and Applied Science)

Landing Trajectory Prediction for UAS Based on Generative Adversarial Network

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0127
Jun Xiang, Junfei Xie, Jun Chen (San Diego State University)

Deep Reinforcement Learning Controller for Autonomous Tracking of Evasive Ground Target

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0128
David van Wijk, Kameron J Eves, John Valasek (Texas A&M University)

EXPL-01 | In Person - Annapolis 1

3D Printed Lunar Landing Pad Design Iteration and Analysis

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0068
Peter J Albrecht, Helen Carson (University of Washington), Alyssa Bulatek (University of Florida, Gainesville), Andres I Campbell (Minnesota State University Mankato), Luke Martin, Michael Oswalt (Arizona State University), Vincent Murai (University of Hawai'i at Manoa), Kayla Schang, Alexander Nicola (University of Central Florida), Ethan Romo (University of California Santa Cruz), Kaveon Smith (Venesco LLC)

Magnetic Subsystem Design and Testing for the NASA Magnetic Latching Cryogenic Coupler

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0069
Paul S Bean, Nic Heersema, Andrew Holguin, Jonathan Lopez-zepeda, Scott L Stebbins (NASA Armstrong Flight Research Center)

Effect of Pressure on Liquid Nitrogen Flow Boiling in Additively Manufactured Rocket Engine Cooling Channels

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0070
Debra Ortega, Alejandro Amador, Alejandro Silva, Ahsan R Choudhuri, Md Mahamudur Rahman (The University of Texas at El Paso)

MDO-01 In Person - Chesapeake A	
Toward Gradient-Based Optimization of Vehicle Shape and Operational Effectiveness	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0145 Christopher A. Lupp (Air Force Research Laboratory)	
Low-Noise Propeller Design with the Vortex Lattice Method and Gradient-Based Optimization	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-2039 Daniel Ingraham (NASA Glenn Research Center)	
Design of an Aeroelastically Scaled Model in a Compressible Air Wind Tunnel Facility Using Multifidelity Multi-Objective Bayesian Optimization	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-2040 Daning Huang (The Pennsylvania State University - University Park Campus), Ashwin Renganathan (The University of Utah), Mark A Miller (The Pennsylvania State University - University Park Campus)	
Large-Scale Multidisciplinary Design Optimization of an eVTOL Aircraft using Comprehensive Analysis	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0146 Darshan Sarojini, Marius L Ruh, Anugrah Jo Joshy, Jiayao Yan, Alexander K Ivanov, Luca Scotzniovsky (University of California San Diego), Andrew H Fletcher (University of Illinois Urbana-Champaign), Nicholas C Orndorff, Mark Sperry, Victor Evan Gandarillas (University of California San Diego), Issac Asher, Jeffrey T Chambers (Aurora Flight Sciences), Hyunjune Gill, Seongkyu Lee (University of California Davis), Zeyu Cheng, Gabriel Rodriguez, Shuofeng Zhao, Chris Mi (San Diego State University), Thomas Nascenzi, Timothy Cuatt, Tyler F Winter (M4 Engineering), Alexandre Thomas Guibert, Ashley Cronk, Hyunsun A Kim, Shirley Meng, John T Hwang (University of California San Diego)	
PDL-01/AMT-01 In Person - Azalea 3	
Wavefront Retrieval from Irradiance Measurements using Inverse Design Methods	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0164 Christopher Limbach (Texas A&M University)	
Assessment of classical theory of laser propagation through turbulence using well-resolved direct numerical simulations	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0165 Dillon Motley, Komal Kumari, Diego A Donzis (Texas A&M University)	
Evaluating the role of product gas composition in vibrational relaxation in pulsed microwave plasma-enhanced flames	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0166 Fynn Reinbacher, Sarang Bidwai, James B Michael (Iowa State University), Ryan J Thompson, Chloe E Dedic (University of Virginia School of Engineering and Applied Science)	
CARS in an Inductively Coupled Plasma Torch, Part 1: High Temperature Nitrogen Thermometry	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0167 Dan Fries, John S Murray, Spenser Stark, Noel Clemens, Philip L. Varghese (The University of Texas at Austin), Rajkumar Bhakta, Elijah Jans, Sean P Kearney (Sandia National Laboratories)	
CARS in an Inductively Coupled Plasma Torch, Part 2: Temperature and Carbon-Monoxide Measurements in the Reaction Layer of a Graphite Ablator	
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0168 Sean P Kearney, Rajkumar Bhakta (Sandia National Laboratories), Dan Fries, John S Murray, Spenser Stark, Noel Clemens, Philip L. Varghese (The University of Texas at Austin Cockrell School of Engineering)	
APA-05 In Person - Potomac 2	
Experimental and numerical comparison of different missile body cross sectional shapes	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0055 Nathan Shumway, Mehdi Ghoreyshi (US Air Force Academy)	
Dynamic Pressure Measurements in a Rectangular Cavity with Multiple Stores	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0056 Eric D Smith, Rajan Kumar (Florida A&M University-Florida State University College of Engineering), Timothy A Eymann (Air Force Research Laboratory)	
Very-Large Eddy Simulations of Transonic Flows within a Jet-Fighter Weapon Bay with Internal Store	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0057 Ignacio Gonzalez-Martino (Dassault Systemes SE), Netanel Viner (ADCOM Consulting), Hadar Ben-Gida (Israeli Air Force)	

LP-01 | In Person - National Harbor 14

CFD Design and Analysis of a Perforated Plate for the Control of Cryogenic Flow under Reduced Gravity
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0133 Jason W Hartwig (NASA Glenn Research Center), Narottama Esser (University of Florida), Shreykumar Jain (Georgia Institute of Technology), David Souders (Flow Sciences), Allen Varghese, Angelo Tafuni (New Jersey Institute of Technology)
Conjugate Heat Transfer Analysis of the Wall Heat Flux in a Liquid Rocket Engine using Wall Models
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0134 Matthew Evan Harvazinski, Tomas Houba (Air Force Research Laboratory Aerospace Systems Directorate)
Rechargeable RCS Tank Operations Using Cryocoolers
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0135 Tony Skaff, Ama R Carney, Lauren Gronich (Sierra Lobo, Inc.)
Effects of Varying Characteristic Injection Parameters and Geometric Configurations on the Cyclonic Flowfield in a Bidirectional Vortex Chamber Using Velocity Inlet Conditions
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0136 Gaurav Sharma, Joseph Majdalani (Auburn University)
Intelligent Rocket Engine Control with Reinforcement Learning: Experimental Results of the LUMEN LNG Turbopump Test Campaign
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0137 Kai Dresia, Antonius Adler, Günther Waxenegger-Wilfing, Tobias Traudt, Jan Deeken (Deutsches Zentrum für Luft- und Raumfahrt eV), Michael Oschwald (Rheinisch-Westfälische Technische Hochschule Aachen)

MST-02 | In Person - Baltimore 4

Physics-based recurrent neural network model for flight path trajectory prediction under high-altitude stall
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0147 Mohamed Hamza, Venkatasatyanand Mutnur (Arizona State University), Hwa-Young Kim (Dongguk University), Aditi Chattopadhyay (Arizona State University)
Enabling Thread Safety and Parallelism in the Program to Optimize Simulated Trajectories II
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0148 Robert A Williams, Rafael A Lugo (NASA Langley Research Center), Steven M Marsh, James A Hoffman, Jeremy D Shidner, John T Aguirre (Analytical Mechanics Associates, Inc.)
pyaerso: A Rust-backed Python Module for Accessible Flight Dynamics Modelling for Machine Learning
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0149 Robert J Clarke, Liam J Fletcher, Thomas S Richardson (University of Bristol)
Development of Flight Control Software Framework for X-Plane 11 and ROS-based Flight Simulation Environment
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0150 Sungwook Cho (Cheongju University), Yeondeuk Jung (Korea Aerospace Industries Ltd)
Open Source Toolbox for Generalized Polynomial Chaos Expansion-based Uncertainty Quantification for sUAS Traffic Operations
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0151 Aakarshan Khanal, Rajnish Bhusal, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington), Wendy Okolo (NASA Ames Research Center)

MAT-01 | In Person - Chesapeake 2

Multiscale Modeling of Composite Materials under Volumetric and Interfacial Damage: Achieving Adaptive Model Order Reduction
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0138 Min Lin (University of Wyoming), David Brandyberry (University of Illinois Urbana-Champaign), Xiang Zhang (University of Wyoming)
Multiscale Modeling of Carbon Fiber Reinforced Composites with a Cohesive Interface Model
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0139 Neslihan Genckal, Gary Don Seidel, Shengfeng Cheng (Virginia Polytechnic Institute and State University)
Multiscale Modeling of Thermoplastics Using Atomistic-informed Micromechanics
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0140 Evan J Pineda (NASA Glenn Research Center), Jamal Hussein (University of Massachusetts Lowell), Joshua Kemppainen, Gregory M Odegard (Michigan Technological University), Brett A Bednarczyk (NASA Glenn Research Center), William Pisani (U.S. Army Engineer Research and Development Center), Scott E Stapleton (University of Massachusetts Lowell)
In-Situ Micro-scale Characterization of Parachute Textiles with Micro-Tomography and Machine Learning
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0141 Cutler Phillippe, Marco Mattei, Francesco Panerai, Laura Villafañe Roca (University of Illinois Urbana-Champaign)

(continued) MAT-01 | In Person - Chesapeake 2

2D Materials Guided Self-assembly of Polymer: Molecular Dynamics Simulation Study

Monday, 23 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0142
Akash Singh, Yumeng Li (University of Illinois Urbana-Champaign)

NFFP-01 | In Person - Chesapeake 12

Considerations for Radiator Design in Multi-Megawatt Nuclear Electric Propulsion Applications

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0152
William S Machemer, Matthew Ernest Duchek, Dennis Nikitaev (Analytical Mechanics Associates, Inc.)

Mission Design Analysis with Centrifugal Nuclear Thermal Propulsion

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0153
William Ziehm, Lawrence Thomas (The University of Alabama in Huntsville College of Engineering)

OPS-01 | In Person - National Harbor 15

A Comparison of Control Strategies for Contact Force Manipulation During Simulated On-Orbit Contact Events

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0154
Thomas A. Battista, Michael Andonian, Jake Singh, Ashtin K Cheng, Kevin Chow (The Aerospace Corporation)

Robot Guided Emergency Evacuation from a Simulated Space Station

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0156
Brett Sheeran, Alan R. Wagner (The Pennsylvania State University - University Park Campus), Colin Holbrook, Daniel Holman (University of California Merced)

Adaptive Detumbling of Uncontrolled Planar Spacecraft using Finite Module Deposition

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0158
Ian Down, Manoranjan Majji (Texas A&M University)

Using Small Satellites to Construct an In-Space Test Platform for Risk Reduction

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2214
Elozor Plotke, Peter C Lai (LinQuest Corp), Roberta M Ewart (United States Space Force)

AA-02 | In Person - Baltimore 2

getPROP - A MATLAB Suite for Low-Signature Propeller Design, Analysis, and Optimization

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0026
Aleksandra Kvurt, Dor Ruf, Ofek Hertzman (Israeli Air Force), Oksana Stalnov (Technion Israel Institute of Technology), Hadar Ben-Gida (Israeli Air Force)

Comparison of Prediction Modeling Methodologies for Aeroacoustic Characterization of Hovering sUAS Rotors

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0027
Christopher Thurman, David Douglas Boyd, Benjamin M Simmons (NASA Langley Research Center)

Unsteady RANS and Scale Resolving Simulations of Open Rotor Noise

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0028
Ercan Dumlupinar, Jeffrey Allen Housman, Gaetan K. Kenway, Cetin C Kiris (NASA Ames Research Center)

Application of Data Reduction Methodologies To Prediction of Rotor Noise

Monday, 23 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0029
Samuel Afari, Reda R Mankbadi (Embry-Riddle Aeronautical University)

PC-03 | In Person - National Harbor 8

The Influence of Chemical Reaction Models on Combustion Dynamics in an Opposed-Flow Solid Fuel Burner

Monday, 23 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0161
Ryan D DeBoskey (Syntek Technologies Maryland Office), David A Kessler, Brian T Bojko, Ryan F Johnson, Gabriel B Goodwin (US Naval Research Laboratory)

HTPB Combustion Temperature Measurements

Monday, 23 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0162
Clayton Matthias Geipel, Christopher J Pfutzner, Brian T Fisher (US Naval Research Laboratory)

Radiative Heat Transfer in a Counterflow Diffusion Flame Containing Reacting Metal Particles

Monday, 23 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0163
Trushant K Patel, David A Kessler, Brian T Bojko (US Naval Research Laboratory)

APA-02 In Person - Potomac 5	
Airbrake CFD Analysis for Land Speed Record Vehicles	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0045	
Antoine Gilles (Ecole de l'air), Ioan I Feier (US Air Force Academy)	
Multi-track, Multi-rider Human Powered Land Speed Vehicle Aerodynamic CFD Analysis	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0046	
Julius Roger (Ecole de l'air), Ioan I Feier (US Air Force Academy)	
Wheel Rotation Modeling Effects on the Flowfield Around DrivAer Notchback Model Variants	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0047	
Matthew T Aultman, Lian Duan (The Ohio State University)	
Evaluation of CFD methodologies for Predicting Wind Noise Sources over the Front Side Window of a Sport Utility Vehicle	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0048	
Hang Li, Lian Duan (The Ohio State University), Rodrigo Auza-Gutierrez, Austin Kimbrell (Honda R&D Americas, Inc.)	
Boundary Layer Turbulence Flight Experiment in Memory of Dr. Michael Holden: Project Definition (Invited Talk)	
Monday, 23 January 09:30 - 09:50 (UTC-5)	
FD-04 In Person - Chesapeake D	
Hypersonic Boundary Layer Transition of the BoLT-2 Flowfield at Flight Conditions, BOLT II Flight Test	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0084	
Zachary M Johnston, Graham V Candler (University of Minnesota Twin Cities)	
Hypersonic Stability and Breakdown Measurements on the AFRL/AFOSR BOLT II Geometry	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0085	
Heather Emily Kostak-Teplicek, Rodney D Bowersox (Texas A&M University)	
Recent BOLT Discrete-Roughness Trip Results from the 20-Inch Mach 6 Tunnel	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0086	
Scott A Berry, Carey F. Scott (NASA Langley Research Center)	
Heat Transfer Measurements of the BOLT II Flight Experiment Model within the T4 Reflected Shock Tunnel	
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0087	
Will O Landsberg, Jacob Sandral, David Mee, Anand Veeraragavan (The University of Queensland Centre for Hypersonics)	
SD-02 In Person - Chesapeake 3	
Shock tube investigation of aerospace fuels for zero-carbon future: A US-Germany collaboration	
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0178	
Rosa Olivera, Ramees Rahman, Seetha Raghavan (University of Central Florida), Clemens Naumann, Marina Braun-Unkhoff (Deutsches Zentrum fur Luft- und Raumfahrt eV), Subith Vasu (University of Central Florida)	
CMAS Infiltration and Mitigation Strategies for Minimizing Premature Degradation Failure of High Temperature Ceramic Coatings in Turbine Engines	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0179	
Zachary Stein, Brendon Cavainolo, Laurene Tetard, Michael P Kinzel, Seetha Raghavan (University of Central Florida)	
Residual Strains in an Additively Processed Ni-based Superalloy Transpiration-Cooled Aerodynamic Leading Edge Structure using Neutron Diffraction	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0180	
Quentin Fouliard, Jose Mayi-Rivas, Oneilia Swaby (University of Central Florida), Marion Bartsch (German Aerospace Center (DLR), Cologne, Germany), Jeffrey R. Bunn (Oak Ridge National Laboratory), Jayanta Kapat, Seetha Raghavan (University of Central Florida)	
Influence of Experimental Parameters on Rare-earth Doped Ytria-stabilized Zirconia Thermal Barrier Coatings for Phosphor Thermometry Measurements	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0181	
Quentin Fouliard, Ranajay Ghosh, Seetha Raghavan (University of Central Florida)	
Investigation of Stress Corrosion Cracking via in-situ Measurements	
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0182	
Remelisa Esteves, Quentin Fouliard, Ranajay Ghosh, Seetha Raghavan (University of Central Florida)	

SD-01 | In Person - Chesapeake 5

Model Based Automatic Control Design for the T-FLEX Demonstrator Using RCE Environment
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0175 Béla Takarics, Bálint Patartics, Tamás Luspay, Balint Vanek (Eotvos Lorand Kutatasi Szamitastechnikai es Automatizalasi Ku-tatointezet), Charles Poussot-Vassal, Pierre Vuillemin (Office National d'Etudes et de Recherches Aerospatiales), Matthias Wuestenhagen (Deutsches Zentrum fur Luft- und Raumfahrt eV)
Aeroservoelastic induced drag modelling and minimization for the T-FLEX demonstrator
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0176 Yasser Muhammad Meddaikar, Thiemo M Kier (Deutsches Zentrum fur Luft- und Raumfahrt DLR), Julius Bartasevicius, Fanglin Yu (Tech-nische Universitat Munchen), Balint Vanek, Abel Olgyay, Béla Takarics (SZTAKI)
Comparing Different Potential Flow Methods for Unsteady Aerodynamic Modelling of a Flutter Demonstrator Aircraft
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0177 Thiemo M Kier (Deutsches Zentrum fur Luft- und Raumfahrt eV)

APA-01 | In Person - Potomac 1

Recent and Upcoming Advancements in HPCMP CREATETM-AV Kestrel
Monday, 23 January 09:30 - 09:50 (UTC-5) 3766920 Steven E Lamberson (CREATE-AV Kestrel)
Development of GPGPU Capable Multi-solver Overset Methods
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0042 Jay Sitaraman, Dylan Jude (US Army Combat Capabilities Development Command Aviation & Missile Center)
Advancements in HPCMP CREATE-AVTM ADAPT as an MDAO Front-End
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0043 Andrew J Field, Madeline Lickenbrock, Joseph Maclean, William McGough, Paul Syfrett, William Zuber (CREATE AV Team)
Responding Body Motion Simulation with Collision in the Kestrel Framework
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0044 Andrew G Denny (Arnold Engineering Development Complex), Robert Patrick McNally (US Army Corps of Engineers)

APA-06 | In Person - Potomac 3

Quesst Mission Overview and Standards Development Status
Monday, 23 January 09:30 - 09:50 (UTC-5) 3797655 Peter G Coen (NASA Headquarters)
X-59 Aircraft Overview and Status
Monday, 23 January 09:50 - 10:10 (UTC-5) 3796676 David M Richwine (NASA Headquarters)
X-59 Sonic Boom Wind Tunnel Testing
Monday, 23 January 10:10 - 10:30 (UTC-5) 3796506 Melissa B Carter (NASA Langley Research Center)
Preparations for Quesst Acoustic Validation
Monday, 23 January 10:30 - 10:50 (UTC-5) 3796555 Larry J Cliatt (NASA Armstrong Flight Research Center)
Preparations for Quesst Mission Community Response Testing – Overview and Status
Monday, 23 January 10:50 - 11:10 (UTC-5) 3796518 Gautam H Shah, Jonathan Rathsam, Alexandra Loubeau (NASA Langley Research Center)

FD-05 | In Person - Chesapeake I

X-Ray Phase Contrast Imaging and Radiography of Pressure-swirl Atomizing Sprays in a Crossflow
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0088 Chi Young Moon, Qian Peng, Brandon Sforzo, Alan Kastengren, Christopher F. Powell (Argonne National Laboratory)
Investigation of Droplet Aerobreakup Using Non-Intrusive Diagnostics and Numerical Simulations
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0089 James Leung, Mohana Gurunadhan, Shyam K Menon (Louisiana State University)
Measuring Agricultural Spray Droplet Distirbutions in Propeller Wake: A Cautionary Tale
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0090 Ian M Tierney, Sidaard Gunasekaran (University of Dayton), Kyle Butz (Spray Analytics Inc.), Timothy Anderson (BASF Corp Cincinnati), C. Taber Wanstall (University of Dayton)

STR-01/MAT-02 | In Person - Chesapeake 7

Hybrid Discontinuous Galerkin Process Zone Models for Thermal Induced Fractures and Fracture Reduced Heat Transfer
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0196
Daniel N Pickard, Christopher Terrence Quinn, Raul Radovitzky (Massachusetts Institute of Technology)
A Discontinuous-Galerkin, Lagrangian Thermo-chemo-mechanical Material Response Solver for the Analysis of Ablative Thermal Protection Systems
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0197
Christopher Terrence Quinn, Daniel N Pickard, Raul Radovitzky (Massachusetts Institute of Technology)
Novel Test and Analysis Methodology for the Assessment of Joint under Re-entry Environment
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0198
Pavel Babuska, Waihong Tai, Vinay K Goyal (The Aerospace Corporation), Alvaro Rodriguez (NASA Johnson Space Center)
Enhanced Manufacturing of Complex Shape Composites with Nano-Porous Networks
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0199
Carina Xiaochen Li, Carlos Catalano, Carolina Furtado (Massachusetts Institute of Technology), Estelle Kalfon-Cohen (Metis Design Corporation), Shannon Cassady, Jeonyoon Lee (Massachusetts Institute of Technology), Seth Kessler (Metis Design Corporation), Brian L Wardle (Massachusetts Institute of Technology)

TES-01 | In Person - National Harbor 5

Laminar Burning Velocity Measurement of NH ₃ /H ₂ /CH ₄ Fuel Blends at Elevated Temperature and Pressure
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0201
Pragya Berwal, Sudarshan Kumar (Indian Institute of Technology Bombay), Bhupendra Khandelwal (The University of Alabama College of Engineering)
Reverse Convection Power Generation
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0202
Joseph R Herdy (CFD Research Corporation)
Investigation of Bluff-body Stabilized Methane, Propane and Ammonia Flames with Flowfield Dilution
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0203
Rishi Roy, Eliza Melia, Ashwani K Gupta (University of Maryland at College Park)

TP-02 | In Person - Azalea 1

Kentucky Re-entry Universal Payload System (KRUPS): Overview of hypersonic re-entry flight
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0206
John D Schmidt, Matthew P Ruffner, James T Nichols, Isaac S Rowe, Ryan D Nolin, Kirsten F Ford, William T Smith, Alexandre Martin (University of Kentucky)
Aerothermal Analysis of a Space Rocket during its Hypersonic Ascent Phase
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0207
Luan NM Dinh, Eduardo Trifoni (Australian National University)
Stagnation Point Convective Heating Correlations for Entry into H ₂ /He Atmospheres
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0208
Alex T Carroll (California Institute of Technology), Aaron Michael Brandis (NASA Ames Research Center)

TP-01 | In Person - Azalea 2

On Computationally Efficient Radiative Transfer Calculations for Three-dimensional Entry Problems
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0204
Amal Sahai (Analytical Mechanics Associates, Inc.), Christopher O Johnston (NASA Langley Research Center)
Characterization of particle-surface impacts on a sphere-cone at hypersonic flight conditions
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0205
Joseph B Habeck, Michael D Kroells, Thomas E Schwartzentruber, Graham V Candler (University of Minnesota Twin Cities)
Numerical investigation of flow development and thermal boundary condition effects on local sCO ₂ heat transfer trends in circular tubes
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0604
Yang Chao, Nicholas C Lopes, Sandra Boetcher, Mark A Ricklick (Embry-Riddle Aeronautical University)

GTE-01 | In Person - National Harbor 11

Enhanced Internal Cooling Performance with Protruded Rib Turbulators in Turbine Blade Cooling
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0111
Yueyang, Symus Say, Yi Yu, Adamya Singh Dhaker, Wai Tuck Chow (Nanyang Technological University)
Characterization of an Active Turbulence Grid in a Linear Cascade
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0112
Molly H Donovan, Markus P Rumpfkeil (University of Dayton), Christopher R Marks (Air Force Research Laboratory Aerospace Systems Directorate)
High-Lift High-Work LPT Blades and Separation: A Machine-Learning-Based Approach to Separation Identification
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0113
Jared N Kerestes, Christopher R Marks, John P. Clark (Air Force Research Laboratory), Mitch Wolff (Wright State University), Ron-Ho Ni (AeroDynamic Solutions Inc), Nathan Fletcher (Innovative Science Solutions LLC)
Aerothermal Investigation of Seal Teeth Cavity Leakage Flow in Supercritical CO2 Compressor
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0114
Saugat Ghimire, Adam Ringheisen, Mark G Turner (University of Cincinnati)
A comparison of gradient-free and gradient-enhanced optimization methods for the robust design of a compressor rotor
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0115
Marcus Meyer, Robin Schmidt (Rolls-Royce Deutschland Ltd und Co KG)

PC-02 | In Person - National Harbor 10

Hybrid LES-FDF Simulations of Reactive Flows With Dynamic AMR and detailed Chemistry
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0159
Rodrigo Cavalcanti Ribeiro Lima, Joao M Vedovoto (Universidade Federal de Uberlandia)
Large Eddy Simulation of Diesel Spray Flames using the Unsteady Flamelet Progress Variable Approach with Soot Prediction
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0160
Islam Kabil, Chao Xu (Argonne National Laboratory)

FT-01 | In Person - Camellia 1

UAS Flight Testing in Support of Research for Academia: Getting Started and Experiences from the Fields
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0100
Matthew Anderson (California Institute of Technology), Kai Lehmkueler (The University of Sydney School of Aerospace Mechanical and Mechatronic Engineering), Jeremy Randle (The University of Sydney Australian Centre for Field Robotics), KC Wong (The University of Sydney School of Aerospace Mechanical and Mechatronic Engineering), Soon-Jo Chung (California Institute of Technology)
Robust Control and Flight Test of a Coaxial Helicopter UAV
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0101
HoiJo Jeong, Jinyoung Suk, Seungkeun Kim (Chungnam National University)
Flight Testing of a Flying-Wing UAV
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0102
Noureldein Ahmed Ibrahim, Ashraf Kamal, Mohamed Yehia Zakaria (Military Technical College)

APA-03 | In Person - Potomac 4

A Computational and Experimental Analysis of Vortex Shedding from Complex Turning Vanes
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0049
Andrew P Hayden, Cole Hefner, John Gillespie, Alexandrina Untaroiu, Todd Lowe (Virginia Polytechnic Institute and State University)
Experimental Generation and Characterization of Isolated Vortical Gusts
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0050
Paras Vadher, Holger Babinsky (University of Cambridge)
Interaction of a Small Unmanned Aerial System with a Moving Vehicle
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0051
David Lee, Keith W. Moored (Lehigh University), John T Hrynuk (US Army Research Laboratory)

FD-06 | In Person - Chesapeake H

Numerical Study of Turbulent Characteristics behind Novel Vortex Generating Structures
Monday, 23 January 09:30 - 09:50 (UTC-5) AIAA-2023-0091
Benjamin S Savino, Taiho Yeom, Wen Wu (University of Mississippi)

(continued) FD-06 In Person - Chesapeake H	
Three-dimensional Pressure–Rate-of-Strain, Pressure Diffusion, and Velocity–Pressure-Gradient Tensor Measurements in a Cavity Flow by Time-resolved Tomo-PIV	
Monday, 23 January 09:50 - 10:10 (UTC-5) AIAA-2023-0092 Jose R Moreto, Xiaofeng Liu (San Diego State University)	
Effects of Shock-Induced Separation on Boundary Layer Transitional Mechanisms	
Monday, 23 January 10:10 - 10:30 (UTC-5) AIAA-2023-0093 Nikhil Mahalingesh, Sébastien Piponniau, Pierre Dupont (Aix-Marseille Universite)	
Sensitivity of Shock-Wave Boundary-Layer Interactions to Inflow Turbulence Characteristics using the Synthetic Eddy Method	
Monday, 23 January 10:30 - 10:50 (UTC-5) AIAA-2023-0094 Chelsea Johnson, Preethi V. Mysore, Kyle A Schau, Joseph Oefelein (Georgia Institute of Technology College of Engineering)	
Medium-Frequency Unsteadiness in a Turbulent Separation Bubble	
Monday, 23 January 10:50 - 11:10 (UTC-5) AIAA-2023-0095 Carolina Cura (Technische Universitat Berlin), Ardeshir Hanifi (Kungliga Tekniska Hogskolan), Julien Weiss (Technische Universitat Berlin)	

14:00 | Technical Panel

INPSI-03/ACD-05/EAT-02/TF-02/GTE-04/PC-06 In Person - Woodrow Wilson A	
DGE-02 In Person - Woodrow Wilson B	
AS-02/ACD-04/INPSI-02/GTE-02/PC-05/STR-02 In Person - Woodrow Wilson D	
AMT-02/PC-04 In Person - Baltimore 1	
MAT-04/NDA-02 In Person - Chesapeake 2	

14:00 | Technical Paper Session

GTE-03 In Person - National Harbor 11	
Design and Optimization of Primary/Core Heat Exchangers for Turbofan Engine Waste Heat Recovery	
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0307 Michael F Stoia, Arun Muley, Sho Sato (The Boeing Company), Claire-Phonie Bury, Ladislav Vesely, Jayanta Kapat, Marcel Otto (University of Central Florida)	
A Study on Variable Geometries and Component Matching of Variable Cycle Engine for Aircraft with Supercruise Capability	
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0308 Saravanan Karupppiah (DRDO Gas Turbine Research Establishment), Pericles Pilidis, Suresh Sampath (Cranfield University), Muthuveerappan N (DRDO Gas Turbine Research Establishment)	
Development of an Open Rotor Propulsion System Model and Power Management Strategy	
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0309 Robert A Clark, Christian Perron, Jimmy C Tai, Benjamin J Airdo, Dimitri N Mavris (Georgia Institute of Technology)	
Considering Turbofan Operability in Hybrid Electric Aircraft Propulsion System Design	
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-2178 Jeffryes W Chapman (NASA Headquarters)	
AMT-04 In Person - Camellia 2	
Further Refinement and Validation of the Spatially Filtered Wavefront Sensor as a Novel Aero-Optical Measurement Technique	
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0224 Luke N Butler, Stanislav Gordeyev (University of Notre Dame)	
High Temperature Gladstone-Dale Coefficient Measurements in a Free-Piston Shock Tube	
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0225 Gwendolyn Wang (Georgia Institute of Technology), Kyle Daniel, Kyle P Lynch, Daniel R Guildenbecher (Sandia National Laboratories), Yi Chen Mazumdar (Georgia Institute of Technology)	
Window Selection for Synchrotron-based Energetic Material and Propulsion Measurements	
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0226 Preston David Silverstein (California State University Long Beach College of Engineering), Alan Kastengren (Argonne National Laboratory), Joseph Kalman (California State University Long Beach College of Engineering)	

(continued) AMT-04 | In Person - Camellia 2

Reducing Photodegradation of Dual-Luminophore Pressure-Sensitive Paint by Adding Antioxidants

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0227
Kazuki Uchida, Yuta Ozawa, Keisuke Asai, Taku Nonomura (Tohoku Daigaku)

AFM-03 | In Person - Magnolia 2

Static Wind Tunnel Testing of a Generic T-Tail Transport Airplane at High Angle of Attack

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0217
Daniel Pusztai, Mark H Lowenberg, Simon A Neild (University of Bristol)

Design of Longitudinal Control for Reduced-Gravity Atmospheric Flights

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0218
Yi-Hsuan Chen, Eric Feron (King Abdullah University of Science and Technology)

Wing aerodynamic loading asymmetry in engine failure condition for multi-propeller driven airplanes

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0219
Geovana F S Neves, Rodrigo Felix de Souza, Chiara Cotta Tilton, Gabriel Espedito Marqueze Messias, Lucas Rubiano de Souza Cruz (Embraer SA)

GNC-04 | In Person - Annapolis 2

Dynamics and Stability Analysis of a Tethered Unmanned Rotorcraft

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0296
Alexander Donkels, Johann Christoph Dauer (Deutsches Zentrum fur Luft- und Raumfahrt DLR), Derek A Paley (University of Maryland at College Park)

VTOL Trajectory Coordination Around Vertiports with Collision Avoidance

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0297
Marc Welsch, Walter Fichter (Universitat Stuttgart)

Using Forward Slipping for Maximum Descend Authority in an Incremental Control Approach

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0298
Andreas Steinleitner, Walter Fichter (Universitat Stuttgart)

Manipulation of a Rigid Object in 3-D Space by a Pair of UAVs using Sliding Modes

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0687
Sachit Rao (International Institute of Information Technology), Animesh Chakravarthy (The University of Texas at Arlington), Debasish Ghose (Indian Institute of Science)

Active Flutter Suppression H_∞ Synthesis using Multiple Models with Imposed Aeroelastic Poles

Monday, 23 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0686
Hugo Fournier, Robin Vernay (Airbus SAS), Paolo Massioni, Minh Tu Pham (Institut National des Sciences Appliquees de Lyon), Laurent Bako (Ecole Centrale de Lyon)

MDO-03 | In Person - Chesapeake 6

Air-taxi transition trajectory optimization with physics-based models

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0324
Nicholas C Orndorff, Darshan Sarojini, Luca Scotzniovsky (University of California San Diego), Hyunjune Gill, Seongkyu Lee (University of California Davis), Zeyu Cheng, Shuofeng Zhao, Chris Mi (San Diego State University), John T Hwang (University of California San Diego)

Low-fidelity design optimization and parameter sensitivity analysis of tilt-rotor eVTOL electric propulsion systems

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0325
Tyler Critchfield, Andrew Ning (Brigham Young University)

Coupled Aeropropulsive Design Optimization of an Over-Wing Nacelle Configuration

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0327
Mohamed Arshath Saja Abdul Kaiyoom, Anil Yildirim, Joaquim R. R. A. Martins (University of Michigan)

Multipoint Aerostructural Optimization for Urban Air Mobility Vehicle Design

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0326
Bernardo Pacini, Malhar Prajapati, Karthikeyan Duraisamy, Joaquim R. R. A. Martins (University of Michigan), Ping He (Iowa State University)

UAS-01 | In Person - Chesapeake C

Real-Time Path Optimization for 3D UAS Line Survey Operations

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0395
Aaron Thomas Blevins (Naval Surface Warfare Center Panama City Division)

(continued) UAS-01 | In Person - Chesapeake C

Onboard path planning for unmanned aircraft automated taxi using a virtual line-graph

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0396
Sebastian Benders, Sven Lorenz, Martin Laubner, Lukas Goormann (Deutsches Zentrum für Luft- und Raumfahrt eV)

Adaptable Cooperative Unmanned Communications Relay Placement Algorithm

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0397
Mary Martin (Georgia Tech Research Institute)

PC-08 | In Person - National Harbor 15

Numerical modeling of plasma assisted deflagration to detonation transition of a H_2/O_2 mixture in a microscale channel

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0346
Zhiyu Shi, Xingqian Mao, Yiguang Ju (Princeton University)

Computational studies of the interaction of a detonation and a bow shock

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0347
Ashwath Sethu Venkataraman, Elaine S Oran (Texas A&M University)

Detonation Propagation in Mixtures Containing Exhaust Gases

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0348
Mason Stocke, Brian Sell, John Hoke (Innovative Scientific Solutions, Inc.), Robert T Fievisohn (Air Force Research Laboratory)

Spectral Analysis of Unstable Detonation

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0349
Ramachandran Suryanarayan, Navneeth Srinivasan, Shufan Zou, Suo Yang (University of Minnesota Twin Cities)

DGE-01 | In Person - Chesapeake 12

Advancing Model-based Engineering through Improved Integration of Domain-Specific Simulation and Analysis using SysML-based Models for Unmanned Aerial Vehicles

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0256
Daniel R Herber (Colorado State University), Dominic Dierker (PC Kraus and Associates), Soumya S Patnaik (Air Force Research Laboratory Aerospace Systems Directorate)

Leveraging a Digital Engineering Testbed to Explore Mission Resilience for New Observing Strategies

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0257
Matthew Jason LeVine, Brian Chell, Paul T Grogan (Stevens Institute of Technology)

A Feasibility Study for the Development of Air Mobility Operations within an Airport City (Aerotropolis)

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0258
Xi Wang, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology)

Model-Based Validation of U.S. Military Mission Scenarios with Digital Threads

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0259
Jeff Newcamp (US Air Force Academy), Christopher Oravetz (Infinity Systems Engineering), McKenzie Steiner, Wesley Park, Andrew Hancock, John Cook (US Air Force Academy)

Overview of NASA EDL Technology Strategy and EDL Session Organization

Monday, 23 January 14:00 - 14:20 EDT (UTC-5)

GNC-05/AFM-04 | In Person - Annapolis 3

Navigation Doppler Lidar Signal Processing Architecture and Algorithms

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0299
Glenn D Hines, Farzin Amzajerdian, Mitchell Jordan Davis, Aram Gragossain, Gregory H Crowther (NASA Langley Research Center)

High-Accuracy 3-DoF Hypersonic Reentry Guidance via Sequential Convex Programming

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0300
Skye Mceowen, Abhinav G Kamath, Purnanand Elango, Taewan Kim, Samuel C Buckner, Behcet Acikmese (University of Washington)

Robust Entry Guidance with Atmospheric Adaptation

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0301
Kevin S Tracy, Giusy Falcone, Zachary Manchester (Carnegie Mellon University)

Feature-based Learning for Optimal Abort Guidance

Monday, 23 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0302
Vinay Kenny, Samuel Godfrey Hendrix, Sixiong You, Ran Dai (Purdue University), Jeremy R Rea (NASA Johnson Space Center)

FT-02 | In Person - Camellia 1

Combat Aircraft Maneuvers in Stability Regions
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0293
Chimpalthradi R Ashokkumar (Smartools, LLC)
Verification of YP689 Flow Field Models for Dynamic Interface Flight Test
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0294
Nicholas Bostock, Adrien Richez, Donald H Costello, Allison Webster-Giddings (US Naval Academy), Manessha Wickramasuriya (The George Washington University)
Real-Time Analysis and Model Comparison during Flight Test
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0295
Jessica M Peterson (U.S. Air Force Test Pilot School)

APA-12 | In Person - Potomac 6

Experimental investigation of pressure fluctuations around protuberances of varying shapes
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0248
Nishanth Menakath, Gareth A Vio, Nicholas J Lawson (The University of Sydney Faculty of Engineering and Information Technologies), Nicholas F Giannelis (The University of Newcastle College of Engineering Science and Environment)
Validation of CFD Analysis of Steady Blowing for Control of the Unstable Pitch Break on a FlyingWing
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0249
John Parks, Michael Amitay (Rensselaer Polytech Institute School of Engineering), Rick Hooker, Andrew Wick (Helden Aerospace Corporation)
Optimization of Synthetic jet to enhance the aerodynamic performance of a VTOL aircraft at real flight conditions
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0250
Hung D Truong, Abderahmane Marouf, Yannick Hoarau (Universite de Strasbourg), Jan B Vos, Alain Gehri (CFS Engineering)

FD-09 | In Person - Chesapeake F

GPU-Accelerated High-Fidelity Implicit Large Eddy Simulations of Coanda Cylinder Flow Instabilities
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0272
Tom Regev (Technion Israel Institute of Technology), Jonathan Nestmann (Technische Universitat Dresden), Anan Garzuzi, David Greenblatt, Steven Frankel (Technion Israel Institute of Technology)
Modeling and Numerical investigation of thermal management using wing fence, Hydrogen Fuel Cell UAV test case
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0273
Jean-Denis Parisse (Ecole de l'air), Gilles Bouchet (Institut Universitaire des Systemes Thermiques Industriels)
Performance Analysis of High Frequency Oscillating Circulation Control
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0274
James Henry, David R Williams (Illinois Institute of Technology)
Learning-based Adaptive Gust Mitigation with Oscillating Wings
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0275
Naresh Poudel, Arjun Trivedi, Parham Oveissi, Meilin Yu, Ankit Goel (University of Maryland Baltimore County College of Engineering and Information Technology), John T Hrynuk (US Army Combat Capabilities Development Command)

FD-10 | In Person - Chesapeake G

Time-resolved volumetric flow measurements around a flexible airfoil undergoing flow-induced vibration
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0276
Hadi Samsamkhayani, Sarah Dulac, Mostafa Khazaee Kuhpar, Banafsheh Seyed-Aghazadeh (University of Massachusetts Dartmouth)
Computational Fluid Dynamics and Flow Testing of Corrugated Metal Flexhoses to Evaluate Flow-Induced Vibration and Pressure Drop
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0277
Patrick K Tran, Jared F Congiardo, Craig R Fortier (NASA John F Kennedy Space Center), Erik Fernandez, Jayanta Kapat (University of Central Florida)
A Data-Driven Experimental Approach for Modeling Aeroelastic Instabilities of Pitching Wings
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0278
Yuanhang Zhu, Kenneth Breuer (Brown University)

SD-08 | In Person - Baltimore 5

Multiple-Input, Multiple-Output Linear and Nonlinear Active Control of a Flexible Wing
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0375
James D Ellis, Davide Balatti, Hamed Haddad Khodaparast, Shakir Jiffri, Micheal Ian Friswell (Swansea University), Sebastiano Fichera (University of Liverpool Faculty of Science and Engineering)
Experimental Effect of Sideslip Angle on the Dynamic Behaviour of Flared Folding Wingtips
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0376
Fintan Healy, Djamel Rezgui, Jonathan E Cooper (University of Bristol)
Frequency Domain Quasi Maximum Likelihood Identification of Low Order Aeroservoelastic Models from Flight-Test Data
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0377
Jeffrey A Ouellette, Chris Miller, Matthew J. Boucher (NASA Armstrong Flight Research Center)
Nonlinear Low-Fidelity Numerical Model of the Flared Folding Wingtip
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0378
Xavier Carrillo, Roeland De Breuker, Jurij Sodja (Technische Universiteit Delft)
Safe Flutter Determination for Wings Undergoing Large Deflections
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0379
Stefan de Boer (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Moti Karpel (Technion Israel Institute of Technology), Jurij Sodja (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

SCS-01 | In Person - Woodrow Wilson C

Modeling of Damage in Coilable Composite Shell Structures
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0364
Armanj D Hasanyan, Sergio Pellegrino (California Institute of Technology Division of Engineering and Applied Science)
Nonlinear global/local stress and free-edge analysis of ultra-thin composite deployable booms
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0365
Riccardo Augello, Erasmo Carrera, Alfonso Pagani (Politecnico di Torino)
Prediction of Snap-Through Buckle Formation and Peak Buckle Curvatures in TRAC Booms
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0366
Wen Luo, Sergio Pellegrino (California Institute of Technology)

EXPL-03 | In Person - Chesapeake L

Creating Human Experience through Food in Space (C.H.E.F.)
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0264
Carla Uyeda, Madhu Thangavelu (University of Southern California)
Exploring viability of Life Support System for long term human spaceflight missions
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0265
Leon Chen, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology)
Microgravity Test of Autonomous Multiple Cycle Farming System
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0266
Trupti Mahendrakar, Markus Wilde (Florida Institute of Technology)
A Historical Analysis of Earth-Independence in Human Spaceflight Missions
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0267
Annika E Rollock, David Klaus (University of Colorado Boulder)

MST-03 | In Person - Baltimore 3

Modeling and Simulation of a High-Fidelity Air Refueling System (HiFARS)
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0335
Hung Q Tran (CAE Inc.)
Modeling of Passive Pilot, Pilot Seat, and Inceptor for Aircraft-Pilot-Coupling (APC) Induced Oscillation Investigations
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0337
Mohammad A Shams, Fidel Khouli (Carleton University), Sylvain Therien (Bombardier Inc)

FD-08 | In Person - Chesapeake E

Effects of distributed roughness on shock-wave/boundary-layer interactions at Mach 7.2
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0268
Eugene N. Hoffman, David M. Kendhammer, Elijah J LaLonde, Angelina Andrade, Christopher S Combs (The University of Texas at San Antonio)

(continued) FD-08 | In Person - Chesapeake E

Relaminarization Effects on a Three-Dimensional Cone-Slice-Ramp Geometry at Mach 8
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0269
Anshuman Pandey (Sandia National Laboratories), Adam Jirasek (US Air Force Academy), Ashley J Saltzman, Katya M Casper, Steven J Beresh, Rajkumar Bhakta, Brian Denk, Marie De Zetter, Russell Spillers (Sandia National Laboratories)
Index of Refraction Fluctuation Spectra in Aerothermochemical Non-equilibrium Shock Layers
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0270
Tyler Dean (Texas A&M University), Farhan Siddiqui, Mark T Gragston (The University of Tennessee Space Institute), Rodney D Bowersox (Texas A&M University)
Measurements of Hypersonic Double Cone Flows with Shock Wave/Boundary Layer Interactions in the X3 Expansion Tunnel
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0271
Aaron Kennedy, Rowland T Penty Geraets (University of Oxford), Christopher M James, Matthew Thompson, Richard G Morgan (The University of Queensland), Joanna M Austin (California Institute of Technology), Fabian Zander (University of Southern Queensland), Matthew McGilvray (University of Oxford)

FD-13 | In Person - Chesapeake K

Numerical investigation of the laminar-turbulent boundary-layer transition for a circular cone at Mach 5: wind tunnel and flight conditions
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0287
Christoph Hader, Hermann F Fasel (The University of Arizona)
Characterization of Transitional, High-Enthalpy Boundary Layers on a Slightly-Blunted Cone. Part I: Schlieren Imaging
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0289
Laura A Paquin, Stuart J Laurence (US Naval Research Laboratory), Ahsan Hameed, Nick J Parziale (Stevens Institute of Technology), Wesley M Yu, Joanna M Austin (California Institute of Technology)
Characterization of Transitional, High-Enthalpy Boundary Layers on a Blunted Cone. Part II: FLDI and Higher Order Spectral Analysis
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0288
Ahsan Hameed, Nick J Parziale (Stevens Institute of Technology), Laura A Paquin, Stuart J Laurence (University of Maryland at College Park), Wesley M Yu, Joanna M Austin (California Institute of Technology)
Study of Bluntness-Induced Elongated Structures in Hypersonic Flow over a 7 degree Circular Cone
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0290
Alexandre R Berger, Matthew P Borg (Air Force Research Laboratory)

GNC-06/IS-04 | In Person - Annapolis 4

Energy-Minimization Path Planning and Control of Unmanned Aerial Systems for Advanced Air Mobility
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0303
Trevor Karpinski (New Mexico State University), Alexander Blakesley, Jakub Krol, Bani Anvari (University College London), George E. Gorospe (NASA Ames Research Center), Liang Sun (New Mexico State University)
On-board implementation using Julia precompiler for rendezvous path planning
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0304
Colin Taylor (Parallax Advanced Research Corporation), Satyanarayana G Manyam (Infoscitex), David Casbeer (Air Force Research Laboratory)
Fixed-Wing Glider Guidance for Plume Localization and Tracking Missions
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0305
Derrick W Yeo, Elena Shrestha (University of Michigan), Jason M Cho (Johns Hopkins University Applied Physics Laboratory)
Quantitative Conflict Detection in an Airspace of Heterogeneous Unmanned Aerial Vehicles Subject to Wind Uncertainties
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0306
Rajnish Bhusal, Aakarshan Khanal, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington), Wendy Okolo (NASA Ames Research Center)

SD-06 | In Person - Chesapeake 3

Sparse Identification of Nonlinear Gust Response in Laminar Flow
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0367
Zahra Sotoudeh, Ziyin Yuan (California State Polytechnic University, Pomona), Caleb J Barnes (Air Force Research Laboratory)
Development of AI-powered Predictive Model via Convolutional Recurrent Network for Mobility Application
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0368
Hyejin Kim, Inho Jeong, Hojin Jeong, Haeseong Cho (Jeonbuk National University), Joong-Kwan Kim (Hanseο University)

(continued) SD-06 | In Person - Chesapeake 3

Automatic Adaptive Refinement Sampling Method for Data-Driven Predictive Models

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0369
Zahra Sotoudeh, Makus Eger (California State Polytechnic University Pomona)

Optimal sensor location and stress prediction on a plate using machine learning

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0370
Sam Choppala (San Jose State University), Todd W Kelmar (San Jose State University Charles W Davidson College of Engineering), Maria Chierichetti, Fatemeh Davoudi, Daniel Huang (San Jose State University)

MAT-03 | In Person - Chesapeake 8

Non-Oxide Ceramic Additive Manufacturing Processes for Aerospace Applications

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0315
Giancarlo D'Orazio, Grace Emma Falanga, Zachariah Chazen (Cornell University), Jason Jones (Moog Inc), Sadaf Sobhani (Cornell University)

Rapid thermal analysis of the Fused Filament Fabrication process

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0316
Manish Nagaraj, Christopher J Hansen, Marianna Maiaru (University of Massachusetts Lowell)

Multiphysics Modeling of Frontal Polymerization-Assisted Layer-by-Layer Additive Manufacturing of Thermoset Polymer Components

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0317
Zhuoting Chen (University of Wyoming), Morteza Ziaee, Mostafa Yourdkhani (Colorado State University), Xiang Zhang (University of Wyoming)

Embedded Piezoresistive Sensors Printed by FFF for Aerospace Applications

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0318
Merve Karabal (Istanbul Teknik Universitesi), Ramazan Yuksel (Aerospace Research Center, Istanbul Technical University,), Fulden Kayginok (Advanced Materials Technologies Research Division, ASELSAN Inc), Alptekin Yildiz, Hulya Cebeci (Istanbul Teknik Universitesi)

MDO-04 | In Person - Chesapeake B

Understanding Distributed Propulsion on the NASA Tiltwing Concept Vehicle with Aerodynamic Shape Optimization

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0143
Bernardo Pacini, Malhar Prajapati, Karthikeyan Duraisamy, Joaquim R. R. A. Martins (University of Michigan), Ping He (Iowa State University)

A Generalized Methodology for a Highly Parallelizable Uncoupled Method for Static Aeroelastic Analysis in Support of Design Optimization

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0328
William D Scholten, Nicolas Reveles, Eric Blades (ATA Engineering, Inc.)

High-Fidelity Aerothermoelastic Optimization with Differentiable CAD Geometry

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0329
Sean P Engelstad, Brian Burke, Rohan N Patel, Graeme Kennedy, Sejal Sahu (Georgia Institute of Technology)

Implementation and Verification of an Exergy Functional in FUN3D

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0144
Neal Novotny, Markus P Rumpfkeil (University of Dayton), Jose A Camberos (Air Force Research Laboratory)

PGC-04 | In Person - National Harbor 2

Detonation Flow Characterization Using Megahertz Rate Particle Image Velocimetry

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0359
Joshua Berson, Rachel Hytovick, Kareem A Ahmed (University of Central Florida)

Visualization and Velocimetry Techniques for Supersonic Reacting Flows

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0360
Rachel Hytovick, Kareem A Ahmed (University of Central Florida)

Investigating quantitative ion probe measurements in a rotating detonation engine

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0361
Clinton Bedick, Justin Weber, Donald H Ferguson (National Energy Technology Laboratory)

Dependence of premixture jet height on detonation wave propagation inside a pressure gain combustion channel

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0362
Faming Wang, Taichi Kitaori, Ryunosuke Shimizu, Toshiharu Mizukaki (Tokai Daigaku)

Experimental Studies of the Interaction of Liquid Rocket Fuel Droplets with Detonation Waves

Monday, 23 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0363
Nicolas Berube, Sydney M Briggs, Daniel R Dyson, Anthony Aguilera, Artem Arakelyan, Subith Vasu (University of Central Florida)

MDO-05 | In Person - Chesapeake A

Data-driven Model Reduction via Operator Inference for Coupled Aeroelastic Flutter
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0330 Benjamin G Zastrow (The University of Texas at Austin Cockrell School of Engineering), Anirban Chaudhuri, Karen E Willcox (The University of Texas at Austin Oden Institute for Computational Engineering and Sciences), Anthony S Ashley, Michael C Henson (Lockheed Martin Aeronautics Company)
Determination of Kriging Model Parameters for Modeling of Computational Aerodynamic Euler Responses for a Generic Hyper-sonic Vehicle
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0331 Christopher C Fischer, Jacob R. Johanik, Ramana V Grandhi (Air Force Institute of Technology), Logan P Riley, Jose A Camberos (Air Force Research Laboratory)
Shapley Additive Explanations for Knowledge Discovery via Surrogate Models
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0332 Pramudita Satria Palar, Lavi Rizki Zuhul (Institut Teknologi Bandung), Koji Shimoyama (Tohoku Daigaku), Yohanes Bimo Dwianto (Institut Teknologi Bandung), Joseph Morlier (ISAE-SUPAERO)
Hull Form Design Optimization using ROM with Machine Learning and Active Subspace Methods
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0333 Wontae Hwang (Gwangju Institute of Science and Technology), Jewon Kim (Pusan National University), Seongim Choi (Gwangju Institute of Science and Technology), Febriani Rohma Dhanan, Jongcheon Park (Pusan National University)
Learning Optimal Aerodynamic Designs through Multi-Fidelity Reduced-Dimensional Neural Networks
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0334 Xiaosong Du, Joaquim R. R. A. Martins (University of Michigan), Thomas O'Leary-Roseberry, Anirban Chaudhuri, Omar Ghattas, Karen E Willcox (The University of Texas at Austin)

EP-02 | In Person - Chesapeake 11

Electrospray Emitter Geometry Characterization through Surface Profilometry and Parameter Estimation
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0260 Collin B Whittaker, Benjamin Jorns (University of Michigan)
Additive Manufacturing and Characterization of Porous Ceramic Electrospray Emitters
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0261 Suhail Chamieh, Elaine Petro, Sadaf Sobhani (Cornell University)
Designing and Commercialization of Porous Emitter Electrospray Thruster for Space Applications
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0262 Arsad Quraishi, Szymon Dworski, Chengyu Ma, Charles N Ryan (University of Southampton), Alessandro Ferreri, Guillaume Vincent, Hugo Larsen, Emmanuelle Rosati Azevedo, Emily Dingle, Alberto Garbayo (AVS UK), Maria Vozarova, Erich Neubauer (RHP Technology)
A Brief Review of Diagnostics for Electrospray Propulsion
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0263 Christopher T Lyne, Miron F Liu, Joshua Rovey (University of Illinois Urbana-Champaign)

MST-04 | In Person - Baltimore 4

Modeling, Simulation and Control of a Tailsitter Tiltrotor MAV
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0338 Ilja Pricker, Sophie F Armanini (Technische Universitat Munchen School of Engineering and Design)
Computer Based Modeling for Tilt-Wing e-VTOL Propeller Performance
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0339 Ege Konuk, Drew Landman (Old Dominion University Frank Batten College of Engineering and Technology)
Drag model for extremely fast estimation of pressure and friction drag for AI driven design of non-structured VTOL aircraft
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0340 Frederick Michael Heim, Pablo C Bueno, Sidney Chocron, James D. Walker, Alexander Carpenter, Jon T Cutshall, Brian Swenson (Southwest Research Institute), Theodore Bapty (Vanderbilt University), Sydney Whittington (Southwest Research Institute)
Development of a Shipboard Skid-equipped Rotary-wing Aircraft Manoeuvring and Securing Simulation Package
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0341 Alexander R Schock, Robert Langlois (Carleton University Faculty of Engineering and Design)

FD-11 | In Person - Chesapeake I

A Scalable Multiphase Flow Solver for Simulation of Hybrid Rocket Motors
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0279
Mae L Sementilli, Matthew McGurn, James M Chen (University at Buffalo School of Engineering and Applied Sciences)
Predicting Particle Acceleration Using Flow Feature Extraction in a Louver Particle Separator
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0280
Travis Bowman, Cairen Joel Miranda, John Palmore (Virginia Polytechnic Institute and State University)
Study of shock interaction with a particle curtain using the Multiphase Particle in Cell (MP-PIC) approach
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0281
Akhil Marayikkottu Vijayan, Deborah A Levin (University of Illinois Urbana-Champaign)
A Phase Transition Model for Cavitating Flows
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0282
Lingquan Li, Facundo Nicolas Airaud, Rainald Lohner (George Mason University)
Verification of the Eulerian-Eulerian Two-Fluid Model in Loci/GGFS
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0283
Manuel Gale (CFD Research Corporation)

MAT-05/ICME-01/MDO-02/STR-03 | In Person - Chesapeake 1

Machine-Learning-Assisted Characterization of Interfacial Failure in Solid-State Batteries
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0319
Juner Zhu (Northeastern University), Wei Li, Avtar Singh (Massachusetts Institute of Technology), Donal Finegan, Trevor Martin (National Renewable Energy Laboratory)
Mixed-domain Charge Transport in the S-Se System from First Principles
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0320
Junsoo Park, Zhigang Wu, John Lawson (NASA Ames Research Center)
Modelling and experiments to guide the manufacture of fast-charging and long-life Li-ion electrode architectures
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0321
Donal Finegan (National Renewable Energy Laboratory)
Characterization of microscopic deformation of materials using computer vision
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0322
Kavindu Wijesinghe, Janith C Wann, Natasha Banerjee, Sean Banerjee, Ajit Achuthan (Clarkson University)
Development of a Methodology for Analysis of Bonded Interface in Polymeric Matrix Composites in Presence of Manufacturing Defects
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0323
Guillaume Seon, Andrew V Makeev (The University of Texas at Arlington)

CFD2030-01 | In Person - National Harbor 13

Wall-Modeled Large Eddy Simulation Method for Unstructured-Grid Navier-Stokes Solvers
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0251
Li Wang, William K Anderson, Eric J Nielsen (NASA Langley Research Center), Prahladh Satyanarayanan Iyer, Boris Diskin (National Institute of Aerospace)
Numerical Study on the Aerodynamics of an Iced Airfoil with Scale-Resolving Simulations
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0252
Man Long Wong, Aditya S Ghat, Gaetan KW Kenway, Gerrit-Daniel Stich, Cetin C Kirs (NASA Ames Research Center)
Evaluation of Voronoi Meshes for Large Eddy Simulations of High Lift Aerodynamics
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0255
Emre Sozer (NASA Ames Research Center), Aditya S Ghat, Gaetan KW Kenway (Science and Technology Corporation), Michael F Barad (NASA Ames Research Center), Victor C. B. Sousa (Science and Technology Corporation), Cetin C Kirs (NASA Ames Research Center)
Turbulence Simulations of Transonic Flows over an NACA-0012 Airfoil (Invited)
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0254
Ponnampalam Balakumar (NASA Langley Research Center), Prahladh Satyanarayanan Iyer (National Institute of Aerospace), Mujeeb R Malik (NASA Langley Research Center)
Wall-modeled LES of the Three-dimensional Speed Bump Experiment
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0253
Prahladh Satyanarayanan Iyer (National Institute of Aerospace), Mujeeb R Malik (NASA Langley Research Center)

AMT-03 | In Person - Magnolia 3

Wall-normal FLEET Velocimetry in a Canonical Hypersonic Inlet

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0220
John C Pehrson, Boris S Leonov, Richard B Miles (Texas A&M University), Matthew T Lakebrink (The Boeing Company St Louis), Christopher Limbach (Texas A&M University)

Joint Temperature and Velocity Statistics in High-speed Flows Using Simultaneous CARS Thermometry and FLEET Velocimetry

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0221
Erik Braun, Jonathan Crosmer, David Ritchie, Nathaniel Kiefer, James Braun, Guillermo Paniagua, Mikhail Slipchenko, Terrence R Meyer (Purdue University)

1D Temperature Measurement of a Supersonic Air Jet with N2 Resonantly Ionized Photoemission Thermometry

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0222
Aleksander Madison Clark, Walker McCord, Kyle Pride, Zhili Zhang (The University of Tennessee Knoxville)

Non-Intrusive Velocimetry in a Supersonic Reacting Flow using Two-Point Focused Laser Differential Interferometry

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0223
Andrew Ceruzzi, Mithuun Kanapathipillai, Kenneth H Yu, Christopher P Cadou (University of Maryland at College Park)

ACD-02 | In Person - National Harbor 12

A Conceptual Sizing Tool for Regional and Commuter Aircraft with Hybrid-Electric Propulsion

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0213
Gala Licheva, Susan Liscouet-Hanke (Concordia University)

Conceptual investigation on performance of short-medium range aircraft with liquid hydrogen propulsion and different airframe architectures

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0214
Vittorio Cipolla (Universita degli Studi di Pisa), Davide Zanetti (SkyBox Engineering), Karim Abu Salem (Universita degli Studi di Pisa), Vincenzo Binante (SkyBox Engineering), Giuseppe Palaia (Universita degli Studi di Pisa)

Conceptual Design of a Next Generation Supersonic Airliner for Low Noise and Emissions

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0215
Cristina Villena Munoz, Giordana Bonavolontà, Craig Lawson, Atif Riaz (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Aerothermodynamic Assessment of Conceptual and Detail Configuration Changes to a Rocket Propelled Aircraft

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0216
Jack A Griffin, Timothy T Takahashi (Arizona State University Ira A Fulton Schools of Engineering), Patrick E Rodi (Rice University)

PDL-02/AMT-05 | In Person - Azalea 3

Angle Optimized Filtered Rayleigh Scattering for the Imaging of Pressure Waves from Laser Generated Surface Sparks at 250,000 Frames per Second

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0350
James R Creel, Boris S Leonov, Richard Miles (Texas A&M University System)

Quantitative femtosecond two-photon absorption laser induced fluorescence measurements of hydrogen and nitrogen atoms in an AC dielectric barrier discharge

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0351
Ning Liu (Princeton University), Timothy Chen (Sandia National Laboratories California), Hongtao Zhong, Christopher Kondratowicz, Yiguang Ju (Princeton University)

Beam Shaping for the Laser Energy Deposition in Air

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0352
Sagar Pokharel, Junhwi Bak, Albina Tropina, Richard B Miles (Texas A&M University)

On the effect of high-frequency plasma actuator forcing for prevention of dynamic stall

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0353
Alexander J Lilley, Subrata Roy (University of Florida), Miguel R Visbal (Air Force Research Laboratory)

AA-03 | In Person - Baltimore 2

Aeroacoustic Optimization of VTOL Rotor Blades

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0209
Matthew A Clarke (Massachusetts Institute of Technology), Emilio Botero (Stanford University)

On the influence of elasticity on swept propeller noise

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0210
Ole Bergmann, Felix Möhren, Carsten Braun, Frank Janser (FH Aachen)

(continued) AA-03 | In Person - Baltimore 2

Prediction of Sound Exposure caused by a Landing Motor Glider with Recuperating Propellers
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0211
Sebastian Hille, Eike Stumpf (Rheinisch-Westfälische Technische Hochschule Aachen), Joscha Mayntz, Peter Dahmann (FH Aachen)
Acoustics of an Open Rotor Ingesting a Planar Turbulent Boundary Layer With Pressure Gradient Effects
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0212
Szu-Fu Huang, Shaheen Thimmaiah Palanganda, Jarrod T Banks, William N Alexander, William J Devenport (Virginia Polytechnic Institute and State University)

HIS-02 | In Person - Chesapeake 10

History of the NRC 1.5m Trisonic Wind Tunnel
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0310
Stuart McIlwain, Melissa Richardson (National Research Council Canada)
The Path to Mars Runs through the National Full-Scale Aerodynamics Complex
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0311
Patrick W Goulding, Christopher M Nykamp (National Full-Scale Aerodynamics Complex)
Edgar Lineberry, Pioneer of Orbital Rendezvous
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0312
John Goodman (Odyssey Space Research, LLC)
George Cherry and Apollo Lunar Module Guidance
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0313
John Goodman (Odyssey Space Research, LLC)

STR-05 | In Person - Chesapeake 4

Sizing and Design Tool for Tall Lunar Tower
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0382
Kyongchan Song (NASA Langley Research Center), Martin Mikulas (National Institute of Aerospace), Matthew K Mahlin, Jacob T Cassady (NASA Langley Research Center)
Towers: Critical Initial Infrastructure for the Moon
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0383
William R Doggett, Jacob Heppler, Matthew K Mahlin, Richard S Pappa, John Teter, Kyongchan Song, Brace White, Iok Wong (NASA Langley Research Center), Martin Mikulas (National Institute of Aerospace)
Mechanical Properties of Hierarchical Beams for Large-Scale Space Structures
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0384
Fakhreddin Emami, Andrew J Gross (University of South Carolina)
Theoretical and Experimental Analyses of Inflatable Structures
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0385
Jitish Miglani, Wei Zhao, Rakesh K Kapania (Virginia Polytechnic Institute and State University), Shardul Singh Panwar, Rikin Gupta, Azwan Aris (Toyota Research Institute North America)
Design, Manufacturing, and Evaluation of Functionally Graded Adhesive Lap Joints Using Radiation Sensitive Adhesives
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0386
Sam B Hurvitz, Scott E Stapleton (University of Massachusetts System)

FD-14 | In Person - Chesapeake D

Boundary Layer Turbulence Flight Experiment, Memories of Mike Holden
Monday, 23 January 14:00 - 14:20 (UTC-5) 3776685</stron
Tim P Wadhams (CUBRC), Rodney D Bowersox (Texas A&M University), Aaron T Dufrene, Michael S. Holden (CUBRC)
Basic State Computations and Streamline Analysis for Selected BOLT-II Flight Conditions
Monday, 23 January 14:20 - 14:40 (UTC-5) 3771639</stron
Fei Li, Scott A Berry, Meelan M Choudhari (NASA Langley Research Center), Pedro Paredes (National Institute of Aerospace)
Initial BiGlobal Stability Analysis of the BOLT II Flight Experiment
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0291
Cameron Butler, Gregory McKiernan, Bradley M Wheaton (Johns Hopkins University Applied Physics Laboratory)
Trajectory-Based Conjugate Heat Transfer Simulation of the BoLT-II Flight Experiment
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0292
Kyle A Damm, Rowan Gollan, Anand Veeraragavan (The University of Queensland Centre for Hypersonics)

SD-07 | In Person - Chesapeake 5

Gust Load Alleviation Control of Aircraft with Varying Mass Distribution
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0371
Matthias Wuestenhagen (Deutsches Zentrum fur Luft- und Raumfahrt eV)
In-flight drag measurement and validation for a medium-sized UAV
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0372
Julius Bartasevicius, Mirko Hornung (Technische Universitat Munchen)
Flight Vibration Testing of the T-FLEX UAV using Online Modal Analysis
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0373
Keith Soal, Robin Volkmar, Carsten Thiem, Julian Sinske, Yasser Muhammad Meddaikar, Yves Govers, Marc Böswald (Deutsches Zentrum fur Luft- und Raumfahrt eV), Daniel Teubl, Julius Bartasevicius (Technische Universitat Munchen), Mihaly Nagy, Balint Vanek (Eotvos Lorand Kutatasi Halozat Szamitastechnikai es Automatizalasi Kutatointezet)
Application and Validation of a Model Updating Approach for Linearized State-Space Models of Flexible Aircrafts Using Multiple Flight Test Data
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0374
Özge Süelözgen (Deutsches Zentrum fur Luft- und Raumfahrt eV)

APA-08 | In Person - Potomac 1

Towards True Digital Transformation with HPCMP CREATETM-AV Simulation Tools
Monday, 23 January 14:00 - 14:20 (UTC-5) 3775153
David R McDaniel, Andrew M Wissink (CREATE AV Team)
Machine Learning-Based Surrogate Modeling for Aerodynamic Loads Predictions
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0232
Jennifer Abras, Todd Tuckey, David R McDaniel, Nathan S Hariharan (CREATE AV Team)
A Data-Driven Modeling Approach for Rotorcraft Store Separation
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0233
Nicholas Peters, John A Ekaterinaris (Embry-Riddle Aeronautical University), Andrew M Wissink (US Army Combat Capabilities Development Command Aviation & Missile Center)
Data-Driven Modeling of Aerodynamic Loadings for Tiltrotor Pylon using Multi-Fidelity CFD Data
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0234
Phuriwat Anusonti-Inthra (Army Research Laboratory Aberdeen Proving Ground)
A Computational Environment for Aircraft Design and Acquisition Engineering
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0235
Robert B Haehnel, Deanna L Hardin, Jordan T Bates, Scott D Christensen, Thomas L Arnold, Marvin S Brown, Andrew C Bauer, Quyen T Brannon, Joshua Q Church, Amanda R Catlett, Theresa R Coumbe, Dallon C Schofield (US Army Engineer Research and Development Center), Beatrice F Roget (US Army Combat Capabilities Development Command)

APA-09 | In Person - Potomac 5

An Overview of NASA Langley Low-Speed CFD Contributions to the Space Launch System Program
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0236
Brent W Pomeroy (NASA Langley Research Center)
Launch Vehicle Ascent CFD for the Space Launch System
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0237
Derek Jordan Dalle, Stuart E Rogers, Jamie Meeroff, Aaron C Burkhead (NASA Ames Research Center), Daniel G Schauerhamer, Joshua F Diaz (Science and Technology Corporation)
Advances in Space Launch System Booster Separation CFD
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0238
Jamie Meeroff, Derek J Dalle, Stuart E Rogers, Aaron C Burkhead (NASA Ames Research Center), Daniel G Schauerhamer, Joshua F Diaz (Science and Technology Corporation)
A Computational Study of Plume Modeling For Space Launch System Abort Scenarios
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0239
Jonathan Boustani, Michael Applebaum, William Eppard (Mclaurin Aerospace), Thomas Steva (NASA Marshall Space Flight Center), Leslie H Hall (Mclaurin Aerospace)
Ground Wind Loads on the Space Launch System Mobile Launcher Crew Access Arm
Monday, 23 January 15:20 - 15:40 (UTC-5) AIAA-2023-0240
Thomas J Wignall, Jesse G Collins, Brent W Pomeroy, Jeremy Pinier (NASA Langley Research Center)

APA-07 | In Person - Potomac 3

Supersonic Configurations at Low Speeds (SCALOS): Configuration Comparison of SCALOS to Existing Designs

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0228
Eli Livne (University of Washington)

Supersonic Configurations at Low Speeds (SCALOS): The Aerodynamic Effects of Control Surfaces

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0229
Eli Livne (University of Washington)

Supersonic Configurations at Low Speeds (SCALOS): The Incremental Effects of Configuration Variations and Model Regression Studies

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0230
Eli Livne (University of Washington)

Supersonic Configurations at Low Speeds (SCALOS): CFD Aided Wind Tunnel Data Corrections

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0231
Eli Livne (University of Washington)

STR-04 | In Person - Chesapeake 7

A Complex Potential Methodology for Bolted Repair Analysis of Composite Laminates

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0380
Steven G Russell (Russell Aerostructures Consulting LLC)

Linear Viscoelastic Model of an Adhesively Bonded, Single Lap Shear Joint

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0381
Cole T Cappon, Craig G Merrett (Clarkson University)

PGC-03 | In Person - National Harbor 3

Experimental Results for Geometrically Scaled Rotating Detonation Rocket Engines

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0354
Carl Knowlen, Tyler J Mundt, Mitsuru Kurosaka (University of Washington)

Design and analysis of an additively manufactured rotating detonation rocket engine chamber for calorimetry and thermal management assessment

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0355
Joseph Hernandez-McCloskey, Daniel I Pineda (The University of Texas at San Antonio), John W Bennewitz (The University of Alabama in Huntsville), Blaine R Bigler (Jacobs Technology Inc.), Jason R Burr, Stephen A. Danczyk, Eric J. Paulson, William A Hargus (Air Force Research Laboratory)

Liquid Jet Response to Detonation Waves in a Linear Detonation Combustor

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0356
Charlie H Black, Timothy R Winter, Deborah Renae Jackson, Mark Frederick, Rohan Gejji, Carson D Slabaugh (Purdue University), H. Douglas Perkins (NASA Glenn Research Center), Christopher Allen Fugger (Spectral Energies)

Development of a High Pressure, Cold Flow Test Facility for Characterizing Novel, Ultra High Performance, Additively Manufactured Injector Elements for Pressure Gain Engines

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0357
Ari D Goldman, Murphy Mitchell (Auburn University), Thomas W Teasley (NASA Marshall Space Flight Center), David E. Scarborough (Auburn University)

Scaling Effects of Increased Annular Diameter in a Rotating Detonation Rocket Engine

Monday, 23 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0358
Blaine R Bigler (Jacobs Technology Inc), Jason R Burr (Exquadrum), John W Bennewitz, Stephen A. Danczyk, Eric J. Paulson (Air Force Research Laboratory Aerospace Systems Directorate)

TES-02 | In Person - National Harbor 6

Predicting CO and NO_x Emissions from a Gas Turbine Using Machine Learning Techniques

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0387
Muhammad Rubayat Bin Shahadat, Michael S. Murillo, Farhad Jaber (Michigan State University)

Plug and Abandonment of Oil Wells by an Innovative Thermal Technology: A contribution to the shift from a Carbon-based to a Carbon-free economy

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0388
Anatole Hordiene, Marcelo JS de Lemos (Instituto Tecnológico de Aeronáutica - ITA)

TP-04 | In Person - Azalea 1

Role of Multiphase Modeling on Nozzle Thermochemical Erosion in Solid Rocket Motors
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0392
Marco Rotondi, Marco Grossi, Mario Tindaro Migliorino, Daniele Bianchi (Universita degli Studi di Roma La Sapienza)
The Effect of Drag Model on Heatshield Recession due to Particle Impacts for Martian Spacecraft
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0393
Grant E Palmer, Amal Sahai (Analytical Mechanics Associates, Inc.)
Characterization of Surface Erosion from High Speed Single Micrometer Impacts on Al-6061 T6
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0394
Austin Andrews, Devin McGee, Ioannis Pothos, Nathan Bellefeuille, Christopher J Hogan, Thomas E Schwartzentruber (University of Minnesota Twin Cities)

TP-03 | In Person - Azalea 2

Aerodynamics and Heat Transfer Investigation of Supercritical Carbon Dioxide Multi Jet Impingement Cooling for a Leading Edge at Hypersonic Speeds
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0389
Manoj Prabakar Sargunaraj, Marcel Otto, Ladislav Vesely, Erik Fernandez, Jayanta Kapat (University of Central Florida), Valerio Viti, Swati Saxena (ANSYS Inc)
Impact of Data Representation on Artificial Neural Network Performance in sCO ₂ Cooling Applications
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0390
Vinusha Dasarla Giri Babu, Yang Chao, Nicholas C Lopes, Mark Ricklick, Prashant Shekhar, Sandra Boetcher (Embry-Riddle Aeronautical University)
Numerical Evaluation of Entry System Trajectory Control via Active Porosity Control of Transpiration Cooled Thermal Protection System
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0391
Caroline Anderson, Michael P Kinzel (University of Central Florida College of Engineering and Computer Science)

APA-10 | In Person - Potomac 2

Aerodynamic Effects of Surface Protuberance Sizes on Slender-Bodied Supersonic Vehicle
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0241
Kazuki Nimura, Fumiya Tsutsui, Keiichi Ktamura (Yokohama National Univeristy), Satoshi Nonaka (Japan Aerospace Exploration Agency)
Unsteadiness in Curved Shock-Induced Separation due to Protuberances
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0242
Ramachandra K, Sourabh Bhardwaj, Sriram Rengarajan (Indian Institute of Technology Madras)
Low Speed Characteristics Study of Various Supersonic Airfoils Using Co-Flow Jet Active Flow Control
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0243
Zhijin Lei, Gecheng Zha (University of Miami)
Analysis of the flow development towards shock buffet on an OAT15A profile
Monday, 23 January 15:00 - 15:20 (UTC-5) AIAA-2023-0244
Alessandro Accorinti, Tim Korthäuer, Sven Scharnowski, Christian Kähler (Universitat der Bundeswehr Munchen Institut fur Stromungsmechanik und Aerodynamik)

PC-07 | In Person - National Harbor 10

Premixed flames subjected to actively generated turbulence: Flame structure and burning velocity
Monday, 23 January 14:00 - 14:20 (UTC-5) AIAA-2023-0342
Sajjad Mohammadnejad, Sina Kheirkhah (The University of British Columbia Okanagan)
Large eddy simulations of NH ₃ -H ₂ jet flame at elevated pressure using PCA with inclusion of NH ₃ /H ₂ ratio variation
Monday, 23 January 14:20 - 14:40 (UTC-5) AIAA-2023-0343
Suliman Abdelwahid, Mohammad Rafi Malik (King Abdullah University of Science and Technology Clean Combustion Research Center), Hasan Abed Al Kader Hammoud (King Abdullah University of Science and Technology), Francisco E. Hern'andez P'erez (King Abdullah University of Science and Technology Clean Combustion Research Center), Bernard Ghanem (King Abdullah University of Science and Technology), Hong G Im (King Abdullah University of Science and Technology Clean Combustion Research Center)
Influence of Mixture Composition and Radial Flame Location on Counter-rotating Vortex Pair Evolution in a reacting jet in crossflow
Monday, 23 January 14:40 - 15:00 (UTC-5) AIAA-2023-0344
Vedanth Nair, Abin Krishnan, Subodh Adhikari, Vishal S Acharya, Tim C Lieuwen (Georgia Institute of Technology)

(continued) PC-07 | In Person - National Harbor 10

Evaluation of Deconvolution Methods to Estimate Energy Dynamics from Filtered Velocity Measurements

Monday, 23 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0345
Askar Kazbekov, Andrew Shi, Adam M Steinberg (Georgia Institute of Technology), Ryan Andrew Darragh, Peter E Hamlington (University of Colorado Boulder)

APA-11 | In Person - Potomac 4

Numerical 6DOF simulation of a perching wing deforming UAV

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0245
Wee Beng Tay, Woei-leong Chan (National University of Singapore)

Embedded WMLES of transonic buffet on a nacelle-aircraft configuration

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0246
Marius Herr (Technische Universitat Braunschweig), Sebastian Spinner, Axel Probst (Deutsches Zentrum fur Luft- und Raumfahrt eV), Rolf Radespiel (Technische Universitat Braunschweig), Ralf Rudnik (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Spectral model of wall-pressure fluctuations applied to the transonic flow around a generic space launcher

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0247
Simon Lecler, Pierre-Elie Weiss, Sébastien Deck (Office National d'Etudes et de Recherches Aerospatiales)

FD-12 | In Person - Chesapeake H

Modelling Errors in Wall-Modelled Large-Eddy Simulations of High-Speed Channel Flows

Monday, 23 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0284
William van Noordt (University of Oxford Mathematical Physical and Life Sciences Division), Sparsh Ganju (University of Maryland at College Park), Luca di Mare (University of Oxford Mathematical Physical and Life Sciences Division), Christoph Brehm (University of Maryland at College Park)

A New Wall-Stress Model for Large-Eddy Simulations

Monday, 23 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0285
Matthew Subrahmanyam, Zan Xu, Brian Cantwell, Juan J Alonso (Stanford University)

Wall-Resolved Large-Eddy Simulation of Flow over a Three-Dimensional Gaussian Bump

Monday, 23 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0286
Donald P Rizzetta, Daniel J Garmann (Air Force Research Laboratory)

14:00 | Technical Workshop

GNC-03 | In Person - Annapolis 1

GT-01/APA-13 | In Person - Chesapeake 9

LP-02 | In Person - National Harbor 5

16:00 | Technical Panel

EXPL-04 | In Person - National Harbor 7

INPSI-04/EAT-03/TF-03/GTE-06/PC-09 | In Person - Potomac 4

IS-08 | In Person - Woodrow Wilson D

MAT-08/NDA-03 | In Person - Chesapeake 1

DGE-03 | In Person - National Harbor 6

16:00 | Technical Paper Session

AMT-08/FD-15 | In Person - Camellia 2

Quantifying fs/ps CARS measurement uncertainty for transient flows

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0411
Ryan J Thompson, Laurie A Elkowitz, Mohamed Anwar Akkari, Chloe E Dedic (University of Virginia)

(continued) AMT-08/FD-15 | In Person - Camellia 2

FluidNeRF: A Scalar-Field Reconstruction Technique for Flow Diagnostics using Neural Radiance Fields
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0412
Dustin Lee Kelly, Brian S Thurow (Auburn University)
Data Assimilation for isotropic turbulent flow and Pressure Computation using Omnidirectional Integration
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0413
Mohamed Amine Abassi, Qi Wang, Xiaofeng Liu (San Diego State University College of Engineering)
Pressure Reconstruction from the Measured Pressure Gradient Using Gaussian Process Regression
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0414
Zejian You, Qi Wang, Xiaofeng Liu (San Diego State University College of Engineering)
Analysis of Impact of Uncertainty in a Method for Determining Drag from Wake Velocity Profiles
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0415
David H Bridges (Texas A&M University)

EP-03 | In Person - Chesapeake 11

A linear magnetic reconnection based plasma thruster for spacecraft propulsion
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0448
Christopher N Everett, Charles N Ryan (University of Southampton)
Performance Predictions for CW-Mode Operation of an RMF Thruster
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0449
Christopher L Sercel, Tate Gill, Benjamin Jorns (University of Michigan)
Research on Efficient Heat Transfer for Air Breathing Electric Propulsion
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0450
Masanori Harada, Hideki Moriai (Kanazawa Kogyo Daigaku)
Performance of a 5-kW class coaxial Rotating Magnetic Field Thruster
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0451
Tate Gill, Christopher L Sercel, Benjamin Jorns (University of Michigan)
Characterization of an Air-Breathing Deflagration Thruster
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0452
Keshav P Prathivadi, Jackson S Dye, Thomas C Underwood (The University of Texas System)

PGC-06 | In Person - National Harbor 2

Second-Generation Development of a Radial Rotating Detonation Engine
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0576
John T. Ursino, Marc D Polanka (Air Force Institute of Technology), Kavi Muraleetharan (Air Force Research Laboratory)
3D Evaluation of Premixed Gas Injection Ports Number on Flow Field in Disk RDE
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0577
Takumi Ito, Nobuyuki Tsuboi, Kohei Ozawa (Kyushu Kogyo Daigaku), A Koichi Hayashi (Aoyama Gakuin Daigaku)
Multi-wave Operation of a Radial Rotating Detonation Engine with Integrated Aerospike
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0578
Dalton Langner, Apurav Gupta, Shaon Talukdar, Ajay K Agrawal (The University of Alabama)
Numerical Optimization of Disk RDE Integrated with an Aerospike Using Cross-Sectional Area Profiling
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0579
Kayla Bell, Ajay K Agrawal (The University of Alabama)
Development of TDLAS-based Thermal Sensor for Measuring the Exhaust Gas Temperature of Shuttling Transverse Combustor
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-2061
Po-Hsiung Chang, Xin Huang, Zhen Wei Teo, Jiun-Ming Li, Chiang Juay Teo, Boo Cheong Khoo (National University of Singapore)

UAS-02 | In Person - Chesapeake C

An Autonomous System for the Rapid Airfield Damage Repair Mission
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0605
Adam Broshkevitch, Andrew Hancock, August Peters, Matthew Kim, Michael L Anderson, Hugh Clark Briggs (US Air Force Academy), John Colombi (Air Force Institute of Technology), Matthew Hale, Kyle Volle, Prashant Ganesh, Jose H Ramos (University of Florida)
Airborne Collision Risk Prediction with Crewed Traffic using Heuristics
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0606
Brandon J Daniel, Arezou Koohi, Huina Gao, Amy Tal Rose-Tejwani, Matthew Drew (The MITRE Corporation)

(continued) UAS-02 | In Person - Chesapeake C

Analysis of Safety Performance of Tracking Services Based on Simulation of Unmitigated UAS Conflicts

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0607
Zhi Hao Z Quek (Nanyang Technological University Air Traffic Management Research Institute), Wei Dai, Kin Huat Low (Nanyang Technological University)

WE-01 | In Person - Chesapeake 9

High Efficiency 2-Bladed Utility Wind Turbine Enhanced by CoFlow Jet Active Flow Control

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0608
Yan Ren, Gecheng Zha (CoFlow Jet Wind Turbines, LLC), Nick Johnson, Ganesh Vijayakumar (National Renewable Energy Laboratory)

Assessment of a BEMT-based rotor aerodynamic model under uniform aligned steady inflow

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0609
Umberto Boatto, Paul Bonnet (Siemens Digital Industries Software), Francesco Avallone, Daniele Ragni (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

Computational Aeroacoustic Analysis of Airfoil Sections in Deep Stall

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0610
Prakyath Pindi Nataraj (Universiteit Twente), Akshay Koodly Ravishankara (TNO), Huseyin Ozdemir, Cornelis H. Venner (Universiteit Twente)

Correlation Between the Generated Noise and Effectiveness for a Vertical Axis Savonius Type Rotor

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0611
Shivangi Sachar, Piotr Doerffer, Pawel Flaszynski (Instytut Maszyn Przeplywowych im Roberta Szewalskiego Polskiej Akademii Nauk), Jozef Kotus, Krzysztof Doerffer (Politechnika Gdanska)

Assessment of Control Methods for Vertical Axis Wind Turbines: Start-up, Active Flow Control, and Overspeed Control

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0612
Juan Fernando Harmjanz, Thor Westergaard, D. Todd Griffith (The University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science)

PC-11 | In Person - National Harbor 10

Suppression of Thermoacoustic Instabilities Using an Electric Field and Feedback Control

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0556
Dustin L Cruise, Aman Satija, Galen King (Purdue University System)

Parametric Modeling of Multi-Injector Rocket Combustors using Component-based Reduced-Order Modeling Framework

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0557
Cheng Huang (University of Kansas School of Engineering)

Hydroxyl Planar Laser-Induced Fluorescence Imaging in an Optically Accessible Solid Fuel Ramjet Combustor

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0558
Tianyu Gai, Will C.B. Senior, Nicholas L Strahan, Rohan Gejji, Carson D Slabaugh (Purdue University System)

Blowoff and bulk mode instability in a liquid-fueled ramjet combustor

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0559
Haim Elya Brod, Dan Michaels (Technion Israel Institute of Technology)

LP-03/PC-10 | In Person - National Harbor 14

Sensitivity of Methane Oxygen Flames to the Initial Methane Injection Temperature

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0511
Mario Roa (Sierra Lobo, Inc.), Douglas G Talley, Ramakanth Munipalli (Edwards Air Force Base)

Heat Transfer Characteristics of Liquid Film Formed on a Superheated Wall during Pulsed Injection of Liquid Jet

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0512
Noritaka Sako, Kouhei Noda, Jun Hayashi (Kyoto Daigaku), Yu Daimon (Japan Aerospace Exploration Agency (JAXA)), Hiroshi Kawanabe (Kyoto Daigaku)

Numerical Analysis of Film Cooling and Mixture Ratio Bias in Oxygen-Methane Liquid Rocket Engines

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0513
Pierluigi Concio, Mario Tindaro Migliorino, Daniele Bianchi, Francesco Nasuti (Universita degli Studi di Roma La Sapienza)

Propulsive and Thermal Aspects of Storable Propellants Combustion – H₂O₂ and n-Dodecane

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0514
Bastien Boust, Marc Bellenoue (National Center for Scientific Research (CNRS)), Miguel Martin-Benito, Lilian Prevost (CNES)

(continued) LP-03/PC-10 | In Person - National Harbor 14

Analyzing the potentialities of an electric pump-fed new generation kick stage powered by green propellants: a sensitivity analysis approach

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0515
Livia O Ordonez Valles, Uwe Apel (Hochschule Bremen), Angelo Pasini (Universita di Pisa), Martin Tajmar (Technische Universitat Dresden)

PGC-05 | In Person - National Harbor 3

Characterization of Injection Mixing in The Rotating Detonation Rocket Engine

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0572
Austin M Burden, Robert F Burke, Taha Rezzag, Jonathan O Jacobson, Samuel Schuetz, Kareem A Ahmed (University of Central Florida College of Engineering and Computer Science)

Time resolved visualization of liquid jet interaction with H₂-air rotating detonations using MHz rate diesel PLIF

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0573
Venkat Athmanathan, Matthew Hoeper, Austin M. Webb, Robert B Wang (Purdue University), Sukesh Roy (Spectral Energies), H. Douglas Perkins (NASA John H Glenn Research Center), Christopher Allen Fugger (Spectral Energies), Terrence R Meyer (Purdue University)

Mixing and Recovery Performance of Triplet Impinging Injectors with Varying Flow Areas for Detonative Combustion

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0574
Michaela R. Hemming, Dian Ruth Hill, Garrett R Cobb, Jared Andrew Sauer, David M Lineberry, Kunning G Xu (The University of Alabama in Huntsville), Thomas W Teasley (NASA Marshall Space Flight Center)

Characterization of Liquid Fuel Droplet Breakup Interacting with Shock Waves and Detonations

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0575
Steven A Schroeder, Sheikh Salauddin, Vidhan Malik, Anthony J Morales, John Patten, Kareem A Ahmed (University of Central Florida)

Synthetic Laser Measurements in Rotating Detonation Rocket Engine Simulations

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2063
Mathias Ross, Anil P Nair, Ann Karagozian, Raymond Mitchell Spearrin (University of California Los Angeles), Christopher Lietz (Air Force Research Laboratory)

GTE-05 | In Person - National Harbor 11

Characteristics of Premixed Ammonia/Hydrogen/Methane Blends as an Alternative Fuel in a Swirl Stabilized Gas Turbine Combustor with Sustained Pilot

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0494
Andrew Gantt, Meghna Chaudhury, Srinath Ekkad (NC State University)

Global Combustion Characteristics of Glycerol and Methanol Blends Using a Novel Fuel-Flexible Injector

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0495
Lulin Jiang, Timothy Hall, Derek Williams, Rachel Swinney (Baylor University)

Autoignition Delay Times of Hydrogen/Ammonia/Air Mixtures at Gas Turbine Relevant Conditions

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0496
Michael Pierro, Justin J Urso, Cory Kinney, Christopher W Dennis, Jonathan McGaunn, Ramees Khaleel Rahman, Subith Vasu (University of Central Florida)

Numerical Simulation of Ammonia/Methane/Air blends in a Swirl-Stabilized Gas Turbine Combustor

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0497
Meghna Das Chaudhury, Srinath Ekkad (NC State University), Gaurav Kumar (Convergent Science Inc)

Investigation of the Effect of Atomizing Air-to-Liquid Mass Ratio on Spray Dynamics for a Novel Injector Design

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-1058
Rachel Swinney, Lulin Jiang (Baylor University)

STR-07 | In Person - Chesapeake 7

Characterization of meso-scale progressive failure model for fiber reinforced composites from high resolution experimental data

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0591
Jose F Rojas Sanchez, Anthony M Waas (University of Michigan)

Derivation of Best Theory Diagrams through the use of Failure Indexes

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0592
Marco Petrolo, Pierluigi Iannotti, Alfonso Pagani, Erasmo Carrera (Politecnico di Torino)

A multi-mechanism framework for cure-informed probabilistic progressive failure analysis of composite structures

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0593
Minh Hoang Nguyen, Royan J D'Mello, Anthony M Waas (University of Michigan)

PDL-03 | In Person - Azalea 3

Investigation of Hypersonic Radiative Signatures Through the Use of a Voxelized Photon Monte Carlo Radiation Model
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0567
Sara Swenson, Brian Argrow (University of Colorado Boulder)
Semiclassical Analytic Model of Nonadiabatic Energy Transfer in Atomic Collisions
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0568
Igor V Adamovich, J. William Rich (Ohio State University)
Effects of Multiple Pulses on Nanosecond Discharges
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0569
Alfredo J Duarte, Nicholas E Deak, Fabrizio Bisetti (The University of Texas at Austin Cockrell School of Engineering)
State-to-State Analysis of a Nitrogen RF Inductively Coupled Plasma
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0570
Sanjeev Kumar, Alessandro Munafò, Sung Min Jo, Marco Panesi (University of Illinois Urbana-Champaign)
Numerical modeling of NS discharge development in inhomogeneous magnetic field
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0571
Andrey Starikovskiy (Princeton University), Nickolay Aleksandrov (Moskovskij fiziko-tehniceskij institut nacional'nyj issledovatel'skij univer-sitet), Mikhail N Shneider (Princeton University)

DE-01 | In Person - Chesapeake A

Novel Articulating Mechanism Design for a Movable-Nose Missile Concept
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0445
Aaron Drenth, Adam Moeller, Mark Humphries, Devin Schwindt (US Air Force)
Aircraft Structures Projects Involving Aviation Museums Across Canada and the United States
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0447
Craig G Merrett (Clarkson University)
Capstone Design Case Study: Developing a System for Covert Payload Emplacement
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0446
Jacob Echavarria, Katherine Fitzpatrick, Evan Pomfret, Abigail Price, Michael L Anderson (US Air Force Academy), Sarah Galyon-Dorman (SAFE, Inc)

PC-12 | In Person - National Harbor 15

Exploration of Shock-Droplet Ignition and Combustion
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0560
John Patten, Vidhan Malik, Sheikh Salauddin, Kareem A Ahmed (University of Central Florida College of Engineering and Computer Science)
Investigations in Multiphase Detonations
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0561
Calvin Young, Benjamin Musick, Jacob McFarland (Texas A&M University System)
Numerical Investigation of a Kerosene Droplet-Detonation Interaction in a Gaseous Hydrogen-Oxygen Channel
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0562
Armani Batista (Jacobs Engineering Group Inc), Mathias Ross (University of California Los Angeles), Christopher Lietz, Jason R Burr (Air Force Research Laboratory), John W Bennewitz (The University of Alabama in Huntsville)
Experimental Study on Initiating Detonation Waves by Shock Focusing in Laser Ignition
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0563
Tomoyuki Sato, Ken Matsuoka, Akira Kawasaki, Noboru Itouyama (Nagoya Daigaku Kogakubu Daigakuin Kogaku Kenkyuka), Hiroaki Watanabe (ISAE-ENSMA), Jiro Kasahara (Nagoya Daigaku Kogakubu Daigakuin Kogaku Kenkyuka)

AMT-07 | In Person - Magnolia 3

Structure and Dynamics of Reacting Solid Ramjet Fuel Surfaces
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0407
Joseph Kalman, Adrian Guerra, Jack Karapetian (California State University Long Beach), Alan Kastengren (Argonne National Laboratory)
Towards In-Situ Measurements of Air-Carbon Ablation Products in a Shock Tunnel
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0408
Joshua Hargis, Kyle Daniel, Christopher Murzyn, William Swain, Elijah Jans, Kyle P Lynch, Justin Lawrence Wagner (Sandia National Laboratories)
Temperature-dependent x-ray diffraction of thermographic phosphors
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0409
Linda E Hansen, John C Miers, Daniel Lowry, Eric R Westphal, Caroline Winters (Sandia National Laboratories)

(continued) AMT-07 | In Person - Magnolia 3

Lifetime-based Phosphor Thermometry via X-ray Excitation

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0410
Eric Westphal, Linda E Hansen (Sandia National Laboratories), Steven Son, Terrence R Meyer (Purdue University), Caroline Winters (Sandia National Laboratories)

GNC-07 | In Person - Annapolis 2

Leader-Follower Formation Control with Longitudinal Separation along Lateral and Vertical Shifted Follower Paths

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0484
Niklas Pauli, Walter Fichter (Universitat Stuttgart)

Implicit Information Transfer via Streaker Bees in a Bio-Inspired Visual Feedback Swarm Framework

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0485
Md Arif Billah, Imraan Faruque (Oklahoma State University)

Model Predictive Control for Cooperative Systems with Task Prioritization applied to Vehicle Rendezvous and Docking

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0486
Baris Taner, Kamesh Subbarao (The University of Texas at Arlington)

TP-05 | In Person - Azalea 1

Dragonfly : Entry and Descent one Titan Year after Huygens

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0599
Ralph D Lorenz (Johns Hopkins University Applied Physics Laboratory)

Dragonfly Entry and Descent Overview

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0600
Michael Wright (NASA Ames Research Center), Karl T Edquist (NASA Langley Research Center)

Dragonfly Entry and Descent Flight Mechanics Modeling and Analysis

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0601
Richard G Winski, Alejandro R Pensado (Analytical Mechanics Associates, Inc.)

Dragonfly Aerothermal Environment and Aerosciences Instrumentation

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0602
Aaron Michael Brandis (NASA Ames Research Center), Christopher Naughton, David Saunders (Analytical Mechanics Associates), Christopher O Johnston, Derek Liechty (NASA Langley Research Center), Helen Hwang (NASA Ames Research Center), Ali Guelhan (Deutsches Zentrum fur Luft- und Raumfahrt eV), Jose Santos, Eric Stern (NASA Ames Research Center), Chris Karlgaard (Analytical Mechanics Associates), Tomo Oishi (Jacobs Engineering Group Inc), Thomas Thiele, Frank Siebe, Niklas Wendel, Dominik Neeb, Armin Weiss (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Dragonfly TPS Sizing and Analysis

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0603
Eric Stern, Milad Mahzari (NASA Ames Research Center)

MDO-06 | In Person - Chesapeake 3

Gradient-Based Sub-Optimization in the MAUD Architecture without Post-Optimality Sensitivities

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0529
Christopher A. Lupp (Air Force Research Laboratory)

Multiphysics Simulation and Optimization using High-Order Finite Elements with Structured Differentiation

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0530
Aaron Fu, Bao Li, Graeme Kennedy (Georgia Institute of Technology)

High-fidelity aerodynamic and aerostructural optimization of UAV propellers using the adjoint method

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0531
Ping He, Heyecan Koyuncuoglu (Iowa State University), Helen Hu (Johns Hopkins University), Anvesh Dhulipalla, Haiyang Hu, Hui Hu (Iowa State University)

Efficient Gradient-Based Optimization of Differential-Algebraic Equation Systems

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0532
Zeyu Huang, Darshan Sarojini, John T Hwang (University of California San Diego)

ACD-03/AFM-05/MST-05 | In Person - Woodrow Wilson A

Genetic Algorithm Optimization of Lift-Plus-Cruise VTOL Aircraft with Electrified Propulsion

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0398
Rajan Bhandari, Aashutosh Aman Mishra, Imon Chakraborty (Auburn University)

(continued) ACD-03/AFM-05/MST-05 | In Person - Woodrow Wilson A

Flight Control System Architecture for Urban Air Mobility Simplified Vehicle Operations

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0399
Anthony M Comer, Imon Chakraborty (Auburn University)

Flight Simulation Based Assessment of Simplified Vehicle Operations for Urban Air Mobility

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0400
Imon Chakraborty, Anthony M Comer, Rajan Bhandari, Aashutosh Aman Mishra (Auburn University), Ross Schaller, David Sizoo (Federal Aviation Administration Central Region Regional Office), Robert McGuire (Federal Aviation Administration)

VTOL Freewing Design and Adaptive Controller Development

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0401
Rachel Marie Axten, Eric N Johnson (The Pennsylvania State University - University Park Campus)

Experimental Study of the Impact of Folding Wingtip Devices on Aircraft Flight Mechanics and Handling Qualities

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0402
Huaiyuan Gu, Ronald C M Cheung, Fintan Healy, Djamel Rezgui, Mark H Lowenberg, Jonathan E Cooper (University of Bristol)

FT-03 | In Person - Camellia 1

Measurement Results of the ACMU System in Various Research UAVs

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0481
Daniel Teubl, Sebastian Oberschwendtner, Mirko Hornung (Technische Universitat Munchen)

Development of a Flight Test Data Analyzer for Pixhawk Autopilots

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0482
Noureldein Ahmed Ibrahim, Mohamed Yehia Zakaria, Ashraf Kamal (Military Technical College)

A Limited Evaluation of a Model-Free Control Law System

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0483
Shawn S Stephens, Maximo Navarro, Kota Ban, Jacob Anthony Fischer, Marc-Antoine Pelletier, Timothy Sick, Marcus Trautschold, M Christopher Cotting (U.S. Air Force Test Pilot School), Agamemnom Crassidis (Rochester Institute of Technology Kate Gleason College of Engineering)

APA-18 | In Person - Potomac 6

Aerodynamic Control of an Axisymmetric Body at High Incidence using Forebody Fluidic Actuation

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0432
Edward Lee, Bojan Vukasinovic, Ari Glezer (Georgia Institute of Technology)

Aerodynamic Assessment of Surface-Normal Active Flow Control for Lift Enhancement on the High-Lift Common Research Model

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0433
Seyedeh Sheida Hosseini (NASA Ames Research Center), Case P Van Dam (University of California Davis), Shishir Pandya (NASA Ames Research Center)

Numerical Simulation of Discrete Co-Flow Jets NACA-6415 Airfoil

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0434
Zhijin Lei, Gecheng Zha (University of Miami)

Near Wake Evolution of a Flexible Aerodynamically-Adaptive Wing Controlled by Distributed Bleed Actuation

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0435
Gabriel Peyredieu du Charlat (Georgia Institute of Technology), Luca De Beni, Massimo Ruzzene, Ari Glezer (University of Colorado Boulder)

FD-17 | In Person - Chesapeake F

Flow Physics and Control of a Generic Tailless Chined Forebody-Delta Wing Configuration

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0456
Tomas E Rojas Carvajal, Michael Amitay (Rensselaer Polytech Institute School of Engineering)

Adjoint-Based Optimal Control on Flows with Multiple Moving Cylinders in Tandem

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0457
Bolun Xu, Daniel Colgan, Mingjun Wei (Kansas State University), John T Hrynuik (Army Research Laboratory Aberdeen Proving Ground)

3D Vortical Structure of Multiple Moving Spheroids under Adjoint-Based Optimal Control

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0458
Daniel Colgan, Bolun Xu, Mingjun Wei (Kansas State University), John Hrynuik (Army Research Laboratory Aberdeen Proving Ground)

Proportional Control of Aerodynamic Forces using an Active Gurney Flap on a Wind Turbine Blade Section

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0459
Siyang Hao, Alexander Koh-Bell, Rehaan Irani, Jenya Kirsch-Posner, Kenneth Breuer (Brown University)

(continued) FD-17 | In Person - Chesapeake F

Optimal surface morphing using adjoint optimization

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0460
Ernold Thompson, Andres Goza (University of Illinois Urbana-Champaign)

FD-18 | In Person - Chesapeake G

Aerodynamic Forces and Wake Analysis of Wing Damaged Flapping Flight

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0463
Alec Menzer, Haibo Dong (University of Virginia)

Thin Surface Permeability Modeling for Mars Supersonic Parachute Inflations

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0461
Seyed Danial Ghasimi, Jason Rabinovitch (Stevens Institute of Technology)

Subscale Wind Tunnel Testing of Parachutes: Effects of Design Shape on Drag and Canopy Breathing

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0462
Marco Mattei, Cutler Phillippe, Francesco Panerai, Laura Villafañe Roca (University of Illinois Urbana-Champaign)

SD-10 | In Person - Baltimore 5

Utilization of Flutter Vector Strain Energy for Aeroelastic Sizing

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0588
Darin Haudrich (The Boeing Company)

Transonic Flutter Dips of the AGARD 445.6 Wing

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0589
Bret Stanford, Kevin Jacobson (NASA Langley Research Center)

Impact of Relaxing Assumptions of Theodorsen’s Unsteady Aerodynamic Theory and Edgewise Aerodynamics on Flutter Prediction of Floating Vertical Axis Wind Turbines

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0590
Faraz Ahsan, D. Todd Griffith (The University of Texas at Dallas)

NFFP-02 | In Person - Chesapeake 12

The Dynamics of Interstellar Laser Sails

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0552
Brice N Cassenti (University of Connecticut), Laura Cassenti (ET Solutions)

Warp Factory: A Numerical Toolkit for the Analysis and Optimization of Warp Drive Geometries

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0553
Christopher Helmerich, Jared Fuchs (The University of Alabama in Huntsville), Alexey Bobrick, Luke Sellers, Sarah Dangelo, Gianni Martire (Advanced Propulsion Laboratory at Applied Physics), Joseph F.X. Agnew (The University of Alabama in Huntsville)

Propulsion and Power from Cylindrical and Spherical Magneto-inertial Fusion Plasmas

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0554
Jason T Cassibry, Nathan Schilling (The University of Alabama in Huntsville)

A Fusion-Propelled Transportation System to Produce Terrestrial Power Using Helium-3 From Uranus

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0555
Stephanie J Thomas, Michael A Paluszek (Princeton Satellite Systems)

SCS-02 | In Person - Woodrow Wilson C

Nonlinear Behavior of IM7 Carbon Fibers in Compression Leads to Bending Nonlinearity of High-Strain Composites

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0580
Kanthasamy Ubamanyu, Sergio Pellegrino (California Institute of Technology)

Design and Fabrication of a High Strain Composite Flexure for CubeSat Reflectarrays

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0581
B. Yasara Dharmadasa, Francisco Lopez Jimenez (University of Colorado Boulder), Manan Arya (Stanford University), Juan Mejia-Ariza, Jonathan F Sauder, Paolo Focardi, Samuel Case Bradford (Jet Propulsion Laboratory)

A New MSG-based Design Framework for Tow-steered Composites

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0582
Su Tian, Yufei Long (Purdue University), Xin Liu (The University of Texas at Arlington), Frank A Leone (NASA Langley Research Center), Wenbin Yu (Purdue University)

(continued) SCS-02 | In Person - Woodrow Wilson C

Advanced Interface Concepts for Rollable Composite Space Booms under Test in Artificial Weightlessness

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0583
Marco Straubel, Martin Hillebrandt (Deutsches Zentrum für Luft- und Raumfahrt eV)

HSABP-02 | In Person - National Harbor 4

Numerical modelling of hydrogen combustion phenomena in a dual-mode ramjet engine with cavity flameholder

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0499
Karel Van den Borre, Bayindir H Saracoglu (Von Karman Institute For Fluid Dynamics), Axel Coussement (Universite Libre de Bruxelles)

Multi-Resolution Analysis of Subgrid Turbulence / Chemistry Interactions in a Supersonic Hydrogen-Air Diffusion Flame

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0500
Paige Drummond, Jack R Edwards (NC State University)

MST-07 | In Person - Baltimore 3

Using the Hess Adaptive Pilot Model for Modeling Human Operator’s Control Adaptations in Pursuit Tracking

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0541
Nora Jakimovska, Daan M Pool, Marinus M van Paassen, Max Mulder (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaart-techniek)

Prediction Models for Individuals’ Control Skill Development and Retention using XGBoost and SHAP

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0542
Barry A.A. van Leeuwen (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Armon Toubman, Jelke van der Pal (Koninklijk Nederlands Lucht- en Ruimtevaartcentrum), Daan M Pool (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaart-techniek)

Assessment of a Dynamic Motion Seat’s Body Force Cueing in the Dynamic Interface Task

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0543
Amanda K Lampton, David H Klyde (Systems Technology Inc), Jared Cooper (Barron Associates, Inc.), Donald Gaublomme (Naval Air Warfare Center Aircraft Division)

Development of a Simulator Training Framework for Flight Maneuvers Based on Augmented Reality

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0544
Michael Zintl, Moritz Speckmaier, Jerg Jaisle, Carsten Schmidt-Moll, Markus Maly, Maximilian A. J. Wechner, Florian Holzapfel (Technische Universität München)

APA-19 | In Person - Chesapeake B

Wall-Modeled Large-Eddy Simulations of Mach 14 Turbulent Boundary Layer - Aero-Optical Distortions

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0436
Pedro Castillo Gomez, Andreas Gross (New Mexico State University), Daniel R Guildenbecher, Nathan E. Miller, Kyle P Lynch (Sandia National Laboratories)

Aerodynamic Effects and Heat Flux Augmentation of a Transpiration Cooled Hypersonic Sharp Leading Edge

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0437
Raghul Ravichandran, Luke J Doherty, Matthew McGilvray (University of Oxford), Kyle Damm, Rowan Gollan (The University of Queensland)

CFD Integrated Transition Modeling for High-Speed Flows via Coupled OVERFLOW-LASTRAC Analysis

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0438
Ethan Vogel, Balaji Shankar Venkatachari, Pedro Paredes (National Institute of Aerospace), Fei Li, Meelan M Choudhari (NASA Langley Research Center)

Second-Mode Instability Investigation of a 7° Cone at Mach 6

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0439
Adelbert A Francis, Cassandra J Butler, Joseph S Jewell (Purdue University)

FD-16 | In Person - Chesapeake E

Direct Numerical Simulation of High-Speed Boundary-Layer Separation due to Forward Facing Curvature

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0453
Gary Lloyd Nicholson, Lian Duan (The Ohio State University), Nicholas J Bisek (Air Force Research Laboratory)

LES Simulation of Hypersonic Flow over Hollow Cylinder Flare

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0454
Sogol Pirbastami (University of Nevada Las Vegas)

(continued) FD-16 | In Person - Chesapeake E

Hypersonic Multi-Fidelity Turbulence Modeling on a Mach 5 Blunt Ogive with Cool Walls
Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0455
Bryan J Morreale, Jack Shine, Rodney D Bowersox (Texas A&M University), Neal Bitter (Johns Hopkins University Applied Physics Laboratory), Ross Wagnild (Sandia National Laboratories)

INPSI-05 | In Person - National Harbor 12

FUN3D Analyses of the 5th AIAA Propulsion Aerodynamics Workshop Inlet Test Case
Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0501
Michael D Bozeman (NASA Langley Research Center)

Characterization of unsteady distortion events for S-duct intakes under non-uniform inlet conditions
Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0502
Matteo Migliorini, Pavlos K Zachos, David MacManus (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Spectral Proper Orthogonal Decomposition Downstream of a Vortex Tube Separator Array
Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2354
Adit Acharya, Jubel Kurian, Todd Lowe, Wing Ng (Virginia Polytechnic Institute and State University)

FD-21 | In Person - Chesapeake K

On the Unsteadiness of a Hypersonic Flow over a Double Cone using Kinetic Methods
Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0472
Irmak Taylan Karpuzcu, Deborah A Levin (University of Illinois Urbana-Champaign), Vassilios Theofilis (University of Liverpool Faculty of Science and Engineering)

Co-linear FLDI/Schlieren and Surface Pressure Measurements of Bluntness Induced Elongated Structures in Hypersonic Flow
Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0473
Alexandre R Berger, Matthew P Borg (Air Force Research Laboratory)

Simulation of Multiple Instabilities in the Entropy Layer over a Hypersonic Blunt Cone
Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0474
Lachlan S Whyborn, Rowan Gollan, Peter A Jacobs (The University of Queensland Centre for Hypersonics)

Reduced Order Model Predictions for Spherically Blunted Circular Cones
Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0475
Timothy J Leger, Matthew W Tufts, Nicholas J Bisek (Air Force Research Laboratory)

Numerical Investigation of Fluid-Ablation Interactions for a Mach 5.3 Transitional Boundary Layer Flow Over a 13 Degree Cone
Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0476
Sean D Dungan, Christoph Brehm, Joel A McQuaid (University of Maryland at College Park), Aleksander Lavi Zibitsker, Alexandre Martin (University of Kentucky)

IS-07 | In Person - Baltimore 2

Experimental Results on Composing Cooperative Behaviors in Networked Mobile Robots in the Presence of Unknown Control Effectiveness
Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0508
Eren Sarioglu, Atahan Kurttisi, Kadriye Merve Dogan (Embry-Riddle Aeronautical University)

An Efficient Algorithm to Determine Polynomial Trajectories and Adaptive Control of a Quadcopter
Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0509
Atahan Kurttisi, Sirani Perera, Kadriye Merve Dogan (Embry-Riddle Aeronautical University)

Intelligent Rover Slip Detection and Characterization
Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0510
Morgan J May, Philip A Ferguson (University of Manitoba)

GNC-08/IS-05 | In Person - Annapolis 4

Improving the Maneuver Automaton with Maneuver Interruption
Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0487
Kevin Choi, Zachary C Goddard, Samuel J Deal (Georgia Institute of Technology College of Engineering), Kyle Williams (Pathfinder Technologies), Anirban Mazumdar (Georgia Institute of Technology College of Engineering)

Precision Maritime Localization and Landing with Real-time Kinematic GNSS
Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0488
Alexander D Jordan, Matthew Rydalch, Tim McLain, Michael Williamson (Brigham Young University)

(continued) GNC-08/IS-05 | In Person - Annapolis 4

Maximum Uncertainty Distribution in a Traffic of Small Unmanned Aerial Vehicles For Collision-free Airspace operation

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0489
Rajnish Bhusal, Aakarshan Khanal, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington), Wendy Okolo (NASA Ames Research Center)

Model Uncertainty-aware Adaptive Controller Design with Online Parameter Identification

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0490
Akin Catak, Ahmet Talha Cetin, Emre Koyuncu (Istanbul Teknik Universitesi)

IS-06 | In Person - Baltimore 1

Airport Runway Configuration Management with Offline Model-Free Reinforcement Learning

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0504
Milad Memarzadeh, Tejas G Puranik, Jarrett Battistini, Krishna M Kalyanam, Wes Ryan (NASA Ames Research Center)

Value of Potential Field in Reward Specification for Robotic Control via Deep Reinforcement Learning

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0505
Mingkang Wu (The University of Texas at San Antonio), Feng Tao (AB Volvo), Yongcan Cao (The University of Texas at San Antonio)

Drone Navigation in Unreal Engine Using Generative Adversarial Imitation Learning

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0506
Suraj Bandela, Yongcan Cao (The University of Texas at San Antonio)

Tethered Multicopter Guidance in GPS-Denied Environments Through Reinforcement Learning

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0507
Amer Al-Radaideh, Robert A Selje, Daniel Coraspe (New Mexico State University), Efe Camci, Rajdeep Dutta (Agency for Science, Technology and Research (A*STAR)), Liang Sun (New Mexico State University), Senthilnath Jayavelu, Xiaoli Li (Agency for Science, Technology and Research (A*STAR))

FD-19 | In Person - Chesapeake I

Tomographic Measurements of Ejecta Cloud Concentrations in Plume-Surface Interactions using Millimeter Wave Interferometry

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0465
Nicolas Rasmont, Hussein Al-Rashdan, Gregory S Elliott, Joshua Rovey, Laura Villafañe Roca (University of Illinois Urbana-Champaign)

High-Speed Imaging of Droplet Impact on a Hypervelocity Projectile

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0464
Alex Dworzanczyk, Nick J Parziale (Stevens Institute of Technology), Nicholas Mueschke, Donald Grosch, Pablo C Bueno (Southwest Research Institute)

An Experimental Study on the Dynamics of Binder Drops Impacting on a Powder Surface in Binder Jetting Additive Manufacturing

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0466
Zachary Pakulniewicz, Yang Liu (East Carolina University)

MDO-07 | In Person - Chesapeake 4

Super Resolution Generative Adversarial Networks for Multi-Fidelity Pressure Distribution Prediction

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0533
Xiaosong Du, Joaquim R. R. A. Martins (University of Michigan)

A Fully Automated Adaptive Sampling Strategy for Reduced-Order Modeling of Flow Fields

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0534
Xiaosong Du (University of Michigan), Jiachen Wang (Johns Hopkins University), Joaquim R. R. A. Martins (University of Michigan)

Mitigating the Kolmogorov Barrier for the Reduction of Aerodynamic Models using Neural-Network-Augmented Reduced-Order Models

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0535
Joshua L Barnett, Charbel Farhat (Stanford University), Yvon Maday (Sorbonne Universite)

GNC-09/MST-06 | In Person - Annapolis 1

Nonlinear Control of an Autonomous Airship with Collision Avoidance Capability

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0491
Uluhan C Kaya, Abhishek kashyap, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington)

Dynamic Modeling and Trajectory Tracking of a Quadcopter via Linear and Backstepping Controller

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0492
Uygar Gunes, Artun Sel (TOBB Ekonomi ve Teknoloji Universitesi), Bilgehan Sel (Virginia Polytechnic Institute and State University), Cosku Kasnakoglu (TOBB Ekonomi ve Teknoloji Universitesi)

(continued) GNC-09/MST-06 | In Person - Annapolis 1

Convex Trajectory Planning for Proximity Operations using Electric Propulsion with Quantized Thrust

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0493
Kazuya Echigo, Christopher R Hayner, Avi Mittal, Selahattin Burak Sarsilmaz (University of Washington), Matthew Harris (Utah State University), Behcet Acikmese (University of Washington)

MAT-06 | In Person - Chesapeake 8

Out of Autoclave Manufacturing of Void-free Woven Aerospace-grade Carbon Fiber Reinforced Plastic Composite Laminates Using Capillary Effects of Aerogel Nanoporous Networks

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0516
Jingyao Dai, Alisa Webb, Jeonyoon Lee (Massachusetts Institute of Technology), Lauren Randaccio, Justin Griffin, Steven A Steiner (Aerogel Technologies LLC), Brian L Wardle (Massachusetts Institute of Technology)

Multifunctional Polysiloxane Ablative Nanocomposites for Improved Weight Efficiency

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0517
William P Fahy (Texas State University System), Joseph H. Koo (KAI, LLC), Jitendra Tate, Bahram Asiabanpour (Texas State University System)

Reduced-Order Model for the Effective Electro-Mechanical Properties of CNT-Polymer Nanocomposites via Two-Point Correlation Functions

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0518
Kavan Shah, Gary Don Seidel (Virginia Polytechnic Institute and State University)

Multiscale Modeling of Structured Ceramics Under Thermal Shock

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0519
Li Ma, Keith S Caruso, Michael Hunt, Collin McClain, Dajie Zhang, Kenneth Kane, Gehn Ferguson (Johns Hopkins University Applied Physics Laboratory)

Experimental investigation of strain and damage sensing of polymer bonded energetics with MWCNTs and conductive grains under cyclic compressive loads

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0520
Viswajit Talluru, Gary Don Seidel (Virginia Polytechnic Institute and State University College of Engineering)

CFD2030-02 | In Person - National Harbor 13

Measurements and Computations of the Turbulent Corner Flow on the NASA Juncture-Flow Model with a Symmetric Wing

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0440
Michael A Kegerise, Andrew N Leidy, Judith Hannon, Christopher L Rumsey (NASA Langley Research Center), Thomas H Pulliam (NASA Ames Research Center)

Measurements and Computations of Natural Transition on the NASA Juncture-Flow Model with a Symmetric Wing

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0441
Andrew Leidy, Michael A Kegerise, Judith Hannon, Meelan M Choudhari (NASA Langley Research Center), Balaji Shankar Venkatachari, Pedro Paredes (National Institute of Aerospace)

Summary of a Mach 2.5 Shock Wave Turbulent Boundary Layer Interaction Experiment in a Circular Test Section

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0442
Jonathan Sasson (Case Western Reserve University), David O Davis (NASA Glenn Research Center), Paul Barnhart (Case Western Reserve University), Heath H Reising (HX5, LLC)

Instabilities in the Wake of a Pseudorandom Roughness on a Supersonic Flat Plate

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0443
Amanda Chou, Michael A Kegerise, Rudolph A King (NASA Langley Research Center)

Direct Investigation of Nonlinear and Nonlocal Turbulent Constitutive Relations in a Three-Dimensional, Non-Equilibrium Boundary Layer

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0444
Aldo Gargiulo, Julie E Duetsch-Patel, Christopher J Roy, Todd Lowe (Virginia Polytechnic Institute and State University)

AMT-06 | In Person - Magnolia 2

Burst-mode planar laser-induced fluorescence of Nitric Oxide in the Sandia Free-Piston Shock Tunnel

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0403
Sean P Kearney, Kyle P Lynch, Kyle Daniel, Elijah Jans, Charley Downing, Justin Lawrence Wagner (Sandia National Laboratories), Austin M. Webb, Christopher Crabtree, Mikhail Slipchenko (Purdue University)

KTP Optical Parametric Oscillator for Extended Duration High Repetition Rate NO Planar Laser Induced Fluorescence

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0404
Austin M. Webb, Christopher Crabtree, Venkat Athmanathan, Mikhail Slipchenko, Terrence R Meyer (Purdue University)

(continued) AMT-06 | In Person - Magnolia 2

100 kHz High-Spectral-Resolution NO-PLIF Measurements for Compressible Flows
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0405
Neil S Rodrigues, Paul M Danehy (NASA Langley Research Center), Naibo Jiang, Paul Hsu, Jason Leicht, Sukesh Roy (Spectral Energies)
One-Dimensional Nitrogen-based Resonantly Ionized Photoelectron Thermometry (N ₂ RIPT)
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0406
Walker McCord, Aleksander Madison Clark, Zhili Zhang (The University of Tennessee Knoxville Tickle College of Engineering)

MDO-08/NDA-04 | In Person - Chesapeake 6

Quantifying Uncertainty in Li-ion Battery Aging due to Unknown Usage with Hybrid Physics-Informed Neural Networks
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0536
Renato Giorgiani do Nascimento, Felipe Viana (University of Central Florida), Matteo Corbetta, Chetan Shrikant Kulkarni (NASA Ames Research Center)
Using Physics-Informed Neural Networks to Solve Inverse Heat Conduction Problems
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0537
Pramudita Satria Palar, Muhamad Abdul Aziz, Lavi Rizki Zuhail, Poetro Lebdo Sambegoro (Institut Teknologi Bandung), Duong Viet Dung (Vietnam National University Hanoi)
Physics-Informed Proper Orthogonal Decomposition for Data Reconstruction
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0538
Kemas Zakaria, Pramudita Satria Palar, Lavi Rizki Zuhail (Institut Teknologi Bandung), Joseph Morlier (ISAE-SUPAERO)
Microstructure-Sensitive Material Design with Physics-Informed Neural Networks
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0539
Md Mahmudul Hasan, Zekeriya Ender Eger, Arulmurugan Senthilnathan, Pinar Acar (Virginia Polytechnic Institute and State University)
Development of a physics-informed neural network to complement experimental and computational aerospace design efforts
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0540
Emile Oshima, Pablo Hermoso Moreno, Morteza Gharib (California Institute of Technology), Vincent Lee, Abdollah Khodadoust (Boeing Research and Technology)

MAT-07 | In Person - Chesapeake 2

Integration of Physics-based Models and In-situ Process Monitoring for Predicting Variability Associated with Liquid Composites Molding
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0521
Ryan S Enos, Dianyuan Zhang (Purdue University), Xuxiao Li, Jim Lua (Global Engineering and Materials, Inc.)
A Novel Anisotropic Hyper-viscoelastic Model for Predicting Fabric Draping Responses
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0522
Qingxuan Wei, Dianyuan Zhang (Purdue University)
Process Modeling of a Multidirectional Laminate with Multiple Embedded Staggered Tow Gaps
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0523
Von Clyde C. Jamora, Alex Kravchenko (Old Dominion University Frank Batten College of Engineering and Technology), Sergey Kravchenko (The University of British Columbia)
A Multiphysics Coupling for Evaluation of Effects of Local Boundary Conditions on Autoclave-Cured Composite
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0524
Jim Lua, Anand Karuppiiah, Xuxiao Li, Kalyan Shrestha (Global Engineering and Materials, Inc.), Jinhui Yan, Ze Zhao (University of Illinois), Dianyuan Zhang (Purdue University)

MST-08 | In Person - Baltimore 4

Theoretical and Simulated Capacity of Urban Air Mobility Airspace Characteristics
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0546
Casey L Denham, William G Cummings, Jeremy C Smith (NASA Langley Research Center)
Effect of Airspace Characteristics on Urban Air Mobility Airspace Capacity
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0545
William G Cummings, Casey L Denham, Jeremy C Smith (NASA Langley Research Center)
Learning-Driven Airspace Congestion Pricing for Advanced Air Mobility
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0547
Ben Wang, Zilong Deng, Xuan Ni, Kevin B Smith, Max Z Li, Romesh Saigal (University of Michigan)

(continued) MST-08 | In Person - Baltimore 4

Performance Modeling of Urban Air Mobility Vehicles to Support Air Traffic Management Research

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0548
David Hartman (NASA Langley Research Center), Christopher L. Hartman (Analytical Mechanics Associates, Inc.), John V. Foster (NASA Langley Research Center)

An Interface Specification for Urban Air Mobility Performance Models to Support Air Traffic Management Research

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0549
David Hartman (NASA Langley Research Center), Christopher L. Hartman (Analytical Mechanics Associates, Inc.), John V. Foster (NASA Langley Research Center), Fabian Morscheck, Florian Linke (Deutsches Zentrum für Luft- und Raumfahrt DLR Standort Berlin)

PC-13 | In Person - National Harbor 8

Aluminum Ignition Imaging for Composite Solid Fuels

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0564
Clayton Matthias Geipel, Christopher J Pfutzner, Matthew T Finn, Albert Epshteyn, Brian T Fisher (US Naval Research Laboratory)

Laser Absorption Spectroscopy Measurements of High Pressure and Temperature Aluminum Combustion in a Shock Tube

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0565
Kyle Daniel, Elijah Jans, Christopher Murzyn, Daniel R Guildenbecher, William Swain, Charley Downing, David Allen, Kyle P Lynch, Justin Lawrence Wagner (Sandia National Laboratories)

Experimental Investigation of Solid Rocket Motor Slag

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0566
Yoshiki Matsuura (IHI Aerospace)

FD-22 | In Person - Chesapeake D

Boundary Layer Turbulence Flight Experiment in Memory of Mike Holden: Pre-Flight Mission Design

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0477
Bryan J Morreale, Eric Swinny, Heather Emily Kostak-Teplicek, Rodney D Bowersox, Edward B White (Texas A&M University), Aaron T Dufrene, Tim P Wadhams (CUBRC)

Boundary Layer Turbulence Flight Experiment in Memory of Mike Holden: Vehicle Design, Instrumentation, and Ground Test Results

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0478
Aaron T Dufrene, Phillip Portoni, Tim P Wadhams (CUBRC), Heather Emily Kostak-Teplicek, Rodney D Bowersox (Texas A&M University)

Atmospheric Measurements with the HALAS LiDAR System supporting the BOLT II Flight Test

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0479
Thomas J Dobbins, Matthew D Wiebold, Jeffrey VanKerkhove, Matthew C ArchMiller, Lucas N Taylor, Erik H Horak (Honeywell Aerospace)

In-situ Turbulence and Particulate Measurements in Support of the BOLT II Flight Experiment

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0480
Dale A Lawrence, Brian Argrow, Joseph L Pointer, Nicholas Kenny, Christopher A Roseman (University of Colorado Boulder), James Flaten, Graham V Candler (University of Minnesota Twin Cities), Aroh Barjatya, Julio Guardado (Embry-Riddle Aeronautical University)

SD-09/STR-06 | In Person - Chesapeake 5

Flutter and Limit Cycle Oscillations of a Panel Using Unsteady Potential Flow Aerodynamics

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0584
Luisa Piccolo Serafim, Maxim Freydin, Earl H Dowell (Duke University)

Aeroelasticity of Very Flexible Aircraft: Prof. Dewey Hodges' Three-decade Contributions to the Field

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0585
Carlos E Cesnik (University of Michigan College of Engineering)

Gust Alleviation of Highly Flexible Aircraft with Model Predictive Control

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0586
Tianyi He (Utah State University), Weihua Su (The University of Alabama)

Constitutive and geometric effects on nonlinear aeroelastic trim and stability of the predator aircraft

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0587
Mojtaba Moshtaghzadeh, Natalia Rangel, Pezhman Mardanpour (Florida International University)

APA-15 | In Person - Potomac 1

Application of CREATE-AV Helios to XV-15 Tiltrotor
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0418
Andrew M Wissink, Dylan Jude, Jay Sitaraman, Steven Tran (US Army Combat Capabilities Development Command Aviation & Missile Center Aeroflightdynamics Directorate)
High-Fidelity Simulations of Flight Dynamics and Trajectory of a Parachute-Payload System Leaving the C-17 Aircraft
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0419
Mehdi Ghoreyshi (US Air Force Academy), Keith Bergeron (US Army Combat Capabilities Development Command Soldier Center Product Optimization Team), Adam Jirasek, Jurgen Seidel (US Air Force Academy), Gregory Noetscher (US Army Combat Capabilities Development Command Soldier Center Product Optimization Team)
Demonstration of an Integrated Multiphase Capability within Kestrel
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0420
Stefen A Lindörfer, Chris L Robinson, Greg D Power (Arnold Engineering Development Complex)
CFD Study of a Counter-Rotating Propeller eVTOL Concept
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0421
James Lewis (Air Force Research Laboratory), Andrew J Lofthouse (Air Force Life Cycle Management Center), Ashish Bagai (AFWERX)
Enabling HH-60G Predictive Maintenance via Computational Fluid Dynamics (CFD) Artificial Intelligence (AI) Rotorcraft Development and Modeling (CARD-M)
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0422
Jesus Arias, Maia Gatlin, Alex Forbes, David A. Alvord (Georgia Tech Research Institute)

APA-16 | In Person - Potomac 5

Experimental Characterization of the Space Launch System Block 1B Liftoff and Transition Environment
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0423
Lee Mears, Patrick R Shea, Jesse G Collins, Sarah Langston, Morgan A Walker, Jeremy Pinier (NASA Langley Research Center)
Improved Techniques for Measuring Static Ground Wind Loads on the NASA Space Launch System Mobile Launcher 2
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0424
Jesse G Collins, Lee Mears, Patrick R Shea, Sarah Langston, Morgan A Walker, Jeremy Pinier (NASA Langley Research Center)
Overview of the High Reynolds Number Ascent Wind Tunnel Test of the Space Launch System at the National Transonic Facility
Monday, 23 January 16:40 - 17:00 (UTC-5) AIAA-2023-0425
David T Chan, Patrick R Shea, Scott Goodliff, Morgan A Walker, Jesse G Collins, Sarah Langston, Lee Mears, Elizabeth Rieken, Jeremy Pinier (NASA Langley Research Center)
Force and Moment Analysis for the High Reynolds Number Wind Tunnel Test of the Space Launch System at Ascent Conditions
Monday, 23 January 17:00 - 17:20 (UTC-5) AIAA-2023-0426
Patrick R Shea, David T Chan, Morgan A Walker, Sarah Langston, Jesse G Collins, Lee Mears, Elizabeth Rieken, Jeremy Pinier (NASA Langley Research Center)
Parametric Study of the Forward Attachment Geometry for the Space Launch System Next Generation Booster
Monday, 23 January 17:20 - 17:40 (UTC-5) AIAA-2023-0427
James M Ramey, Ian M Giles, Oleg Goushcha, Patrick S Heaney, David J Piatak, Martin K Sekula, Francesco Soranna (NASA Langley Research Center)

APA-14 | In Person - Potomac 3

Unsteady Vortex Lattice Linearization and Sensitivity Analyses for Control Models in Supersonic Aircraft Design
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0416
Thiago Augusto Machado Guimarães, Carlos E Cesnik, Ilya Kolmanovsky (University of Michigan)
Flexibility Assessment of the Aeroelastic-flight-dynamic Behavior for Supersonic Aircraft
Monday, 23 January 16:20 - 16:40 (UTC-5) AIAA-2023-0417
Thiago Augusto Machado Guimarães, Carlos E Cesnik, Ilya Kolmanovsky (University of Michigan)
Panel Discussion
Monday, 23 January 16:40 - 17:40 EDT (UTC-5)

TES-03 | In Person - National Harbor 5

High Pressure Saturated Pool Boiling of Water on Engineered Cylindrical Tubes
Monday, 23 January 16:00 - 16:20 (UTC-5) AIAA-2023-0594
Omar Hernandez Rodriguez, Md Mahamudur Rahman (The University of Texas at El Paso)

(continued) TES-03 | In Person - National Harbor 5

Assessment of Machine Learning Classification Based Models in Identifying Reaction Occurrence in Turbulence Shockwave Interaction (STI)

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0595
Ibrahem Alshybani, Farhad Jaber, Michael S. Murillo (Michigan State University), Yifeng Tian (Los Alamos National Laboratory)

Effects of Aromatic Blends on Seal Swell Rates Using Novel Seals Compatibility Test Rig

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0596
Jerry Hamilton, Bhupendra Khandelwal (The University of Alabama System)

Experimental Investigation on Fuel Cell Reactor for SOFC/Gas Turbine Hybrid Propulsion

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0597
Keiichi Okai, Takayuki Kojima (Uchu Koku Kenkyu Kaihatsu Kiko), Yusuke Suganuma, Hiroshi Nomura (Nihon Daigaku Seisan Kogakubu)

Global Combustion Characteristics of a Viscous Alternative Jet Fuel Blend Using a Novel Twin-Fluid Injector

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0598
Lulin Jiang, Rachel Swinney, Dylan Van Horn (Baylor University), Edwin Corporan (Air Force Research Laboratory)

APA-17 | In Person - Potomac 2

Comparison of URANS and Hybrid RANS/LES buffet response of the Benchmark Supercritical Wing

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0428
Nicholas F Giannelis (The University of Newcastle), Gareth A Vio (The University of Sydney)

Wall-modeled LES of transonic buffet over NASA-CRM using Cartesian-grid-based flow solver FVHC-ACE

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0429
Yoshiharu Tamaki, Soshi Kawai (Tohoku Daigaku)

Simulating Buffet Aerodynamics of a Hammerhead Model Using Hybrid RANS-LES CFD Modeling

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0430
Andrew P Voegelé, Matthew Sirignano (The Aerospace Corporation)

Influence of Reynolds Number on Transonic Buffet Conditions on a Supercritical Airfoil

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0431
Christopher J Schauerte, Anne-Marie Schreyer (Rheinisch-Westfälische Technische Hochschule Aachen Lehrstuhl für Strömungslehre und Aerodynamisches Institut)

FD-20 | In Person - Chesapeake H

PIV Investigation of Turbulent Boundary Layer Response to Active Manipulation of Large-Scale Structures

Monday, 23 January 16:00 - 16:20 (UTC-5) | AIAA-2023-0467
Mitchell E Lozier, Flint O Thomas, Stanislav Gordeyev (University of Notre Dame College of Engineering)

Mean and Unsteady Surface-Pressure Measurements on the BeVERLI Hill

Monday, 23 January 16:20 - 16:40 (UTC-5) | AIAA-2023-0468
Daniel A MacGregor (University of Toronto Institute for Aerospace Studies), Aldo Gargiulo, Julie E Duetsch-Patel (Virginia Polytechnic Institute and State University), Philippe Lavoie (University of Toronto Institute for Aerospace Studies), Todd Lowe (Virginia Polytechnic Institute and State University)

Coupling between a Rectangular Jet and an Oscillating Transverse Flow

Monday, 23 January 16:40 - 17:00 (UTC-5) | AIAA-2023-0469
William Eagan, David J Forliti (University of Saint Thomas)

Effects of a Simulated Atmospheric Boundary Layer on Ship Airwakes

Monday, 23 January 17:00 - 17:20 (UTC-5) | AIAA-2023-0470
Nicholas Zhu, Zheng Zhang, Ebenezer P Gnanamanickam, John Gordon Leishman (Embry-Riddle Aeronautical University)

A Study of Extreme Vertical Flow Fluctuations of the Ship Airwake

Monday, 23 January 17:20 - 17:40 (UTC-5) | AIAA-2023-0471
Guillermo A Mazzilli, Nicholas Zhu, Ebenezer P Gnanamanickam, John Gordon Leishman, Zheng Zhang (Embry-Riddle Aeronautical University)

Tuesday, 24 January

09:30 | Technical Lecture

AS-03/ACD-09/INPSI-06/GTE-07/PC-14/GRE-04/STR-08/DE-02 In Person - Woodrow Wilson A
WE-02 In Person - Chesapeake 9
AS-04 In Person - Woodrow Wilson D
STR-11/SD-16/MAT-12 In Person - Baltimore 5

09:30 | Technical Panel

DGE-04 In Person - Chesapeake 12
EXPL-05 In Person - National Harbor 7
EP-05 In Person - National Harbor 2
PGC-07 In Person - National Harbor 3
PDL-04 In Person - Azalea 3
FD-23 In Person - Chesapeake H
MAT-10/NDA-05 In Person - Woodrow Wilson B

09:30 | Technical Paper Session

CFD2030-03 In Person - National Harbor 13
Pseudo-time Stepping Strategies for Space-Time Discontinuous Galerkin Discretizations
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0662
Sung-Hwan Yoon, Andrew C Kirby, Dimitri J Mavriplis (University of Wyoming)
Fully Discrete Entropy-Stable Flux Reconstruction Scheme for Compressible Flows through the Relaxation Runge-Kutta Method
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0663
Carolyn M V Pethrick, Sivakumaran Nadarajah (McGill University)
Positivity-preserving and entropy-bounded discontinuous Galerkin method for the chemically reacting, compressible Navier-Stokes equations
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0664
Eric J Ching, Ryan F Johnson (US Naval Research Laboratory), Sarah Burrows (Rensselaer Polytechnic Institute), Jacklyn P Higgs (University of Central Florida), Andrew D Kercher (US Naval Research Laboratory)
Positivity-preserving Entropy Stable Schemes of Arbitrary Order of Accuracy for Navier-Stokes Equations
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0665
Nail K Yamaleev, Johnathon Upperman (Old Dominion University)
Entropy Stable Weight-Adjusted Flux Reconstruction High-Order Method in Split Form for Compressible Flows on Curvilinear Grids
Tuesday, 24 January 10:50 - 11:10 (UTC-5) AIAA-2023-0666
Alexander Cicchino, Sivakumaran Nadarajah (McGill University)
APA-23 In Person - Potomac 4
A Convex Optimization Approach to Thin Airfoil Design Using Cubic Splines
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0651
Daniel Berkenstock, Juan J Alonso (Stanford University), Laurent Lessard (Northeastern University)
Hybrid Fidelity Optimization of Efficient Airfoils and Rotors in Ultra-Low Reynolds Numbers Conditions
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0652
Manuel Carreno Ruiz, Domenic D'Ambrosio (Politecnico di Torino)
Multi-Fidelity Probabilistic Aerodynamic Database Generation with the ProForMA Tool
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0653
Michael Cunningham, Nikhil Nigam (BlueHalo), Jayant Mukhopadhaya, Juan J Alonso (Stanford University), Sricharan K Ayyalasomayajula (BlueHalo)

MST-10 | In Person - Baltimore 4

Mass Varying Lunar Lander Dynamics Model with Time Delay
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0730
Andres Enriquez Fernandez (The University of Texas at El Paso)
Lidar Pose Estimation Performance Modeling for Satellite Rendezvous and Proximity Operations
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0731
Tae W Lim (US Naval Academy)
Conceptual Development of a Simulation Environment for Missiles Under Damaged States
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0732
James M Floyd, Mario Perhinschi, Jason N Gross, Wade Huebsch (West Virginia University)

STR-12/MAT-09 | In Person - Chesapeake A

A Multigrid Finite Element Neural Network for Efficient Material Response Prediction
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0770
Changyu Meng, Yongming Liu (Arizona State University Ira A Fulton Schools of Engineering)
CNN-Informed Genetic Algorithm for Optimizing Mechanical Performance of Carbon Nanotube Microscale Bundles
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0771
Karen DeMille (The University of Utah), Joshua Richard Leigh, Riley Hall, Ibrahim Guven (Virginia Commonwealth University), Ashley Spear (The University of Utah)
Multiphysics Modeling on the Capacity Degradation of Silicon Anode
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0772
Parth Bansal, Zhuoyuan Zhang, Pingfeng Wang, Yumeng Li (University of Illinois Urbana-Champaign)
Artificial Intelligence Assisted Residual Strength and Life Prediction of Fiber Reinforced Polymer Composites
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0773
Partha Pratim Das (The University of Texas at Arlington), Muthu Elenchezhian (Purdue University), Vamsee Vadlamudi, Rassel Raihan (The University of Texas at Arlington)

UAS-03 | In Person - Chesapeake C

A Series of Macroscopic Models for Urban Air Mobility Traffic Flow
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0785
Alexandra Fedrigo (The University of Alabama in Huntsville College of Science)
Real-time on-the-fly Motion planning via updating tree data of RRT* using Neural network inference
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0786
Junlin Lou, Burak Yuksek, Gokhan Inalhan, Antonios Tsourdos (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)
Flight Testing an Onboard Turbulence Quantification System for Multicopter Vehicles
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0787
Alec J Bateman (Barron Associates, Inc.), Stephan De Wekker (University of Virginia), Adam Reed, Michael D DeVore, Neha Gandhi (Barron Associates, Inc.)
Optimal Control of Precision Airdrop Trajectories Using Direct Collocation Methods
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0788
Edward J Maxwell, Michael Zollars (Air Force Institute of Technology Graduate School of Engineering and Management), Filip Dziwulski (Farcast, Inc.)

STR-13 | In Person - Chesapeake 7

Lengthscales as a Viable Tool for Investigating Damage in Composites
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0774
Jeffrey T Chambers (Aurora Flight Sciences)
4D X-ray CT for Evaluation of Progressive Damage Growth of Composites under Fatigue Loading
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0775
Waruna p Seneviratne, John Tomblin (Wichita State University)
Comparison of Uniaxial Spectrum Editing Method Performance
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0776
Dominic Jarecki (Texas A&M University), Soonwook Kwon (Technical Data Analysis Inc), Anahita Imanian (The MITRE Corporation), Nagaraja Iyyer (Technical Data Analysis Inc)

(continued) STR-13 In Person - Chesapeake 7	
Fatigue Life Prediction Model Considering Surface Roughness for Additively Manufactured Metallic Components	
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0777	
Kaushik Kethamukkala, Yongming Liu (Arizona State University Ira A Fulton Schools of Engineering)	
STR-14 In Person - Chesapeake 4	
Improved Method for Increased-Rate Stitched Composites Manufacturing	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0778	
Andrew E Lovejoy (NASA Langley Research Center)	
Mechanical Cloaking of Cutouts in Laminated Plates	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0779	
Calum J McInnes, Alberto Pirrera, Byung Chul Kim, Rainer MJ Groh (University of Bristol)	
Stacking sequence optimization to improve volumetric heat generation for induction welding of thermoplastic composites	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0780	
Darun Barazanchy, Jaspreet Pandher, Michael J Van Tooren (University of South Carolina)	
Manufacturing Trials of Integrally-Stiffened Panels for Flight Applications	
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0781	
Alana Cardona, Dawn C Jegley, Andrew E Lovejoy (NASA Langley Research Center)	
NDA-06/MDO-11 In Person - Chesapeake 3	
Adaptive Sparse Polynomial Chaos Expansion based on a Classifier with Sequential Sampling	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0740	
Mishal Thapa, Sameer B Mulani, Achyut Paudel, Subham Gupta (The University of Alabama), Robert W Walters (Virginia Polytechnic Institute and State University)	
Optimally tensor-structured quadrature rule for uncertainty quantification	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0741	
Bingran Wang, Nicholas C Orndorff, John T Hwang (University of California San Diego)	
Evaluation of Designed Distributions for Stochastic Collocation Methods	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0742	
Edwin E Forster, Daniel L Clark, Philip Beran (Air Force Research Laboratory)	
HIS-03 In Person - Chesapeake 10	
<i>A Trailblazing Flight for Portuguese Overseas </i>Commercial Air Routes	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0707	
Fernando P Neves, Jorge M Barata, Andre R Silva (Universidade da Beira Interior Faculdade de Engenharia)	
Twenty-Five Years of Portuguese Aviation Events at Amadora	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0708	
Fernando P Neves, Jorge M Barata, Andre R Silva (Universidade da Beira Interior)	
The Rome-Tokyo air raid in 1920	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0709	
Antonio di Biase (Politecnico di Milano)	
EAT-04 In Person - Camellia 1	
Hybrid-Electric Aero-Propulsion Controls Testbed: Overview and Capability	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0671	
Halle E. Buescher (HX5, LLC), Dennis E Culley, Santino Bianco, Joseph W Connolly, Ariel Dimston, Joseph Saus, Casey Theman (NASA Headquarters), Marcus Horning (HX5, LLC), Nicholas Purpera (Peraton, Inc.)	
Parametric Optimization and Performance Assessment of a Mild Hybrid Propulsion System for a Single-Aisle and Regional Aircraft	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0672	
Konstantinos Milios, Jonathan Conrad Gladin, Anusha Harish, James Kenny, Joshua Brooks, Haya Helmy, Jeremy Decroix, Dimitri N Mavris (Georgia Institute of Technology)	
High Power Density Permanent Magnet Propulsion Motor Development for Urban Mobility Applications	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0673	
Ouyang Wen (Aurora Flight Sciences)	

MDO-10 In Person - Chesapeake 6	
Aerodynamic Shape Optimization with CAD-Based Geometric Parameterization	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0726	
Hannah Hajdik, Anil Yildirim, Joaquim R. R. A. Martins (University of Michigan)	
Solver-Independent Aeroelastic Coupling For Large-Scale Multidisciplinary Design Optimization	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0727	
Sebastiaan PC van Schie, Han Zhao, Jiayao Yan, Ru Xiang, John T Hwang, David Kamensky (University of California San Diego)	
Bi-level Multidisciplinary Design Optimization of a Wing Considering Maneuver Load Alleviation and Flutter	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0728	
Bernardo Bahia Monteiro, Alasdair C Gray, Carlos E Cesnik, Ilya Kolmanovsky (University of Michigan), Fabio Vetrano (Airbus SAS)	
Fuel burn Minimization Including Dynamic Aeroelastic Constraint for Free-flying Vehicle Under Geometrically Nonlinear Deformations	
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0729	
Patrizio Rosatelli, Carlos E Cesnik (University of Michigan), Christopher A. Lupp (Air Force Research Laboratory)	
GTE-08 In Person - National Harbor 11	
Dynamics and properties of ignition kernel generated by a helicopter sunken fire ignitor	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0702	
Alessandra Matino (Safran Helicopter Engines), Julien Sotton, Marc Bellenoue (National Center for Scientific Research (CNRS)), Christophe Viguier, Stéphane Richard (Safran Helicopter Engines)	
Transient Optimization of a Gas Turbine Engine	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0703	
Jonathan Lee Kratz (NASA Glenn Research Center)	
Transient Optimization for the Betterment of Turbine Electrified Energy Management	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0704	
Jonathan Lee Kratz, Dennis E Culley, Julian Lehan (NASA Glenn Research Center)	
Hot Corrosion Damage Modelling in Aero Engines based on Performance and Flight Mission Analysis	
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0705	
Evangelia Pontika, Panagiotis Laskaridis, Theoklis Nikolaidis (Cranfield University), Max Koster (Lufthansa Technik AG)	
Mapping the Effect of Variable HPT Blade Cooling on Fuel Burn, Engine Life and Emissions for Fleet Optimization using Active Control	
Tuesday, 24 January 10:50 - 11:10 (UTC-5) AIAA-2023-0706	
Evangelia Pontika, Panagiotis Laskaridis (Cranfield University), Felipe Montana Gonzalez, Will Jacobs, Andrew Mills (The University of Sheffield)	
GNC-10/AFM-07 In Person - Annapolis 3	
Performance of a Crater Navigation Method for Lunar South Pole Landing	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0690	
Svenja Woicke, Hans Krüger (Deutsches Zentrum für Luft- und Raumfahrt eV)	
Hazard Boresight Relative Navigation for Safe Lunar Landing	
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0691	
Stephen R Steffes, Paul DeTrempe (Charles Stark Draper Laboratory Inc), Gregory Barton, David Woffinden (NASA Johnson Space Center)	
Technology Maturation of Active Precision Navigation for Lunar Landing	
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0692	
Bryan Friia, Aditya Mahajan, Michael Forrest, Stefan R Bieniawski (Blue Origin LLC)	
Verification and Validation of Signature-based Terrain Relative Navigation System for Precision Landing	
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0693	
Jeremy Hardy, Kori Hough, Chris Owens, Michael Bloom, Harry Kim, Hector Li Sanchez, Ebrahim Mohammadi, Holly Lindenfelser, Andrew Tennenbaum, Louis Moon, Rajesh Venkateswaran (Astrobotic Technology), Erik Bailey, Yang Cheng, Daniel Clouse, Carlos Y. Villalpando, Ashot Hambardzumyan, Andrew Johnson (Jet Propulsion Laboratory), Andrew D Horchler (Astrobotic Technology)	
INPSI-07 In Person - National Harbor 12	
Influence of Hot Flow Conditions on Nozzle Performances	
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0714	
Emanuele Resta, Roberto Marsilio, Michele Ferlauto (Politecnico di Torino)	

(continued) INPSI-07 | In Person - National Harbor 12

PIV Measurements of Internal Flows through Nozzles with Curvature and Shape Transition

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0715
Vincent Adah Onoja, Daniel R Cuppoletti (University of Cincinnati)

Comparison and Analysis of Hypersonic Scramjet Nozzles

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0716
Dustyn A Vianna Moizes, Adam R Kotler, Mason Redman Thornton, Kareem A Ahmed (University of Central Florida)

APA-24 | In Person - Potomac 6

Effect of leading-edge tubercles on dynamic stall in pitching airfoils

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0654
Cesar A Leos (University of Nebraska System), Alejandro Carrizales, Robert Freeman, Isaac Choutapalli (The University of Texas Rio Grande Valley)

Flow Control for Enhanced Aileron Effectiveness on a Commercial Aircraft

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0655
Arvin Shmilovich, Yoram Yadlin (Boeing Research and Technology), Paul M Vijgen (Boeing Commercial Airplanes), Rene Woszidlo (Boeing Research and Technology)

Applications of Flow Control to Wing High-Lift Leading Edge Devices on a Commercial Aircraft

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0656
Arvin Shmilovich, Yoram Yadlin (Boeing Research and Technology), Paul M Vijgen (Boeing Commercial Airplanes), Rene Woszidlo (Boeing Research and Technology)

Conceptual Integration Studies of Localized Active Flow Control on the Wing of a Commercial Aircraft

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0657
Paul M Vijgen, Alex Ziebart (Boeing Commercial Airplanes), Arvin Shmilovich, Rene Woszidlo (Boeing Research and Technology)

Separation Control and the Energy Expenditure Using Pulsed Co-Flow Jet

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0658
Kewei Xu, Gecheng Zha (University of Miami)

SD-12/APA-26 | In Person - Chesapeake B

Investigation of Geometrically Nonlinear Effects in the Aeroelastic Behavior of a Very Flexible Wing

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0759
Cristina Riso (Georgia Institute of Technology), Carlos E Cesnik (University of Michigan)

Stall Flutter of the Benchmark Supercritical Wing at High Angles of Attack

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0760
Lior Poplingher, Daniella E Raveh (Technion Israel Institute of Technology)

Uncertainties Quantification in the Prediction of the Aeroelastic Response of The PAZY Wing Tunnel Model

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0761
Marcello Righi (Zurcher Hochschule fur Angewandte Wissenschaften)

Aerodynamic and Static Coupling Simulations of the Pazy Wing with Transitional CFD for the Third Aeroelastic Prediction Workshop

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0762
Markus Ritter, Michael Fehrs (Deutsches Zentrum fur Luft- und Raumfahrt eV), Christoph Mertens (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

MVCE-01 | In Person - Chesapeake L

Parameterising Discrete and Voxelised Geometries for use in Design

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0738
William N Dawes (University of Cambridge)

Automated FE Analysis of a Stiffened Tank Pressure Vessel using Shell-Solid Multi-Fidelity Modeling

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0739
Manasi Palwankar, Rakesh K Kapania (Virginia Polytechnic Institute and State University), Daniel C Hammerand, Edward Szwabowski, Mohamed Jrad (M4 Engineering)

An Integrated Design Environment for the Engineering Sketch Pad

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0550
John Dannenhoffer (Syracuse University), Robert Haimes (Massachusetts Institute of Technology)

(continued) MVCE-01 | In Person - Chesapeake L

An Interactive Airfoil Analysis and Design Tool in Matlab

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0551
Krzysztof Fidkowski (University of Michigan)

GNC-11/IS-09 | In Person - Annapolis 4

Data-Driven Retrospective Cost Adaptive Control of a Quadrotor UAV

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0694
Brian Y Lai, Syed Aseem Ul Islam (University of Michigan), Scott Nivison (Air Force Research Laboratory Munitions Directorate), Dennis S. Bernstein (University of Michigan)

The Open-Blimp: An Open-Source Blimp Platform for Lighter-Than-Air Research

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0695
Tony X Lin (Georgia Institute of Technology), Tristan K Schuler, Daniel M Lofaro, Donald Sofge (US Naval Research Laboratory), Fumin Zhang (Georgia Institute of Technology)

Run-Time Assurance via Real-time Generation of Backup Trajectories and Transverse Dynamics Regulation Laws

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0696
Ibrahim A Alomar (King Abdulaziz City for Science And Technology), Fatema Alhani (King Abdullah University of Science and Technology), Abdulaziz Ahmed Alfaadehl (King Abdulaziz City for Science And Technology), Eric M Feron (King Abdullah University of Science and Technology), Hesham Shageer (King Abdulaziz City for Science And Technology), Mohamad T Shahab (King Abdullah University of Science and Technology)

APA-25 | In Person - Potomac 3

Implicit Large eddy simulation of hypersonic boundary-layer transition for a flared cone

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0659
Cuong Nguyen, Sebastien Terrana, Jaime Peraire (Massachusetts Institute of Technology)

3D-Printed Quasi-Random Distributed Roughness for Turbulent Boundary Layer Analysis on Hypersonic Ogive Nosecones

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0660
Jack Shine, Joel White, Rodney D Bowersox, Edward B White (Texas A&M University), Mark T Gragston, Farhan Siddiqui (The University of Tennessee Space Institute)

Visualization of Surface Heat Transfer around Sharp-Fin on Hypersonic Flat Plate at Various Angles of Attack

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0661
Masato Taguchi, Masashi Kashitani (National Defense Academy)

PC-16 | In Person - National Harbor 10

A visualization of the ignition process of n–dodecane under multiple injections: An optical study in a heavy–duty diesel engine

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0743
Rajavasanth Rajasegar, Ales Srna (Sandia National Laboratories California)

Comparison of End Wall and Sidewall Ignition Delay Times for Ethylene at Sub-atmospheric Pressures

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0744
Michael S Knadler, Mitchell D Hageman (US Air Force Academy), Ez Hassan (Air Force Research Laboratory)

Design and Characterization of a Hot-Surface Ignition (HSI) Experiment

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0745
David Teitge, James C Thomas, Thomas E Sammet, Eric L Petersen (Texas A&M University)

On Hydrodynamic Regimes of Pulse Ignition in Methane-Air Flow

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0746
Si Shen, Enrico Rempe, Joseph Lefkowitz (Technion Israel Institute of Technology)

HSABP-03 | In Person - National Harbor 4

Numerical Evaluation of Hypersonic Inward-Turning Inlets at Off-Design Mach Number

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0710
Jacob Snider, William Engblom, Arjun J Vedam (Embry-Riddle Aeronautical University), John W Slater (NASA Glenn Research Center)

A Comparison of Turbulence Models for Scramjet Isolator Unstart Estimation

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0711
Nicholas Harris, Timothy M Stokes, Ragini Acharya (The University of Tennessee Space Institute)

(continued) HSABP-03 | In Person - National Harbor 4

Multi-fidelity Computational Investigations of Hypersonic Shock Wave-Boundary Layer Interactions in a Multi-compression Scram-jet Inlet

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0712
Timothy M Stokes, Ragini Acharya (The University of Tennessee Knoxville Tickle College of Engineering), Mesbah Uddin (UNC Charlotte)

High-Temperature Tungsten Liquid Metal Heat Pipes: Applications and Performance

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0713
Marcel Otto, Quentin Pascal Fouliard, Jayanta Kapat, Seetha Raghavan (University of Central Florida), Zachariah Koyn (Energy Driven Technologies, LLC), Jean Paul Allain (The Pennsylvania State University)

FD-25 | In Person - Chesapeake K

Linear and Nonlinear Stability Analysis of a Three-Dimensional Boundary Layer over a Hump

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0678
Sven Westerbeek (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Juan Alberto Franco Sumariva (Deutsches Zentrum fur Luft- und Raumfahrt eV), Theodoros Michelis (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Stefan Hein (Deutsches Zentrum fur Luft- und Raumfahrt eV), Marios Kotsonis (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

On the Unsteadiness and Three Dimensionality of a Laminar Separation Bubble for a Supersonic Flow over a Compression Corner

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0679
Irmak Taylan Karpuzcu, Deborah A Levin (University of Illinois Urbana-Champaign), Nicolas Cerulus, Vassilios Theofilis (University of Liverpool Faculty of Science and Engineering)

Analysis of Hypersonic Flow Behind an Isolated Roughness Element Using Kinetic Methods

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0680
Angelos Klothakis (Technical University of Crete), Kamil Dylewicz, Vassilios Theofilis (University of Liverpool), Deborah A Levin (University of Illinois Urbana-Champaign)

Schlieren Visualization of Controlled Disturbances in Mach 5 Flow Over a Hollow Cylinder Flare

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0681
Ashish Singh, Christoph Hader, James A S Threadgill, Hermann F Fasel, Jesse C Little (The University of Arizona)

AA-05 | In Person - Baltimore 1

An OpenFoam-Based LEE Solver for Prediction of Noise Generated by a Supersonic Jet Issued from a Rectangular Nozzle

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0613
Sam Salehian (Tuskegee University), Patrick P Good, Vladimir V Golubev, Reda R Mankbadi (Embry-Riddle Aeronautical University)

Coherence of Screech Generation at the 2nd Harmonic for a Rectangular Jet

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0614
Olivia Grace Martin, Gao Jun Wu, Sanjiva K Lele (Stanford University)

Influence of Nozzle Geometry on Jet mixing and Jet Installation Noise

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0615
Hussain Ali Abid, Annabel P Markesteijn, Vasily Gryazev, Vassili Toropov, Sergey A Karabasov (Queen Mary University of London), Guangda Yang, Christian B Allen, Hasan Kamliya Jawahar, Mahdi Azarpeyvand (University of Bristol)

Effect of Flight on the Noise from Turbulent Jets in the Generalized Acoustic Analogy

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0616
Stewart J Leib (HX5, LLC), James E Bridges (NASA Glenn Research Center)

LP-04 | In Person - National Harbor 14

Performance Characteristics of the Film-cooling System Applied to 200 N-class GCH₄-LOx Small Rocket Engine

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0717
Yun Hyeong Kang, Hyun Jong Ahn, Chang Han Bae, Jeong Soo Kim (Pukyong National University), Jae Won Lee, Jong Hyun Kim (Hanwha Corp)

Experimental analysis in Hydrogen Peroxide Monopropellant Thruster with Different Injector Pressure Drop

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0719
Yehyun Kim, Sejin Kwon, Sang-Hyun Lee (Korea Advanced Institute of Science and Technology)

Validation of Transient Spacecraft Refueling Model with Gateway Breadboard Test Data

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0720
Brian S Lusby (NASA Johnson Space Center), Brandie L Rhodes (The Aerospace Corporation), Adela D Han (Jacobs Technology Inc), Pooja S Desai (NASA Johnson Space Center), Matthew W Green (Jacobs Technology Inc), Christopher D Radke (NASA Johnson Space Center)

DE-03 | In Person - Chesapeake 5

Reduced Order Model for Standard Computer-aided Engineering Design Workflows

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0668
José E Valenzuela del Río, Arun Ramamurthy, Hyunjee Jin (Siemens Corp Corporate Research)

Configuration Selection via Self-Supervised, Performance-Weighted Generative Neural Networks

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0669
Jordan T Smart, Juan J Alonso (Stanford University)

AI-Based Multifidelity Surrogate Models to Develop Next Generation Modular UCAVs

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0670
Hasan Karali, Gokhan Inalhan, Antonios Tsourdos (Cranfield University)

GNC-12/MST-09 | In Person - Annapolis 2

Multi-Level Adaptation for Automatic Landing with Engine Failure under Turbulent Weather

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0697
Haotian Gu, Hamidreza Jafarnejadsani (Stevens Institute of Technology)

Relative Spacecraft Position and Attitude in the Circular Restricted Three-Body Problem: TSE(3) vs. Dual Quaternions

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0698
Brennan S McCann, Matthew M Wittal, Morad Nazari (Embry-Riddle Aeronautical University)

An Efficient Quintic Time Scaling End-Effector Trajectory Generation Algorithm for a Servicing Robotic Arm

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0699
Aryslan Malik, Sirani Perera, Troy Henderson (Embry-Riddle Aeronautical University)

Discriminative Kalman Filtering in Special Euclidean Group SE(3) for Modeling Unknown Spacecraft Environments

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0700
Matthew M Wittal, Brennan S McCann, Morad Nazari (Embry-Riddle Aeronautical University)

REEF Calibrator: An Open-Source Online IMU-Camera Calibration

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0701
Jose H Ramos (University of Florida), Kevin Brink (Air Force Research Laboratory Munitions Directorate), Prashant Ganesh (University of Florida)

MAT-11/ICME-02/MDO-09/STR-09 | In Person - Chesapeake 1

Molecular dynamics simulation of effects of solutes on dislocation propagation in Ni-based superalloys

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0721
Mikhail I Mendelev, Valery Borovikov, Nikolai Zarkevich, John Lawson (NASA Ames Research Center), Timothy M Smith (NASA John H Glenn Research Center)

Towards Accurate and Efficient Predictions of Martensitic Transition Temperatures for Shape Memory Alloys from First Principles

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0722
Zhigang Wu, Hessam Malmir, John Lawson (NASA Ames Research Center)

Abstract Title: A Dislocation Mechanism-Based Constitutive Model for Hierarchical Anisotropic Materials: Ti6Al4V implementation

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0723
Chamara Herath, Janith C Wannin (Clarkson University), Steven M Arnold (NASA Headquarters), Ajit Achuthan (Clarkson University)

Effect of Damage Progression on the Thermal Conductivity of 3D Woven Composite Thermal Protection System Materials

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0724
Brett A Bednarczyk (NASA Glenn Research Center), Peter A Gustafson (Western Michigan University), Trenton M Ricks, Evan J Pineda, Pappu L Murthy (NASA Glenn Research Center), Subodh Mital (The University of Toledo)

AMT-09 | In Person - Magnolia 3

10 kHz Acetone Molecular Tagging Velocimetry in a Mach 4 Ludwig Tube

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0630
Cary Dean Smith, Lauren E Lester, Farhan Siddiqui (The University of Tennessee Space Institute), Mark Gragston (The University of Tennessee Knoxville Tickle College of Engineering)

Development and Assessment of a New Particle Image Velocimetry System in the NASA GRC 225 cm2 Wind Tunnel

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0631
Heath H Reising (HX5, LLC), David O Davis (NASA Glenn Research Center)

(continued) AMT-09 | In Person - Magnolia 3

Planar Doppler Velocimetry in a Full-Scale Aircraft Engine Exhaust

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0632
Tom P Jenkins, Regis K. C. Morgan (MetroLaser Inc), David E. Mayo, Michael J. Smith (Naval Air Systems Command), Robert P. Howard, Bernard M Williamson, Bradley C. Winkleman, William B. Besheres (Arnold Engineering Development Complex)

Preliminary Development of Tomographic Wavelet-based Optical Flow Velocimetry (TwOFV)

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0633
Wayne E Page, Jeffrey Alan Sutton (The Ohio State University)

Optimizing Dt for MP-STB in Particle Tracking Velocimetry

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0634
Michael R Fenelon, Yang Zhang, Louis N Cattafesta (Florida A&M University-Florida State University College of Engineering)

PDL-05/PC-17 | In Person - Azalea 2

Numerical model of the initiation and propagation of a radial flame front by NRP discharge

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0747
Raphaël J Dijoud, Carmen Guerra-Garcia (Massachusetts Institute of Technology)

Ignition enhancement of NH₃/air mixtures by non-equilibrium excitation in a nanosecond pulsed plasma discharge

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0748
Xingqian Mao, Hongtao Zhong, Ning Liu, Yiguang Ju (Princeton University)

Numerical Investigation of Ignition Kernel Development with Nanosecond Pulsed Plasma in Quiescent and Flowing Mixtures

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0749
Taaresh Sanjeev Taneja (University of Minnesota Twin Cities), Timothy Ombrello (Air Force Research Laboratory), Joseph Lefkowitz (Technion Israel Institute of Technology), Suo Yang (University of Minnesota Twin Cities)

Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Flame in an Annular Spray Burner

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0750
Parneeth Lokini, Ciprian Dumitrache, Bret C Windom, Azer P Yalin (Colorado State University)

Ammonia Generation in Ns Pulse and Ns pulse / RF Discharges Over a Catalytic Surface

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0751
Xin Yang, Caleb Richards, Igor V Adamovich (The Ohio State University)

AA-06 | In Person - Baltimore 2

CFD-based Aerodynamic and Aeroacoustic Analysis of Large Payload Multi-Copter Rotors

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0617
Naina Pisharoti, Jeremiah Whelchel, William N Alexander, Stefano Brizzolara (Virginia Polytechnic Institute and State University)

Fast Broadband Noise Prediction of Serrated UAV Rotors in Hover

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0618
Jorge Santamaria, Marlene Sanjose (Ecole de technologie superieure), Stephane Moreau (Universite de Sherbrooke)

Investigation into Aeroacoustic Rotor Scaling Effects using Near-Field and Time-Resolved Particle Image Velocimetry Measurement Techniques

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0619
Matthew Walker, Daniel R Cuppoletti (University of Cincinnati)

Acoustics of a Rotary Wing with Passive Reduced Tip Vortex in a Static Configuration

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0620
Mateo Diaz, Daniel Yu, Phillip J Ansell, Theresa Saxton-Fox (University of Illinois Urbana-Champaign)

MST-11 | In Person - Baltimore 3

Aggregate Network Model with Resilience Considerations for Air Traffic Flow Management

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0733
Adam Frewin (The MITRE Corporation), Max Z Li (University of Michigan), Christine P Taylor, Lesley A Weitz (The MITRE Corporation)

Optimal Cruise Airspeed in the Presence of Wind Uncertainty

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0734
Hyunho Jung, John-Paul Clarke (The University of Texas at Austin)

Improving Noise Predictions of the Aviation Environmental Design Tool (AEDT) Using Deep Neural Networks and Sound-level Monitor Data

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0735
Juan J Alonso, Yasmine Alonso, Aditeya Shukla, Donald Jackson, Thomas Rindfleisch (Stanford University)

(continued) MST-11 | In Person - Baltimore 3

Probabilistic Risk Estimation of sUAS Collisions with non-participating people
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0736
Nishanth Reddy Goli (EngeniusMicro), Chris Duling, David Arterburn (The University of Alabama in Huntsville)
UAV Collision Risk Assessment in Terminal Restricted Area by Heatmap Representation
Tuesday, 24 January 10:50 - 11:10 (UTC-5) AIAA-2023-0737
Na Zhang (Nanyang Technological University), Hu Liu (Southwest Jiaotong University), Kin Huat Low (Nanyang Technological University)

SATS-01 | In Person - National Harbor 5

Guardian Scout: Military Space from the Pad Up
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0752
Matt A Bille, Kerri Westburg, Paul Kolodziejski, Mariah Lutz (Booz Allen Hamilton)
Mission Planning for Stellar Occultation Measurements of Lower Thermospheric Nitric Oxide in the Polar Night
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0753
Nicholas A Jones, Leon K Harding, Scott Bailey, Samantha Parry Kenyon (Virginia Polytechnic Institute and State University)

SR-01 | In Person - National Harbor 15

Acoustic Pressure Mode Shapes and Frequencies in a Circular Tube for an Arbitrary Temperature Distribution
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0768
Cody Shelton, Joseph Majdalani (Auburn University)
A Historical Review Sounding Rockets and their use in Hypersonics Research
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0769
David J McDonell, Krishan K Ahuja (Georgia Institute of Technology)

SCS-03 | In Person - Woodrow Wilson C

Kilometer-Scale Parabolic Reflector for a Radio Telescope in a Lunar Crater
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0754
Manan Arya, JT Herrscher (Stanford University), Dario Pisanti (Scuola Superiore Meridionale), Alessandro Verniani, Melanie Delapierre, Gaurangi Gupta, Ashish Goel, Joseph Lazio, Paul Goldsmith, Saptarshi Bandyopadhyay (Jet Propulsion Laboratory)
Design and Prototyping of an Origami-Based Rigid-Foldable Parabolic Reflector
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0755
Tianshu Wang, Matthew J Santer (Imperial College London)
Demonstration of an Electrostatically Actuated Mesh Reflector Antenna with Bend-Forming
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0756
Harsh G Bhundiya, John Z Zhang, Kaleb Overby, Fabien Royer, Jeffrey Lang, Zachary C Cordero (Massachusetts Institute of Technology), William Moulder, Sungeun K Jeon, Mark J Silver (Massachusetts Institute of Technology Lincoln Laboratory)
Multistable helical antenna with reconfigurable radiation pattern for spacecraft
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0757
Maria Sakovsky, Phoenix Reivers (Stanford University), Rosette Maria Bichara, Fatima Asadallah, Youssef Tawk, Joseph Costantine (American University of Beirut)
Preliminary Study of Employing Space-Based Mirrors for Augmented Illumination of Cislunar Resident Space Objects
Tuesday, 24 January 10:50 - 11:10 (UTC-5) AIAA-2023-0758
Alec Cook, Jacob Dahlke, Robert A. Bettinger (Air Force Institute of Technology)

FD-26 | In Person - Chesapeake D

Boundary Layer Turbulence Flight Experiment in Memory of Mike Holden: Side A Flight Data
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0682
John Wirth, Bryan J Morreale, Heather Emily Kostak-Teplicek, Rodney D Bowersox (Texas A&M University System), Aaron T Dufrene, Phillip Portoni, Tim P Wadhams (CUBRC)
Boundary Layer Turbulence Flight Experiment in Memory of Mike Holden: Ground-to-Flight Comparisons
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0683
Phillip Portoni, Aaron T Dufrene (CUBRC)
BOLT II Roughness-Side Flight Results
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0684
Scott A Berry (NASA Langley Research Center)

(continued) FD-26 | In Person - Chesapeake D

Thermal and Structural Analysis of BOLT-2: The Holden Mission

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0685
Bradley M Wheaton (Johns Hopkins Applied Physics Laboratory), Aaron T Dufrene (CUBRC)

SD-13/STR-10 | In Person - Chesapeake 8

In Memory of Prof. Dewey Hodges: A Review of Advanced Beam Theories and Applications

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0763
Zahra Sotoudeh (California Polytechnic State University College of Engineering), Mayuresh Patil (Georgia Institute of Technology)

A Review of Modeling of Composite Structures

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0764
Wenbin Yu (Purdue University)

Deployment of Beam Theories in Determining Subsystem Properties for Statistical Energy Analysis

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0765
Anurag Rajagopal (Altair Engineering Inc)

Prof. Hodges Memorial Session: A New Approach to Beam Cross-sectional Analysis

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0766
Mayuresh Patil (Georgia Institute of Technology)

Properties and Layerwise Modeling of the Harlequin Variational Theorem for Composite Structures

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0767
Luciano Demasi (San Diego State University)

APA-20 | In Person - Potomac 1

Computational Study of Ring-slot Parachute Dynamics in Turbulent Flow Fields

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0640
Keith Bergeron (US Army Combat Capabilities Development Command), Mehdi Ghoreyshi, Adam Jirasek (US Air Force Academy)

Transitional CFD Analysis of a Slotted, Natural-Laminar-Flow Tail Rotor

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0641
Christopher J Axten (The Pennsylvania State University)

Roughness Wall Modeling for Naval Applications in CREATETM-AV Kestrel as Modified by NSWCCD

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0642
Theo Leasca, Andrew S DeJong (Naval Surface Warfare Center Carderock Division)

A Prototype Incompressible Pressure-Based Solver for Free-Surface Flows in CREATETM-AV Kestrel

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0643
Matthew B Jemison, Paul F White, Andrew S DeJong, Chandrasekhar Kannepalli, Wesley M Wilson, Jacob B Engel (Naval Surface Warfare Center Carderock Division), Robert Starr (CREATE-AV Kestrel)

APA-21 | In Person - Potomac 5

Space Launch System Core Stage Green Run Base Heating: Anomaly, Mitigation and Flight Redesign

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0644
Manish Mehta, Christopher I Morris, Brandon L Mobley, Terry L Prickett (NASA Marshall Space Flight Center)

Predicting SLS Launch Environment using a Novel Multiphase Formulation

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0645
Jordan B Angel, Scott Neuhoﬀ, Man Long Wong, Michael F Barad, Cetin C Kiris (NASA Ames Research Center)

Validation of Shadowgraph Spectral Analysis using an SLS Block 2 Wind-Tunnel Model

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0646
Oleg Goushcha, Martin K Sekula (NASA Langley Research Center), Theodore J Garbeﬀ (NASA Ames Research Center)

Comparison of Corcos-based and experimentally-derived coherence factors for buffet forcing functions estimation

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0647
Francesco Soranna, Patrick S Heaney, Martin K Sekula, David J Piatak, James M Ramey (NASA Langley Research Center)

Experimental and Computational Examination of the Coandă Effect on the Space Launch System at Liftoff Conditions

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0648
Thomas J Wignall, Morgan A Walker, Jesse G Collins (NASA Langley Research Center)

ACD-06 | In Person - Chesapeake E

Linearized Rigid-Body Static and Dynamic Stability of an Aircraft with a Bio-Inspired Rotating Empennage
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0621
Austin J Kohler, Christian R Bolander, Douglas F Hunsaker (Utah State University), James J Joo (Air Force Research Laboratory)
Hybrid Wing Body Pitch Control with a Surface-Vorticity Solver
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0623
Griffin A DiMaggio, Roy J. Hartfield (Auburn University), Vivek Ahuja (Research in Flight)
Static Trim of a Bio-Inspired Rotating Empennage for a Fighter Aircraft
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0624
Christian R Bolander, Austin J Kohler, Douglas F Hunsaker (Utah State University), David Myszka (University of Dayton), James J Joo (Air Force Research Laboratory)

TES-04 | In Person - National Harbor 6

Comparison of F-76 and JP-8 Fuel Surrogates in a Low-Pressure Swirl Burner
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0782
John E Fernandez, Oliver A Dyakov, John Hunter Mack, Noah E Van Dam (University of Massachusetts Lowell)
On the Development of Coupled Radiative Flamelet Generated Manifolds to Predict Solid Fuel Flame Spread in Microgravity
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0783
Kenneth L. Budzinski, Paul E. DesJardin (University at Buffalo)
Hydrogen-Enriched Natural Gas Auto-Combustion Mapping at Elevated Pressures for Gas Turbines
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0784
Christopher Loving, Garrett Mastantuono, Subith Vasu (University of Central Florida), Scott Cloyd, Angel Hernandez, Travis Pigon (Mitsubishi Group)

TP-06 | In Person - Azalea 1

Decomposition and permeability of room temperature vulcanizing (RTV) silicone
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-2716
Luis Chacon, Ben Deaton, Savio James Poovathingal (University of Kentucky)
Materials Response Modeling of Pyrolysis Gases Flow Through Material with Thin Layers
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-2717
Hilmi Berk Gur, Christen Setters, Rui Fu, Alexandre Martin (University of Kentucky)
Additively Manufactured Titanium Alloy Sandwich Structures for Thermal Protection
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-2719
Philipp Nieke (The University of Auckland), Thorn Schleutker, Ali Guelhan (Deutsches Zentrum fur Luft- und Raumfahrt eV), Nicholas J. Rattenbury, John E. Cater (The University of Auckland)
Quantification of Directionally Dependent Mechanical Properties and Damage Tolerance of FiberForm
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-2597
Robert N Quammen, Paul F. Rottmann (University of Kentucky)
Crack Modeling in Charring Ablation Materials
Tuesday, 24 January 10:50 - 11:10 (UTC-5) AIAA-2023-2085
Rui Fu, Alexandre Martin (University of Kentucky)

APA-22 | In Person - Potomac 2

Strip theory approach to corner effects in shock-wave boundary layer interactions
Tuesday, 24 January 09:30 - 09:50 (UTC-5) AIAA-2023-0649
Rhys David Williams, Holger Babinsky (University of Cambridge)
Corner effects on oblique shock wave boundary layer interactions in rectangular channels
Tuesday, 24 January 09:50 - 10:10 (UTC-5) AIAA-2023-0650
Timothy Missing, Holger Babinsky (University of Cambridge)
Vortex Interaction in Transonic Flow for Wing-Mounted UHBR Nacelles
Tuesday, 24 January 10:10 - 10:30 (UTC-5) AIAA-2023-0810
Sebastian Spinner, Ralf Rudnik (Deutsches Zentrum fur Luft- und Raumfahrt eV)
Numerical Study on Suppression of Reentry Capsule Dynamic Instability in Transonic Flow
Tuesday, 24 January 10:30 - 10:50 (UTC-5) AIAA-2023-0811
Yasuhito Okano, Shintaro Sato, Naofumi Ohnishi, Hiroki Nagai (Tohoku Daigaku)

FD-24 | In Person - Chesapeake G

Spectral analysis of a turbulent boundary layer encountering steady and unsteady complex pressure gradients

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0674
Aadhy S Parthasarathy, Theresa Saxton-Fox (University of Illinois Urbana-Champaign)

Wavelet-based resolvent analysis for statistically-stationary and temporally-evolving flows

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0676
Eric Ballouz (California Institute of Technology), Barbara Lopez-Doriga, Scott T M Dawson (Illinois Institute of Technology), Hyunji Jane Bae (California Institute of Technology)

A sparsity-promoting resolvent analysis for the identification of spatiotemporally-localized amplification mechanisms

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0677
Barbara Lopez-Doriga (Illinois Institute of Technology), Eric Ballouz, Hyunji Jane Bae (California Institute of Technology), Scott T M Dawson (Illinois Institute of Technology)

AFM-06 | In Person - Camellia 2

Simultaneous Wind Field Measurements with Doppler Lidar, Quadrotor and Fixed-Wing UAV

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0625
Murat Bronz (Ecole Nationale de l'Aviation Civile), Nikola Gavrilovic (ISAE-SUPAERO), Gautier Hattenberger (Ecole Nationale de l'Aviation Civile), Jean-Marc Moschetta (ISAE-SUPAERO)

Flight path reconstruction filter extension for tracking flexible aircraft modal amplitudes and velocities

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0626
Andres Jurisson (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Bart Eussen (Koninklijk Nederlands Lucht- en Ruimtevaartcentrum), Coen C de Visser, Roeland De Breuker (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

System Identification and Flight Dynamics Analysis of a Quad-Biplane Tail-Sitter Aircraft in Hover

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0627
Holman Torno, Brody Armstrong, Gary Munsell, Stephen Galindo, Ondrej Juhasz (US Naval Academy)

Longitudinal System Identification for a Small Flying-wing UAS

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0628
Justin Matt, Haiyang Chao, Mosarruf H. Shawon (University of Kansas School of Engineering), Steven G. Hagerott (Textron Aviation)

Efficient Frequency Response Identification for Small Fixed-Wing UAS Using Closed-Loop Flight Data

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0629
Justin Matt, Haiyang Chao (University of Kansas School of Engineering)

AMT-10/GT-13/SD-11 | In Person - Magnolia 2

NASA's Unsteady Pressure-Sensitive Paint Research and Operational Capability Developments

Tuesday, 24 January 09:30 - 09:50 (UTC-5) | AIAA-2023-0636
Nettie Roozeboom, David Daisuke Murakami (NASA Ames Research Center), Jie Li (Metis Technology Solutions, Inc.), Marc Shaw-Lecerf, E. Lara Lash (NASA Ames Research Center), Nicholas Califano (Metis Technology Solutions, Inc.), Paul Stremel (Science and Technology Corporation), Kenneth Lyons, Jennifer Baerny, Chris Barreras (NASA Ames Research Center), Jack Ortega (Metis Technology Solutions, Inc.), Lawrence Hand (NASA Ames Research Center)

Methodology for Validation of Unsteady Pressure-Sensitive Paint Measurements using Pressure Transducers

Tuesday, 24 January 09:50 - 10:10 (UTC-5) | AIAA-2023-0639
Marc Shaw-Lecerf, E. Lara Lash, David Daisuke Murakami, Nettie Roozeboom (NASA Ames Research Center), Jie Li (Metis Technology Solutions, Inc.), Paul G Bremner (aerohydroPLUS)

Joint Acceptance Attenuation Factor of Integrated Pressure with Unsteady Pressure-Sensitive Paint Measurements

Tuesday, 24 January 10:10 - 10:30 (UTC-5) | AIAA-2023-0637
Jie Li (Metis Technology Solutions, Inc.), Marc Shaw-Lecerf, David Daisuke Murakami, E. Lara Lash, Nettie Roozeboom (NASA Ames Research Center), Paul G Bremner (aerohydroPLUS)

Implementation of the Lifetime Method in Unsteady Pressure-Sensitive Paint Measurements

Tuesday, 24 January 10:30 - 10:50 (UTC-5) | AIAA-2023-0635
David Daisuke Murakami, Marc Shaw-Lecerf, E. Lara Lash, Kenneth Lyons, Nettie Roozeboom (NASA Ames Research Center)

Infrared Reflection Removal in Wind Tunnels Using Polarization Theory

Tuesday, 24 January 10:50 - 11:10 (UTC-5) | AIAA-2023-0638
Nicholas Califano (Metis Technology Solutions, Inc.), E. Lara Lash, Theodore J Garbeff, Nettie Roozeboom (NASA Ames Research Center)

DGE-05 In Person - National Harbor 6
ACD-07 In Person - National Harbor 12
AMT-11 In Person - Woodrow Wilson B
HSABP-04 In Person - National Harbor 4
PDL-06 In Person - Azalea 3
FD-31 In Person - Chesapeake H
GT-02 In Person - Baltimore 3
INPSI-08/ACD-13/GTE-10/EAT-06/PC-18/TF-04 In Person - Woodrow Wilson A

14:00 | Technical Paper Session

AMT-12 In Person - Magnolia 3
Holographic Measurements of Particle Motion in a Resonant Acoustic Mixer
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0802
Preston David Silverstein, Joseph Kalman (California State University Long Beach College of Engineering)
Analysis of Holography Techniques for Phase Distortion Removal in Extreme Environments
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0803
Andrew W Marsh, Zachary D'Ambra (Georgia Institute of Technology), Anthony McMaster, Daniel R Guildenbecher (Sandia National Laboratories), Yi C. Mazumdar (Georgia Institute of Technology)
Digital Holography for Investigating Front-Edge Instabilities of Liquid Jets in Supersonic Crossflows
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0804
Joshua A Johnson, Suresh Menon, Yi Chen Mazumdar (Georgia Institute of Technology)
Three-Dimensional Characterization of Hypervelocity Shock-Droplet Interactions Using Digital In-Line Holography
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0805
Gavin Lukasik, Christian Schweizer, Jacob Rogers, Thomas E Lacy, Waruna D Kulatilaka (Texas A&M University)
3D measurement of ice crystal accretion using a plenoptic camera
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0806
Martin F. Eberhart, Stefan Loehle, Felix Grigat (Universitat Stuttgart), Jonathan Connolly, Matthew McGilvray, David Gillespie (University of Oxford)
CFD2030-04 In Person - National Harbor 13
Assessment of near-wall grid resolution for a h/p-adaptive high-order entropy stable solver
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0831
Irving Enrique Reyna Nolasco , Lisandro Dalcin, Matteo Parsani (King Abdullah University of Science and Technology)
Extension of the Vertex-Centered Mixed-Element-Volume MUSCL scheme to mixed-element meshes
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0832
Cosimo Tarsia Morisco, Lucille-Marie Tenkes, Frederic Alauzet (National Institute for Research in Computer Science and Control (INRIA))
Unsupervised Residual Vector Analysis for Mesh Optimization
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0833
Mohammad Zandsalimy, Carl F Ollivier Gooch (The University of British Columbia)
AA-07 In Person - Baltimore 1
Design and Characterization of a Phased Microphone Array
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0789
Zhe Lu, Raymond Alsaif , Alis Ekmekci (University of Toronto Institute for Aerospace Studies)
A Microphone Phased Array for Launch Acoustics Application
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0790
Jayanta Panda (NASA Ames Research Center), Matthew Nguyen (Metis Technology Solutions, Inc.), David R. Keil (Jacobs Engineering Group Inc), Kenneth R Hamm (NASA Ames Research Center)
Acoustics and forces from isolated and installed tandem eVTOL rotor configurations
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0791
James Goldschmidt, Henry Tingle, Peter Ifju, Steven A E Miller, Lawrence S Ukeiley (University of Florida), Ben Goldman, Giovanni Droandi, Kyuho Lee (Archer Aviation)

(continued) AA-07 | In Person - Baltimore 1

Experimental and Numerical Investigation of Installed Ducted Propulsor Aeroacoustics

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0792
Matthew D Langford, Jonathan Fleming, William Walton (Techsburg, Inc.), Kyle Schwartz, David Wisda (AVEC, Inc.)

Fan Noise Predictions of the NASA Source Diagnostic Test using Unsteady Simulations with LAVA Part I: Near-Field Aerodynamics and Turbulence

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0793
Luis Santos Fernandes (Science and Technology Corporation), Jeffrey Allen Housman (NASA Ames Research Center), Gaetan KW Kenway, Gerrit-Daniel Stich (Science and Technology Corporation), Cetin C Kiris (NASA Ames Research Center)

APA-28 | In Person - Potomac 4

Wind Tunnel Testing of an Aeroelastically Tailored Horizontal Stabilizer

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0815
Ronald C M Cheung, Djamel Rezgui, Jonathan E Cooper (University of Bristol), Richard Green (University of Glasgow), Raul Carlos Llamas-Sandin (Airbus)

Real-Scale Atmospheric Wind and Turbulence Replication using a Fan-Array for Environmental Testing and UAV/AAM Validation

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0812
Aurélien Walpen, Guillaume Catry (WindShape), Flavio Noca (Haute Ecole Specialisee de la Suisse Occidentale)

Off-Board Aerodynamic Measurements of Small-UAVs in Glide and Powered Flight Using Motion Tracking

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0813
Mohamed El Mehdi Ouhabi, Shreyas Narsipur, Jichul Kim (Mississippi State University James Worth Bagley College of Engineering)

MST-12 | In Person - Baltimore 4

Simulator Assessment of the Lateral-Directional Handling Qualities of the Flying-V

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0906
Sjoerd Joosten, Olaf Stroosma, Roelof Vos, Max Mulder (Technische Universiteit Delft)

Piloted Simulator Evaluation of Low-Speed Handling Qualities of the Flying-V

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0907
Riccardo Torelli, Olaf Stroosma, Roelof Vos, Max Mulder (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

Modelling, Simulation, and Verification of the Saab 340B

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0908
Jeet Makadia, Murat Millidere, Mushfiqul Alam, Simon Place, James Whidborne (Cranfield University)

Development of High-Fidelity Saab 340B Aerodynamic Model

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0909
Murat Millidere, Mushfiqul Alam, Simon Place, James Whidborne (Cranfield University)

Modeling of the Blackbird Wind-Powered Ground Vehicle

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0910
Meyer Nahon, Zihao Zhuo, Shengan Yang, Inna Sharf (McGill University), Rick Cavallaro (SMT), Stephen Morris (Volansi)

AFM-08 | In Person - Magnolia 2

A Smart Data Approach to Determine an Aircraft Performance Model From an Operational Flight Data Base

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0797
Christoph Deiler (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Sensitivity analysis of a minimum lateral control speed prediction system

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0798
Frank Bouwman, Olaf Stroosma, Alexander C in't Veld, Max Mulder (Technische Universiteit Delft)

Experimental Investigation of the Static and Dynamic Stability Derivatives Using a Novel 3-DoF Mechanism

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0799
Jacob J Szymanski, Casey P Fagley, Molly Ellinger, Thomas Yechout (US Air Force Academy)

Bio-Inspired Gust Alleviation Based on Center-of-Percussion

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0800
Aidan C Ellisor, Casey P Fagley, Cale L Franklin, Samuel P Metzler, Samuel C Stanton (US Air Force Academy)

Simplified Wake Vortex Encounter Modeling and Inner Loop Controller Analysis for Small UAS

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0801
Justin Matt, Haiyang Chao, Zhenghao Lin (University of Kansas School of Engineering), Charlie Zheng (Utah State University)

AA-08 | In Person - Baltimore 2

Principal Component Analysis of Aviation Noise Grids for Dimensionality Reduction

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0794

Ameya Behere, Dimitri N Mavris (Georgia Institute of Technology)

Takeoff Ground Roll Analysis of Real-World Operations for Improved Noise Modeling

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0795

Jirat Bhanpato, Ameya Behere, Michelle Kirby, Dimitri N Mavris (Georgia Institute of Technology)

Measurement of Acoustic Attenuation in Gas Mixtures at Elevated Temperatures

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0796

Graeme Gillespie, Stuart J Laurence (University of Maryland at College Park)

STR-15/MAT-13 | In Person - Chesapeake A

A Mechanics-Informed Neural Network Framework for Data-Driven Nonlinear Viscoelasticity

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0949

Faisal As'ad, Charbel Farhat (Stanford University)

Application of Machine Learning in Rapid Generation of Support-free, Topologically-optimised Structures

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0950

Bohan Peng, Ajit Panesar (Imperial College London)

Implementation of Machine Learning-based Lattice Generation Strategy for Elliptic-cavity Lattice Cell

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0951

Jier Wang, Ajit Panesar (Imperial College London)

HIS-04 | In Person - Chesapeake 10

The outset of the Portuguese Military Aeronautics (1912-1917)

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0886

Fernando P Neves, Jorge M Barata, Andre R Silva (Universidade da Beira Interior)

History of Aeronautics Engineering Course at UBI

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0887

Fernando P Neves, Jorge M Barata, Andre R Silva (Universidade da Beira Interior)

Founding of the AIAA Women of Aeronautics and Astronautics

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0889

Rosemary Davidson (Massachusetts Institute of Technology), Annika E Rollock (University of Colorado Boulder), Matthew Marcus (NASA Goddard Space Flight Center), Elaine Petro (Cornell University), Alexandra N Straub (Eglin Air Force Base Airman and Family Readiness Center), Emily R. Kusulas (Lockheed Martin)

History of Aerospace Engineering at the University of Bristol

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0888

Scott Eberhardt, Karen Aplin, Steve G Burrow, Jonathan E Cooper, Mark H Lowenberg, Sandy N.A. Mitchell (University of Bristol)

AS-05 | In Person - Chesapeake 1

Aeroelastic Analysis of Actuated Adaptive Wingtips Based on Pressure-Actuated Cellular Structures

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0825

Patrick Meyer, Christian Hühne (Technische Universität Braunschweig), Kjell Bramsiepe, Wolf Krueger (Deutsches Zentrum für Luft- und Raumfahrt eV)

Study of Dynamic Interaction Between Low Re Aerodynamic Load and Flexible-Biomimetic Wings with Tailorable Stiffness by FSI Modeling

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0826

Smail Boughou (Université Internationale de Rabat), Radouane Boukharfane (Université Mohammed VI Polytechnique), Daniel J Inman (University of Michigan Department of Aerospace Engineering), Ashraf A Omar, Omer Elsayed (Université Internationale de Rabat)

A longitudinal linear parameter-varying model of a gliding gull during wing morphing

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0827

Christina Harvey (University of California Davis)

Control of a Flapping Plate Shape with Fluidic Flexible Matrix Composites

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0828

Christine Gilbert, Blake Armstrong, Oscar Johansson, Carson Squibb, Michael Philen (Virginia Polytechnic Institute and State University)

Tailorable vibration of lightweight viscoelastic biomimetic scale-covered beam

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0829

Ranajay Ghosh, Hossein Ebrahimi (University of Central Florida), Hessein Ali (Union College), Milos Krsmanovic (University of Central Florida)

WE-03 | In Person - Chesapeake 9

The impact of leading edge damage and repair on sectional aerodynamic performance	
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0968	
Alexander Meyer Forsting, Anders S Olsen, Niels N Sørensen, Christian Bak (Danmarks Tekniske Universitet Institut for Vindenergi)	
Winglet Design for a Wind Turbine with an Additively Manufactured Blade Tip	
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0969	
David C Maniaci, Daniel R Houck, James Cutler, Brent C Houchens (Sandia National Laboratories)	
Full-Scale Serrated Wind Turbine Trailing Edge Noise Certification Analysis Based on the Lattice-Boltzmann Method	
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0970	
Wouter Cornelis Pieter van der Velden (Dassault Systemes), Damiano Casalino, Gianluca Romani (Dassault Systemes Deutschland GmbH)	
Considerations on vortex methods for aerodynamic analyses of wind turbines	
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0971	
Carlos R Santos, Øyvind Waage Hanssen-Bauer, Roy Stenbro (Institutt for energiteknikk)	

STR-16 | In Person - Chesapeake 4

Integration of Fatigue R-Curve Effects into VCCT for Durability Predictions, Part 1: Buckled Composite Single-Stringer Stiffened Panels	
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0952	
Austin Pennington (Lockheed Martin Aeronautics Company), Vijay Goyal (Lockheed Martin Aeronautics Co Marietta)	
Integration of Fatigue R-Curve Effects into VCCT for Durability Predictions, Part 2: Buckled Composite Multi-Stringer Stiffened Panels	
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0953	
Austin Pennington, Vijay Goyal (Lockheed Martin Aeronautics Company)	
Predicting Post-Buckling Response and Damage Initiation of Pristine Double Hat-Stiffened Laminated Composite Panels Utilizing Enhanced Schapery Theory	
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0954	
Jacob N Gagliano, Shiyao Lin (University of Michigan), Vipul Ranatunga (Air Force Research Laboratory), Anthony M Waas (University of Michigan)	
Lessons Learned in the Buckling Assessments of Space Structures	
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0955	
Vinay K Goyal, James Tuck-Lee, Pavel Babuska, Emily Zeitunian (The Aerospace Corporation), Luis Aguirre (SpaceX)	

PC-19 | In Person - National Harbor 10

Autoignition Enhanced Turbulent Combustion in an Afterburner	
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0919	
Tongxun Yi, Marc D Polanka (Air Force Institute of Technology)	
Forced and Unforced Dynamics of a Lean Premixed Prevaporized Combustor for Civil Supersonic Transport	
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0920	
Mitchell L Passarelli, Samuel E Wonfor, Andy X Zheng, Yi Chen Mazumdar, Jerry M Seitzman, Adam M Steinberg (Georgia Institute of Technology), Victor Salazar, Krishna Venkatesan (GE Global Research), Michael Benjamin (GE Aviation)	
Limit Cycle Oscillation Dynamics in a MLDI Combustor	
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0921	
Yuvi Nanda (University of Cincinnati), Aditya Saurabh (Indian Institute of Technology Kanpur), Lipika Kabiraj (Indian Institute of Technology Ropar), Rodrigo Villalva Gomez, Ephraim Gutmark (University of Cincinnati)	
Study on Lean Premixed Flame Stability Enhancement by Altering Fuel-Air Mixture Homogeneity	
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0922	
Radi A Alsulami (King Abdulaziz University)	
Variation in Convective and Radiative Heat Transfer with Reynolds Number and Temperature in a Backward-Facing Step Combustor	
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0923	
Jennifer Colborn, Jacqueline A O'Connor (The Pennsylvania State University)	

CASE-01 | In Person - Potomac 2

Monitoring Airspace Complexity and Determining Contributing Factors	
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-1197	
Daniel I Weckler, Bryan L Matthews, Shayan Monadjemi, Shawn Wolfe, Nikunj Oza (NASA Ames Research Center)	

(continued) CASE-01 | In Person - Potomac 2

Self-organizing UAM Vehicles for Noise Mitigation in Urban Environments
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-1198
Sangeeth Saagar Ponnusamy, Sönke Klostermann, Carsten Strobel (Airbus Defence and Space GmbH), Stephen Rolston (Airbus UK)
Manifold Learning of Nonlinear Airfoil Aerodynamics with Dimensionality Reduction
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-1199
Srikanth Vasudevan, Roeland De Breuker, Xuerui Wang (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)
Demonstrating a semantic approach to clarifying regulatory ambiguity in aircraft design and development using process mapping, UML, and ontological modeling
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0830
Andrea Cartile (Concordia University), Catharine Marsden (Royal Military College of Canada), Susan Liscouet-Hanke (Concordia University)

STR-17 | In Person - Chesapeake 7

Simulation of Fiber Pullout Tests using a Peridynamic Approach
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0956
Riley Hall, Ibrahim Guven (Virginia Commonwealth University College of Engineering)
Manufacture of Hybrid Standard-Ply/Thin-Ply Carbon/Epoxy Panels for Notched Test Specimens
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0957
Andrew E Lovejoy, Alana Cardona (NASA Langley Research Center)
Influence of Graphene Nanoplatelets on the Tensile Response of Stitched Composites with Thin Plies
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0958
Radwa Alaziz, Shuvam Saha, Rani W Sullivan (Mississippi State University)

GNC-13 | In Person - Annapolis 1

Adaptive Control/Steering Design for Deorbiting Space Debris with Hybrid Actuators Configuration
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0872
Takahiro Sasaki, Ryo Nakamura, Toru Yamamoto (Japan Aerospace Exploration Agency (JAXA))
A Koopman-Operator Control Optimization for Relative Motion in Space
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0873
Simone Servadio (Massachusetts Institute of Technology), Roberto Armellin (The University of Auckland), Richard Linares (Massachusetts Institute of Technology)
Bayesian Active Sensing for Fault Estimation with Belief Space Tree Search
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0874
James Ragan, Benjamin Riviere, Soon-Jo Chung (California Institute of Technology)

Overview Talk-Dr. Alok Majumdar
Tuesday, 24 January 14:00 - 14:20 EDT (UTC-5)

EXPL-06 | In Person - National Harbor 7

Analysis of Cryogenic Propellant Liquefaction Rates in Cooled Constant-Wall-Temperature Tanks
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0846
Anson R Koch (NASA Marshall Space Flight Center)
Nodal Numerical Modeling of Submerged Helium Injection in a Cryogenic Propellant Tank
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0847
Michael Baldwin (GeoControl Systems, Inc.), Alok K Majumdar, Andre LeClair (NASA Marshall Space Flight Center)
Axisymmetric Two-Dimensional Modeling of No Vent Filling of a Cryogenic Tank using Generalized Fluid System Simulation Program
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0848
Alok K Majumdar, Andre LeClair (NASA Marshall Space Flight Center), Jason W Hartwig (NASA John H Glenn Research Center)

IS-11 | In Person - Potomac 6

Distributed Sensing and Advanced Perception Technologies to Enable Advanced Air Mobility
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0894
Corey A Ippolito, Kelley E Hashemi, Evan Kawamura, George E. Gorospe, Wendy Holforty, Keerthana Kannan, Vahram Stepanyan, Thomas Lombaerts (NASA Ames Research Center), Nelson Brown, Alexander M. Jaffe (NASA Armstrong Flight Research Center), Chester Dolph (NASA Langley Research Center)

(continued) IS-11 | In Person - Potomac 6

A Simulation Architecture for Air Traffic Over Urban Environments Supporting Autonomy Research in Advanced Air Mobility
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0895
Keerthana Kannan, Joshua E Baculi, Thomas Lombaerts, Evan Kawamura, George E. Gorospe, Wendy Holforty, Corey A Ippolito, Vahram Stepanyan (NASA Ames Research Center), Chester Dolph (NASA Langley Research Center), Nelson Brown (NASA Armstrong Flight Research Center)
Distributed Ground Sensor Fusion Based Object Tracking for Autonomous Advanced Air Mobility Operations
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0896
Thomas Lombaerts, Keerthana Kannan, Evan Kawamura (NASA Ames Research Center), Chester Dolph (NASA Langley Research Center), Vahram Stepanyan, George E. Gorospe, Corey A Ippolito (NASA Ames Research Center)
Perception Testing in Fog for Autonomous Flight
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0897
George E. Gorospe (NASA Ames Research Center), Elihu Deneke (Sandia National Laboratories)
Classifying Aircraft using Velocity Data with Support Vector Machines and Likelihood Ratio Tests
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0898
Logan Dihel, Chester Dolph, Henry T Holbrook (NASA Langley Research Center), Sandip Roy (Washington State University)

EAT-05 | In Person - Camellia 1

System-level Trade Study of Hybrid Parallel Propulsion Architectures on Future Regional and Thin Haul Turboprop Aircraft
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0838
Yu Cai, Chrysoula L Pastra, Jiacheng Xie, Jasrayman K Thind, Matheus Medeiros Maciel Monjon, Jonathan Conrad Gladin, Dimitri N Mavris (Georgia Institute of Technology)
Uncertainty Quantification on a Parallel Hybrid-Electric Propulsion EPFD Vehicle
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0839
Jaylon Uzodinma, Turab Zaidi, Miguel Walter, Raphael Gautier, Dimitri N Mavris (Georgia Institute of Technology)
Integrated Mission Performance Analysis of Novel Propulsion Systems: Analysis of a Fuel Cell Regional Aircraft Retrofit
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0840
Evangelia Pontika, Bahareh Zaghari, Tianzhi Zhou, Hossein Balaghi Enalou, Panagiotis Laskaridis (Cranfield University)

GNC-14/AFM-09 | In Person - Annapolis 3

Vision-Based Terrain Relative Navigation on High Altitude Balloon and Sub-Orbital Rocket
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0875
Dominic R Maggio (Massachusetts Institute of Technology), Courtney Mario, Brett Streetman, Ted Steiner (Charles Stark Draper Laboratory Inc), Luca Carlone (Massachusetts Institute of Technology)
Crater Navigation with Extended Features Utilizing Random Matrix Measurement Models
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0876
James D Brouk, Kyle J DeMars (Texas A&M University)
Small Satellite Aerocapture Concepts for Future Interplanetary Missions
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0877
Rohan Deshmukh (Analytical Mechanics Associates, Inc.), Angela Bowes, Soumyo Dutta (NASA Langley Research Center)
Performance Analysis of SmallSat Aerocapture at Venus
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0878
Rafael A Lugo, Soumyo Dutta (NASA Langley Research Center), Daniel Matz, Breanna J Johnson (NASA Johnson Space Center), Alejandro R Pensado, Evan Roelke, John T Aguirre, Richard Powell (Analytical Mechanics Associates, Inc.)

SD-14/APA-32 | In Person - Chesapeake 8

Aeroelastic Experiments and Companion Computations Assessing the Impact of Impinging Shock Sweep
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0945
Kirk R Brouwer (ARCTOS Technology Solutions), Ricardo Perez, Timothy J Beberniss, Stephen M Spottswood (Air Force Research Laboratory)
Boundary-Layer Measurements for FTSI Systems: Influence of Panel Flutter on a Mach 2 Turbulent Boundary-Layer
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0946
Scott J Peltier (Air Force Research Laboratory Aerospace Systems Directorate), Kirk R Brouwer (ARCTOS Technology Solutions), Ricardo Perez, Stephen M Spottswood, Stephen Hammack (Air Force Research Laboratory Aerospace Systems Directorate)

(continued) SD-14/APA-32 | In Person - Chesapeake 8

Combined Stereo Digital Image Correlation and Infrared Measurements of a Notional Mach 5 Aircraft Panel in the NASA 8-Foot High-Temperature Wind Tunnel

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0947
Timothy J Bebernis (Air Force Research Laboratory), David A Ehrhardt (University of Illinois Urbana-Champaign)

Design of Aerothermoelastic Experiments in the AFRL Mach 6 High Reynolds Number Facility

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0948
Zachary B Riley, Ricardo Perez (Air Force Research Laboratory), Kirk R Brouwer (ARCTOS, LLC)

FD-30 | In Person - Chesapeake F

Micro-Cavity Actuation for Control of Dynamic Stall on Swept Wing Sections

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0861
Daniel J Garmann, Miguel R Visbal (Air Force Research Laboratory)

Air Interactions of Magnetically Driven Plasma Discharges in Crossflow

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0862
Georgi Hristov, Phillip J Ansell (University of Illinois Urbana-Champaign Grainger College of Engineering), Joseph W. Zimmerman, David L Carroll (CU Aerospace LLC)

Effect of Interference Between Two Facing Plasma Actuators on Discharge and Flow Field

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0863
Takafumi Saito, Hiroyuki Nishida, Yutaka Kaneko, Yusuke Kakuya (Tokyo Noko Daigaku - Koganei Campus)

Identification of Important Flow Structures for Deep Reinforcement Learning-based Control of Flow Separation over an Airfoil

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0864
Naoki Takada, Ayano Watanabe, Satoshi Shimomura, Tatsumasa Ishikawa, Hiroyuki Nishida (Tokyo Noko Daigaku Kogakubu Daigakuin Kogaku Kenkyuin)

Numerical Study of Extreme Adverse Pressure Gradients Enabled by Co-Flow Wall Jet

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1430
Brendan McBreen, Kewei Xu, Gecheng Zha (University of Miami)

GNC-15/IS-10 | In Person - Annapolis 4

A ROS Package for UAV Run Time Assurance with In-the-Loop Reachability

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0879
Christian Llanes, Samuel Coogan (Georgia Institute of Technology)

Safe Optimal Control with Synthesized Waypoints as Guidance

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0880
Lin Song, Neng Wan, Naira Hovakimyan (University of Illinois Urbana-Champaign)

Gust Load Alleviation Control and Gust Estimation for a High Aspect Ratio Wing Wind Tunnel Model

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0881
Christopher J Forte (KBR Wyle), Nhan T Nguyen (NASA Ames Research Center), Juntao Xiong (KBR Wyle)

EP-04 | In Person - Chesapeake B

Design of an Air-Core Circuit for a Hall Thruster

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0841
William Hurley, Thomas A Marks, Benjamin Jorns (University of Michigan)

Operation and Performance of a Magnetically Shielded Hall Thruster at Ultrahigh Current Densities on Xenon and Krypton

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0842
Leanne L Su, Parker J Roberts, Tate Gill, William Hurley, Thomas A Marks, Christopher L Sercel, Madison Allen, Collin B Whittaker, Matthew Byrne, Zachariah Brown, Eric Vigas, Benjamin Jorns (University of Michigan)

Characterization of Electron Mach Number in a Hollow Cathode with Thomson Scattering

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0843
Parker J Roberts, Benjamin Jorns (University of Michigan)

Theory of RF Plasma Cathodes and Supporting Experiments for Electric Propulsion Applications

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0844
Marcel P Georgin, Michael S McDonald, John W Brooks (US Naval Research Laboratory)

100 A-500 A High-Current Hollow Cathode Development

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0845
Wayne L Ohlinger (Self), Bernard Vancil (eBeam, Inc.)

APA-29 In Person - Potomac 3
Rapid hypersonic sonic boom prediction using line-distributed energy impulse formulations with and without lift effect Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0816 Shufan Zou, Zachary M Johnston, Graham V Candler, Suo Yang (University of Minnesota Twin Cities)
Assessment of Optical Propagation Models with Application to Hypersonic Entry Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0817 Anubhav Gupta, Pol Mesalles Ripoll, Nicholas S Campbell, Brian Argrow (University of Colorado Boulder)
Hypersonic Boundary-Layer Stability with Local Cooling and Local Metasurface Treatment Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0818 Furkan Oz, Kursat Kara (Oklahoma State University)
Elevon-Cove Pressure Fluctuations in a Quiet Mach-6 Flow Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0819 Adam C Lay, Brandon Charles Chynoweth, Joseph S Jewell (Purdue University)
FD-29 In Person - Chesapeake E
An Assessment of the Laminar Hypersonic Double-Cone Experiments in the LENS-XX Tunnel Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0856 Jaideep Ray, Patrick Joseph Blonigan (Sandia National Laboratories California), Eric T Phipps, Kathryn Maupin (Sandia National Laboratories)
A Study on Side Jet Interactions for a Hypersonic Flow using Kinetic and Experimental Methods Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0857 Irmak Taylan Karpuzcu, Deborah A Levin (University of Illinois Urbana-Champaign), Joseph S Jewell (Purdue University)
Computational Simulations of Hypersonic Mach Stems at High Enthalpy Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0858 Caleb A Bryan, Tyler Dean, Bryan J Morreale, Rodney D Bowersox (Texas A&M University)
Comparative Studies on the Hypersonic Finned Cone Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0859 Madeline McMillan Peck, Andrew K Riha, Helen L Reed (Texas A&M University), Angelos Klothakis (Technical University of Crete), Kamil Dylewicz, Vassilios Theofilis (University of Liverpool)
Unsteadiness of hypersonic flows over a double wedge Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0860 Ozgur Tumuklu, Kyle M. Hanquist (The University of Arizona)
LP-05 In Person - National Harbor 14
Thermal gradient stabilized supercritical droplets and bubbles Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0899 Nelson P. Longmire, Steven Showalter, Daniel T Banuti (University of New Mexico School of Engineering)
An Experimental Characterization of a Pintle Injector Jet Spray Using High Speed Imaging Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0900 Evan Pruitt, Olivia DeCaro, Xiaofeng Liu (San Diego State University)
Laminar Diffusion Flame-holding Characteristics in Cross-flow Formed at the Wake of the Injector Post Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0901 Yu Daimon (Uchu Koku Kenkyu Kaihatsu Kiko), Masaharu Nakajima, Noritaka Sako, Jun Hayashi, Hiroshi Kawanabe (Kyoto Daigaku), Himeko Yamamoto (Uchu Koku Kenkyu Kaihatsu Kiko)
DE-04 In Person - Chesapeake 5
Novel Kinetic Effects Warhead Design for Air-to-Ground Munitions Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0835 Luke Hardy, Trinity Good, Bradley Bitting, Anthony Neil (US Air Force Academy), Rusty A Powell, Ph.D. (Axient), Michael L Anderson (US Air Force Academy)
Feasibility of Structural Strength of Multi-cell Stratospheric Tower Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0834 Kensuke Ishimoto, Tomoyuki Miyashita, Ken Higuchi (Waseda Daigaku Riko Gakujutsuin)
Set-Based Design Space Exploration to Investigate the Effect of Energy Storage Durability on the Energy Management Strategy of a Hybrid-Electric Aircraft Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0837 Andrea Spinelli, Gustavo Pedro Krupa, Timoleon Kipourous (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

FD-33 | In Person - Chesapeake K

Global Reconstruction of Hypersonic Boundary Layer Disturbance Modes
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0869
Jonathan L Hill (Air Force Institute of Technology), Elizabeth Katherine Benitez, Matthew P Borg (Air Force Research Laboratory), Mark F Reeder (Air Force Institute of Technology)
On the dynamics of second mode modified first mode instability
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0870
Tony Liang, Arham Amin Khan, Joseph Kuehl (University of Delaware)
Shock receptivity: characteristics of shock oscillation modes and induced boundary-layer disturbances
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0871
Adriano Cerminara (University of Wolverhampton), Deborah A Levin (University of Illinois Urbana-Champaign), Vassilios Theofilis (University of Liverpool)

PC-20 | In Person - National Harbor 8

Assessment of LES Subfilter Model Accuracy in a Supercritical CO2 Spatially Evolving Mixing Layer
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0924
Dhruv Purushotham, Joseph Oefelein (Georgia Institute of Technology Daniel Guggenheim School of Aerospace Engineering)
Evaluation of Explicit Filtering Techniques for Large Eddy Simulation of Reacting Flows
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0925
Scott W Theuerkauf, Joseph Oefelein (Georgia Institute of Technology)
Large Eddy Simulations of Solid Fuel Ramjet Combustion
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0926
Charles Arnold, Henry Pace, Dominic Gallegos, Luca Massa, Gregory Young (Virginia Polytechnic Institute and State University)
Recirculation Zone Structure and Dynamics in Confined Bluff-Body Turbulent Premixed Flames
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0927
Joseph N Squeo, Joshua Sykes (Innovative Scientific Solutions, Inc.), Brent A Rankin (Air Force Research Laboratory)

MDO-12 | In Person - Chesapeake 6

Rapid Training of Emulator Embedded Neural Networks for Multi-Fidelity Conceptual Design Studies
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0902
Atticus J Beachy, Harok Bae (Wright State University), Jose A Camberos (Air Force Research Laboratory), Ramana V Grandhi (Air Force Institute of Technology)
Domain Decomposed ROM with Grid Adaptation for Hypersonic Flows
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0903
Susmit S Joshi (Virginia Polytechnic Institute and State University), Seongim Choi (Gwangju Institute of Science and Technology)
Shapley Additive Explanations for Knowledge Discovery in Aerodynamic Shape Optimization
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0904
Satoshi Takanashi, Shinsuke Nishimura, Kaoruko Eto, Keita Hatanaka (Mitsubishi Group)
Gradient-Based Shape Optimization for Unsteady Turbulent Simulations Using Dynamic Closures
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0905
Krzysztof Fidkowski (University of Michigan)

PGC-08 | In Person - National Harbor 3

Detonation Wave Visualization in a Rocket RDE with Continuous Variation of Fuel Injection Location
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0928
Allyson Haynes, Ethan W Plaehn, Rohan Gejji, Carson D Slabaugh (Purdue University)
Simultaneous in-chamber MHz sensing of CO, H2O, temperature, and pressure via mid-infrared laser absorption in a rotating detonation rocket engine
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-2062
Nicholas Kuenning, Anil P Nair, Alex R. Keller, Nicolas Minesi, Raymond Mitchell Spearrin (University of California Los Angeles), Emre Ozen, Jason Kriesel (Opto-Knowledge Systems, Inc.), Blaine R Bigler (Jacobs Technology Inc), John W Bennewitz (University of Alabama at Huntsville), Jason R Burr (AFRL/RQRC, Combustion Devices Branch, Air Force Research Laboratory)
Experimental Comparison of Different Pressure Gain Measurement Techniques for RDCs
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0929
Tim Kayser, Hongyi Wei, Eric Bach, Christian O Paschereit, Myles Bohon (Technische Universitat Berlin)

(continued) PGC-08 | In Person - National Harbor 3

Uncertainties and Limitations of Experimental Thrust and Pressure Gain Measurements in a Rotating Detonation Combustor
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0930
Alexander Feleo, Joshua Shepard, Mirko Gamba (University of Michigan)
Analysis of Quasi-steady, Transitional, and Short Timescale Galloping within Rotating Detonation Engines
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0931
Kristyn Johnson, Justin Weber, Donald H Ferguson (National Energy Technology Laboratory Morgantown), Andrew C Nix (West Virginia University)

FD-28 | In Person - Chesapeake I

Shock capturing for discontinuous Galerkin approximations of hypersonic non-equilibrium flow
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0853
Robert L Van Heyningen, Cuong Nguyen, Jaime Peraire (Massachusetts Institute of Technology)
Aeroheating Predictions of Hypersonic Flight Geometries with High-Order Discontinuous Galerkin Methods
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0854
Zubin J Lal, Graham V Candler, Bernardo J Cockburn (University of Minnesota Twin Cities)
A Moving Discontinuous Galerkin Method with Interface Conservation Enforcement for Reacting Hypersonic Flows
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0855
Hong Luo, Gianni Absillis (NC State University), Matthew Goodson, Giovanni Salazar, Cameron Brown, Kilian Cooley (Corvid Technologies), Alireza Mazaheri (NASA Langley Research Center)

NDA-07 | In Person - Chesapeake 3

Multi-Fidelity Kriging and Sparse Polynomial Chaos Surrogate Models for Uncertainty Quantification
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0915
Markus P Rumpfkeil (University of Dayton), Philip S Beran (Air Force Research Laboratory)
Projection-based multifidelity linear regression for data-poor applications
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0916
Vignesh Sella, Julie Pham, Anirban Chaudhuri, Karen E Willcox (The University of Texas at Austin)
Improving Bayesian networks multifidelity surrogate construction with basis adaptation
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0917
Xiaoshu Zeng (University of Southern California), Gianluca Geraci (Sandia National Laboratories), Alex Gorodetsky (University of Michigan), John Jakeman, Michael S Eldred (Sandia National Laboratories), Roger G. Ghanem (University of Southern California)
Multi-fidelity metamodeling in turbine blade airfoils via transfer learning on manifolds
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0918
Katiana Kontolati (Johns Hopkins University), Panagiotis Tsilifis, Sayan Ghosh, Valeria Andreoli (General Electric Research), Michael Shields (Johns Hopkins University), Liping Wang (General Electric Research)

TP-09 | In Person - Azalea 1

Examination of Mars2020 shock-layer conditions via infrared laser absorption spectroscopy of CO₂ and CO
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0959
Christopher Jelloian, Nicolas Minesi, Raymond Mitchell Spearrin (University of California Los Angeles), Augustin Tibere-Inglesse, Megan E. MacDonald, Brett A Cruden (NASA Ames Research Center)
Examination of Mars2020 shock-layer conditions via infrared emission spectroscopy of CO₂
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0960
Augustin Claude Tibère-Inglesse (Oak Ridge Associated Universities), Brett A Cruden (Analytical Mechanics Associates, Inc.), Christopher Jelloian, Raymond Mitchell Spearrin (University of California Los Angeles)
Simulations of A Conceptual MSR-EES Shoulder Recession and Thermal Response
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0961
Prakash Shrestha (Analytical Mechanics Associates, Inc.), Olivia Schroeder (University of Minnesota Twin Cities), Christopher O Johnston (NASA Langley Research Center), Eric Stern (NASA Ames Research Center)
Assessment of Mars 2020 Forebody Heating Predictions with Coupled Material Response
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0962
Thomas K West, Christopher O Johnston (NASA Langley Research Center)
Coupling Heatshield Response and Aerothermal Environment for Mars Entry via Surface Gas Blowing
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0963
John M Thornton, Dinesh K Prabhu, Jeremie Bernard Erwin Meurisse, Arnaud Borner (Analytical Mechanics Associates, Inc.), Joshua D Monk (NASA Ames Research Center), Brett A Cruden (Analytical Mechanics Associates, Inc.)

HR-01 | In Person - National Harbor 15

Demonstration of Axial-Injection End-Burning Hybrid Rocket using FDM 3D Printer
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0890
Shota Hirai, Landon T Kamps, Yuki Nobuhara, Harunori Nagata (Hokkaido Daigaku)
Investigation of Hybrid Rocket Motor Regression Rate Doped with High Entropy Metallic Additives
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0891
Muhammad Hanafi Azami, Nur Arifah Mohamad Jamil, Mai Nurul Fareesya Mohamad Anuar, Norhuda Hidayah Nordin, Izham Izzat Ismail (International Islamic University Malaysia Kulliyah of Engineering)
Demonstration of Composite Hypergolic Solid Fuel for Hydrogen Peroxide Hybrid Rocket
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0892
Junyeong Jeong, Seungho Lee, Sejin Kwon (Korea Advanced Institute of Science and Technology)
Regression Rate End-Burning Hybrid Rocket Motor Doped with High Entropy Metallic Additives
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0893
Muhammad Hanafi Azami, Muhammad Ezamuddin Ezzad Sabri, Mohammad Amirul Qayyum Roslan (International Islamic University Malaysia Kulliyah of Engineering), Zuraidah Salleh (University Technology MARA)

TP-07 | In Person - Azalea 2

Validation of the reverse Monte Carlo ray-tracing method and coupling with material response
Tuesday, 24 January 14:00 - 15:40 (UTC-5) AIAA-2023-2086
Ahmed H S Yassin, Savio James Poovathingal (University of Kentucky)
Multi-Fidelity Modeling Framework for Radiative Transfer in Hypersonic Atmospheric Entry
Tuesday, 24 January 14:00 - 15:40 (UTC-5) AIAA-2023-1730
Sung Min Jo, Sanjeev Kumar, Vincent Le Maout, Alessandro Munafò, Marco Panesi (University of Illinois Urbana-Champaign)
Shock Radiation Tests for Ice Giant Entry Probes Including CH4 in the T6 Free-Piston Driven Wind Tunnel
Tuesday, 24 January 14:00 - 15:40 (UTC-5) AIAA-2023-1729
Joseph Steer, Peter L Collen, Alex Benjamin Glenn, Tamara Sopek, Christopher Hambidge, Luke J Doherty, Matthew McGilvray (University of Oxford), Stefan Loehle (Universitat Stuttgart Institut fur Raumfahrtsysteme), Louis Walpot (European Space Agency)

SATS-02/GNC-16 | In Person - National Harbor 5

Reachability and Sensitivity Analysis of a CubeSat Autonomous Rendezvous and Docking MPC Algorithm
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0932
Andrew Fear, E Glenn Lightsey (Georgia Institute of Technology College of Engineering)
On-Orbit Verification of Attitude Dynamics of Satellites with Variable Shape Mechanisms using Atmospheric Drag Torque and Gravity Gradient Torque
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0933
Kiyona Miyamoto, Toshihiro Chujo, Kei Watanabe, Saburo Matunaga (Tokyo Kogyo Daigaku Kogakuin)
SGP4 versus Vinti6: A Comparative Study of Orbit Propagators for Very Low Altitude CubeSat Orbits
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0934
Cian Anthony Branco, Ethan Senecal, Sharan Asundi (Old Dominion University)
Attitude Control of a 3U CubeSat with Combination of Magnetorquers and Reaction Wheels
Tuesday, 24 January 15:00 - 15:20 (UTC-5) AIAA-2023-0935
Yufei Zhu, Richard Sutherland, Anouck Girard, Brian Gilchrist (University of Michigan)
Performance Measure of the Novel Electropermanent Magnetorquer
Tuesday, 24 January 15:20 - 15:40 (UTC-5) AIAA-2023-0936
Youngho Eun, Zihao Wang, Xiaofeng Wu (The University of Sydney)

SCS-04/AS-06 | In Person - Woodrow Wilson C

Structural Architectures for Self-Erecting Lunar Towers
Tuesday, 24 January 14:00 - 14:20 (UTC-5) AIAA-2023-0937
Jacob G Daye, Andrew J Lee (NC State University), Juan M Fernandez (NASA Langley Research Center)
Force Application of a Single Boom for a 500-m ² -Class Solar Sail
Tuesday, 24 January 14:20 - 14:40 (UTC-5) AIAA-2023-0938
Martin Richter, Marco Straubel, Martin Eckhard Zander (Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Faserverbundleichtbau und Adaptronik), Joshua E Salazar, Matthew K Chamberlain, Juan M Fernandez (NASA Langley Research Center)
Effects of Ply-level Imperfections and Space Environment on Bistability of Ultrathin Composite Booms
Tuesday, 24 January 14:40 - 15:00 (UTC-5) AIAA-2023-0939
Chloe Zarader, Xin Ning (The Pennsylvania State University)

(continued) SCS-04/AS-06 | In Person - Woodrow Wilson C

Shearless Outrigger Booms with Improved Edge Registration

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0940
Alexi S Rakow, Isaac Lammers, Brian Potter, Andrew Haynes, Susan Tower, Christopher Worsdale (MMA Design, LLC)

Large Deformation Bending of Ultralight Deployable Structure For Nano-Micro-Class Satellites

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0941
Jimesh D. Bhagatji, Alex Kravchenko, Sharan Asundi (Old Dominion University)

SCS-05 | In Person - Woodrow Wilson D

Hermian Exploration Researching Mercury, Excavating Samples (HERMES) Mission Architecture

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0942
Hadley N Douglas, Islam Zakaria-Saleh, Javid Bayandor (University at Buffalo School of Engineering and Applied Sciences)

Origami Floor Structures for Extraterrestrial Habitats

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0943
Jackson G Schuler, Daewon Kim (Embry-Riddle Aeronautical University)

Thickness Accommodation for the Flasher Origami Deployable Array

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0944
Katie Varela, Lais Oliveira, Brandon Sargent, Larry L Howell, Spencer P Magleby (Brigham Young University)

FD-27 | In Person - Chesapeake D

Passive control of high-speed boundary layer transition using non-uniform surface temperature distributions

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0849
Kazuki Ozawa, Chengwei Xia, Georgios Rigas, Paul J Bruce (Imperial College London)

Controlling the Jet of Overexpanded Nozzle Using Coanda Effect

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0850
Syed Qasim Zaheer, Peter J. Disimile (University of Cincinnati), Norman Toy (Engineering & Scientific Innovations Inc)

Active Control of a Multi-Stream Rectangular Supersonic Nozzle via Micro Jet Array

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0851
Seth Kelly, Mark N Glauser (Syracuse University)

Mach 3.5 Compression Corner Control using Micro-Vortex Generators

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0852
Daniel C Gochenaur, Rhys David Williams, Kshitij Sabnis, Holger Babinsky (University of Cambridge)

APA-31 | In Person - Annapolis 2

Test Summary of the Full-Span High-Lift Common Research Model at the ONERA F1 Pressurized Low-Speed Wind Tunnel

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0823
Sylvain Mouton, Grégoire Charpentier (ONERA Le Fauga-Mauzac), Annabelle Lorenski (ONERA Lille)

The High Lift Common Research Model Wind Tunnel Testing at Kawasaki New Low-Speed Wind Tunnel

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | 3815336</stron
Takahiro Hashioka, Takeo Kawamura, Yoshiki Murahashi, Hidemasa Yasuda, Yuta Sawaki, Wataru Suzuki (Kawasaki Jukogyo Kabushiki Kaisha Gifu Kojo)

Design of two NASA High Lift Common Research Models for the National Transonic Facility

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | 3836467</stron
Courtney Spells Winski (NASA Langley Research Center)

Design of the 6% Boeing High-Lift Common Research Model (CRM-HL)

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0824
Kolleen Hood (The Boeing Company Commercial Airplanes Everett)

Integration of CFD and Wind-Tunnel Testing at NASA

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | 3835242</stron
James C Ross (NASA Ames Research Center)

APA-27 | In Person - Potomac 1

Kestrel KCFD and FUN3D Results for the Fourth High Lift Prediction Workshop

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0807
Andrew J Lofthouse (Air Force Life Cycle Management Center)

(continued) APA-27 | In Person - Potomac 1

Evaluation of the Turbulence Models in CREATE-AV Kestrel for High-Mach Flows

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0808
Brian Burke (Georgia Institute of Technology), William C. Tyson (Naval Air Warfare Center Aircraft Division), Robert H Nichols (The University of Alabama at Birmingham School of Engineering)

Uncertainty Quantification of Tiltrotor Download Prediction

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0809
Manas Khurana (Science and Technology Corporation), Buvana Jayaraman, Andrew M Wissink, Rohit Jain (U.S. Army Combat Capabilities Development Command)

APA-30 | In Person - Potomac 5

Introduction to AVT-351: Enhanced Computational Performance and Stability & Control Prediction for NATO Military Vehicles

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0820
Mario Stradtner (Deutsches Zentrum für Luft- und Raumfahrt eV), David Drazen (Naval Surface Warfare Center Carderock Division), Michel van Rooij (Koninklijk Nederlands Lucht- en Ruimtevaartcentrum)

Ongoing Activities of the NATO Performance, Stability & Control, and Fluid Physics Technical Committee

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | 3776326</stron
Stuart McIlwain (National Research Council Canada)

Reynolds Number Effects on Transonic Designed Multi-Swept Combat Wing at Subsonic & Supersonic Speeds

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0821
Raj Nangia (University of Bristol), Mehdi Ghoreyshi (US Air Force Academy), Michel van Rooij (Royal Netherlands Aerospace Centre)

Assessment and reduction of propeller and rotor noise from unmanned aircraft systems (UAS) for military and civil operations

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | 3774627</stron
Philip J Morris (The Pennsylvania State University - University Park Campus), Theo Van Veen (National Aerospace Laboratory), Benoit G Marinus (Ecole Royale Militaire)

Development of an Unsteady Indicial Response Model for Submarine Maneuvering

Tuesday, 24 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0822
Craig J Marshall, Tiger Jeans, Andrew Gerber (University of New Brunswick Fredericton), Robert Doyle (Defence Research and Development Canada)

UAS-04 | In Person - Chesapeake C

Topological Optimization, Generative Design and Validation of Drone Structures

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0964
Sofia Gutierrez (Universidad de Antioquia), Juan Ocampo (Saint Mary's University), Carlos Alberto Narváez (Universidad Nacional de Colombia)

Safety Assessment of UTM Strategic Deconfliction

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0965
Antony D Evans (Acubed by Airbus), Maxim Egorov (Actual Systems Inc.), Apurva Anand, Scot E Campbell (Acubed by Airbus), Sebastian Zanolongo, Tyler Young, Nick Sarfaraz (Johns Hopkins University)

Capabilities to Increase Access for Unmanned Surveillance Systems

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0966
Grant Appel, Seth Konig, George Gardner, Shawn Mathis, John Olson, William Yates, Michael L Anderson, Hugh Clark Briggs (US Air Force Academy), Prashant Ganesh, Jose H Ramos (University of Florida)

Optimization of a Robust Reinforcement Learning Policy

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0967
Bilkan Ince, Hyo-Sang Shin, Antonios Tsourdos (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

GTE-09 | In Person - National Harbor 11

Simulation of Hot Corrosion in Industrial Gas Turbines

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0882
Maximillian Lewis, William N Dawes (University of Cambridge), Roger Wells, Omar Valero, Neil Chapman (Siemens Energy Industrial Turbomachinery Ltd)

Effects of Dusting Film Cooling Placement and Configuration on Surface Heat Transfer Characteristics of a Transonic Turbine Squealer Blade Tip

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0883
Hallie Collopy, Phillip M Ligrani (The University of Alabama in Huntsville College of Engineering), Hongzhou Xu, Michael Fox (Solar Turbines Incorporated)

(continued) GTE-09 | In Person - National Harbor 11

A new channel-based internal cooling design for turbine blade leading edge cooling using tangential crossover jets utilizing effects of rotation

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0884
Madhusudan Pallikaranai Thirumalai, Het Padachh, Srinath Ekkad (NC State University)

Unpacking Test Dust Mineral Behaviors for Research in Gas Turbine Engine Deposition

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0885
Nathanael J Wendel, Jeffrey P Bons (The Ohio State University)

TP-08 | In Person - Camellia 2

Big-data Efficient and Automated Science Transfer (BEAST): an open-source software architecture for arc jet data management, modeling, and automation

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2712
Magnus A Haw (Analytical Mechanics Associates, Inc.), Megan E. MacDonald (NASA Ames Research Center), Sebastian V Colom (Analytical Mechanics Associates, Inc.)

Laser Absorption Spectroscopy Measurements of Post-Shock Non-Equilibrium Species in the NASA Ames Electric Arc Shock Tube

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2713
Efaine Chang, Jesse Streicher, Christopher Lyle Strand, Ronald K Hanson (Stanford University), Brett A Cruden (NASA Ames Research Center)

Radiative Heat Transfer in Thermal Protection Systems using a One-Way Coupled Fluid-Solid Framework

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2715
Prathamesh R Sirmalla, Sung Min Jo (University of Illinois Urbana-Champaign), Robert Chiodi (Los Alamos National Laboratory), Marco Panesi, Daniel J Bodony (University of Illinois Urbana-Champaign)

Radiative Heat Transfer in Thermal Protection Systems using a One-Way Coupled Fluid-Solid Framework

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2715
Prathamesh R Sirmalla, Sung Min Jo (University of Illinois Urbana-Champaign), Robert Chiodi (Los Alamos National Laboratory), Marco Panesi, Daniel J Bodony (University of Illinois Urbana-Champaign)

FD-32 | In Person - Chesapeake G

Direct-Numerical and Large-Eddy Simulations of Hypersonic Turbulent Couette Flow at Mach 6, 7 and 8

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0865
Takahiko Toki, Victor C. B. Sousa, Yongkai Chen, Carlo Scalo (Purdue University)

DNS of a Mach 14 Flow Over a Sharp Cone in AEDC Tunnel 9

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0866
Ross Wagnild (Sandia National Laboratories)

Probing Resolution Effects of Particle Image Velocimetry for Measuring High-Speed Turbulent Boundary Layers Using Lagrangian Particle Tracking

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0867
Matthew T Aultman, Kevin J Disotell, Lian Duan (The Ohio State University)

Turbulent heat flux in supersonic flows for different thermal boundary conditions

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0868
Akanksha Baranwal, Diego A Donzis, Rodney D Bowersox (Texas A&M University)

MVCE-02 | In Person - Chesapeake L

Optimized Implementation of Recursive Sub-Division Technique for Higher-Order Finite-Element Isosurface and Streamline Visualization

Tuesday, 24 January 14:00 - 14:20 (UTC-5) | AIAA-2023-0911
Scott T Imlay, Yves-Marie Lefebvre, William Scott Fowler, Michael Saunders, John Goetz (Tecplot)

Fusion of Multimodal Aerodynamics Data and Enhanced Knowledge Capture

Tuesday, 24 January 14:20 - 14:40 (UTC-5) | AIAA-2023-0912
Aljaz Kotnik, Thanassis Frank, Graham Pullan (University of Cambridge)

Interactive Visualisation of Multi-Fidelity Design Optimisation

Tuesday, 24 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0913
Graham Pullan, Aljaz Kotnik (University of Cambridge), Marcus Meyer (Rolls-Royce Deutschland Ltd und Co KG)

Visualization of Diffuse Material in CNTP via Particle Methods

Tuesday, 24 January 15:00 - 15:20 (UTC-5) | AIAA-2023-0914
John Seekins, Jason Cassibry (The University of Alabama in Huntsville)

16:00 | Technical Lecture

16:00 | Technical Panel

16:00 | Technical Paper Session

Wednesday, 25 January

09:30 | Technical Panel

INPSI-11/AS-12/ACD-23/EAT-07/GTE-17/PC-24/TF-05 In Person - Woodrow Wilson A
MST-15 In Person - Baltimore 3
HSABP-05/PC-23 In Person - National Harbor 4
PDL-07 In Person - Azalea 3
GT-03 In Person - Annapolis 1

09:30 | Technical Lecture

GNC-21 In Person - Woodrow Wilson B
EP-07 In Person - Baltimore 2

09:30 | Technical Paper Session

AMT-14 In Person - Magnolia 3
Broadband NIR water absorption thermometry of lab scale metalized explosives Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1173 Anthony C LoCurto, Michael Welch, James B Michael, Travis R Sippel (Iowa State University College of Engineering), Adam Sims, Michael Soo (Naval Surface Warfare Center)
Nitric Oxide Emission Spectroscopy of a Cylinder Stagnation Flow in a Shock Tunnel Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1174 Kyle Daniel, Elijah Jans, Kyle P Lynch, William Swain, Charley Downing, Justin Lawrence Wagner (Sandia National Laboratories)
Near-IR Laser Absorption Measurements of Atomic Nitrogen, Oxygen, and Carbon Concentrations in Shock-Heated Air Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1175 Elijah Jans, Christopher Murzyn, Kyle Daniel, Charley Downing, David Allen, Kyle P Lynch, Justin Lawrence Wagner (Sandia National Laboratories)
Temperature and H2O Measurements at 500 kHz in Post-Detonation Fireballs using Scanned-Wavelength-Modulation Spectroscopy Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1176 Charles J Schwartz, Joshua Stiborek, Christopher S Goldenstein (Purdue University), Austin Butler, Damon Chen, Nick Glumac (University of Illinois Urbana-Champaign)
A Mid-Infrared Laser Absorption Spectroscopy Diagnostic for Measuring Air Temperature, Pressure, and Mass Flux at 100 kHz via Ambient CO ₂ Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1177 Dan J Londrico, Charles J Schwartz, Ryan J Tancin, Christopher S Goldenstein (Purdue University)
SCS-07/AS-13 In Person - Woodrow Wilson C
Electrostatically Actuated Thin-Shell Space Structures Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1302 Fabien Royer, John Z Zhang, Kaleb Overby, Elizabeth Y. Zhu, Harsh Bhundiya, Jeffrey Lang, Zachary C Cordero (Massachusetts Institute of Technology)
Technology Demonstration for System of Magnetically Aligning Reconfigurable Tiny Cube Satellites (SMARTCubeS) Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1303 Ryan William Oroke, Garrett Schmitz, Grant Maclachlan, Johnathan Neptune, Holly Young, Jake Thames, Cole Smith, Brody Austin, Jared Baumert, Corey Schroeder (University of Colorado Boulder), Tom DiSarro, Mieszko Salamon (Jet Propulsion Laboratory)
Variable Curvature Composite Lattice for Space Applications Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1304 Ciaran McHale, Paul Weaver (University of Limerick Faculty of Science and Engineering)
Origami-Inspired Deployable Electromagnetic Waveguides Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1305 Nikhil Ashok, Sangwoo Suk, Sven G. Bilén, Xin Ning (The Pennsylvania State University)

EP-09 | In Person - Baltimore 5

Novel Methods to Detect Trace Quantities of 1-ethyl-3-methylimidazolium tetrafluoroborate
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1410
Stefan Bell, Carl Geiger, Benjamin Inbar, Mark Pfeifer, Elaine Petro (Cornell University)
A two-stage μCAT-MPD thruster
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1213
Denis B Zolotukhin, Michael Keidar (The George Washington University)
Physical Insight into Microwave Electrothermal Thruster Startup via Multi-Objective Design Optimization and Plasma Simulation
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1215
Tsubasa Ozawa (Kyushu Daigaku), Suk Hyun Yeo (RMIT University), Hideaki Ogawa (Kyushu Daigaku)
Study on the laser induced plasma applying for laser propulsion
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1216
Ryota Yasuda, Hideki Moriai (Kanazawa Kogyo Daigaku)

EDU-02 | In Person - Annapolis 3

How Students Situate Aerospace Project Teams to Coursework and Industry
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1211
Jack B Perry, Chloe Kimberlin, Emily Buten, Aaron W Johnson (University of Michigan)
Impacts of the REU Site HYPER: Experience and Recruiting over Three Years
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1212
Jeffrey L Kauffman, Ali Gordon (University of Central Florida)
System Dynamics Model on Retention of STEM Undergraduates
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-0062
Qian Shi, Cesare Guariniello, Christopher Debenham, Katharine Burn, Tram Thu Dang, Joyce Main, Daniel A DeLaurentis (Purdue University)

APA-40 | In Person - Potomac 4

Hypersonic Ground Tests of BOLT II Using Optical Diagnostics
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1190
Jacob G Butera, Cary Dean Smith, John D Schmisser (The University of Tennessee Space Institute)
Experimental Characterization of the Base Flow of a Slender Cone at Supersonic Speeds
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1191
Noah Moffeit, Rajan Kumar (Florida State University), Jonas Gustavsson (Florida State University Florida Center for Advanced Aero Propulsion)

APA-41 | In Person - Potomac 2

Shock Migration on an Oscillating Straked Delta Wing Using an Unsteady Euler Solver
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1192
Alexander Brown, Donald L Kunz (Air Force Institute of Technology)
Aerostructural Predictions Combining FEniCS and a Viscous Vortex Particle Method
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1193
Ryan Anderson, Andrew Ning (Brigham Young University), Ru Xiang, Sebastiaan P. C. van Schie, Mark Sperry, Darshan Sarojini, David Kamensky, John T Hwang (University of California San Diego Jacobs School of Engineering)
Bifurcation analysis of an aeroelastic system under flight varying conditions: A hybrid approach
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1194
Jesús García Pérez, Amin Ghadami (University of Michigan), Leonardo Sanches, Guilhem Michon (ISAE-SUPAERO), Bogdan Epureanu (University of Michigan)
The effect of structural characteristics on transonic buffeting
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1195
Tim Korthäuer, Alessandro Accorinti, Sven Scharnowski, Christian Kähler (Universitat der Bundeswehr Munchen Institut fur Strömungsmechanik und Aerodynamik)
Aeroelastic Analysis of Transonic Flutter with CFD-Based Reduced-Order Model
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1196
Ana N Carloni (Instituto Tecnológico de Aeronautica), João Luiz F Azevedo (Instituto de Aeronautica e Espaço)

MST-16 | In Person - Baltimore 4

Aircraft Taxi Simulations with Detailed Aircraft and Landing Gear Modeling
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1277 Phillip W Richards, Boone M Tate (SDI Engineering Inc.), Isao Kuwayama, Mitsuhiro Kurino, Hitoshi Isshiki (Kabushiki Kaisha Bridgestone)
Optimization-based Flight Control System Clearance Philosophy for Fighter Aircraft
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1278 Pedro Miguel Dias, Patrick Pipek, David Schwalb (Airbus Defence and Space GmbH Manching)
UAS Simulator for Modeling, Analysis and Control in Free Flight and Physical Interaction
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1279 Azarakhsh Keipour (Amazon.com Inc), Mohammadreza Mousaei, Junyi Geng, Dongwei Bai, Sebastian Scherer (Carnegie Mellon University)
Multi-Objective Optimization for Quadrotor Multibody Dynamic Simulations
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1280 Marcus Gambatese, Daisaku Inoyama, Tom G Stoumbos (Northrop Grumman Space Systems), YiZhuang Garrard, Wenlong Zhang (Arizona State University Polytechnic School)
Implementation of a Comprehensive Real-Time Flight Simulator for XV-15 Tilt-Rotor Aircraft
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-0336 Stefano Primatesta, Federico Barra, Simone Godio, Giorgio Guglieri (Politecnico di Torino), Pierluigi Capone (Zurich University of Applied Sciences)

ACD-14 | In Person - Woodrow Wilson D

Configuration Optimization of a Hydrogen-Kerosene Hybrid Combustion Aircraft Retrofit
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1161 Caleb Akhtar Martinez, Jerome Jarrett (University of Cambridge)
Configuration Optimisation of Aircraft with Electric Propulsion
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1160 Fergus C Flanagan, Jerome Jarrett (University of Cambridge)
A Parametric Design Process based on Optimization-Guided Incremental Design Decisions
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1162 Dongjoon Lee, Cody Karcher, Robert Haimes, Marshall C Galbraith (Massachusetts Institute of Technology), John Dannenhoffer (Syracuse University)
Evaluation of a Collaborative and Distributed Aircraft Design Environment, Enabled by Microservices and Cloud Computing
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1163 Xin Chen, Adriano Isoldi, Atif Riaz, Christos Mourouzidis (Cranfield University Cranfield School of Aerospace Transport and Manufacturing), Akin Keskin (Rolls-Royce plc), Dale Smith, Marin D. Guenov, Vassilios Pachidis (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)
Direct Software Coupling for Aeroplane Sizing and Integrated Aeroplane-Engine Mission Performance Simulations
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1164 Aleksandar Joksimovic, Spurthy Subramanya, Jean-Baptiste Chaudron, Xavier Carbonneau (ISAE-SUPAERO)

IS-16 | In Person - Annapolis 4

A Methodology to Develop Survivability Maps for Autonomous Aerial Vehicles
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1256 Fanruiqi Zeng (Georgia Institute of Technology), John-Paul Clarke (The University of Texas at Austin), Husni R Idris (NASA Ames Research Center)
Learning Stochastic Processes Using Gaussian Processes: An Application to Flight Delay Prediction
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1257 Aakarshan Khanal, Rajnish Bhusal, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington), Wendy Okolo (NASA Ames Research Center)
Motion Primitive Path Planning Under Uncertainty for High-Speed Vehicles
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1258 Geordan M Gutow (Carnegie Mellon University), Jonathan D Rogers (Georgia Institute of Technology College of Engineering), Kyle Williams (Sandia National Laboratories)

STR-23 | In Person - Chesapeake 4

Modal Test and Analysis Correlation of Wind Tunnel Blades for the National Transonic Facility
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1321 Brian H Mason, Carlos G Davila, Andrew E Lovejoy (NASA Headquarters)

(continued) STR-23 | In Person - Chesapeake 4

Dynamic performance of hygro-thermal-mechanically preloaded variable stiffness composite fairing structures
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1322
Giuseppe Sciascia, Vincenzo Oliveri, Paul Weaver (University of Limerick)
WrapToR Truss Stiffeners: Lightweight Reinforcement for Composite Skin Panels
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1323
Chris F Grace, Mark Schenk, Benjamin King Sutton Woods (University of Bristol)
Automated Immersion Type Ultrasonic C-Scan Inspection of Triangular Thermoset Composite Grid Structures for Aerospace Applications
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1324
Tayfun Durmaz (University of Limerick Faculty of Science and Engineering), Robert Telford, Brendan Murray, Kelly Matthews (ATG Innovation), Ronan O'Higgins (University of Limerick Faculty of Science and Engineering)

AA-11 | In Person - Baltimore 1

Acoustics on a Coarse Grid
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1156
Iman Samani, Philip L Roe (University of Michigan)
Aero-Acoustic Noise Predictions Using Stochastic Noise Generation and Non-Boundary Conformal Refined Cartesian Meshes
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1157
Mark R Allan, David W Standingford, Jamil Appa (Zenotech Ltd)
Computational and Experimental Aeroacoustics of an Isolated Supercritical Wingtip Model
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1158
Guang C Deng, Satoshi Baba, Philippe Lavoie (University of Toronto), Stephane Moreau (Universite de Sherbrooke)
Optimization of turbulent time scales for jet noise prediction
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1159
Tejal K Shanbhag, Gao Jun Wu, Sanjiva K Lele, Juan J Alonso (Stanford University)

PGC-10 | In Person - National Harbor 3

Computational Assessment of the Impact of Wave Count on Rotating Detonation Engine Performance
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1290
Daniel E Paxson (NASA John H Glenn Research Center)
Low-Order Model for Detonation Velocity Suppression in Rotating Detonation Combustors
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1291
Provence Barnouin, Eric Bach (Technische Universitat Berlin), Ephraim J Gutmark (University of Cincinnati), Christian O Paschereit, Myles Bohon (Technische Universitat Berlin)
Investigation of Geometric RDC Dependencies Using a Fast Reactive Euler Solver
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1292
Roman Klopsch, Niclas Garan, Eric Bach, Christian O Paschereit, Myles Bohon (Technische Universitat Berlin)
Markov Chain Monte Carlo Parameter Estimation of Deflagration Losses in a Rotating Detonation Engine
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1293
Riley Huff, Mirko Gamba (University of Michigan)
Numerical simulations of mode transition in Rotating Detonation Engines
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1294
Prashant Tarey, Praveen Ramaprabhu (UNC Charlotte The William States Lee College of Engineering), Douglas A Schwer (Naval Research Laboratory Chemistry Division), Jacob McFarland (Texas A&M University System)

SD-21 | In Person - Chesapeake B

Genetic Algorithm-Guided Parametric Aeroelastic Reduced-Order Model with State-Consistence Enforcement
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1313
Jung I Shu, Yi Wang (University of South Carolina), William C Krolick, Kapil Pant (CFD Research Corporation)
Parametric Aeroelastic Reduced-Order Modeling with Hyperparameter Optimization for Flutter Analysis
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-2701
Jung I Shu, Yi Wang (University of South Carolina), Alessandro Brown, Andrew L Kaminsky (CFD Research Corporation)
Investigation of Experimental Response of Bladed Disk with Under-Platform Dampers Using Tip Timing and Strain Gauge Responses
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-2699
Troy C Krizak, Eric Kurstak, Kiran X DSouza (The Ohio State University)

(continued) SD-21 | In Person - Chesapeake B

Reduced-Order Modeling and Parameter Identification of Wind Tunnel Measurement Systems

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2700
Zachary T Jones, Nicholas A Vljajic (The Pennsylvania State University Applied Research Laboratory), Peter A Parker, Devin E Burns (NASA Langley Research Center)

GNC-20 | In Person - Chesapeake 5

Incremental Nonlinear Control Allocation for an Aircraft with Distributed Electric Propulsion

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1248
Pepijn de Heer (Technische Universiteit Delft Faculteit Werktuigbouwkunde Maritieme Techniek & Technische Materiaalwetenschappen), Coen C de Visser (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Marijn L Hoogendoorn, Henk W Jentink (Koninklijk Nederlands Lucht- en Ruimtevaartcentrum)

Multi-objective Design and Performance Analysis of Incremental Control Allocation-based Flight Control Laws

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1249
Tijmen Pollack, Erik-Jan Van Kampen (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

Gain Design of an INDI-based Controller for a Conceptual eVTOL in a Nonlinear Simulation Environment

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1250
Denis Surmann, Stephan Myschik (Universitat der Bundeswehr Munchen)

Invited talk with Dan Hauser

Wednesday, 25 January 09:30 - 10:10 EDT (UTC-5)

EXPL-07 | In Person - National Harbor 7

Operational Techniques in Microgravity for Cryogenic Fluid Management

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1217
Bryan Hoffman (Jacobs Engineering Group Inc), Jacob Brodnick (NASA Marshall Space Flight Center)

Development and Validation of Two-Phase CFD Models for Key Elements of Propellant Tank CFM Operations in 1G and Microgravity – An Overview

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1218
Mohammad Kassemi (Case Western Reserve University), Daniel M Hauser (NASA Glenn Research Center), Olga V Kartuzova, Sonya I Hylton (Case Western Reserve University)

PC-26 | In Person - National Harbor 10

Evaluation of Kinetic Energy and Entropy Preserving Schemes on the Simulation of Detonation Wave Dynamics

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1286
Kyle A Schau, Joseph Oefelein (Georgia Institute of Technology)

Investigation of Modeling Approaches for a Sudden Release of a High-Pressure Hydrogen Jet into Low-Pressure Hydrogen

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1287
Surya Kaundinya Oruganti, Marcel Martins Alves, Odai Nassar, Moran Ezra (Tel Aviv University), Sergey Kudriakov, Etienne Studer (Universite Paris-Saclay), Liel Ishay (Nuclear Research Centre Negev), Yoram Kozak (Tel Aviv University)

The Evolution of the Velocity-Curvature-Acceleration Relationship with Activation Energy for Unstable Gaseous Detonations

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1288
David J Lont, Scott I. Jackson (Texas A&M University), Carlos Chiquete, Mark Short (Los Alamos National Laboratory)

The Role of Cell Size and Area Expansion on the Behavior of Geometric Detonation Amplification

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1289
Benjamin Millard, Daniel R Cuppoletti (University of Cincinnati)

EAT-08 | In Person - Camellia 1

Fail Safe Hybrid-Electric Propulsion System Design

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1208
Sunil Patil, Mazen El Houte, Nils Heuermann, Mike Slack (ANSYS Inc)

Power System Redundancy Design Trends for All-Electric eVTOL Quadrotors

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1209
George L Thomas, Brian Malone (NASA Glenn Research Center)

Circular Flight-Path Optimization for a Solar-Powered UAV Flying in Horizontal Winds

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1210
Maya Rahaman-Noronha, William Bissonnette, Goetz Bramesfeld (Toronto Metropolitan University)

AFM-11 | In Person - Potomac 6

DAVINCI Venus Entry, Descent, and Landing Modeling and Simulation
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1165 Soumyo Dutta, Nelson Guecha-Ahumada (NASA Langley Research Center), Matthew Garrison, Kyle Hughes (NASA Goddard Space Flight Center), Mark Johnson (Lockheed Martin)
Construction of Entry Vehicle Aerodynamic Surrogates from CFD-in-the-loop Flight Simulations
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1166 Zach Ernst, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)
Demonstration of a coupled CFD-RBD-FCS framework on Mars Science Laboratory Vehicle
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1167 Alexandra M Hickey, Zach Ernst, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology)
Reusable Entry Vehicle Trajectory Optimization Using Multiple-Domain Radau Collocation
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1168 Cale A Byczkowski, Anil V. Rao (University of Florida)
Multidisciplinary Modeling for Missionisation of Re-entry Vehicles
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1169 Jacopo Guadagnini, Gabriele De Zaiacomo (Deimos Space SLU)

STR-22 | In Person - Chesapeake 7

Fail-Safe Technologies for Bonded Unitized Composite Structures - Overview
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1316 Stephen B Clay, Philip Knoth, Savannah Crampton, Michael Gran, Brian Smyers (Air Force Research Laboratory Aerospace Systems Directorate), Wesley Ault (Booz Allen Hamilton Inc)
Demonstration Testing Approach on AFRL/NGC Fail-Safe Technologies for Bonded Unitized Composite Structures (FASTBUCS) Program
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1317 Jonathan D Bartley-Cho, Nav Muraliraj (Northrop Grumman Space Systems), Brian Smyers, Dustin Comer, Austin Land, Wesley Ault (Air Force Research Laboratory), James Finlay, Anthony M Waas (University of Michigan)
Fail-Safe Prediction for Bonded Composite Structures Using Discrete Damage Modeling
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1318 Vijay Goyal (Lockheed Martin Aeronautics Co Marietta), Kevin H Hoos, Wei-Tsen Lu, Endel V Iarve (The University of Texas at Arlington)
Weak Bond Study of Adhesively Bonded Composites for Laser Bond Inspection
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1319 Abel Barraza (Spirit AeroSystems Inc), Jason Action (Lockheed Martin Corporation Aerospace and Defense)
Design and Experimental Validation of a bonded structure Fail Safe Damage Arrest Concept in Mode II (shear mode)
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1320 Iddo Kressel, David Bardenstein, Alexander Lukatsky, Zvi Deutsch, Aviad Levi Sasson (Israel Aerospace Industries Ltd), Noam Shemesh (Israel Defense Forces), Stephen B Clay, Brian Smyers, Philip Knoth, Wesley Ault (Air Force Research Laboratory)

MAT-15 | In Person - Chesapeake 8

Low Velocity Impact on Composite Energy Absorbers: Experimental Analysis
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1262 Akhil Bhasin (Wichita State University National Institute for Aviation Research), Suresh Raju Keshavanarayana (Wichita State University), Tanat Maichan, Hooloomann Ramdial, Luis Manuel Gomez, Gerardo Olivares (Wichita State University National Institute for Aviation Research)
Combustion Chamber Fatigue Life Analysis for Reusable Liquid Rocket Engines (LREs)
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1263 Mateusz Tomasz Gulczynski, Jörg R Riccius, Günther Waxenegger-Wilfing, Jan Deeken, Michael Oschwald (Deutsches Zentrum für Luft und Raumfahrt DLR Standort Lampoldshausen)
A Peridynamic Investigation of Ceramic Material Response Under High-Speed Solid Impact Loadings
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1264 Ugur Can (Virginia Commonwealth University College of Engineering), Stewart Silling (Sandia National Laboratories), Ibrahim Guven (Virginia Commonwealth University College of Engineering)

EXPL-08 | In Person - Chesapeake L

Numerical Analysis of Flight Performance of Bioinspired Mars Flight Vehicles
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1219
Michaela L Tarpley, Jeremy A Pohly, Chang-Kwon Kang (The University of Alabama in Huntsville College of Engineering), Taeyoung Lee (George Washington University), Hikaru Aono (Shinshu Daigaku)
Fast Transit Interstellar Probe Mission with Extreme Solar Sailing
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1220
Artur Davoyan (University of California Los Angeles)
Space Shuttle Program Dual Docked Operations
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1221
Joel Sills (NASA Johnson Space Center), Erica Bruno (MRI Technologies)

FD-43 | In Person - Chesapeake F

Crossflow Interactions of Inclined Fluidic Oscillator Jets
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1237
Vanessa G Awate, Phillip J Ansell (University of Illinois Urbana-Champaign)
Active Flow Control of a Swept Wing using Unsteady Fluidic Fence Techniques
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1238
Alex Spens, Evan J McFadden, Jeffrey P Bons (The Ohio State University)
Active Flow Control of a Swept Wing in Subsonic Compressible Flow via Streamwise Vortex Generating Jets
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1239
Collin B Rambacher, Jeffrey P Bons (The Ohio State University)
Scaling of the Momentum Coefficient from Fluidic Oscillators at Different Ambient and Supply Conditions
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1240
K. Venkateswara Reddy, Rene Woszidlo (The Boeing Company)
Power Efficiency Analysis of a Co-Flow Jet Airfoil in Cruise Conditions
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1429
Fernando Zigunov, Yang Zhang, Louis N Cattafesta (Florida State University)

FD-39 | In Person - Chesapeake D

Automatic Code-Generation to Enable High-Fidelity Simulations of Multi-Block Airfoils on GPUs
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1222
David J Lusher, Markus Zauner, Andrea Sansica, Atsushi Hashimoto (Japan Aerospace Exploration Agency (JAXA))
Assessment of Edge-Based Viscous Method for Corner-Flow Solutions on Graphics Processing Units
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1223
Yi Liu, Boris Diskin, Hiroaki Nishikawa (National Institute of Aerospace), William K Anderson, Gabriel Nastac, Eric J Nielsen, Aaron Walden, Li Wang (NASA Langley Research Center)
On the Use of Nonlinearly Stable Flux Reconstruction for Implicitly Filtered Large Eddy Simulation
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1224
Julien Brillon, Sivakumaran Nadarajah (McGill University)
Python based API to post-process CFD data
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1225
Harpreet Singh Chhabra, Dilip Kalagotla, Paul D Orkwis (University of Cincinnati)
A Multi-Architecture Approach for Implicit Computational Fluid Dynamics on Unstructured Grids
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1226
Gabriel Nastac, Aaron Walden, Li Wang, Eric J Nielsen (NASA Langley Research Center), Yi Liu (National Institute of Aerospace), Matthew Opgenorth (Sierra Space), Jason Orender, Mohammad Zubair (Old Dominion University)

LP-07 | In Person - National Harbor 14

Preliminary Demonstration of Concept for Fault Diagnosis in Resilient Redundant Spacecraft Propulsion
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1259
Kaname Kawatsu, Go Fujii (Uchu Koku Kenkyu Kaihatsu Kiko), Taiichi Nagata (), Himeko Yamamoto, Yu Daimon (Uchu Koku Kenkyu Kaihatsu Kiko)

(continued) LP-07 | In Person - National Harbor 14

Development and Testing of Femto-Second Laser Surface Processing (FLSP)-Treated Guide Vanes for Application to Advanced Cryogenic Liquid Acquisition Devices

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1260
Craig Zuhlke (University of Nebraska-Lincoln), Thomas Conboy (Creare LLC), Arthur Werkheiser (NASA Marshall Space Flight Center), Jason W Hartwig (NASA John H Glenn Research Center), Cody Gilliland (NASA Marshall Space Flight Center), Garrett Beard (University of Nebraska-Lincoln), Andrew Smith (NASA Marshall Space Flight Center), Jedediah Storey (NASA John F Kennedy Space Center)

Speed of Sound Characterization of Mixed Oxides of Nitrogen from Freezing Point to 50°C

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1261
Catriona White, Schuyler T McNaughton, Jason Gabl, Timothee L Pourpoint (Purdue University)

FD-45 | In Person - Chesapeake K

Measurements on a Blunt Cone-Cylinder-Flare at Mach 6

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1245
Elizabeth Katherine Benitez, Matthew P Borg (Air Force Research Laboratory), Jonathan L Hill (Air Force Institute of Technology), Anton Scholten (NC State University), Pedro Paredes (National Institute of Aerospace), Joseph S Jewell (Purdue University)

Boundary Layer Separation on a Hollow-Cylinder/Flare at Mach 5

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1246
James A S Threadgill, Ashish Singh, Alejandro Roskelley Garcia, Jesse C Little (The University of Arizona College of Engineering)

Experimental measurements and numerical investigations of boundary-layer instabilities on a Mach 5 hollow cylinder

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1247
John Thomas Flood, Christoph Hader, Hermann F Fasel, Stuart A. Craig (The University of Arizona)

Hypersonic Shock-Wave/Boundary-Layer Interactions on the ROTEX-T Cone/Flare

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1436
Jonathan Davami, Thomas J Juliano (University of Notre Dame), Anton Scholten (NC State University), Pedro Paredes (National Institute of Aerospace)

Reduced Order Model of Boundary Layer Transition for HIFiRE-1

Wednesday, 25 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1437
Timothy J Leger, Matthew W Tufts, Nicholas J Bisek (Air Force Research Laboratory)

FD-42 | In Person - Chesapeake E

Computation of Hypersonic Boundary Layer Transition behind Propagating Shock Wave

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1233
Hiroki Sakamoto, Shintaro Sato, Naofumi Ohnishi (Tohoku Daigaku)

Laminar/Transitional Fin-induced Shock Wave Boundary-Layer Interactions at Mach 5

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1234
Sathyan Padmanabhan, Lucas Jouannais, James A S Threadgill, Jesse C Little (The University of Arizona College of Engineering)

Enthalpy Effects on Disturbance Growth in high-enthalpy hypersonic flow

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1235
Hideyuki Tanno, Katsuhiro Itoh, Hisaaki Arai, Keita Kanakubo, Joh Nagata (Uchu Koku Kenkyu Kaihatsu Kiko)

Numerical considerations of slow acoustic mode in high-velocity boundary layers

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1236
Shaun Harris, Ross Wagnild (Sandia National Laboratories)

PC-25 | In Person - National Harbor 8

Development of Data Assimilation Methods for Combustion

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1281
Tomas Houba (Sierra Lobo, Inc.), Matthew Evan Harvazinski, Ramakanth Munipalli (Air Force Research Laboratory)

Implementation of gradient based optimizers for reaction mechanism tuning

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1282
Mandhapati P Raju, Tomasz Malewicki, Nitesh O Attal, Daniel Probst, Peter K Senecal (Convergent Science Inc)

Physics-integrated Segmented Gaussian Process (SegGP) learning for cost-efficient training of diesel engine control system with low cetane numbers

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1283
Sai Ranjeet Narayanan (University of Minnesota Twin Cities), Yi Ji (Duke University), Harsh Darshan Sapra (University of Wisconsin-Madison), Suo Yang (University of Minnesota Twin Cities), Simon Mak (Duke University), Zongxuan Sun (University of Minnesota Twin Cities), Sage Kokjohn (University of Wisconsin-Madison), Kenneth Kim, Chol Bum Kweon (Army Research Laboratory Aberdeen Proving Ground)

(continued) PC-25 | In Person - National Harbor 8

Predictive Modeling of Complex Flows using Regularized Conditionally Parameterized Graph Neural Networks

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1284
Elnaz Rezaian, Karthikeyan Duraisamy (University of Michigan)

An Ensemble-Based Deep Framework for Estimating Thermo-Chemical State Variables from Flamelet Generated Manifolds

Wednesday, 25 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1285
Amol Salunkhe (University at Buffalo), Georgios Georgalis, Abani Patra (Tufts University), Varun Chandola (University at Buffalo)

DGE-06/MST-14 | In Person - Chesapeake 12

Digital Engineering: Recognizing and Honing Our 6th Sense with respect to Physical Modelling

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1204
Nigel J Taylor (MBDA UK Ltd)

A Model-Based Framework for NASA Science Mission Formulation

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1205
Matthew Marcus, Henock Legesse, David Richardson (NASA Goddard Space Flight Center)

Review on Reduced Order Modeling and Its Application in the Digital Twinning Industry

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1206
Kazi Tanisha Zaman Angshu, Anika Tasnim, Md Habib Ullah Khan, Md Harun Or Rashid Molla, Md Ismail Hassan Udoy, Mehrin Chowdhury, Ahsan R Choudhuri (The University of Texas at El Paso)

How Credible Model-Based Engineering Can Enable Risk-Informed Decision-Making

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1207
Terril N Hurst, Kevin L Rotz, Addison K Dunn (Raytheon Missiles & Defense)

MAT-16/ICME-04/MDO-15/STR-21 | In Person - Chesapeake 1

Application Table: A Bridge Connecting the Designing “With-The-Material” and “The-Material” Paradigm’s

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1265
Steven M Arnold, Brandon L Hearley (NASA John H Glenn Research Center), David Cebon (ANSYS, Inc)

A Robust Schema for Machine Learning Data and Models Within the Granta MI Information Management System

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1266
Brandon L Hearley, Steven M Arnold, Joshua Stuckner (NASA John H Glenn Research Center)

Generation of 2-D Fiber Reinforced Composite Microstructures with Statistically Equivalent Features Using Machine Learning and Adaptive Data Generation

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1267
Jamal Hussein, Farhad Pourkamali-Anaraki, Parisa Hajibabae, Scott E Stapleton (University of Massachusetts Lowell)

Predicting Fiber Breakage Failure Mode of Plain Weave Fabrics with Multiscale Recursive Micromechanics

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1268
Brandon L Hearley, Evan J Pineda, Brett A Bednarczyk (NASA John H Glenn Research Center), Scott M Murman (NASA Ames Research Center), Mark Pankow (NC State University)

Computational Discovery of Complex Material Systems by Design Optimization

Wednesday, 25 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1269
Nicholas Boechler, Brianna Mcnider, Ryan Fancher, Jaeyub Hyun, Hyunsun A Kim (University of California San Diego Jacobs School of Engineering)

TP-11 | In Person - Azalea 1

New Developments in NASA’s Entry Systems Modeling Project

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1333
Aaron Michael Brandis, Michael Barnhardt (NASA Ames Research Center), Thomas K West, Monica Hughes (NASA Langley Research Center)

Overview of NASA Research Activities in Shock Layer Kinetics and Radiation

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1334
Brett A Cruden, E Papajak, Amal Sahai, Khalil Bensassi (Analytical Mechanics Associates, Inc.), Augustin Tibere-Inglesse (Oak Ridge Associated Universities), Aaron Michael Brandis, David Schwenke (NASA Ames Research Center), Christopher O Johnston (NASA Langley Research Center)

Dynamic Stability Methodologies and Capabilities

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1335
Joseph Michael Brock, Cole D Kazemba (NASA Ames Research Center)

(continued) TP-11 | In Person - Azalea 1

Fluid-Structure Interaction Simulations of the ASPIRE SR03 Supersonic Parachute Flight Test
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1336
Francois Cadieux, Jordan B Angel, Michael F Barad, Cetin C Kiris (NASA Ames Research Center)
An Overview of Experiments in The Entry Systems Modeling Project
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1337
Brody K Bessire (NASA Ames Research Center), Alexandre Martin, Michael W. Renfro, Sean Bailey, Kristin Price (University of Kentucky College of Engineering), Francesco Panerai, Sam Chen (University of Illinois Urbana-Champaign)

SATS-04/SCS-06 | In Person - National Harbor 5

Guided Net Intercept Vehicle for Active Debris Removal of Large Uncooperative Debris
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1297
Alexandra M Hickey, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology), Aimee N. Williams (Georgia Tech Research Institute)
Simulation of a Guided Active Debris Removal Interception
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1298
Mitchell Misbach, Arnaud M. Ballande, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology)
HexSat: Detachable Net Casting Spider-Inspired Space Debris Removal Device Concept Design
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1299
James Montoya, John Racette, Eric Schroeder, Leonor Merino Osornio, Camden Case, Ramon Romero, Mostafa Hassanalian (New Mexico Institute of Mining and Technology)
Viability of Electric Propulsion in Smallsats for Active Debris Removal (EPSADR)
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1300
Yaw Tung Tan (Georgia Institute of Technology), Kelly Erin Irons (GE Aerospace), Elaine Petro (Cornell University College of Engineering)
Free-Fall Dynamics and Dispersion Modeling of Gram-Scale Atmospheric Probes
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1301
Joshua S Umansky-Castro, Kimberly G Yap, Shane W Johnson, Mason A Peck (Cornell University), Vuthy Vey (Hobart and William Smith Colleges)

CFD2030-05 | In Person - National Harbor 13

Summary of the CFD 2030 Integration Committee Invited Panel on Physics Based Model Improvement and Uncertainty Quantification for the Digital Engineering Transformation
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1200
Earl P Duque (Intelligent Light), Scott A Morton (US Army Corps of Engineers), Andrew M Wissink (US Army Combat Capabilities Development Command), Spencer W Stone (Lockheed Martin Corporation Aerospace and Defense), William Spotz (US Department of Energy Office of Science), Daniel J Caraway (Lockheed Martin Corporation Aerospace and Defense), Steve M Legensky (Intelligent Light)
Detecting Missing Flow Separation using Supervised Machine Learning
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1201
Amirpasha Hedayat, Carl F Ollivier Gooch (The University of British Columbia)
Towards Efficient Simulations of Non-Equilibrium Chemistry in Hypersonic Flows: Neural Operator-Enhanced 1-D Shock Simulations
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1202
Ivan Zanardi, Simone Venturi, Alessandro Munafò, Marco Panesi (University of Illinois Urbana-Champaign)
Multi-GPU Approach for Training of Graph ML Models on large CFD Meshes
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1203
Sebastian Strönisch, Maximilian Sander (Technische Universität Dresden), Marcus Meyer (Rolls-Royce Deutschland Ltd und Co KG), Andreas Knüpfer (Technische Universität Dresden)

AMT-15 | In Person - Magnolia 2

Application of Pressure-Sensitive Paint to Investigate Hypersonic Shock-Wave/ Boundary-Layer Interactions
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1178
Angelina Andrade, Elijah J LaLonde, Eugene N. Hoffman, Sofia Gutierrez, Christopher S Combs (The University of Texas at San Antonio)
High-Speed Pressure Sensitive Paint Measurements of the Initial Concept 3.X Vehicle at Mach 7
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1179
Abinayaa Dhanagopal, Chad Williamson, Elijah J LaLonde (The University of Texas at San Antonio), Sofia Gutierrez (), Angelina Andrade, Valeria Delgado, Christopher S Combs (The University of Texas at San Antonio)

(continued) AMT-15 | In Person - Magnolia 2

Dynamic Mode Decomposition of Simultaneous Dual-layer Focusing Schlieren and Unsteady Pressure-Sensitive Paint Measurements for Transonic Buffet on a Swept Wing

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1180
Shota Fukumoto, Toshinori Kouchi (Okayama Daigaku), Yosuke Sugioka, Shunsuke Koike (Uchu Koku Kenkyu Kaihatsu Kiko)

Development and Testing of High-Temperature Fast Response Pressure Sensitive Paint

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1181
Sam J Wood, Shaan Stephen, Chase Jenquin, Ethan Johnson, Venkateswaran Narayanaswamy (NC State University Department of Mechanical and Aerospace Engineering)

AFM-12 | In Person - Camellia 2

Dynamic Stability of Deployable Aeroshells at Supersonic Speeds

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1170
Pietro Innocenzi, Paul J Bruce, Salvador Navarro-Martinez (Imperial College London)

Adaptive Control Validation Using a Matlab-Based CFD/RBD Coupled Simulation

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1171
Jubaraj Sahu, Benjamin C Gruenwald, Bradley T Burchett (US Army Research Laboratory)

Reachability Analysis of a Hypersonic Glide Vehicle using Particle Swarm Optimization

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1172
Jens A Rataczak, Jay W McMahon, Iain D Boyd (University of Colorado Boulder College of Engineering and Applied Science)

FD-40 | In Person - Chesapeake I

Compressible flow solver FFWHC-ACE for fully automated LES of aeronautical flows

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1227
Hiroyuki Asada, Yoshiharu Tamaki (Tohoku Daigaku), Ryoji Takaki (Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus), Soshi Kawai (Tohoku Daigaku)

Validation and Verification of reactingPimpleCentralFOAM for Ejector Ramjet Applications

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1228
Tyson E Migadel, Derek Lastiwka, Artem Korobenko, Craig T Johansen (University of Calgary)

Numerical Simulation of Supersonic Turbulent Boundary Layers Subjected to Favorable Pressure Gradients

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1229
Joseph Carlson, Rodney D Bowersox, Nathan R Tichenor (Texas A&M University)

Computational Simulation of Jet in Crossflow with RANS and Hybrid RANS/LES Methods

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1230
Brian R Smith, Patrick Yagle (Lockheed Martin Aeronautics Company)

MDO-16 | In Person - Chesapeake 6

Topology optimization for stiffened panels, from linear buckling to postbuckling

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1270
Sheng Chu, Carol Featherston, David Kennedy (Cardiff University), Hyunsun A Kim (University of California San Diego)

Feature-Mapping Topology Optimization of a Wing-box with Geometric Constraints

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1271
Hollis A Smith, Julian A Norato (University of Connecticut), Joshua D Deaton (Air Force Research Laboratory)

Analysis-Oriented Moving Morphable Components for Topology Optimization

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1272
Keisuke Otsuka (Tohoku Daigaku), Shuonan Dong, Ryo Kuzuno, Kanjuro Makihara ()

Efficient Shape Optimization via Parametric Model Embedding

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1273
Andrea Serani, Matteo Diez (Consiglio Nazionale delle Ricerche), Domenico Quagliarella (Centro Italiano Ricerche Aerospaziali)

SR-03 | In Person - National Harbor 15

Role of Finite-Rate Kinetics on the Performance Predictions of Solid Rocket Motor Nozzles

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1314
Marco Grossi, Alessio Sereno, Daniele Bianchi, Bernardo Favini (Universita degli Studi di Roma La Sapienza)

Statistical Analysis of Tapered Grain Solid Rocket Motor Performance

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1315
Tyler Sheils, Noel Cervantes, Mark Carpenter, Roy J Hartfield (Auburn University)

SD-19 | In Person - Chesapeake 2

Design of a Tiltrotor Semi-Span Wind Tunnel Model for Whirl Flutter Investigations
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1306
Stefan van 't Hoff, Jelmer van Vilsteren (Royal Netherlands Aerospace Centre (NLR)), Alessandro Cocco, Pierangelo Masarati (Politecnico di Milano)
Influence of blade elasticity on propeller whirl flutter stability
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1307
Christopher Koch, Benedikt Koert (Deutsches Zentrum für Luft- und Raumfahrt eV)
Predicting Whirl Flutter Bifurcations Using Pre-Flutter Output Data
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1308
Sai Vishal Gali, Todd Goehmann, Cristina Riso (Georgia Institute of Technology)
Optimal Tiltrotor Blade Twist to Extend Whirl-Flutter Stability Boundaries
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1510
Vincenzo Muscarello (RMIT University STEM College), Giuseppe Quaranta (Politecnico di Milano)
Multi-Propeller Whirl Flutter Stability Study Using Component Mode Synthesis Element
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1509
Kyle J. Nelson, Jinwei Shen (The University of Alabama System)

SD-20 | In Person - Chesapeake 3

Improvements to Wind-Tunnel Flutter Prediction with Application to the Active Aeroelastic Aircraft Testbed Wind-Tunnel Model
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1309
Tomer Ben Asher, Daniella E Raveh (Technion Israel Institute of Technology)
Dynamic Shape Sensing of the A3TB Wind Tunnel Model Using Fiber Optics Strain Data and the Kalman State Estimator
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1310
Tsoof Joels, Daniella E Raveh (Technion Israel Institute of Technology)
Flexible High Aspect Ratio Wing Wind Tunnel Tests
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1311
Etienne Coetzee (Airbus SAS), Mark H Lowenberg, Simon A Neild (University of Bristol)
TU-Flex: A Very-Flexible Flying Demonstrator with a Generic Transport Aircraft Configuration
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1312
Pedro Gonzalez, Gerrit Starvorinus, Flavio J Silvestre (Technische Universität Berlin), Arne Voß, Yasser Muhammad Meddaikar, Wolf Krueger (Deutsches Zentrum für Luft- und Raumfahrt eV)

APA-38 | In Person - Potomac 5

AeroFusion: Data Fusion and Uncertainty Quantification for Entry Vehicles
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1182
Steven Snyder, Thomas J Wignall, Justin S. Green, Satvik Kumar, Michael William Lee, Tenavi Nakamura-Zimmerer, James B. Scoggins, Robert A Williams (NASA Langley Research Center)
Comparisons of Performance Metrics and Machine Learning Methods on an Entry Descent and Landing Database
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1183
Thomas J Wignall, Tenavi Nakamura-Zimmerer, James B. Scoggins, Steven Snyder, Satvik Kumar, Brendon K. Colbert (NASA Langley Research Center)
Structured Covariance Gaussian Networks for Orion Crew Module Aerodynamic Uncertainty Quantification
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1184
Tenavi Nakamura-Zimmerer, Mary T. Stringer, Brendon K. Colbert, James B. Scoggins (NASA Langley Research Center)
Multihierarchy Gaussian Process Models for Probabilistic Aerodynamic Databases using Uncertain Nominal and Off-Nominal Configuration Data
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1185
James B. Scoggins, Thomas J Wignall, Tenavi Nakamura-Zimmerer, Karen L Bibb (NASA Langley Research Center)
Construction of a Fluid Flow Field from Discrete Point Data using Machine Learning
Wednesday, 25 January 10:50 - 11:10 (UTC-5) AIAA-2023-1186
Yury Lebedev (University of Florida), Michael William Lee (NASA Langley Research Center), Alina Zare (University of Florida)

FD-44 | In Person - Chesapeake G

High-fidelity CFD verification workshop 2024: wall-modeled large eddy simulation of smooth-body separation
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1241
Johan Larsson (University of Maryland at College Park), Ivan Bermejo Moreno (University of Southern California), Robert A Baurle (NASA Langley Research Center), Daniel J Garmann, Donald P Rizzetta (Air Force Research Laboratory), Christoph Brehm (University of Maryland at College Park), Marshall C Galbraith (Massachusetts Institute of Technology), David R Gonzalez (Office of Naval Research)
High-Fidelity CFD Verification Workshop 2024: Shock-Dominated Flows
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1242
Kevin R Holst (The University of Tennessee Knoxville Tickle College of Engineering), Chongam Kim (Seoul National University), Matthew Joseph Zahr (University of Notre Dame)
High-Fidelity CFD Verification Workshop 2024: Mesh Motion
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1243
Nathan A Wukie (Air Force Research Laboratory Aerospace Systems Directorate), Krzysztof Fidkowski (University of Michigan), Per-Olof Persson (University of California Berkeley), Zhi Jian Wang (University of Kansas)
High-Fidelity CFD Verification Workshop 2024: Spalart-Allmaras QCR2000-R Turbulence Model
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1244
Boris Diskin, Yi Liu (National Institute of Aerospace), Marshall C Galbraith (Massachusetts Institute of Technology)

MDO-17 | In Person - Chesapeake A

An overview of six decades of structural optimization and personal experience. A tribute to Garret N. Vanderplaats
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1274
Santiago Hernandez (University of Coruña)
Second Generation Approximations: A Review of Efficient Structural Optimization and a Tribute to Dr. Garret N. Vanderplaats, Originator of These Approximations
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1275
Juan P Leiva (OmniQuest)
An Improved What-if Post-Processing Utility – A Tribute to Dr. Garrett N. Vanderplaats
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1276
Shubhamkar Kulkarni, Daniel Fust (OmniQuest)

APA-39 | In Person - Potomac 1

A Common Simulation for Hover Validation of a Helicopter near the Ground
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1187
Robert P Narducci (The Boeing Company Defense Space and Security), Nathan S Hariharan (CREATE AV Team)
Model and Full-Scale Rotor Hover Performance Analysis using HELIOS/OVERFLOW
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1188
Vera Klimchenko, Byung-Young Min, Brian Wake (Sikorsky Aircraft Corp)
Numerical Analysis of HVAB and STAR Rotor Blades Using HMB3
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1189
Rinaldo Steininger, George N Barakos, Mark A Woodgate (University of Glasgow)

UAS-07 | In Person - Chesapeake C

Testbed for Cyber Attack Detection of Flight Control System Using Zynq FPGA+ARM SOC
Wednesday, 25 January 09:30 - 09:50 (UTC-5) AIAA-2023-1342
Matthew W Gelber, Peter Vaughan Truslow, Robert H Klenke (Virginia Commonwealth University College of Engineering)
Checkpoint based thread execution monitoring of an STM32 based flight control system using a Zynq FPGA+ARM SOC
Wednesday, 25 January 09:50 - 10:10 (UTC-5) AIAA-2023-1343
Peter Vaughan Truslow, Matthew W Gelber, Robert H Klenke (Virginia Commonwealth University College of Engineering)
Neural Network-based UAV System Identification from Sparse Flight Test Data
Wednesday, 25 January 10:10 - 10:30 (UTC-5) AIAA-2023-1344
Eren Ertugrul, Emre Koyuncu (Istanbul Teknik Universitesi)
Data-Driven and Robust Path-following Control of a Quadrotor Slung Load Transport System
Wednesday, 25 January 10:30 - 10:50 (UTC-5) AIAA-2023-1345
Hei Shing Helson Go, Longhao Qian, Hugh H T Liu (University of Toronto)

TES-05 | In Person - National Harbor 6

Investigation of Weight and Flight-Path Constraints on Liquid Hydrogen Fueled SOFC/GT Hybrid Propulsion System

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1325

Takayuki Kojima, Keiichi Okai (Uchu Koku Kenkyu Kaihatsu Kiko)

Evaluation of Emission during Simulated in-Flight Conditions Based on Experimental Data with an RQL Combustor Model

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1326

Keiichi Okai, Hitoshi Fujiwara, Takuya Mizuno (Uchu Koku Kenkyu Kaihatsu Kiko)

Evaluation of thermal oxidative stability of sustainable aviation fuels using a novel thermal stability measurement method

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1327

Rahim Boylu, Bhupendra Khandelwal (The University of Alabama System)

Characterization of A Swirl Flex Fuel Combustor in a CO₂ Diluted Environment

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1328

Md Habib Ullah Khan, Md Harun Or Rashid Molla, Kazi Tanisha Zaman Angshu, Md Ismail Hassan Udoy, Md Mohieminul Islam Khan, Md Nawshad Arslan Islam, Ahsan R Choudhuri (The University of Texas at El Paso)

GTE-16 | In Person - National Harbor 11

High-Temperature Fuel Coking Mitigation Frangible Coatings for Jet Fuel Nozzles and Screens

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1251

Santiago Ruales, Samuel Schuetz, Vidhan Malik, Sheikh Salauddin, Kareem A Ahmed (University of Central Florida)

High-Temperature Degradation and Coking of Aircraft Gas Turbine Engine Lubricants

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1252

Raquel Juarez, Noble Gutierrez, Eric L Petersen (Texas A&M University System)

Latticework Airfoils for sCO₂ Turbines: Characterization and Heat Transfer

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1253

Marcel Otto, Parker O'Neal, Ryan Wardell, Ladislav Vesely, Kevin Bauer, Jayanta Kapat (University of Central Florida)

Development of a Machine Learning Wall Model for Large-Eddy Simulation of Gas Turbine Film Cooling Flows

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1254

Tadbhagya Kumar, Pinaki Pal, Sicong Wu, A. Cody Nunno, Opeoluwa Owoyele (Argonne National Laboratory), Michael Joly, Dima Tretiak (Raytheon Technologies Research Center)

Large-Eddy Simulation of Film Hole Interaction with Rib Turbulators

Wednesday, 25 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1255

Shinyoung Jeon, Changmin Son (Virginia Polytechnic Institute and State University)

TP-12 | In Person - Azalea 2

Aerothermal characterization of the Plasmatron X Wind Tunnel: Heat flux, Stagnation Pressure and Jet Unsteadiness

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1338

Lorenzo Capponi, Trey Oldham, Matthew Konnik, Kelly Stephani, Daniel J Bodony, Marco Panesi, Gregory S Elliott, Francesco Panerai (University of Illinois Urbana-Champaign)

Experimental Study of a Galileo Sub-Scale Model at Ice Giant Entry Conditions in the T6 Free-Piston Driven Wind Tunnel

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1339

Joseph Steer, Peter L Collen, Alex Benjamin Glenn (University of Oxford), Tamara Sopek (University of Southern Queensland), Christopher Hambidge, Luke J Doherty, Matthew McGilvray (University of Oxford), Stefan Loehle (Universitat Stuttgart Institut fur Raumfahrtsysteme), Louis Walpot (European Space Agency)

High Temperature Ablation of Vitreous Carbon in a Table-Top Shock Tunnel (TTST)

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1340

Brian E. Riggs (University of Colorado Boulder), Eric C Geistfeld (University of Minnesota Twin Cities), Chenbiao Xu (University of Colorado Boulder), Irina Gouzman (Soreq Nuclear Research Center), Thomas E Schwartzentruber (University of Minnesota Twin Cities), Timothy K Minton (University of Colorado Boulder)

Characterization of the Table-Top Shock Tunnel Facility Using Kapton Erosion Experiments and Direct Simulation Monte Carlo

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1341

Eric C Geistfeld, Thomas E Schwartzentruber (University of Minnesota Twin Cities), Brian E. Riggs, Chenbiao Xu, Irina Gouzman, Timothy K Minton (University of Colorado Boulder)

TF-06 | In Person - Annapolis 2

Investigation of Weather-Related Considerations for Electrified Regional Air Mobility Operations

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1329

Sam Crawford, Michael Fredricks, Quentin Derville, Cedric Y Justin, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)

(continued) TF-06 | In Person - Annapolis 2

Bioinspired Unmanned Aircraft System Nest Concepts for Urban Cities

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1330
Chase Dunaway, James Montoya, Steven Lukow, Mostafa Hassanalain (New Mexico Institute of Mining and Technology)

Landing Framework and Control for EVTOL Aircraft in Urban Environments

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1331
Taizo Meyer-Oehme, Kilian Ginnell, David E. Lampl, Sophie F Armanini (Technische Universitat Munchen)

Flight Trajectory Planning with Safe Landing Assurance under Contingent Event

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1332
Hsun Chao, Sai Mudumba, Kshitij Mall, Daniel A DeLaurentis (Purdue University)

FD-41 | In Person - Chesapeake H

Aerodynamic Performance of Swept Wings in Unsteady Streamwise Flow

Wednesday, 25 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1231
Dasha Gloutak, Kenneth E Jansen, John A Farnsworth (University of Colorado Boulder)

Analytical Gust Model to Inform Future Small UAS Studies

Wednesday, 25 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1232
Colin Stutz, Douglas G Bohl (Clarkson University), John T Hrynuik (Army Research Laboratory Aberdeen Proving Ground)

High Amplitude Lift Tracking Using Closed-Loop Feedback and Control; A Flow Analysis

Wednesday, 25 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2476
Michael P Mongin, Albert Medina (Air Force Research Laboratory), Andrew Killian, Sidaard Gunasekaran (University of Dayton School of Engineering)

Periodic Vortical Gust Encounter and Mitigation Using Closed Loop Control

Wednesday, 25 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2477
Andrew Killian, Sidaard Gunasekaran (University of Dayton), Michael P Mongin, Albert Medina (Air Force Research Laboratory)

Simplified Iterative Maneuver Optimization in a Transverse Gust Encounter

Wednesday, 25 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2478
Xianzhang Xu (University at Buffalo), Francis D. Lagor (University at Buffalo School of Engineering and Applied Sciences)

14:00 | Technical Panel

AS-15/INPSI-12/ACD-21/APA-47/GTE-18/TF-08/DA-05/GNC-22/PC-28 | In Person - Woodrow Wilson D

PDL-08 | In Person - Azalea 3

FD-49 | In Person - Chesapeake H

MAT-17/NDA-10 | In Person - Chesapeake 2

14:00 | Technical Paper Session

WE-05/NDA-12 | In Person - Chesapeake 9

Developing a vorticity-velocity-based off-body solver to perform multifidelity simulations of wind farms

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1542
Shahaboddin Alahyari Beig, Glen R Whitehouse, Alex Boschitsch (Continuum Dynamics Inc), Ashesh Sharma, Michael Brazell, Marc Henry de Frahan, Michael Sprague (National Renewable Energy Laboratory)

Sparsity for Gradient-based Optimization of Wind Farm Layouts

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1543
Benjamin T Varela, Andrew Ning (Brigham Young University)

AS-14 | In Person - Chesapeake 1

Open-Cavity Fluid Flow as an Information Processing Medium

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1393
Timothy Vincent, Daniel Nelson, Benjamin Grossmann (UES, Inc.), Andrew Gillman, Alexander Pankonien, Philip Buskohl (Air Force Research Laboratory)

(continued) AS-14 | In Person - Chesapeake 1

Homogenization Model for Multistable Honeycomb Metastructures Exhibiting Beam-like Behavior

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1394
David M Boston, Andres Felipe Arrieta (Purdue University)

ACD-16/TF-07 | In Person - Potomac 6

Urban Air Vehicle Mission Sizing and Performance Estimation Using Pacelab APDTM

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1359
Anna Occhipinti (PACE Aerospace & IT GmbH), Aleksandar Joksimovic (ISAE-SUPAERO), Mathias Emeneth (PACE America Inc.)

Physics-based Surrogate Models for UAM Weight Prediction

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1360
Thomas Nascenzi, Timothy Cuatt, Tyler F Winter (M4 Engineering), Marius L Ruh, Darshan Sarojini, John T Hwang (University of California San Diego), Sarina Kiani (M4 Engineering)

Systems Integration Considerations for Hybrid-electric Commuter Aircraft: Case Study for the DO-228

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1361
Vijesh Mohan, Andrew Kingsley Jeyaraj, Susan Liscouet-Hanke (Concordia University)

CFD2030-06 | In Person - National Harbor 13

Evaluation of heat transfer performance of a film-cooled turbine vane using metric-based anisotropic mesh adaptation

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1399
Frederic Alauzet (National Institute for Research in Computer Science and Control (INRIA)), Dimitrios Papadogiannis, Laure Billon (Safran Tech)

Von Neumann Analyses of Recovery-based Discontinuous Galerkin on Semi-Unstructured Meshes

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1400
Mizuho Takayama, Loc H Khieu, Eric Johnsen (University of Michigan)

Development of an Immersed Boundary Method for High-Speed Compressible Flows

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1401
Moran Ezra, Yoram Kozak (Tel Aviv University)

On Enforcing Interface Conservation in Computational Fluid Dynamics

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1402
Hong Luo, Gianni Absillis (NC State University)

GTE-19 | In Person - National Harbor 11

Dynamic Modeling, Simulation, and Controls of a SOFC Combustor Hybrid Cycle for Commercial Electric Aviation

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1461
Trevor J Kramer, Rory A Roberts, Jeff Webster (Tennessee Tech University)

Possible Effects of Turbine/Fuel Cell Integration on Combustor Operation Part II: Ignition Delay and Flame Temperatures

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1462
Lucas M Pratt, Christopher P Cadou (University of Maryland at College Park)

Integration of 5-kW Turboelectric Powerplant into Small Multirotor Unmanned Aircraft

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1463
Rannock Thomas, Kurt P Rouser (Oklahoma State University College of Engineering Architecture and Technology)

Development of a Parametric Variable Cycle Engine Model Using the Multiple Design Point Approach

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1464
Robert A Clark, Jimmy C Tai, Dimitri N Mavris (Georgia Institute of Technology)

Engine cycle design and Integration of Component Interfaces of a Micro Turbojet Engine for Additive Manufacturing

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1465
Aaron Creese, Rohit K S S Vuppala, Scout D Hernandez, Kurt P Rouser (Oklahoma State University)

ACD-15 | In Person - Woodrow Wilson A

Continued Exploration of the Electrified Aircraft Propulsion Design Space

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1354
Jason Kirk, Zachary J Frederick, Mark D Gynn, Nathaniel J Blaesser, Ben D Phillips (NASA Langley Research Center), Kenneth Fisher, Steven J Schneider (NASA Glenn Research Center), Peter Frederic (Tecalote Research)

Sky Cruiser – A Design Study in Space Tourism

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1355
Joshua H Heinz, Kevin P O'Brien, Tyler L Hatch, Timothy T Takahashi (Arizona State University Ira A Fulton Schools of Engineering)

(continued) ACD-15 | In Person - Woodrow Wilson A

Novel Approach for Wing Design in Conceptual Overall Aircraft Design

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1356
Tim Effing, Florian Schuelcke, Yves Heuschling, Paul Maurer, Eike Stumpf (Rheinisch-Westfälische Technische Hochschule Aachen)

Top Level Aircraft Requirements relaxation for a single-aisle aircraft: a case study on fleet-wide CO2 emissions and economic impacts

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1357
Antoine Salgas, Scott Delbecq, Thomas Planès (ISAE-SUPAERO), Gilles Lafforgue (TBS Education)

Surrogate-Based Multi-Objective Optimization of Commercial Aircraft for the Minimization of Noise and Emissions

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1358
Cuyler Dull, Jimmy C Tai, Dimitri N Mavris (Georgia Institute of Technology)

PGC-12 | In Person - National Harbor 2

The Effects of Aerogel Lining on a H2-Air Fueled Annular RDC Combustor

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1498
Jorge J Betancourt, Tyler C Pritschau, Alec R Gaetano, Rachel Wiggins, Ephraim J Gutmark (University of Cincinnati)

Thermoacoustic Suppression in a Rotating Detonation Combustion using Perforated Liner

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1499
Tyler C Pritschau, Jorge J Betancourt, Alec R Gaetano, Rachel Wiggins, Ephraim J Gutmark (University of Cincinnati)

Choked Flow in a Converging/Diverging Rotating Detonation Engine Exit

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1500
Justin Weber, Clinton Bedick, Todd Sidwell, Charlotte Albuino, Donald H Ferguson (National Energy Technology Laboratory)

FD-46 | In Person - Chesapeake D

Aerodynamic Shape Optimization with Hybridized Discontinuous Galerkin Schemes

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1422
Joachim Balis, Frederik Jacobs, Georg May (Von Karman Institute For Fluid Dynamics)

A Globally Convergent Method to Accelerate PDE-constrained Optimization Using On-the-fly Model Hyperreduction

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1423
Tianshu Wen, Matthew Joseph Zahr (University of Notre Dame)

Fully Parabolic Prediction of the Hypersonic Near-Field About Slender Axisymmetric Bodies

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1424
Christian B King, Steven A E Miller (University of Florida)

GNC-23 | In Person - Annapolis 1

Recovery Spacecraft from Communication Loss Through Reinforcement Learning

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1438
Hao Peng, Xiaoli Bai (Rutgers The State University of New Jersey)

Spacecraft Adaptive Deep Reinforcement Learning Guidance with Input State Uncertainties in Relative Motion Scenario

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1439
Andrea Brandonisio, Lorenzo Capra, Michèle Lavagna (Politecnico di Milano)

Reward Function Design for Stand-Off Tracking of Reinforcement Learning

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1440
Yeontaek Jung, Jinrae Kim, Seong-hun Kim, Youdan Kim (Seoul National University)

Neural Network-Based Orbit Control Method via Aerodynamic Force for Formation Flying with Variable Shape Function

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1441
Shogo Kitamura, Saburo Matunaga (Tokyo Kogyo Daigaku)

Six-degree-of-freedom Optimal Feedback Control of Pinpoint Landing using Deep Neural Networks

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0689
Omkar Mulekar (University of Florida), Hanchol Cho, Riccardo Bevilacqua (Embry-Riddle Aeronautical University)

STR-25 | In Person - Chesapeake 4

Comparison of Various Skin-Stringer Connection Approaches for Stiffened Structures with Curvilinear Stiffeners

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1522
Wei Zhao (Oklahoma State University), Junhyeon Seo, Rakesh K Kapania (Virginia Polytechnic Institute and State University)

(continued) STR-25 | In Person - Chesapeake 4

Ritz Method Using Orthogonal Jacobi Polynomials for Buckling Analysis of Curvilinearly Stiffened Functionally Graded Plate
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1523 Mayank Agarwal (Virginia Polytechnic Institute and State University), Wei Zhao (Oklahoma State University), Rakesh K Kapania (Virginia Polytechnic Institute and State University)
Sensitivity Analysis of Geometric Imperfection Sources in Honeycomb Cores on Flatwise Compression Behavior
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1524 Adrian X Rivera, Satchi Venkataraman (San Diego State University), Evan J Pineda (NASA Glenn Research Center)
Testing of a Composite Conical-Cylindrical Shell
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1525 Michelle T Rudd (NASA Marshall Space Flight Center), Marc R Schultz, Nathaniel W Gardner, Cyrus J Kosztowny (NASA Langley Research Center), Chiara Bisagni (Technische Universiteit Delft)

GNC-24 | In Person - Annapolis 2

Quadrotor Flight Envelope Protection while Following High-Speed Trajectories: a Reference Governor Approach
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1442 Rick Schieni, Chengwei Zhao, John Barreira (Rutgers The State University of New Jersey), Michael Malisoff (Louisiana State University), Laurent Burlion (Rutgers The State University of New Jersey)
Robust Attitude Control for PAVs using DNN with Exponentially Stabilizing Control Lyapunov Functions
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1443 Minseok Jang, Jeongseok Hyun, Taeho Kwag, Chan Gwak, Tuan Anh Nguyen, Jae-Woo Lee (Konkuk University)
Introduction to Adaptive Control for Multiple Time Scale Systems
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1444 Kameron J Eves, John Valasek (Texas A&M University System)

EXPL-09 | In Person - National Harbor 7

Validation of Cryogenic Propellant Tank Self-Pressurization
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1411 Hong Q Yang (CFD Research Corporation), Chintan Patel, Brandon Williams (NASA Marshall Space Flight Center)
CFD Model Development of a Cryogenic Storage Tank Self-Pressurization in Normal Gravity and Validation against SHIVER Experiment
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1412 Olga V Kartuzova, Mohammad Kassemi, Daniel M Hauser (NASA Glenn Research Center)
Validation of Ullage Collapse Due to Violent Lateral Slosh
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1413 Hong Q Yang (CFD Research Corporation), Brandon Williams (NASA Marshall Space Flight Center)
Modeling Autogenous Pressurization and Draining of a Cryogenic Storage Tank in Normal Gravity
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1414 Olga V Kartuzova, Mohammad Kassemi, Daniel M Hauser (NASA Glenn Research Center)

ACD-17/DE-07 | In Person - Chesapeake 5

Estimation of Battery Pack Layout and Dimensions for the Conceptual Design of Hybrid-Electric Aircraft
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1362 Zachary Heit, Susan Liscouet-Hanke (Concordia University)
PoETS: A Proposed Powertrain Topology Encoding Scheme
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1363 Laminn McLay, James Scanlan, Andras Sobester (University of Southampton)
MDO Framework for DEP Aircraft Design Including Flight Controls
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1364 Abhinav Sharma, Jeffrey D. Keller (Continuum Dynamics Inc), Joaquim R. R. A. Martins (University of Michigan)
Optimization of the multi-bubble passenger cabin stiffening scheme of a hypersonic aircraft
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1365 Clara Cid Bengoa, Aitor Baldomir García, Miguel Rodríguez-Segade, Santiago Hernández (Universidade da Coruna Escuela Tecnica Superior de Ingenieros de Caminos Canales y Puertos)

SATS-05 | In Person - National Harbor 5

Demonstration of a Utility-Based Priority Algorithm for Filtering Commercial Satellite Tasking Requests
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1501
Leigha Capra, Matthew Jason LeVine, Paul T Grogan (Stevens Institute of Technology)
Network Testbed for Small Satellites (NeTSat) - Distributed Space Adaptive Communications and Security for Multi-Constellation Networks
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1502
Bruce Barbour, Richard Gibbons, Samantha Kenyon, James McClure, Devin Ridge, Jonathan Black (Virginia Polytechnic Institute and State University)
Satellite Orbit Selection for Regional Coverage Using a Response Surface Methodology
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1503
Nathaniel Choo, Darryl Ahner (Air Force Institute of Technology)
Defining and Parameterizing the Design Space for Cislunar PNT Architectures
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1504
Theresa E Bender, Austin S Gabhart, Michael J Steffens, Dimitri N Mavris (Georgia Institute of Technology)

GT-04 | In Person - Baltimore 3

Startup Loads in The Boeing/AFOSR Mach-6 Quiet Tunnel
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1454
Nathaniel T Lavery, Brandon Charles Chynoweth, Joseph S Jewell (Purdue University)
LAVA CFD Analysis of the Check Standard Model within the Langley Unitary Plan Wind Tunnel
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1455
James Robert Lee Koch, Jeffrey Allen Housman, Cetin C Kiris (NASA Ames Research Center)
Testing and Characterization of the University of Tennessee High-Enthalpy Tunnel
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1456
Damiano Baccarella, Killian E Samuels (The University of Tennessee Knoxville Tickle College of Engineering)
Design and Initial Characterization of the UTSI Mach 7 Ludwig Tube
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1457
Mark Gragston, Kirk Davenport, Farhan Siddiqui, Nicholas Webber, Cary Dean Smith, Phillip A Kreth, John D Schmisser (The University of Tennessee Space Institute)
Freestream Characterization and Condensation Detection in the AFOSR–Notre Dame Large Mach-6 Quiet Tunnel
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1458
Erik M Hoberg, Thomas J Juliano (University of Notre Dame)

DGE-07 | In Person - Chesapeake 12

Assessing the Value of Digital Twins In a Multi-Agent Dynamic Decision-Making Context
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1403
Ian Marks, Olivia J Pinon-Fischer, Dimitri N Mavris (Georgia Institute of Technology), Noah Fehrenbacher (Lockheed Martin Space Systems)
Authoritative Sources of Truth and Consistency in Digital Engineering
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1404
Darcy L Allison, Matthew W Cribb, Thomas McCarthy (Raytheon Missiles & Defense), Richard LaRowe (Raytheon Missiles & Defense Tewksbury)
Implementing the Digital Thread - A Proof-of-Concept
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1405
Juan Oroz, Zayn A Roohi, Sabastian Abelezele, Gabriel Fronk, Ruby Al Fawares, Olivia J Pinon-Fischer, Aroua Gharbi, Dimitri N Mavris (Georgia Institute of Technology), Melissa Petersen (Rolls-Royce North America Inc), Alexander Karl, John F Matlik, Bryan Schwering (Rolls-Royce Corp)

GNC-25/AFM-14 | In Person - Annapolis 3

Mixed-Input Learning for Multi-point Landing Guidance with Hazard Avoidance Part I: Offline Mission Planning based on Multi-Stage Optimization
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1445
Chaoying Pei, Sixiong You, Ran Dai (Purdue University), Jeremy R Rea (NASA Johnson Space Center)
Mixed-Input Learning for Multi-point Landing Guidance with Hazard Avoidance Part II: Learning-based Guidance Algorithm
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1446
Sixiong You, Chaoying Pei, Ran Dai (Purdue University), Jeremy R Rea (NASA Johnson Space Center)

(continued) GNC-25/AFM-14 | In Person - Annapolis 3

Lunar Landing Site Hazard Assessment Approach

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1447
David J Halaas, Stefan R Bieniawski, Brian Hannan (Blue Origin LLC)

Hazard Avoidance Algorithm for a 3-D Imaging Flash Lidar Utilizing Multi-Frame Super-Resolution Technique

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1448
Alexander Bulyshev (Coherent Applications), Farzin Amzajerdian, Paul F Brewster (NASA Langley Research Center)

INPSI-13 | In Person - National Harbor 12

Design and Optimisation of a Mach 2.5 Wind Tunnel Nozzle

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1468
Miguel Moreno, Matteo Migliorini, Pavlos K Zachos, Anthony Haslam, David MacManus (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Viscous Wake Effects on the Inviscid Wall-Bounded Jet Flow over an Aerospike Nozzle

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1469
Zachary Pyle, Gustaaf B Jacobs (San Diego State University), Nils Sedano, Farhad Davoudzadeh (Air Force Research Laboratory)

Multiobjective Aerodynamic Design Optimization of the Contour of Annular Aerospike Nozzles

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1470
Kei Tokoh (University of Tokyo), Akira Oyama, Takeo Tomita, Hideyo Negishi (Japan Aerospace Exploration Agency (JAXA))

STR-26 | In Person - Chesapeake 7

Validation of a Cohesive Fatigue Law to Account for Fiber Bridging Effects in Stitched Resin Infused Structures

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1526
Brian Justusson, Bryan Lilley (The Boeing Company), Yuri Nikishkov, Gennadiy Nikishkov (The University of Texas at Arlington College of Engineering), Philip Knoth (Air Force Research Laboratory)

Modelling Disbond in Stitched Resin Infused Structures under Combined Loading

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1527
Brian Justusson, Bryan Lilley (The Boeing Company), Yuri Nikishkov (The University of Texas at Arlington), Philip Knoth (Air Force Research Laboratory)

Progressive Failure Modeling of Z-Pin Reinforced Composite Pi Joints

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1528
James Finlay, Anthony M Waas (University of Michigan), Paul Davidson (The University of Texas at Arlington), Jonathan D Bartley-Cho, Nav Muraliraj (Northrop Grumman Corp)

AMT-17 | In Person - Magnolia 3

Sensitivity of External Emission Spectroscopy for Hypersonic Vehicle Control

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1370
Max Chern, Chloe E Dedic, Christopher P Goyne (University of Virginia School of Engineering and Applied Science), Alexander D Plumadore, Robert P Lucht (Purdue University)

CO2-Enhanced Filtered Rayleigh Scattering for Study of a Hypersonic Cone-Slice-Ramp Geometry

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1371
Ashley J Saltzman, Anshuman Pandey, Steven J Beresh, Katya M Casper, Rajkumar Bhakta, Brian Denk, Marie De Zetter, Russell Spillers (Sandia National Laboratories)

Seeding-free inlet flow distortion measurement by filtered Rayleigh scattering: diagnostic approach and verification

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1372
Ulrich Doll, Ralf Kapulla (Paul Scherrer Institut PSI), Jonas Steinbock, Michael Dues (ILA R&D GmbH), Matteo Migliorini, Pavlos K Zachos (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Machine-Learned Background Quantification for Filtered Rayleigh Scattering Measurement Processing

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1373
Evan P Warner, Todd Lowe (Virginia Polytechnic Institute and State University)

Development of a Flight-Ready Optical Emission Spectroscopy Sensor for Hypersonic Flow

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1374
Alexander D Plumadore, Aman Satija, Vishnu Radhakrishna, Christopher S Goldenstein (Purdue University), Max Chern, Christopher P Goyne, Chloe E Dedic (University of Virginia), Robert P Lucht (Purdue University)

PGC-11 | In Person - National Harbor 3

Numerical Investigation on the Deflagration-to-Detonation Run-up Distance of Hydrogen Flames at elevated Pressures
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1493
Robyn Cideme, Bernhard Stiehl, Kareem A Ahmed (University of Central Florida)
Wave Propagation Phenomenon in Shuttling Transverse Combustion
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1494
Zhen Wei Teo, Ruiqin Shan, Xin Huang, Po-Hsiung Chang, Heng Kee Ngiam, Jiun-Ming Li, Chiang Juay Teo, Boo Cheong Khoo (National University of Singapore)
Transient Evolution of Wedge Induced Dynamics in Supersonic Reacting Flow
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1495
Taylor R Brown, Rachel Hytovick, Kareem A Ahmed (University of Central Florida)
Statistical Characterization of Hydrogen-Oxygen Detonations
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1496
Joshua Berson, Robyn Cideme, Rachel Hytovick, Kareem A Ahmed (University of Central Florida)
Experimental Study of Oblique Detonation Wave Stabilization on a Wedge
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1497
Zachary P White, Mason Redman Thornton, Daniel A Rosato, Adam R Kotler, Kareem A Ahmed (University of Central Florida)

GNC-26/IS-17 | In Person - Annapolis 4

Feedback Oscillatory Control of Roll Instability During Stall Using the LIBRA Mechanism
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1449
Mahmoud A. M. Abdelgalil, Haithem Ezzat Taha (University of California Irvine)
Enabling Proliferated Space Sensor Awareness Constellations Through Topological Observability
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1450
Chris W Hays, Troy Henderson (Embry-Riddle Aeronautical University), Sean Phillips, Alexander A Soderlund (Air Force Research Laboratory Space Vehicles Directorate)
Adaptive Algorithm for Multirotor Attitude Control in the Presence of Actuation Delay and Unknown Actuator Efficiency
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1451
Atahan Kurttisi, Kadriye Merve Dogan (Embry-Riddle Aeronautical University), Ahmet T Koru (The University of Texas Arlington College of Science)
Geomagnetic Aided Navigation using Rao Blackwellized Particle Filter
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1452
Andrei Cuenca, Hever Moncayo (Embry-Riddle Aeronautical University)
Model-Based Systems Engineering (MBSE) in the Evaluation of Handling Qualities
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1453
Caleigh Rowan, Kadriye Merve Dogan (Embry-Riddle Aeronautical University)

AFM-13 | In Person - Camellia 2

An Alternate Dimensionless Form of the Linearized Rigid-Body Aircraft Equations of Motion with Emphasis on Dynamic Parameters
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1366
Douglas F Hunsaker, Ben Moulton (Utah State University)
Aircraft Accident Investigation Using Wavelet Scalogram-Based Metric to Identify Possible PIO Signature
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1367
Ricardo S.F. Mello (Gulfstream Aerospace Corp), David H Klyde (Systems Technology Inc), David G Mitchell (Mitchell Aerospace Research)
Flight Simulator Result Comparing Three Aircraft Configurations: Quasi-Static, Flexible and Extended Flexibility
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1368
Fernando J Oliveira Moreira, Daniel Drewiacki, Marco Antonio de Oliveira Alves Junior (Embraer SA), Jan-Philipp Buch, Jana Schwithal, Carsten Seehof (Deutsches Zentrum fur Luft- und Raumfahrt eV)
A Theoretical Basis for Predicting Pilot Performance, Workload, and Handling Qualities
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1369
Edward N Bachelder (San Jose State University), Bimal L Aponso (Federal Aviation Administration), Tom Berger (US Army Combat Capabilities Development Command Aviation & Missile Center)

TP-14 | In Person - Azalea 2

Spatially resolved convective heat flux measurements during satellite demise at flight total enthalpies
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1537
James Leader, Peter L Collen, Joseph Steer, Matthew McGilvray (University of Oxford)
Design of a Photogrammetric System for Real Time Surface Morphology Analysis
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1538
Colin M Yee, Evangelos Y Maragoudakis, Kyle Woo, Noah Langton, Tyler T Joyce (The University of Texas at Austin), Joseph H Koo (KAI, LLC)
Pre- and Post-Flight Surface Roughness Measurements on the X-23 Hypersonic Glide Vehicle
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1539
Cassandra J Butler, Elizabeth Katherine Benitez, Joseph S Jewell (Purdue University), Christopher J Ruscher, Sivaram Gogineni (Spectral Energies)
Open-source Wireless Sensor Network (Wi-Se Net) for Flexible Deployment
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1540
Sebastian V Colom, Magnus A Haw (NASA Ames Research Center)

APA-46 | In Person - Potomac 3

Large Eddy Simulation of Transitional and Turbulent Hypersonic Flow
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1383
Natan N Hoffmann, Amareshwara Sainadh Chamarthi, Hemanth Chandra Vamsi Kakumani, Steven Frankel (Technion Israel Institute of Technology)
Visualization and Measurement of Transverse Jet Injection on a 7 Degree Half-Angle Cone in Hypersonic Quiet Flow
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1384
Christopher C Chinske, Zachary D. Lawless, Robert N. Blackwell, Joseph S Jewell (Purdue University)
Wind-Tunnel based Free-Flight Testing of a Viscous Optimised Hypersonic Waverider
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1385
Jeremy H Moran, Liam P McQuellin, Luke Pollock, Andrew J Neely (University of New South Wales Canberra at ADFA), David Munk (Defence Science and Technology Group), Fabian Zander (University of Southern Queensland)
Rebuilding the VKI's Experiment on the Interference of a Free-Flying Ring and Stationary Cylinder Using a Multi-Fidelity Numerical Methodology
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1386
Fábio Morgado, Marco Fossati (University of Strathclyde), Dániel Kóvacs, Thierry Magin (Von Karman Institute for Fluid Dynamics Aeronautics and Aerospace Department)
Numerical Simulations of Hypersonic Flows over the Fire II Capsule: Impact of Mesh Resolution and Boundary Conditions on Convective Heat Transfer
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1387
Farney Coutinho Moreira (Instituto Tecnológico de Aeronautica), William Wolf (Universidade Estadual de Campinas), João Luiz F Azevedo (Instituto de Aeronautica e Espaço)

EXPL-11 | In Person - Chesapeake L

A Methodology for Evaluating Cislunar PNT Architectures during Initial Design Space Exploration
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1418
Madilyn Drosendahl, Theresa E Bender, Michael J Steffens, Dimitri N Mavris (Georgia Institute of Technology)
Surrogate Modeling of Orbital Decay of Lunar Orbits
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1419
Maxime Varoqui, Michael J Steffens, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)
Mission Planning and Analysis of Heliopause and the World Beyond Solar System
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1420
Tanishka Roy, Manan Malik (University of Petroleum and Energy Studies), Monica Shanmugam (Virginia Polytechnic Institute and State University), Gurunadh Velidi (University of Petroleum and Energy Studies)

LP-08 | In Person - National Harbor 14

The Effect of Nitric Oxide on the Ignition Delay of Mixed Oxides of Nitrogen with Monomethylhydrazine
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1475
Ruth A Beaver, Catriona White, Jason Gabl, Timothee L Pourpoint (Purdue University)

(continued) LP-08 | In Person - National Harbor 14

Density Characterization of Mixed Oxides of Nitrogen from Freezing Point to 50°C
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1476 Catriona White (Purdue University), Alicia Benhidjeb-Carayon (Jet Propulsion Laboratory), Jason Gabl, Timothee L Pourpoint (Purdue University)
Surface Tension Measurements of Mixed Oxides of Nitrogen using Capillary Tubes
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1477 Schuyler T McNaughton, Catriona White, Jason Gabl, Timothee L Pourpoint (Purdue University)

AA-12/PC-27 | In Person - Baltimore 1

Effect of LAFPA Based Control on Supersonic Rectangular Jets
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1346 Anirudh Lakshmi Narasimha Prasad, Unnikrishnan Sasidharan (Florida State University)
An Experimental and Numerical Investigation of Rectangular Embedded Jet Exhausts
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1347 Darryl A Douglas, Philip J Morris (The Pennsylvania State University), Nicholas Behlman, Kerwin Low (Pratt and Whitney)
Development of a Pressurized, Liquid-Fueled Combustor for Noise Measurements
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1348 Shivam J Patel, Sungyoung Ha, Vedanth Nair, Subodh Adhikari, David Wu, Benjamin L Emerson, Adam M Steinberg, Tim C Lieuwen (Georgia Institute of Technology)
Large eddy simulation of combustion noise in a realistic gas turbine combustor
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1349 Achyut Panchal, Suresh Menon (Georgia Institute of Technology)

EXPL-10 | In Person - Chesapeake I

Increasing Thin Film Evaporation of Liquid Nitrogen using Additively Manufactured Micro-Pillar Arrays for Lunar Ice Collection
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1415 Mahadi Hasan, Esteban Cook, Nathaniel Regalado, Mohiuddin Ahmad, Ahsan R Choudhuri, Md Mahamudur Rahman (The University of Texas at El Paso College of Engineering)
Rarefied Water Vapor Ionization and Transportation to the Lunar Ice Collector
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1416 Brenda Caraveo, Fernando Rivera, Amelia D Greig, Ahsan R Choudhuri, Md Mahamudur Rahman (The University of Texas at El Paso)
Increasing Sublimated Water Vapor Collection Rates on an Engineered Cold Plate from Icy Lunar Regolith
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1417 Mahadi Hasan, Nathaniel I Jurado, Nicolas Veytia, Ahsan R Choudhuri, Md Mahamudur Rahman (The University of Texas at El Paso)

APS-01 | In Person - National Harbor 6

System Architecture Study of A Robust High Power Solar Array for LEO and Lunar Environments
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1388 Steven Isaacs (Redwire Space)
Lunar Array, Mast, and Power System (LAMPS) for Deployable Lunar Power Provision
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1389 Hunter Williams, Robert Van Ness, Evan Cloninger, Brian Vogel, Ray Crum, Vishnu Sanigepalli, Kris Zacny (Honeybee Robotics Spacecraft Mechanisms Corp), Murat Okandan, Jason Wilson, Kevin Hell, Kaveh Rouhani (mPower Technology)
Energy Storage Requirements for a Lunar DC Micro-Grid System
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1390 Wayne W Weaver (Michigan Technological University), David Wilson, Marvin Cook (Sandia National Laboratories), Joseph Young (Optimo-Joe)
Supervisory On-line Optimal Control of an Electric Power Microgrid Design for Lunar Habitation
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1391 Joseph Young (OptimoJoe), David Wilson, Marvin Cook (Sandia National Laboratories), Wayne W Weaver (Michigan Technological University)
Optimal Sensor Placement for Fault Detection and Isolation in a Lunar DC Microgrid
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1392 Gabriel Heyer, Kaveh Khodadadi Sadabadi, Matilde D’Arpino, Giorgio Rizzoni (The Ohio State University)

PC-30/MAT-18 | In Person - Chesapeake 3

Frictional Ignition of Metals in High Pressure Oxygen: A Critical Reassessment of NASA Test Data

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1489
Andres Garcia Jimenez, Zachary C Cordero (Massachusetts Institute of Technology School of Engineering)

Particle-Impact Ignition Testing of Three Commercially Available Ignition Resistant Metal Alloys

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1490
Joshua Winner, James H Morehart (The Aerospace Corporation)

Friction Ignition Testing of Metals in Oxygen up to 24.1 MPa

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1491
Timothy M Wabel, Fabio Bendana, John DeSain, Levon Gevorkyan (The Aerospace Corporation)

Interaction of a high energy laser with metals in reacting atmospheres

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1492
Daniil Andrienko, Iain D Boyd (University of Colorado Boulder), Jaykob N Maser, Steven Shepard (Lockheed Martin Corp)

EP-08 | In Person - Camellia 1

Investigating the Chemical Stability of Electrospray Plumes During Particle Collisions

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1406
Abderrahim Rafid Bendimerad, Abu Taqui Md Tahsin, Adam Yonas (Cornell University), Caleb Colucci (Embry-Riddle Aeronautical University), Elaine Petro (Cornell University)

Plume-Material Interactions of Metallic Surfaces Bombarded by an [EMIM][BF₄] Electrospray Source

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1407
Avinash Rao, Tanapat Bhakypaibul, Joshua Rovey, Deborah A Levin, Huck Chew (University of Illinois Urbana-Champaign)

Angular Properties of Ionic Liquid Electrospray Emitters

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1408
Madeleine Schroeder, Ximo Gallud Cidoncha, Amelia Bruno (Massachusetts Institute of Technology), Oliver Jia-Richards (University of Michigan), Paulo Lozano (Massachusetts Institute of Technology)

Optical Emission Characterization of a Single Emitter Electrospray Thruster Interacting With Surfaces

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1409
Nazli Turan, Chengyu Ma, Charles N Ryan (University of Southampton)

Experimental Study of a Low-Voltage Pulsed Plasma Thruster for Nanosatellites

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1214
Brian F Jeffers, Patrick Gresham, Alexey Shashurin (Purdue University)

TF-09/ACD-24 | In Person - Woodrow Wilson B

Semi-Empirical Aerodynamic Modeling Approach for Tandem Tilt-Wing eVTOL Control Design Applications

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1529
Marc Simon May, Daniel Milz, Gertjan Looye (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Scheduled Flight Control System of Tilt-Rotor VTOL PAV

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1530
Namuk Kang, James Whidborne, Linghai Lu, Julien Enconniere (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Design Modifications for Improved Range for a Quadrotor Tailsitter UAS

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1531
Matthew Bahr, Farhan Gandhi, Robert j Niemiec (Rensselaer Polytechnic Institute)

Energy Augmentation Concepts for Advanced Air Mobility Vehicles

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1532
Kapil Sheth, Nhan T Nguyen, Seth Schisler, Todd Stinchfield (NASA Ames Research Center), David Pike, Thomas Lavelle (NASA Glenn Research Center)

IS-18 | In Person - Potomac 4

Distributed Limited Resource Allocation and Energy-Expenditure Learning for Advanced Air Mobility

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1471
Arezoo Samiei, Robert A Selje, Liang Sun (New Mexico State University)

Virtual Target Approach for Emulating Advanced Guidance Laws on Conventional Interceptors

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1472
Gleb Merkulov, Martin Weiss, Tal Shima (Technion Israel Institute of Technology)

(continued) IS-18 | In Person - Potomac 4

Multi-Agent Task Assignment and Sequencing using Monte Carlo Tree Search and Process Algebra

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1473
Steven J Rasmussen (Miami Valley Aerospace LLC), David Casbeer (Air Force Research Laboratory), Abhay Singh Bhadoriya, Swaroop Darbha (Texas A&M University System), Satyanarayana G Manyam (Infoscitex)

Leader Detection in Swarms using a Relative Velocity Framework

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1474
Animesh Chakravarthy (The University of Texas at Arlington), Debasish Ghose (Indian Institute of Science)

TP-13 | In Person - Azalea 1

Application of ESM Investments to Aerothermodynamic Modeling of the Mars Sample Return Earth Entry System

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | 3774621</stron
Christopher O Johnston (NASA Langley Research Center), Grant Palmer, Todd White (NASA Ames Research Center)

Overview of NASA's Detailed Investigation into the MEDLI2 Flight Data

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | 3777014</stron
Thomas K West (NASA Langley Research Center)

Overview of the material response code Icarus

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1534
Joseph C Schulz, Georgios Bellas Chatzigeorgis (Analytical Mechanics Associates, Inc.), Eric Stern (NASA Ames Research Center), Grant Palmer (Analytical Mechanics Associates, Inc.), Olivia Schroeder (University of Minnesota)

Model-driven Characterization of Properties and Failure in Woven Thermal Protection Systems

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1535
Justin Haskins, Lauren Abbott, Sergio Fraile Izquierdo, Sander Visser (NASA Ames Research Center), Trenton M Ricks, Brett A Bednarczyk, Subodh Mital, Evan J Pineda, Pappu L Murthy (NASA John H Glenn Research Center), Kevin Wheeler, Vasyl Hafiychuk, Michael von Pohle, Andrew Santos (NASA Ames Research Center)

Porous Microstructure Analysis (PuMA) software

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1536
Federico Semeraro, Joseph Corbett Ferguson, John M Thornton (NASA Ames Research Center), Francesco Panerai (University of Illinois Urbana-Champaign), Arnaud Borner, Nagi N Mansour, Jeremie Bernard Erwin Meurisse, Sergio Fraile Izquierdo (NASA Ames Research Center)

HSABP-06 | In Person - National Harbor 4

Adaptive Modeling of Supersonic Combustion in a Cavity-Stabilized Scramjet

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1466
Matthew Bonanni, Matthias Ihme (Stanford University)

URANS Simulations of Inlet-Isolator Unstart at Mach 4.9

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1467
Brian Burke (Georgia Institute of Technology), Jonathan Poggie (Purdue University)

Noise Generated in a Scramjet Combustor

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0314
Ramprakash Ananthapadmanaban, Tim McIntyre, Vincent Wheatley, David Mee (The University of Queensland)

FD-48 | In Person - Chesapeake F

Recurrent-Neural Network Prediction of Lift on an Oscillating Plate

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1435
Nida Ahsan, Mahmoud Ayyad, Muhammad Hajj (Stevens Institute of Technology), Imran Akhtar (National University of Sciences and Technology)

Evaluation of Knowledge-guided Tensor Decomposition in Engineering Applications

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1433
Joy Metzler, Christopher Coley (US Air Force Academy)

Flow on Leeward Side of a Sharp Fin Undergoing Swept Shock/Turbulent Boundary-Layer Interaction

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1434
Dustin Otten (Lockheed Martin Missiles and Fire Control), Frank K Lu (The University of Texas at Arlington College of Engineering)

A Variational Principle for Navier-Stokes Equations

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1432
Haithem Ezzat Taha, Cody Gonzalez (University of California Irvine)

FD-47 | In Person - Chesapeake G

An Application of Embedded Large Eddy Simulation for Transonic Buffet Prediction
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1425
Yoimi Kojima, Atsushi Hashimoto (Uchu Koku Kenkyu Kaihatsu Kiko)
Computational Study of Transonic Buffet’s Sensitivity to Reynolds Number and Wind Tunnel Wall Effects
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1426
Ian K Eldridge-Allegra, Tsz Yeung Xu (Duke University), Kai Mbali Kruger Bastos (Rivian Automotive LLC), Earl H Dowell (Duke University)
Delayed Detached Eddy Simulation of Axisymmetric Turbulent Shock Wave Boundary Layer Interaction at Mach 2.5
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1427
John-Paul G Mosele, Andreas Gross (New Mexico State University)
Large Eddy Simulation of Shock Wave Boundary Layer Interaction in an Expansion-Compression Corner
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1428
Nadia Kianvashrad, Doyle D Knight (Rutgers The State University of New Jersey)

SR-04 | In Person - National Harbor 15

Quantification of HCI in Solid Propellant Combustion Products
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1515
Filippo Maggi, Stefania Carlotti, Luca Nichelini, Arianna Masini, Marco Adorno, Andrea Galavotti, Alberto Verga (Politecnico di Milano), Stefano Dossi (ReActive Powder Technology s.r.l.), Agostino Neri (European Space Agency)
Laser Heating and Ignition of Solid Fuels in an Oxidizing Environment
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1516
Felix A Rodriguez, Eric L Petersen (Texas A&M University System)

ASE-01 | In Person - Baltimore 5

Evidence for Multicomponent Arc Plasmas in Arecibo Arcing Data for 5 Satellites
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1395
Dale C Ferguson (Air Force Research Laboratory), Elena Plis ()
Advances in the Development of a Multi-Energy Electron Gun
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1396
Miles Thomas Bengtson (National Research Council), Ryan C Hoffmann, Dale C Ferguson (Air Force Research Laboratory), Jainisha Shah, Sydney Collman (Assurance Technology Corporation), Saya Han, Pao Chen, Pratibha Sharma (Violumas)
Dynamic Detection of Nearby Space Objects with Binary Wide Field of View X-Ray Sensing
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1397
Andrea Lopez, Julian Hammerl, Hanspeter Schaub (University of Colorado Boulder)
Electric Potential Estimation of Inhomogeneous and Differentially Charged Objects Using X-Rays
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1398
Julian Hammerl, Andrea Lopez, Hanspeter Schaub (University of Colorado Boulder)

SCS-08 | In Person - Woodrow Wilson C

Design of Experiments and Optimization for Deployable Space Structures
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1505
Jonathan C Griffee, Derek W Hengeveld (Redwire Space), Nathan A Pehrson (Air Force Research Laboratory), Jacob Moulton, Ryan Vasas, Andrew Kline (Redwire Space)
Thermoelastic Deformations of Thin-Shell Deployable Booms
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1506
John M Pederson, Alexandra Haraszti, Sergio Pellegrino (California Institute of Technology)
Solar Cruiser TRAC boom development
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1507
Lee Nguyen, Kamron Medina, Zachary McConnel, Mark S Lake (Redwire Space)
Blossoming Failure Analysis of a Composite Collapsible Tubular Mast (CTM) Boom
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1508
Sicong Wang, Lining Sun (Soochow University), Chuang Shi (Harbin Institute of Technology), Bin Wang (Self)

APA-42 | In Person - Potomac 5

Parametric studies of subsonic and supersonic reentry phases of the Orion Crew Module through numerical simulations
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1375
Jonas Buchmeier, FNU Himanshu, Donya Ramezanian, Ivan Bermejo-Moreno (University of Southern California)

(continued) APA-42 | In Person - Potomac 5

Quantifying Emergent Fluid Dynamics using Reynolds-interpolated Fluid Reduced-order Models
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1376
Chris Edwards (NC State University), Michael William Lee (NASA Langley Research Center), Donya Ramezani (University of Southern California), Ralph Smith (NC State University)
Application of an Affine Nonlinear Galerkin Reduced-order Model to Compressible Fluid Flows
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1377
Donya Ramezani (University of Southern California), Michael William Lee (NASA Langley Research Center), Ivan Bermejo Moreno (University of Southern California)
Low-cost Quantification of Fluid Flow Parameter Sensitivity using Reduced-order Modeling
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1378
Harley W Hanes (NC State University), Michael William Lee (NASA Langley Research Center), Donya Ramezani (University of Southern California), Ralph Smith (NC State University)
Optimal Sensor Placement in Fluid Dynamics using Machine Learning and Sensitivity Analysis
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1379
Harley W Hanes (NC State University), Yury Lebedev (University of Florida), Ralph Smith (NC State University), Alina Zare (University of Florida)

GT-05 | In Person - Baltimore 4

Recent Enhancements of Measurement Capabilities at the European Transonic Windtunnel (ETW)
Wednesday, 25 January 14:00 - 14:20 (UTC-5) 3793875</stron
Harald Quix (European Transonic Windtunnel GmbH (ETW))
Advances in PSP Testing in LaRC High Reynolds Number Facilities
Wednesday, 25 January 14:20 - 14:40 (UTC-5) 3796483</stron
Daniel Reese, Neal Watkins (NASA Langley Research Center)
Remote control actuated wind tunnel models: design and testing best practices
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1459
Frederick T Calkins, Douglas Nicholson, Michael Carpenter, Alexander Lafranchi (The Boeing Company), Donald R Saxer, Christopher Cramer (NASA Langley Research Center)
Temperature-Sensitive Paint measurements in combination with Carbon-Fiber-Reinforced Plastic models in cryogenic conditions
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1460
Christian Klein, Jonathan Lemarechal, Ulrich Henne, Stefan Koch (Deutsches Zentrum für Luft- und Raumfahrt eV), Vladimir Ondrus (University of Applied Sciences Muenster), Ann-Katrin Hensch (European Transonic Windtunnel), Sven Schaber (Airbus Bremen Germany)

APA-45 | In Person - Potomac 1

Effects of Anhedral Tip on Hover Performance
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1380
Shivani Shankar, Lakshmi N Sankar (Georgia Institute of Technology), Po-Wei Chen (Ansys, Inc.)
A Coupled Source Panel, Actuator Line, and Viscous Vortex Particle Method in an O(n) Scheme
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1381
Ryan Anderson, Andrew Ning (Brigham Young University)
An Application of the Flow360 Solver to the Hover Download Prediction Problem
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1382
Thomas A Fitzgibbon, Charles J Doolittle, Qiqi Wang, Philippe Spalart (Flexcompute)

STR-24/MAT-19 | In Person - Chesapeake A

Characterizing Air Plasma Sprayed Aluminum Oxide Coatings for the Protection of Lunar Structures
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1517
Perla C Latorre, Quentin Fouliard, Seetha Raghavan (University of Central Florida)
Design, Analysis and Experimental Development of Structural Joints for a Large Composite Cryotank
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1518
Aristidis Sidiropoulos, William P. Keith, Jeffrey D. Eichinger, Tin A. Luu, Juan C. Guzman, Jordan O. Birkland, Steven P Wanthal (The Boeing Company)
Modal and Structural Analysis of Lunar Domes Constructed using Micro-Struts
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1519
Avi Gileadi, Cuauhtemoc Jimenez Avila, Maria Chierichetti (San Jose State University Charles W Davidson College of Engineering)

(continued) STR-24/MAT-19 | In Person - Chesapeake A

Correlation Study of SWOT Payload Acoustic Prediction and Test

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1520
Li Lin (Jet Propulsion Laboratory), Alexis Castel (ESI Group), Andrew Kissil, Gary Wang (Jet Propulsion Laboratory), Bryce Gardner (ESI Group)

Design of Buoyant Architected Materials to Enable a New Aerial Platform Operating Near the Surface of Venus

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1521
Fakhreddin Emami, Andrew J Gross (University of South Carolina)

SPSN-01 | In Person - Chesapeake C

Redesign of a Low-Boom Supersonic Transport Using Powered Engine Simulation for Sonic Boom Analysis

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1511
Wu Li, Karl Geiselhart (NASA Langley Research Center)

A Theoretical Trade-Off Between Wave Drag and Sonic Boom Loudness Due to Equivalent Area Changes on a Supersonic Body

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1512
Nolan L Dixon, Douglas F Hunsaker (Utah State University)

Development of A Sonic Boom Propagation Code For Low-Boom Supersonic Aircraft Design and Optimization

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1513
Yusuf Demiroglu, Melike Nikbay (Istanbul Teknik Universitesi)

Sonic Boom Propagation using an Output-based Adaptive, Higher-order Finite Element Method

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1514
David L Darmofal, Steven Allmaras, Marshall Galbraith (Massachusetts Institute of Technology)

Multi-Fidelity and Multi-Disciplinary Design Optimization of A Low-Boom Supersonic Transport Aircraft

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1478
Melike Nikbay, Dilan Kilic, Enes Cakmak, Huseyin E Tekaslan, Sihmehmet Yildiz, Yusuf Demiroglu (Istanbul Teknik Universitesi)

PC-29 | In Person - National Harbor 10

Droplet Characteristics in Spray Flames of Jet Fuels and Jet Fuel Surrogates

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1484
Christopher B Reuter (US Naval Research Laboratory), Tanvir Farouk (University of South Carolina), Steven G Tuttle (US Naval Research Laboratory)

Ignition Characteristics of Alcohol to Jet Fuel using a Hot Surface Probe

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1485
James M Henderson, Sheikh Salauddin, Kareem A Ahmed (University of Central Florida)

Predictions of Spray Combustion using Conventional Category A Fuels and Exploratory Category C Fuels

Wednesday, 25 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1486
Francesco Pignatelli, Martin Passad, Arvid Åkerblom, Thommie Nilsson, Elna Nilsson, Christer Fureby (Lunds Universitet)

Development of Kinetic Mechanisms for Varied CN Controlled Fuels using Response Surface Surrogate Modeling

Wednesday, 25 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1487
Paxton W Wiersema, Ji Hun Oh, Keunsoo Kim, Tonghun Lee (University of Illinois Urbana-Champaign)

A novel ultra-low NOx hydrogen combustor based on the Lean Azimuthal Flame concept

Wednesday, 25 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1488
Pedro M. de Oliveira (University of Cambridge Department of Engineering), Luigi Miniero, Khushboo Pandey, Nicolas Noiray (Eidgenossische Technische Hochschule Zurich Departement Maschinenbau und Verfahrenstechnik), Epaminondas Mastorakos (University of Cambridge Department of Engineering)

NDA-11/GNC-27/SD-18 | In Person - Chesapeake 8

Probabilistic Transfer Learning through Ensemble Probabilistic Deep Neural Network

Wednesday, 25 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1479
Sandipp Krishnan Ravi, Piyush Pandita, Sayan Ghosh, Anindya Bhaduri, Valeria Andreoli, Liping Wang (General Electric Research)

Comparison of Methods to Verify Probabilistic Aerospace Requirements

Wednesday, 25 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1480
Sankalp Bhan, Raghu Venkataraman, Ben Novak, Simone Airoldi, Christopher McFarland (Amazon.com Inc)

(continued) NDA-11/GNC-27/SD-18 In Person - Chesapeake 8	
Strategies for Automation of Model Tuning in Multi-fidelity Trajectory Uncertainty Propagation	
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1481	
Marten Thompson (NASA Langley Research Center), Gianluca Geraci (Sandia National Laboratories), Geoffrey Bomarito, James Warner, Patrick Leser, William Paul Leser (NASA Langley Research Center), Michael S Eldred, John Jakeman (Sandia National Laboratories), Alex Gorodetsky (University of Michigan)	
Online Parameter Estimation Within Trajectory Optimization for Dynamic Soaring	
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1482	
Carleen A McKenna, Alex Gorodetsky (University of Michigan)	
Advantages of the Real-Space Model Validation Approach vs. the ASME VV10 and VV20 Validation Approaches	
Wednesday, 25 January 15:20 - 15:40 (UTC-5) AIAA-2023-1483	
Vicente J Romero (Sandia National Laboratories)	
AA-13 In Person - Baltimore 2	
Higher-order Statistical Metrics for Characterizing Rotor Acoustics.	
Wednesday, 25 January 14:00 - 14:20 (UTC-5) AIAA-2023-1350	
Charles E Tinney, John A Valdez (The University of Texas at Austin Applied Research Laboratories)	
Aerodynamic and Acoustic Analysis of a Multi-Rotor eVTOL Configuration	
Wednesday, 25 January 14:20 - 14:40 (UTC-5) AIAA-2023-1351	
Dilhara Jayasundara, Bumseok Lee, James D Baeder (University of Maryland at College Park), Jan Goericke, Zoren Habana (Advanced Rotorcraft Technology Inc)	
Numerical Method Comparison on Shaped Sonic Boom Propagation Through Atmospheric Boundary Layer Turbulence	
Wednesday, 25 January 14:40 - 15:00 (UTC-5) AIAA-2023-1352	
Joshua L Kapcsos, Victor Ward Sparrow (The Pennsylvania State University - University Park Campus)	
Robust Design of Sonic Boom Performance using Spatially Accurate Polynomial Chaos	
Wednesday, 25 January 15:00 - 15:20 (UTC-5) AIAA-2023-1353	
John A Schaefer, David S Lazzara, Stephen T LeDoux (Boeing Research and Technology)	

16:00 | Special Programming

WATCH-02 In Person - Baltimore 3
WATCH-03 In Person - Azalea 3

16:00 | Technical Panel

16:00 | Technical Paper Session

16:00 | Technical Workshop

Thursday, 26 January

09:30 | Technical Panel

DA-04/GNC-55/ACD-28/AS-24/APA-58/UAS-11 In Person - Woodrow Wilson D
INPSI-19/ACD-32/EAT-12/TF-12/GTE-26/PC-35 In Person - National Harbor 12
AS-37/AA-18 In Person - Chesapeake 12

09:30 | Technical Paper Session

EDU-04 In Person - Annapolis 1
Propulsion Research and Academic Programs at the University of Alabama in Huntsville
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1779
Robert A Frederick, Lawrence Thomas (The University of Alabama in Huntsville College of Engineering)
Using CEQUEL for Thermochemistry Calculations in a Graduate Rocket Propulsion Course at UAH
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1780
Paige Berg, William Loeblich, Robert A Frederick (The University of Alabama in Huntsville)
Ten Years of Voluntary Work
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1781
Rene Nardi Rezende (Inotech)
MDO-20 In Person - Chesapeake 6
Exergy-based Sensitivity Analysis of the Generic Hypersonic Vehicle using FUN3D
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1843
Neal Novotny, Markus P Rumpfkeil (University of Dayton), Eric J Nielsen (NASA Langley Research Center), Boris Diskin (National Institute of Aerospace)
CFD Based Multi-Component Aerodynamic Optimization for Wing Propeller Coupling
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1844
Heyecan Koyuncuoglu, Ping He (Iowa State University)
Comparison of Finite Volume and High Order Discontinuous Galerkin Based Aerodynamic Shape Optimization
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1845
Alexander Coppeans, Krzysztof Fidkowski, Joaquim R. R. A. Martins (University of Michigan)
Fast and Accurate Strategies for CFD-based Aerodynamic Shape Exploration in a System of Multi-Objective Evolutionary Algorithm
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1846
Sungki Jung (Universidade Federal do ABC Centro de Engenharia Modelagem e Ciencias Sociais Aplicadas), Tamara Guimaraes Bucalo (The Pennsylvania State University - University Park Campus)
WE-07 In Person - Chesapeake 9
On the influence of the grid size of large eddy simulations of a neutral atmospheric boundary layer on wind turbine load calculations
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1918
Simone Mancini, Marco Caboni, Koen Boorsma, Gerard Schepers (TNO), Mikko Folkersma, Remco Verzijlbergh (Whiffle)
Application of an unsteady double wake panel method for aeroelastic rotor analysis
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1919
Akshay Koodly Ravishankara, Koen Boorsma (TNO)
Nonlinear Analysis of Wind Turbine Blades Using Finite Elements with Anisotropic Variable Kinematics
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1921
Sander F. van den Broek, Mayank Patni, Aewis Hii, Paul Weaver (University of Bristol), Peter Greaves (Offshore Renewable Energy Catapult), Alberto Pirrera (University of Bristol)
On the Estimation of Short Fiber Orientation in a Filled Epoxy Adhesive and its Effect on the Tensile Strength
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1922
Tobias Holst (Fraunhofer-Institut für Windenergiesysteme IWES), Alexandros Antoniou (Ethniko Metsobio Polytechnio Schole Epharmosmenon Mathematikon kai Physikon Epistemon), Nils Englisch (Fraunhofer-Institut für Windenergiesysteme IWES), Nikolas Manousides, Claudio Balzani (Leibniz Universität Hannover)

SD-27 | In Person - Chesapeake 3

Thrust Control and Vibration Damping Using a Wingtip Electric Proprotor
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1891
Changik Cho, Christopher D. Rahn, Edward Smith, Joseph P. Cusumano (The Pennsylvania State University - University Park Campus)
Three-Dimensional Blade and Hub Stresses of Coaxial Rotors in High-Speed Forward Flight
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1892
Mrinalgouda Patil, Anubhav Datta (University of Maryland at College Park), Buvana Jayaraman (NASA Ames Research Center)
A Sensitivity Study on Aeroelastic Instabilities of Slender Wings with a Large Propeller
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1893
Nils Böhnisch, Carsten Braun (FH Aachen), Vincenzo Muscarello, Pier Marzocca (RMIT University)

APA-56 | In Person - Potomac 4

Prediction Accuracy of RANS-based Analysis for Aerodynamic Forces and Moments of a Civil Aircraft Model
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1758
Kohei Konishi (Tokyo Noko Daigaku - Koganei Campus), Yoimi Kojima, Atsushi Hashimoto (Uchu Koku Kenkyu Kaihatsu Kiko), Masaharu Kameda (Tokyo Noko Daigaku - Koganei Campus)
Mixed-element USM3D Contributions to the 4th AIAA High Lift Prediction Workshop
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1759
Michael D Bozeman, Mohagna J Pandya (NASA Langley Research Center)
The CFFD Equivalence
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1760
Ronald M Deslandes (Self)
Modelling Effect of Rain on the External Aerodynamics of the Utility Truck with the Morphing Boom Equipment: Computations and Wind Tunnel Testing
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1761
Parth Y Patel , Chandramouli Krishnamurthy, Gavin Clausman, Vladimir Vantsevich, Roy Koomullil (The University of Alabama at Birmingham)
Toward Ultra-High Cruise Lift Coefficient Using Flapped Coflow Jet Airfoil
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-1008
Jaehyoung Jeon, Yan Ren, Gecheng Zha (University of Miami)

AFM-16 | In Person - Camellia 2

Minimal Energy Quadcopter Descent and Recovery
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1741
Peiman Moradi, Alex Mcconville, Thomas S Richardson (University of Bristol)
Optimal Landing Control of eVTOL Vehicles Using ODE-Based Aerodynamic Model
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1742
Zhenbo Wang, Yufei Wu (The University of Tennessee Knoxville Tickle College of Engineering), Daning Huang (The Pennsylvania State University College of Engineering)
Model reference adaptive control of experimentally identified honeybee visual tracking dynamics
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1743
Md. Saiful Islam, Imraan Faruque (Oklahoma State University)

TP-16 | In Person - Azalea 3

ArcjetCV: a new machine learning application for extracting time-resolved recession measurements from arc jet test videos
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1912
Alexandre Quintart (Flying Squirrel), Magnus A Haw (Analytical Mechanics Associates, Inc.)
Characterization of spalled particles resulting from arc-jet tests
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1913
Kristen J Price, Alexandre Martin, Sean Bailey (University of Kentucky)
Early Response of Ablative Materials to Arcjet Testing
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1914
Stewart V McDougall, Aditya Vinod, Fabrizio Bisetti (The University of Texas at Austin)
Numerical reconstruction of spalled particle trajectories in an arc-jet environment: Accounting for non-sphericity and back-tracking
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-2714
Raghava Davuluri, Kristen J Price, Sean Bailey, Kaveh Tagavi, Alexandre Martin (University of Kentucky)

(continued) TP-16 | In Person - Azalea 3

Numerical reconstruction of spalled particle trajectories in an arc-jet environment: Cylinder and Hemicylinder samples
Thursday, 26 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1911
Raghava Davuluri, Kristen J Price, Sean Bailey, Kaveh Tagavi, Alexandre Martin (University of Kentucky)

FD-55 | In Person - Chesapeake F

Unsteady Lift and Circulation for Impulsively Started Flat Plates at Low Reynolds Numbers
Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1788
Jeremy A Pohly, Chang-kwon Kang (The University of Alabama in Huntsville)

Climbing Flight of Monarch Butterflies via Wing and Abdomen Kinematic Modulation Using a High-Fidelity Numerical Framework
Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1789
Jeremy A Pohly, Chang-kwon Kang (The University of Alabama in Huntsville), Tejaswi K. C., Taeyoung Lee (The George Washington University), Hikaru Aono (Shinshu Daigaku)

An investigation of the sweep effect on corrugated wings at low Reynolds numbers
Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1790
Syed Hassan R Shah, Josh Kacmarzyk (Auburn University), Zaeem Shabbir (National University of Sciences & Technology)

Flow Physics of a Passive Flap on a Dynamically Pitched Airfoil
Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1791
Zoey Flynn, Andres Goza (University of Illinois Urbana-Champaign)

Flow Interactions and Wake Structures in Large Groups of Undulating Foils
Thursday, 26 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2292
John M Kelly, Yu Pan, Haibo Dong (University of Virginia)

GTE-25 | In Person - National Harbor 11

Measurements of laminar burning speeds in ammonia and hydrogen-air mixtures for gas turbines
Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1823
Louis Yovino, Gihun Kim, Ritesh Ghorpade (University of Central Florida), Rehab M.I. Elsamra (Alexandria University), Subith Vasu (University of Central Florida)

Numerical Modeling of Multiple Liquid Jets in Crossflow for Gas Turbine Spray Characterization
Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1824
Homayoon Feiz, Hasan Karim (General Electric Company), Dominik Kubicki (Engineering Design Center General Electric Company Sp z o o), Vivek Kumar, Pravin M Nakod (ANSYS Inc), Jongguen Lee (University of Cincinnati), Wei Zhao (General Electric Company), Marcin Frackowiak (Engineering Design Center General Electric Company Sp z o o), Yuxin Zhang (General Electric Company)

STR-34 | In Person - Chesapeake 7

Investigation of Damage Mechanisms in Composites due to the Interaction of Ply and Fiber Waviness Defects
Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1905
Jarod Heise, Paulina Diaz Montiel, Satchi Venkataraman (San Diego State University College of Engineering)

Local Analysis-Test Correlation of Tow-Steered Composite Shells With Small Cutouts
Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1906
K Chauncey Wu (NASA Langley Research Center), Rainer MJ Groh (University of Bristol), Nathaniel W Gardner (NASA Langley Research Center)

Modeling and characterization of crushable composite structures
Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1907
Deepak Kumar Patel (Dassault Systemes Simulia Corp), Evan J Pineda (NASA Glenn Research Center), Paria Naghipour (HX5, LLC), Steven M Arnold (NASA Glenn Research Center)

Invited Talk: Adam Smith et al., Low Leakage Valves for long duration missions
Thursday, 26 January 09:30 - 09:30 EDT (UTC-5)

EXPL-13 | In Person - National Harbor 7

Low Leakage Valves for Long Duration Missions
Thursday, 26 January 09:30 - 10:10 (UTC-5) | AIAA-2023-1782
Cody Gilliland, Scott Kramer, William Sadowski, Andrew Smith, Robert Walker (NASA Marshall Space Flight Center)

(continued) EXPL-13 | In Person - National Harbor 7

Development of a Test Article to Demonstrate the Long Duration Storage of Liquid Hydrogen via a Two-Stage Active Cooling Approach

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1783
Travis Belcher, Patrick A Giddens (NASA Marshall Space Flight Center), Ryan J Grotenrath (NASA John H Glenn Research Center), Brian Hamill, Kevin Pedersen, James Smith, Jonathan R Stephens, Juan G Valenzuela, Robert M Witbrodt (NASA Marshall Space Flight Center)

Modeling and Simulation of Tank Pressure Control using Zero-Boil Off Active Thermal Control for LOXSAT Technology Demonstration Mission

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1784
Jonathan Bentley, Leo Bolshinskiy, Anson R Koch (NASA Marshall Space Flight Center), William Notardonato, Daniel Hollibaugh (Eta Space)

GT-06 | In Person - Baltimore 3

Using Computational Fluid Dynamics for the Development of Supersonic Wind Tunnels

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1815
Ryan T O'Rorke, Daniel R Cuppoletti (University of Cincinnati)

Renewed characterization of a Mach 6 hypersonic wind tunnel

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1816
Sacha Hirsch (ONERA Mecanique des fluides et energetique), Guillaume Grossir, Olivier Chazot (Von Karman Institute for Fluid Dynamics Aeronautics and Aerospace Department)

Transient Thermodynamic Simulation of the DLR Turbine Test Facility NG-Turb

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2521
Björn Schneider (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Uncertainty Analysis of Store Separation Aerodynamic Data at the NRC 1.5 m Trisonic Wind Tunnel

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2520
Jennifer Pereira, Melissa Richardson (National Research Council Canada)

EAT-11 | In Person - Camellia 1

An Assessment of the Environmental and Cost Benefits from the Electrification of Light Trainer Aircraft

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1772
Mathieu Bouchard, Nathan Louvel, David Rancourt (Universite de Sherbrooke)

Development of a Large-Scale Thermosyphon for Cooling the Fault Management System of a MW-Scale Electric Aircraft

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1773
Jeff Diebold, Brett Leitherer, Calin Tarau, Kuan-Lin Lee (Advanced Cooling Technologies Inc)

Analysis of Active Cooling System for High Power Density Bio-LNG Cooled Electric Motors for Electric Aircraft

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1774
Jimmy W Meacham, Rory A Roberts, Trevor J Kramer (Tennessee Tech University)

Projected Utility of All-Electric Aircraft in Reducing Emissions at the Hartsfield Jackson Atlanta International Airport

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1775
Jacob Eaton, Mohammad Naraghi, James G Boyd (Texas A&M University)

EXPL-14 | In Person - Chesapeake L

Microgravity Experiment using Drop Tower and CFD-DEM Coupled Simulation about Plume-Surface Interaction

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1785
Mitsuhisa Baba (Uchu Koku Kenkyu Kaihatsu Kiko), Shinpei Okita (Hexagon Manufacturing Intelligence Ltd), Kentaro Watanabe (Mitsubishi Group), Yusuke Maru, Shujiro Sawai, Osamu Mori, Kazuhisa Fujita (Uchu Koku Kenkyu Kaihatsu Kiko)

Parameterization and Design Space Exploration of a Hypersonic Inflatable Aerodynamic Decelerator

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1786
Kaleb Cornick, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)

Lift Wire Deployment and Anchoring System for the Lunar Crater Radio Telescope on the Far Side of the Moon

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1787
Rebecca Wang (Stanford University), Vinod P. Gehlot, Saptarshi Bandyopadhyay, Patrick M McGarey, Benjamin Byron (Jet Propulsion Laboratory), Dario Pisanti (Scuola Superiore Meridionale), Ron Wilson (United States Air Forces Central), Kenneth Jenks (NASA Johnson Space Center)

ECS-01 | In Person - National Harbor 6

Impacts of Condensed Carbon in Detonation of Selected Gaseous Hydrocarbon/Oxygen Mixtures

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1776
Lien C Yang (Self)

Comparison of Velocity-Adjusted Detonation Product Equation of State Methods to a Data-Driven Model

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1777
Athena Padgiotis, Scott I. Jackson (Texas A&M University)

Thermite-for-Demise: Preliminary on-Ground Heat Transfer Experimental Testing

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1778
Filippo Maggi, Alessandro Finazzi, Piero Finocchi, Christian Paravan, Luciano Galfetti (Politecnico di Milano), Stefano Dossi, Alessandro Murgia (ReActive Powder Technology s.r.l.), Tobias Lips (Hyperschall Technologie Gottingen GmbH), Geert Smet, Kobye Bodjona (European Space Research and Technology Centre)

TF-13 | In Person - Magnolia 2

Feasibility Study of a Multi Tilt-rotor Aircraft as the Artemis Lunar Training Vehicle

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1908
Jing Pei, Jared A Grauer, Jason Welstead, Luke J Miller (NASA Langley Research Center), Han Woong Bae (NASA Marshall Space Flight Center)

Towards Zero-Emission Transportation in Scandinavia

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1909
Kristian Amadori, Christopher Jouannet (Saab Aeronautics)

Nonlinear Dynamic Inversion Flight Control of a Tiltwing VTOL Aircraft

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1910
Leo Panish, Chris Nicholls, Marko Bacic (University of Oxford)

GNC-32/IS-21 | In Person - Annapolis 4

Trajectory Planning and Control of Bathy-drone: A Drone Towing a Boat equipped with Sonar for Bathymetry Mapping

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1811
Andres Pulido, Antonio Diaz, Andrew Ortega, Peter Ifju, Jane Shin (University of Florida)

Distributed Adaptive Control of Multiagent System with State and Control Dependent Coupled Dynamics in the Presence of Unknown Control Effectiveness Matrix

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1812
Islam A Aly, Sebastian Comeaux, Kadriye Merve Dogan (Embry-Riddle Aeronautical University)

Scalability Concept for Model Reference Adaptive Control of Gain Scheduled Dynamical Systems

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1813
Jesse Jaramillo, Kevin Wilcher, Tansel Yucelen (University of South Florida), Mehrdad Pakmehr (ControlIX)

Machine Learning Based Architecture for Generation of Synthetic Flight Test Data

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1814
Nathaniel Sisson, Hever Moncayo (Embry-Riddle Aeronautical University)

Using automotive radar to enable detection and tracking of small UAVs

Thursday, 26 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1810
Adam A Johnson, Aleena Kurumunda (Charles Stark Draper Laboratory Inc)

TP-17 | In Person - Azalea 2

Feasibility Study on using the Heat Pipe Assembly to Enhance the Performance of Air-Cooled Condensers

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1915
Masoud Darbandi, Kazem Mashayekh, Fakhreh Seyedi (Sharif University of Technology), G E Schneider (University of Waterloo)

Micro/Nano-Engineered Hierarchical Arrays for Enhanced Thin Film Evaporation of Water

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1916
Esteban Rios, Alejandro Amador, Alejandro Silva, Ahsan R Choudhuri, Md Mahamudur Rahman (The University of Texas at El Paso)

Simulation of Natural Convection in Two-Phase Cryogenic Tanks Using Sparse Identification of Nonlinear Dynamics

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1917
Alireza Moradikazerouni, Tomas Solano, Mark Sussman, Kourosh Shoele (Florida State University)

HMT-02 | In Person - National Harbor 15

Evaluating NASA Scientists’ Perspectives of the NASA Task Load Index
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1825
Eric M McCoy, Ellie Kazemi, Adisa Ptah (California State University Northridge), Amir Rahmani (Jet Propulsion Laboratory), Lauren Khoury (California State University Northridge)
Modeling the Relationship Between Pilot Visual Sca, Control Activity and Aircraft State
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1826
Prakrith Raja, Amy Pritchett (The Pennsylvania State University)
Procedure and Interface Design for Continuous Descent Approaches Under End Time Constraints
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1827
Viktoras Georgios Vasilopoulos, Clark Borst, Marinus M van Paassen, Alexander C in’t Veld, Max Mulder (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)
XAI Design Goals and Evaluation Metrics for Space Exploration: A Survey of Human Spaceflight Domain Experts
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1828
Tammer Barkouki, Ziquan Deng (University of California Davis), John Karasinski (NASA Ames Research Center), Zhaodan Kong, Stephen Robinson (University of California Davis)

FD-57 | In Person - Chesapeake E

Entropy-stable Deep Learning for Navier–Stokes Predictions of Transitional-regime Flows
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1796
Ashish S Nair (University of Notre Dame), Justin Sirignano (University of Oxford), Marco Panesi (University of Illinois Urbana-Champaign), Jonathan F MacArt (University of Notre Dame)
Numerical Simulation of a Shock Tube in Thermochemical Non-Equilibrium
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1797
Justin Clarke, Peter L Collen, Matthew McGilvray, Luca di Mare (University of Oxford)
Nonequilibrium effects in high-speed flow: experiment and simulation
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1798
Nicholas S Manavi, Albina Tropina, Richard B Miles (Texas A&M University), Maninder S Grover (Air Force Research Laboratory)
Heat Flux Predictions using a 3D Near Body Solver on an Adaptive Block-Structured Cartesian Off-Body Grid
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1799
Joel A McQuaid (University of Maryland at College Park), Aleksander Lavi Zibitsker, Alexandre Martin (University of Kentucky), Christoph Brehm (University of Maryland at College Park)

STR-33 | In Person - Chesapeake 4

Investigation of High-Velocity Nylon Bead Impact Damage on Aerospace Ceramic Materials
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1901
Joshua Richard Leigh, Ibrahim Guven (Virginia Commonwealth University College of Engineering)
Gas Permeability and Flexural Strength Post Impact of Cryogenically Cycled Composites
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1902
Shuvam Saha, Rani W Sullivan (Mississippi State University James Worth Bagley College of Engineering)
High Energy Dynamic Impact Testing of APC AS4D/PEKK-FC and TC1225 LMPAEK T700G Thermoplastic Composite Materials
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1903
Mike Pereira, Sandi G. Miller, Duane M. Revilock, Charles R. Ruggeri (NASA Glenn Research Center), Richard E. Martin (HX5, LLC)
Knockdown in Load Bearing Capability of Thin and Thick Composites Due to Low Velocity Impact
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1904
Andrew Seamone (University of Michigan), Paul Davidson (The University of Texas at Arlington), Anthony M Waas (University of Michigan)
Effects of Boundary Conditions on Damage Size in Composite Structures Subjected to Low Velocity Impact – An Analytical Study
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-0200
Landon K Henson, Matthew Molitor, Rebecca Cutting, Brian Carpenter, Brian Justusson (The Boeing Company), Vipul Ranatunga (Air Force Research Laboratory)

MDO-21 | In Person - Chesapeake 5

Credibility-Based Multidisciplinary Design Optimisation of Electric Aircraft
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1847
Nicolas F.M. Wahler (University of Southampton Faculty of Engineering and the Environment), Daigo Maruyama (Technische Universitat Braunschweig), Ali Elham (University of Southampton Faculty of Engineering and the Environment)

(continued) MDO-21 | In Person - Chesapeake 5

Graph Learning based Decision Support for Multi-Aircraft Take-Off and Landing at Urban Air Mobility Vertiports
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1848
Prajit Krishshna Kumar, Jhoel Witter, Steve Paul, Karthik Dantu, Souma Chowdhury (University at Buffalo)
Coupling Genetic Algorithm with an Artificial Neural Network for Optimization of a Supercritical CO2 Compressor
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1849
Saugat Ghimire, Mark G Turner (University of Cincinnati)

HR-02/03 | In Person - National Harbor 13

Small-Scale Hybrid Rocket Combustor Temperature and Water Concentration Measurements using Near-Infrared Tunable Diode Laser Absorption Spectroscopy
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1829
Connor Becnel, Mohana Gurunadhan, Shyam K Menon (Louisiana State University)
Regenerative Cooling of Graphite Nozzles for Throat Erosion Suppression
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1830
Hiroki Kojima, Landon T Kamps, Yuki Nobuhara, Giuseppe Gallo, Harunori Nagata (Hokkaido Daigaku)
Spray Ignition Studies on a Green Hypergolic Hybrid Rocket Propellant
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1831
Syamantak Nath, Lovely Mallick, Joseph Lefkowitz (Technion Israel Institute of Technology)
Laser Ignition of Hybrid Rocket Motors: Ignition Characterization and Ignition Mechanism Analysis
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1832
Veronika Korneyeva, David Dyrda, James Wall, Eylül Bilgin, Brian J Cantwell (Stanford University)

MAT-21/STR-32/SUR-01 | In Person - Chesapeake A

Radiation hardening of spacecraft and other autonomous robotic systems: Lunar safety v2.0
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1839
Ronald H Freeman (American Institute of Aeronautics and Astronautics (AIAA))
Design and Evaluation of Additively-Manufactured MMOD Satellite Shielding
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1840
James Boudrie, Erin Shea, Henry Pyzdrowski, Kevin Brisker, Peter Fiori, Michael L Anderson (US Air Force Academy), Justin Rausch (SAFE, Inc), Paul T Mead, Kalyan R Kota, Thomas E Lacy (Texas A&M University System)
Comparison of Experimental, Numerical and Analytical approaches to HRAM events
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1841
Georg A Heilig, Michael May (Fraunhofer EMI)
The Effect of Shot Dependency and Weave Matrix on Composite Materials Subject to Ballistic Testing
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1842
Jack T Morgan, Alex M Ramsperger, John H Hansen (Air Force Institute of Technology)

MVCE-04/NDA-14 | In Person - Chesapeake 8

Potential Approaches for Mesh Adaptation of Large Eddy Simulations with Near-Wall Treatments
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1851
Michael A Park, Li Wang (NASA Langley Research Center)
High-Order Node Movement Discretization Error Control in Shape Optimization
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-2367
Devina Pribadi Sanjaya (The University of Tennessee Knoxville Tickle College of Engineering), Krzysztof Fidkowski (University of Michigan)
High-Order Reconstruction of Defect Corrected Solutions on Unstructured Meshes
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-2368
Akhil Jayasankar, Carl F Ollivier Gooch (The University of British Columbia)
Adjoint-Based Adaptation of Large-Eddy Simulations using Dynamic Closures
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1850
Krzysztof Fidkowski (University of Michigan)
Output-Based Mesh Optimization Using Metric-Conforming Node Movement
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-2369
Krzysztof Fidkowski (University of Michigan)

FD-59 | In Person - Chesapeake I

On The Choice of Activation Functions in Physics-Informed Neural Network for Solving Incompressible Fluid Flows
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1803
Duong Viet Dung, Nguyen Dang Thai Song (Vietnam National University Hanoi), Pramudita Satria Palar, Lavi Rizki Zuhal (Institut Teknologi Bandung)
Patch-wise Training to Improve Convolutional Neural Network Synthetic Upscaling of Computational Fluid Dynamics Simulations
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1804
John Romano, Alec C. Brodeur (Naval Surface Warfare Center Dahlgren Division), Oktay Baysal (Old Dominion University)
Structured Input-Output Tools for Modal Analysis of a Transitional Channel Flow
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1805
Talha Mushtaq, Diganta Bhattacharjee (University of Minnesota Twin Cities), Peter J Seiler (University of Michigan College of Engineering), Maziar Hemati (University of Minnesota Twin Cities)
Data-Driven RANS closure with Model Derived Turbulence Variables
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1806
Basu Parmar, Kenneth E Jansen, John A Evans (University of Colorado Boulder)

SE-02/DE-08/DGE-09 | In Person - Magnolia 3

An MBSE Approach for Developing an Autonomous Rover Platform
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1894
Ignacio G Lopez-Francos, Seydou Mbaye, Samantha I Infeld (NASA Headquarters)
Leveraging SysML V2 for Integration of MBSE and Multidisciplinary System Development
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1895
Joanna A. Zhang, Burak Bagdatli, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)
Understanding the Benefits of Utilizing Additive Manufacturing (AM) for Liquid Rocket Engine Components and its Quantification Using Model-Based Systems Engineering (MBSE)
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1896
Joshua Buettner, Shreyas Lakshmpuram Raghu, Lawrence Thomas (The University of Alabama in Huntsville College of Engineering)
MBSE-Enabled System Verification and Process Improvement of Transport Aircraft Certification
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1897
Daewoon Kim, Meric Taneri, Ehiremen N Omoarebun, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology)

AS-23 | In Person - Chesapeake 1

Aeroelastic Simulation and Experimental Validation of the 3D-printed Passive Morphing Airfoil
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1766
Shuji Ochi, Shoko Kai, Kohei Takase, Kensuke Soneda, Taro Imamura, Kenichi Rinoie, Tomohiro Yokozeaki (Tokyo Daigaku)
Optimized Kresling origami-inspired structures using Artificial Neural Network and Monte Carlo Method
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1767
Mojtaba Moshtaghzadeh, Ali Bakhtiari, Pezhman Mardanpour (Florida International University)
Optimization of Morphing Composite Laminates Due to Temperature Actuation
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1768
Maxwell J Booth, Jeffrey L Kauffman (University of Central Florida)

FD-56 | In Person - Chesapeake H

Parallel Mesh Adaptation for Unsteady Blast Simulations on Cartesian Meshes
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1792
Wade M Spurlock (Science and Technology Corporation), Michael J Aftosmis, Jonathan J Chiew, Marian Nemec (NASA Ames Research Center)
Full-Space Goal Oriented Mesh Optimization
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1793
Pranshul Thakur, Sivakumaran Nadarajah (McGill University)
Conservative Solution Transfer Between Anisotropic Meshes for Adaptive Time-Accurate Hybridized Discontinuous Galerkin Methods
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1794
Tomáš Levý (Zapadoceska univerzita v Plzni), Georg May (Von Karman Institute for Fluid Dynamics Aeronautics and Aerospace Department)
Development of a Cartesian Cut-Cell Solver for Viscous Flows
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1795
Alexander O Kleb, Krzysztof Fidkowski, Joaquim R. R. A. Martins (University of Michigan)

HSABP-09 | In Person - National Harbor 4

CFD Analysis of Scramjet Fuel Injectors

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1833
Justin D Sprunger, Ali Mosa, Adam R Kotler, Mason Redman Thornton, Kareem A Ahmed (University of Central Florida)

Numerical Investigation of the Effect of Inflow Mach Number on Fuel Mixing in a Supersonic Cavity Combustor

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1834
Cal Rising, Gabriel B Goodwin (US Naval Research Laboratory)

Uncertainty Quantification for Ignition Delay Times using Polynomial Chaos Expansion

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1835
Ryan J Clark (Air Force Research Laboratory), Mitchell D. Hageman, Michael S Knadler (US Air Force Academy), Ez Hassan (Air Force Research Laboratory)

LP-10 | In Person - National Harbor 14

Coating Techniques for 3D Printed Catalyst Beds

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1836
Michael R Orth, Timothee L Pourpoint (Purdue University), Brad Bullard (NASA Marshall Space Flight Center)

Applications of Ceramic Matrix Composites in Liquid Rocket Propulsion

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1837
Grant M Henson (GE Global Research), Timothy M Wabel, Elliott Sullivan-Lewis, Steffen Tai, Vinay K Goyal (The Aerospace Corporation), Jon Strizzi (United States Space Force)

Flame-acoustic interaction in a high-pressure, single-injector, LOX/CNG rocket combustor with optical access

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1838
Jan Martin, Wolfgang Armbruster, Michael Börner, Justin Hardi, Michael Oschwald (Deutsches Zentrum für Luft- und Raumfahrt DLR Institut für Raumfahrtantriebe)

PDL-10/AMT-19 | In Person - Baltimore 1

Demonstration of low angle Thomson scattering for background interference suppression

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1859
Junhwi Bak, Amirhossein Abbasszadehrad, Anuj Rekhy, Christopher Limbach, Richard B Miles (Texas A&M University)

Mapping of an Arbitrarily Oriented Circular Aperture to Determine Solid Angle Broadening Effects on Thomson Scattering

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1860
Amirhossein Abbasszadehrad, Junhwi Bak, James R Creel, Richard Miles (Texas A&M University System)

Seeded Optical Parametric Oscillator as a Light Source for Slow-Light Imaging Spectroscopy

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1861
Boris S Leonov, Robert T. Randolph, Anuj Rekhy, Junhwi Bak, Amirhossein A. Rad, Arthur Dogariu, Richard Miles, Christopher Limbach (Texas A&M University)

Electron Momentum-Transfer Collision Frequency Measurements in Small Plasma Objects via Phase Information from Constructive Elastic Microwave Scattering

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1862
Adam Patel, Xingxing Wang, Apoorv Ranjan, Mikhail Slipchenko, Sergey O Macheret (Purdue University), Mikhail N Shneider (Princeton University), Alexey Shashurin (Purdue University)

Preliminary Krypton Measurements by Two-Photon Absorption Laser Induced Fluorescence (TALIF) in Cold Flow and a Hollow Cathode Plasma

Thursday, 26 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1863
Jacob Gottfried, Seth Antozzi, Ciprian Dumitrache, Azer P Yalin (Colorado State University)

PDL-11 | In Person - Baltimore 2

Control of Shock Train in Mach 4 Duct-Driven Flow by Filamentary Plasma

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1864
Philip S Andrews, Philip Lax, Sergey B Leonov (University of Notre Dame)

Investigating the Effect of Flow Velocity on Jetting Motion Produced by Repetitively Pulsed Discharges

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1865
Katherine C Opacich (University of Dayton), Joshua Heyne (Washington State University), Stephen Hammack, Timothy Ombrello (Air Force Research Laboratory)

Influence of Airflow on Nanosecond Pulsed Discharges

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1866
Carmen Guerra-Garcia, Colin A Pavan, Sankarsh Rao, Raphaël J Dijoud (Massachusetts Institute of Technology)

(continued) PDL-11 | In Person - Baltimore 2

The effect of humidity on streamer propagation in long air gaps
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1867
Andrey Starikovskiy (Princeton University), Eduard Bazelyan (AO Energeticeskij institut im G M Krzizanovskogo), Nickolay Aleksandrov (Moskovskij fiziko-tehniceskij institut nacional'nyj issledovatel'skij universitet)
Kinetics of HO ₂ Radical in Ns Pulse O ₂ -He Plasmas over a Liquid Water Surface
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-1868
Hamzeh Telfah (The Ohio State University), Elijah Jans (Sandia National Laboratories), Sai Raskar, Igor V Adamovich (The Ohio State University)

APA-54 | In Person - Potomac 5

Experimental Wind Tunnel Investigation on Propeller-Wing Interactional Aerodynamics
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1752
Shreyas Srivathsan, Juergen Rauleder (Georgia Institute of Technology)
Analytical Framework for Design of Aero-Propulsive Geometries with Powered Wakes
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1754
Himavath Jois, Phillip J Ansell (University of Illinois Urbana-Champaign)
Full Stall Simulations of a Redesigned Ventilation Fan for the International Space Station
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1755
Branden Anthony Butler, Carlos A Valentin, Michael R Borghi, Mark G Turner (NASA Headquarters)

FD-58 | In Person - Chesapeake G

An improved Riemann solver for RANS simulations
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1800
Axel Buck, Christian Mundt (Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik)
General Formulation of the Gradient Richardson Number for RANS Modelling
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1801
Philip Ströer, Tobias Knopp (Deutsches Zentrum fur Luft- und Raumfahrt eV)
A Neural-Network Based Adaptive Discontinuous Galerkin Method for Turbulent Flow Simulations
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1802
Miles J McGruder, Aniruddhe Pradhan, Krzysztof Fidkowski (University of Michigan)

APA-55 | In Person - Potomac 1

Local Basis Approach for the Reduction of CFD-Based Embedded Boundary Models
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1756
Noah Youkilis, Charbel Farhat (Stanford University)
Deep Learning for Realistic Wind Field Prediction in Various Urban Morphologies for Application to Small Unmanned Aerial Systems
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1757
Rohit K S S Vuppala, Kursat Kara (Oklahoma State University)

SATS-07 | In Person - National Harbor 5

SPICESat: A Nanosatellite Mission to Explore the Propellant Sloshing Problem
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1878
Michael Fogel, Manav Jadeja, Laurent Burlion (Rutgers The State University of New Jersey)
A Rapid CubeSat Demonstration of an Additive Manufactured Battery Case with Embedded Oscillating Heat Pipes
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1879
Marissa N Miranda, Karen Segura, Daniella Dorantes, David Hyatt, Riley Olsen, Chris Garner, Lachlan McCarthy, Sevada Avanesian, Ryan Orr, Navid Nakhjiri (California State Polytechnic University Pomona), Ben Furst, Scott Roberts, Jeremiah Gayle (Jet Propulsion Laboratory)
Overview of the Avionics Design for the Farside Seismic Suite
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1880
James W Cutler, Tran Anh Nguyen, Tatsuya Kano, Yethinder Ragav Lakshmi Kumar (University of Michigan), Mark Panning, Steve April, Salman Haque (Jet Propulsion Laboratory)
EarthScan-TSS, a Cubesat Based Tethered Satellite System And Platform To Test On Orbit Servicing And Space Sustainability
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1881
Andrew D Santangelo (Sci_Zone, Inc.), Gregory Falco (Johns Hopkins University)

ASE-03 | In Person - Baltimore 5

Experimental Validation of Touchless Electric Potential Sensing Using a Pulsed Electron Beam
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1769
James D Walker, Julian Hammerl, Hanspeter Schaub (University of Colorado Boulder)
Large scale particle tracing simulation for touchless potential sensing
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1770
Kaylee Marie Champion, Álvaro Romero-Calvo, Hanspeter Schaub (University of Colorado Boulder)
Atomic Oxygen Effects on Outgassing Properties of Silicone Materials
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1771
Samuel A Westrick (California Polytechnic State University)

SCS-10 | In Person - Woodrow Wilson C

Zero-G Deployment Testing of a New Rollable and Retractable Solar Array
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1882
Martin Hillebrandt, Sebastian Meyer, Mareike Stegmaier, Marco Straubel, Martin Eckhard Zander, Christian Hühne (Deutsches Zentrum für Luft- und Raumfahrt eV)
Slew Maneuver Constraints for Agile Flexible Spacecraft
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1883
Michael Marshall, Sergio Pellegrino (California Institute of Technology)
Precision Deployable Spacecraft Structures: Retrospectives and Lessons Learned
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1884
Mark S Lake (Redwire Space), Lee D Peterson (Safira Piñon, LLC)
Accurate Microgravity Simulation for Deployable Structures
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1885
Chuck Sullivan, Kendall Gebhardt, Christopher Solis (Redwire Space), Tyler Mitchell (COSMIAC), Nathan A Pehrson (Air Force Research Laboratory)
A Simplified Analytical Approach for Detecting Deployment Singularities in Complex Structures
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-1886
Heather Passe, Julia Calish, Nicholas W Bearns (Redwire Space), Lee D Peterson (Safira Piñon, LLC), Mark S Lake (Redwire Space)

SD-26 | In Person - Chesapeake 2

Advances in Aeroelasticity and Structural Dynamics in the Gulfstream Dynamics Group
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1887
Paul F Taylor (Gulfstream Aerospace Corp), Raj Kumar Nariseti (Wisk Aero), Allie Stewart, Seth Hildebrand (Gulfstream Aerospace Corp)
Recent Developments in Static Aeroelasticity and Load Predictions in the Gulfstream Loads Group
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1888
Gordon Cheung, Michael Palles, Kyle Finnegan, Mark Ray (Gulfstream Aerospace Corp)
An efficient global loads specification process for the design of business aircraft structures at Dassault Aviation
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1889
Eric Garrigues (Dassault Aviation)
Advances in Structural Dynamics at Rolls Royce Deutschland
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1890
Carsten Buchholz, Martin Knöpke, Gerald Paysan (Rolls-Royce Deutschland), Paul F Taylor (Gulfstream Aerospace Corp)

FD-60 | In Person - Chesapeake D

DARPA CRANE Program Overview
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1807
Alexander M Walan, Jeffrey Lydecker (Defense Advanced Research Projects Agency)
DARPA CRANE: Program Overview at Aurora Flight Sciences / Boeing
Thursday, 26 January 09:50 - 10:10 (UTC-5) 3774970</stron
Kevin R Uleck (Aurora Flight Sciences), Timothy Garrett, Edward A Whalen (Boeing Research and Technology)
DARPA CRANE Program Overview by Lockheed Martin
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1808
Juan Montoro, William L Carbaugh, Daniel N Miller (Lockheed Martin Aeronautics Company)
Presenter Q&A
Thursday, 26 January 10:30 - 11:10 EDT (UTC-5)

APA-57 | In Person - Potomac 3**Materials and Performance Testing of DCM Drag-Reducing Riblets for Aviation**

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1762

Henry C Bilinsky, Mitchell S Quinn, Dylan McGrath, John Whitelock, Swapnil Poudyal, Duncan C Bell (MicroTau), Christoph Feichtinger, Peter Adrian Leitl, Richard Benauer (Bionic Surface Technologies)

Computational Simulation of Staggered 3-D Riblets for Skin Friction Drag Reduction

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1763

Brian R Smith, Patrick Yagle, Paul D McClure (Lockheed Martin Aeronautics Company)

Numerical study of riblet defects and their impact on performance

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1764

Peter Adrian Leitl, Christoph Feichtinger, Georg Schatzdorfer, Andreas Flanschger (bionic surface technologies GmbH)

Numerical and experimental investigation of Riblet application on a helicopter rotor blade

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1765

Peter Adrian Leitl (bionic surface technologies GmbH), Dominik Kohl (Schiebel), Hirokazu Tsuchihashi (Nikon Corporation), Richard Gruber (bionic surface technologies GmbH), Karl Pichler (Schiebel), Yuta Goto (Nikon Corporation), Mikel Lucas Garcia de Albeniz (bionic surface technologies GmbH), Kaneyuki Naito (Nikon Corporation), Andreas Flanschger (bionic surface technologies GmbH), Go Ichinose (Nikon Corporation)

GT-07 | In Person - Baltimore 4**Comparison of Dynamics Stability Testing Techniques with Magnetic Suspension Wind Tunnel Capabilities**

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1817

Otoniel A Ramirez, Mark Schoenenberger, David E Cox (NASA Headquarters), Colin P Britcher (Old Dominion University)

Effects of Separation Region Reattachment on the Dynamic Motion of Low-Fineness Ratio Cylinders

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1818

Forrest A Miller, Colin P Britcher (Old Dominion University)

Electromagnetic Modeling of Wind Tunnel Magnetic Suspension and Balance Systems

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1819

Colin P Britcher (Old Dominion University), David E Cox (NASA Langley Research Center)

Unsteady three-dimensional wake structure behind magnetically levitated freestream-aligned circular cylinder

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1820

Sho Yokota, Taku Nonomura (Tohoku Daigaku)

Measurement of the Aerodynamic Forces Acting on a Rotating Sphere Using a Magnetic Suspension and Balance System

Thursday, 26 January 10:50 - 11:10 (UTC-5) | AIAA-2023-1821

Kazuna Usui (Yamagata Daigaku), Kazuya Seo, Shinichiro Ito, Masaki Hiratsuka (Kogakuin Daigaku - Hachioji Campus)

APA-53 | In Person - Potomac 2**Preliminary Assessment of a Distributed Electric Propulsion System for the SUSAN Electrofan**

Thursday, 26 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1748

Leonardo M. G. Machado, Timothy Chau, Gaetan KW Kenway (Science and Technology Corporation), Jared C Duensing, Cetin C Kiris (NASA Ames Research Center)

SUSAN Concept Vehicle Power and Propulsion System Study

Thursday, 26 January 09:50 - 10:10 (UTC-5) | AIAA-2023-1749

Jeffryes W Chapman, Jonathan Lee Kratz, Timothy Dever, Arman Mirhashemi, Nicole Heersema, Ralph Jansen (NASA John H Glenn Research Center)

Control Architecture for a Concept Aircraft with a Series/Parallel Partial Hybrid Powertrain and Distributed Electric Propulsion

Thursday, 26 January 10:10 - 10:30 (UTC-5) | AIAA-2023-1750

Jonathan S Litt, Jonathan Lee Kratz, Santino Bianco, Jonah Sachs-Wetstone, Timothy Dever (NASA Glenn Research Center), Halle E. Buescher (HX5, LLC), Nicholas C. Ogden, Felipe Valdez, Daniel W. Budolak, Matthew J. Boucher (NASA Armstrong Flight Research Center), Andrew P. Patterson (NASA Langley Research Center), Ralph Jansen (NASA Glenn Research Center)

Flightcrew Thrust Control and Engine Display Concepts for the Subsonic Single Aft Engine (SUSAN) Transport Aircraft

Thursday, 26 January 10:30 - 10:50 (UTC-5) | AIAA-2023-1751

Jarvis J Arthur, Kellie D Kennedy (NASA Langley Research Center), Timothy J Etherington (Analytical Mechanics Associates, Inc.), Jonah Sachs-Wetstone, Jonathan S Litt (NASA John H Glenn Research Center), A. Karl Owen (HX5, LLC)

PC-36 | In Person - National Harbor 8

Repetitive autoignition and extinction of near-limit non-premixed n-dodecane spray cool flames
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1856
Wenbin Xu, Ziyu Wang, Bowen Mei, Ying Lin (Princeton University Department of Mechanical and Aerospace Engineering), Jiarong Hong (University of Minnesota Department of Mechanical Engineering), Yiguang Ju (Princeton University Department of Mechanical and Aerospace Engineering)
Numerical investigation of high-pressure transcritical shock-droplet interaction and mixing layer using VLE-based CFD accelerated by ISAT
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1857
Hongyuan Zhang, Suo Yang (University of Minnesota Twin Cities)
A VLE-Based Reacting Flow Solver for High-Pressure Transcritical Two-Phase Combustion
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1858
Navneeth Srinivasan, Hongyuan Zhang, Suo Yang (University of Minnesota Twin Cities)

PGC-13 | In Person - National Harbor 3

Structural and Fatigue Analysis of a Rotating Detonation Rocket Engine
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1869
Krzysztof Stopka, John Smallwood, Aman Chokshi, Stephen D Heister, Michael Sangid (Purdue University)
In-space Demonstrations of Rotating Detonation Engines: from Gaseous Propellant to Liquid Propellant Applications
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1870
Noboru Itouyama, Koichi Matsuyama, Ken Matsuoka, Akira Kawasaki, Kazuki Ishihara, Shiro Ito, Kotaro Nakata, Tomoki Sato, Jiro Kasahara (Nagoya Daigaku), Akiko Matsuo (Keio Gijuku Daigaku), Ikkoh Funaki (Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus)
Time-Resolved Stagnation Pressure Measurement Technique in a Rotating Detonation Rocket Combustor
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1871
Kevin Dille, Mark Frederick, Carson D Slabaugh, Stephen D Heister (Purdue University)
Current State of NASA Continuously Rotating Detonation Cycle Engine Development
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1873
Thomas W Teasley, Tessa M Fedotowsky, Paul R Gradl (NASA Marshall Space Flight Center), Benjamin L Austin (IN Space, LLC), Stephen D Heister (Purdue University System)

SPSN-02 | In Person - Chesapeake C

Implementation of MachLine: A Subsonic/Supersonic, Unstructured Panel Code
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1898
Cory D Goates, Ammon M Houser, Douglas F Hunsaker (Utah State University)
Multi-Fidelity Comparison of Supersonic Wave Drag Prediction Methods Using Axisymmetric Bodies
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1899
Troy Abraham, Douglas F Hunsaker (Utah State University), David S Lazzara (The Boeing Company)
A Multi-Limiter Method for Simulating Complex Flows on Large Grids
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1900
Paul G Cizmas, Justin Schoppe (Texas A&M University)

NDA-15/GNC-33/SD-25 | In Person - Chesapeake B

Stochastic Reachability Analysis using Sparse-Collocation Method
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1852
Amit Jain, Puneet Singla (The Pennsylvania State University)
Uncertainty Quantification and Collision Assessment in a Traffic of Unmanned Aerial Vehicles
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1853
Rajnish Bhusal, Aakarshan Khanal, Kamesh Subbarao, Animesh Chakravarthy (The University of Texas at Arlington), Wendy Okolo (NASA Ames Research Center)
Finite Element Model Tuning using Nastran-generated Sensitivity Values
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1854
Chan-gi Pak (NASA Armstrong Flight Research Center)
Reliability Assessment of Uncertain Linear Systems Subjected to Random Vibrations
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1855
Luis E Ballesteros Martínez, Samy Missoum (The University of Arizona College of Engineering)

ACD-25/UAS-10 In Person - Woodrow Wilson A	
Design and Fabrication of a Low-Cost, Low-Speed, Self-Deploying sUAS Motor Glider	
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1738	
Thomas Jones, Julia Cole, Simon Miller, Michael A. Yukish (The Pennsylvania State University)	
Flight Test Driven Development of Low Cost UAVs - Pitfalls and Opportunities	
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1739	
Adrian B. Weishaeufl, James Scanlan, Andras Sobester (University of Southampton)	
Electric Propeller Configuration and Efficiency Analysis for Long Range Small UAS	
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1740	
Cole Callahan, Tristan Denholm, Joshua McConnell, Charles F Wisniewski, Nidal M Jodeh (US Air Force Academy)	
Development of a Hydrogen-powered UAV System for Crossing the Atlantic Ocean	
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1924	
Nikola Gavrilovic, Jean-Marc Moschetta (ISAE-SUPAERO), Quentin Barascud (H3 Dynamics)	
Effect of Motor-Rotor Geometry on the Performance of Electric VTOL UAVs	
Thursday, 26 January 10:50 - 11:10 (UTC-5) AIAA-2023-1923	
Oliver Westcott, Swathi Krishna, Mario Ferraro, Robert Entwistle (University of Southampton)	
AFM-17/GNC-31/MST-18 In Person - Potomac 6	
X-62 VISTA Capabilities and Architecture	
Thursday, 26 January 09:30 - 09:50 (UTC-5) AIAA-2023-1744	
M Christopher Cotting, Shawn S Stephens, James Cole, Joshua Barricklow, William Gray (U.S. Air Force Test Pilot School)	
The New VISTA Simulation System (VSS) Design and Implementation	
Thursday, 26 January 09:50 - 10:10 (UTC-5) AIAA-2023-1745	
Patrick J Haus, Brian Konopka, Derek Faught (Calspan Corp)	
VISTA X-62A Model Following Algorithm Overview	
Thursday, 26 January 10:10 - 10:30 (UTC-5) AIAA-2023-1746	
Daniel J Caraway (Lockheed Martin Aeronautics Co Marietta), Que C Harris (Lockheed Martin Aeronautics Company), M Christopher Cotting (U.S. Air Force Test Pilot School)	
Model Following Control Allocation For The X-62A	
Thursday, 26 January 10:30 - 10:50 (UTC-5) AIAA-2023-1747	
Que C Harris (Lockheed Martin Aeronautics Company), Daniel J Caraway (Lockheed Martin Aeronautics Co Marietta)	

14:00 | Technical Panel

GTE-27 In Person - Chesapeake C
INPSI-20/GTE-28/EAT-14/ACD-34/PC-37/TF-14 In Person - National Harbor 12
INPSI-26/ACD-38/GTE-37/EAT-16/TF-17/PC-52 In Person - Woodrow Wilson A
AS-26/DE-10/STR-35/ACD-41 In Person - Woodrow Wilson D
ICC-01 In Person - Azalea 3

14:00 | Technical Paper Session

TP-18 In Person - Azalea 2
Towards a flow-material unified solver for heatshield modeling
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2718
Bruno Dias (Oak Ridge Associated Universities), Aleksander Lavi Zibitsker (University of Kentucky), Jeremie Bernard Erwin Meurisse, Nagi N Mansour (Analytical Mechanics Associates, Inc.)
3D ablation modeling of silicone-coated heatshield compared to MEDLI2 in-flight data
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2720
Jeremie Bernard Erwin Meurisse, Georgios Bellas Chatzigeorgis, Dinesh K Prabhu, Arnaud Borner, John M Thornton, Brett A Cruden, Nagi N Mansour (Analytical Mechanics Associates, Inc.), Joshua D Monk, Brody K Bessire (NASA Ames Research Center)

STR-37 | In Person - Chesapeake 7

Structural-mechanical characterisation of triply periodic minimal surface sheet networks: simulation and experiment
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2076 Hendrik Traub, Moritz Sprengholz, Daniel Teufel (Technische Universitat Braunschweig), Christian Hühne (Deutsches Zentrum fur Luft- und Raumfahrt eV)
Aerospace Quality In-situ Consolidated Thermoplastic Composite Structures via Automated Fiber Placement: Effects of Staggering on Part Performance
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2077 Timothy Yap (The University of Texas at Austin), Ali Yeilaghi Tamijani (Embry-Riddle Aeronautical University), Mehran Tehrani (The University of Texas at Austin)
Structural Requirements, Process Simulation, and Residual Stress Characterization for Additively Manufactured Spaceflight Parts
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2078 Brett Soltz, Vinay K Goyal, Jacob Rome, David Witkin, Xueyong Qu (The Aerospace Corporation)
Development of an Additive Manufactured Fitting Sensorized with Optical Fibres for Load Recognition
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-2079 Alessandro Airoidi, Pietro Ballarin, Sebastiano Di Mauro, Daniela Rigamonti (Politecnico di Milano), Felix Reinert (ProtoShape 3D Printing AG), Mohammad Mehdi Dadras, Saba Zabihzadeh (Centre Suisse d'Electronique et de Microtechnique), Eustachio De Nicolò, Paolo Bettini (Politecnico di Milano), Lorenzo Cartabia (Plyform Composites Srl)
Additive Manufacturing Material Behavior Prediction - A Simulation Based ICME Approach
Thursday, 26 January 15:20 - 15:40 (UTC-5) AIAA-2023-2080 Yi Zhang, Junyan He (ANSYS, Inc.)

AMT-20 | In Person - Camellia 2

AMT Rising Stars: Optical Diagnostic for Index of Refraction Measurements Across Shock Waves
Thursday, 26 January 14:00 - 14:20 (UTC-5) 3772171</stron Gwendolyn Wang (Georgia Institute of Technology)
AMT Rising Stars: Resonantly Ionized Photoelectron Thermometry Technique for Non-Intrusive, Non-seeded, One-Dimensional (1D) Measurements in Supersonic Flows
Thursday, 26 January 14:20 - 14:40 (UTC-5) 3772219</stron Walker McCord (The University of Tennessee Knoxville Tickle College of Engineering)
AMT Rising Stars: Non-Equilibrium High Reynolds Number Turbulent Boundary Layers Over Rough and Smooth Surfaces
Thursday, 26 January 14:40 - 15:00 (UTC-5) 3774129</stron Vidya Vishwanathan (Virginia Polytechnic Institute and State University)
AMT Rising Stars: Studying the Mechanisms of Metal Particle Combustion using Holography and Imaging Pyrometry
Thursday, 26 January 15:00 - 15:20 (UTC-5) 3775101</stron Andrew W Marsh (Georgia Institute of Technology)
AMT Rising Stars: Aerodynamic measurements in the UTSA Mach 7 Ludwig Tube facility
Thursday, 26 January 15:20 - 15:40 (UTC-5) 3776837</stron Eugene N. Hoffman (The University of Texas at San Antonio)

STR-38 | In Person - Chesapeake 4

A DoE-based scalable approach for the preliminary structural design of Box-Wing aircraft from regional to medium range categories
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2082 Vincenzo Binante (SkyBox Engineering), Karim Abu Salem, Giuseppe Palaia (Universita degli Studi di Pisa), Davide Zanetti (SkyBox Engineering), Vittorio Cipolla (Universita degli Studi di Pisa)
Structural Sizing of a Composite Transonic Truss-Braced Wing
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2083 Erin K Anderson, Alana Cardona, Brian H Mason (NASA Langley Research Center)
Modeling and Simulation of a Compression Molding Process for Aircraft Structures with Recycled Thermoplastic Composites
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2084 Sooyoung Lee, Minsu Park, Wooseok Ji (Ulsan National Institute of Science and Technology)

APA-62 | In Person - Potomac 4

A Numerical Investigation of the Dragonfly Lander Exiting an Aero Backshell During Descent into Titan
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1948 Corey A Zucker, Luis Amaya, Wayne Farrell, Michael P Kinzel (University of Central Florida)

(continued) APA-62 | In Person - Potomac 4

Prediction of Duct Airfoil Aerodynamics using Surface Vorticity
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1949
Xiangpu Wang, Roy J. Hartfield (Auburn University), Vivek Ahuja (Research in Flight)
Computational Evaluation of a Damage Assessment Model for UAV Wings
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1950
Siddharth Chandra Shekar, Raymond P LeBeau, Srikanth Gururajan (Saint Louis University)
An Evaluation of a Sprayed Liquid Flap on a 3D Wind Turbine Blade
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1951
Alexander Spitzer, George E Loubimov, Michael P Kinzel (University of Central Florida)

FD-61 | In Person - Chesapeake F

Dynamic Mode Decomposition of the Metachronal Paddling Wake
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1971
Mitchell Ford, Arvind Santhanakrishnan, Imraan Faruque (Oklahoma State University)
A Mobile Reinforcement Learning-Cyber-Physical Fluid Dynamics-based Flapping Wing Platform: Simulation Component
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1972
Albert R Farah (University of Massachusetts Lowell College of Sciences), Milo F DiPaola (University of Massachusetts Lowell Francis College of Engineering), Tyler Barkin (Self), David J Willis (University of Massachusetts Lowell Francis College of Engineering)
Lateral stability and wake analysis of tri-foil system pitching in-line
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1973
Jiacheng Guo, Pan Han, Yu Pan, Haibo Dong (University of Virginia)
Aspect Ratio Effect of Coaxial Rotor in Low Reynolds Number Condition
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1974
Ren Nishimura, Masaki Okawa, Tsubasa Ikami, Hiroki Nagai (Tohoku Daigaku)
Unsteady Interference between Propeller Slipstream and Flow Field around NACA0012 under Low Reynolds Number Condition
Thursday, 26 January 15:20 - 15:40 (UTC-5) AIAA-2023-2293
Masaki Okawa, Ren Nishimura, Tsubasa Ikami, Hiroki Nagai (Tohoku Daigaku Ryutai Kagaku Kenkyujo)

AMT-21 | In Person - Magnolia 2

Characterization of Shock Tunnel Free-Stream Nonequilibrium using Nanosecond Pulse-Burst Coherent Anti-Stokes Raman Scattering
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1929
Elijah Jans, Kyle P Lynch, Kyle Daniel, Charley Downing, Justin Lawrence Wagner, Ross Wagnild, Jungyeoul B Maeng, Sean P Kearney (Sandia National Laboratories)
Gas-Phase Pressure and Temperature Measurements in a Cold-Flow Hypersonic Wind Tunnel via Femtosecond Coherent Anti-Stokes Raman Spectroscopy
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1930
Daniel R Richardson (Sandia National Laboratories), Jonathan E Retter (National Institute of Aerospace), Sean P Kearney, Steven J Beresh (Sandia National Laboratories)
Chirped-Probe-Pulse Femtosecond CARS H_2 Thermometry in a High-Pressure Model Rocket Combustor
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1931
Ziqiao Chang, Rohan Gejji, Aman Satija, Robert P Lucht (Purdue University)
Towards multi-point thermodynamic flow characterization using single shot coherent Rayleigh Brillouin scattering
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1932
Atulya U Kumar, Alexandros Gerakis (Luxembourg Institute of Science and Technology)
Development of a fs/ps CARS system for temperature and species measurements in a dual-mode scramjet combustor
Thursday, 26 January 15:20 - 15:40 (UTC-5) AIAA-2023-1933
Alan Kim, Chloe E Dedic (University of Virginia), Andrew D Cutler (The George Washington University)

GT-08 | In Person - Baltimore 3

Design and Development of an Aircraft Electric Powertrain Test Stand
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2008
Ayush Jha, Virinchi Puligundla, Jonathan Paravano, Brian German (Georgia Institute of Technology College of Engineering)

(continued) GT-08 | In Person - Baltimore 3

Development of a Dual Stream Jet Propulsion Rig for Test and Evaluation of Engine Nozzles in a Transonic Wind Tunnel

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2009
Angel Gomariz-Sancha (Aircraft Research Association Ltd), Christopher Sheaf (Rolls-Royce plc), Carlos O. Marquez Gutierrez (Rolls-Royce Deutschland Ltd und Co KG)

Modal testing and analysis as part of a development process of a test stand for experimental rocket engines

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2010
Piotr Slawecki (Akademia Gorniczo-Hutnicza imienia Stanislaw Staszica w Krakowie Wydzial Informatyki Elektroniki i Telekomunikacji), Radoslaw Korczynski (Akademia Gorniczo-Hutnicza imienia Stanislaw Staszica w Krakowie Wydzial Inzynierii Mechanicznej i Robotyki)

APS-02 | In Person - National Harbor 6

Methodology to Assess Emissions and Performance Trade-Offs for a Retrofitted Solid Oxide Fuel Cell Hybrid and Hydrogen Powered Aircraft

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1954
Khaled Alsamri, Jessica Janeth De la Cruz, Melody Emmanouilidi, Jacqueline L Huynh, Jacob Brouwer (University of California Irvine)

Seebeck Effect Generators for Orbit-to-Ground Power Supply

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1955
James H O'Hara, Levi McKinney (Georgia Southern University)

GNC-37/AFM-19 | In Person - Annapolis 3

Customized Real-Time First-Order Methods for Onboard Dual Quaternion-based 6-DoF Powered-Descent Guidance

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2003
Abhinav G Kamath, Purnanand Elango, Taewan Kim, Skye Mceowen (University of Washington), Yue Yu (The University of Texas at Austin), John M Carson (NASA Johnson Space Center), Mehran Mesbahi, Behcet Acikmese (University of Washington)

Lossless Convex Guidance for Lunar Powered Descent

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2004
Andrew W Berning, Lloyd Strohl, Stefan R Bieniawski (Blue Origin LLC)

Six-Degree-of-Freedom Rocket Landing Optimization by Augmented Convex-Concave Decomposition

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2005
Marco Sagliano (Deutsches Zentrum fur Luft- und Raumfahrt eV), Ping Lu (San Diego State University), David Seelbinder, Stephan Theil (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Propellant-Optimal Powered Descent Guidance Revisited

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2006
Ping Lu, Ryan Callan (San Diego State University)

PGC-14 | In Person - National Harbor 3

Transverse Detonation Waves in Near-Limit Detonations

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1874
Mark Frederick, Rohan Gejji (Purdue University), Joseph Shepherd (California Institute of Technology), Carson D Slabaugh (Purdue University)

Experimental Investigation on Confinement Effects in Hydrogen-Air Detonations

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1875
Robyn Cideme, Joshua Berson, Rachel Hytovick, Robert F Burke, Kareem A Ahmed (University of Central Florida)

Effects of Nitrogen Dilution on Detonation Wave Physics in a H₂-Air Non-premixed Rotating Detonation Combustors

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1876
Robert B Wang, Venkat Athmanathan, Austin M. Webb, Sahaj Patel, James Braun, Zach Ayers (Purdue University), Christopher Allen Fugger (Spectral Energies), Terrence R Meyer (Purdue University)

Nitric oxide sensitization of hydrogen detonations

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1877
Karl P. Chatelain, Mhedine Ali Cherif, Samir B. Rojas Chavez, Deanna A Lacoste (King Abdullah University of Science and Technology)

Numerical Study on Pressure Gain of Rotating Detonation System

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2565
A Koichi Hayashi (Aoyama Gakuin Daigaku Riko Gakubu Daigakuin Rikogaku Kenkyuka)

PDL-12/APA-64 | In Person - Baltimore 1

Method for Remote Detection of Temperature and Material Species of Test Articles in Hypersonic Environments

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2052
Christopher Grunbok, Richard Miles, Arthur Dogariu (Texas A&M University)

(continued) PDL-12/APA-64 | In Person - Baltimore 1

Luminous Efficiency Determination of Spacecraft Materials in Ground Test Facilities

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2053
David Leiser, Christian Andreas Dürnhöfer, Stefan Loehle (University of Stuttgart), Jérémie J. Vaubaillon (Observatoire de Paris), Stefanos Fasoulas (Universitat Stuttgart Institut für Raumfahrtssysteme)

Effect of Transport Coefficients on RAM-C-II Plasma Density

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2054
Prasanna Thoguluva Rajendran, Bernard Parent (The University of Arizona)

Effect of Transport Coefficients on RAM-C-II Plasma Density

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2054
Prasanna Thoguluva Rajendran, Bernard Parent (The University of Arizona)

Stabilization Effects in Hydromagnetic Plasma Flows

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2055
Thomas C Underwood (The University of Texas at Austin)

WE-08 | In Person - Chesapeake 9

Design of Flexible Wind Tunnel Model of Yawed Wind Turbine Rotor with Teetering Hub

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2091
Panagiotis Georgopoulos, Jurij Sodja, Roeland De Breuker (Technische Universiteit Delft)

Toward the Advanced Manufacturing of Land-Based Wind Turbine Blades

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2092
Pietro Bortolotti, Derek Berry, William Scott Carron (National Renewable Energy Laboratory), Todd Anderson, Molly Chann (General Electric Company)

An Open-Source NuMAD Model for the IEA 15 MW Blade with Baseline Structural Analysis

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2093
Alejandra S Escalera Mendoza, Ipsita Mishra, D. Todd Griffith (The University of Texas at Dallas)

Modeling of a Wind-Turbine-Powered Ground Vehicle

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2094
Meyer Nahon, Zihao Zhuo, Shengan Yang, Inna Sharf (McGill University), Rick Cavallaro (SMT), Stephen Morris (Volansi)

Vibratory Load Reduction on a Quad-Rotor Wind Turbine using Relative Rotor Phasing

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2095
Alexander N Stillman, Etana Ferede, Farhan Gandhi (Rensselaer Polytechnic Institute)

FD-65 | In Person - Chesapeake K

Measurements of the Evolution of Scalar Disturbance Spectra and Heat Transfer Rates on a Flared Cone at Mach 6

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1988
Farhan Siddiqui, Mark T Gragston (The University of Tennessee Space Institute), Jack Shine, Rodney D Bowersox (Texas A&M University)

Global Stability Analysis of Turbulent Transonic Buffet on the NASA Common Research Model: From Wind Tunnel to Flight Reynolds Numbers

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1989
Andrea Sansica, Atsushi Hashimoto (Japan Aerospace Exploration Agency (JAXA))

Experimental Investigation of the Role of Shock Strength in Transitional Shockwave-Boundary Layer Interactions

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1990
Zane M Shoppell, Kenneth R Langley, John D Schmisser (The University of Tennessee Space Institute)

AMT-22 | In Person - Magnolia 3

Comparison of Two Load Prediction Methods for Strain-Gage Balances

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1934
Norbert M Ulbrich, Thomas Volden (Jacobs Technology Inc), Ross Flach (NASA Ames Research Center)

Graphical and Numerical Description of Strain-Gage Balance Interactions

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1935
Norbert M Ulbrich (Jacobs Technology Inc)

First measurements on BEARCAT, the SAFRAN’s heavily instrumented turboshaft

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1936
Jean-Louis Champion-Reaud (Safran Tech)

(continued) AMT-22 | In Person - Magnolia 3

Measuring Instantaneous Forces with a Photoelastic Force Balance

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1937
Brad McLaughlin, John Lawson, Bharathram Ganapathisubramani (University of Southampton)

DGE-10/DE-09 | In Person - Chesapeake 12

Vehicle Configuration Compendium (VCC): Data Richness Studies on High-Speed Vehicles

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1959
Stenila Simon, Samuel Atchison, Bernd Chudoba (The University of Texas at Arlington)

IBIS : An Interactive Virtual Assistant for System Engineers

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1960
Sangeeth Saagar Ponnusamy, Philipp Helle, Andreas Zindel, Stefan Richter, Gerrit Schramm, Carsten Strobel (Airbus Defence and Space GmbH)

An Innovative Knowledge Management Methodology and Software Development, AVD^{>KBS}, for Aerospace Engineering Conceptual Design</sup>

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1961
Xiao Peng, Stenila Simon, Bernd Chudoba (The University of Texas at Arlington)

Quantifying, Visualizing and Managing Vehicle Design Knowledge: A 20-Year Research Effort

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1962
Stenila Simon, Samuel Atchison, Bernd Chudoba (The University of Texas at Arlington)

Expressing Architecture from Design Patterns, a Real-World Example

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-1963
Samuel P Russell (NASA Johnson Space Center)

PC-39 | In Person - National Harbor 10

High Pressure Spherically Expanding Laminar Flame Speed Measurement with Plasma Affected Data

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2050
James Shaffer, Omid Askari (West Virginia University)

Study of Diethyl Ether Oxidation Kinetics by Using a Supercritical Pressure Jet-stirred Reactor up to 100 atm

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2051
Ziyu Wang, Chao Yan, Bowen Mei, Ying Lin, Yiguang Ju (Princeton University)

Methane Oxidation Rates at Turbine-Relevant Conditions in a High Pressure Catalytic Shock Tube

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-0498
Justin J Urso, Cory Kinney, Michael Pierro, Christopher W Dennis, Jonathan McGaunn, Cooper Mills, Subith Vasu (University of Central Florida)

MAT-22 | In Person - Chesapeake A

Deformation and Damage in Metallic Structures due to High Speed Soft and Hard Particle Impacts

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2020
Riza Kaan Gonuleri, Ugur Can, Ibrahim Guven (Virginia Commonwealth University College of Engineering)

Simulating Hypervelocity Impacts to High-Density Polyethylene

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2021
Jacob Rogers, Paul T Mead, Justin Wilkerson, Thomas E Lacy (Texas A&M University), Neil Williams (US Army Engineer Research and Development Center)

Char Strength of Low-Density Thermal Protection Systems Materials

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2022
Ben M Rech (The University of Texas at Austin)

Comparison of Material Response Models for Low-Density Ablative Materials

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2023
Samantha Bernstein, Colin M Yee, Wei Li (The University of Texas at Austin), Mark E. Ewing (Northrop Grumman Corp), Joseph H Koo (The University of Texas at Austin)

CFD-Informed Rain Drop Impact Damage Predictions at Hypersonic Conditions

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2024
Riza Kaan Gonuleri (Virginia Commonwealth University College of Engineering), Manuel Viqueira-Moreira (University of Maryland at College Park), Joshua Richard Leigh, Ugur Can, Kyle Watson (Virginia Commonwealth University College of Engineering), Christoph Brehm (University of Maryland at College Park), Ibrahim Guven (Virginia Commonwealth University College of Engineering)

GNC-35 | In Person - Annapolis 2

Design of ReFEx Guidance: Trajectory Correction after Ascent
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1995
Jose Luis R Redondo Gutierrez, David Seelbinder, Stephan Theil (Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Bremen)
Nonsingular Impact Time Guidance and Control Co-design against a Stationary Target
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1996
Abhinav Sinha (The University of Texas at San Antonio), Shashi Ranjan Kumar (Indian Institute of Technology Bombay)
Data fusion-based Incremental Nonlinear Model Following Control Design for a Hypersonic Waverider Configuration
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1997
Johannes Autenrieb (Deutsches Zentrum fur Luft- und Raumfahrt eV)
L1 Adaptive Augmentation of an Incremental Nonlinear Dynamic Inversion Autopilot for Dual-Spin Guided Projectiles
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1998
Sofiane Pineau (Universite de Lorraine), Spilios Theodoulis (Technische Universiteit Delft), Michel Zasadzinski, Mohamed Boutayeb (Universite de Lorraine), Emmanuel Roussel (French-German Research Institute of Saint-Louis (ISL))

EXPL-16 | In Person - Chesapeake L

Searching for Life on Titan: The Undersea Retrieval of Titan Lake Extractions (TURTLE) Mission
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1968
Maximilian Adang (California Institute of Technology), Arielle Ainabe (McMaster University), Aditya Dave (Regents of the University of Minnesota), Adrian Dumitrescu (University of Southampton), Anna E Engle (Northern Arizona University), Sarah Lamm (University of Kansas College of Liberal Arts and Sciences), Connie Liou (Rutgers The State University of New Jersey), Samuel Y. W. Low (Stanford University), Corey McClelland (School of Visual Arts), Giuliana Miceli (University of Colorado Boulder), Palak Patel (Massachusetts Institute of Technology), Pedro Salazar (Iowa State University), Leanne L Su (University of Michigan), Jessica Todd (Massachusetts Institute of Technology), Adam Vigneron (Airbus Defence and Space GmbH), Brit Wylie (California Institute of Technology)
Daedalus Solar Probe: A Polar Exploration of Our Closest Star
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1969
Francesco H Latorre, Matthew Mader, Michael Pilipchuk, Ethan Roy, Alex Perry, Jadon Meyers, Nick Crawford, Sam Dzigiel, Sharif Mutasim, Justin Mansell, Rachana Agrawal, Youssef Nouredine (Purdue University System)
Model-Based Architecting Framework for Lunar Operations
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1970
Timothy Elrick, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology)

FD-64 | In Person - Chesapeake I

Structured Input-Output Analysis of Compressible Plane Couette Flow
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1984
Diganta Bhattacharjee, Talha Mushtaq (University of Minnesota Twin Cities), Peter J Seiler (University of Michigan), Maziar Hemati (University of Minnesota Twin Cities)
Global Mode Reconstruction using Phase-Consistent SPOD
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1985
Jonathan L Hill (Air Force Institute of Technology), Matthew P Borg (Air Force Research Laboratory), Mark F Reeder (Air Force Institute of Technology)
POD-based reduced-order models in translating coordinates
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1986
Charles E Tinney, Yingjun Zhao (The University of Texas at Austin)
Modal analysis for three-dimensional instability coupling mechanisms in turbulent wake flows over an airfoil
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1987
Het D. Patel, Chi-An Yeh (NC State University)

NDA-16 | In Person - Chesapeake B

Uncertainty Propagation of the Negative Spallart-Allmaras Turbulence Model Coefficients using Projection-based Reduced-Order Models
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2041
Elizabeth H Krath, Patrick Joseph Blonigan, Eric Parish (Sandia National Laboratories California)
Data Puncturing and Training Strategies for Cost-Efficient Surrogate Modeling of Airfoil Aerodynamics
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2042
Koushik Marepally, Nick Paternostro, Bumseok Lee, James D Baeder (University of Maryland at College Park)

(continued) NDA-16 | In Person - Chesapeake B

Data-Driven Surrogate Modeling Approaches for Parametric Prediction and Uncertainty Quantification of Fluid Flows

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2043
Weiming Ding, Petro Junior Milan, Vigor Yang (Georgia Institute of Technology)

Data-driven Surrogate Modeling using Deep Learning for Uncertainty Quantification of Random Fields

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2044
Pramudita Satria Palar, Rafael Stevenson, Cahya Amalinadhi, Kemas Zakaria, Lavi Rizki Zuhul (Institut Teknologi Bandung)

Robust Sensitivity Analysis of Complex Simulation Models subject to Noise

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2045
Andriy Prots, Lukas Schlüter, Matthias Voigt, Ronald Mailach (Technische Universität Dresden), Marcus Meyer (Rolls-Royce Deutschland Ltd und Co KG)

FD-62 | In Person - Chesapeake H

The Moving Discontinuous Galerkin Method with Interface Condition Enforcement for Robust Simulations of High-Speed Viscous Flows

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1975
Eric J Ching, Andrew D Kercher, Andrew T Corrigan (US Naval Research Laboratory)

Application of a Self-Adaptive Levenberg-Marquardt Algorithm to Solve the Moving Discontinuous Galerkin Method with Interface Conservation Enforcement System

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1976
Gianni Absillis, Hong Luo (NC State University), Robert Nourgaliev (Lawrence Livermore National Laboratory), Matthew Goodson, Giovanni Salazar (Corvid Technologies)

High-order Implicit Shock Tracking Boundary Conditions for Supersonic Flow over a Smoothed Rectangle

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1977
Tianci Huang, Matthew Joseph Zahr (University of Notre Dame)

Development of high order interpolation schemes for overset structured grid

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1978
Khalid F AlSubaie, Shereef A Sadek (King Saud University)

MAT-23 | In Person - Chesapeake 2

Reconstruction of Tricalcium Silicate Microstructures for Repeating Unit Cell Analysis

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2025
Vishnu Saseendran, Namiko Yamamoto, Peter Collins, Aleksandra Radlinska (The Pennsylvania State University), Evan J Pineda, Brett A Bednarczyk (NASA Glenn Research Center)

Modeling Elasticity of HCP Crystals Using a Nonlocal Lattice Particle Method

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2026
Di Liu (University of Kentucky)

Massively Multiscale Modeling using NASA Multiscale Analysis Tool through Partitioned Task-Parallel Approach

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2027
Ibrahim Kaleel, Trenton M Ricks (NASA Glenn Research Center), Peter A Gustafson (Western Michigan University), Evan J Pineda, Brett A Bednarczyk, Steven M Arnold (NASA Glenn Research Center)

Induction welding simulations of curvature-based thermoplastic composites

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2028
Harikrishnan Mohan, Florentius Johannes van Zanten, Darun Barazanchy (University of South Carolina)

Effects of Non Equilibrium Surface Boundary Conditions for Material Response in Atmospheric Reentry Simulations

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2029
Vincent Le Maout, Alessandro Munafò, Marco Panesi (University of Illinois Urbana-Champaign)

MAT-24 | In Person - Chesapeake 5

Damage Detection of CNT/CNC-reinforced Foam-cored Sandwich Composites by Acoustic Emission Tests under Flexural Load

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2030
Eyuphan Kucukkalfa (Istanbul Teknik Üniversitesi), Aliakbar Ghaderiaram (Technische Universiteit Delft Faculteit Civiele Techniek en Geowetenschappen), Kaan Yildiz (Istanbul Teknik Üniversitesi), Mohammad Fotouhi (Technische Universiteit Delft Faculteit Civiele Techniek en Geowetenschappen), Amir Asadi (Texas A&M University), Hulya Cebeci (Istanbul Teknik Üniversitesi)

(continued) MAT-24 | In Person - Chesapeake 5

Fabrication and Characterization of Carbon Nanotube/Bismaleimide Nanocomposite Laminates with Ultrahigh Nanofiber Volume Fraction

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2031
Chloe Curtis-Smith (University of Oxford), Marianna Rogers, Jingyao Dai, Erick Gonzalez, Carina Xiaochen Li, Yuying Lin, Ashley L Kaiser, Jeonyoon Lee, Brian L Wardle (Massachusetts Institute of Technology)

Multiscale Peridynamic Modeling of Carbon Nanotube-Based Composites

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2032
Kyle Watson, Riley Hall, Ibrahim Guven (Virginia Commonwealth University College of Engineering)

Fabrication and Characterization of Carbon Nanotube/Silicon Carbide Nanocomposite Laminates

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2033
Jingyao Dai, Luiz Acauan, Shaan Jagani, Palak Patel, Veera Panova, Brian L Wardle (Massachusetts Institute of Technology)

Cellulose Nanofiber Coated Carbon Fiber/Epoxy Composite with Higher Mechanical Strength

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2034
Siddharth Bhaganagar (Indiana University Purdue University Indianapolis), Pias Kumar Biswas (Purdue University), Mangilal Agarwal, Hamid Dalir (Indiana University Purdue University Indianapolis)

MAT-25/ICME-05/MDO-22/STR-36 | In Person - Chesapeake 8

Cellular Subgrain Features in Directed Energy Deposited Stainless Steel 316L: The influence of morphology on Mechanical Properties

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2035
Janith C Wann, Arzu Colak, Ajit Achuthan (Clarkson University)

Data-Driven Bayesian Model for Predicting Fatigue Crack Nucleation in Polycrystalline Ni-based Superalloys

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2036
Somnath Ghosh, George Weber, Maxwell Pinz (Johns Hopkins University)

Computationally Efficient Finite Element Models to Simulate Additive Manufacturing Process of Metals

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2037
Nipun Sandaruwan Wijesinghe, Ajit Achuthan (Clarkson University)

Multifidelity Robust Topology Optimization for Material Uncertainties with Digital Manufacturing

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2038
Jaeyub Hyun (University of California San Diego Jacobs School of Engineering), Anirban Chaudhuri, Karen E Willcox (The University of Texas at Austin Oden Institute for Computational Engineering and Sciences), Hyunsun A Kim (University of California San Diego Jacobs School of Engineering)

SD-29 | In Person - Chesapeake 1

Data-Driven Time-Varying Eigensystem Realization Algorithm With Data-Correlation

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2072
Damien Gueho, Matthew Brownell, Puneet Singla (The Pennsylvania State University)

An Integrated Nonlinear Coupled Multibody Aeroelastic Dynamic Simulation Framework for Next-Generation Flexible Aircraft Wing Design

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2073
Chi Wing Cheng, Alvaro Cea, Rafael Palacios (Imperial College London), Andrea Castrichini, Thomas Wilson (Airbus UK)

Spring-Based Approach for Rapid Modeling of Ejector-Store Interaction

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2074
Lap Nguyen, Glenn A Gebert (Lockheed Martin Corp)

Computational Analysis of Tuned Vibration Absorbers with Impact and Friction Contacts

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2075
Mihai Cimpuiaru, Sean Thomas Kelly, Bogdan Epureanu (University of Michigan)

PDL-13/PC-40 | In Person - Baltimore 2

Modeling Flame Speed Modification by Nanosecond Pulsed Discharges to Inform Experimental Design

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2056
Colin A Pavan, Carmen Guerra-Garcia (Massachusetts Institute of Technology)

(continued) PDL-13/PC-40 | In Person - Baltimore 2**Laser Induced Fluorescence and High Speed Imaging of Nanosecond-Pulsed Discharges for Application in Plasma Assisted Combustion in a Microchannel**

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2057

Madeline Vorenkamp, Andrey Starikovskiy (Princeton University), Christopher Klierer (Sandia National Laboratories California), Yiguang Ju (Princeton University)

Investigation and Modeling of Equilibrium Plasma for Spherical Flame Initiation and Measurements

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2058

James Shaffer, Omid Askari (West Virginia University)

Kinetics of non-equilibrium plasma in water vapor- and hydrocarbon-containing gaseous mixtures

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2059

Nickolay Aleksandrov (Moskovskij fiziko-tehniceskij institut nacional'nyj issledovatel'skij universitet), Eduard Bazelyan (AO Energeticeskij institut im G M Krzizanovskogo), Alexander Ponomarev (Nacional'nyj issledovatel'skij universitet Vyssaa skola ekonomiki), Andrey Starikovskiy (Princeton University)

Plasma Assisted Emission Control of Hydrocarbon Gas Flares: A 0D Feasibility Study

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2060

Praise Noah Johnson, Taresh Sanjeev Taneja, Suo Yang (University of Minnesota Twin Cities)

APA-60 | In Person - Potomac 5**A Wind Tunnel Rig to Study the External Fan Cowl Separation Experienced by Compact Nacelles in Windmilling Scenarios**

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1942

Kshitij Sabnis (University of Cambridge), Luca Boscagli, Avery Swarthout, Fernando Tejero Embuena (Cranfield University), Holger Babinsky (University of Cambridge), David MacManus (Cranfield University), Christopher Sheaf (Rolls-Royce plc)

Discernment of Wall Functions and Turbulence Statistics for Common Supersonic Retropropulsion Configurations

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1943

Emily Jewell, Charbel Farhat (Stanford University)

Comparison of Aerodynamic Analysis Tools Applied to a Propeller-Blown Wing

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1753

Vivek Ahuja (Research in Flight), Brandon L Litherland (NASA Langley Research Center)

APA-61 | In Person - Potomac 1**Improved Methods of Optimized Sparse Sensing for Yaw Angle Estimation and Surface Pressure Distribution Reconstruction Using Pressure-Sensitive Paint Data of Ground Vehicle**

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1944

Ryoma Inoba, Kazuki Uchida, Yuto Iwasaki, Takayuki Nagata, Yuta Ozawa, Keisuke Asai, Taku Nonomura (Tohoku Daigaku)

Modeling airfoil dynamic stall using State-Space Neural Networks

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1945

Luca Damiola, Jan Decuyper, Mark Runacres, Tim De Troyer (Vrije Universiteit Brussel)

System Identification and Control of a Circulation Control Airfoil for Gust Load Alleviation

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1946

Salvatore Asaro (Technische Universitat Braunschweig), Davide Cavaliere, Nicolas Fezans (Deutsches Zentrum fur Luft- und Raumfahrt eV), André Bauknecht (Technische Universitat Braunschweig)

Low Fidelity Modelling of the Nonlinear Aerodynamics of Spoilers

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1947

Alessandro Pontillo, Punsara Navaratna, Mark H Lowenberg, Djamel Rezgui, Jonathan E Cooper, Simon A Neild (University of Bristol)

HSABP-10 | In Person - National Harbor 4**RANS comparison of openfoam, star-ccm and US3D code of a supersonic cavity at Mach 2**

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2016

Zac Chapman, Thomas Nuese (South Dakota State University), David Peterson (Air Force Research Laboratory), Jeffrey J Doom (South Dakota State University)

Reduced order design space analysis of for ramjet engines with data mining techniques

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2017

Bora O Cakir, Ali Can Ispir, Francesco Civera, Bayindir H Saracoglu (Von Karman Institute For Fluid Dynamics)

Thermodynamic Cycle Analysis of an Ejector-Ramjet Propulsion System - Part 1

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2018

Derek Lastiwka, Artem Korobenko, W. Schuyler Hinman, Craig T Johansen (University of Calgary)

(continued) HSABP-10 | In Person - National Harbor 4

Exergy Analysis and Optimization of a Scramjet Engine

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2019
Francis A Centlivre, Mitch Wolff (Wright State University), Mark Hagenmaier, Timothy A Eymann (Air Force Research Laboratory), Jose A Camberos (Wright State University)

HIS-06 | In Person - Chesapeake 10

HPCMP CREATETM – The Remarkable Success of a DoD Software Factory

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2014
David R Sears, Scott A Morton (US Department of Defense)

Bell 8096 Agena: Unsung Hero of America’s First Decades in Space

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2015
Walter O Gordon (Niagara Frontier Section AIAA)

ASE-04 | In Person - Baltimore 5

Spacecraft materials degradation under space-simulated low Earth orbit (LEO) environment

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1956
Elena Plis (Georgia Tech Research Institute), Miles T. Bengtson (Air Force Research Laboratory Space Vehicles Directorate), Daniel P Engelhart (University of New Mexico), Gregory Badura (Georgia Tech Research Institute), Heather Cowardin (NASA Johnson Space Center), Ryan C Hoffmann, Alexey Sokolovskiy (Air Force Research Laboratory Space Vehicles Directorate), Jacqueline Reyes (The University of Texas at El Paso), Dale C Ferguson (Air Force Research Laboratory Space Vehicles Directorate), Jainisha Shah, Sydney Collman (Assurance Technology Corporation), Timothy Scott (DuPont de Nemours Inc)

Spacecraft Material Characterization Using Reflectance Spectra Extracted from RGB/IR Color Images

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1957
Jainisha Shah (Assurance Technology Corporation), Miles Thomas Bengtson (Air Force Research Laboratory), Elena Plis (Georgia Tech Research Institute), Ryan C Hoffmann, Dale C Ferguson (Air Force Research Laboratory Space Vehicles Directorate), Sydney Collman (Assurance Technology Corporation), Daniel P Engelhart (University of New Mexico College of Arts and Sciences), Gregory Badura (Georgia Tech Research Institute), Heather Cowardin (NASA Johnson Space Center), Timothy Scott (DuPont de Nemours Inc)

High-Fidelity Discontinuous Galerkin Method for Physics-Based Space Weather Modeling

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1958
Jordi Vila-Pérez, Cuong Nguyen, Jaime Peraire (Massachusetts Institute of Technology)

Invited Talk: Koki Ho

Thursday, 26 January 14:00 - 14:20 EDT (UTC-5)

EXPL-15 | In Person - National Harbor 7

A Spaceflight Logistics Approach to Modeling Novel Vehicle Concepts

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1964
Chloe Downs, Akshay Prasad, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology)

A Heuristic Method for Determining Payload-to-Vehicle Assignment & Launch Order for Multi-Vehicle Exploration Campaigns

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1965
Nicholas J Gollins, Masafumi Isaji, Yuri Shimane, Koki Ho (Georgia Institute of Technology College of Engineering)

Application of routing problems to space exploration missions

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1966
Jaemyung Ahn, Euihyeon Choi, DongUk Lee (Korea Advanced Institute of Science and Technology)

Analysis of the Business Case for an On-orbit Space Debris Recycling Facility

Thursday, 26 January 15:20 - 15:40 (UTC-5) | AIAA-2023-0071
Sonali Sinha Roy, Qian Shi, Cesare Guariniello, Daniel A DeLaurentis (Purdue University)

GNC-36 | In Person - Annapolis 1

Nonlinear Robust Control and Observation for Aeroelastic Launch Vehicles with Propellant Slosh in a Turbulent Atmosphere

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1999
Erwin Mooij, Xuerui Wang (Technische Universiteit Delft)

A Comparison of Linear Quadratic and Nonlinear Model Predictive Control Applied to Station Keeping of Satellites in Areostationary Mars Orbits

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2000
Robert D Halverson (University of Minnesota Twin Cities), Avishai Weiss (Mitsubishi Electric Research Laboratories), Ryan Caverly (University of Minnesota Twin Cities)

(continued) GNC-36 | In Person - Annapolis 1

Title: H-Infinity Sensor Fusion Technique for High Bandwidth Pointing Stabilization
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2001 Richard Y Chiang (The Aerospace Corporation)
Multi-spectral Light Curves For Attitude Estimation via Optimization
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-2002 Stephen R Gagnon, John L Crassidis (University at Buffalo)
Non-Rest to non-Rest Reference Slews for Agile Imaging Satellites With LQ-minimized Angular Momentum
Thursday, 26 January 15:20 - 15:40 (UTC-5) AIAA-2023-2173 Peter Zentgraf (Technische Hochschule Rosenheim)

SCS-11 | In Person - Woodrow Wilson C

Validation of Tailored Resonant Behavior for Multiscale Optimized Lattice Structures
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2064 Morgan D Nightingale, Ryan Murphy, Robert Hewson, Matthew J Santer (Imperial College London)
Dynamics of the Caltech SSPP deployable structures: structure–mechanism interaction and deployment envelope
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2065 Narravula Harshavardhan Reddy, Sergio Pellegrino (California Institute of Technology)
Launch Vibration Damping Using Slip in Pretensioned Coils
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2066 Alexander Wen, Sergio Pellegrino (California Institute of Technology)
Development and Testing of an Electromagnetic Platform for Microvibration Suppression
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-2067 Vladimir V Yotov (The University of Auckland), Alessandro Stabile (University of Surrey Surrey Space Centre), Guglielmo Aglietti (The University of Auckland), Guy Richardson (Surrey Satellite Technology Ltd), Peter Spanoudakis, Florent Cosandier, Philippe Schwab (Centre Suisse d'Electronique et de Microtechnique SA), Emilia Wegrzyn, Gianluca De Zanet (University of Surrey Surrey Space Centre), Geert Smet (European Space Agency)

FD-66 | In Person - Chesapeake D

Aerodynamic Active Flow Control using Hybrid, Momentum-Based Actuation
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1991 Michael DeSalvo, Ari Glezer (Georgia Institute of Technology)
DARPA CRANE Circulation Control using Arrays of Discrete Fluidic Actuator Jets
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1992 Bojan Vukasinovic, Ari Glezer, Robert B Funk (Georgia Institute of Technology)
DARPA CRANE: Hybrid Aerodynamic Control using Fluidic Actuation Coupled with Distributed Bleed
Thursday, 26 January 14:40 - 15:00 (UTC-5) 3779011</stron Michael DeSalvo, Ari Glezer (Georgia Institute of Technology)
Experimental investigation of the effectiveness of Coanda reaction surface geometries for Super-Critical Circulation-Control
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1993 Roland Penty Geraets, Bill Crowther, Mark K Quinn, Sam Weigert, Thomas R Shearwood, Mostafa Nabawy (The University of Manchester Faculty of Science and Engineering), Matt Forster, Clyde Warsop, Lucia Axani (BAE Systems Plc)
CFD Investigation of the Effectiveness of Coanda Reaction Surface Geometries for Super-Critical Circulation Control
Thursday, 26 January 15:20 - 15:40 (UTC-5) AIAA-2023-1994 Matt Forster, Lucia Axani, Clyde Warsop (BAE Systems Plc)

APA-63 | In Person - Potomac 3

Numerical and experimental investigation of different Riblet layouts on a Stratos 716 X business jet
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1952 Peter Adrian Leidl (bionic surface technologies Gmbh), John Smoker (Stratos Aircraft), Mikel Lucas Garcia de Albeniz, Andreas Flanschger (bionic surface technologies Gmbh)
Wind Tunnel Test Results for Staggered 3-D Riblets
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1953 Paul D McClure (Lockheed Martin Corp)
Drag Reduction of a Microfiber-Coated Cylinder as a Function of Reynolds Number and Surface Density
Thursday, 26 January 14:40 - 15:00 (UTC-5) 3773967</stron Mitsugu Hasegawa, Yi-Chung Chen, Hirotaka Sakaue (University of Notre Dame)

(continued) APA-63 | In Person - Potomac 3

Viscous drag reduction performance of micro-machined riblet surfaces with geometric defects to simulate surface damage

Thursday, 26 January 15:00 - 15:20 (UTC-5) | 3776131</stron
Frank Austin Mier, Jonathan W Naughton (University of Wyoming)

GT-09 | In Person - Baltimore 4

Strut Interference with Flow around Slanted Cylinder Levitated by Magnetic Suspension and Balance System

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2011
Kodai Tashiro (Tohoku Daigaku), Sho Yokota, Yuta Ozawa, Keisuke Asai, Taku Nonomura ()

Measurement of Aerodynamic Characteristics of Square Cylinders with Low Fineness Ratio Using 1-m Magnetic Suspension and Balance System

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2012
Hiroyuki Okuizumi, Rintaro Makino, Hideo Sawada, Yasufumi Konishi, Shigeru Obayashi (Tohoku Daigaku Ryutai Kagaku Kenkyujo), Taku Nonomura (Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu)

Time-efficient Windtunnel test method for Obtaining Dynamic Aircraft Characteristics Using Magnetic Suspension and Balance System

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2013
Hiroki Sugiura (Uchu Koku Kenkyu Kaihatsu Kiko), Daiki Kai, Asei Tezuka (Waseda Daigaku Riko Gakujutsuin)

APA-59 | In Person - Potomac 2

Mission Profiles for the SUSAN Electrofan Concept

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1938
Casey L Denham (NASA Langley Research Center), Timothy Chau (Science and Technology Corporation), Wes Ryan (NASA Ames Research Center), Ralph Jansen (NASA John H Glenn Research Center)

Structural Requirements for Design and Analysis of 25% Scale Subsonic Single Aft Engine (SUSAN) Research Aircraft

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-1939
Lilia Miller, Ralph Jansen (NASA John H Glenn Research Center)

Thermal Requirements for Design and Analysis of Subsonic Single Aft Engine (SUSAN) Research Aircraft

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-1940
Erik J Stalcup (NASA John H Glenn Research Center), Nicole Heersema (NASA Armstrong Flight Research Center)

Market analysis of the Subsonic Aft Engine (SUSAN) Transport Aircraft Concept

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-1941
Jacob M Wishart, Kendall Mahavier (Volpe Center), Ralph Jansen (NASA John H Glenn Research Center)

PC-38 | In Person - National Harbor 8

Mimicking gas-turbine spray combustion in a constant-volume premixed combustion vessel

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2049
Lyle M Pickett, Julien Manin, Francesco Di Sabatino, Tuan Nguyen (Sandia National Laboratories California), Sanghoon Kook (University of New South Wales)

Atomization Performance of a Simplex Spray through X-ray Scattering Tomography

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2047
Brandon Sforzo, Chi Young Moon, Qian Peng, Jan Ilavsky, Christopher F. Powell (Argonne National Laboratory)

Influence of an Underexpanded Shock Train on Spray Distribution Statistics

Thursday, 26 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2048
Steven G Tuttle, Christopher B Reuter (Naval Research Laboratory Chemistry Division)

Single-Hole Atomizer (SHA) Research to Study Spray Flame Dynamics and Soot Formation for Aero-engine Combustion

Thursday, 26 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2046
Francesco Di Sabatino, Julien Manin, Kevin Wan (Sandia National Laboratories California)

SD-28 | In Person - Chesapeake 3

A Time-Varying Subspace Method for Shape Estimation of a Flexible Spacecraft Membrane

Thursday, 26 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2068
Matthew Brownell (The Pennsylvania State University), Andrew J Sinclair (Air Force Research Laboratory), Puneet Singla (The Pennsylvania State University)

Using Distributed Fiber-optic Strain Sensing to Estimate Generalized Modal Coordinates from Flight-test Data

Thursday, 26 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2069
Jeffrey A Ouellette, Matthew J. Boucher, Peter Suh (NASA Armstrong Flight Research Center)

(continued) SD-28 | In Person - Chesapeake 3

Identification of modal parameters in rotating structures using Stochastic Modal Appropriation (SMA)
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2070
Giuliano Coppotelli, Gabriele Muto (Universita degli Studi di Roma La Sapienza), Maher Abdelghani (Universite de Sousse)
Safe Flutter Flight Testing of an Unmanned Aerial Vehicle Utilizing Parametric Flutter Margin
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-2071
Ross Heidersbach, Dhuree Seth, Matthew McCrink (The Ohio State University), Moti Karpel (Technion Israel Institute of Technology)

TP-19 | In Person - Azalea 1

Rotational and Vibrational Temperature Measurements of CN X²Σ⁺ Behind Shock Waves using Ultrafast-Laser-Absorption Spectroscopy in the UV
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-2087
Vishnu Radhakrishna, Ryan J Tancin, Christopher S Goldenstein (Purdue University)
Method of Characteristics Modeling of Non-Equilibrium Flow in an Impulse Facility
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-2088
Ananthkumar Jayamani, Frank K Lu (The University of Texas at Arlington)
Modeling of Nitric Oxide Vibrational Level Populations Using an Overlay Approach for Emission and Absorption Spectra
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-2089
Shubham Thirani, Irmak Taylan Karpuzcu, Deborah A Levin (University of Illinois Urbana-Champaign)
Freestream Characterization of Hypersonic Wind Tunnels by Combining Measurements and Simulation
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-2090
Thomas Gross, Thomas E Schwartzentruher (University of Minnesota Twin Cities)

FD-63 | In Person - Chesapeake E

Simulations of a Bell-Shaped Span-Loaded Swept Wing
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1979
Patrick R Hammer, Daniel J Garmann (Air Force Research Laboratory)
Edge Curvature Effects on the Wake of a Simulated Transport Aircraft Fuselage
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1980
Chitrarth Prasad (The Ohio State University), Daniel J Garmann (Air Force Research Laboratory), Datta V Gaitonde (The Ohio State University)
Scaling Characteristics of Ground Vortices in a Nacelle Inlet Flow Field
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1981
Derek A Nichols, Bojan Vukasinovic, Ari Glezer (Georgia Institute of Technology)
Mean Flow Topology of the Rounded Afterbody in Compressible Flow
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1983
Rhylan A Huss, Fernando Zigunov, Prabu Sellappan, Farrukh S Alvi (Florida State University)

AFM-18/GNC-34/MST-19 | In Person - Potomac 6

The AAAX Vision to Accelerate Autonomy Test & Evaluation using the X-62A VISTA
Thursday, 26 January 14:00 - 14:20 (UTC-5) AIAA-2023-1925
Ronald S Picard, Matthew Niemiec (US Department of the Air Force)
X-62 VISTA System for the Autonomous Control of the Simulation Design and Implementation
Thursday, 26 January 14:20 - 14:40 (UTC-5) AIAA-2023-1926
Anthony Schiavone, Paul Babala, Luke Hartwig (Lockheed Martin Corporation Aerospace and Defense), M Christopher Cotting (U.S. Air Force Test Pilot School)
Ground and Flight Testing the New VISTA Simulation System (VSS)
Thursday, 26 January 14:40 - 15:00 (UTC-5) AIAA-2023-1927
Patrick J Haus (Calspan Corp)
X-62 VISTA Simulation and Autonomy Flight Testing
Thursday, 26 January 15:00 - 15:20 (UTC-5) AIAA-2023-1928
M Christopher Cotting, Shawn S Stephens, James Cole, William Gray (U.S. Air Force Test Pilot School), Luke Hartwig, Daniel J Caraway, Que Harris, Anthony Schiavone, Paul Babala (Lockheed Martin Corporation Aerospace and Defense), Ronald Picard (Air Force Research Laboratory)

14:00 | Technical Workshop

EAT-13 In Person - Camellia 1
EP-12 In Person - Annapolis 4

16:00 | Technical Panel

16:00 | Technical Paper Session

Friday, 27 January

09:30 | Technical Panel

EXPL-17 In Person - National Harbor 7
EDU-05 In Person - Chesapeake 9

09:30 | Technical Paper Session

IS-24 In Person - Azalea 3
Reinforcement Learning-based Nonlinear Disturbance Observer for UAV with Parametric Uncertainty and Unmodeled Dynamics
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2357
Dongwoo Lee, Hyungjoo Ahn, Jaeho Lee, Hyochoong Bang (Korea Advanced Institute of Science and Technology)
Resilience-based Optimization of Investigative Satellite Swarm via an Artificial Honeybee Colony Algorithm
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2358
Alec C Nichols (The University of Alabama), Sean Phillips, Alexander A Soderlund (Air Force Research Laboratory Space Vehicles Directorate)
Potential of Hybrid Neural Network Local Path Planner for small UAV in Urban Environments
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2359
Andreas Thoma, Luc Stiemer, Carsten Braun (FH Aachen), Alex Fisher, Alessandro G.M. Gardi (RMIT University STEM College)
GT-11/AMT-27 In Person - Baltimore 4
Development of kHz-rate CO Laser-Induced Fluorescence in High Speed Flows
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2336
Neil Blackwell, Austin M. Webb, Christopher Crabtree, Mikhail Slipchenko, Terrence R Meyer, Joseph S Jewell (Purdue University)
Tagging Velocimetry in the Stevens Shock Tunnel
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2337
Ben A. Segall, David Shekhtman, Ahsan Hameed, James H. Chen, Nick J Parziale (Stevens Institute of Technology Charles V Schaefer Jr School of Engineering and Science)
Advanced Optical Diagnostics in an Axis-Symmetric Mach 5 Glass Blown Nozzle
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2338
Charles Fabijanic, Jordi Esteveadeordal, William Refling (North Dakota State University)
A Single-Piece Wind Tunnel Balance with a Universal Metric End
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2339
Devin E Burns, Peter A Parker (NASA Langley Research Center)
AFM-20 In Person - Woodrow Wilson B
Application of Framework for Estimating Performance and Associated Uncertainty for Modified Aircraft Configurations Using NASA's X-57 Maxwell
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2249
Casey L Denham (NASA Langley Research Center), Mayuresh Patil (Georgia Institute of Technology), Christopher J Roy (Virginia Polytechnic Institute and State University), Natalia Alexandrov (NASA Langley Research Center)
Evaluation of the MachLine Subsonic-Supersonic Panel Code With Experimental Results
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2250
Ammon M Houser, Cory D Goates, Douglas F Hunsaker (Utah State University)
Evaluation of Response Surface Experiment Designs for Distributed Propulsion Aircraft Aero-Propulsive Modeling
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2251
Benjamin M Simmons (NASA Langley Research Center)
Wind Estimation using an H ∞ Filter with Fixed-Wing Aircraft Flight Test Results
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2252
Kenneth Gahan, Jeremy W Hopwood, Craig A Woolsey (Virginia Polytechnic Institute and State University)
MDO-26 In Person - Chesapeake 6
Multidisciplinary Design Analysis and Optimization of a Hypersonic Inflatable Aerodynamic Decelerator
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2364
Hayden V Dean, Bradford E Robertson, Dimitri N Mavris (Georgia Institute of Technology)

(continued) MDO-26 | In Person - Chesapeake 6

A Multidisciplinary Analysis Framework for the Sizing and Synthesis of Hypersonic Aerial Systems

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2365

Kenneth Decker, Dimitri N Mavris (Georgia Institute of Technology)

Multi-fidelity Bayesian optimization strategy applied to Overall Drone Design

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2366

Rémy Charayron, Thierry Lefebvre, Nathalie Bartoli (ONERA Toulouse), Joseph Morlier (ISAE-SUPAERO)

APA-73 | In Person - Potomac 4

Performance and Validation of a Segregated Pressure-based Solver for Computations of Low and High-Speed Compressible Flows

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2274

Ashutosh Pandey (Simerics, Inc.)

Assessment of Using Ideal Gas for Predicting Boattail Flow at Cryogenic Temperatures

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2275

Jan-Renee Carlson (NASA Headquarters)

Transonic Buffet Simulation using Harmonic Balance Method

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2276

Andrea Petrocchi, George N Barakos (University of Glasgow College of Science and Engineering)

Curvature-Based Adaptation Using Gradient Descent Optimization Applied to High-Speed Flows

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2277

Arjun J Vedam, William Engblom (Embry-Riddle Aeronautical University)

CFD-Based Kriging Surrogate Models Compared to Axisymmetric Missile Concept From Mach 0.60 to 3.95

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2278

Zachary D. Lawless, Emily R Dreyer, Clayton Smith (Sandia National Laboratories)

OPS-04 | In Person - Chesapeake 12

Impact of Intra-class Variance on YOLOv5 Model Performance for Autonomous Navigation around Non-Cooperative Targets

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2374

Trupti Mahendrakar, Monty N Attzs, Ashley L Tisaranni, Josseanne M Duarte (Florida Institute of Technology College of Engineering), Ryan Taylor White (Florida Institute of Technology), Markus Wilde (Florida Institute of Technology College of Engineering)

A Combined Machine Learning and Physics-Based Tool for Anomaly Identification in Propulsion Systems

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2375

Samuel R Darr, Sean Engelstad, Talbot Knighton, Matthew E Taliaferro, Vinay K Goyal (The Aerospace Corporation)

Application of Reinforcement Learning Agents to Space Habitat Resource Management

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2376

Matthew R Rines, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)

AMT-25/FD-72 | In Person - Camellia 2

Investigation of Thermographic Phosphors Properties for High-Speed Aerodynamics

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2258

Yasuhiro Egami, Yushi Matsumura, Aoto Shibata (Aichi Kogyo Daigaku), Hirotaka Sakaue (University of Notre Dame)

Single-Component Average Velocity Profiles in the Wake of the Orion Crew Capsule at the National Transonic Facility

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2259

Jonathan E Retter, Olivia K Tyrrell (National Institute of Aerospace), Bryce Moran, James Montgomery, William Dressler (Jacobs Technology, Inc), Karen L Bibb, Greg J Brauckmann, Daniel Reese, Paul M Danehy (NASA Langley Research Center)

Development of a Micro-Pitot Traverse for Pressure Measurements in the Boeing-AFOSR Mach 6 Quiet Tunnel

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2260

Samuel Overpeck (Purdue University), Emma Farnan, John Benjamin Middlebrooks, Eric H Matlis (University of Notre Dame), Joseph S Jewell (Purdue University)

The Use of Pitot Tube on IRT Boundary Layer Analysis Validation

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2261

Ryan Tsao, Nicholas Nomikos, Jack Furey (RMIT University STEM College), Henry Ng, Pier Marzocca (RMIT University Sir Lawrence Wackett Defence and Aerospace Centre)

STR-43 In Person - Chesapeake 4	
Buckling of Metamaterial-Based Cylindrical Shells under Axial Compression	
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2419	
Mitansh Sharad Doshi, Xin Ning (The Pennsylvania State University)	
Buckling tolerance design of aircraft fuselage using carbon fiber reinforced thermoplastic (CFRTP)	
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2420	
Haruka Kaneda (Tohoku Daigaku)	
Weight-Effect of Buckled Composite Stiffened Panels Under Static Compression	
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2421	
Vijay Goyal (Lockheed Martin Aeronautics Company), Jacob N Gagliano (University of Michigan), Austin Pennington (Lockheed Martin Aeronautics Company), Shiyao Lin, Anthony M Waas (University of Michigan)	
INPSI-25 In Person - National Harbor 12	
Data-driven Modelling Tradeoffs to Characterize the Distortion Profile of an APU Inlet	
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2355	
Evan H Bond, Nicole L Key (Purdue University)	
Design of a high-speed intake distortion simulator for propulsion integration research	
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2356	
Matteo Migliorini, Artur Szymanski, Pavlos K Zachos, David MacManus (Cranfield University Cranfield School of Aerospace Transport and Manufacturing), Peter G Martin (Defence Science and Technology Laboratory)	
Design Optimization of a Fan Blade under Boundary Layer Ingestion Flow	
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-0503	
Akiva R Wernick, Jen-Ping Chen, James Giuliani (The Ohio State University)	
GTE-34 In Person - National Harbor 11	
Trajectory Modeling of Liquid Jets in Crossflow with Solid Obstructions	
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2340	
Charles R Clark, Michael E Tonarely, Tommy Genova, Kareem A Ahmed (University of Central Florida)	
Assessment of mixtures of iso-pentanol and Jet A-1 for use in aviation gas turbine engines	
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2341	
Abdallah Abu Saleh, Spiridon Siouris, Kevin Hughes, Ruoyang Yuan, Mohamed Pourkashanian (The University of Sheffield)	
Splash Plate Design for Fuel Injector Flow-Independence in a Vitiated Crossflow	
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2342	
Michael E Tonarely, Charles R Clark, Kareem A Ahmed (University of Central Florida)	
Effect of Catalytic Surface on Oxidation of Methane in a High-Pressure Shock Tube	
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2343	
Justin J Urso, Cory Kinney, Michael Pierro, Jonathan McGaunn, Christopher W Dennis, Anthony C Terracciano, Subith Vasu (University of Central Florida)	
FD-73 In Person - Chesapeake H	
Residual-Based Time-Step Control for High-Order Discretizations	
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2294	
Krzysztof Fidkowski (University of Michigan)	
Application of a Jacobian-Free Newton-Krylov Method to the Simulation of Hypersonic Flows	
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2295	
Kyle A Damm, Nicholas N Gibbons, Peter A Jacobs, Rowan Gollan (The University of Queensland Centre for Hypersonics)	
Combined continuation methods for robust CFD Newton solvers	
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2296	
Josh L Anibal, Sabet Seraj, Anil Yildirim, Joaquim R. R. A. Martins (University of Michigan)	
GT-10 In Person - Baltimore 3	
Development of Small Scale Arc-jet Facility OPG1	
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2331	
Tobias Hermann, Eric Won Keun Chang, Joelle Schaefer, Chinmay Joglekar (University of Oxford), Hannah Boehrk (Baden-Wuerttemberg Cooperative State University (DHBW))	

(continued) GT-10 | In Person - Baltimore 3

Scramjet Inflow Characterization Based on Thermodynamic Analysis of Arc-Heater Plenum

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2332
Isabella Gessman, Shruti Ghanekar, Gyu Sub Lee, Keunsoo Kim, Nozomu Kato (University of Illinois Urbana-Champaign), Jihyung Yoo (Hanyang University), Tonghun Lee (University of Illinois Urbana-Champaign)

Measurements of Temperature and Enthalpy in NASA Ames 60-MW Arcjet using Atomic Oxygen and Atomic Nitrogen Absorption

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2333
Peter M Finch, Zev Noach Granowitz, Christopher Lyle Strand (Stanford University), Megan E. MacDonald (NASA Ames Research Center), Ronald K Hanson (Stanford University)

Integration of Arc-jet in Impulse Facility for Hypervelocity Aerothermal Testing with Ablation

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2334
Eric Won Keun Chang, Chinmay Joglekar, Matthew McGilvray, Tobias Hermann (University of Oxford)

Assessment of Arcjet Radiation by Mass Addition

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2335
Christian Andreas Dürnhofer (Universitat Stuttgart), Arne Meindl (Max Planck Institute for Plasma Physics), Martin F. Eberhart, Stefan Loehle (Universitat Stuttgart)

SD-32 | In Person - Chesapeake 5

On the Determination of Harmonic Propeller Loads

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2404
Felix Möhren, Ole Bergmann, Frank Janser, Carsten Braun (FH Aachen)

Advanced Modeling and Dynamic Stability Analysis of the Aerodynamic Control Surfaces of CALLISTO

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2405
Lale Evrim Briese, Thiemo M Kier, Ivaylo Petkov, Jens Windelberg, Lars Heinrich, Sven Krummen (Deutsches Zentrum für Luft- und Raumfahrt DLR)

Non-linear Aeroelastic Capabilities in NeoCASS Suite

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2406
Francesco Toffol, Nicola Fonzi, Sergio Ricci (Politecnico di Milano)

Coupled Aeroelasticity and Flight Dynamics of Active Morphing Aircraft

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2407
Kensuke Soneda (Tokyo Daigaku), Natsuki Tsushima (Uchu Koku Kenkyu Kaihatsu Kiko), Tomohiro Yokozeeki, Taro Imamura (Tokyo Daigaku)

GNC-46/AFM-21 | In Person - Annapolis 3

Magnetic Suspension Wind Tunnel Reconstruction Using an Extended Kalman Filter Framework

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2322
Chris D Karlgaard, Matthew Toniolo (Analytical Mechanics Associates, Inc.), Soumyo Dutta (NASA Langley Research Center)

Multi-State Measurement Processing with Factorized Stochastic Cloning

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2323
William N Fife (Texas A&M University)

Error State Filtering for Atmospheric Landing Using Air Data Systems

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2324
William N Fife (Texas A&M University)

Entry, Descent, and Landing GN&C System Evaluation via Cable-Driven Emulation Robotics

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2325
Davis W Adams, Teming Tse, Sean Downs, Ronald R Sostaric, Joshua Sooknanan, Derek Bankieris, Sarah O'Meara (NASA Johnson Space Center), Caleb Peck, Manoranjan Majji (Texas A&M University), Hector Li Sanchez, Ebrahim Mohammadi, Ringnyu Bunju Antoinette, James Walton, Chris Owens (Astrobotic Technology)

Nonlinear Multiplicative Smoothing Applied to Trajectory Recovery for GPS/INS-Aided Navigation

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2326
Davis W Adams, Caleb Peck, Manoranjan Majji (Texas A&M University)

APA-78/SD-31 | In Person - Chesapeake 7

Aerothermoelastic Experimentation and Modeling Overview

Friday, 27 January 09:30 - 09:50 (UTC-5) | 3772077</stron
Stephen M Spottswood (Air Force Research Laboratory)

(continued) APA-78/SD-31 | In Person - Chesapeake 7

Test Article Design for FTSI Experiments at AEDC VKF Tunnel C

Friday, 27 January 09:50 - 10:10 (UTC-5) | 3775923</stron
Ricardo Perez (Air Force Research Laboratory), Kirk R Brouwer (ARCTOS Technology Solutions), Stephen M Spottswood (Air Force Research Laboratory)

Multi-Scale Modeling of Localized Features of Interest in Built-Up Shell Structures

Friday, 27 January 10:10 - 10:30 (UTC-5) | 3776381</stron
Patrick J O'Hara (Air Force Research Laboratory)

PGC-15 | In Person - National Harbor 3

Imaging Exhaust Flow of Radial RDE using Rainbow Schlieren Deflectometry

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2391
Apurav Gupta, Dalton Langner, Robert Miller, Sean Sawaya, Ajay K Agrawal (The University of Alabama)

Experimental Testing of a Single Airstream Centerbodiless Rotating Detonation Engine with a Hollow Core

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2392
Regan Hencel, John Hoke (Innovative Scientific Solutions, Inc.), Matthew Fotia, Stephen Alexander Schumaker (Air Force Research Laboratory)

Interferometric visualization of detonation waves inside a pressure gain combustion channel at low-mass flow rates

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2393
Toshiharu Mizukaki, Faming Wang (Tokai Daigaku)

Survey of Machine Learning Based RDE Diagnostics: Evaluation and Comparison for Broad Application in Experimental Facilities

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2394
Kristyn Johnson, Donald H Ferguson (National Energy Technology Laboratory Morgantown), Andrew C Nix (West Virginia University)

Cellular Properties of Unstable Detonations from Mixtures of Ethylene with Nitrous Oxide

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2395
Mitchell D Hageman, Michael S Knadler (US Air Force Academy)

GRE-02 | In Person - National Harbor 5

Experimental Investigation of Hydrogen Storage Strategies with Aerogel at Cryogenic Temperatures

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2327
Yakym Khlyapov, Erik Fernandez, Marcel Otto, Adil Riahi, Jayanta Kapat (University of Central Florida)

Cost estimation of the use of low-carbon fuels in prospective scenarios for air transport

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2328
Antoine Salgas, Thomas Planès, Scott Delbecq, Florian Simatos (ISAE-SUPAERO), Gilles Lafforgue (TBS Education)

A Comparison of the Performance of a Data-Driven Surrogate Model of a Dehumidifier with Mathematical Model of Humidification-Dehumidification System

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2329
Mahyar Abedi, Xu Tan, James F. Klausner, Michael S. Murillo, Andre Benard (Michigan State University)

Parameter Identification of a Reduced-Order Model for the Reconfigurable Ducted Turbine Array Concept

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2330
Nazim Erol, Xin Shan, Onur Bilgen (Rutgers The State University of New Jersey)

ACD-35 | In Person - Woodrow Wilson A

Hypersonic Aerial Gunnery: New Missions, Aircraft Design Opportunities

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2246
Ronald M Barrett-Gonzalez, Nathan Wolf (University of Kansas School of Engineering)

Maneuvering Capabilities of Hypersonic Airframes

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2247
Timothy T Takahashi (Arizona State University Ira A Fulton Schools of Engineering)

Hypersonic Aircraft Performance Limitations Arising from Aerodynamic Control Limits

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2248
Timothy T Takahashi, Jack A Griffin (Arizona State University)

HSABP-12 | In Person - National Harbor 4

Performance Evaluation of an Internal Osculating Waverider Inlet

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2352
Mark E Noftz, Andrew J Shuck, Joseph S Jewell, Jonathan Poggie (Purdue University), Andrew Bustard, Thomas J Juliano (University of Notre Dame), Nicholas J Bisek (Air Force Research Laboratory)

Air Ionization for Air-Breathing Plasma Thruster

Friday, 27 January 09:50 - 10:10 (UTC-5) | 3774785</stron
Anmol Taploo, Li Lin, Michael Keidar (The George Washington University)

FD-76 | In Person - Chesapeake K

The Near-Wake of Super-Critical Discrete Roughness Elements on Swept Wings

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2306
Aaron Sequeira, Giulia Zoppini, Theodoros Michelis, Daniele Ragni, Marios Kotsonis (Technische Universiteit Delft)

Machine-Learning-Based Transition Prediction for Hypersonic Boundary Layers with Crossflow

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2307
Bryan Barraza, Andreas Gross (New Mexico State University), Anthony P Haas, Christoph Hader, Hermann F Fasel (The University of Arizona)

Investigation of Cross-Flow and Laminar Separation Using Infrared Thermography

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2308
Alek Cotnoir, David Borgmann, Jesse C Little (The University of Arizona)

A Study on the Impacts in the Numerical Solution of Transition Empirical Correlations Including Crossflow Effects

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2309
Aline R. S. Righi (Instituto Tecnológico de Aeronautica), Gustavo L. O. Halila (Embraer SA), João Luiz F Azevedo (Instituto de Aeronautica e Espaço)

AMT-26 | In Person - Magnolia 3

Fabrication and Characterization of a Large-array Hot-film Sensor for Detection of Separated Flow

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2262
Sean J Wang, Mark A Miller (The Pennsylvania State University)

Experimental Investigation of Atomic Layer Thermopile Heat-Flux Sensors in a Shock Tube

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2263
Jan-Erik Brune, Christian Mundt (Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik)

Experimental Measurement of Martian Real-Gas Aerodynamics Using a Two-Stage Light Gas Gun

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2264
Kyosuke Itabashi (Tokyo Daigaku), Satoshi Nomura, Masahito Mizuno (Uchu Koku Kenkyu Kaihatsu Kiko), Tatsuru Ishikawa (Shizuoka Daigaku), Hiroki Takayanagi, Kazuhisa Fujita (Uchu Koku Kenkyu Kaihatsu Kiko)

ATLAS: Assistive Tool for seLf-Aligning Schlieren

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2265
Nicholas Mejia, Bryan E Schmidt (Case Western Reserve University)

Extended-Phase-Consistent-Dynamic-Mode-Decomposition-based Density Reconstruction of Schlieren Images in Low-Density Wind Tunnel Tests

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2266
Tsuyoshi Shigeta, Takayuki Nagata, Taku Nonomura (Tohoku Daigaku)

APA-74 | In Person - Potomac 2

Effect of Turbulence Intensity on Time-Averaged Aerodynamics of NACA0012 Wing at Low Reynolds Numbers

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2279
Masataka Kase (National Defense Academy of Japan), Makoto Mizoguchi, Hajime Itoh (National Defense Academy of Japan Department of Aerospace Science)

Utilizing a Spalart-Allmaras Turbulence Model Correction with a Transition Model

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2280
Christopher J Axten, Mark D Maughmer (The Pennsylvania State University)

PC-47 | In Person - National Harbor 8

Modes of Laser Spark Ignition of a Model Rocket Combustor

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2377
Ryan Strelau, Mark Frederick, Will C.B. Senior, Rohan Gejji, Carson D Slabaugh (Purdue University)

(continued) PC-47 | In Person - National Harbor 8

High Pressure Ignition Study of Methane and CO2 near 200 bar in a Shock Tube

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2379
Cory Kinney, Michael Pierro, Christopher W Dennis, Jonathan McGaunn, Justin J Urso, Sam Klopp, Subith Vasu (University of Central Florida)

Assessment of impurities effect on methane/natural gas ignition at high pressure

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2378
Jessica Baker, Ramees Khaleel Rahman, Rosa Olivera, Subith Vasu (University of Central Florida)

Measurement and Kinetics Prediction of Undiluted Methane-Oxygen Laminar Flame Speeds

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2380
Mattias A Turner, Eric L Petersen (Texas A&M University)

HR-05 | In Person - National Harbor 13

Necessary Condition of Regression Mode in Axial-injection End-burning Hybrid Rockets

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2347
Mai Fukada, Sho Suzuki, Hiroki Hayasaka, Hironobu Maebayashi, Seong Mungyu, Yownin Albert M. Leung, Harunori Nagata (Hokkaido Daigaku Kogakubu Daigakuin Kogakuin Kogaku Kenkyuin)

Numerical Model for the Prediction of the Regression Rate in Hybrid Rocket Kick-Motors Working with Nitrous Oxide

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2348
Giuseppe Gallo, Landon T Kamps, Shota Hirai, Carmine Carmicino, Harunori Nagata (Hokkaido Daigaku Kogakubu Daigakuin Kogakuin Kogaku Kenkyuin)

Multi-disciplinary Optimization of Single-stage Hybrid Rocket with Swirl Injection for Lunar Ascent

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2349
Paolo Zolla, Rodrigo Rosa, Mario Tindaro Migliorino, Daniele Bianchi (Universita degli Studi di Roma La Sapienza)

Numerical Simulations of a Paraffin-Hydrogen Peroxide Hybrid Rocket with Swirl Injection

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2350
Mario Tindaro Migliorino, Marco Fabiani, Daniele Bianchi, Francesco Nasuti (Universita degli Studi di Roma La Sapienza), Francesco Barato (Universita degli Studi di Padova), Nicolas Bellomo (Technology for Propulsion and Innovation), Daniele Pavarin (Universita degli Studi di Padova), Simone Pizzurro, Marco Pizzarelli, Rocco Carmine Pellegrini, Enrico Cavallini (Agenzia Spaziale Italiana)

Numerical and Experimental Analysis of a Paraffin-based 1000 N Thrust Class Hybrid Rocket including Nozzle Erosion

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2351
Mario Tindaro Migliorino, Giorgio Gubernari, Daniele Bianchi, Francesco Nasuti (Universita degli Studi di Roma La Sapienza), Daniele Cardillo, Francesco Battista (Centro Italiano Ricerche Aerospaziali), Simone Pizzurro, Marco Pizzarelli, Rocco Carmine Pellegrini, Enrico Cavallini (Agenzia Spaziale Italiana)

GTE-35/MDO-25 | In Person - National Harbor 6

Sensitivity of selecting training data for machine learning to predict engine performance

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2344
Jin-sol Jung, Changmin Son, Eric Bae, G. Geoffrey Vining (Virginia Polytechnic Institute and State University)

Reverse engineering EEE transonic compressor fan blade

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2345
Bharadwaj Dogga, Mark G Turner (University of Cincinnati)

Techno-economic Evaluation of the sCO₂ Waste Heat Recovery System for Aircraft Engines

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2346
Ladislav Vesely, Jayanta Kapat (University of Central Florida), Cleverson Bringhenti, Jesuino Takachi Tomita (Instituto Tecnologico de Aeronautica)

SCS-12/AS-35 | In Person - National Harbor 2

Strain Measurement in Coilable Thin Composite Shells with Embedded Fiber Bragg Grating Sensors

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2399
Brayden Aller, Sergio Pellegrino (California Institute of Technology), Nathan Kinkaid, Juan Mejia-Ariza, Richard Otis (Jet Propulsion Laboratory), Patrick Chan, Francisco Pena (NASA Armstrong Flight Research Center)

A Multifunctional Bistable Ultrathin Composite Boom for In-Space Monitoring of Deployment Dynamics

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2400
Yao Yao, Alexander Ambruso (The Pennsylvania State University), Juan M Fernandez (NASA Langley Research Center), Sven G. Bilén, Xin Ning (The Pennsylvania State University)

(continued) SCS-12/AS-35 | In Person - National Harbor 2

Shape memory behavior and conductivity of CF-CNT-SMP

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2401
Ayako Torisaka (Tokyo Metropolitan University), Veli Bugra Ozdemir, Kawai Kwok (University of Central Florida)

Microwave absorption and space radiation shielding composite with polydopamine coating and multi-walled carbon nanotube grafting on the fiber

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2402
Ji-Hun Cha (Korea Advanced Institute of Science and Technology)

Self-Healing Composite Dielectric Elastomer Sensor for Inflatable Space Structures

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2403
Scott N Bender, Nicholas Smith, Foram Madiyar, Daewon Kim (Embry-Riddle Aeronautical University)

GNC-44 | In Person - Annapolis 2

Nonlinear Estimation of Rigid Body Inertial Parameters

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-1809
Burak Boyacioglu, Danylo Sandursky, Kristi A Morgansen (University of Washington)

Trajectory Reconstruction of Launch Vehicle in Atmospheric Flight using the Unscented Kalman Filter

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2315
Giovanni Di Monaco, Vincenzo D'Antuono, Alessandro Zavoli, Guido De Matteis (Universita degli Studi di Roma La Sapienza), Simone Pizzurro, Enrico Cavallini (Agenzia Spaziale Italiana)

Magnetometer-Based Attitude Determination Using Common-Frame Filtering with Unobservable Parameter Consideration

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2316
Steven Szklany (XAnalytix Systems, LLC), John L Crassidis (University at Buffalo)

Differentiable Rendering for Pose Estimation in Non-cooperative Proximity Operations

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2317
Ramchander Bhaskara (Texas A&M University), Roshan Thomas Eapen (The Pennsylvania State University), Manoranjan Majji (Texas A&M University)

Comparative Study of Beamforming Methods Devised to Reduce the Scan Steps for On-board Active Phased Arrays

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2318
Avnish Kumar (Defence Research and Development Organisation), Debasish Ghose (Indian Institute of Science)

SEN-04 | In Person - Chesapeake C

Earth/Moon System Star Tracking Sensor for Improved Deep Space Laser Communications

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2415
Stephen C Cain (Air Force Institute of Technology), Michael J Lichter (NASA John H Glenn Research Center)

Novel Methods for Gas Cell Lift Measurement

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2416
Kyle J Vernyi, Jonathan Wittmer, Dennis Carter (Lighter Than Air Research and Exploration)

Additively Manufactured Flexible Hybrid Electronic Sensor for Discrete Fatigue Crack Detection

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2417
Corinne Smith, Austin R.J. Downey (University of South Carolina)

Linear and Geometrically Nonlinear Structural Shape Sensing from Strain Data using the Basis Function Method

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2418
Chan-gi Pak (NASA Armstrong Flight Research Center)

STR-44 | In Person - Chesapeake A

Organic Matrix Composites Process-to-Performance, Evaluation, Research and Analysis (OPPERA)

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2424
David S Riha, Matthew Kirby, Marcus Stanfield, Vikram Bhamidipati (Southwest Research Institute), Eric Zhou (University of Dayton Research Institute), Alireza Forghani (Convergent Manufacturing Technologies), Endel V larve, Kevin H Hoos, Hari K Adluru, Michael K Ballard (The University of Texas at Arlington), Alex S Selvarathinam (Lockheed Martin Aeronautics Company), David Mollenhauer (Air Force Research Laboratory)

Development and Calibration of a Model for Predicting the Structural Response of Bonded Composite Pi-joints

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2422
Matthew Kirby, Marcus Stanfield, Erin C DeCarlo, David Riha (Southwest Research Institute)

(continued) STR-44 | In Person - Chesapeake A

Progressive Damage Analysis of Complex 3D Textiles with Open Holes using Independent Mesh Method and Discrete Damage Modeling

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2423
Kevin H Hoos, Hari K Adluru, Endel V larve (The University of Texas at Arlington), Eric Zhou (University of Dayton Research Institute), M. Keith Ballard, David Mollenhauer (Air Force Research Laboratory)

Uncertainty Quantification of Fiber Volume Fraction of Fiber Bundles using Digital Chains

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2425
Vikram Bhamidipati, David Riha (Southwest Research Institute), Eric Zhou (University of Dayton Research Institute), Michael K Ballard (The University of Texas at Arlington College of Business), David Mollenhauer (Air Force Research Laboratory Materials & Manufacturing Directorate)

APA-72 | In Person - Potomac 5

Flow Structures of Ship Airwakes with Quartering Winds

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2270
Kaijus H Palm, Zheng Zhang, Ebenezer P Gnanamanickam, John Gordon Leishman (Embry-Riddle Aeronautical University)

Pressure Distributions for Bodies of Revolution in Compressible Flows Using an Advanced Panel Method

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2271
William F Collins, Roy J. Hartfield (Auburn University), Vivek Ahuja (Research in Flight)

Assessment of Quadrotor Near-Wall behaviour using six-Degrees of Freedom CFD simulations

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2272
Manuel Carreno Ruiz, Nicoletta Bloise, Elisa Capello, Domenic D'Ambrosio, Giorgio Guglieri (Politecnico di Torino)

Computational Methodology to Compute Unmanned Aircraft Deflections due to Aerodynamic Interaction with a Commercial Aircraft

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2273
Harsh Shah, Nidhi Sathyanarayana, Luis Manuel Gomez, Gerardo Olivares (Wichita State University National Institute for Aviation Research)

PDL-14/AMT-28 | In Person - Baltimore 1

Electric Field Distribution in a "Hybrid" RF Discharge with Ionization Generated by Ns Discharge Pulses

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2381
Sai Raskar, Keegan Orr, Xin Yang, Igor V Adamovich (The Ohio State University)

Measurements of Vibrationally Excited Oxygen Molecules in Preheated O₂-Ar Mixtures Excited by a Ns Pulse Discharge

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2382
Keegan Orr (The Ohio State University), Dirk van den Bekerom (Sandia National Laboratories California), Igor V Adamovich (The Ohio State University)

Single-shot time-resolved thermometry of atmospheric-pressure nanosecond pulsed plasma discharges

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2383
Karna Patel, Anup Saha, Aman Satija, Terrence R Meyer, Sally PM Bane (Purdue University)

Optical and Electrical Diagnostics of a High-Voltage Laser-Triggered Switch with Variable Impedance Load

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2384
Jacob Gottfried (Colorado State University), Charles E Rose (Sandia National Laboratories), Azer P Yalin (Colorado State University)

High-fidelity simulations of plasma-assisted oxidation of hydrocarbon fuels using nanosecond pulsed discharges

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2385
Nicholas E Deak, Alfredo J Duarte (The University of Texas System), Lucas Esclapez, Marc Day (National Renewable Energy Laboratory), Fabrizio Bisetti (The University of Texas System)

PDL-15/PC-48 | In Person - Baltimore 2

Dynamics of low-temperature filamentary plasma-assisted ignition-stabilized combustion

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2386
Ravi B Patel, Jeroen van Oijen, Nico Dam, Sander Nijdam (Technische Universiteit Eindhoven)

Stabilization of lean flames with nanosecond discharges in a gas turbine model combustor

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2387
Victorien P Blanchard, Frédéric Roqué, Philippe Scoufflaire, Christophe O Laux, Sébastien Ducruix (CentraleSupélec)

(continued) PDL-15/PC-48 | In Person - Baltimore 2

- Numerical Simulation of Microwave-Enhanced Low Swirl Methane-Air Flames**
Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2388
Christer Fureby, Elna Nilsson (Lunds Universitet), Daniel Lörstad (Siemens Energy AB), Kevin Nordin Bates, Tomas Hurtig, Niklas Zettervall (Totalforsvarets Forskningsinstitut), Rasmus Robertsson, Andreas Ehn (Lunds Universitet)
- Electrical characteristics and flow topology of ring-type dielectric barrier discharge plasma actuator**
Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2389
Tom Fridlender (National Center for Scientific Research (CNRS)), Srikar Yadala Venkata (Norges teknisk-naturvitenskapelige universitet Fakultet for ingeniørvitenskap), Nicolas Benard, Eric Moreau (National Center for Scientific Research (CNRS))
- Mixing enhancement downstream of an active square mesh grid using plasma actuation**
Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2390
Tom Fridlender, Nicolas Benard, Jean-Paul Bonnet, Eric Moreau (National Center for Scientific Research (CNRS))

LP-11/PC-46 | In Person - National Harbor 14

- Testing of Thermodynamic Vent System Augmented Injectors for Tank-to-Tank Transfer of Cryogenics**
Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2360
Nicole Vaughn, Travis Belcher, Cameron Hines, Omar Mireles, Kevin Pedersen, James Smith, Jonathan R Stephens, Noah Rhys (NASA Marshall Space Flight Center)
- Broad Area Cooling with Hybrid Additive Manufactured Pressure Vessel Analysis**
Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2361
Tony Skaff, Ama R Carney, Alex Walker (Sierra Lobo, Inc.)
- Efficient Three-Dimensional Sump Optimization Using Potential Flow Theory and a Thermal Analogy**
Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2362
Nathan F Andrews, Steven T. Green (Southwest Research Institute), Shane B Coogan (Self)
- An Unsteady Hypergolic Combustion Modeling Tool Based on Compressible Three-Stream Flamelet Methodology**
Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2363
Siddharth S Thakur, Jeffrey Wright, Christopher Neal (Streamline Numerics, Inc.)

APA-75 | In Person - Potomac 3

- Scaling of Hovering Rotorcraft Aerodynamics in Hyperbaric Experimental Conditions**
Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2281
Constantinos S Kandias, Mark A Miller (The Pennsylvania State University College of Engineering)
- High-Fidelity Simulations of a Tiltwing Vehicle for Urban Air Mobility**
Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2282
David Garcia Perez, Patricia Ventura Diaz, Steven Yoon (NASA Ames Research Center)
- Assessment of Methods for Propeller Performance Calculation at High Incidence Angles**
Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2283
Luiz F. T. Fernandez (ONERA Traitement de l'information et systemes), Murat Bronz (Ecole Nationale de l'Aviation Civile), Nathalie Bartoli, Thierry Lefebvre (ONERA Traitement de l'information et systemes)
- Effect of Propeller Incidence Angle on Wing Embedded Propeller Configuration in Forward Flight**
Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2284
George J Gogidze, Sidaard Gunasekaran, Jielong Cai (University of Dayton)
- Flowfield Analysis of a Quadrotor in Forward and Maneuvering Flight Modes**
Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2285
Colin P Britcher, Engin Baris (Old Dominion University)

EXPL-18 | In Person - Chesapeake L

- Demonstration and Evaluation of an Automated Construction System for Assembling a Landing Pad and Blast Wall**
Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2289
Tyler B Stephans, Alan R. Wagner (The Pennsylvania State University College of Engineering)
- Pill Bug-Inspired Robot with Crawling and Rolling Locomotion Mechanisms for Use on the Lunar Surface**
Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2290
Sara Lanctot, James Montoya, Chase Dunaway, Celeste Elizalde Flores, Juliana Barstow, Suzanne Eisenberg, Forest Good, Natasha Davis, Shengyu Zhang, William Janney, Mostafa Hassanalian (New Mexico Institute of Mining and Technology)
- An ADMM-based Decomposition Method for Human-Scale Mars Entry Guidance**
Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2291
Changhuang Wan (Tuskegee University)

AMT-24 | In Person - Magnolia 2

Characterization of an Accurate Method for Obtaining High-Temperature, Low-Pressure Shock Tube Test Conditions for Hyper-sonics

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2253
Marley Anna Albright, Farhan Arafin, Jacklyn Higgs, Justin J Urso, Subith Vasu (University of Central Florida)

Comparison of rotational and vibrational thermometry of detonation in microchannels

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2254
Sarang Bidwai, James B Michael (Iowa State University), Chloe E Dedic (University of Virginia)

Spectral Analysis of a Shock Wave Turbulent Boundary Layer Interaction In a Circular Test Section

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2255
Jonathan Sasson, Paul Barnhart (Case Western Reserve University)

Direct Measurements of Shock Impingement in a Busemann Inlet via a Miniature Embedded Imaging System

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2256
Griffin David Eagan, Christopher J Lewis, Ryan M Alles (Auburn University), Kyle C Klingaman, Kirk Davenport, Mark T Gragston (The University of Tennessee Space Institute), Brian Elliot Rice (Air Force Research Laboratory), Michael C Hamilton, Brian S Thurow (Auburn University)

Experiments on Water Droplet Breakup in a Detonation Medium

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2257
Sydney M Briggs, Nicolas Berube, Daniel R Dyson, Reed Forehand, Michael P Kinzel, Subith Vasu (University of Central Florida), Sheryl Grace (Boston University), Phillip Anderson (Andersonics LLC)

FD-75 | In Person - Chesapeake I

Particle-laden high-speed flows over a blunted cone

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2301
Qiong Liu, Irmak Taylan Karpuzcu, Akhil Marayikkottu Vijayan, Deborah A Levin (University of Illinois Urbana-Champaign)

Numerical Investigation of Liquid Droplet Interactions with Cylindrical Bow Shocks

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2302
Andrew Michael Hess, David A Kessler, Camilo Aguilera Munoz (US Naval Research Laboratory)

Shock-Particle Curtain Interactions at High Mach Number

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2303
Justin Lawrence Wagner, Kyle Daniel, Charley Downing, Thomas W. Grasser, Kyle P Lynch (Sandia National Laboratories)

Multi-Scale Modeling of Shock-Droplet Interaction Within a Shock Tube

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2304
Reed Forehand, Khanh C Nguyen, Caroline Anderson, Sydney M Briggs, Nicolas Berube, Subith Vasu, Michael P Kinzel (University of Central Florida), Sheryl Grace (Boston University)

Higher-Order Simulations of Droplet-Shock Interaction, Aerobreakup and Impingement at High Mach Numbers

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2305
Manuel Viqueira-Moreira (University of Maryland at College Park), Riza Kaan Gonuleri, Joshua Richard Leigh, Kyle Watson, Ibrahim Guven (Virginia Commonwealth University), Christoph Brehm (University of Maryland at College Park)

SAT-02 | In Person - National Harbor 15

The Sociotechnical Imaginaries of Contemporary Commercial Space: Explicating Homo Galacticus, Techno-Utopianism, and Capitalistkind

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2396
Robert Edgell (SUNY Polytechnic Institute), Jeffrey Olney (Oregon Health and Science University)

Maverick and Skunk Works: Representing Aerospace in Popular Culture

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2397
James M Walton, Patrick LeBeau (Lockheed Martin Corp)

Can we dream of the conquest of space? The influence of isolation and sunlight deprivation on the sleep of members of simulated space missions

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2398
Nina Bazela (Uniwersytet Jagiellonski w Krakowie Wydział Filozoficzny), Pawel Graczak, Lena Stec (Akademia Gorniczo-Hutnicza imienia Stanisława Staszica w Krakowie Wydział Humanistyczny)

(continued) SAT-02 | In Person - National Harbor 15**Mental Health and Well-being in Space: Artificial Intelligence-supported Heritage Extended Reality Experiences and What Can be Learnt for the Indigenous Perspectives**

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2566

Kaja Antleij (Deakin University Faculty of Science Engineering and Built Environment), Annahita Nezami (VR Overview Effect), Bahareh Nakisa (Deakin University Faculty of Science Engineering and Built Environment), Kaori Becerril (Dereum Labs), Tyson Yunkaporta, Gabrielle Fletcher, John Davis (Deakin University, National Indigenous Knowledges Education Research Innovation (NIKERI) Institute)

ASE-05 | In Person - Baltimore 5**Instrumentation for Measuring Supercooled Large Droplet Cloud Distributions in Icing Wind Tunnels**

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2286

Venkateshwa Reddy Bora Bora, Inken Knop (Technische Universitat Braunschweig Fakultat fur Maschinenbau), Johannes Lucke, Tina Jurkat-Witschas (Deutsches Zentrum fur Luft- und Raumfahrt eV)

Debris Risk Assessment for Mega-Constellations in Low and Medium Earth Orbit Due to Satellite Breakup During Orbit Raising Maneuver

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2287

Joseph Canoy, Robert A. Bettinger (Air Force Institute of Technology)

Simulation of Fluid Flows about Titan Probes during Atmospheric Entry

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2288

Jiajun Guo, Raymond P LeBeau (Saint Louis University)

GNC-45 | In Person - Annapolis 1**Distributed Control of the Attitude and Shape of a Flexible Spacecraft**

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2319

Curtis Merrill, Derek A Paley (University of Maryland at College Park)

Sensor Based Motion Planner for Small Solar System Body Exploration

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2320

Jan Olucak, Sebastian Zähringer, Fabian Schimpf, Walter Fichter (Universitat Stuttgart Fakultat 6 Luft- und Raumfahrttechnik und Geodasie)

Convex Approach to Covariance Control for Low-Thrust Trajectory Optimization with Mass Uncertainty

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2321

Boris Benedikter, Alessandro Zavoli (Universita degli Studi di Roma La Sapienza), Zhenbo Wang (The University of Tennessee Knoxville Tickle College of Engineering), Simone Pizzurro, Enrico Cavallini (Agenzia Spaziale Italiana)

FD-77 | In Person - Chesapeake D**Development of Active Flow Control Prediction Tools for Aircraft Conceptual Design**

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2310

Niko Intravartolo, Alex Miller, Rene Wozidlo (The Boeing Company), Elisa Phillips (The University of Arizona College of Engineering), Arvin Shmilovich (The Boeing Company)

DARPA CRANE – A toolset for the design of compact fluidic distribution systems for flow control applications: Part 1 – Model development and system optimisation

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2311

Bill Crowther, Mostafa Nabawy, Roland Penty Geraets, Mark K Quinn, Sam Weigert (The University of Manchester Faculty of Science and Engineering), Clyde Warsop, Matt Forster, Lucia Axani (BAE Systems Plc), Thomas R Shearwood (The University of Manchester Faculty of Science and Engineering)

DARPA CRANE – A toolset for the design of compact fluidic distribution systems for flow control applications: Part 2 – Model validation and implementation

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2312

Bill Crowther, Thomas R Shearwood, Mostafa Nabawy, Roland Penty Geraets, Mark K Quinn, Sam Weigert (The University of Manchester Faculty of Science and Engineering), Clyde Warsop, Matt Forster, Lucia Axani (BAE Systems Plc)

THALES: Development of a Compendium for Active Flow Control Technologies

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2313

Evan Harrison, Dimitri N Mavris (Georgia Institute of Technology)

Surrogate Modelling of Active Flow Control

Friday, 27 January 10:50 - 11:10 (UTC-5) | AIAA-2023-2314

Matt Forster, Jon Feldman, Peter Lyes, Joe Johns, Clyde Warsop (BAE Systems Plc)

APA-71 | In Person - Potomac 1

Lessons Learned from the Advanced Aerodynamic Design Center for Ultra-Efficient Commercial Vehicles
Friday, 27 January 09:30 - 09:50 (UTC-5) 3776789
James G Coder (The University of Tennessee Knoxville Tickle College of Engineering)
Update on the Aerodynamic Performance Analysis of a SNLF-enabled Transonic Truss Braced Wing
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2267
Khanh H Pham, Leo L Chou, Neal A Harrison, Paul M Vijgen, Abdollah Khodadoust (The Boeing Company)
A Winglet Design Study for the Slotted, Natural-Laminar-Flow Strut-Braced Transport Aircraft
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2268
Leonard P Metkowsky, Mark D Maughmer (The Pennsylvania State University)
Investigating Fluidic Oscillators Embedded in a Slotted-Natural Laminar Flow Airfoil for High-Lift Applications
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2269
Christopher Colletti, Phillip J Ansell (University of Illinois Urbana-Champaign)

SE-04 | In Person - Chesapeake 1

QuickSAT/Designer and /Test, a Flexible and Collaborative AI Based Mission Design and Test Environment
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2411
Andrew D Santangelo (Sci_Zone, Inc.)
Affordability: Comparing Perspectives of NASA MSFC to Industry
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2412
Taylor Yeazitzis (The University of Alabama in Huntsville)
Methodology for Launch Vehicle Postflight Assessments in Support of the Mission Assurance Process
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2413
Vinay K Goyal, Brianne Williams, Steve Frolik, Akhil Gujral, Nikolas Nordendale (The Aerospace Corporation), Jon Strizzi (United States Space Force)
A Hybrid Agile Systems Engineering Approach for the ESRA CubeSat Mission to Earth's Radiation Belts
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2414
Brooke Mosley (Los Alamos National Laboratory)

TP-20 | In Person - Azalea 2

Thermal Modeling of Hypersonic Wind Tunnel Heater using Low Fidelity Fluid Model
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2426
Alexander J Snyder , Lindsay Gilkey, Nathan Porter, Humberto Silva, Steven J Beresh (Sandia National Laboratories)
CFD Simulations of the IHF 13-Inch Nozzle Flow: 55-deg Sphere-Cone Model, Manufactured Fences and Gaps
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2427
Tahir Gokcen, Tane Boghazian, Antonella Alunni (Analytical Mechanics Associates, Inc.)
Numerical study of thermal and pressure diffusion effects on canonical blunt bodies in hypersonic flows
Friday, 27 January 10:10 - 10:30 (UTC-5) AIAA-2023-2428
Chiara Amato, Graham V Candler (University of Minnesota Twin Cities)
Direct molecular simulation and quasi-classical trajectory calculation studies of 5-species air mixtures
Friday, 27 January 10:30 - 10:50 (UTC-5) AIAA-2023-2429
Erik Torres, Eric C Geistfeld, Thomas E Schwartzentruber (University of Minnesota Twin Cities)
Efficient Parametric Uncertainty Analysis of an Earth Entry Vehicle Concept using Least Angle Regression
Friday, 27 January 10:50 - 11:10 (UTC-5) AIAA-2023-2430
Thomas K West, Christopher O Johnston (NASA Langley Research Center)

NDA-17 | In Person - Chesapeake B

Exact Method of Antithetic Sampling for Higher Dimensionality
Friday, 27 January 09:30 - 09:50 (UTC-5) AIAA-2023-2370
Nadiya Rowshan, Subham Gupta, Achyut Paudel, Mishal Thapa, Sameer B Mulani (The University of Alabama), Robert W Walters (Virginia Polytechnic Institute and State University)
Control Allocation with Physics-Based Reliability Models for Multirotor UAVs
Friday, 27 January 09:50 - 10:10 (UTC-5) AIAA-2023-2371
Ikedichi Nnamdi-Nwosu, Jonathan Liscouët (Concordia University)

(continued) NDA-17 | In Person - Chesapeake B

Statistical Reliability Estimation of Satellites Operating from 1991-2020

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2372

Travis Grile, Robert A. Bettinger (Air Force Institute of Technology)

Towards a Framework for Non-intrusive Uncertainty Propagation in the Preliminary Design of Aircraft Systems

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2373

Ioanna Ioannou, Peter O Hristov (University of Liverpool Faculty of Science and Engineering), Hau Kit Yong, Robert Marsh, Edmar Silva, Andras Sobester (University of Southampton), Scott Ferson (University of Liverpool Faculty of Science and Engineering)

SD-33 | In Person - Chesapeake 3

Dynamic Antiresonant Vibration Isolators with Flexible Levers and Elastic Boundary Conditions

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2408

George Rai, Christopher D. Rahn, Edward Smith (The Pennsylvania State University), Conor Marr (LORD Corporation)

Exact Solutions for the Free Vibration of Uniform Beams under Combined Inertial and Stiffness Bending-Torsion Coupling

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2409

Arnold Deffo (California Polytechnic State University)

A study of wave propagation in thick/multilayer panels using theory of elasticity

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2410

Pankaj Joshi (ZAL Center of Applied Aeronautical Research), Mayuresh Patil (Georgia Institute of Technology)

FD-74 | In Person - Chesapeake E

Wake dynamics of tapered wings. Part I: a computational study

Friday, 27 January 09:30 - 09:50 (UTC-5) | AIAA-2023-2297

Jean Helder M Ribeiro, Kunihiro Taira (University of California Los Angeles), Jacob Neal, Michael Amitay (Rensselaer Polytechnic Institute), Anton Burtsev, Vassilios Theofilis (University of Liverpool Faculty of Science and Engineering)

Wake dynamics of tapered wings. Part II: an experimental study

Friday, 27 January 09:50 - 10:10 (UTC-5) | AIAA-2023-2298

Jacob Neal, Brandon Gares, Michael Amitay (Rensselaer Polytech Institute School of Engineering), Anton Burtsev, Vassilios Theofilis (University of Liverpool Faculty of Science and Engineering), Jean Helder M Ribeiro, Kunihiro Taira (University of California Los Angeles)

Wake Dynamics of Tapered Wings. Part III: TriGlobal Linear Stability Analysis

Friday, 27 January 10:10 - 10:30 (UTC-5) | AIAA-2023-2299

Anton Burtsev, Vassilios Theofilis (University of Liverpool), Jean Helder M Ribeiro, Kunihiro Taira (University of California Los Angeles), Jacob Neal, Michael Amitay (Rensselaer Polytechnic Institute)

Characterization of the Flow Field of Slender Delta Wings with Trailing Edge Jets Using Volumetric PIV

Friday, 27 January 10:30 - 10:50 (UTC-5) | AIAA-2023-2300

Hakeem Balogun, Antoine Smith, Mohammad J Khan, Chadia A. Aji (Tuskegee University)

14:00 | Technical Panel

EDU-06 | In Person - Chesapeake 9

HIS-07 | In Person - Azalea 2

EXPL-20 | In Person - National Harbor 7

14:00 | Technical Paper Session

IS-27 | In Person - Azalea 3

Explainable Artificial Intelligence Techniques for the Analysis of Reinforcement Learning in Non-Linear Flight Regimes

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2534

Gabriel de Haro Pizarroso, Erik-Jan Van Kampen (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

Adaptive fault-tolerant control of octo-rotor UAV under motor faults in adverse wind conditions

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2535

Ibrahim Ahmed, Marcos Quinones-Gruero, Gautam Biswas (Vanderbilt University)

Sim-to-Real Transfer of a Deep Reinforcement Learning Approach for Active Stall Protection

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2536

Franziska Hein, Stefan Notter, Walter Fichter (Universitat Stuttgart)

(continued) IS-27 | In Person - Azalea 3**Machine Actuating Commands for Autonomy of an Unmanned Combat Air Vehicle**

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2537

Chimpalthradi R Ashokkumar (Smartools, LLC)

ACD-36 | In Person - Woodrow Wilson A**Design, Manufacturing and Testing of a Wing Pivot Mechanism**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2431

Drew Priest, Matthew P Snyder, Catherine McAlister, Beckett Andersen, Charles Lo, Joshua Schmidt, Hugh Clark Briggs (US Air Force Academy)

Simplified Mass and Inertial Estimates for Aircraft with Components of Constant Density

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2432

Ben Moulton, Douglas F Hunsaker (Utah State University)

A Form-Finding Approach to the Geometric Modelling of Aircraft Sub-Systems

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2601

Hau Kit Yong, Robert Marsh, Edmar Silva, Neil Bressloff, András Sóbester (University of Southampton Faculty of Engineering and the Environment)

A Multidisciplinary Analysis of a Stratospheric Airborne Climate Observatory System for Key Climate Risk Areas

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2603

Annick Dewald, R John Hansman (Massachusetts Institute of Technology)

The Aerial Gunnery Gap: Challenged Programs, New Combat Aircraft Opportunities and Designs

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2602

Ronald M Barrett-Gonzalez, Nathan Wolf (The University of Kansas)

APA-79 | In Person - Potomac 6**Three-dimensional Viscous Coupling & Flow Separation Enhancements to an Inviscid Surface Vorticity Flow Solver**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2455

Vivek Ahuja, Roy J Hartfield (Research in Flight), Danilo Ciliberti (Universita degli Studi di Napoli Federico II)

Aerodynamic Investigation of a Novel Diamond-Back Morphing Wing Configuration

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2456

Shiladitya Bhowmick, Rinku Mukherjee (Indian Institute of Technology Madras), V Kalyana Chakravarthy (Defence Research and Development Organisation)

Application of a Semi-Empirical Method to Model Subsonic Vortex Lift over Sharp Leading-Edge Delta Wings

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2457

Daniel Huynh, Davide Di Pasquale, Simon Prince (Cranfield University Cranfield School of Aerospace Transport and Manufacturing), Vivek Ahuja (Research In Flight)

Performance of Forward-Swept and Backward-Swept Stabilizers in a V-tail Configuration

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2458

Ronald C M Cheung, Djamel Rezgui, Jonathan E Cooper (University of Bristol), Richard Green (University of Glasgow), Raul Carlos Llamas-Sandin (Airbus)

SEN-07 | In Person - National Harbor 6**Vision-based Positioning System for a Micro-UAV Flight in an Indoor Operation**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2579

Chandra Liuswanto, Yazdi I Jenie, Rianto Adhy Sasongko (Institut Teknologi Bandung)

Probability map based aerial target detection and localisation using networked cameras

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2580

Zihao Wang (The University of Sydney School of Aerospace Mechanical and Mechatronic Engineering), David Williams (SiNAB Pty. Ltd.), KC Wong (The University of Sydney School of Aerospace Mechanical and Mechatronic Engineering)

Tornado localization and structure identification from UAV wind measurements

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2581

Abdallahman Mansy, Imraan Faruque (Oklahoma State University College of Engineering Architecture and Technology)

Exploiting Information Fusion for Cybersecurity of Small Unmanned Aerial Vehicles

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2582

Ali K Raz, Michael Hieb, Jair Ferrari, Lance Sherry, Paulo Costa (George Mason University)

STR-45 | In Person - Chesapeake 4

Discrete Nonlinear Lattice Truss Beam Displacement Analysis Related to Fundamental Solid Mechanics, Heat Transfer, and Fluid Mechanics Theory

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2590
Winfred S Kenner (NASA Langley Research Center)

Ritz Analysis of Stepped Beams Subjected to Discontinuous Load

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2591
Sudharsan Parthasarathy, Rakesh K Kapania (Virginia Polytechnic Institute and State University)

APA-80 | In Person - Potomac 2

A Preliminary Investigation into Icing Accretion around a Wavy Leading-edge Wing

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2459
Andrea Da Ronch, Gabriele Immordino, Jae Wook Kim (University of Southampton)

Computation study about the interaction between the tandem flying snake airfoils with dynamic motion

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2460
Yuchen Gong, Haibo Dong (University of Virginia)

Experimental Investigation of Planar Swept Bio-Inspired Wing Planforms

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2461
Arnab Chatterjee, Tulasi Ram Vechalapu, Chang-Kwon Kang, Konstantinos Kanistras (The University of Alabama in Huntsville College of Engineering)

Experimental analysis of a large-scale tandem flapping wing system

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2462
Thomas Lambert, Grigorios Dimitriadis (Universite de Liege)

On the aeroelastic characterization of flexible wings at high angles of attack

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2463
Guojun Li, Rajeev Kumar Jaiman (The University of British Columbia)

GTE-36 | In Person - National Harbor 11

Accuracy Improvement of Soot Prediction for Aviation Gas Turbine Combustor using Method of Moments

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2522
Saurabh Patwardhan, Pravin M Nakod, Stefano Orsino, Rakesh Yadav (ANSYS Inc), Fang Xu, Kiran Manoharan (Honeywell Aerospace)

Blow-off Zone Identification In Preliminary Gas Turbine Combustor Design

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2523
Navin Kumar Mahto, Satyanarayanan R. Chakravarthy (Indian Institute of Technology Madras)

A distributed fuel injection enabled approach for two-zone combustion of methane-ammonia-air mixtures

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2524
Varun Nanjunda Rao Viswamithra, Shyam K Menon (Louisiana State University)

CPS-02 | In Person - Chesapeake I

Provably Correct Software: Don't Leave Earth Without It

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2471
Richard C Linger (AssuranceLabs, Inc.), Ali Mili (New Jersey Institute of Technology), Robert Drazovich (AssuranceLabs, Inc.), Mark Pleszkoch (Institute for Defense Analyses), John McHugh (The University of North Carolina at Chapel Hill), Wided Ghardallou (AssuranceLabs, Inc.)

Byzantine Resilient Reinforcement Learning for Multi-Agent UAV Systems

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2472
Jishu K. Medhi, Chao Huang, Rui Liu, Xuhui Chen (Kent State University)

A New Parallel Resampling Algorithm for GPU-Accelerated Particle Filter

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2473
Kyung Woo Hong (Korea Advanced Institute of Science and Technology), Youngjoo Kim (Nearthlab), Hyochoong Bang (Korea Advanced Institute of Science and Technology)

IS-29 | In Person - Woodrow Wilson C

An L1 Adaptive Control Augmentation for a Lift-Plus-Cruise Vehicle

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2541
Andrew Patterson, Kasey A Ackerman, Jacob Cook, Michael J Acheson, Irene M Gregory (NASA Langley Research Center)

(continued) IS-29 | In Person - Woodrow Wilson C

Modified Cascading Generalized Inverse Control Allocation

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2542
Michael J Acheson, Irene M Gregory (NASA Langley Research Center)

Comparison of Acoustic Models and Trajectory Generation Methods for an Acoustically-Aware Aircraft

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2543
Kasey A Ackerman, Irene M Gregory (NASA Langley Research Center)

Combined Bernstein Polynomial Optimal Reciprocal Collision Avoidance Differential Dynamic Programming for Trajectory Re-planning and Collision Avoidance for UAM Vehicles

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2544
Matthew D Houghton, Michael J Acheson, Andrew P. Patterson, Alex Oshin, Irene M Gregory (NASA Langley Research Center)

GT-12/AMT-33 | In Person - Baltimore 4

Aerothermal Characterization of the Plasmatron X Wind Tunnel: Optical Emission Spectroscopy and Jet Temperature Reconstruction

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2516
Trey Oldham, Lorenzo Capponi, Matthew Konnik, Kelly Stephani, Daniel J Bodony, Marco Panesi, Gregory S Elliott, Francesco Panerai (University of Illinois Urbana-Champaign)

Spectroscopic Characterization of a High-Enthalpy Plasma Arcjet Tunnel

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2517
Killian E Samuels, Damiano Baccarella (The University of Tennessee Knoxville Tickle College of Engineering)

Near-Body Measurements in Hypersonic Wedge Flows in the T5 Reflected Shock Tunnel by Tunable Diode Laser Absorption Spectroscopy

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2518
Peter M Finch, Tal Schwartz, Zev Noach Granowitz (Stanford University), Wesley M Yu (California Institute of Technology), Thomas Gross (University of Minnesota Twin Cities), Christopher Lyle Strand (Stanford University), Thomas E Schwartzentruber (University of Minnesota Twin Cities), Joanna M Austin, Hans G Hornung (California Institute of Technology), Ronald K Hanson (Stanford University)

Laser-based *in-situ* absorption spectroscopy sensor for gas measurements in an impulse facility

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2519
Tal Schwartz, Joana Porfirio Santos, Christopher Lyle Strand, Ronald K Hanson (Stanford University)

SD-34 | In Person - Chesapeake 5

Active hinged wingtip for gust load alleviation and manoeuvres

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2567
Davide Balatti, James D Ellis, Shakir Jiffri, Hamed Haddad Khodaparast, Micheal Ian Friswell (Swansea University)

Transient Release and Lateral Gust Behavior of Aircraft Incorporating Flared Folding Wingtips

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2568
Huaiyuan Gu, Ronald C M Cheung, Fintan Healy, Vahid Goodarzi Ardakani, Saber Abdo, Djamel Rezgui, Mark H Lowenberg, Jonathan E Cooper (University of Bristol)

Experimental Effect of Liquid Sloshing on the Dynamic Behaviour of Flared Folding Wingtips

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2569
Fintan Healy, Joe J De Courcy, Huaiyuan Gu, Djamel Rezgui, Jonathan E Cooper (University of Bristol)

Prediction of Gust Aeroelastic performance of HALE using Graph Neural Networks

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2570
Michele Colombo, Joseph Morlier, Michaël Bauerheim (ISAE-SUPAERO)

LQG-based Gust Load Alleviation Systems for Very Flexible Aircraft

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2571
Stefanie Duessler, Thulasi Mylvaganam, Rafael Palacios (Imperial College London)

PC-51 | In Person - National Harbor 8

Adhesion of Thermoplastic Copolymers with Hydroxyl Terminated Polybutadiene in Application to Dissimilar Materials 3D Printing

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2556
Mitchell Donoughue, James Plotzke, Monique McClain (Purdue University)

Droplet Impact of Additives and HTPB

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2557
Marc A Magana, Alexander Klotz, Joseph Kalman (California State University Long Beach)

(continued) PC-51 | In Person - National Harbor 8

Dynamic Contact Angle Measurements Using LabRam

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2558
Izabel B Marquez, Joseph Kalman (California State University Long Beach)

GNC-50 | In Person - Annapolis 3

Simulator Evaluation of Flightpath-oriented Control Allocation for the Flying-V

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2508
Gijs Vugts, Olaf Stroosma, Roelof Vos, Max Mulder (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

Distribution Based Performance Analysis of Control Allocation Strategies Under Failure Conditions

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2509
Cedric Kotitschke, Venkata Sravan Akkinapalli, Florian Holzapfel (Technische Universitat Munchen)

Auto-landing Fault-Tolerant Control System Design for a Light Aircraft

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2510
Ege Cagri Altunkaya, Ibrahim Ozkol (Istanbul Teknik Universitesi)

Local Strong Accessibility Analysis and Fault-Tolerant Control of Multicopter Considering Actuator Failures

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2511
Hanna Lee, Jinrae Kim, Seong-hun Kim, Miae Kim, Youdan Kim (Seoul National University)

Model Reference Control for Reducing Pilot-Induced Oscillation Tendencies Due to Actuator Rate Limits

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2512
Loren J Newton, Ilan Kroo (Stanford University)

AMT-29/PC-49 | In Person - Magnolia 3

Simultaneous Detection of OH and CH Using a Single Femtosecond Pulsed Laser

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2433
Matthew K Hay, Pradeep Parajuli, Waruna D Kulatilaka (Texas A&M University)

OH imaging of partially-premixed ethylene-air flames in a dual-mode scramjet

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2434
Andrew Joseph Metro, Alan Kim, Robert D. Rockwell, Laurie A Elkowitz, Chloe E Dedic (University of Virginia), Andrew D Cutler (The George Washington University)

Planar Time-Resolved Laser-Induced Incandescence for Particulate Emissions in Premixed Flames at Elevated Pressures

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2435
Andy X Zheng, Sundar Manikandan, Samuel E Wonfor, Adam M Steinberg, Yi Chen Mazumdar (Georgia Institute of Technology)

Multi-parameter Measurements in Sooting Turbulent Non-premixed Flames

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2436
Jinpeng Pu, Wesley R Boyette, Jeffrey Alan Sutton (The Ohio State University)

GNC-49/IS-25 | In Person - Annapolis 4

Investigating Noise Rejection with Gradient-Based Update Laws in Discrete-Time Adaptive Control

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2503
Peter Fisher, Anuradha Annaswamy (Massachusetts Institute of Technology)

On Adaptive Control of Robotic Manipulators with Actuator Deficiencies

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2504
Islam A Aly, Sebastian Comeaux, Kadriye Merve Dogan (Embry-Riddle Aeronautical University), Enver Tatlicioglu (Ege Universitesi), Erkan Zengeroglu (Gebze Teknik Universitesi)

Hierarchical Reinforcement Learning and Gain Scheduling-based Control of a Hypersonic Vehicle

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2505
Wanjiku Makumi, Max L Greene (University of Florida), Zachary Bell, Brendan Bialy (Air Force Research Laboratory), Rushikesh Kamalapurkar (Oklahoma State University), Warren Dixon (University of Florida)

Vision-based Distributed Pose Estimation using a Spacecraft Constellation

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2506
Saptarshi Bandyopadhyay, Vinod P. Gehlot, William Seto, Amir Rahmani (Jet Propulsion Laboratory), Spencer Kraisler, Shahriar Talebi, Aditya Deole, Niyousha Rahimi, Mehran Mesbahi (University of Washington), Jonathan Beckett (Danmarks Tekniske Universitet)

Adaptive Stabilization of Multi-Rotor Systems with Actuator Limits and Transient Mass Distribution

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2507
John K Zelina, Islam A Aly, Kadriye Merve Dogan, Richard J Prazenica (Embry-Riddle Aeronautical University)

GRE-03 | In Person - National Harbor 5**Climate Assessment of Hydrogen Combustion Aircraft: Towards a Green Aviation Sector**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2513

Miguel Ángel Sáez Ortuño, Feijia Yin, Arvind Gangoli Rao, Roelof Vos, Pieter-Jan Proesmans (Technische Universiteit Delft)

Quantification of Hybrid-Electric Propulsion Systems for Aerospace Applications

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2514

Roydon G Fernandes, John Parsells, Kyle Collins, Patrick Currier, Mark Ricklick, Richard Anderson (Embry-Riddle Aeronautical University)

Numerical Prediction of Pressurized Hydrogen Leakage and Spontaneous Ignition

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2515

Yu Xia, Didier Bessette, Vivek Kumar, Abhijit Patil, Sourabh Shrivastava, Patrick Sharkey, Pravin M Nakod (ANSYS Inc)

HSABP-13 | In Person - National Harbor 4**Validation of the Density Based Navier-Stokes solver simulating the combustion process of different Scramjets combustors**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2528

Bruce G Crawford (ANSYS Inc), Jayson C Small, Liwei Zhang (The University of Texas at Arlington), Shaoping Li, Valerio Viti, Jean-Sébastien Cagnone (ANSYS Inc)

Manifold-based Modeling for Supersonic Turbulent Combustion

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2529

Esteban Cisneros-Garibay, Michael E Mueller (Princeton University)

Shock Tube and Laser Measurements of HTPB/air Combustion at Solid Ramjet Conditions for Hypersonics

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2530

Jacklyn Higgs, Juan Cruz Pellegrini, Ramees Khaleel Rahman, Rosa Olivera, Subith Vasu (University of Central Florida)

HMT-03/IS-26 | In Person - Woodrow Wilson D**Foundational Human-Autonomy Teaming Research and Development in Scalable Remotely Operated Advanced Air Mobility Operations: Research Model and Initial Work**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-1066

Eric T. Chancey, Michael S Politowicz, Bill K Buck, Kathryn Ballard (NASA Langley Research Center), James Unverricht (National Institute of Aerospace), Vincent E Houston (NASA Langley Research Center), Meghan Chandarana (NASA Ames Research Center), Lisa Le Vie (NASA Langley Research Center)

A Remote Vehicle Operations Center's Role in Collecting Human Factors Data

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2526

Bill K Buck, Eric T. Chancey, Michael S Politowicz (NASA Langley Research Center), James Unverricht (National Institute of Aerospace), Steven Geuther (NASA Langley Research Center)

MPATH (Measuring Performance for Autonomy Teaming with Humans) Ground Control Station: Design Approach and Initial Usability Results

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2525

Michael S Politowicz, Eric T. Chancey, Bill K Buck (NASA Langley Research Center), James Unverricht (National Institute of Aerospace), Bryan J Petty (NASA Langley Research Center)

Where is the Human-in-the-Loop? Human Factors Analysis of Extended Visual Line of Sight Unmanned Aerial System Operations within a Remote Operations Environment

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2656

James Unverricht (National Institute of Aerospace), Eric T. Chancey, Michael S Politowicz, Bill K Buck, Steven Geuther, Kathryn Ballard (NASA Langley Research Center)

Intelligent Change Detection System (ICDS): A Machine Learning Approach to Combat Change Blindness in Remote Operation Environments

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2527

Vincent E Houston, Michael S Politowicz (NASA Langley Research Center), Noah E Jennings (Old Dominion University)

PDL-16/APA-82 | In Person - Baltimore 2**Numerical Analysis of Magnetohydrodynamic Flow Control in Mars Direct and Orbital Entries**

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2559

Kotaro Tabuchi, Ryota Sumitomo, Kaito Tanaka, Takayasu Fujino (Tsukuba Daigaku)

Feasibility of MHD Aerobraking for Use in Martian Atmospheric Entry

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2560

John C Ogilvie, David Gildfind, Rowan Gollan, Nicholas N Gibbons (The University of Queensland)

(continued) PDL-16/APA-82 | In Person - Baltimore 2

Prediction of communication blackout and degradation for a re-entry hypersonic capsule through high-fidelity numerical simulations

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2561
Henry H Vu, Valerio Viti, Jeff Tharp, Eldon Staggs (Ansys Inc)

Optimised Magnetic Field Strengths for Venus Atmospheric Entry using Magnetohydrodynamic Aerobraking

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2562
Sebastiaan B van Oeveren, David Gildfind (The University of Queensland)

FD-78 | In Person - Chesapeake H

A Cut-Cell Inspired Immersed Boundary Solver for Compressible Flows

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2479
MLNV Kasturi Rangan, Santanu Ghosh (Indian Institute of Technology Madras)

A high-order 3D immersed interface finite difference method for the advection-diffusion equation

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2480
James Gabbard, Wim M van Rees (Massachusetts Institute of Technology)

Modeling a shock front as an extended dividing hypersurface

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2481
Joseph John Thalakkottor (South Dakota School of Mines and Technology), Adam C DeVoria (The Citadel Military College of South Carolina)

ICC-02 | In Person - Chesapeake A

Intelligent Wargaming Approach to Increase Course of Action Effectiveness in Military Operations

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2531
Batu Candan, Guney Guner, Burak Yuksek, Hasan Karali, Gokhan Inalhan (Cranfield University)

Prediction of Critical Aircraft Performance Model Parameters from Historical Flight Data

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2532
Alicia Fernandes, Dan Wesely (Mosaic ATM, Inc.), Tejas G Puranik, Aida Sharif Rohani (Universities Space Research Association), Krishna M Kalyanam (NASA Ames Research Center), Drew Morin (Federal Aviation Administration)

Learning-based Adaptive Thrust Regulation of Solid Fuel Ramjet

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2533
Parham Oveissi, Arjun Trivedi, Ankit Goel (University of Maryland Baltimore County), Ozgur Tumuklu, Kyle M. Hanquist (The University of Arizona Graduate College), Alireza Farahmandi, Douglas Philbrick (Naval Air Weapons Station China Lake)

IS-28 | In Person - National Harbor 13

Situational Anomaly Detection Using Multi-agent Trajectory Prediction for Terminal Airspace Operations

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2538
Hyunsang Park, Inseok Hwang (Purdue University)

Online Probabilistic Collision Detection for Urban Air Mobility under Data-Driven Uncertainty

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2539
Pengcheng Wu, Jun Chen (San Diego State University)

Data-Driven Controller and Multi-Gradient Search Algorithm for Morphing Configurations

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2540
Jose Messias Magalhaes (Georgia Institute of Technology), Gustavo Luiz Olichevis Halila (Instituto de Aeronautica e Espaco), Kyriakos G Vamvoudakis (Georgia Institute of Technology)

ASE-06/EXPL-19 | In Person - Baltimore 5

Impacts of the Space Environment on Lunar Exploration

Friday, 27 January 14:00 - 14:40 (UTC-5) | AIAA-2023-2467
Joseph I Minow (NASA Headquarters)

Designing the PLANET Chamber for Lunar Environment Ground Testing

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2468
Erin G Hayward, Mary Nehls, Todd Schneider, Patrick Lynn, Peter Bertone, Jason Vaughn (NASA Marshall Space Flight Center)

Low-cost Testing in Representative Lunar Regolith Environment

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2469
Scott L Stebbins, Nic Heersema (NASA Armstrong Flight Research Center)

(continued) ASE-06/EXPL-19 | In Person - Baltimore 5

Spacecraft Wake Formation in Cislunar Plasma Regions

Friday, 27 January 15:20 - 15:40 (UTC-5) | AIAA-2023-2470
Kaylee Marie Champion, Hanspeter Schaub (University of Colorado Boulder)

GNC-47 | In Person - Annapolis 2

Linear Quadratic Differential Games Guidance Law with an Intercept Angle Constraint and Varying Speed Adversaries

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2495
Adi Mishley, Vitaly Shaferman (Technion Israel Institute of Technology)

Three-dimensional Nonlinear Impact Time Guidance using Predicted Interception Point

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2496
Abhinav Sinha (The University of Texas at San Antonio), Rohit Vishwajit Nanavati (Loughborough University), Shashi Ranjan Kumar (Indian Institute of Technology Bombay)

Information-Enhancement via Trajectory Shaping in Bayesian Decision-Directed Stochastic Guidance

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2497
Liraz Mudrik, Yaakov Oshman (Technion Israel Institute of Technology)

Linear Parameter Varying Pitch Autopilot Design for a Class of Long Range Guided Projectiles

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2498
Gian Marco Vinco (French-German Research Institute of Saint-Louis (ISL)), Spilios Theodoulis (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek), Olivier Sename (Grenoble Images Parole Signal Automatique Pole Automatique et Diagnostic), Guillaume Strub (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

MDO-27/DE-13 | In Person - Chesapeake 8

Flexible Design for an in-Space Assembled Telescope

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2547
Rosemary Davidson, David W Miller (Massachusetts Institute of Technology)

Level Set Topology Optimization in OpenMDAO

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2548
Carolina M Jauregui (University of California San Diego), Sydney L Schnulo, Justin S Gray (NASA Headquarters), Hyunsun A Kim (University of California San Diego)

OPS-05 | In Person - Chesapeake 12

Decision-Making and Optimization Framework for the Design of Emerging Satellite Constellations

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2549
Marc A Koerschner, Kavya Navaneetha Krishnan, Alexia P. Payan, Dimitri N Mavris (Georgia Institute of Technology)

Optimal Active Debris Removal Mission Design Using Low-thrust Trajectory

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2550
DongUk Lee, Jaemyung Ahn (Korea Advanced Institute of Science and Technology)

FD-81 | In Person - Chesapeake K

Non-intrusive, 3-D Crater Formation Measurements Due to Plume-Surface Interactions Under Sub-Atmospheric Pressure Conditions

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2488
Daniel Stubbs, Lokesh Silwal, Vikas N. Bhargav, Brian S Thurow, Masatoshi Hirabayashi, Vrishank Raghav, David E. Scarborough (Auburn University)

Unconventional Wave Phenomena of a Bethe-Zel'dovich-Thompson Gas and Numerical Computation of Dense Gas Flow

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2489
Jingyi Zeng, Jie Zhu, Feng Liu (University of California Irvine)

Separation Region Unsteadiness Drivers in Swept Compression Ramps

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2490
Daniel S Allen, Kenneth R Langley, John D Schmisser, Phillip A Kreth (The University of Tennessee Space Institute)

Wall shear stress measurements using a MTV-based plenoptic microscope

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2491
Peter D Huck, Charles Fort, Philippe Matthieu Bardet (The George Washington University)

SD-35 | In Person - Chesapeake 3

Investigating Low-Dimensional Representations for Body Freedom Flutter
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2572
Samuel C Stanton, Nicholas Hawley (US Air Force Academy), Alexander M Pankonien, Kevin McHugh (Air Force Research Laboratory)
Flutter Testing Methodology for Swirl Distortion Generators
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2573
Cole Hefner, Andrew P Hayden, John Gillespie, Todd Lowe, Alexandrina Untaroiu (Virginia Polytechnic Institute and State University)
Turbine blade structural analysis by using the isogeometric Bernstein-Bezier discretization
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2574
DongHyeon Song, Seung Hoon Kang, Yongse Kim, Sang Joon Shin (Seoul National University)
Dispersion Characteristics of Wave Propagation in Lattice-Based Mechanical Metamaterial for Vibration Suppression
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2575
Natsuki Tsushima (Uchu Koku Kenkyu Kaihatsu Kiko Koku Gijutsu Bumon), Yuta Hayashi, Tomohiro Yokozeki (Tokyo Daigaku)
Inextensible plate model for nonlinear structural dynamics
Friday, 27 January 15:20 - 15:40 (UTC-5) AIAA-2023-2576
Dylan Donovan Dooner, Gareth A Vio (The University of Sydney Faculty of Engineering and Information Technologies), Nicholas F Giannelis (The University of Newcastle College of Engineering Science and Environment)

STR-46 | In Person - Chesapeake 7

An Aerospace Structural Sizing Tool with Sectional Equivalent Beam Requirements
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2593
Mario Lee, Stephen Jones, August Noever, Bertram Stier (Collier Aerospace)
An Integrated Design Tool for Tow-steering Composites in Abaqus and MSC.Patran/Nastran
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2594
Xin Liu, Bangde Liu, Twinkle Kothari (The University of Texas at Arlington), Su Tian, Yufei Long (Purdue University), Frank Leone (NASA Langley Research Center), Wenbin Yu (Purdue University)
Effects of Liquid Disinfectants and Ultraviolet-C Germicidal Irradiation on Honeycomb Core Sandwich Panels
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2595
Akhil Bhasin, Aswini Kona Ravi, Luis Daniel Castillo, Tanat Maichan, Luis Manuel Gomez, Gerardo Olivares (Wichita State University National Institute for Aviation Research)
Reflections on 37 Years as a NASA Structural Engineer
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2596
John J Zipay (Self)

EXPL-21 | In Person - Chesapeake L

Transportation and Energy Ecosystem based on Martian Atmosphere
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2474
Miranda Anhalzer, Alexis Abundio, Johan Zambrano, Yusif Gurbanli, Gecheng Zha (University of Miami)
Investigating Photogrammetric Accuracy of a Lunar-lander-induced Crater Measurement System
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2475
Olivia K Tyrrell (National Institute of Aerospace), Joshua M Weisberger, Timothy Weldon Fahringer, Paul M Danehy (NASA Langley Research Center), William D Hutchins (University of Virginia)
Seismic activity of Mars
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2624
Mateusz Olszewski (Akademia Gornicz-Hutnicza imienia Stanislaw Staszica w Krakowie)

APA-81 | In Person - Potomac 3

Vertically Offset Overlapping Propellers in Tandem Configuration
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2464
Jielong Cai, Sidaard Gunasekaran (University of Dayton), Michael V Ol (Folderol LLC)
Fundamental Studies Towards Rotor Simulations and Design
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2465
Feilin Jia, Philippe Spalart (Flexcompute), Maks J Groom, Qiqi Wang (Massachusetts Institute of Technology)
Comparison of Instantaneous Aerodynamic Loads on Sharp and Blunt Trailing-Edged Blades of High Advance Ratio Rotors
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2466
Oliver Wild (University of Maryland at College Park), Matthew James Murphy (University of Glasgow), Anya R Jones (University of Maryland at College Park)

FD-80 | In Person - Chesapeake G

Rational Boolean Stabilization of Subgrid Models for Large Eddy Simulation
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2485
Emilio E. Torres, Werner J.A. Dahm (Arizona State University)
Extension of the Smagorinsky Subgrid Stress Model to Anisotropic Filters
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2486
Aviral Prakash, Kenneth E Jansen, John A Evans (University of Colorado Boulder)
Sub-grid Scale Modeling of Meso-scale Hurricane Boundary Layer Flows using Machine Learning
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2487
MD Badrul Hasan, Meilin Yu (University of Maryland Baltimore County), Heng Xiao (Virginia Polytechnic Institute and State University)

AMT-30 | In Person - Camellia 2

High Magnification Telecentric Background Oriented Schlieren (BOS) and its Application to a Supersonic Turbulent Boundary Layer
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2437
Terry Zhou, Jonathan Gaskins, Suzanne Swaine, Sally PM Bane, Jonathan Poggie, Gregory A Blaisdell (Purdue University)
Implementation of Self-Aligned Focusing Schlieren for Hypersonic Boundary Layer Measurements
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2438
Jonathan L Hill (Air Force Institute of Technology), Matthew P Borg, Elizabeth Katherine Benitez (Air Force Research Laboratory), Carson L Running (University of Dayton), Mark F Reeder (Air Force Institute of Technology)
A Quantitative Comparison of Background Oriented and Conventional Schlieren Visualization
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2439
Julia Dobrosotskaya, Abdulaziz Alrefaie, Bryan E Schmidt (Case Western Reserve University)
Superresolution Measurement and Comprehension of Time-Resolved Three-Dimensional Density Field of an Underexpanded Jets in Screech B Mode
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2440
Chungil Lee, Yuta Ozawa, Takayuki Nagata, Taku Nonomura (Tohoku Daigaku)
Physics-Informed Background-Oriented Schlieren of Turbulent Underexpanded Jets
Friday, 27 January 15:20 - 15:40 (UTC-5) AIAA-2023-2441
Joseph P Molnar, Samuel J Grauer (The Pennsylvania State University), Olivier Léon, David Donjat (ONERA/DMPE, Université de Toulouse), François Nicolas (ONERA/DAAA, Université Paris Saclay)

SOF-05 | In Person - Camellia 1

Model-Based Systems Engineering for AI-Based Systems
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2587
Jasper Sprockhoff, Bojan Lukic, Vincent Janson, Alexander Ahlbrecht, Umut Durak, Siddhartha Gupta, Thomas Krueger (Deutsches Zentrum für Luft- und Raumfahrt eV)
A Hierarchy of Monitoring Properties for Autonomous Systems
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2588
Sebastian Schirmer, Christoph Torens, Johann Christoph Dauer (Deutsches Zentrum für Luft- und Raumfahrt eV), Jan Baumeister, Bernd Finkbeiner (CISPA Helmholtz-Zentrum für Informationssicherheit gGmbH), Kristin Yvonne Rozier (Iowa State University College of Engineering)
Operational Domain Metamodel for Testing AI Systems in Aviation
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2589
Siddhartha Gupta, Umut Durak (Deutsches Zentrum für Luft- und Raumfahrt DLR Standort Braunschweig)

SOF-04 | In Person - Chesapeake C

aeroBERT-NER: Named-Entity Recognition for Aerospace Requirements Engineering using BERT
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2583
Archana Tikayat Ray, Olivia J Pinon-Fischer, Dimitri N Mavris (Georgia Institute of Technology), Ryan Taylor White (Florida Institute of Technology), Bjorn F Cole (Lockheed Martin Space Systems Co)
COLIBRY - A Counter Optimization Library for MATLAB
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2584
David Braun, Florian Schwaiger, Florian Holzapfel (Technische Universität München), Johannes Diepolder (Diepolder Dynamic Optimization GmbH), Joseph Z. Ben-Asher (Technion Israel Institute of Technology)

(continued) SOF-04 | In Person - Chesapeake C

Development of a Web-based Test Procedure Authoring and Execution Environment for Space Systems

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2585
Hongman Kim, Christopher A Swan (Jet Propulsion Laboratory)

An Open-Source Gazebo Plugin for GNSS Multipath Signal Emulation in Virtual Urban Canyons

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2586
Kartik A Pant, Zhanpeng Yang, James M Goppert, Inseok Hwang (Purdue University System)

GNC-48 | In Person - Annapolis 1

Dynamic Inversion Heat-Flux Tracking for Hypersonic Entry

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2499
Erwin Mooij (Technische Universiteit Delft)

Control of a Spacecraft Rendezvous with an Asteroid and Proximity Maneuvering

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2500
Hadarou Sare, Balachandran Balakumar (University of Maryland College Park Official Bookstore)

Spacecraft Rendezvous and Docking with Obstacle Avoidance using Model Predictive Control

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2501
Jinaykumar Patel (The University of Texas at Arlington Department of Mechanical & Aerospace Engineering), Shashi Ranjan Kumar (Indian Institute of Technology Bombay Department of Aerospace Engineering)

Direct-Indirect Hybrid Strategy for Optimal Powered Descent and Landing

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2502
Fabio Spada (Politecnico di Milano), Marco Sagliano (Deutsches Zentrum für Luft- und Raumfahrt DLR Standort Bremen), Francesco Topputo (Politecnico di Milano)

FD-82 | In Person - Chesapeake D

DARPA CRANE <i>Analysis and Simulation of a Fluidic Effector-Controlled Aircraft</i>

Friday, 27 January 14:00 - 14:20 (UTC-5) | 3779230</stron>
Michael A Niestroy, Neil S Hall (Lockheed Martin Aeronautics Company)

Integration of Active Flow Control Effectors into Aircraft Control Laws

Friday, 27 January 14:20 - 14:40 (UTC-5) | AIAA-2023-2492
Seth Zelman, Matthew Silic, Sui Nam Chan (Aurora Flight Sciences)

Sizing, Integration and Characterization of an Active Flow Control System

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2493
Cody Gray, Kevin R Uleck, Alexander W Feldstein (Aurora Flight Sciences), Benjamin Kangas, Mary Beckman (The Boeing Company Defense Space and Security), Ted Florence, Rene Woszidlo (The Boeing Company)

Novel Approach to Characterizing Tare & Interference Effects on the Lockheed Martin CRANE Wind Tunnel Model

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2494
Emma Chao, Edward Rooney, Mark Buchholz, Austin Shellito, Henry Reagan, Glen Duncan, Brant Maines (Lockheed Martin Corporation), David R Williams (Illinois Institute of Technology)

APA-87 | In Person - Potomac 1

Transonic Wind-Tunnel Testing of a Slotted, Natural-Laminar-Flow Wing at Full-Scale Conditions

Friday, 27 January 14:00 - 14:20 (UTC-5) | AIAA-2023-2452
James G Coder (The University of Tennessee Knoxville Tickle College of Engineering)

Boundary-Layer Stability Analysis of a Swept, Slotted Wing in the NASA Ames 11-Foot Transonic Wind Tunnel

Friday, 27 January 14:20 - 14:40 (UTC-5) | 3776667</stron>
Koen J. Groot, Nicholas John Porfido (Texas A&M University), James G Coder (The Pennsylvania State University)

Measurements of Crossflow Vortices and Tollmien-Schlichting Waves on a Slotted, Natural-Laminar-Flow Airfoil

Friday, 27 January 14:40 - 15:00 (UTC-5) | AIAA-2023-2453
Jeppesen G Feliciano, Edward B White (Texas A&M University)

Effect of Transition Modeling for Analysis of a Slotted, Natural-Laminar-Flow Transonic Truss-Braced Wing Aircraft Configuration

Friday, 27 January 15:00 - 15:20 (UTC-5) | AIAA-2023-2454
Cody L Perkins, Zhi Yang, Dimitri J Mavriplis (University of Wyoming), James G Coder, Lawton Shoemake (The University of Tennessee Knoxville Tickle College of Engineering), Christopher J Axten (The Pennsylvania State University College of Engineering)

AMT-31 | In Person - Magnolia 2

A Method for Direct Shear Measurement of Large Scale Roughened Surfaces in Short Duration Hypersonic Facilities
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2442
David C Steuer (Universitat Stuttgart), Christopher Hambidge, Matthew McGilvray (University of Oxford)
A Method for IR Measurement of Large Scale Roughened Surfaces in Hypersonic Flow
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2443
Wesley J Condren, Christopher Hambidge, David Christopher Steuer, Imran Naved, Matthew McGilvray (University of Oxford)
Accurate Near Wall Measurements in Wall Bounded Flows with wOFV via an Explicit No-Slip Boundary Condition
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2444
Gauresh Raj Jassal, Bryan E Schmidt (Case Western Reserve University)
Temperature-Sensitive Paint Measurements of Cylinder-Induced Shockwave-Boundary Layer Interaction on a 6-degree Cone with Laminar Mach 7 Flow
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2445
Cary Dean Smith, Phillip A Kreth, John D Schmisser (The University of Tennessee Space Institute), Garrett Strickland (Lockheed Martin Space Systems)
One-Dimensional Resonantly Ionized Photoelectron Thermometry Measurements in Supersonic Flow Around a Cylinder
Friday, 27 January 15:20 - 15:40 (UTC-5) AIAA-2023-2446
Walker McCord (The University of Tennessee Knoxville Tickle College of Engineering), Mark T Gragston (The University of Tennessee Space Institute), Zhili Zhang, Aleksander Madison Clark (The University of Tennessee Knoxville Tickle College of Engineering)

AMT-32 | In Person - Baltimore 1

Unsteady Pressure Sensitive Paint Camera Calibration Improvements
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2447
Nicholas Califano (Metis Technology Solutions, Inc.), Marc Shaw-Lecerf, Nettie Roozeboom (NASA Ames Research Center)
Half-Isolator Shock Dynamics Due to the Presence of Pressure-Sensitive Paint and Microramp Vortex Generators
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2448
Chase Jenquin, Ethan Johnson, Venkateswaran Narayanaswamy (NC State University)
Novel Luminescent Temperature Sensor for Internal Temperature Measurement of Ablating Objects in High-Speed Flows
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2449
Joseph Gonzales, Philip Lax, Hirotaka Sakaue (University of Notre Dame)
Tunable Diode Laser Absorption Spectroscopy (TDLAS) for Material Characterization
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2450
Samuel Feltis, Zhili Zhang (The University of Tennessee Knoxville Tickle College of Engineering)
Improvement of Pressure-sensitive-paint Measurement of Rotating blades by Adjusting Oxygen Concentration under Low-pressure Conditions
Friday, 27 January 15:20 - 15:40 (UTC-5) AIAA-2023-2451
Takafumi Matsuyama, Takayuki Nagata, Miku Kasai, Taku Nonomura (Tohoku Daigaku)

PC-50 | In Person - National Harbor 10

Investigation of Mixing Mechanisms to Enable Premixed Hydrogen Combustion
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2552
Tate Prater, Christopher Caulfield, Gan Xiao, Paul P Palies (The University of Tennessee Space Institute)
A Study of the Effects of Containment Wall on the Combustion of Swirl-Stabilized Flames
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2553
Saja Al-rifai, Cheng-Xian Lin (Florida International University), Brian T. Bohan, Kevin J. DeMarco, Marc D Polanka (Air Force Institute of Technology)
Combustion Dynamics in a Swirl-stabilized Cavity Combustor
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2554
Kranthi Yellugari , Rodrigo Villalva Gomez, Ephraim J Gutmark (University of Cincinnati)
Premixed Hydrogen-Air Swirled-Stabilized Combustor Development
Friday, 27 January 15:00 - 15:20 (UTC-5) AIAA-2023-2555
Christopher Caulfield, Jonathan Kolwyck, Tate Prater, Paul Palies (The University of Tennessee Space Institute)

SE-05 In Person - Chesapeake 2	
Interference-to-Noise (I/N) Compliance Validation of Telesat, OneWeb and SpaceX's 2020 Ka-Band NGSO FCC Processing Round Applications	
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2577	
Antoinette Tan, Pranavi Boyalakuntla, Braden Oh, Utsav Gupta, Lieselotte Heinrich, Whitney Lohmeyer (Franklin W Olin College of Engineering)	
Uncovering Hazards Using a Multi-Objective Optimization to Explore the Faulty State-Space	
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2578	
Inga Girshfeld, Daniel Hulse, Lukman Irshad (NASA Ames Research Center)	
TP-21 In Person - Azalea 1	
Stochastic determination of gas-phase chemical reaction rates from experiments in air plasmas	
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2598	
Ana Isabel del Val, Olivier Chazot (Von Karman Institute For Fluid Dynamics)	
Development of a Scalable Radiative Heat Transfer Module for Gray, Diffuse Surfaces	
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2599	
Rainald Lohner (George Mason University), Alejandro Figueroa (Eawag)	
Modeling Heat Conduction in Composite Materials Using a Nonlocal Lattice Particle Method	
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2600	
Donglai Liu, Hailong Chen (University of Kentucky)	
FD-79 In Person - Chesapeake E	
Time-resolved volumetric particle tracking measurements of an unstable helical vortex pair	
Friday, 27 January 14:00 - 14:20 (UTC-5) AIAA-2023-2482	
Dominic Schröder (Rheinisch-Westfälische Technische Hochschule Aachen), Thomas Leweke (Institut de Recherche sur les Phenomenes hors Equilibre), Eike Stumpf (Rheinisch-Westfälische Technische Hochschule Aachen)	
Time-Resolved Particle Image Velocimetry Measurements of Vortex Breakdown	
Friday, 27 January 14:20 - 14:40 (UTC-5) AIAA-2023-2483	
Assaf Krupnik, Anya R Jones (University of Maryland at College Park)	
Effect of Freestream Turbulence on Wall-bounded Tip Vortex Breakdown and Decay Mechanisms	
Friday, 27 January 14:40 - 15:00 (UTC-5) AIAA-2023-2484	
Jack R Medzorian, Stephen P Lynch (The Pennsylvania State University)	

16:00 | Technical Panel

EXPL-20.2 In Person - National Harbor 7
SOF-07 In Person - Camellia 1
HIS-08 In Person - Azalea 2

16:00 | Technical Paper Session

SEN-05 In Person - Chesapeake I
Selection of Tuning Parameters of the Unscented Kalman Filter using Analytical Truth Statistics
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2702
Matthew Rhudy (Penn State Berks)
Image Database Generation and Management System for the Small-pixelized Airborne Target Recognition
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2703
Lee Hoseop, Sungwook Cho (Cheongju University)
INS Aiding by Combining Radar Altimeter and Seeker Measurements
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2704
Emre han Ata, Koray S. Erer (Roketsan Roket Sanayii ve Ticaret AS), Erhan Ilhan Konukseven (Orta Dogu Teknik Universitesi)
INS Aiding by Combining Radar Altimeter and Seeker Measurements
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2704
Emre han Ata, Koray S. Erer (Roketsan Roket Sanayii ve Ticaret AS), Erhan Ilhan Konukseven (Orta Dogu Teknik Universitesi)

(continued) SEN-05 | In Person - Chesapeake I

Drone Navigation Based on Integrated MEMS Inertial and Polarimetric Camera Measurements
Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2705
Verdiana Bottino, Giorgio de Alteriis, Claudia Conte, Rosario Schiano Lo Moriello, Giancarlo Rufino, Domenico Accardo (Universita degli Studi di Napoli Federico II)

APA-84 | In Person - Potomac 6

Design of Laminar-Flow Airfoils Based On Boundary-Layer Integral Parameters
Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2608
Armando R. Collazo Garcia, Phillip J Ansell (University of Illinois Urbana-Champaign)

Numerical Study of Co-Flow-Jet Distribution along the Span of Finite Wing
Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2609
Zhijin Lei, Gecheng Zha (University of Miami)

Flight Dynamics of a Flying Wing Aircraft Featuring the Bell Spanload
Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2610
Caleb S Robb, Rohit K S S Vuppala, Ryan C Paul, Kursat Kara (Oklahoma State University College of Engineering Architecture and Technology)

Experimental analysis of the effect of active morphing of a VR-12 airfoil for unsteady aerodynamics optimization
Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2611
William Refling, Thomas Sprengeler, Joshua Yurek, Charles Fabijanic, Yildirim B Suzen, Jordi Estevedeordal (North Dakota State University)

Simulation of 3D Co-Flow Jet Airfoil with Integrated Micro-Compressor Actuator at Different Cruise Mach Numbers
Friday, 27 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2118
Paula A Barrios, Yan Ren, Gecheng Zha (University of Miami)

SEN-06 | In Person - Chesapeake 11

Heterogeneous Fleet Allocation and Route Planning Using Weighted Voronoi Diagrams
Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2706
Victor A Yang, Jehan Dastoor, Xiao Wei, Johann Bradley, Mostafa Elghorab, Alicia Sudol, Dimitri N Mavris (Georgia Institute of Technology)

On-demand Landmark Activation to aid Navigation for Advanced Air Mobility
Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2707
Rohith Boyinine (University of Cincinnati), Eshaan Khanapuri, Anusna Chakraborty (Utopia Compression), Rajnikant Sharma (University of Cincinnati)

IS-32 | In Person - Baltimore 2

A Deep Reinforcement Learning Approach to solve the Vehicle Routing Problem with Resource Constraints
Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2662
Dong Ho Lee, Jaemyung Ahn (Korea Advanced Institute of Science and Technology)

Robust Waypoint Guidance of a Hexacopter on Mars using Meta-Reinforcement Learning
Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2663
Lorenzo Federici, Roberto Furfaro (The University of Arizona), Alessandro Zavoli, Guido De Matteis (Universita degli Studi di Roma La Sapienza)

Systems Theoretic Process Analysis of a Run Time Assured Neural Network Control System
Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2664
Kerianne L Hobbs, Benjamin Heiner (Air Force Research Laboratory), Lillian Busse (University of Cincinnati), Kyle Dunlap (Parallax Advanced Research Corporation), Jonathan Rowanhill, Ashlie Ben Hocking (Dependable Computing, LLC), Aditya Zutshi (Galois Inc)

State-Estimation-Aware Planning for Autonomous Systems with Temporal Logic Specifications
Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2665
Ali Tevfik Büyükköçak, Yingjie Hu, Azizollah Taheri (University of Minnesota Twin Cities), Derya Aksaray (Northeastern University), Demoz Gebre-Egziabher (University of Minnesota Twin Cities)

GPS-Denied State Estimation for Blue/NDAA Unmanned Multi-Rotor Vehicles
Friday, 27 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2666
Grant Phillips, Justin M Bradley (University of Nebraska-Lincoln), Prashant Ganesh (University of Florida)

IS-31 | In Person - Azalea 3

Estimating System State from the Actions of a Reinforcement Learning Agent
Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2657
Andres Enriquez Fernandez, John J Bird (The University of Texas at El Paso)

(continued) IS-31 | In Person - Azalea 3

Sequential Cooperative Reinforcement Learning of Mothership Routing Problem

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2658
Jaeho Lee, Junwoo Park, Dongwoo Lee, Hyochoong Bang (Korea Advanced Institute of Science and Technology)

Real-time planning of Optimal Route for Conflict-Free UAS Operation Using Deep Reinforcement Learning

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2659
Jaejun Jang, Nicholas Chaehoon Song, Junki Shim, Gwonyeol Lee (Gwangju Institute of Science and Technology), Jae-Young Choi, Rachit Prasad (Virginia Polytechnic Institute and State University), Seongim Choi (Gwangju Institute of Science and Technology)

Data-Driven Trajectory Modeling of UAS/UAM in Dynamic Environment

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2660
Rachit Prasad (Virginia Polytechnic Institute and State University), Gwonyeol Lee (Gwangju Institute of Science and Technology), Jae-Young Choi (Virginia Polytechnic Institute and State University), Jaejun Jang, Junki Shim, Nicholas Chaehoon Song, Seongim Choi (Gwangju Institute of Science and Technology)

Dynamic Network-based Probabilistic Route Planner and Validation with Flight Test

Friday, 27 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2661
Rachit Prasad (Virginia Polytechnic Institute and State University), Junki Shim (Gwangju Institute of Science and Technology), Jae-Young Choi, Jean-Michel W Fahmi (Virginia Polytechnic Institute and State University), Jaejun Jang, Gwonyeol Lee, Nicholas Chaehoon Song (Gwangju Institute of Science and Technology), Craig A Woolsey (Virginia Polytechnic Institute and State University), Seongim Choi (Gwangju Institute of Science and Technology)

IS-34 | In Person - Baltimore 4

Self-supervised Obstacle Detection During Autonomous UAS Taxi Operations

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2672
Muhammad Yousuf Shaikh, Ivan Petrunin, Argyrios Zolotas (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

A Closed Loop Perception Subsystem for small Unmanned Aerial Systems

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2673
Veera Venkata Ram Murali Krishna Rao Muvva, Kruttidipta Samal, Justin M Bradley, Marilyn Wolf (University of Nebraska-Lincoln)

Integration of Reinforcement Learning and Unreal Engine for Enemy Containment via Autonomous Swarms

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2674
David Peterson, Beyonce Andrades, Kevin Lizarazu-Ampuero, Jai Deshmukh, Thomas Stapor (Virginia Polytechnic Institute and State University), Will Destaffan, Don Engel (University of Maryland Baltimore County College of Engineering and Information Technology), Justin Krometis (Virginia Polytechnic Institute and State University), Justin A Kauffman (Virginia Tech Research Center - Arlington)

Multi-agent Control of Chaser Satellites using Games with Lexicographic Preferences

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2675
Kristina Miller (University of Illinois Urbana-Champaign), Sean Phillips, Alexander A Soderlund (Air Force Research Laboratory Space Vehicles Directorate)

Impact of Hydrogen Powered Drones on Advanced Air Mobility

Friday, 27 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2676
Daniel Coraspe, Samuel Diaz-Acosta, Emilio Serrano, Zoey Banash, Liang Sun (New Mexico State University)

IS-33 | In Person - Baltimore 3

Motion-Primitive based Deep Reinforcement Learning for High Speed Aerospace Vehicle Missions

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2667
Winston C Levin, Sean M Nolan (Purdue University), Ali K Raz (George Mason University), Kris Ezra (Purdue University), Julie J Parish, Kyle Williams (Sandia National Laboratories)

Development of Active Decoy Guidance Policy by Utilising Multi-Agent Reinforcement Learning

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2668
Enver Bildik, Burak Yuksek, Antonios Tsourdos, Gokhan Inalhan (Cranfield University Cranfield School of Aerospace Transport and Manufacturing)

Impact and Influence of Cyber-Physical Systems Research on Autonomous Aerospace Systems

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2669
Justin M Bradley (University of Nebraska-Lincoln), Cody H Fleming (Iowa State University)

Energy-Aware Motion Planning using Experimental Flight Data from a Tailsitter UAV

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2670
Peter Ryseck (University of Maryland at College Park), Elena Shrestha, Derrick W Yeo (University of Michigan), Rajneesh Singh, Matt Floros (Army Research Laboratory Aberdeen Proving Ground), Inderjit Chopra (University of Maryland at College Park)

(continued) IS-33 | In Person - Baltimore 3

Effects of Intercept Point Placement On Clothoid Path Recovery Time After Collision Avoidance

Friday, 27 January 17:20 - 17:40 (UTC-5) | AIAA-2023-2671
Travis W Moleski, Theodore Tuttle, Jay Wilhelm (Ohio University)

PC-53 | In Person - National Harbor 10

Combustion Characteristics of Gaseous O₂/CH₄ Coaxial Jet Flames in a Model Combustion Chamber

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2688
Young Hoo Kim, Jae Hyun Kim, Oh Chae Kwon (Sungkyunkwan University College of Engineering)

Investigation of Extinction and Turbulence Effects in Liquid-Fueled Jet Flames

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2689
John Schihl, Amirreza Gandomkar (Michigan State University), Aaron Skiba, Campbell D Carter (Air Force Research Laboratory), Patton M Allison (Michigan State University)

Model Simulations of Soot Formation due to PAH Kinetics from Mixing Layers of Jet-A Fuels

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2690
Shubham B Karpe, Suresh Menon (Georgia Institute of Technology)

DA-02 | In Person - National Harbor 14

Concept of Operations for an In-time Aviation Safety Management System (IASMS) for Upper E Airspace

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2620
Kyle KE Ellis, Lawrence J Prinzel (NASA Langley Research Center), Paul Krois (Crown Consulting, Inc.), Misty Davies, Nikunj Oza, Robert Mah (NASA Ames Research Center), Chad Stephens, Michael Vincent (NASA Langley Research Center), Jan de Regt, Deborah Kirkman, Debra Moch-Mooney (Flight Safety Foundation), James Ackerson (Flight Research Aerospace), Samantha I Infeld (Analytical Mechanics Associates, Inc.)

Design and Implementation of a Low-Cost Local Beacon System for GPS-Denied Environments

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2621
Aref Asgari, Philip A Ferguson (University of Manitoba)

Safe and Sustainable Unmanned Aircraft Trajectory Planning in Dense Urban Environments

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2622
Maarten Uijt De Haag, Christian Berth, Carola Ebert, Julien Weiss (Technische Universitat Berlin Fakultat V Verkehrs- und Maschinensysteme)

A Strategic Approach for Dense, Integrated, Vehicle Navigation

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2623
Mahyar R Malekpour (NASA Langley Research Center)

IS-36 | In Person - Potomac 4

Comparison of Visual and LiDAR SLAM Algorithms using NASA Flight Test Data

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2679
Keerthana Kannan, Anjan Chakrabarty, Joshua E Baculi, Evan Kawamura, Wendy Holforty, Corey A Ippolito (NASA Ames Research Center)

A Structurally-Adaptive Framework for Distributed Airborne Sensing over Real-time Collaborative Information Sharing Networks

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2680
Corey A Ippolito (NASA Ames Research Center)

Distributed Decision-Making on the Edge

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2681
Aditya N Das (NASA Headquarters)

PC-54 | In Person - National Harbor 8

Altering the Burning Rate of a Propellant with Shape Memory Alloy

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2691
Derek K Messer, Cohen T Nunes, Thomas A Hafner, Steven Son (Purdue University School of Mechanical Engineering)

Effects of Oxidizer Content on Electrically Controlled Gel Polymer Electrolyte Monopropellants

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2692
Harrison Autry, Bradley Gobin, Ryan Marks, Gregory Young (Virginia Polytechnic Institute and State University)

Extinguishing and Reignition Characteristics of Electrically Controllable Solid Propellants Under Elevated Pressures

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2693
Bradley Gobin, Gregory Young (Virginia Polytechnic Institute and State University)

(continued) PC-54 | In Person - National Harbor 8

The Effects of Simple Copper Containing Particles on the Thermal Decomposition of Ammonium Perchlorate

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2694
Hope H Feltenberger, Joseph Kalman (California State University Long Beach)

FD-84 | In Person - Chesapeake H

Investigation of Turbulent Inflow Techniques for High-Fidelity Simulations

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2628
Matthew J Schwartz (Ohio Aerospace Institute), Daniel J Garmann (Air Force Research Laboratory)

Economical Third-Order Methods for Accurate Surface Heating Predictions on Simplex Element Meshes

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2629
Kyle B Thompson (NASA Langley Research Center), Hiroaki Nishikawa, Emmett Padway (National Institute of Aerospace)

Shock-capturing model using PID controller for high-order discontinuous Galerkin method

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2630
Juhyun Kim, Hojun You, Chongam Kim (Seoul National University)

Walsh Functions for Shock Tracking and their Application to Expansion Tube Simulations

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2631
Jamie Border, Rowan Gollan (The University of Queensland Centre for Hypersonics)

GNC-54/IS-37 | In Person - Annapolis 4

Dynamic Inversion with Adaptive Augmentation for a High-Speed Guided Projectile

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2647
Tristan Griffith (Texas A&M University), John K Zelina (Embry-Riddle Aeronautical University), Benjamin C Gruenwald, Joshua Bryson (Army Research Laboratory Aberdeen Proving Ground)

Modeling of GPS Degradation Conditions for Risk Assessment of UAS Operations in Urban Environments

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2648
Andrei Cuenca, Tatiana Gutierrez, Eduardo Morillo, Brock Steinfeldt, Hever Moncayo (Embry-Riddle Aeronautical University)

Experimental Validation of a Distributed Norm-Free and Adaptive Event-Triggered Control Approach on an Aerial Multiagent System

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2649
Deniz Kurtoglu, Jesse Jaramillo (University of South Florida), Stefan Ristevski (Combine Control System AB), Andrya Pimentel, Tansel Yucelen (University of South Florida), Jonathan A Muse (Wright-Patterson Air Force Base)

Candidate Performance Metrics for Generalized Control for Autonomous Flight

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2650
Irene M Gregory, Michael J Acheson, Andrew P. Patterson, Matthew D Houghton, Alex Oshin, Kasey A Ackerman, Jacob Cook (NASA Langley Research Center)

GTE-38 | In Person - National Harbor 11

Conjugate Heat Transfer Prediction Procedure for Realistic Film-Cooled Axial Turbines

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2651
Joseph Graff, Roger L. Davis (University of California Davis), John P. Clark (Air Force Research Laboratory)

Unsteady Simulation of a Single Stage High Speed Compressor with Advanced Casing Treatments

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2652
Russell W Powers, Joshua Gilbert (Naval Air Warfare Center Aircraft Division)

Computational Fluid Dynamics Modeling of Lean Blowout in the ARC-M1 Gas Turbine Combustor

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2653
Debolina Dasgupta, Sibendu Som (Argonne National Laboratory), Eric J Wood, Tonghun Lee (University of Illinois Urbana-Champaign Grainger College of Engineering), Eric Mayhew, Jacob Temme, Chol Bum Kweon (Army Research Laboratory Aberdeen Proving Ground)

IS-35 | In Person - National Harbor 13

Safe Path Planning of UAV Based on Reinforcement Learning in Probabilistic Environments

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2677
James Gault, Jun Xiang, Jun Chen (San Diego State University)

Twin-Delayed Deep Deterministic Policy Gradient for altitude control of a flying-wing aircraft with an uncertain aerodynamic model

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2678
Willem Völker, Yifei Li, Erik-Jan Van Kampen (Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek)

MDO-28 | In Person - Chesapeake 5

Nonlinear Projection-Based Model Order Reduction in the Presence of Adaptive Mesh Refinement

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2682
Clayton Little, Charbel Farhat (Stanford University)

Efficient Global Optimization Algorithm Using Neural Network-based Prediction and Uncertainty

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2683
Pavankumar Koratikere, Leifur T Leifsson (Purdue University), Laurel Barnet, Kenneth Bryden (Iowa State University)

Uncertainty Quantification via Deep Ensembles in Missile Performance Prediction

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2684
SunWoong Yang, Kwanjung Yee (Seoul National University)

GNC-51 | In Person - Annapolis 2

Optimal Coasting Time Determination of a Multi-stage Interceptor Considering Engagement Zone

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2637
Hyungho Na, Taehyun Sung, Jaemyung Ahn (Korea Advanced Institute of Science and Technology)

Integrated and Adaptive Guidance and Control for Endoatmospheric Missiles via Reinforcement Meta-Learning

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2638
Brian Gaudet, Roberto Furfaro (The University of Arizona)

On-Board Optimal Feedback Controller Generation for Hypersonic Re-Target Scenarios

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2639
Mihir Vedantam (The University of Texas at Austin), Carlos Andres Vargas Venegas, Damien Gueho, Puneet Singla (The Pennsylvania State University), Maruthi R Akella (The University of Texas at Austin)

HMT-04/IS-30 | In Person - National Harbor 6

Q-Learning based Pursuit-Evasion game in a grid network with partial information

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2654
Srikanth Elkoori Ghantala Karnam, Rajnikant Sharma (University of Cincinnati)

Multi-Agent Assisted Shortest Path Planning using Monte Carlo Tree Search

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2655
Abhay Singh Bhadoriya, Swaroop Darbha, Sivakumar Rathinam (Texas A&M University), David Casbeer, Steven J Rasmussen (Air Force Research Laboratory), Satyanarayana G Manyam (Infoscitex)

OPS-06 | In Person - Chesapeake 12

Commercial Potential Evaluation of Scramjet Powered Vehicles for Access-to-Space

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2685
Lachlan McTaggart, Tristan Vanyai (The University of Queensland)

A Bibliometric Approach to Characterizing Technology Readiness Levels Using Machine Learning

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2686
Jehan Dastoor, Heying Zhang, Michael G Balchanos, Dimitri N Mavris (Georgia Institute of Technology)

Developing a Roadmap for an On-Orbit Satellite Factory Concept

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2687
Jacob Rome, Matthew Obenchain, Christopher Hartney, Kelvin Chen, Arianna Villegas, Vinay K Goyal (The Aerospace Corporation), Jon Strizzi (United States Space Force)

GNC-52 | In Person - Annapolis 3

Robust Wind-Aware Path Optimization Onboard Small Fixed-wing UAVs

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2640
Thomas Bucher, Thomas Stastny (Eidgenossische Technische Hochschule Zurich), Sebastian Verling (Wingtra AG), Roland Siegwart (Eidgenossische Technische Hochschule Zurich)

A Nonlinear Guidance Law for Target Enclosing with Arbitrary Smooth Shapes

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2641
Abhinav Sinha, Yongcan Cao (The University of Texas at San Antonio)

Energy-efficient Ring Formation Control with Constrained Inputs

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2642
Praveen Kumar Ranjan, Abhinav Sinha, Yongcan Cao (The University of Texas at San Antonio), Dzung M Tran, David Casbeer, Isaac E Weintraub (Air Force Research Laboratory)

APA-85 | In Person - Potomac 3

Aerodynamic Design of Propellers for an EVTOL Aircraft
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2612
Carlotta Manca, Prasanth K Murari, Kavipiriyam Shanmuganathan, Sachin Ramesh (Volador FlyTech Limited)
Time Varying Rotor Aerodynamics for Quadrotor Vehicles
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2613
Christopher Smith, Alok Sinha (The Pennsylvania State University)
Design of Propellers with Passive Mitigation of Coherent Tip Vortex Roll-up
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2614
Tove E Kopperstad, Phillip J Ansell (University of Illinois Urbana-Champaign)

FD-86 | In Person - Chesapeake G

Applying compressible transformations to wall modeled LES of cold wall flat plate boundary layers
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2635
Tyler R Hendrickson, Pramod Subbareddy, Graham V Candler (University of Minnesota Twin Cities), Robyn L Macdonald (University of Colorado Boulder)
Rotor Performance and Turbulent Wake Simulations of a Scaled Helicopter Rotor in Hover Using Wall-Modeled Large-Eddy Simulations
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2636
Zachary Stratton, John T Spyropoulos (Naval Air Systems Command), Sanjeeb Bose (Cascade Technologies Inc), Jelena Svorcan (Univerzitet u Beogradu)

SOF-06 | In Person - Chesapeake C

Space-based Computing Challenges
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2708
Fred C Briggs (Self)
Space ROS: An Open-Source Framework for Space Robotics and Flight Software
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2709
Austin Probe (Emergent Space Technologies, Inc), Amalaye Oyake, S Will Chambers (Blue Origin LLC), Matthew Deans, Guillaume Brat, Nick Bryan Cramer (NASA Ames Research Center), Brian Roberts (NASA Goddard Space Flight Center), Kimberly Hambuchen (NASA Johnson Space Center)
Analysis of Input from Wildfire Incident Experts to Identify Key Risks and Hazards in Wildfire Emergency Response
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2710
Seydou Mbaye, Garfield Jones (Morgan State University), Misty D Davies (NASA Ames Research Center)
ARINC 661 Based User Interface Design for a Sustainable Aviation Application on an Electronic Flight Bag
Friday, 27 January 17:00 - 17:20 (UTC-5) AIAA-2023-2711
Nimisha Scariachan (Technische Universitat Clausthal), Marie Goetz, Joscha Kurz, Umut Durak (Deutsches Zentrum fur Luft- und Raumfahrt eV)

SCS-13/SATS-08 | In Person - Woodrow Wilson D

Development of the High Strain Composite Deployable Vector Sensor Payload for the AERO and VISTA Cubesat Missions
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2695
Mark J Silver, Alai Lopez, Robert Reeve, Alexander Morris, Alan Fenn (Massachusetts Institute of Technology Lincoln Laboratory)
Prototyping and Engineering Model Test Campaign of the 100W 1U PowerCube Deployable Solar Array
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2696
Antonio Pedivellano, Thomas Sinn, Ambre Raharijaona, Michael Kringer, Joram Gruber, Joachim Schmidt, Thomas Lund, Alexander Titz (Deployables Cubed GmbH), Diego Garcia, Daria Stepanova, Anton Drachuk, Anton Vlaskin (German Orbital Systems GmbH), Tim Kubera (Azur Space Solar Power GmbH), Stefan Titze, Mathias Hartmann (Technische Hochschule Deggendorf), Bailey Leona Garrett, Callan Whitney, Pauline Faure (California Polytechnic State University)
Design and Testing of the BionicWingSat in a Zero-g Flight Campaign - A 2U-CubeSat with Deployable, Biologically-Inspired Wings
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2697
Martin Eckhard Zander (Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Faserverbundleichtbau und Adaptronik), Matthew K Chamberlain (NASA Langley Research Center), Dominic Jost, Daniel Robert Müller, Niels Hagmeister, Marco Straubel, Christian Hühne (Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Faserverbundleichtbau und Adaptronik)

(continued) SCS-13/SATS-08 In Person - Woodrow Wilson D	
Deployable Roll-Out Composite (ROC) Booms for Smallsat Antennas	
Friday, 27 January 17:00 - 17:20 (UTC-5) AIAA-2023-2698	
Michael Pulford, Mark S Lake (Redwire Space)	
GNC-53 In Person - Annapolis 1	
Rigid Body Pose Estimation on TSE(3) for Spacecraft with Unknown Moments of Inertia	
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2643	
Brennan S McCann, Morad Nazari, Matthew M Wittal (Embry-Riddle Aeronautical University), Jeffrey Smith (NASA John F Kennedy Space Center)	
Convex Optimization of Ascent and Powered Descent of a Reusable Launch Vehicle	
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2644	
Federico Gettatelli, Boris Benedikter, Alessandro Zavoli (Universita degli Studi di Roma La Sapienza), Simone Pizzurro, Enrico Cavallini (Agenzia Spaziale Italiana)	
Electrospray Propulsion Performance for Cubesat Missions	
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2645	
Ivan Martinez I Cano, Kenneth D. Mease (University of California Irvine)	
A Novel Variable Specific Impulse Optimization Methodology for Modulable Electric Propulsion Systems	
Friday, 27 January 17:00 - 17:20 (UTC-5) AIAA-2023-2646	
Giuseppe Di Pasquale (IENAI SPACE), Manuel Sanjurjo Rivo (Universidad Carlos III de Madrid - Campus de Leganes), Daniel Pérez Grande (IENAI SPACE)	
ASE-07/PDL-17 In Person - Baltimore 5	
Liquid Plasma Crystals on the ISS	
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2615	
Evdokiya G Kostadinova (Auburn University), Emerson Gehr (Baylor University), Bradley Andrew (Auburn University), Lorin S Matthews, Truell W Hyde, Abbie Terrell (Baylor University)	
Charging of Irregularly-Shaped Dust Grains near Surfaces in Space	
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2616	
David Lund, Xiaoming He, Daoru Han (Missouri University of Science and Technology)	
Simulated Propagation of Ion Acoustic Solitary Waves from Orbital Debris Contrasted with Simultaneous Observations of the Ionosphere by an Incoherent Scatter Radar	
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2617	
Connor M Wilson, Christine M Hartzell (University of Maryland at College Park)	
Addressing the Lightning Protection Needs of Novel Aircraft	
Friday, 27 January 17:00 - 17:20 (UTC-5) AIAA-2023-2618	
Carmen Guerra-Garcia, Samuel Austin, Jaime Peraire, Cuong Nguyen (Massachusetts Institute of Technology)	
Streamer Discharge Development in Long Air Gaps	
Friday, 27 January 17:20 - 17:40 (UTC-5) AIAA-2023-2619	
Andrey Starikovskiy (Princeton University), Eduard Bazelyan (AO Energeticeskij institut im G M Krzizanovskogo), Nickolay Aleksandrov (Moskovskij fiziko-tehniceskij institut nacional'nyj issledovatel'skij universitet)	
FD-83 In Person - Chesapeake D	
Conceptual Aircraft Design Studies with Integrated Active Flow Control	
Friday, 27 January 16:00 - 16:20 (UTC-5) AIAA-2023-2625	
Alexander L Carrere (Boeing Research and Technology), Alexander W Feldstein (Aurora Flight Sciences), Sean R Wakayama (Boeing Research and Technology), Lauren Wolfe (Aurora Flight Sciences), Ryan Hupp, Norman Princen (Boeing Research and Technology)	
Evaluation of Mission and Configuration Effectiveness Employing Active Flow Control (AFC) Technologies	
Friday, 27 January 16:20 - 16:40 (UTC-5) AIAA-2023-2626	
Carl Johnson, Jimmy C Tai (Georgia Institute of Technology)	
Preliminary Design of Coplanar Joined Wing Aircraft with Integrated Active Flow Control	
Friday, 27 January 16:40 - 17:00 (UTC-5) AIAA-2023-2627	
Alexander W Feldstein, Kevin R Uleck, John Floyd, Cody Gray (Aurora Flight Sciences), Niko Intravartolo, Matthew Stauffer, Timothy Garrett (Boeing Research and Technology)	

APA-83 | In Person - Potomac 5**AVT-297 Development of a Framework for Validation of Computational Tools**

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2604

Joseph H Morrison (NASA Langley Research Center), Melike Nikbay (Istanbul Teknik Universitesi), Eric L Walker (NASA Langley Research Center)

Exploitation of a Validation Hierarchy for Modeling and Simulation

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2605

Scott Shaw (MBDA UK Ltd), James M Luckring (NASA Langley Research Center), William Oberkampf (W. L. Oberkampf Consulting), Rick E Graves (Air Force Research Laboratory)

A Process for Identifying Requirements for Physical Referent Data to Support Computational Model Validation

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2606

Nigel J Taylor (MBDA UK Ltd), Dimitri N Mavris, Efe Yamac Yarbasi, Burak Bagdatli (Georgia Institute of Technology)

A Systems Engineering Based Model Selection Approach for Complex, Multi-Disciplinary Physics Problems

Friday, 27 January 17:00 - 17:20 (UTC-5) | AIAA-2023-2607

Efe Yamac Yarbasi, Burak Bagdatli, Dimitri N Mavris (Georgia Institute of Technology College of Engineering)

FD-85 | In Person - Chesapeake E**Evaluation of the Modified Version of the Holmén Vortex Identification Method Using Experimental Data**

Friday, 27 January 16:00 - 16:20 (UTC-5) | AIAA-2023-2632

Tomas E Rojas Carvajal, Jacob Neal, Michael Amitay (Rensselaer Polytech Institute School of Engineering)

Recognition and Classification of Vortical Flows using Artificial Neural Networks and Graftieaux's Identification Criteria

Friday, 27 January 16:20 - 16:40 (UTC-5) | AIAA-2023-2633

Dylan T O'Donoghue, Chang-Kwon Kang (The University of Alabama in Huntsville), Truong Tran (Penn State Harrisburg)

Investigation of Interacting Wake Instability using Complex Network Analysis

Friday, 27 January 16:40 - 17:00 (UTC-5) | AIAA-2023-2634

Renee Dorer (The Pennsylvania State University), Michael Meehan (University of Colorado Boulder), Jacqueline A O'Connor (The Pennsylvania State University)