

AVIATION AVIATION



2014

16-20 JUNE 2014

ATLANTA, GA

AVIATION'S GLOBAL PROMISE – CHALLENGES AND OPPORTUNITIES



FINAL PROGRAM

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Welcome

Welcome to Atlanta and to AVIATION 2014; we're excited to share this year's program with you as we explore aviation's global promise! An essential driver of economic growth and stability, the aviation enterprise is in a phase of evolving business models, increased efficiency demands, emerging manufacturing methods, and constantly evolving technology integration. These trends offer unprecedented opportunities and challenges for new capabilities that could transform the way we utilize this critical asset.

This year's forum will build on the foundation of AVIATION 2013 to stimulate thought-provoking conversations among industry leaders and the engineering and technical professionals that develop and operate aviation systems. A full program of detailed technical discussions will underpin the high-level plenary and panel conversations to provide a wide-ranging overview of the state of the art in our industry.

In addition to cutting-edge technical research presentations, industry executives and thought-leaders will discuss challenges and opportunities associated with international aviation integration and operations, global supply chain and risk management, NextGen and SESAR implementation, and technology development and implementation. We've invited local Atlanta aviation companies to discuss how they operate internationally from a worldwide hub. Government and industry experts from around the world will address the future of CFD and how it will impact the way we design and certify future aviation systems. Entrepreneurs and policymakers will discuss the implications of and growing demand for the increased use of unmanned platforms in an already crowded airspace.

These are just a few of the discussions planned for the forum this year. Everyone involved in the planning has worked to develop a robust, timely, and interesting program; we hope you take advantage of the many learning and networking opportunities throughout the week.

AVIATION 2014 is proud to feature the following conferences:

- | | |
|--|---|
| 20th AIAA/CEAS Aeroacoustics Conference | 7th AIAA Flow Control Conference |
| 30th AIAA Aerodynamic Measurement Technology and Ground Testing Conference | 44th AIAA Fluid Dynamics Conference |
| AIAA/3AF Aircraft Noise and Emissions Reduction Symposium | 19th AIAA International Space Planes and Hypersonic Systems and Technologies Conference |
| 32nd AIAA Applied Aerodynamics Conference | 11th AIAA/ASME Joint Thermophysics and Heat Transfer Conference |
| AIAA Atmospheric Flight Mechanics Conference | 21st AIAA Lighter-Than-Air Systems Technology Conference |
| 6th AIAA Atmospheric and Space Environments Conference | 15th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference |
| 14th AIAA Aviation Technology, Integration, and Operations Conference | AIAA Modeling and Simulation Technologies Conference |
| AIAA Balloon Systems Conference | 45th AIAA Plasmadynamics and Lasers Conference |
| AIAA Flight Testing Conference | 7th AIAA Theoretical Fluid Mechanics Conference |

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FEATURES



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Conference Info

Including special events



Take Notes

Take notes during sessions



City Map

See the surrounding area and the Hyatt Regency Atlanta



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Contents

INTRODUCTION	Welcome	3
	Forum Overview	6
	Sponsors and Supporters	8
HIGHLIGHTS	Keynote Speakers and Plenary Sessions	9
	Special Sessions & Events	10
	Highlighted Sessions	12
	Networking Events	13
	Educational Events	14
	Recognition Events	15
EXPOSITION	Exposition Hall	19
	Exhibitors	21
GENERAL	General Information	24
	Author and Session Chair Information	25
	ITAR Information	26
	Organizing Committee	27
	Committee Meetings	28
PROGRAM	Sessions at a Glance	31
	Author and Session Chair Index	41
	Technical Zones	148
	Venue Map	149



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Password: aiaa2014



AIAA is the world's largest technical society dedicated to the global aerospace profession. With more than 35,000 individual members worldwide, and one hundred corporate members, AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.

www.aiaa.org



Forum Overview

	SATURDAY / SUNDAY 14 – 15 June	MONDAY 16 June	TUESDAY 17 June		
0700 hrs			Networking Breakfast (0700 – 0800 hrs)		
0730 hrs		Speakers' Briefing	Speakers' Briefing		
0800 hrs	Continuing Education Course and Workshop	Opening Keynote	Plenary Panel		
0830 hrs					
0900 hrs		Networking Break	Networking Break in Exposition Hall		
0930 hrs		Technical Sessions	Panel: Aviation's Challenges & Opportunities - Georgia's Global Perspectives	Technical Sessions	
1000 hrs					Panel: Aviation's Challenges & Opportunities - Perspectives from Brazil & China
1030 hrs					
1100 hrs				Exposition Hall Open	
1130 hrs					
1200 hrs					
1230 hrs			Networking Lunch on Own	Awards Luncheon: Celebrating Achievements in Aerospace Sciences	
1300 hrs			Networking Lunch on Own		
1330 hrs					
1400 hrs		Technical Sessions	Panel: Transformative Aerospace System Analysis, Design, and Certification: A Vision for CFD in 2030		
1430 hrs				Panel: FAA Has Selected UAS Test Sites – What Happens Next?	
1500 hrs					
1530 hrs	Networking Break		Networking Break		
1600 hrs					
1630 hrs			Rising Leaders in Aerospace Forum Leadership Exchange and Speed Networking		
1700 hrs			Hall Closed		
1730 hrs	Fluid Dynamics Award Lecture	Rising Leaders in Aerospace Forum Panel		William Littlewood Memorial Lecture	
1800 hrs					
1830 hrs		Rising Leaders in Aerospace Forum Reception			
1900 hrs			William Littlewood Memorial Reception in Exposition Hall		
1930 hrs					
2000 hrs					
2030 hrs					
2100 hrs					
2130 hrs					
2200 hrs					

Forum Overview

	WEDNESDAY 18 June			THURSDAY 19 June			FRIDAY 20 June		
0700 hrs	Networking Breakfast (0700 – 0800 hrs)			Networking Breakfast (0700 – 0800 hrs)					
0730 hrs	Speakers' Briefing			Speakers' Briefing			Speakers' Briefing		
0800 hrs	Plenary Panel			Keynote			Plenary Panel		
0830 hrs									
0900 hrs	Networking Break in Exposition Hall			Networking Break in Exposition Hall			Networking Break		
0930 hrs		Technical Sessions	Keynote: Aviation Noise & Emissions Reduction: Challenges & Opportunities	Exposition Hall Open		Panel: Toward an Integrated Global ATM – NextGen/Sesar	Exposition Hall Open		Panel: NASA Aeronautics Vision for the 21st Century: Why a New Strategy?
1000 hrs									
1030 hrs									
1100 hrs									
1130 hrs			Panel: Research Networks—Progress & Future Plans						
1200 hrs									
1230 hrs	Luncheon in Exposition Hall			Awards Luncheon: Celebrating Achievements in Aircraft and Atmospheric Systems	Networking Lunch on Own		Networking Lunch on Own		
1300 hrs									
1330 hrs									
1400 hrs		Technical Sessions	Panel: Creating a Successful Commercial UAS Business Environment—Challenges & Opportunities	Exposition Hall Open		Panel: Getting Ready for the Next Billion Dollar Aerospace Industry – The Low Altitude Frontier			
1430 hrs									
1500 hrs									
1530 hrs	Networking Break								
1600 hrs	AMT Award Lecture								
1630 hrs									
1700 hrs									
1730 hrs	Thermophysics Award Lecture	Aeroacoustics Award Lecture							
1800 hrs					Aerodynamics Award Lecture				
1830 hrs									
1900 hrs									
1930 hrs									
2000 hrs									
2030 hrs									
2100 hrs									
2130 hrs									
2200 hrs									
				Aeroacoustics Award Banquet					

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Keynote Speakers and Plenary Sessions

Get the big picture on Aviation from the thought-leaders in the field during these high-level discussions and presentations.

Monday, 16 June

0800–0900 hrs

Centennial I/II



Opening Keynote

The Global Economic Impact of the F-35 Lightning II Program

Orlando Carvalho, Executive Vice President, Lockheed Martin Aeronautics

Tuesday, 17 June

0800–0900 hrs

Centennial I/II

Integration and Interoperability: Fly Smarter, Fly Cleaner, Fly Safer

Moderator: **Ben Iannotta**, Editor-in-Chief, *Aerospace America*

Panelists:

Peter Cerda, Regional Vice President, The Americas, International Air Transport Association

Steve Kong, Business and Technical Development Manager, Inmarsat Aviation

Allan McArtor, Chairman and CEO, Airbus Group, Inc.

Tony Ng, Lockheed Martin Fellow, Lockheed Martin Corporation

1230–1400 hrs

Regency VII

Fly Your Ideas with Airbus

Join Airbus at AVIATION 2014 to find out more about Airbus' global student challenge, network and enjoy lunch with Airbus representatives. Airbus Fly Your Ideas challenges students worldwide to develop innovative ideas for a sustainable aviation industry, with the chance to win €30,000 and shape the future of aviation. During this interactive event, Charles Champion, Airbus Executive Vice President Engineering and patron of the competition will be joined by previous Fly Your Ideas Finalists to share their insights and answer your questions. The event is free of charge but you must register in advance by going to www.airbus-fyi.com

Speaker: **Charles Champion**, Airbus Executive Vice President Engineering



Wednesday, 18 June

0800–0900 hrs

Centennial I/II

Global Supply Chain Challenges and Opportunities

Moderator: **Trevor Stansbury**, President, Supply Dynamics

Panelists:

Duane Hawkins, Senior Vice President, Supply Chain, Spirit AeroSystems

Kurt Miller, Program Management – Subcontract Director, Lockheed Martin Aeronautics

Thursday, 19 June

0800–0900 hrs

Centennial I/II



Thursday Morning Keynote

NextGen Implementation Challenges and Opportunities in an International Context

Michael Whitaker, Deputy Administrator, FAA

Friday, 20 June

0800–0900 hrs

Centennial I/II

Aeronautics Technology Development

Moderator: **Glenn Roberts**, Chief Engineer, The MITRE Corporation

Panelists:

Steve Bradford, Chief Scientist - Architecture & NextGEN Development, Office of the Chief Scientist, ANG-3

Spiro Lekoudis, Director of Weapons Systems, Office of the Assistant Secretary of Defense for Research and Engineering, United States Department of Defense

Al Romig, Vice President & Program Manager, Skunk Works Engineering and Advanced Systems, Lockheed Martin Aeronautics Company.

Jaiwon Shin, Associate Administrator for Aeronautics Research Mission Directorate, NASA Headquarters

Special Sessions & Events

These Forum 360 conversations with experts will cover a spectrum of timely topics including programs, systems, policy, operations, applications, platforms and more!

Monday, 16 June

0930–1130 hrs

Regency VI

Aviation's Challenges & Opportunities - Georgia's Global Perspectives

Moderator: **Steve Justice**, Director, Georgia Center of Innovation for Aerospace

Panelists:

Jack Crisler, Vice President, New Business, Air Mobility, Special Forces, and Maritime Programs, Lockheed Martin Aeronautics Company

Steve Dickson, Senior Vice President–Flight Operations, Delta Air Lines

Al Hegner, Director – Base Maintenance, Delta Air Lines

1400–1630 hrs

Regency VI

Transformative Aerospace System Analysis, Design and Certification: A Vision for CFD in 2030

Moderator: **Robert D. Gregg III**, Boeing Commercial Airplanes Chief Aerodynamicist, The Boeing Company

Panelists:

Wilson Felder, Distinguished Service Professor, School of Systems and Enterprises, Stevens Institute of Technology

Parviz Moin, Franklin P. and Caroline M. Johnson Professor, Department of Mechanical Engineering, Stanford University

Stephen Morford, Chief Engineer, Systems Analysis and Aerodynamics, Pratt & Whitney

David Schuster, NASA Technical Fellow for Aerosciences, NASA Engineering and Safety Center, NASA Langley Research Center

Jeffrey P. Slotnick, Boeing Technical Fellow, Computational Sciences & Aerodynamics, Boeing Research & Technology

Cord-Christian Rossow, Director, Institute of Aerodynamics and Flow Technology, German Aerospace Center (DLR)

Tuesday, 17 June

0930–1100 hrs

Regency VI

Aviation's Challenges & Opportunities - Perspectives from Brazil & China

Moderator: **Joao Luis Azevedo**, Senior Research Engineer, Instituto de Aeronautica e Espaco

Panelists:

Luis Carlos Affonso, Chief Operating Officer, Embraer Commercial Aviation

Zhenghong Gao, Professor, Northwestern Polytechnical University

Carlos Americo Pacheco, Rector, Instituto Tecnológico de Aeronautica

Guoqing Wang, President, Chinese Aeronautical Radio Electronics Research Institute

1400–1600 hrs

Regency VI

FAA Has Selected UAS Test Sites - What Happens Next?

Moderator: **Rich Christiansen**, Vice President, Sierra Lobo, Inc.

Panelists:

Ro Bailey, Director, Pan-Pacific UAS Test Range Complex

Luis Cifuentes, Vice President, Division of Research, Commercialization and Outreach, Texas A&M University – Corpus Christi

Rose Mooney, Executive Director, Mid-Atlantic Aviation Partnership

Al Palmer, Director, Center for UAS Research, Education and Training for John D. Odegard School of Aerospace Sciences, University of North Dakota

Elizabeth Soltys, Program Manager, FAA UAS Test Sites

Thomas Wilczek, Thomas Aerospace & Defense Industry Liaison, Governor's Office of Economic Development, Nevada UAS Test Site

Ray Young, Technical Director, NUAIR

1730–1830 hrs

Regency VI

William Littlewood Memorial Lecture

Axel Krein, Senior Vice President, Research and Technology, Airbus

Sponsored by:  AIRBUS

Special Sessions & Events

Wednesday, 18 June

0930–1130 hrs

Regency VI

Aviation Noise and Emissions Reduction: Challenges and Opportunities

Carl Burleson, Acting Assistant Administrator for Policy, International Affairs and Environment, FAA

Dragoş Preda, Head of Flight Operations Data Management Office, TAROM

1130–1230 hrs

Regency VI

Research Networks — Progress & Future Plans

Moderator: **Dominique Collin**, Head of Acoustics, Safran Group, X-Noise Network Coordinator

Panelists:

Ralph Cavalieri, Director, FAA Center of Excellence - Alternative Jet Fuels & Environment (ASCENT), Washington State University

Sylvain Cofsky, GARDN Executive Director

Janina Scheelhaase, ECATS Representative, DLR German Aerospace Center

1400–1630 hrs

Regency VI

Creating a Successful Commercial UAS Business Environment — Challenges & Opportunities

Moderator: **John Langford**, CEO, Aurora Flight Sciences

Panelists:

Nicholas Alley, President and CEO, Area-I, Inc.

Morgan Cloud, Charles Howard Candler Professor of Law, Emory University

Steve Justice, Director, Georgia Center of Innovation for Aerospace

John Lambert, Senior Vice President, Nexutech

Rose Mooney, Executive Director, Mid-Atlantic Aviation Partnership

Elizabeth Soltys, Program Manager, FAA UAS Test Sites

Thursday, 19 June

0930–1100 hrs

Regency VI

Toward an Integrated Global ATM — NextGen/Sesar

Moderator: **Victoria Cox**, Former Assistant Administrator for NextGen, FAA (retired)

Panelists:

Edward Bolton, Assistant Administrator for NextGen, FAA ANG-1
Marc Hamy, Vice President, SESAR Deployment, Airbus ProSky

1400–1600 hrs

Regency VI

Getting Ready for the Next Billion Dollar Aerospace Industry — The Low Altitude Frontier

Moderators: **Parimal Kopardekar**, Manager, NextGen Concepts and Technology Development Project, NASA Ames Research Center and **B. Danette Allen**, Chief Technologist for Autonomy, NASA Langley Research Center

Panelists:

Jesse Kallman, Global Business Development & Regulatory Affairs, Airware

Andres Lacher, UAS Integration Research Lead, The MITRE Corporation

David Maroney, Principal Systems Engineer – Civil UAS Integration, The MITRE Corporation

Rose Mooney, Executive Director, Mid-Atlantic Aviation Partnership

Mark Moore, Aerospace Engineer, NASA Langley Research Center

Friday, 20 June

0930–1130 hrs

Regency VI

NASA Aeronautics Vision for the 21st Century: Why a New Strategy?

Moderator: **Robert Pearce**, Director – Strategy, Architecture & Analysis, NASA Aerospace Research Mission Directorate; NASA Headquarters

Panelists:

John Civolowsky, Program Director – Airspace Operations and Safety, NASA Aeronautics Research Mission Directorate; NASA Headquarters

Jay Dryer, Program Director – Advanced Air Vehicles Program, NASA Aeronautics Research Mission Directorate; NASA Headquarters

Douglas Rohn, Program Director – Transformative Aeronautics Concepts, NASA Aeronautics Research Mission Directorate; NASA Headquarters

Ed Waggoner, Program Director – Integrated Aviation Systems, NASA Aeronautics Research Mission Directorate; NASA Headquarters

Highlighted Sessions

in **RISING LEADERS** **AEROSPACE FORUM**

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AIAA's Rising Leaders in Aerospace Forum is a special initiative taking place during AVIATION 2014 that provides a forum for young aerospace leaders, age 35 and under, to learn from and engage with others.

The multidimensional program features a leadership exchange/speed mentoring, panel session, Q&A with top industry leaders, and multiple opportunities for networking. This exciting and energetic forum will provide access to top aerospace leaders and their perspectives, with subject matter relevant to your career stage.

Program Agenda

Forum Chair: **Ryan Rudy**, Boeing Engineering Operations and Technology

Panel – Getting Involved

Monday, 16 June **International North**
1730–1830 hrs

This panel will have speakers that have been involved with AIAA in various ways. Their involvement with AIAA comes from many different perspectives. See the different ways you can get involved with AIAA: Board of Directors, Technical Committees, Standing Committees, local officer, or participant.

Moderator: **Ben Marchionna**, Lockheed Martin Aerospace

Panelists:

Kathleen Atkins, Lockheed Martin Aeronautics – AIAA Technical Activities Committee

Cees Bil, RMIT – Region/Section Officer, Technical Committee member

Networking Reception

Monday, 16 June **International North**
1830–1930 hrs

The reception is a perfect opportunity for young leaders to mingle with others who will be participating in the forum as attendee, presenter, or veteran professional. Come meet other participants in a casual environment. You're bound to see them again throughout the week.

Leadership Exchange and Speed Networking

Tuesday, 17 June **International North**
1600–1730 hrs

Senior members of corporations and AIAA will be taking time to meet with people and share their experiences. This is a great way to get some insight from top-level officials and make some great new contacts. And, maybe, they will end up being a mentor for more than just this event. Don't miss a terrific opportunity.

Senior Mentors:

Kathleen Atkins, Lockheed Martin Aeronautics/Director USMC/USCG C-130 Program

Cees Bil, Professor/Royal Melbourne Institute of Technology

Wilson Felder, Stevens Inst. Of Tech, FAA, TRW, US Military

Basil Hassan, Sandia National Laboratories/Manager, Aerospace Systems Analysis Department

Sandy Magnus, AIAA/Executive Director

Mark Maughmer, Professor/Penn State University – 2014 Piper General Aviation Award Winner

John O'Leary, Vice President, Engineering/Airbus Americas

Alex Smits, Professor/Princeton University

Dani Soban, Aerospace Lecturer/Queen's University Belfast

Tony Springer, NASA/Lead Communications and Education

Networking Events

Understanding the importance of networking with colleagues new and old, a series of activities have been planned that will help you connect with current colleagues and new acquaintances.

Twitter Kiosks

There are several Twitter Kiosks in various locations. Real-time tweets with the hashtag #aiaaAviation will be displayed on the monitor. To learn how to use Twitter visit www.wikihow.com/Use-Twitter.

Twitter Contest! The user with the most tweets will be awarded an iPad Mini. For contest details and rules, please visit www.aiaa-aviation.org/twittercontest.

Sponsored by:



Networking Breakfasts

A great way to start the day and interact with colleagues old and new, networking breakfasts will be offered on Tuesday–Thursday, 0700–0800 hrs, on the Ballroom Level. This event is open to all forum attendees (no tickets are required).

Networking Coffee Breaks

Networking coffee breaks allow even more time for making new contacts, continuing discussions from sessions, visiting the exposition hall, or checking emails and voicemails to keep in touch with the office. Networking coffee breaks will be located in the locations at the following times:

Monday, 16 June 0900–0930 hrs and 1530–1600 hrs	Meeting Room Foyers
Tuesday, 17 June 0900–0930 hrs and 1530–1600 hrs	Exposition Hall
Wednesday, 18 June 0900–0930 hrs and 1530–1600 hrs	Exposition Hall
Thursday, 19 June 0900–0930 hrs	Exposition Hall
1530–1600 hrs	Meeting Room Foyers
Friday, 20 June 0900–0930 hrs and 1530–1600 hrs	Meeting Room Foyers

William Littlewood Memorial Reception

Tuesday, 17 June
1830–2000 hrs

Exposition Hall

A welcome reception will be held on Tuesday, 17 June, 1830–2000 hrs, in the Exposition Hall. Take this opportunity to engage new contacts and refresh old ones. A ticket for the reception is required and included in the registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site, as space is available.

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Luncheon in the Exposition Hall

Wednesday, 18 June
1230–1400 hrs

Exposition Hall

CALL FOR NOMINATIONS

AIAA/AAAE/ACC JAY HOLLINGSWORTH SPEAS AIRPORT AWARD

The award is presented to the nominee(s) judged to have contributed most significantly in recent years to the enhancement of relationships between airports and/or heliports and their surrounding environments via exemplary innovation that might be replicated elsewhere. Recipient receives a certificate and \$7,500 USD honorarium.

Nominations must be submitted to AIAA on or before **1 October 2014**. For more information, contact AIAA Honors and Awards at 703.264.7623 or at carols@aiaa.org.



Educational Events

These activities are designed to provide participants with valuable knowledge, experience, and interaction.

Electric Cargo Airplane Workshop

Sunday, 15 June
0800–1600 hrs

Chicago A

This workshop will introduce 6–12 grade educators to the concept and utility of a tethered flight engineering challenge. The instructors, using curriculum that has been mapped to national standards, will help participants build an airplane with maximum dimensions of 3' in length, width, and height that can carry the maximum amount of cargo as it flies around a power pole that supplies electricity and mechanical support via a tether.

At the conclusion of this workshop, educators will have the necessary tools to help students understand how engineers combine science, math, research and experimentation to build a successful cargo plane.

Cost – free to 6–12 grade educators. You must register in advance!

Instructors: **Paul Wiedorn** is a Technology and Engineering educator at Wilde Lake High School in Columbia, Maryland. A 1978 graduate of the Naval Academy, he has been able to apply his degrees in Naval Architecture and his engineering experience to help his students excel in the Maryland Engineering Challenges.

Thomas Milnes is a Principal Mathematician and Navigation Modeling Section Head at the Johns Hopkins University/Applied Physics Laboratory (JHU/APL) and an expert at Strategic and Underwater Navigation Systems and Instrumentation. He is organizer and head judge for the Maryland Engineering Challenges Elementary School Paper Airplane and Middle and High School Electric Cargo Plane Challenges.

NEQAIR Tutorial

Thursday, 19 June
1400–1500 hrs

Executive Conference Room 219

Open to all conference attendees

NEQAIR has been NASA's main radiation code for the last 30 years. It is a line-by-line radiation code that computes spontaneous emission, absorption and stimulated emission due to transitions between various energy states of chemical species along a line-of-sight. There have recently been many substantial upgrades to the code (both in terms of the efficiency in running the code, and the physics). This tutorial will detail the latest updates, as well as show how to run and obtain the code.



Recognition Events

Join with us throughout AVIATION 2014 as AIAA recognizes the very best in our industry: those individuals and teams who have taken aerospace technology to the next level...who have advanced the quality and depth of the aerospace profession...who have leveraged their aerospace knowledge for the benefit of society. Their achievements have inspired us to dream and to explore new frontiers. For over 75 years AIAA has been a champion to make sure that aerospace professionals are recognized for their contributions.

Monday, 16 June

1730–1830 hrs

Regency Ballroom VII



Fluid Dynamics Award Lecture

Mixing in Turbulent Combustion: Physics and Computational Challenges

Paul E. Dimotakis, John K. Northrop Professor of Aeronautics and Professor of Applied Physics, California Institute of Technology



Aerodynamic Measurement Technology Award

Alexander J. Smits

Eugene Higgins Professor of Mechanical and Aerospace Engineering
Department of Mechanical and Aerospace Engineering
Princeton University
Princeton, New Jersey

“For advancement of quantitative techniques in extreme conditions including high Reynolds numbers and compressible flows, and in particular for research aiding understanding of hot-wire anemometry.”

Tuesday, 17 June

1230–1400 hrs

Centennial I/II

Awards Luncheon: Celebrating Achievements in Aerospace Sciences

A ticket for the luncheon is required and included in the registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site, as space is available.

The following awards will be presented:



Aeroacoustics Award

Edward J. Rice

Aerospace Engineer (Retired)
NASA Glenn Research Center
Cleveland, Ohio

“For seminal contributions to the theories of aircraft engine duct noise radiation and grazing flow liner optimization.”



Aerodynamics Award

Michael S. Selig

Associate Professor
Aerospace Engineering Department
University of Illinois at Urbana-Champaign
Urbana, Illinois

“In recognition of outstanding contributions to applied aerodynamics research, design, and education, including leadership in the development and public dissemination of airfoil and propeller data.”



Fluid Dynamics Award

Paul E. Dimotakis

John K. Northrop Professor of Aeronautics and Professor of Applied Physics
California Institute of Technology
Pasadena, California

“For fundamental to turbulent mixing and combustion through careful and thorough experiments using novel techniques.”



Recognition Events

Tuesday, 17 June (continued)

1730–1830 hrs

Regency Ballroom VII



Ground Testing Award

Jeffrey Haas

Chief, Testing Division (retired)
Facilities and Testing Directorate
NASA Glenn Research Center
Cleveland, Ohio

“For exceptional management of NASA Glenn Research Center’s test facility assets; for significant contributions to advance aerodynamic and propulsion ground testing; and for leadership and service to AIAA.”



James A. Van Allen Space Environments Award

Stamatios M. Krimigis

Emeritus Head, Space Department
Johns Hopkins University/Applied
Physics Laboratory
Laurel, Maryland

“For pioneering studies of the radiation environment around all solar system planets and of interplanetary charged particles from Mercury to the local interstellar medium.”



Losey Atmospheric Sciences Award

John Hallett

Research Professor Emeritus
Division of Atmospheric Sciences
Desert Research Institute
Reno, Nevada

“For outstanding scholarship that has led to a better understanding of the fundamental processes of cloud microphysics and for exceptional leadership as a mentor and a teacher of atmospheric physics.”



Plasmadynamics and Lasers Award

John T. Lineberry

President and General Manager (retired)
LyTec LLC
Manchester, Tennessee

“In recognition of a distinguished career in plasmadynamics and magnetohydrodynamics, for major contributions to terrestrial and aerospace applications, and fostering of scientific and technological advancements through international collaborations and AIAA.”



Sustained Service Award

Eric J. Jumper

Professor
University of Notre Dame
Notre Dame, Indiana

“For sustained service to AIAA as a member, Technical Committee member, Meeting Chair, prolific author, and Student Section Faculty Advisor.”



Thermophysics Award

Van P. Carey

Professor, A. Richard Newton Chair
Mechanical Engineering Department
University of California at Berkeley
Berkeley, California

“For seminal and sustained contributions to the field of liquid-vapor phase change thermophysics, particularly near-interface nano-scale and micro-scale phenomena, and transport in liquid-vapor systems.”

Aerodynamic Measurement Testing Best Paper

“Dual-Pump CARS Of Air In A Heated Pressure Vessel Up To 55 Bar and 1300 K,” AIAA 2014-1098, Luca Cantu, Emanuela Gallo, and Andrew Cutler, George Washington University and Paul Daney, NASA Langley.

Applied Aerodynamics Best Paper

“Over Wing Nacelle Installations for Improved Energy Efficiency,” AIAA 2013-2920, John Hooker and Andrew Wick, Lockheed Martin Aeronautics Company; Cale Zeune, Air Force Research Laboratory, Wright-Patterson AFB; and Anthony Agelastos, Sandia National Laboratories.

Atmospheric Flight Mechanics Best Paper

“Flight Testing of a Subscale Aeroservoelastic Aircraft,” AIAA 2014-0032, Jeffrey Ouellette, Mayuresh Patil and Craig Woolsey, Virginia Polytechnic Institute and State University.

David Weaver Best Student Paper

“Adjoint-Based Aerothermodynamic Shape Design of Hypersonic Vehicles in Non-Equilibrium Flows,” AIAA 2014-0513, Sean R. Copeland, Francisco Palacios, and Juan J. Alonso, Stanford University.

Fluid Dynamics Best Paper

“Direct Numerical Simulation Of The Aeroelastic Response Of A Panel Under High Speed Turbulent Boundary Layers,” AIAA 2013-3200, Christopher Ostoich, Daniel Bodony, and Philippe Geubelle, University of Illinois at Urbana-Champaign.

Recognition Events

Tuesday, 17 June (continued)

Ground Testing Best Paper

“Deployment of Particle Image Velocimetry into the Lockheed Martin High Speed Wind Tunnel,” AIAA 2014-1238, Steven Beresh, Justin Wagner, Brian Pruett, and Russell Spillers, Sandia National Laboratories; Michael McWithey and Jeffrey Gary, Lockheed Martin Missiles and Fire Control; Kurt Chankaya, Lockheed Martin Space Systems.

Modeling and Simulation Best Papers

“Propeller Slipstream Model for Small Unmanned Aerial Vehicles,” AIAA 2013-4907, Waqas Khan, Ryan Caverly, and Meyer Nahon, McGill University.

“Modeling Wake Vortex Roll-Up and Vortex-Induced Forces and Moments for Tight Formation Flight,” AIAA 2013-5076, André Kaden and Robert Luckner, Technical University of Berlin.

Plasmadynamics and Lasers Best Paper

“Experimental And Numerical Study Of Fast Gas Heating And O Atom Production In A Capillary Nanosecond Discharge,” AIAA 2014-1030, Andrei Klochko, Arthur Salmon, Joseph Lemainque, Jean-Paul Booth, and Svetlana Starikovskaya, Ecole Polytechnique; Nikolay Popov, Moscow State University; and Mark Kushner and Zhongmin Ziong, University of Michigan.

Plasmadynamics and Lasers Best Student Paper

“Simulation of Reacting Flows in Magnetic Fields with Preconditioning,” AIAA 2013-2754, Amrita Lonkar, Francisco Palacios, and Juan J. Alonso, Stanford University.

Winners of the Aeroacoustics and Atmospheric Flight Mechanics Student Paper Competitions will also be announced.

1730–1830 hrs

Regency VI



William Littlewood Memorial Lecture

Axel Krein, Senior Vice President, Research and Technology, Airbus

Sponsored by:  AIRBUS

Wednesday, 18 June

1600–1700 hrs

Regency Ballroom VII



Aerodynamic Measurement Technology Award Lecture

Nanoscale Instrumentation for Measuring Turbulence

Alexander J. Smits, Eugene Higgins Professor of Mechanical and Aerospace Engineering, Department of Mechanical and Aerospace Engineering, Princeton University

1730–1830 hrs

Regency Ballroom VII



Thermophysics Award Lecture

Thermophysics of Vaporization and Condensation Processes – A Nanoscale Perspective

Van P. Carey, Professor, A. Richard Newton Chair, Mechanical Engineering Department, University of California at Berkeley

1730–1830 hrs

Regency Ballroom VI



Aeroacoustics Lecture

Turbofan Noise Research – Reconciling Theory and Measurement

Brian J. Tester, ISVR, Southampton University



Recognition Events

Thursday, 19 June

1230–1400 hrs

Centennial I/II

Award Luncheon: Celebrating Achievements in Aircraft and Atmospheric Systems

A ticket for the luncheon is required and included in the registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site, as space is available.

Sponsored by: 

The following awards will be presented:



Aircraft Design Award

Boeing 787 Dreamliner Team
Seattle, Washington

Award to be accepted by
Michael Sinnett, Vice President, Product Development, The Boeing Company

“For the conception, design, and development of the Boeing 787 Dreamliner leading to substantial airliner performance improvements and significant advances in aircraft design and technology.”



Hap Arnold Award For Excellence in Aeronautical Program Management

Steven H. Walker

Deputy Director
Defense Advanced Research
Projects Agency (DARPA)
Arlington, Virginia

“For outstanding and distinguished leadership and management of the Air Force science and technology and acquisition at the Pentagon.”



Hypersonic Systems and Technologies Award

John I. Erdos

President and CEO (retired)
GASL, Inc.
Ronkonkoma, New York

“For over 40 years of visionary technical and organizational leadership of foundational technology, ground test, and flight test activities that became the cornerstones of the international knowledge base of hypersonic systems and technologies.”



Multidisciplinary Design Optimization Award

Robert A. Canfield

Professor and Assistant Department
Head Aerospace and Ocean Engineering
Virginia Polytechnic Institute and
State University
Blacksburg, Virginia

“For pioneering research on design optimization methods leading to structural optimization software, application of MDO to advanced aircraft concepts such as sensorcraft and for leadership in the MDO community.”



Piper General Aviation Award

Mark D. Maughmer

Professor of Aerospace Engineering
Pennsylvania State University
University Park, Pennsylvania

“For contributions to winglet designs on racing sailplanes, an advance that promoted the broader acceptance and diffusion of winglet technology in the general aviation community.”

Hypersonic Systems and Technologies Best Paper

“Design of an Airframe Integrated 3-D Scramjet and Experimental Results at a Mach 10 Flight Condition,” AIAA 2012-5910, Luke J. Doherty, Michael K. Smart, and David J. Mee, The University of Queensland.

Multidisciplinary Design Optimization Best Paper

“Multi-Point, Multi-Mission, High-Fidelity Aerostructural Optimization Of A Long-Range Aircraft Configuration,” AIAA 2012-5706, Rhea Liem, University of Toronto, and Gaetan Kenway and Joaquim Martins, University of Michigan-Ann Arbor.

Winner of the Multidisciplinary Design Optimization Student Paper Competition will be announced.

1730–1830 hrs

Regency Ballroom VII

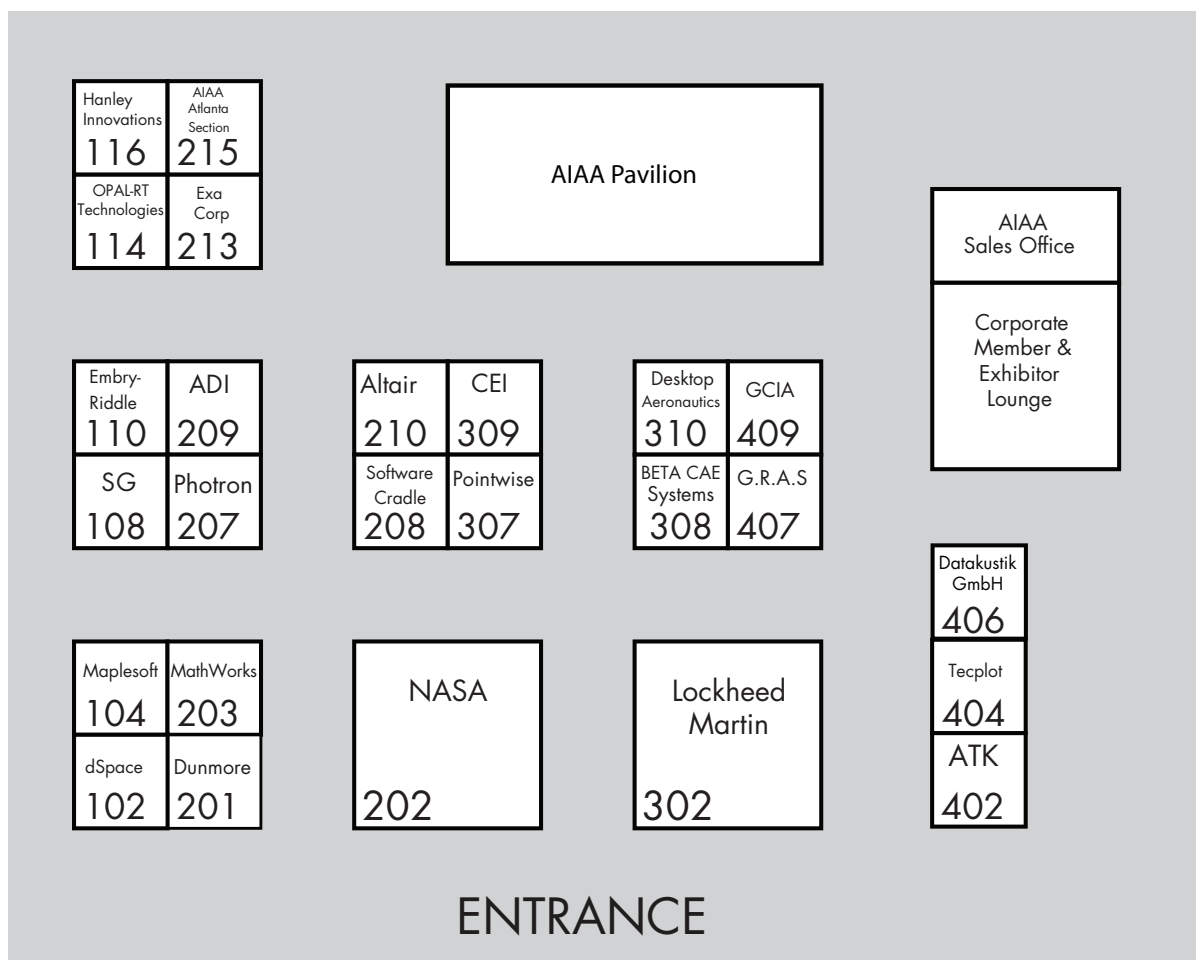


Aerodynamics Lecture

Low-Speed Airfoil Design and Application

Michael S. Selig, Associate Professor,
Aerospace Engineering Department,
University of Illinois at Urbana-Champaign

Exposition Hall



Exhibitors by Booth Number

215	AIAA Atlanta Section	409	Georgia Center of Innovation for Aerospace
210	Altair	116	Hanley Innovations
209	Applied Dynamics International (ADI)	302	Lockheed Martin
402	ATK	104	Maplesoft
308	BETA CAE Systems USA, Inc.	203	MathWorks
309	Computational Engineering International (CEI)	202	National Aeronautics and Space Administration (NASA)
406	DataKustik GmbH	114	OPAL-RT Technologies
310	Desktop Aeronautics	207	Photron
102	dSpace	307	Pointwise, Inc.
201	Dunmore Corporation	108	SG - Space & Ground Engineering Solutions
110	Embry-Riddle Aeronautical University (ERAU)	208	Software Cradle
213	Exa Corporation	404	Tecplot
407	G.R.A.S Sound & Vibration		

Exposition Hall

The exposition hall, located in Centennial Ballroom III/IV is the hub of activity during this event—from seeing exhibitor displays to enjoying networking breaks and other functions, and browsing AIAA publications in the AIAA Pavilion. Make sure you stop by the exposition hall to keep up with the latest happenings! Most networking coffee breaks, luncheons, and receptions are all held in the exposition hall to give attendees and exhibitors the most opportunities to meet and do business.

Exposition Hall Hours

Tuesday, 17 June	0900–1230 hrs 1400–1600 hrs 1830–2000 hrs
Wednesday, 18 June	0900–1200 hrs 1230–1600 hrs
Thursday, 19 June	0900–1200 hrs

AIAA Pavilion

Stop by the AIAA Pavilion, located in the Exposition Hall, to browse publications and merchandise, learn about your membership benefits, and meet AIAA staff.



30% Off All Books at AIAA AVIATION 2014

AIAA Publications is offering a special show discount on all titles featured at AVIATION 2014. Attendees can take advantage of a 30% discount off the list price of all books for sale at the AIAA Bookstore located in the AIAA Pavilion. This show special will only be available during the forum! Take advantage of these super savings and visit the AIAA Bookstore!

Author Information Session

Meet Dr. Joseph Schetz, Editor-in-Chief of the AIAA Education Series, to receive information and ask questions about the process of writing and publishing a book with AIAA.

Tuesday, 17 June, 1900–1930 hrs, in the AIAA Exposition Hall.



Exhibitors

AIAA Atlanta Section

215

www.aiaa-atlanta.org



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Desktop Aeronautics provides conceptual aircraft design and shape optimization services to aircraft manufactures and Government agencies, specializing in design for natural laminar flow (NLF). We also develop and distribute licensed software that addresses the needs of aircraft designers. We are NASA's licensed commercial distributor of Cart3D.

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G.R.A.S. has concentrated its efforts and expertise on the development and production of front-end acoustic products. This includes in principle all products necessary for the precise and reliable measurement, and recording of acoustic signals, from the transducer to the input of the A/D converter. The main line of instrumentation includes a broad range of standard measurement microphones and preamplifiers, all designed and manufactured in accordance with international standards.

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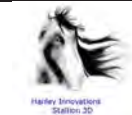


The Georgia Center of Innovation for Aerospace acts as a catalyst, creating opportunities for Georgia aerospace companies through access to new technologies, university research, potential business collaborators and current industry information.

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General Information

AIAA Registration and Information Center Hours

The AIAA Registration and Information Center will be located on the Ballroom Level at the Hyatt Regency. Hours are as follows:

Sunday, 15 June 1500–1900 hrs
Monday, 16 June 0700–1730 hrs
– **Friday, 20 June**

AIAA ITAR Registration Hours

Monday, 16 June 0930–1730 hrs
Tuesday, 17 June 0700–1730 hrs
Wednesday, 18 June 0700–1730 hrs

Wi-Fi Internet Access On Site

AIAA is providing limited Wi-Fi service for attendees to use while on site. To keep this service available and optimized for all attendees, please do not download files larger than 2MB, create multiple sessions across multiple devices, or download multiple files in one session. If you receive an error message that an AIAA server is blocking your current IP address, please inform the AIAA registration desk.

On-Site Wi-Fi Information

Network Name: AIAA 2014

Password: aiaa2014

Conference Proceedings

Proceedings for the forum will be available online. The cost is included in the registration fee where indicated. Online proceedings will be available on 16 June 2014. Attendees who register in advance for the online proceedings will be provided with instructions on how to access them. Those registering on site will be provided with instructions at that time.

Proceedings:

1. To view proceedings visit www.aiaa.org >ARC>Meeting Papers.
 - a. Log in with the link at the top right of the page.
 - b. Select the appropriate conference from the list.
 - c. **Search for individual papers** with the **Quick Search toolbar** in the upper-right corner of the page:

- i. By paper number: Click the “Paper Number” link, select the conference year, and enter the paper number.

- ii. Use the Search textbox to find papers by author, title, or keyword. The Advanced Search link provides additional search information and options.

2. All manuscript files submitted by four days prior to the conference are currently in the proceedings. Files submitted after that date, both original and revised manuscripts, will not be available until the final proceedings update, which may take up to 15 business days after the last day of the conference.

3. Direct any questions concerning access to proceedings and/or ARC to arcsupport@aiaa.org.

Manuscript Revisions

1. Manuscript revision is open for all presenting authors from 0900 hrs Eastern Time, 16 June through 2000 hrs Eastern Time, 1 July 2014
2. Revisions submitted for manuscripts already online **will not refresh until after the proceedings have been updated**, which may take up to 15 business days after the last day of the conference.

Certificate of Attendance

Certificates of Attendance are available for attendees who request documentation at the forum itself. Please request your copy at the AIAA Registration and Information Center. AIAA offers this service to better serve the needs of the professional community. Claims of hours or applicability toward professional education requirements are the responsibility of the participant.

Employment Opportunities

AIAA members can post and browse resumes, browse job listings, and access other online employment resources by visiting the AIAA Career Center at <http://careercenter.aiaa.org>.

Membership

AIAA is your vital lifelong link to the collective creativity and brainpower of the aerospace profession and a champion for its achievements – and nonmembers who pay the full conference registration fee will receive their first year’s AIAA membership at no additional cost! Students who are not yet members may apply their registration fee toward their first year’s student member dues. (Free membership is not included in discounted group-rate registration.)

Young Professional Guide for Gaining Management Support

Young professionals have the unique opportunity to meet and learn from some of the most important people in the business by attending conferences and participating in AIAA activities. A detailed online guide, published by the AIAA Young Professional Committee, is available to help you gain support and financial backing from your company. The guide explains the benefits of participation, offers recommendations and provides an example letter for seeking management support and funding, and shows you how to get the most out of your participation. The online guide can be found on the AIAA website at www.aiaa.org/YPGuide.

Nondiscriminatory Practices

AIAA accepts registrations irrespective of race, creed, gender, color, sexual orientation, physical handicap, and national or ethnic origin.

Restrictions

Photos, video, or audio recording of sessions or exhibits, as well as the unauthorized sale of AIAA-copyrighted material, is prohibited.

General Information

Author and Session Chair Information

Speakers' Briefings in Session Rooms

Authors who are presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute briefing on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s). Laptops preloaded with the Speaker Briefing preparation slides will be provided in each session room. Speaker's Briefing schedule is as follows:

Monday–Friday, 0730–0800 hrs

Speakers' Practice Room

Speakers who wish to practice their presentations may do so in the Williams room located in the Atlanta Conference Center (LL3). A sign-up sheet will be posted on the door. In consideration of others, please limit practice time to 30-minute increments.

Session Chair Reports

All session chairs are asked to complete a session chair report to evaluate their session for future planning. AIAA has partnered with Canvas Solutions to provide an electronic Session Chair Report form. You can download the FREE mobile app in your App Store, AppWorld, or Marketplace by searching for "Canvas Solutions, Inc." The mobile app is free, so please be sure to download it. Detailed instructions will be provided in the session rooms. If you do not have a tablet or a smartphone, simply use the report form as a guide and enter your session chair report information at the session chair reporting computer station located on site near the AIAA registration area. Report data will be collected and used for future planning purposes, including session topics and room allocations. Please submit your session chair report **electronically** by 20 June 2014.

Audiovisual

Each session room will be preset with the following: one LCD projector, one screen, one microphone and sound system (if necessitated by room size), and one laser pointer. **Laptop computers will also be provided.** You may also use your own computer. Any additional audiovisual equipment requested onsite will be at cost to the presenter. Please note that AIAA does not provide security in the session rooms and recommends that items of value not be left unattended.

"No Paper, No Podium" and "No Podium, No Paper" Policy

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the forum. Also, if the paper is not presented at the forum, it will be withdrawn from the proceedings. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper. These policies are intended to improve the quality of the program for attendees.

Journal Publication

AIAA has prior publication rights to any paper presented at its conferences. Authors who are seeking the opportunity for peer-reviewed publication are encouraged to submit their papers for consideration by one of the Institute's archival journals: *AIAA Journal*; *Journal of Aircraft*; *Journal of Guidance, Control, and Dynamics*; *Journal of Propulsion and Power*; *Journal of Spacecraft and Rockets*; *Journal of Thermophysics and Heat Transfer*; or *Journal of Aerospace Information Systems*. Journal scopes and author guidelines and instructions can be found in Aerospace Research Central at <http://arc.aiaa.org/page/authorresources>. You may submit your paper to a journal for review before the conference presentation date: <http://mc.manuscriptcentral.com/aiaa>.



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ITAR Information

International Traffic in Arms Regulations (ITAR)

AIAA speakers and attendees are reminded that some topics discussed in the conference could be controlled by the International Traffic in Arms Regulations (ITAR). U.S. nationals (U.S. citizens and permanent residents) are responsible for ensuring that technical data they present in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR. U.S. nationals are likewise responsible for ensuring that they do not discuss ITAR export-restricted information with non-U.S. nationals in attendance.

ITAR-Restricted Sessions: New for This Year

On Tuesday and Wednesday, a limited number of papers will be presented in “U.S.-Only” technical sessions. In addition to your forum registration, a separate registration process is required to attend these restricted sessions. Please see the detailed information on the ITAR Registration Grid to determine your individual requirements.

Access to ITAR Sessions: Presenting a Paper, Chairing a Session, or Attending an ITAR-Restricted Presentation

Admittance to the restricted technical papers is controlled by the U.S. International Traffic in Arms Regulations (ITAR). All attendees, presenters, and session chairs will need to register for the conference and then visit the ITAR Registration Desk to complete additional registration procedures. Anyone wishing to enter the restricted session room MUST abide by the procedures and submittal of verification documents mandated by the DoD. No Exceptions!

Availability of Manuscripts from ITAR-Restricted Sessions

A DVD containing the manuscripts from the ITAR sessions will be available for purchase on site at the forum, by those who are registered to attend the ITAR sessions, for \$25. There will be no sale or distribution of these papers after the event.

ITAR Electronics Policy

No phones, computers (other than the presenter), ipads, cameras, and other electronic devices with cameras or recording capabilities will be permitted in the ITAR session room. There will be a check-in desk in front of the room where you can check these devices during the time you are in the sessions.

Important session information for all attendees wishing to present or attend ITAR papers



AIAA Restricted Papers – ITAR Regulations Session Admittance Policy (Revised 10/19/2012)

Several papers scheduled to be presented at this conference will be restricted papers governed by ITAR (U.S. International Traffic in Arms Regulations). If you plan to attend any presentations restricted by ITAR, you must bring proof of citizenship PLUS the other verification documents as shown below. Please note that only U.S. Citizens and U.S. Resident Aliens can be considered for attendance at these restricted presentations. Admittance to restricted sessions and access to restricted technical papers is implemented and controlled by ITAR .

All restricted session attendees (including speakers and session chairs for these sessions) MUST abide by the procedures and submittal of verification documents as noted below – **NO EXCEPTIONS**:

ATTENDEE CLASSIFICATION	IDENTIFICATION & PROOF OF EMPLOYMENT REQUIREMENTS
U.S. Government Employees	1. Proof of U.S. Citizenship (for example, passport, birth certificate, voters registration card, naturalization papers), AND 2. Personal <u>photographic</u> identification: U.S. Government/Military Photo ID badge, such as CAC card
U.S. Citizens	1. Proof of U.S. Citizenship (for example, passport, birth certificate, voters registration card, naturalization papers), AND 2. Personal <u>photographic</u> identification (passport, driver’s license, etc.), AND 3. Certification credentials based on DD Form 2345 (see below for details)
Resident Aliens (U.S.)	1. Resident Alien Card, AND 2. Personal <u>photographic</u> identification (passport, driver’s license, etc.), AND 3. Certification credentials based on DD Form 2345 (see below for details)

DD Form 2345 individual certification credentials (required for U.S. & Resident Aliens) MUST be from one of the following:

1. Copy of an approved and active DD2345 for the individual, **OR**
2. Copy of an approved and active DD2345 for the individual’s employer PLUS evidence of current employment status with that employer (corporate ID, business card, etc.), **OR**
3. A listing of the individual’s employer in the most recent DoD quarterly Qualified U.S. Contractor Access List **PLUS** evidence of current employment status with that employer (corporate ID, business card, etc.).

DD Form 2345 may be downloaded and completed online in order to apply for approval to be listed on the Qualified U.S. Contractor List, www.dlis.dla.mil/icp. Allow at least 4-6 week (or longer) **prior** to the AIAA technical conference dates for you to receive the approval and be listed on the Qualified U.S. Contractor List.

How to get your ITAR Clearance:

Bring all of the above listed identification, proof of employment and certification credentials to the AIAA ITAR Registration Desk in the AIAA Registration area. Your documents will be verified and you will be provided with a stamp indicating your ITAR clearance. Photo ID will be checked against your ITAR badge before admittance is granted to any ITAR presentation.

Please be advised that all policies and procedures MUST be followed or admittance to restricted sessions will not be permitted.

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Plasmadynamics and Lasers

Michael White, Ohio Aerospace Institute

Theoretical Fluid Mechanics

Rodney Bowersox, Texas A&M University

Design Engineering

Sidney Rowe, NASA

Digital Avionics

John Moore, Rockwell Collins

11th AIAA/ASME Joint Thermophysics and Heat Transfer Conference (AIAA representative)

William A. Wood, NASA Langley Research Center

11th AIAA/ASME Joint Thermophysics and Heat Transfer Conference (ASME representative)

Yaroslav Chudnovsky, Gas Technology Institute

Product Support

Lori Fischer, Woodward AES

Committee Meetings

Time	Title	Location
Sunday, 15 June 2014		
1400-1500 hrs	APATC New Member Orientation	Baker
1400-1600 hrs	ASME HTD Executive Committee (closed)	Vinings
1430-1500 hrs	APATC Liaisons Subcommittee	Edgewood
1500-1600 hrs	APATC Education Subcommittee	Edgewood
1500-1600 hrs	APATC Honors and Awards Subcommittee	Roswell
1500-1600 hrs	APATC Membership and Nominations Subcommittee	Lenox
1500-1600 hrs	APATC Planning Subcommittee	Kenneshaw
1500-1600 hrs	APATC Publicity and Publications Subcommittee	Marietta
1500-1600 hrs	GTTC Steering Subcommittee	Piedmont
1600-1700 hrs	GTTC New Members and Mentors Meeting	Hanover C/D/E
1600-1700 hrs	FDTC Higher Order Methods DG	Spring
1600-1700 hrs	APATC Technical Activities Meeting	Techwood
1600-1800 hrs	FDTC Transition DG	Inman
1600-1800 hrs	ASME HTD Executive Committee (open)	Vinings
1630-1830 hrs	FDTC Low Re DG	Dunwoody
1700-1800 hrs	GTTC Introduction/Overview	Hanover C/D/E
1700-1800 hrs	APATC Steering Committee	Baker
1730-1830 hrs	FDTC New Member Orientation	Harris
1800-1900 hrs	GTTC Aero and Propulsion Subcommittee	Hanover C/D/E
1800-2100 hrs	Applied Aerodynamics TC	Hanover F/G
1800-2100 hrs	Atmospheric Flight Mechanics TC	Spring
1830-2000 hrs	FDTC Steering Committee	Edgewood
1900-2000 hrs	GTTC Conference Subcommittee	Hanover C/D/E
1900-2100 hrs	TAC Aircraft and Atmospheric Systems Group	Piedmont
2000-2100 hrs	GTTC Awards Subcommittee	Hanover C/D/E
2100-2200 hrs	GTTC Education and Student Activities Subcommittee	Hanover C/D/E
Monday, 16 June 2014		
0800-1000 hrs	K-10: Heat Transfer Equipment	Chicago A
0800-1200 hrs	Future of GTTC Working Group	Executive Conf Suite 219
0800-1600 hrs	GTTC Internal Balance WG	Executive Conf Suite 226
1000-1200 hrs	K-11: Heat Transfer in Combustion	Chicago B
1130-1400 hrs	General Aviation TC	Chicago A
1230-1400 hrs	Aviation MDO SPC	Regency VII
1400-1600 hrs	AATC Array Methods Wksp Planning Discussion	Embassy C
1500-1600 hrs	FDTC Low Order Modeling Tools for AFC DG	Executive Conf Suite 219
1500-1630 hrs	2015 ASME/JSME/KSME Planning Meeting	Chicago B
1600-1700 hrs	FDTC Barriers/Challenges to Tech Transition DG	Chicago C
1700-1900 hrs	Computational Fluid Dynamics Committee on Standards	Executive Conf Suite 219
1730-1830 hrs	APATC Missile and Projectile Aeroprediction DG	Hanover F
1730-1830 hrs	GTTC Committee on Standards	Executive Conf Suite 226
1730-1830 hrs	APATC Low Boom DG	Courtland
1800-1900 hrs	HyTASP PC Steering Committee	International South

Committee Meetings

Time	Title	Location
Monday, 16 June 2014 (continued)		
1800-2100 hrs	2015 ASME Congress and Expo Planning Meeting	Chicago B
1800-2100 hrs	Product Support TC	Chicago A
1830-1930 hrs	FDTC Turbulence Modeling Benchmarks WG	Executive Conf Suite 222
1900-2000 hrs	GTTC Publications Subcommittee	Hanover B
1900-2000 hrs	APATC Aerodynamic Design Optimization DG	Chicago C
1900-2030 hrs	APATC Validation of Numerical Models DG	Hanover C
1900-2100 hrs	APATC Rotorcraft Simulations & Performance Predictions DG	Hanover A
1900-2100 hrs	FDTC Fundamentals Flow Phenomena Subcommittee	Embassy A
1900-2100 hrs	FDTC Flow Control and Fluid Applications Subcommittee	Embassy F
1900-2100 hrs	TAC Aerospace Sciences Group Meeting	Embassy C
1900-2200 hrs	HyTASP PC	International South
1900-2200 hrs	Air Transportation Systems TC	Embassy B
1900-2200 hrs	CADWG	Embassy D
1900-2200 hrs	Digital Avionics TC	Chicago D
1930-2130 hrs	FDTC CFD Methods Subcommittee	Embassy E
Tuesday, 17 June 2014		
0800-1500 hrs	GTTC WT Model Attitude and Deformation Measurement WG	Executive Conf Suite 222
0900-1700 hrs	GTTC Dual Flow Reference Nozzle WG	Chicago D
1000-1100 hrs	AVIATION 2015 Executive Steering Committee	International South
1100-1200 hrs	AVIATION 2015 Forum Organizing Committee	International South
1500-1600 hrs	TPTC Awards Subcommittee	Chicago A
1500-1600 hrs	TPTC Best Paper Subcommittee	Chicago B
1600-1700 hrs	TPTC Publications Subcommittee	Executive Conf Suite 222
1600-1700 hrs	TPTC Conferences Subcommittee	Executive Conf Suite 223
1700-1800 hrs	TPTC Nominations Subcommittee	Executive Conf Suite 219
1700-1800 hrs	TPTC Education Subcommittee	Chicago A
1800-1900 hrs	FDTC Free Shear Layer Mixing Layer Control DG	Chicago B
1800-1900 hrs	TPTC Publicity Subcommittee	Executive Conf Suite 223
1830-1930 hrs	K-19: Environmental Heat Transfer	Executive Conf Suite 222
1830-2230 hrs	Multidisciplinary Design Optimization TC	Chicago C/D
1900-2000 hrs	APATC Low Reynolds Number Aerodynamics DG	Chicago A
1900-2200 hrs	Fluid Dynamics TC	Hanover C/D
1900-2200 hrs	Thermophysics TC	Hanover F/G
1900-2200 hrs	Plasmadynamics and Lasers TC	Hanover E
2000-2200 hrs	Aerodynamic Measurement Technology TC	Hanover A

Committee Meetings

Time	Title	Location
Wednesday, 18 June 2014		
0800-0900 hrs	K-22: Visualization of Heat Transfer	Chicago B
0800-1000 hrs	K-21: Heat Transfer Education	Chicago A
0900-1200 hrs	GTTC Dual Flow Reference Nozzle WG - Day 2	Chicago D
1000-1100 hrs	AVIATION 2015 Technical Program Committee Meeting	International South
1600-1800 hrs	GTTC DOE Focus Group	Chicago A
1700-1800 hrs	FDTC Student Outreach Subcommittee	Chicago B
1730-1900 hrs	FDTC LES WG	Chicago C
1730-1900 hrs	FDTC Nonequilibrium Flows DG	Executive Conf Suite 219
1730-1900 hrs	FDTC Solver Technology for Turbulent Flows	Chicago D
1800-2100 hrs	Flight Testing TC	Executive Conf Suite 222
1800-2100 hrs	Modeling and Simulation TC	Embassy A/B
1800-2200 hrs	Atmospheric and Space Environments TC	Executive Conf Suite 226
1900-2200 hrs	Aeroacoustics TC	Hanover C/D
1900-2200 hrs	Aircraft Design TC	Hanover E
1930-2200 hrs	V/STOL Aircraft Systems TC	Chicago A
Thursday, 19 June 2014		
0900-1200 hrs	GTTC Wind Tunnel Flow Quality WG	Chicago B
0930-1230 hrs	DETC Subcommittee	Chicago A
1000-1200 hrs	K-9: Nano Scale Heat Transfer	Chicago C
1400-1600 hrs	K-6: Heat Transfer in Energy Systems	Chicago C
1800-2100 hrs	Ground Testing TC	International South
1900-2200 hrs	Transformational Flight PC	Embassy C/D
1900-2200 hrs	Design Engineering TC	Chicago A

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Aeroacoustics					
20-AA-1	Airframe Noise I	16-Jun	0930 hrs	1230 hrs	Hanover F
89-AA-2	CAA Numerical Techniques I	17-Jun	0930 hrs	1230 hrs	Hanover A
90-AA-3	Leading Edge Noise	17-Jun	0930 hrs	1230 hrs	Hanover B
93-AA-4	Jet Noise Near Field I	17-Jun	0930 hrs	1230 hrs	Hanover E
94-AA-5	Hybrid Wing Body Aeroacoustics Test I	17-Jun	0930 hrs	1230 hrs	Hanover F
123-AA-6	CAA Sound Generation I	17-Jun	1400 hrs	1730 hrs	Hanover A
124-AA-7	Fluid Acoustic Phenomena I	17-Jun	1400 hrs	1730 hrs	Hanover B
127-AA-8	Jet Noise Reduction I	17-Jun	1400 hrs	1730 hrs	Hanover E
128-AA-9	NASA Gulfstream Airframe Noise Reduction	17-Jun	1400 hrs	1730 hrs	Hanover F
164-AA-10	Jet Noise Prediction I	18-Jun	0930 hrs	1230 hrs	Hanover A
165-AA-11	Propeller Noise I	18-Jun	0930 hrs	1230 hrs	Hanover B
168-AA-12	Jet Noise Reduction II	18-Jun	0930 hrs	1230 hrs	Hanover E
169-AA-13	Hybrid Wing Body Aeroacoustics Test II	18-Jun	0930 hrs	1230 hrs	Hanover F
202-AA-14	CAA Numerical Techniques II	18-Jun	1400 hrs	1730 hrs	Hanover A
203-AA-15	Propeller Noise II	18-Jun	1400 hrs	1730 hrs	Hanover B
206-AA-16	Jet Noise Prediction II	18-Jun	1400 hrs	1730 hrs	Hanover E
207-AA-17	Airframe Noise II	18-Jun	1400 hrs	1730 hrs	Hanover F
248-AA-18	Jet Noise Measurements I	19-Jun	0930 hrs	1230 hrs	Hanover A
249-AA-19	CAA Sound Generation II	19-Jun	0930 hrs	1230 hrs	Hanover B
252-AA-20	Jet Noise Prediction III	19-Jun	0930 hrs	1230 hrs	Hanover E
253-AA-21	Boundary Layer Noise	19-Jun	0930 hrs	1230 hrs	Hanover F
254-AA-22	Acoustic Beamforming I	19-Jun	0930 hrs	1230 hrs	Hanover G
261-AA-23	Fan Noise I	19-Jun	0930 hrs	1230 hrs	Piedmont
264-AA-24	Duct Liners I	19-Jun	0930 hrs	1230 hrs	Spring
267-AA-25	Propeller Noise III	19-Jun	0930 hrs	1230 hrs	Vinings
282-AA-26	Jet Noise Measurements II	19-Jun	1400 hrs	1730 hrs	Hanover A
283-AA-27	Trailing Edge Noise I	19-Jun	1400 hrs	1730 hrs	Hanover B
285-AA-28	CAA Sound Generation III	19-Jun	1400 hrs	1730 hrs	Hanover D
286-AA-29	Jet Noise Prediction IV	19-Jun	1400 hrs	1730 hrs	Hanover E
287-AA-30	Airframe Noise III	19-Jun	1400 hrs	1730 hrs	Hanover F
288-AA-31	Acoustic Beamforming II	19-Jun	1400 hrs	1730 hrs	Hanover G
295-AA-32	Fan Noise II	19-Jun	1400 hrs	1730 hrs	Piedmont
298-AA-33	Duct Propagation I	19-Jun	1400 hrs	1730 hrs	Spring
319-AA-34	Fluid Acoustic Phenomena II	20-Jun	0930 hrs	1230 hrs	Hanover A
320-AA-35	General Acoustics II	20-Jun	0930 hrs	1230 hrs	Hanover B
321-AA-36	Low Noise Systems Integration	20-Jun	0930 hrs	1230 hrs	Hanover C
322-AA-37	CAA Propagation and Scattering I	20-Jun	0930 hrs	1230 hrs	Hanover D
323-AA-38	Jet Noise Measurements III	20-Jun	0930 hrs	1230 hrs	Hanover E
324-AA-39	Broadband Fan Noise Panel Discussion	20-Jun	0930 hrs	1230 hrs	Hanover F
334-AA-40	General Acoustics I	20-Jun	0930 hrs	1230 hrs	Spring
333-AA-41	Duct Propagation II	20-Jun	0930 hrs	1100 hrs	Spring
349-AA-42	Acoustic Measurements	20-Jun	1400 hrs	1730 hrs	Hanover A
350-AA-43	Fluid Acoustic Phenomena III	20-Jun	1400 hrs	1730 hrs	Hanover B

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Aeroacoustics (continued)					
351-AA-44	Trailing Edge Noise II	20-Jun	1400 hrs	1730 hrs	Hanover C
352-AA-45	CAA Propagation and Scattering II	20-Jun	1400 hrs	1730 hrs	Hanover D
353-AA-46	Jet Noise Near Field II	20-Jun	1400 hrs	1730 hrs	Hanover E
354-AA-47	Turbomachinery and Propeller Noise	20-Jun	1400 hrs	1730 hrs	Hanover F
360-AA-48	Fan Noise III	20-Jun	1400 hrs	1730 hrs	Piedmont
361-AA-49	Duct Liners II	20-Jun	1400 hrs	1730 hrs	Spring
Aircraft Design					
10-ACD-1	Aircraft Design Methods and Tools I	16-Jun	0930 hrs	1230 hrs	Embassy F
43-ACD-2	Aircraft Design Methods and Tools II	16-Jun	1400 hrs	1600 hrs	Embassy F
44-ACD-3	Methods for Analysis and Design Under Uncertainty	16-Jun	1400 hrs	1730 hrs	Embassy F
84-ACD-4	Structural Analysis, Design, and Optimization of Aircraft	17-Jun	0930 hrs	1230 hrs	Embassy F
117-ACD-5	Aircraft Performance and Design Studies	17-Jun	1400 hrs	1600 hrs	Embassy F
118-ACD-6	Hybrid Wing Body Design Case Studies	17-Jun	1400 hrs	1730 hrs	Embassy F
160-ACD-7	Stability and Control Considerations in Aircraft Design	18-Jun	0930 hrs	1230 hrs	Embassy F
197-ACD-8	Unmanned Aircraft Design Studies and Methods	18-Jun	1400 hrs	1600 hrs	Embassy F
198-ACD-9	Design of Morphing Wing Concepts	18-Jun	1400 hrs	1730 hrs	Embassy F
243-ACD-10	Aerodynamic Aircraft Design	19-Jun	0930 hrs	1230 hrs	Embassy F
276-ACD-11	Aircraft Integration of Innovative Propulsion Concepts	19-Jun	1400 hrs	1600 hrs	Embassy F
277-ACD-12	Aircraft Subsystems Design and Integration	19-Jun	1400 hrs	1730 hrs	Embassy F
343-ACD-13	VSTOL	20-Jun	1400 hrs	1600 hrs	Embassy D
Atmospheric Flight Mechanics					
15-AFM-1	Aeroservoelastic (ASE) Control, Modeling, Simulation, and Optimization I	16-Jun	0930 hrs	1230 hrs	Hanover A
16-AFM-2	Aircraft Flight Dynamics, Handling Qualities, and Performance I	16-Jun	0930 hrs	1230 hrs	Hanover B
49-AFM-3	Aeroservoelastic (ASE) Control, Modeling, Simulation, and Optimization II	16-Jun	1400 hrs	1530 hrs	Hanover A
50-AFM-4	Aerodynamic Prediction Methods	16-Jun	1400 hrs	1730 hrs	Hanover A
51-AFM-5	Aircraft Flight Dynamics, Handling Qualities, and Performance II	16-Jun	1400 hrs	1730 hrs	Hanover B
104-AFM-7	Planetary Entry and Aeroassist Technology	17-Jun	0930 hrs	1230 hrs	Spring
107-AFM-8	Best Atmospheric Flight Mechanics Student Paper Competition	17-Jun	0930 hrs	1230 hrs	Vinings
141-AFM-11	Launch Vehicle, Missile, and Projectile Flight Dynamics	17-Jun	1400 hrs	1730 hrs	Spring
144-AFM-12	Flight Test and System Identification	17-Jun	1400 hrs	1730 hrs	Vinings
182-AFM-13	Small/Mini/Micro Aerial Vehicles I	18-Jun	0930 hrs	1230 hrs	Spring
220-AFM-14	Small/Mini/Micro Aerial Vehicles II	18-Jun	1400 hrs	1730 hrs	Spring
Aerodynamic Measurement Technology and Ground Testing					
27-AMT-1/GT-1	Ground Test Facility Operation and Improvement	16-Jun	0930 hrs	1230 hrs	Piedmont
30-AMT-2/PDL-2	Diagnostics I	16-Jun	0930 hrs	1230 hrs	Roswell
61-AMT-3/GT-2	Spectroscopic Velocimetry	16-Jun	1400 hrs	1730 hrs	Piedmont
100-AMT-4/GT-3	In Honor of Dick Miles's (semi-) Retirement (Invited)	17-Jun	0930 hrs	1230 hrs	Piedmont

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Aerodynamic Measurement Technology and Ground Testing (continued)					
136-AMT-5/GT-4	Imaging Methods	17-Jun	1400 hrs	1730 hrs	Marietta
137-AMT-6/GT-5	Spectroscopic Temperature Measurement	17-Jun	1400 hrs	1730 hrs	Piedmont
140-AMT-7/PDL-10	Diagnostics II	17-Jun	1400 hrs	1730 hrs	Roswell
176-AMT-8/GT-6	Ground Test Facility Characterization	18-Jun	0930 hrs	1230 hrs	Marietta
177-AMT-9/GT-7	Developments in Particle Image Velocimetry	18-Jun	0930 hrs	1230 hrs	Piedmont
215-AMT-10/GT-8	Aerodynamic Force and Power Measurement	18-Jun	1400 hrs	1730 hrs	Marietta
216-AMT-11/GT-9	Surface Sensors and Probes	18-Jun	1400 hrs	1730 hrs	Piedmont
260-AMT-12/GT-11	Surface Field Measurements	19-Jun	0930 hrs	1230 hrs	Marietta
Aircraft Noise and Emissions Reduction Symposium					
200-ANERS-1	ANERS-Design and Operations	18-Jun	1400 hrs	1630 hrs	Embassy H
228-ANERS-2	What is the Right Balance Between Design and Operations?	18-Jun	1630 hrs	1730 hrs	Embassy H
245-ANERS-3	ANERS-Technology	19-Jun	0930 hrs	1230 hrs	Embassy H
279-ANERS-4	ANERS-ATM Operations	19-Jun	1400 hrs	1630 hrs	Embassy H
302-ANERS-5	How Far Can We Get With Technology and Operations?	19-Jun	1630 hrs	1730 hrs	Embassy H
316-ANERS-6	ANERS-Modeling	20-Jun	930 hrs	1230 hrs	Embassy H
347-ANERS-7	ANERS-Policy and Economics	20-Jun	1400 hrs	1630 hrs	Embassy H
366-ANERS-8	Can We Resolve the Most Pressing Modeling, Policy, and Economic Challenges?	20-Jun	1630 hrs	1730 hrs	Embassy H
Applied Aerodynamics					
4-APA-1	Special Session: NATO Task Group AVT-201 I - Experimental Investigations	16-Jun	0930 hrs	1230 hrs	Baker
5-APA-2	Special Session: Sonic Boom Activities I - 1st Sonic Boom Prediction Workshop Results	16-Jun	0930 hrs	1230 hrs	Courtland
6-APA-3	Aerodynamic Analysis and Design: Design Methodologies	16-Jun	0930 hrs	1230 hrs	Dunwoody
7-APA-4	Low Speed, Low Reynolds Number, Transonic, Supersonic and Hypersonic Aerodynamics I	16-Jun	0930 hrs	1230 hrs	Edgewood
13-APA-5/FC-1	Flow Control (Active and Passive): Computational and Experimental Results I	16-Jun	0930 hrs	1230 hrs	Fairlie
26-APA-6	Airfoil/Wing/Configuration Aerodynamics I	16-Jun	0930 hrs	1230 hrs	Marietta
37-APA-7	Special Session: NATO Task Group AVT-201 II - CFD Prediction and Flow Analyses	16-Jun	1400 hrs	1730 hrs	Baker
38-APA-8	Special Session: Sonic Boom Activities II	16-Jun	1400 hrs	1730 hrs	Courtland
39-APA-9/FC-4	Flow Control (Active and Passive): Computational and Experimental Results II	16-Jun	1400 hrs	1730 hrs	Dunwoody
40-APA-10	Low Speed, Low Reynolds Number, Transonic, Supersonic and Hypersonic Aerodynamics II	16-Jun	1400 hrs	1630 hrs	Edgewood
47-APA-11	Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations I	16-Jun	1400 hrs	1730 hrs	Fairlie
71-APA-13	Low Reynolds Number Aerodynamics Discussion Panel	16-Jun	1630 hrs	1730 hrs	Edgewood
77-APA-14	Special Session: NATO Task Group AVT-201 III - CFD Prediction and Real Scale Analyses	17-Jun	0930 hrs	1230 hrs	Baker
78-APA-15	Special Session: Sonic Boom Activities III	17-Jun	0930 hrs	1230 hrs	Courtland

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Applied Aerodynamics (continued)					
79-APA-16	Aerodynamics of Unmanned Aerial Vehicles I	17-Jun	0930 hrs	1230 hrs	Dunwoody
80-APA-17	Wind Turbine Aerodynamics I	17-Jun	0930 hrs	1230 hrs	Edgewood
87-APA-18	Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations II	17-Jun	0930 hrs	1230 hrs	Fairlie
109-APA-19	Special Session: NATO Task Group AVT-201 IV - Stability and Control Analyses	17-Jun	1400 hrs	1730 hrs	Baker
110-APA-20	Special Session: Sonic Boom Activities IV - Low Sonic Boom Flight Demonstration	17-Jun	1400 hrs	1730 hrs	Courtland
111-APA-21	Special Session: 2nd High-Lift Prediction Workshop I	17-Jun	1400 hrs	1730 hrs	Dunwoody
112-APA-22	Flow Control (Active and Passive): Computational and Experimental Results III	17-Jun	1400 hrs	1730 hrs	Edgewood
121-APA-23	Special Session: Aerodynamic-Structural Modeling, Optimization, and Test Techniques for Flexible Wing Technology I	17-Jun	1400 hrs	1730 hrs	Fairlie
153-APA-25	Flow Control (Active and Passive): Computational and Experimental Results IV	18-Jun	0930 hrs	1230 hrs	Baker
154-APA-26	Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations III	18-Jun	0930 hrs	1230 hrs	Courtland
155-APA-27	Special Session: 2nd High-Lift Prediction Workshop II	18-Jun	0930 hrs	1230 hrs	Dunwoody
156-APA-28	Aerodynamic Analysis and Design: CFD Methods I	18-Jun	0930 hrs	1230 hrs	Edgewood
162-APA-29	Special Session: Aerodynamic-Structural Modeling, Optimization, and Test Techniques for Flexible Wing Technology II	18-Jun	0930 hrs	1230 hrs	Fairlie
189-APA-30	Flow Control (Active and Passive): Computational and Experimental Results V	18-Jun	1400 hrs	1730 hrs	Baker
190-APA-31	Aerodynamic Analysis and Design: CFD Methods II	18-Jun	1400 hrs	1730 hrs	Courtland
191-APA-32	Special Session: 2nd High-Lift Prediction Workshop III	18-Jun	1400 hrs	1730 hrs	Dunwoody
192-APA-33	Vortical/Vortex Flow I	18-Jun	1400 hrs	1730 hrs	Edgewood
201-APA-34	Low Speed, Low Reynolds Number, Transonic, Supersonic and Hypersonic Aerodynamics III	18-Jun	1400 hrs	1730 hrs	Fairlie
236-APA-35	Aerodynamics of Unmanned Aerial Vehicles II	19-Jun	0930 hrs	1230 hrs	Baker
237-APA-36	Other Topics in Applied Aerodynamics - Inlet, Compressor, Diffuser and Nozzle Aerodynamics	19-Jun	0930 hrs	1230 hrs	Courtland
238-APA-37	Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations IV	19-Jun	0930 hrs	1230 hrs	Dunwoody
239-APA-38	Wind Turbine Aerodynamics II	19-Jun	0930 hrs	1230 hrs	Edgewood
246-APA-39	Vortical/Vortex Flow II	19-Jun	0930 hrs	1230 hrs	Fairlie
269-APA-40	Flow Control (Active and Passive): Computational and Experimental Results VI	19-Jun	1400 hrs	1730 hrs	Baker
270-APA-41	Aerodynamic Analysis and Design: Higher Order Methods in CFD	19-Jun	1400 hrs	1730 hrs	Courtland
271-APA-42	Aerodynamic Analysis and Design: Analysis Methods I	19-Jun	1400 hrs	1730 hrs	Dunwoody
272-APA-43	Airfoil/Wing/Configuration Aerodynamics II	19-Jun	1400 hrs	1730 hrs	Edgewood
280-APA-44	Missile, Projectile, Guided-Munitions, Carriage and Store Separation Aerodynamics	19-Jun	1400 hrs	1730 hrs	Fairlie
294-APA-45	High Angle of Attack, High Lift and VSTOL/STOL Aerodynamics	19-Jun	1400 hrs	1730 hrs	Marietta

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Applied Aerodynamics (continued)					
308-APA-46	Other Topic in Applied Aerodynamics - UAVs and Other Similar Vehicles	20-Jun	0930 hrs	1230 hrs	Baker
309-APA-47	Propeller Aerodynamics	20-Jun	0930 hrs	1230 hrs	Courtland
310-APA-48	Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations V	20-Jun	0930 hrs	1230 hrs	Dunwoody
311-APA-49	Wind Turbine Aerodynamics III	20-Jun	0930 hrs	1230 hrs	Edgewood
317-APA-50	Aerodynamic Analysis and Design: Analysis Methods II	20-Jun	0930 hrs	1230 hrs	Fairlie
318-APA-51	Aerodynamic Analysis and Design: Optimization Methods I	20-Jun	0930 hrs	1230 hrs	Greenbriar
330-APA-52	Aerodynamic Analysis and Design: Optimization Methods II	20-Jun	0930 hrs	1230 hrs	Marietta
339-APA-53	Airfoil/Wing/Configuration Aerodynamics III	20-Jun	1400 hrs	1730 hrs	Baker
340-APA-54	Vortical/Vortex Flow III	20-Jun	1400 hrs	1730 hrs	Courtland
342-APA-56	Rotorcraft Aerodynamics	20-Jun	1400 hrs	1730 hrs	Edgewood
348-APA-57	Low Speed, Low Reynolds Number, Transonic, Supersonic and Hypersonic Aerodynamics IV	20-Jun	1400 hrs	1730 hrs	Greenbriar
Atmospheric and Space Environments					
17-ASE-1	Ice Protection Systems and Hydrophobic Coating Application	16-Jun	0930 hrs	1230 hrs	Hanover C
18-ASE-2	Icing Weather and Forecasting	16-Jun	0930 hrs	1230 hrs	Hanover D
52-ASE-3	Icing CFD	16-Jun	1400 hrs	1730 hrs	Hanover C
53-ASE-4/FT-1	NASA Aviation Safety Technologies	16-Jun	1400 hrs	1730 hrs	Hanover D
91-ASE-5	Icing Physics	17-Jun	0930 hrs	1230 hrs	Hanover C
92-ASE-6/AFM-6/ FT-2	Managing Wake Vortex Encounter I	17-Jun	0930 hrs	1230 hrs	Hanover D
125-ASE-7	Ice Roughness Effects on Heat Transfer and Transition	17-Jun	1400 hrs	1730 hrs	Hanover C
126-ASE-8/AFM-9/ FT-3	Managing Wake Vortex Encounter II: Including Wake Vortex Modelling	17-Jun	1400 hrs	1730 hrs	Hanover D
166-ASE-9	3-D Model Design and Ice Measurement Methods for Experimental Icing Simulation	18-Jun	0930 hrs	1230 hrs	Hanover C
167-ASE-10/FT-5	Volcanic Ash and Aviation	18-Jun	0930 hrs	1230 hrs	Hanover D
204-ASE-11	Engine Icing I - Cloud Measurement and Characterization	18-Jun	1400 hrs	1530 hrs	Hanover C
205-ASE-12	Numerical Weather Modeling	18-Jun	1400 hrs	1730 hrs	Hanover D
225-ASE-13	AIRA - Aircraft Icing Research Alliance Panel	18-Jun	1530 hrs	1730 hrs	Hanover C
250-ASE-14/GT-10	NASA Propulsion Systems Laboratory Ice Crystal Engine Icing Test	19-Jun	0930 hrs	1230 hrs	Hanover C
251-ASE-15	Airspace Systems Hazards and Constraints	19-Jun	0930 hrs	1230 hrs	Hanover D
284-ASE-16	Engine Icing II - Ice Crystal Accretion and Particle Impact Dynamics	19-Jun	1400 hrs	1730 hrs	Hanover C

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Aviation Technology, Integration, and Operations					
8-ATIO-1	Terminal & Surface Operations I - Terminal Airspace	16-Jun	0930 hrs	1230 hrs	Embassy D
9-ATIO-2	ATM-I Analysis Techniques in ATM	16-Jun	0930 hrs	1230 hrs	Embassy E
41-ATIO-3	Terminal & Surface Operations II - Surface/Airport Operations	16-Jun	1400 hrs	1730 hrs	Embassy D
42-ATIO-4	ATM-II Modeling & Simulation for ATM	16-Jun	1400 hrs	1730 hrs	Embassy E
81-ATIO-5	Transformational Flight: Technical Gaps, Prizes, and Private-Public Partnerships	17-Jun	0930 hrs	1130 hrs	Embassy C
82-ATIO-6	UAS Integration & Operations I	17-Jun	0930 hrs	1230 hrs	Embassy D
83-ATIO-7	ATM-III Air/Ground Trajectory Enhancements	17-Jun	0930 hrs	1230 hrs	Embassy E
60-ATIO-8	Special Session: Chinese Digital Avionics	16-Jun	1400 hrs	1730 hrs	Marietta
113-ATIO-9	Transformational Flight - Advanced Concepts	17-Jun	1400 hrs	1600 hrs	Embassy C
114-ATIO-10	Transformational Flight - Demand Modeling	17-Jun	1400 hrs	1730 hrs	Embassy C
115-ATIO-11	UAS Integration & Operations II	17-Jun	1400 hrs	1730 hrs	Embassy D
116-ATIO-12	ATM-IV Systems Evaluations in ATM	17-Jun	1400 hrs	1730 hrs	Embassy E
157-ATIO-13	Transformational Flight - Electric Propulsion Development and Testing	18-Jun	0930 hrs	1230 hrs	Embassy C
159-ATIO-14	ATM-V Benefit Analysis of ATM	18-Jun	0930 hrs	1230 hrs	Embassy E
193-ATIO-15	Transformational Flight - Autonomy	18-Jun	1400 hrs	1730 hrs	Embassy C
196-ATIO-16	ATM-VI Weather's Role in ATM	18-Jun	1400 hrs	1730 hrs	Embassy E
240-ATIO-17	Transformational Flight - Distributed Electric Propulsion	19-Jun	0930 hrs	1230 hrs	Embassy C
241-ATIO-18	General Aviation	19-Jun	0930 hrs	1230 hrs	Embassy D
242-ATIO-19	ATM-VII Research Analysis in ATM	19-Jun	0930 hrs	1230 hrs	Embassy E
273-ATIO-20	Transformational Flight - Distributed Electric Propulsion Control	19-Jun	1400 hrs	1600 hrs	Embassy C
275-ATIO-22	Enroute Operations	19-Jun	1400 hrs	1730 hrs	Embassy E
313-ATIO-23	Airline Operations I	20-Jun	0930 hrs	1230 hrs	Embassy E
314-ATIO-24	Terminal & Surface Operations III - Approach Operations	20-Jun	0930 hrs	1230 hrs	Embassy F
344-ATIO-25	Airline Operations II	20-Jun	1400 hrs	1730 hrs	Embassy E
345-ATIO-26	Aircraft Economics	20-Jun	1400 hrs	1730 hrs	Embassy F
367-ATIO-27	New Directions for NASA's Airspace R&D	19-Jun	1600 hrs	1730 hrs	Embassy C
Balloon Systems					
194-BA-1	Balloon Systems	18-Jun	1400 hrs	1600 hrs	Embassy D
Design Engineering					
274-DE-1	Design Engineering and Education	19-Jun	1400 hrs	1730 hrs	Embassy D
Flow Control					
25-FC-2	Flow Control: Actuation and Sensing	16-Jun	0930 hrs	1230 hrs	Lenox
31-FC-3/PDL-3	Plasma-Based Flow Control I	16-Jun	0930 hrs	1230 hrs	Spring
59-FC-5	Special Session: Mixing Layer Flow Control	16-Jun	1400 hrs	1730 hrs	Lenox
99-FC-7	Flow Control: Separated Flows	17-Jun	0930 hrs	1230 hrs	Lenox
135-FC-8/APA-24	Aerodynamic Flow Control	17-Jun	1400 hrs	1730 hrs	Lenox
175-FC-9	Flow Control: Boundary Layers	18-Jun	0930 hrs	1230 hrs	Lenox

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Flow Control (continued)					
180-FC-10/PDL-11	Plasma-Based Flow Control II	18-Jun	0930 hrs	1130 hrs	Roswell
214-FC-11	Flow Control: Active and Passive	18-Jun	1400 hrs	1730 hrs	Lenox
259-FC-12	Closed-Loop Flow Control	19-Jun	0930 hrs	1230 hrs	Lenox
Fluid Dynamics					
14-FD-1	High-Reynolds-Number Fluid Structure Interaction I (Invited)	16-Jun	0930 hrs	1230 hrs	Greenbriar
22-FD-2	Turbulence Modeling I	16-Jun	0930 hrs	1230 hrs	Harris
23-FD-3	Simulation Algorithms I	16-Jun	0930 hrs	1230 hrs	Inman
24-FD-4	Ramjet and Scramjet Propulsion Systems I	16-Jun	0930 hrs	1230 hrs	Kenneshaw
48-FD-5	High-Reynolds-Number Fluid Structure Interaction II (Invited)	16-Jun	1400 hrs	1730 hrs	Greenbriar
55-FD-6	Turbulence Modeling II	16-Jun	1400 hrs	1730 hrs	Harris
56-FD-7	Stability and Transition I	16-Jun	1400 hrs	1730 hrs	Inman
57-FD-8	Ramjet and Scramjet Propulsion Systems II	16-Jun	1400 hrs	1730 hrs	Kenneshaw
88-FD-9	Fluid Structure Interaction I	17-Jun	0930 hrs	1230 hrs	Greenbriar
96-FD-10	Hypersonic Boundary Layer Transition I	17-Jun	0930 hrs	1230 hrs	Inman
122-FD-11	Fluid Structure Interaction II	17-Jun	1400 hrs	1730 hrs	Greenbriar
132-FD-12	Stability and Transition II	17-Jun	1400 hrs	1730 hrs	Inman
133-FD-13	Vortex and Wake Dominated Flows	17-Jun	1400 hrs	1730 hrs	Kenneshaw
163-FD-14	New Frontiers of Fluid Dynamics: Multiphase Flows (Invited)	18-Jun	0930 hrs	1230 hrs	Greenbriar
171-FD-15	Other Topics in Fluid Dynamics	18-Jun	0930 hrs	1230 hrs	Harris
172-FD-16	Supersonic Boundary Layers: Transition	18-Jun	0930 hrs	1230 hrs	Inman
173-FD-17	Hypersonic Boundary Layer Transition II	18-Jun	0930 hrs	1230 hrs	Kenneshaw
231-FD-18	Transition Open Forum	18-Jun	1800 hrs	2030 hrs	Greenbriar
210-FD-19	Fluid Structure Interaction III	18-Jun	1400 hrs	1730 hrs	Harris
211-FD-20	Stability and Transition III	18-Jun	1400 hrs	1730 hrs	Inman
212-FD-21	CFD Methods	18-Jun	1400 hrs	1730 hrs	Kenneshaw
247-FD-22	Low-Speed Boundary Layers: Stability, Transition, and Turbulent Structure	19-Jun	0930 hrs	1230 hrs	Greenbriar
255-FD-23	Multiphase Flows I: Non-Newtonian Liquids, Atomization, and Surface Tension Effects	19-Jun	0930 hrs	1230 hrs	Harris
256-FD-24	Simulation Algorithms II	19-Jun	0930 hrs	1230 hrs	Inman
257-FD-25	Airfoils and Wings	19-Jun	0930 hrs	1230 hrs	Kenneshaw
281-FD-26	Detonation and Supersonic Combustion	19-Jun	1400 hrs	1730 hrs	Greenbriar
289-FD-27	Multiphase Flows II: Air/Water Systems and Icing	19-Jun	1400 hrs	1730 hrs	Harris
290-FD-28	Supersonic Boundary Layers: Fundamental Studies	19-Jun	1400 hrs	1730 hrs	Inman
291-FD-29	Simulation Algorithms III	19-Jun	1400 hrs	1730 hrs	Kenneshaw
293-FD-30	Cavity and Shear Flows	19-Jun	1400 hrs	1730 hrs	Lenox
325-FD-31	Aerothermodynamics and Reacting Flows	20-Jun	0930 hrs	1230 hrs	Harris
326-FD-32	Large Eddy Simulations	20-Jun	0930 hrs	1230 hrs	Inman
327-FD-33	Comparison between CFD and Measurements in Hypervelocity Airflows Part I: Real-gas Effects on Laminar Shockwave Boundary Layer Interaction	20-Jun	0930 hrs	1230 hrs	Kenneshaw

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Fluid Dynamics					
329-FD-34	Galerkin Methods	20-Jun	0930 hrs	1230 hrs	Lenox
355-FD-35	Low-Speed Separated Flows	20-Jun	1400 hrs	1730 hrs	Harris
356-FD-36	Turbulence Simulations	20-Jun	1400 hrs	1730 hrs	Inman
357-FD-37	Shock-Boundary Layer Interactions	20-Jun	1400 hrs	1730 hrs	Kenneshaw
358-FD-38	Acoustic and Unsteady Flows	20-Jun	1400 hrs	1730 hrs	Lenox
359-FD-39	Comparison between CFD and Measurements in Hypervelocity Flows Part II: Shockwave Turbulent Boundary Layer Interaction in High Reynolds Number Duplicating Mach 5 – 8 Flows	20-Jun	1400 hrs	1730 hrs	Marietta
Flight Testing					
158-FT-4	Flight Test Operations	18-Jun	0930 hrs	1230 hrs	Embassy D
International Space Planes and Hypersonic Systems and Technologies					
58-HYTASP-1	Propulsion Cycle Performance-Scramjet Tests I	16-Jun	1400 hrs	1730 hrs	Learning Center
98-HYTASP-2	Vehicle, Mission, and Trajectory Optimization	17-Jun	0930 hrs	1230 hrs	Learning Center
101-HYTASP-3	Vehicle Systems	17-Jun	0930 hrs	1230 hrs	Regency Ballroom V
134-HYTASP-4	Integration and Evaluation	17-Jun	1400 hrs	1730 hrs	Learning Center
138-HYTASP-5	Vehicle, Mission, and Trajectory	17-Jun	1400 hrs	1730 hrs	Regency Ballroom V
213-HYTASP-6	Propulsion Cycle Performance	18-Jun	1400 hrs	1730 hrs	Learning Center
217-HYTASP-7	Review of Fundamental Research I (Invited)	18-Jun	1400 hrs	1600 hrs	Regency Ballroom V
258-HYTASP-8	Propulsion Cycle Performance-Scramjet Tests II	19-Jun	0930 hrs	1230 hrs	Learning Center
262-HYTASP-9	Propulsion Component Performance-Combustor	19-Jun	0930 hrs	1230 hrs	Regency Ballroom V
292-HYTASP-10	Propulsion Component Performance	19-Jun	1400 hrs	1730 hrs	Learning Center
296-HYTASP-11	Review of Fundamental Research II (Invited)	19-Jun	1400 hrs	1630 hrs	Regency Ballroom V
328-HYTASP-12	Propulsion Component Performance-Injector	20-Jun	0930 hrs	1230 hrs	Learning Center
331-HYTASP-13	Propulsion Component Performance-Inlets	20-Jun	0930 hrs	1230 hrs	Regency Ballroom V
28-HYTASP-15	SPHS Introduction	16-Jun	0930 hrs	1000 hrs	Regency Ballroom V
35-HYTASP-16	Global Reports I	16-Jun	1000 hrs	1230 hrs	Regency Ballroom V
62-HYTASP-17	Global Reports II	16-Jun	1400 hrs	1600 hrs	Regency Ballroom V
70-HYTASP-18	Fluid Analysis Panel	16-Jun	1600 hrs	1700 hrs	Regency Ballroom V
178-HYTASP-19	Culpepper Lecture	18-Jun	0930 hrs	1030 hrs	Regency Ballroom V
186-HYTASP-20	HYTASP Programs	18-Jun	1030 hrs	1230 hrs	Regency Ballroom V
226-HYTASP-21	Hypersonic Aircraft Technology Advances and Challenges Panel	18-Jun	1600 hrs	1730 hrs	Regency Ballroom V
303-HYTASP-22	Future of Hypersonics Panel	19-Jun	1630 hrs	1730 hrs	Regency Ballroom V
129-HYTASP-23	Aerodynamic and Propulsion Test Unit (APTU) I	17-Jun	1400 hrs	1600 hrs	Hanover G
208-HYTASP-24	Aerodynamic and Propulsion Test Unit (APTU) II	18-Jun	1400 hrs	1600 hrs	Hanover G
ITAR Sessions					
130-ITAR-2	ITAR-Noise Modeling and Technologies for Quiet UAS	17-Jun	1400 hrs	1730 hrs	Hanover G
170-ITAR-3	ITAR-Experimental Aero, Fluid and Thermal Sciences	18-Jun	0930 hrs	1200 hrs	Hanover G
209-ITAR-5	ITAR-Hypersonic Vehicle Design	18-Jun	1400 hrs	1730 hrs	Hanover G
Lighter-than-Air Systems					
195-LTA-1	Lighter-than-Air Systems	18-Jun	1400 hrs	1730 hrs	Embassy D

Sessions at a Glance

Abbreviation	Title	Date	Start Time	End Time	Location
Multidisciplinary Analysis and Optimization					
11-MAO-1	Multidisciplinary Analysis and Optimization: Shape and Topology I	16-Jun	0930 hrs	1230 hrs	Embassy G
12-MAO-2	Multidisciplinary Analysis and Optimization: MDO Frameworks	16-Jun	0930 hrs	1230 hrs	Embassy H
45-MAO-3	Multidisciplinary Analysis and Optimization: Shape and Topology II	16-Jun	1400 hrs	1730 hrs	Embassy G
46-MAO-4	Multidisciplinary Analysis and Optimization: Applications I	16-Jun	1400 hrs	1730 hrs	Embassy H
85-MAO-5	Multidisciplinary Analysis and Optimization: Shape and Topology III	17-Jun	0930 hrs	1230 hrs	Embassy G
86-MAO-6	Multidisciplinary Analysis and Optimization: Metamodeling I	17-Jun	0930 hrs	1230 hrs	Embassy H
119-MAO-7	Multidisciplinary Analysis and Optimization: Emerging Methods I	17-Jun	1400 hrs	1730 hrs	Embassy G
120-MAO-8	Multidisciplinary Analysis and Optimization: Metamodeling II	17-Jun	1400 hrs	1730 hrs	Embassy H
161-MAO-9	Multidisciplinary Analysis and Optimization: Shape and Topology Method Development	18-Jun	0930 hrs	1230 hrs	Embassy G
199-MAO-10	Multidisciplinary Analysis and Optimization: Emerging Methods II	18-Jun	1400 hrs	1730 hrs	Embassy G
244-MAO-11	Multidisciplinary Analysis and Optimization: Uncertainty I	19-Jun	0930 hrs	1230 hrs	Embassy G
278-MAO-12	Multidisciplinary Analysis and Optimization: Uncertainty II	19-Jun	1400 hrs	1730 hrs	Embassy G
312-MAO-13	Multidisciplinary Analysis and Optimization: Emerging Methods III	20-Jun	0930 hrs	1230 hrs	Embassy D
315-MAO-14	Multidisciplinary Analysis and Optimization: Vehicle Design	20-Jun	0930 hrs	1230 hrs	Embassy G
346-MAO-15	Multidisciplinary Analysis and Optimization: Applications II	20-Jun	1400 hrs	1730 hrs	Embassy G
Modeling and Simulation Technologies					
21-MST-1	M&S: Applications	16-Jun	0930 hrs	1230 hrs	Hanover G
54-MST-2	M&S: Flight Simulator Technologies	16-Jun	1400 hrs	1730 hrs	Hanover G
95-MST-3	M&S: Tools and Technologies	17-Jun	0930 hrs	1230 hrs	Hanover G
174-MST-4	M&S: Vehicle Dynamics, Systems, and Environments AND Uninhabited Aircraft Systems	18-Jun	0930 hrs	1230 hrs	Learning Center
Plasmadynamics and Lasers					
19-PDL-1	Laser Physics	16-Jun	0930 hrs	1230 hrs	Hanover E
65-PDL-4	Plasma and Laser Enhanced Combustion/Propulsion	16-Jun	1400 hrs	1730 hrs	Spring
64-PDL-5	Advanced Concepts and Advanced Computational Modeling of Plasmas and Lasers	16-Jun	1400 hrs	1730 hrs	Roswell
181-PDL-6/FC-6	DBD Actuators	18-Jun	0930 hrs	1230 hrs	Roswell
97-PDL-7	Aero-Optics I	17-Jun	0930 hrs	1230 hrs	Kenneshaw
103-PDL-8	Re-Entry and Spacecraft Concepts	17-Jun	0930 hrs	1230 hrs	Roswell
131-PDL-9	Radiation/Aero-Optics II	17-Jun	1400 hrs	1730 hrs	Harris

Abbreviation	Title	Date	Start Time	End Time	Location
Plasmadynamics and Lasers					
219-PDL-12	Special Session: NATO-RTO-AVT-190, Standardization of DBD Actuators	18-Jun	1400 hrs	1730 hrs	Roswell
147-PDL-13	Special Panel Session on Future Directions in Plasma Aerodynamics	17-Jun	1730 hrs	1830 hrs	Embassy A
Thermophysics and Heat Transfer					
32-TP-1	Ablation I	16-Jun	0930 hrs	1230 hrs	Techwood
33-TP-2	Heat Transfer Enhancement and Energy Harvesting I	16-Jun	0930 hrs	1230 hrs	University
34-TP-3	Multi-Scale Heat Transfer I	16-Jun	0930 hrs	1230 hrs	Vinings
66-TP-4	Ablation II	16-Jun	1400 hrs	1730 hrs	Techwood
67-TP-5	Combustion, Fire and Propulsion Heat Transfer	16-Jun	1400 hrs	1730 hrs	University
68-TP-6	Theoretical, Analytical and Computational Heat Transfer I	16-Jun	1400 hrs	1730 hrs	Vinings
105-TP-7	Theoretical, Analytical and Computational Heat Transfer II	17-Jun	0930 hrs	1230 hrs	Techwood
106-TP-8	Heat Transfer in Cooling, Heating and Power Generation I	17-Jun	0930 hrs	1230 hrs	University
142-TP-9	Nonequilibrium Flows I	17-Jun	1400 hrs	1730 hrs	Techwood
143-TP-10	Heat Transfer Enhancement and Energy Harvesting II	17-Jun	1400 hrs	1730 hrs	University
183-TP-11	Aerothermodynamics I	18-Jun	0930 hrs	1230 hrs	Techwood
184-TP-12	Theoretical, Analytical and Computational Heat Transfer III	18-Jun	0930 hrs	1230 hrs	University
185-TP-13	Multi-Scale Heat Transfer II	18-Jun	0930 hrs	1230 hrs	Vinings
221-TP-14	Aerothermodynamics II	18-Jun	1400 hrs	1730 hrs	Techwood
222-TP-15	Multiphase, Jets and Thermosyphons I	18-Jun	1400 hrs	1730 hrs	University
223-TP-16	Theoretical, Analytical and Computational Heat Transfer IV	18-Jun	1400 hrs	1730 hrs	Vinings
265-TP-17	Nonequilibrium Flows II	19-Jun	0930 hrs	1230 hrs	Techwood
266-TP-18	Heat Transfer in Cooling, Heating and Power Generation II	19-Jun	0930 hrs	1230 hrs	University
299-TP-19	Thermal Management and Heat Pipes	19-Jun	1400 hrs	1730 hrs	Techwood
300-TP-20	Multi-Scale Heat Transfer III	19-Jun	1400 hrs	1730 hrs	University
335-TP-21	Other Heat Transfer Topics	20-Jun	0930 hrs	1230 hrs	Techwood
336-TP-22	Other Topics in Thermophysics	20-Jun	0930 hrs	1230 hrs	University
337-TP-23	Multi-Scale Heat Transfer IV	20-Jun	0930 hrs	1230 hrs	Vinings
362-TP-24	Heat Transfer in Cooling, Heating and Power Generation III	20-Jun	1400 hrs	1730 hrs	Techwood
363-TP-25	Multiphase, Jets and Thermosyphons II	20-Jun	1400 hrs	1730 hrs	University
364-TP-26	Multi-Scale Heat Transfer V	20-Jun	1400 hrs	1730 hrs	Vinings

Monday

Monday, 16 June 2014		Monday Morning Speakers' Briefing	Session Rooms
1-SB-1 0730 - 0800 hrs			
Monday, 16 June 2014		Monday Morning Opening Plenary	Centennial I/II
2-PLMRY-1 0800 - 0900 hrs	<p style="text-align: center;"><i>The Global Economic Impact of the F-35 Lightning II Program</i> Orlando Carvalho Executive Vice President, Lockheed Martin Aeronautics</p>		
Monday, 16 June 2014		Monday Morning Networking Coffee Break	Meeting Room Foyers
3-NW-1 0900 - 0930 hrs			
Monday, 16 June 2014		Special Session: NATO Task Group AVT-201 I - Experimental Investigations	
4-APA-1	Chartered by: N. FRINK, NASA-Langley Research Center		
0930 hrs AIAA-2014-2000 The NATO STO Task Group AVT-201 on 'Extended Assessment of Stability and Control Prediction Methods for NATO Air Vehicles'	1000 hrs AIAA-2014-2001 Conceptual Design and Aerodynamic Analyses of a Generic UCAV Configuration	1030 hrs AIAA-2014-2002 UCAV model design and static experimental investigations to estimate control device effectiveness and S&C capabilities	1100 hrs AIAA-2014-2003 Low-speed Dynamic Wind Tunnel Test Analysis of a Generic S3° Swept UCAV Configuration
R. Cummings, U.S. Air Force Academy, Colorado Springs, CO; A. Schuette, German Aerospace Center (DLR), Braunschweig, Germany	C. Iiersch, K. Huber, German Aerospace Center (DLR), Braunschweig, Germany	K. Huber, German Aerospace Center (DLR), Braunschweig, Germany; D. Vicroy, NASA Langley Research Center, Hampton, VA; A. Schuette, A. Huebner, German Aerospace Center (DLR), Braunschweig, Germany	D. Vicroy, NASA Langley Research Center, Hampton, VA; K. Huber, German Aerospace Center (DLR), Braunschweig, Germany; I. Loeser, German-Dutch Wind Tunnels, Braunschweig, Germany; D. Rohlf, German Aerospace Center (DLR), Braunschweig, Germany
1200 hrs AIAA-2014-2005 Experimental and numerical analysis of the transonic vortical flow over a generic lambda wing configuration	1130 hrs AIAA-2014-2004 High speed static experimental investigations to estimate control device effectiveness and S&C capabilities	M. Rein, German Aerospace Center (DLR), Göttingen, Germany; J. Irving, G. Rigby, BAE Systems, Warton, United Kingdom; T. Birch, Defence Science and Technology Laboratory, Portsmouth, United Kingdom	D. Zimper, German Aerospace Center (DLR), Cologne, Germany; M. Rein, German Aerospace Center (DLR), Göttingen, Germany
Monday, 16 June 2014		Special Session: Sonic Boom Activities I - 1st Sonic Boom Prediction Workshop Results	
5-APA-2	Chartered by: K. WAITHE, Gulfstream Aerospace Corporation and M. PARK, NASA Langley Research Center		
0930 hrs AIAA-2014-2006 Summary and Statistical Analysis of the First AIAA Sonic Boom Prediction Workshop	1000 hrs AIAA-2014-2007 Measurements Supporting 1st Sonic Boom Prediction Workshop Cases	1030 hrs AIAA-2014-2008 LAVA Simulations for the First AIAA Sonic Boom Prediction Workshop	1100 hrs AIAA-2014-2009 Computational and Experimental Assessment of Models for the First AIAA Sonic Boom Prediction Workshop Using Adaptive High Fidelity CFD methods
M. Park, NASA Langley Research Center, Hampton, VA; J. Morgenstern, Lockheed Martin Corporation, Palmdale, CA	J. Morgenstern, Lockheed Martin Corporation, Palmdale, CA	J. Houston, NASA Ames Research Center, Mountain View, CA; E. Sozer, STC Mountain View, CA; C. Klis, NASA Ames Research Center, Mountain View, CA	F. Degrat, Dassault Aviation, Paris, France; A. Loselle, INRIA, Villeneuve d'Ascq, France; I. Schah El Din, ONERA, Toulouse, France

Monday, 16 June 2014		Aerodynamic Analysis and Design: Design Methodologies		Dunwoody
6-APA-3 Chaired by: D. FINLEY, Lockheed Martin Aeronautics and T. DOUVILLE, TLG Aerospace, LLC.				
0930 hrs AIAA-2014-2010 A Generic Airfoil Design Method Based on a Naturally Bounded PARSEC Approach S. Ghosh, H. Ran, D. Morris, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2011 A Rapid Approach to the Aerodynamic Design of a Flexible High-Lift Wing G. Trapani, A. Savill, T. Kipouros, Cranfield University, Cranfield, United Kingdom; C. Agostinelli, University of Bristol, Bristol, United Kingdom; A. Rampurawala, Airbus, Filton, United Kingdom	1030 hrs AIAA-2014-2012 Collaborative Aircraft Design Methodology using ADAS Linked to CEASIOM M. Zhang, A. Rizzi, Royal Institute of Technology (KTH), Stockholm, Sweden; F. Nicolosi, A. De Marco, University of Naples "Federico II", Naples, Italy	1100 hrs AIAA-2014-2013 Re-designing door handles to reduce aerodynamic drag in road vehicles G. Ramchandran, A. Nepak, Y. Mukkamala, Vellore Institute of Technology (VIT), Vellore, India	
Monday, 16 June 2014				
7-APA-4 Chaired by: K. ABDOL-HAMID, NASA Langley Research Center				
0930 hrs AIAA-2014-2014 Static Stall Hysteresis of Low-Aspect-Ratio Wings M. Mizoguchi, Y. Kajikawa, H. Itoh, National Defense Academy, Yokosuka, Japan	1000 hrs AIAA-2014-2015 Unsteady Effects on Airfoils in the Ground Proximity due to Unsteady Flow Separations at Low Reynolds Numbers D. Marescu, A. Panahi, C. Wang, McGill University, Montréal, Canada	1030 hrs AIAA-2014-2016 Comparison Study of Non Sinusoidal Pitch over Sinusoidal Pitch at Higher Angle of Attack R. Zaman, J. Lai, J. Young, M. Ashraf, University of New South Wales at the Australian Defence Force Academy, Canberra, Australia	1100 hrs AIAA-2014-2017 Upstream Effect of Trailing Edge Tonal Emissions on a Laminar Separation Bubble S. Pröbsting, Delft University of Technology, Delft, The Netherlands; S. Yarusyach, University of Waterloo, Waterloo, Canada	1130 hrs AIAA-2014-2018 Effects of Reynolds Number and Turbulent Intensity on a Low Reynolds Number Airfoil S. Wang, Hong Kong Polytechnic University, Hong Kong, Hong Kong; Y. Zhou, M. Alam, Harbin Institute of Technology, Shenzhen, China
Monday, 16 June 2014				
8-ATIO-1 Chaired by: L. REN, GE Global Research Center				
0930 hrs AIAA-2014-2019 Characterization of Nationwide TRACON Departure Operations M. Kistler, A. Capps, Mosaic ATM, Inc., Leesburg, VA; S. Engelland, NASA Ames Research Center, Fort Worth, TX	1000 hrs AIAA-2014-2020 Design Characteristics of a Terminal Departure Scheduler A. Capps, Mosaic ATM, Inc., Fort Worth, TX; M. Kistler, Mosaic ATM, Inc., Leesburg, VA; S. Engelland, NASA Ames Research Center, Fort Worth, TX	1030 hrs AIAA-2014-2021 A Tactical Separation Assurance System for Terminal Airspace H. Tang, NASA Ames Research Center, Moffett Field, CA	1100 hrs AIAA-2014-2022 Conflict Free Trajectory Optimisation with Target Tracking and Performance Monitoring S. Vitaradga, Aerospace Research and Technology Centre (CIAE-ASCAMM), Barcelona, Spain; P. Duan, Ohio University, Athens, OH; X. Prats, Technical University of Catalonia, Barcelona, Spain; M. Uijt De Haag, Ohio University, Athens, OH	1200 hrs AIAA-2014-2024 GPU-based Parallelization for Schedule Optimization with Uncertainty C. Bossou, M. Xue, University Affiliated Research Center, Moffett Field, CA; S. Zielinski, NASA Ames Research Center, Moffett Field, CA
Monday, 16 June 2014				
9-ATIO-2 Chaired by: Y. JUNG, NASA Ames Research Center				
0930 hrs AIAA-2014-2025 Analysis of Airport Ground Delay Program Decisions Using Data Mining Techniques D. Kulkarni, Y. Wang, B. Sridhar, NASA Ames Research Center, Moffett Field, CA	1000 hrs AIAA-2014-2026 Ground Delay Program Analytics with Behavioral Cloning and Inverse Reinforcement Learning M. Bloem, NASA Ames Research Center, Moffett Field, CA; N. Bambos, Stanford University, Stanford, CA	1030 hrs AIAA-2014-2027 Designing Strategic Planning Strategies using Multi-Objective Genetic Algorithms C. Taylor, T. Masek, C. Wanke, MITRE Corporation, McLean, VA	1100 hrs AIAA-2014-2028 Robust And Practical Traffic Flow Management Optimization Algorithm For Near-term Implementation A. Saraf, G. Hunter, K. Ramamoorthy, K. Cheng, K. Griffin, G. Nangle, Sabi Sensis Corporation, Campbell, CA	1130 hrs AIAA-2014-2029 A Multi-resolution Spatio-temporal Scenario Clustering Algorithm for Flow Contingency Management J. Xie, Y. Zhou, Y. Wan, University of North Texas, Denton, TX; S. Tien, C. Taylor, C. Wanke, MITRE Corporation, McLean, VA
Monday, 16 June 2014				
ATM-I Analysis Techniques in ATM				
Embassy E				

Monday, 16 June 2014		Aircraft Design Methods and Tools I			Embassy F
10-ACD-1		Aircraft Design Methods and Tools I			Embassy F
Chaired by: W. ANEMAAT, DARcorporation					
0930 hrs AIAA-2014-2030 Aircraft Conceptual Design: Tools Evaluation D. Locantelli, B. Higgins, J. Schetz, R. Kapania, Virginia Polytechnic Institute and State University, Blacksburg, VA; B. Rabic, C. Leenaert, Snerca, Villardone, France; et al.	1000 hrs AIAA-2014-2031 A Stochastic Process Metamodel for Levering Similar Trends across Concepts J. Valenzuela-del Rio, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2032 Multi-Disciplinary Survey of Engine Parameters and its Impact on Performance and Energy Maneuverability C. Gebeon, T. Takahashi, Arizona State University, Tempe, AZ	1100 hrs AIAA-2014-2033 Aircraft Component Multidisciplinary Design Optimization Considering Cost Performance X. Zhao, R. Curran, Delft University of Technology, Delft, The Netherlands	1130 hrs AIAA-2014-2034 A Constrained Global Optimization Framework D. Poole, C. Allen, T. Rendall, University of Bristol, Bristol, United Kingdom	1200 hrs AIAA-2014-2035 The Multi-Disciplinary Optimization for Aircraft Design Based on Self-Adaptive Approximation Model M. Liu, Y. Hu, Northwestern Polytechnical University, Xi'an, China
Monday, 16 June 2014		Multidisciplinary Analysis and Optimization: Shape and Topology I			Embassy G
Chaired by: V. KALIVARAPU, Iowa State University					
0930 hrs AIAA-2014-2036 Topology Optimization for Additive Manufacturing: Considering Maximum Overhang Constraint A. Geynor, Johns Hopkins University, Baltimore, MD; N. Mersal, C. Williams, Virginia Polytechnic Institute and State University, Blacksburg, VA; J. Guest, Johns Hopkins University, Baltimore, MD	1000 hrs AIAA-2014-2037 Topology Optimization of Thermoelectric Structures using Stress-based Design Criteria J. Denton, R. Grandhi, Wright State University, Dayton, OH	1030 hrs AIAA-2014-2038 A Methodology for the Prediction of Air Transportation Network Growth Dynamics M. Hassan, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1100 hrs AIAA-2014-2039 Automatic Design Evaluation of Nacelle Geometry Using 3D-CFD M. Albert, D. Bestle, Brandenburg University of Technology, Cottbus, Germany		
Monday, 16 June 2014		Multidisciplinary Analysis and Optimization: MDO Frameworks			Embassy H
Chaired by: B. ROTH, Walla Walla Univ					
0930 hrs AIAA-2014-2040 Optimization of Excess System Capability for Increased Reconfigurability J. Watson, J. Allen, C. Mattson, Brigham Young University, Provo, UT; E. Conslar, S. Ferguson, North Carolina State University, Raleigh, NC	1000 hrs AIAA-2014-2041 Geometry and Structural Modeling for High-Fidelity Aircraft Conceptual Design Optimization J. Hwang, G. Kenway, J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	1030 hrs AIAA-2014-2042 Automatic Evaluation of Multidisciplinary Derivatives Using a Graph-Based Problem Formulation in OpenMDAO J. Gray, T. Heam, K. Moore, NASA Glenn Research Center, Cleveland, OH; J. Hwang, J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	1100 hrs AIAA-2014-2043 Noninvasive Continuum Sensitivity Analysis for Aerodynamic Shape Optimization M. Kulkarni, R. Corfield, M. Patil, Virginia Polytechnic Institute and State University, Blacksburg, VA		
Monday, 16 June 2014		Flow Control (Active and Passive): Computational and Experimental Results I			Fairlie
Chaired by: S. SILTON, US Army Research Laboratory and H. BABINSKY, University of Cambridge					
0930 hrs AIAA-2014-2044 Numerical Exploration of Flow Control for Delay of Dynamic Stall on a Pitching Airfoil M. Visbal, Air Force Research Laboratory, Wright-Patterson AFB, OH	1000 hrs AIAA-2014-2045 Aerodynamic Control of a Pitching Airfoil by Active Bleed J. Kenney, A. Glezer, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2046 Numerical analysis and UAV application of the ACHEON vectorial thrust nozzle A. Surul, D. Vucinic, Vrije Universiteit Brussel, Brussels, Belgium	1100 hrs AIAA-2014-2047 Numerical and Experimental Study on the Ability of Dynamic Roughness to Alter the Development of a Leading Edge Vortex C. Griffin, W. Huebsch, West Virginia University, Morgantown, WV	1130 hrs AIAA-2014-2048 A continuous adjoint-based approach for the optimization of wing flapping M. Wei, M. Xu, New Mexico State University, Las Cruces, NM	1200 hrs AIAA-2014-2049 A Numerical Study of Flapping Plates Hinged with a Trailing-Edge Flap Y. Ren, C. Li, H. Dong, University of Virginia, Charlottesville, Charlottesville, VA

Monday, 16 June 2014		High-Reynolds-Number Fluid Structure Interaction I (Invited)		Greenbriar
14-FD-1		High-Reynolds-Number Fluid Structure Interaction I (Invited)		Greenbriar
Chaired by: D. BODONY, University of Illinois at Urbana-Champaign and R. PONNAPPAN, US Air Force				
0930 hrs Oral Presentation AFOSR Turbulence and Transition Program Overview R. Ponnappan, Air Force Office of Scientific Research, Arlington, VA	1000 hrs Oral Presentation HIFIRE-1 Shock Boundary Layer Interaction Pressure Fluctuations R. Kimmel, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1030 hrs Oral Presentation Advancements & Experimental Measurement Challenges of Shock Boundary Layer Interaction (SBLI) Influence on the Dynamic Response of a Flexible Panel T. Bebernis, S. Spottswood, T. Eason, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1100 hrs Oral Presentation Fatigue Loading in Hypersonic Flight due to Large-Scale Unsteadiness J. Poggie, R. Gosse, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1200 hrs Open Discussion
Monday, 16 June 2014				
15-AFM-1				
Chaired by: M. BRENNER, NASA-Dryden Flight Research Center and P. CHENG, Boeing Defense, Space & Security				
0930 hrs AIAA-2014-2050 Optimization of Control Surface Parameters with Augmented Flutter Boundary Constraints K. Singh, L. McDonough, Miami University, Oxford, OH	1000 hrs AIAA-2014-2051 Adaptive Aeroelastic Suppression of a Wind Turbine Blade Using Trailing-edge Flap M. Li, Yangzhou University, Yangzhou, China; M. Balas, University of Wyoming, Laramie, Wyoming, WY	1030 hrs AIAA-2014-2052 Aeroelastic Optimization Study Based on the X-56A Model W. Li, C. Pak, NASA Dryden Flight Research Center, Edwards, CA	1100 hrs AIAA-2014-2053 Robust Modal Filtering and Control of the X-56A Model with Simulated Fiber Optic Sensor Failures P. Suh, A. Chin, NASA Dryden Flight Research Center, Edwards, CA; D. Mavis, Georgia Institute of Technology, Atlanta, GA	1200 hrs AIAA-2014-2055 Aeroservoelastic Modeling and Analysis of a Missile Control Surface with a Nonlinear Electromechanical Actuator A. Kayran, Middle East Technical University, Ankara, Turkey; M. Malci, ROKETSAN Missiles Industries, Inc., Ankara, Turkey
Hanover A				
Aeroservoelastic (ASE) Control, Modeling, Simulation, and Optimization I				
Monday, 16 June 2014				
16-AFM-2				
Chaired by: N. FEZANS, DLR and M. BOLENDER, AFRL/RBCA				
0930 hrs AIAA-2014-2056 Flight Dynamics Simulation with Integrated Electrical System Model for Pilot-in-the-Loop Testing T. Benoit, LMS International, Leuven, Belgium; J. Verbeke, Kulub, Oostend, Belgium; R. De Roo, Vives, Oostend, Belgium; Y. Lammeins, LMS International, Leuven, Belgium	1000 hrs AIAA-2014-2057 F-35A High Angle of Attack Testing S. Boer, Lockheed Martin Corporation, Edwards AFB, CA	1030 hrs AIAA-2014-2058 Alternative Trim Analysis Formulations for Vehicles with Redundant Multi-Axis Control Surfaces D. Garmentello, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1100 hrs AIAA-2014-2059 A Takeoff Rotation Model Including Pilot Technique Parameters for Flight Test Data Reduction and Expansion L. Van Bavel, Luc Van Bavel Design, Quebec City, Canada	
Hanover B				
Aircraft Flight Dynamics, Handling Qualities, and Performance I				

Monday, 16 June 2014		Ice Protection Systems and Hydrophobic Coating Application		Hanover C	
17-ASE-1		Ice Protection Systems and Hydrophobic Coating Application		Hanover C	
Chaired by: R. KREEGER, NASA Glenn Research Center and J. PALACIOS, The Pennsylvania State University					
0930 hrs AIAA-2014-2060 Feasibility Study of a Hybrid Ice Protection System T. Strobl, S. Storm, EADS, Munich, Germany; D. Thompson, Mississippi State University, Mississippi State, MS; M. Homung, Technical University of Munich, Munich, Germany	1000 hrs AIAA-2014-2061 A robust coupling algorithm applied to thermal ice protection system unsteady modeling R. Chauvin, P. Villedieu, P. Trontin, ONERA, Toulouse, France; L. Benmani, Airbus, Toulouse, France	1030 hrs AIAA-2014-2062 Heat and mass transfer analogies for evaporation models at high evaporation rate P. Trontin, P. Villedieu, ONERA, Toulouse, France	1100 hrs AIAA-2014-2063 Ice Adhesion Strength on Hydrophobic and Superhydrophobic Coatings Y. Yeong, E. Loth, University of Virginia, Charlottesville, Charlottesville, VA; J. Sokhey, Rolls-Royce North America, Indianapolis, IN; A. Lambourne, Rolls-Royce Group plc, Derby, United Kingdom	1130 hrs AIAA-2014-2064 Behavior of a Small Water Droplet on Superhydrophobic Coating and Heating Surface in Cold Environment H. Endo, S. Kimura, Kanagawa Institute of Technology, Kanagawa, Japan; M. Katraki, H. Sakaue, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	1200 hrs AIAA-2014-2065 Experimental Investigation of a Single Droplet on a Superhydrophobic Coating in Icing Wind Tunnel for the Development of Ice-Protection System M. Hasegawa, T. Hyugaji, Y. Yamagishi, S. Kimura, Kanagawa Institute of Technology, Atsugi, Japan; M. Katraki, H. Sakaue, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan
Monday, 16 June 2014					
18-ASE-2					
Chaired by: M. POLITOVICH, National Center for Atmospheric Research and J. MURRAY, NASA-Langley Research Center					
0930 hrs AIAA-2014-2066 A Numerical Weather Model's Ability to Predict Aircraft and Ground Icing Environments G. Thompson, M. Politovich, National Center for Atmospheric Research, Boulder, CO	1000 hrs AIAA-2014-2067 Weather Support for Terminal Area Icing Weather Information S. Landolt, M. Politovich, A. Schwartz, K. Goodrich, National Center for Atmospheric Research, Boulder, CO	1030 hrs AIAA-2014-2068 Application of a Nowcasting Tool for Analysis of Meteorological Conditions Associated with Engine Icing J. Black, J. Haggerty, G. McCabe, C. Wolff, G. Cunniff, National Center for Atmospheric Research, Boulder, CO; A. Grandin, Airbus, Toulouse, France	1100 hrs AIAA-2014-2069 Improving Diagnoses of In-Flight Icing Conditions in Regions of Sparsely Distributed Surface Observations D. Adriansen, G. Thompson, C. Wolff, M. Politovich, National Center for Atmospheric Research, Boulder, CO	1130 hrs AIAA-2014-2070 Diagnosing and Forecasting In-Flight Icing Conditions in Alaska C. Wolff, D. Adriansen, M. Politovich, National Center for Atmospheric Research, Boulder, CO	Hanover D
Monday, 16 June 2014					
19-PDL-1					
Chaired by: K. KREMEYER, PM & AM Research and A. YALIN, Colorado State University					
0930 hrs AIAA-2014-2071 Laser Generated Plasma Using a Dual Pulse Approach with Application to Laser Ignition C. Dumitrache, A. Yalin, Colorado State University, Fort Collins, CO; M. Schneider, Princeton University, Princeton, NJ	1000 hrs AIAA-2014-2072 Shock Train Formation in COIL Lasers I. Zilberter, J. Edwards, North Carolina State University, Raleigh, NC	1030 hrs AIAA-2014-2073 Effect of Ionization Waves on Propagation of a Laser-Supported Detonation Wave K. Shimomura, J. Ofosu, K. Komurasaki, University of Tokyo, Chiba, Japan; H. Koizumi, University of Tokyo, Tokyo, Japan	1100 hrs AIAA-2014-2074 Development of a Photonic Crystal Fiber Delivery System for Laser Ignition in Engines C. Dumitrache, Colorado State University, Fort Collins, CO; J. Roth, Seaforth, LLC, Fort Collins, CO; A. Yalin, Colorado State University, Fort Collins, CO; S. Gupta, Argonne National Laboratory, Argonne, IL	1130 hrs AIAA-2014-2075 Computational Model and Calculation Method of Flammable Oxyhydrogen Mixture Ignition with Laser-Induced Plasma S. Ryzikov, Moscow State Technical University, Moscow, Russia; V. Kuzenov, Russian Academy of Sciences, Moscow, Russia	Hanover E

Monday, 16 June 2014		Airframe Noise I		Hanover F	
20-AA-1		Airframe Noise I		Hanover F	
Chaired by: E. GARCIA, Georgia Institute of Technology					
0930 hrs AIAA-2014-2076 Aerodynamic and Acoustic Design of Silent Leading Edge Device M. Pot-Pollenske, J. Wild, German Aerospace Center (DLR), Braunschweig, Germany; L. Bertsch, German Aerospace Center (DLR), Göttingen, Germany	1000 hrs AIAA-2014-2077 Numerical Investigation of a Reductive Nose Landing Gear J. Dahm, C. O'Reilly, G. Efraimsson, Royal Institute of Technology (KTH), Stockholm, Sweden	1030 hrs AIAA-2014-2078 Incorporating and Minimizing Aircraft Noise Annoyance During Conceptual Aircraft Design A. Sahai, E. Stumpf, RWTH Aachen University, Aachen, Germany	1100 hrs AIAA-2014-2079 Airframe noise source diagnostics of a large-scale semi-span model in DNW-NWB and experimental investigation of wing element modification for noise suppression V. Kopiev, M. Zoytsev, I. Belynev, TsAGI, Moscow, Russia; A. Gorbushin, I. Chernyshev, TsAGI, Zhukovskiy, Russia; M. Pot-Pollenske, German Aerospace Center (DLR), Braunschweig, Germany	1130 hrs AIAA-2014-2080 Experimental Study on Slat Noise from 30P30N Three-Element High-Lift Airfoil at JAXA Hard-Wall Low-speed Wind Tunnel M. Murayama, K. Nakakita, K. Yamamoto, H. Ura, Y. Ito, Japan Aerospace Exploration Agency (JAXA), Mitaka, Japan; M. Choudhary, NASA Langley Research Center, Hampton, VA	
Monday, 16 June 2014					
21-MST-1		M&S: Applications		Hanover G	
Chaired by: J. KRUEP, Aeromet Rocketdyne					
0930 hrs AIAA-2014-2081 The Expanded Reach of Simulation Based Aircraft System Verification and its Software Capability Requirements S. James, C. Savaglio, Applied Dynamics Corporation, Ann Arbor, MI	1000 hrs AIAA-2014-2082 Comparative Solution Methods for the Integrated Problem of Sensors, Weapons, and Targets K. Ezra, D. Delaunays, L. Mockus, Purdue University, West Lafayette, IN	1030 hrs AIAA-2014-2083 Response Surface Based Performance Analysis of an Air-Defense Missile System Against Maneuvering Targets K. Günaydin, T. Çimen, ROKETSAN Missiles Industries, Inc., Ankara, Turkey; O. Tekinalp, Middle East Technical University, Ankara, Turkey	1100 hrs AIAA-2014-2084 An Approach for Modeling, Design, and Energy Evaluation of Small Convertible Aerial Vehicles K. Phung, P. Marin, Pierre and Marie Curie University, Paris, France		
Monday, 16 June 2014					
22-FD-2		Turbulence Modeling I		Harris	
Chaired by: B. SMITH, Lockheed Martin Aeronautics					
0930 hrs AIAA-2014-2085 Bayesian calibration of a k-ε turbulence model for predictive jet-in-crossflow simulations J. Roy, S. Leifantzi, Sandia National Laboratories, Livermore, CA; S. Arangojatesan, L. DeChant, Sandia National Laboratories, Albuquerque, NM	1000 hrs AIAA-2014-2086 Turbulence Model Extension for Low Speed Thermal Shear Layers R. Bush, Pratt & Whitney, East Hartford, CT	1030 hrs AIAA-2014-2087 On the Accuracy of RANS Simulations of 2D Boundary Layers with OpenFOAM S. Gomez, B. Graves, S. Poroseva, University of New Mexico, Albuquerque, Albuquerque, NM	1100 hrs AIAA-2014-2088 Assessment of Higher-order RANS Closures in a Decelerated Planar Wall-bounded Turbulent Flow E. Jeyapaul, National Institute of Aerospace, Hampton, VA; G. Coleman, C. Rumsey, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-2089 An Examination of Parameters Affecting Large Eddy Simulations of a Square Cylinder M. Manikbadi, N. Georgiadis, NASA Glenn Research Center, Cleveland, OH	

Monday, 16 June 2014		Simulation Algorithms I		Inman
23-FD-3		Simulation Algorithms I		Inman
Chaired by: E. WHITE, Texas A&M University and K. GREENIVAS, SimCenter: National Center for Computational Engineering				
0930 hrs AIAA-2014-2090 High-Order Residual-Distribution Hyperbolic Advection-Diffusion Schemes: 3rd-, 4th-, and 6th-Order	1000 hrs AIAA-2014-2091 First, Second, and Third Order Finite-Volume Schemes for Navier-Stokes Equations	1030 hrs AIAA-2014-2092 Active Flux for Diffusion	1100 hrs AIAA-2014-2093 A High-Order Immersed Interface Method for Compressible Flows	1130 hrs AIAA-2014-2094 Decreasing the computing time of the CFD code Edge by LU-SGS and line-implicit methods
A. Mizuhata, NASA Langley Research Center, Hampton, VA; H. Nishikawa, National Institute of Aerospace, Hampton, VA	H. Nishikawa, National Institute of Aerospace, Hampton, VA; P. Roe, University of Michigan, Ann Arbor, Ann Arbor, MI; T. Eymann, CREATE (Kestrel Team), Eglin AFB, FL	H. Nishikawa, National Institute of Aerospace, Hampton, VA; P. Roe, University of Michigan, Ann Arbor, Ann Arbor, MI; T. Eymann, CREATE (Kestrel Team), Eglin AFB, FL	C. Brehm, M. Barad, NASA Ames Research Center, Moffett Field, CA; C. Hader, University of Arizona, Tucson, Tucson, AZ	E. Orero, Royal Institute of Technology (KTH), Stockholm, Sweden; P. Eliasson, Swedish Defense Research Agency (FOI), Stockholm, Sweden
Monday, 16 June 2014				
24-FD-4		Ramjet and Scramjet Propulsion Systems I		Kenneshaw
Chaired by: J. EDWARDS				
0930 hrs AIAA-2014-2095 Large-eddy / Reynolds-Averaged Navier-Stokes Simulation of Cavity-Stabilized Ethylene Combustion	1000 hrs AIAA-2014-2096 Supersonic Combustion Processes in an Inlet Fuelled 3D Non-Uniform-Compression Scramjet Engine	1030 hrs AIAA-2014-2097 Development and Application of Numerical Technology for simulation of different combustion types in high-speed viscous gas turbulent flows		
A. Pothuri, J. Edwards, North Carolina State University, Raleigh, NC	M. Briccalli, L. Brown, R. Boyce, University of Queensland, Brisbane, Australia	A. Sinyavara, K. Anisimov, TsAGI, Zhukovskiy, Russia		
Monday, 16 June 2014				
25-FC-2		Flow Control: Actuation and Sensing		Lenox
Chaired by: R. WOSZIDLO, Technical University Berlin				
0930 hrs AIAA-2014-2098 Wall-shear stress measurements in an adverse pressure gradient turbulent boundary layer	1000 hrs AIAA-2014-2099 Balanced Truncation of System Models Using Reduced Resolution Sensing for Plane Poiseuille Flow State Estimation	1030 hrs AIAA-2014-2100 Actuator and Sensor Placement for Flow Control	1100 hrs AIAA-2014-2101 Optimized sensor placement using stochastic estimation for a flow over a 2D airfoil with Coanda blowing	1130 hrs AIAA-2014-2102 Estimation of Plume Concentration from a Moving Source with an Unmanned Aerial Vehicle
K. Geurts, B. Natterback, W. Schroeder, RWTH Aachen University, Aachen, Germany	A. Friedman, Y. Oshman, J. Cohen, Technion-Israel Institute of Technology, Haifa, Israel	M. Natarajan, J. Freund, D. Bodony, University of Illinois, Urbana-Champaign, Urbana, IL	P. Kumar, Y. El Sayed, R. Semnan, Technical University of Braunschweig, Braunschweig, Germany	N. Gatsionis, M. Demetriou, T. Egorova, Worcester Polytechnic Institute, Worcester, MA
Monday, 16 June 2014				
26-APA-6		Airfoil/Wing/Configuration Aerodynamics I		Marietta
Chaired by: A. MCCOMAS, TIG Aerospace				
0930 hrs AIAA-2014-2103 Computational Modelling of Fixed and Rotary Wing Aerodynamics Operating in Close Proximity to Wavy Free Surfaces	1000 hrs AIAA-2014-2104 Impact of Forebody Strakes on Wing Rock behavior on a Generic Chine Body-Wing Configuration	1030 hrs AIAA-2014-2105 Unsteady interactions of a wandering streamwise-oriented vortex with a wing	1100 hrs AIAA-2014-2106 Parametric Trade Study for Supersonic Bi-Directional Flying Wing	1130 hrs AIAA-2014-2107 Advanced Laminar Flow Aerodynamic Configuration Optimization Design for Green Aviation
R. Prasad, V. Divedi, M. Damodaran, Indian Institute of Technology Gandhinagar, Ahmedabad, India	H. Qureshi, Y. Wang, W. Shi, Q. Li, Z. Qiu Shi, Beihang University, Beijing, China	D. Gammam, M. Vishal, Air Force Research Laboratory, Wright-Patterson AFB, OH	J. Gan, A. Lefebvre, D. Espinal, G. Zhao, University of Miami, Miami, FL	Z. Gao, Northwestern Polytechnical University, Xi'an, China

Monday, 16 June 2014		Ground Test Facility Operation and Improvement		Piedmont
Chaired by: J. EVERHART, NASA-Langley Research Center and J. VAN AKEN, Jacobs Technology				
0930 hrs AIAA-2014-2108 March Number Control Improvement in ONERA S1MA large Transonic Wind Tunnel P. Crozier, C. Chagy, ONERA, Modane, France; R. Pichon, ONERA, Châtillon, France	1000 hrs AIAA-2014-2109 Neural-Network Control of Wind Tunnel Test Conditions M. Rennie, P. Sutcliffe, A. Vorobiev, University of Notre Dame, Notre Dame, IN; A. Cain, Innovative Technology Applications Company, Chestersfield, MO	1030 hrs AIAA-2014-2110 Exploiting the Characteristics of Kevlar-Wall Wind Tunnels for Conventional Aerodynamic Measurements K. Brown, W. Devenport, A. Borgoltz, Virginia Polytechnic Institute and State University, Blacksburg, VA	1100 hrs AIAA-2014-2111 Reducing Cost and Increasing Speed: Managing your Test Capital at the Intersection of Critical Value Streams and Knowledge P. McNamara, Seintre Group, Suwanee, GA	
Monday, 16 June 2014				
28-HYTASP-15 0930 - 1000 hrs		SPHS Introduction		Regency Ballroom V
Chaired by: A. SEBENTHAAR, Aerojet Rocketdyne				
Adam Siebenthaar Aerojet Rocketdyne				
Monday, 16 June 2014				
29-PANEL-1 0930 - 1130 hrs		Panel: Aviation's Challenges & Opportunities - Georgia's Global Perspectives		Regency Ballroom VI
Moderator: Steve Justice, Director, Georgia Center of Innovation for Aerospace				
Panelists:				
Steve Dickson Senior Vice President, Flight Operations Delta Air Lines		Al Hegner Director, Base Maintenance Delta Air Lines		Jack Crisler Vice President, New Business, Air Mobility, Special Forces and Maritime Programs Lockheed Martin Aeronautics Company
Monday, 16 June 2014				
30-AMT-2/PDL-2		Diagnostics I		Roswell
Chaired by: C. LIMBACH, Princeton University and J. POGGIE, USAF AFRL/RBAC				
0930 hrs AIAA-2014-2112 Emission Spectroscopy Characterization of Thermal Protection System Materials in Arc-Heated Flows D. Godwin, B. Cruden, T. Ho, MSA Ames Research Center, Moffett Field, CA	1000 hrs AIAA-2014-2113 Time-Resolved Electron Temperature and Number Density Measurements in a Nanosecond Pulse Flament Discharge Using Thomson Scattering A. Roitman, I. Shkurenkov, I. Adamovich, W. Lemper, Ohio State University, Columbus, OH	1030 hrs AIAA-2014-2114 Radar REMPI measurements of N2 rotational temperature S. McGuire, R. Miles, Princeton University, Princeton, NJ	1100 hrs AIAA-2014-2115 Measurement of Continuum Breakdown during Disc Spin-down in Low Pressure Air T. Acharya, J. Falgout, M. Martin, Louisiana State University, Baton Rouge, LA; R. Rasmussen, Guidance Dynamics Corporation, Simi Valley, CA	

Monday, 16 June 2014		Plasma-Based Flow Control I		Spring
Chaired by: V. NARAYANASWAMY, North Carolina State Univ and P. MORGAN, Ohio Aerospace Institute				
0930 hrs AIAA-2014-2116 Numerical Simulations Investigating Flow Over Flat Plate Suction Perforations Driven by Dielectric Barrier Discharge Plasma Actuation P. Morgan, Ohio Aerospace Institute, Wright-Patterson AFB, OH; M. Vissal, Air Force Research Laboratory, Wright-Patterson AFB, OH	1000 hrs AIAA-2014-2117 Application of linear sliding discharges for flow control: study of the energy coupling mechanisms P. Costero, P. Elias, ONERA, Palaiseau, France; C. Loox, École Centrale Paris, Châtenay-Malabry, France	1030 hrs AIAA-2014-2118 Nanosecond pulsed discharge plasma actuation: characteristics and flow control performance Y. Wu, Xi'an Jiaotong University, Xi'an, China	1100 hrs AIAA-2014-2119 Effect of dielectric material on thermal effect produced by ns-DBD plasma actuator G. Corrales, M. Koissons, Delft University of Technology, Delft, The Netherlands	
Monday, 16 June 2014				
32-TP-1		Ablation I		Techedwood
Chaired by: D. KUNTZ, Sandia National Laboratories				
0930 hrs AIAA-2014-2120 Toward Ablative Material Response Coupling in DPLR S. Muppidi, M. Barnhardt, ERC, Inc., Moffett Field, CA; N. Mansour, NASA Ames Research Center, Moffett Field, CA	1000 hrs AIAA-2014-2121 Numerical Investigation of Pyrolysis Gas Blowing Pattern and Thermal Response using Orthotropic Charring Ablative Material H. Weng, A. Martin, University of Kentucky, Lexington, Lexington, KY	1030 hrs AIAA-2014-2122 Gas/Surface Interaction Study of Low-Density Ablators in Sub- and Supersonic Plasmas B. Helber, A. Turchi, O. Chazot, T. Magin, von Kármán Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium; A. Hubin, Vrije Universiteit Brussel, Brussels, Belgium	1100 hrs AIAA-2014-2123 Coupled CFD-Ablation Response Model Simulations Using the libMesh Framework G. Palmer, M. Barnhardt, ERC, Inc., Moffett Field, CA; A. Anar, B. Kirk, NASA Johnson Space Center, Houston, TX; Y. Chen, NASA Ames Research Center, Moffett Field, CA	1200 hrs AIAA-2014-2125 Development and Testing of an Ablation Model Based on Plasma Wind Tunnel Experiments A. Turchi, B. Helber, A. Almarat, T. Magin, von Kármán Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium
Monday, 16 June 2014				
33-TP-2		Heat Transfer Enhancement and Energy Harvesting I		University
Chaired by: Y. CHUDNOVSKY, Gas Technology Institute and E. IMAROTTA, FMC Technologies Inc				
0930 hrs AIAA-2014-2126 A Phase Change Study of Electroplated Copper Wick Structures S. Cai, A. Bhunia, Teledyne Scientific & Imaging, Thousand Oaks, CA	1000 hrs AIAA-2014-2127 Heat Transfer Enhancement in Latent Heat Storage Units T. Rozenfeld, Y. Kozak, G. Ziskind, Ben-Gurion University of the Negev, Beer-Sheva, Israel	1030 hrs AIAA-2014-2128 The effect of step length and inclined angle of backward facing step on heat transfer characteristics R. Moosavi, Florida International University, Miami, FL; S. Ganjalikhani Nasab, Shahid Bahonar University, Kerman, Iran; R. Kifemariam, C. Lin, Florida International University, Miami, FL	1100 hrs AIAA-2014-2130 Influence of a gap on Heat Transfer and Friction Factor in a Square Duct Roughened with Discrete Ribs A. Choubbe, Jabalpur Engineering College, Jabalpur, India; S. Gupta, State Technological University of Madhya Pradesh, Bhopal, India	
Monday, 16 June 2014				
34-TP-3		Multi-Scale Heat Transfer I		Vinnings
Chaired by: A. NARAYANASWAMY, Columbia University and A. HASHEM, Lockheed Martin Space Systems				
0930 hrs Oral Presentation Thermal conductivity of Supratom Molecular Solids J. Molen, W. Ong, J. Epstein, A. McGohey, Carnegie Mellon University, Pittsburgh, PA; X. Roy, E. O'Brien, Columbia University, New York, NY	1000 hrs Oral Presentation Electromagnetic Energy Density and Power Dissipation Derived from the Equivalent Circuit Approach J. Zhao, Harbin Institute of Technology, Harbin, China; Z. Zhang, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2131 Gridless Direct Simulation Monte Carlo Approach for Analysis of Fractal-Like Spore Aggregates R. Jambunathan, D. Levin, Pennsylvania State University, University Park, PA	1100 hrs Oral Presentation When Can the Effective Medium Theory Be Used to Calculate Near-Field Radiative Transfer between Multilayered Metamaterials? X. Liu, T. Bright, Z. Zhang, Georgia Institute of Technology, Atlanta, GA	

Monday, 16 June 2014		Global Reports I		Regency Ballroom V	
35-HYASP-16 1000 - 1230 hrs					
Chaired by: A. SIEBENTHAAR, Aerojet Rocketdyne					
Participants:					
Michael Smart Australia	Christian Mundt Germany	Mario Cosmo Italy	Masataka Maita Japan	Richard Brown UK	Steve Walker US
Monday, 16 June 2014					
36-LINCH-1 1230 - 1400 hrs					
Monday Networking Lunch					
Monday, 16 June 2014					
37-APA-7					
Chaired by: A. SCHUETTE, DLR - German Aerospace Center					
1400 hrs AIAA-2014-2132 Static and dynamic numerical simulations of a generic UCAV configuration with and without control devices	1430 hrs AIAA-2014-2133 Stability and Control CFD Investigations of a Generic 53-deg Swept UCAV Configuration N. Fink, NASA Langley Research Center, Hampton, VA	1500 hrs AIAA-2014-2134 Numerical Simulation of Control Surface Deflections over a Generic UCAV configuration at Off-design Flow Conditions D. Kennerf, G. Hoholis, K. Backcock, University of Liverpool, Liverpool, United Kingdom	1530 hrs AIAA-2014-2135 CFD Predictions of Control Effectiveness for a Generic Highly Swept UCAV Configuration J. Coppin, T. Birch, Defence Science and Technology Laboratory, Fareham, United Kingdom	1600 hrs AIAA-2014-2136 Prediction and Validation of Aerodynamic Characteristics for a Generic UCAV Configuration with Trailing-Edge Flaps M. Young, Defence Science and Technology Organisation, Fishermans Bend, Australia; M. Ghoreyshi, A. Jirasek, R. Cummings, U.S. Air Force Academy, Colorado Springs, CO	Baker
Monday, 16 June 2014					
38-APA-8					
Chaired by: L. BANGERT, NASA Langley Research Center					
1400 hrs AIAA-2014-2137 Boeing N+2 Supersonic Experimental Validation Phase II Program T. Migeo, S. Fugoi, L. Fink, The Boeing Company, Huntington Beach, CA; S. Shaw, The Boeing Company, Seattle, WA	1430 hrs AIAA-2014-2138 Overview of Sonic Boom Reduction Efforts on the Lockheed Martin N+2 Supersonic Validations Program M. Buonanno, S. Choi, F. Marconi, J. Morgenstern, Lockheed Martin Corporation, Palmdale, CA	1500 hrs AIAA-2014-2139 Uncertainty Quantification and Certification Prediction of Low-Boom Supersonic Aircraft Configurations T. West, Missouri University of Science and Technology, Rolla, MO; B. Reuter, University of Texas Austin, Austin, TX; E. Walker, W. Kleib, M. Park, NASA Langley Research Center, Hampton, VA	1530 hrs Oral Presentation Sensitivity Study of Sonic Boom to Off Design Conditions L. Ozoroski, NASA Langley Research Center, Hampton, VA	1600 hrs AIAA-2014-2140 Experimental and Computational Sonic Boom Assessment of Boeing N+2 Low Boom Models D. Durston, NASA Ames Research Center, Moffett Field, CA; A. Ernigui, MSA Langley Research Center, Hampton, VA; S. Cliff, NASA Ames Research Center, Moffett Field, CA; C. Winski, M. Canter, E. Walker, NASA Langley Research Center, Hampton, VA	1630 hrs AIAA-2014-2141 Conceptual Design of Low-Boom Supersonic Aircraft with Flight Trim Requirement I. Ortaz, K. Beiselhart, J. Fenbert, NASA Langley Research Center, Hampton, VA
Monday, 16 June 2014					
Special Session: Sonic Boom Activities II					
Courtland					

Monday, 16 June 2014		Flow Control (Active and Passive): Computational and Experimental Results II		Dunwoody
Chaired by: D. SMITH, Air Force Office of Scientific Research AFOSR and B. CYBIK, JHU/Applied Physics Laboratory				
1400 hrs AIAA-2014-2142 Numerical Simulation of a High-Lift Configuration with Embedded Fluidic Actuators V. Vaisa, NASA Langley Research Center, Hampton, VA; D. Casiano, Exa Corporation, Stuttgart, Germany; J. In, NASA Langley Research Center, Hampton, VA; J. Appelbaum, Exa Corporation, Stuttgart, Germany	1430 hrs AIAA-2014-2143 Numerical Investigation of Tangential Blowing at the Rudder of a Vertical Tailplane Airfoil A. Kraelmer, German Aerospace Center (DLR), Braunschweig, Germany	1500 hrs AIAA-2014-2144 Leading Edge Separation Control on an Airfoil in Fully-Reversed Condition C. Clifford, A. Singhal, M. Samimy, Ohio State University, Columbus, OH	1530 hrs AIAA-2014-2145 Flow Control with Synthetic Jet Actuators under Adverse Pressure Gradient Laminar Boundary Layer M. Gül, O. Uzo, T. Akmanol, Middle East Technical University, Ankara, Turkey	1600 hrs AIAA-2014-2146 Aerodynamic Response of a Wind Turbine Airfoil to Gurney Flap Deployment Hind, J. Naughton, University of Wyoming, Laramie, WY
1630 hrs AIAA-2014-2147 Active Flow Control on a Two Element High-Lift Airfoil with Drooped Spoiler M. Casper, P. Scholz, Technical University of Braunschweig, Braunschweig, Germany				
Monday, 16 June 2014				
40-APA-10 Chaired by: J. AZEVEDO				
1400 hrs AIAA-2014-2148 A high-order immersed-boundary method for simulations of flapping wings C. Zhu, Vanderbilt University, Nashville, TN; G. Li, University of Louisville, Louisville, KY; H. Luo, Vanderbilt University, Nashville, TN	1430 hrs AIAA-2014-2149 Comparison of CFD and quasi-steady analysis of hovering hummingbird aerodynamics for a Ruby-throated hummingbird J. Song, H. Luo, Vanderbilt University, Nashville, TN	1500 hrs AIAA-2014-2150 Forward propulsion of a rigid plunging airfoil N. Aouf, A. Jain, A. Singh, A. Gupta, S. Sanghi, Indian Institute of Technology Delhi, New Delhi, India; H. Aono, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan; et al.	1530 hrs AIAA-2014-2151 Reynolds Number Effects on the Performance of Small-Scale Propellers R. Deeters, G. Ananda Krishnan, M. Selig, University of Illinois, Urbana-Champaign, Urbana, IL	1600 hrs AIAA-2014-2152 Propeller-Induced Flow Effects on Wings of Varying Platform at Low Reynolds Numbers G. Ananda Krishnan, R. Deeters, M. Selig, University of Illinois, Urbana-Champaign, Urbana, IL
Monday, 16 June 2014				
41-ATIO-3 Chaired by: A. SARAf, Saab Sensis Corporation				
1400 hrs AIAA-2014-2153 Runway Location and Orientation Suitability Analysis J. Laar, P. Rosing, Delft University of Technology, Delft, The Netherlands	1430 hrs AIAA-2014-2154 Improved Safety and Capability via Direct Computation of Takeoff and Landing Performance Data L. Bays, Self, Kennesaw, GA; K. Halpin, Elite Electronic Engineering, Inc., Downers Grove, IL	1500 hrs AIAA-2014-2155 Branch & Bound Global-Search Algorithm for Aircraft Ground Movement Optimization P. Godbole, A. Ranade, R. Pant, Indian Institute of Technology Bombay, Mumbai, India	1530 hrs AIAA-2014-2156 Relating Airport Surface Collision Potential to Taxiway Geometry and Traffic Flow A. Ford, T. Waldron, Saab Sensis Corporation, East Syracuse, NY	1600 hrs AIAA-2014-2157 Impact of Gate Availability on Departure Metering Benefits H. Idris, N. Shen, Enghigh Corporation, Billerica, MA
1700 hrs AIAA-2014-2159 A System Dynamics Approach to Airport Modeling P. Bieslich, M. Schmeider, Hamburg University of Technology, Hamburg, Germany; V. Gollnick, German Aerospace Center (DLR), Hamburg, Germany; K. Löhner, Hamburg University of Technology, Hamburg, Germany				
Monday, 16 June 2014				
42-ATIO-4 Chaired by: S. HASAN, LMI				
1400 hrs AIAA-2014-2160 An Operations-Structured Model for Strategic Prediction of Airport Arrival Rate and Departure Rate Futures R. Dial, S. Roy, Washington State University, Pullman, WA; S. Tien, C. Taylor, C. Wanke, MITRE Corporation, McLean, VA	1430 hrs AIAA-2014-2161 Air Route Clustering for a Queuing Network Model of the National Airspace System J. Deakmon, C. Taylor, T. Masek, C. Wanke, MITRE Corporation, McLean, VA	1500 hrs AIAA-2014-2162 METROSIM: A Metropolis-Wide Route Planning and Airport Scheduling Tool E. Wieland, A. Tyagi, V. Kumar, W. Krueger, Intelligent Automation, Inc., Rockville, MD	1530 hrs AIAA-2014-2163 Decision-Theoretic Prediction and Policy Design of GDP Slot Auctions J. Bono, Economists, Inc., San Francisco, CA; D. Wolpert, Santa Fe Institute, Santa Fe, NM; D. Xie, J. Grano, American University, Washington, DC	1600 hrs AIAA-2014-2164 Assessing Relation between Performance of Schedule-Based Arrival Operation and Schedule Nonconformance J. Jung, J. Thiophavong, NASA Ames Research Center, Moffett Field, CA; L. Martin, San Jose State University, San Jose, CA
1700 hrs AIAA-2014-2166 Traffic Aware Planner (TAP) Flight Evaluation J. Menis, M. Haynes, Advanced Aerospace Solutions, LLC, Raleigh, NC; D. Wing, NASA Langley Research Center, Hampton, VA	1630 hrs AIAA-2014-2165 Human-In-The-Loop Simulation to Validate Capability-Aware Traffic Flow Management Concept E. Bromberg, M. Elliott, S. Ahmadbeygi, T. Lewis, J. Burke, Metron Aviation, Inc., Dulles, VA; V. Sud, Federal Aviation Administration, Washington, DC			
Monday, 16 June 2014				
ATM-II Modeling & Simulation for ATM				
Embassy E				

Monday, 16 June 2014		Airframe Design Methods and Tools II		Embassy F
Chaired by: M. DRAKE, Boeing Commercial Airplanes				
1400 hrs AIAA-2014-2167	1430 hrs AIAA-2014-2168	1500 hrs AIAA-2014-2169		
Integrating a human designer's preferences in multidisciplinary design optimization P. Reverdy, A. Reddy, L. Marinelli, N. Leonard, Princeton University, Princeton, NJ	An exercise in design process simulation using agent models based on Bayesian global optimization A. Garbo, X. Fei, B. German, Georgia Institute of Technology, Atlanta, GA	Application of an Aircraft Design-To-Noise Simulation Process L. Bertsch, German Aerospace Center (DLR), Göttingen, Germany; W. Heinze, Technical University of Braunschweig, Braunschweig, Germany; M. Lummer, German Aerospace Center (DLR), Braunschweig, Germany		
Monday, 16 June 2014				
44-ACD-3				
Chaired by: R. MCDONALD, California Polytechnic State University-San Luis Obispo				
1400 hrs No Presentations		1600 hrs AIAA-2014-2170	1630 hrs AIAA-2014-2171	1700 hrs AIAA-2014-2172
		Facilitating Technology Development Progression through Quantitative Uncertainty Assessments K. Gorjan, D. Mavis, Georgia Institute of Technology, Atlanta, GA	Quantifying Random Variable Dependence Structure Through Copulas Theory for Probabilistic Assessment T. Zaidi, H. Jimenez, D. Mavis, Georgia Institute of Technology, Atlanta, GA	A Visualization Method for Multidisciplinary System under Uncertainty S. Ghosh, D. Rancourt, M. Daskiewicz, C. Lee, D. Mavis, Georgia Institute of Technology, Atlanta, GA
Monday, 16 June 2014				
45-MAO-3				
Chaired by: R. KOLONAY, US Air Force Research Lab				
1400 hrs AIAA-2014-2173	1430 hrs AIAA-2014-2174	1500 hrs AIAA-2014-2175	1530 hrs AIAA-2014-2176	1600 hrs AIAA-2014-2177
A Numerical Optimization Study on Winglets S. Khosravi, D. Zingg, University of Toronto, Toronto, Canada	Dimensional Design Space Exploration of Expensive Functions with Access to Gradient S. Berguin, D. Mavis, Georgia Institute of Technology, Atlanta, GA	Preliminary Structural Design Using Topology Optimization with a Comparison of Results from Gradient and Genetic Algorithm Methods A. Burt, M. Tinker, NASA Marshall Space Flight Center, Huntsville, AL	Design and Validation of a Supersonic Natural Laminar Flow Test Article P. Stutzka, D. Rajnarayan, Aerion Corporation, Reno, NV	A non-probabilistic reliability-based topology optimization method based on equivalent loads M. Li, W. Tang, Southeast University, Nanjing, China
Monday, 16 June 2014				
46-MAO-4				
Chaired by: C. BLOEBALUM, University at Buffalo				
1400 hrs AIAA-2014-2178	1430 hrs AIAA-2014-2179	1500 hrs AIAA-2014-2180	1530 hrs AIAA-2014-2181	1600 hrs AIAA-2014-2182
Conceptual Design of a Multi-Ability Reconfigurable Unmanned Aerial Vehicle (UAV) through a Synergy of 3D CAD and Modular Platform Planning S. Clowdhury, Mississippi State University, Mississippi State, MS; V. Maldonado, University of Texas, San Antonio, San Antonio, TX; R. Patel, A&A Company, South Plainfield, NJ	L-Dominance: An Approximate-Domination Mechanism for Adaptive Resolution of Pareto Frontiers B. Hancock, T. Nysevoid, C. Mattson, Brigham Young University, Provo, UT	Multidisciplinary Analysis with SORCER using Domain-Specific Objects S. Burton, American Optimization, LLC, Liberty Township, OH; R. Kolanay, M. Sobolewski, Air Force Research Laboratory, Wright-Patterson AFB, OH	Visualization of System Decomposition in a Value-Based Framework E. Tibor, Iowa State University, Ames, IA; S. Miller, G. Stump, Pennsylvania State University, University Park, PA; C. Bloebaum, B. Mesmer, Iowa State University, Ames, IA; T. Simpson, Pennsylvania State University, University Park, PA, et al.	Non Deterministic Approach for Advanced Aircraft Configuration Design under Uncertainty P. Prakash, T. Nam, C. Penallo, D. Mavis, Georgia Institute of Technology, Atlanta, GA
Monday, 16 June 2014				
Embassy H				

Monday, 16 June 2014		Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations I		Fairlie
Chaired by: J. PINIER, NASA-Langley Research Center and S. MORRIS, Engineering Systems, Inc.				
1400 hrs AIAA-2014-2183 Compressible Boundary Layer Turbulence Transition Measurements with In-depth Thermocouples X. Zhao, X. Guo, China Academy of Aerospace Aerodynamics, Beijing, China	1430 hrs AIAA-2014-2184 Empirical Correlation for Hypersonic Aerodynamic Heating in Open Cavity Geometries Under Rarefied Flow Conditions P. Stevens, Raytheon Company, Tucson, AZ	1500 hrs AIAA-2014-2185 Characteristic Analysis and Experimental Study of Tracer Particles for PIV in Supersonic Flows F. Chen, H. Liu, Shanghai Jiao Tong University, Shanghai, China; Z. Yang, Wright State University, Dayton, OH	1530 hrs AIAA-2014-2186 Performance Investigation of a Supersonic Air Intake in Presence of Boundary Layer Bleed M. Soltani, J. Sepahi Younsi, A. Daliri, Sharif University of Technology, Tehran, Iran	
Monday, 16 June 2014				
48-FD-5 High-Reynolds-Number Fluid Structure Interaction II (Invited)				
Chaired by: K. CASPER, Sandia National Laboratories and R. BOWERSOX, Texas A&M University				
1400 hrs Oral Presentation Experimental Design for Studying Fluid-Structure Interactions during Hypersonic Boundary-Layer Transition K. Casper, M. Meshi, S. Beresh, Sandia National Laboratories, Albuquerque, NM	1430 hrs Oral Presentation Interaction of a Mach 2.25 turbulent boundary layer with elastic panels using direct numerical simulation C. Ostroich, P. Geubelle, D. Bodony, University of Illinois, Urbana-Champaign, Urbana, IL	1500 hrs Oral Presentation Turbulence modification using dynamic wall boundary conditions S. Davvuri, M. Luhar, B. McKeon, California Institute of Technology, Pasadena, CA	1530 hrs Oral Presentation Fluid-Structure Interactions in Compressible Cavity Flows J. Wagner, K. Casper, S. Beresh, P. Hunter, R. Spillers, J. Henfling, Sandia National Laboratories, Albuquerque, NM; et al.	1600 hrs Oral Presentation Turbulence Response to Local Pressure Gradients at Mach 5 R. Bowersox, Texas A&M University, College Station, TX
			1630 hrs Oral Presentation Modeling of Compliant Panels Subjected to Shock Impingement in High Speed Flow A. Gogulapati, R. Deshmukh, A. Crowell, J. McNamara, Ohio State University, Columbus, OH; V. Vyas, X. Wang, Arizona State University, Tempe, AZ; et al.	1700 hrs Open Discussion
Monday, 16 June 2014				
49-AFM-3 Aeroervoelastic (ASE) Control, Modeling, Simulation, and Optimization II				
Chaired by: M. BRENNER, NASA-Dryden Flight Research Center and P. CHENG, Boeing Defense, Space & Security				
1400 hrs AIAA-2014-2187 Control strategies for an experimental morphing wing model L. Grigoire, R. Botez, University of Quebec, Montreal, Canada	1430 hrs AIAA-2014-2188 Model Predictive Control of a Nonlinear Aeroelastic System Using Reduced-Order Volterra Models R. Prazenica, Embry-Riddle Aeronautical University, Daytona Beach, FL	1500 hrs AIAA-2014-2189 Fly-by-Feel Sensing and Control: Aeroervoelasticity A. Mangalam, Ico of Systems Integration, Inc., Hampton, VA; M. Bramer, NASA Dryden Flight Research Center, Edwards, CA		
Monday, 16 June 2014				
50-AFM-4 Aerodynamic Prediction Methods				
Chaired by: T. LAVIN, Sandia National Laboratories and M. COTTING, US Air Force Test Pilot School				
1400 hrs No Presentations			1530 hrs AIAA-2014-2191 Control Performance, Aerodynamic Modeling and Validation of Coupled Simulation Techniques for Guided Projectile Roll Dynamics J. Sahu, F. Fresconi, K. Heavey, Army Research Laboratory, Aberdeen Proving Ground, MD	1600 hrs AIAA-2014-2192 Simulation of a Variety of Wings using a Reynolds Stress Model K. Thompson, H. Hassam, North Carolina State University, Raleigh, NC
Monday, 16 June 2014				
50-AFM-4 Aerodynamic Prediction Methods				
Chaired by: T. LAVIN, Sandia National Laboratories and M. COTTING, US Air Force Test Pilot School				
1400 hrs No Presentations			1530 hrs AIAA-2014-2191 Control Performance, Aerodynamic Modeling and Validation of Coupled Simulation Techniques for Guided Projectile Roll Dynamics J. Sahu, F. Fresconi, K. Heavey, Army Research Laboratory, Aberdeen Proving Ground, MD	1600 hrs AIAA-2014-2192 Simulation of a Variety of Wings using a Reynolds Stress Model K. Thompson, H. Hassam, North Carolina State University, Raleigh, NC

Monday, 16 June 2014		Aircraft Flight Dynamics, Handling Qualities, and Performance II		Hanover B	
Chartered by: M. COTTING, US Air Force Test Pilot School and K. CUNNINGHAM, NASA-Langley Research Center					
1400 hrs AIAA-2014-2193 Measuring Aircraft Nonlinearity Across Aerodynamic Altitude Flight Envelope-Revisited With Symmetrized Aerodynamics	1430 hrs AIAA-2014-2194 Toward a Flying Qualities Standard for Unmanned Aircraft	1500 hrs AIAA-2014-2195 A voluntary/involuntary pilot model for helicopter flight dynamics and aeroelasticity	1530 hrs AIAA-2014-2196 Image-Based Target Tracking of Observable Features in Precision Projectiles	1600 hrs AIAA-2014-2197 Hybrid Wing Body Model Identification Using Forced-Oscillation Water Tunnel Data	1630 hrs AIAA-2014-2198 Implementation of a Trajectory Prediction Function for Trajectory Based Operations
K. Greene, D. Kunz, Air Force Institute of Technology, Wright-Patterson AFB, OH; M. Coting, U.S. Air Force Test Pilot School, Edwards AFB, CA	K. Greene, D. Kunz, Air Force Institute of Technology, Wright-Patterson AFB, OH; M. Coting, U.S. Air Force Test Pilot School, Edwards AFB, CA	P. Masarati, G. Quaranta, Technical University of Milan, Milan, Italy; A. Bernardini, G. Guglielmi, Technical University of Turin, Turin, Italy	L. Fairfax, Army Research Laboratory, Aberdeen Proving Ground, MD	P. Murphy, D. Vicroy, NASA Langley Research Center, Hampton, VA; B. Kramer, M. Kerho, Rolling Hills Research Corporation, El Segundo, CA	J. Benavides, Singier Ghaffarian Technologies, Inc., Moffett Field, CA; J. Kameshige, NASA Ames Research Center, Moffett Field, CA; S. Shamma, Singier Ghaffarian Technologies, Inc., Moffett Field, CA; R. Pando, SAIC, Moffett Field, CA; M. Stęgliński, Singier Ghaffarian Technologies, Inc., Moffett Field, CA
Monday, 16 June 2014					
52-ASE-3					
Chartered by: W. WRIGHT, ASRC Aerospace Corporation and R. AUBERT, Bell Helicopter Textron Inc.					
1400 hrs AIAA-2014-2199 Glaciated and mixed phase ice accretion modeling using ONERA 2D icing suite	1430 hrs AIAA-2014-2200 Icing Analysis of a Swept NACA 0012 Wing Using LEWICE3D Version 3.48	1500 hrs AIAA-2014-2201 Robust Surface Evolution and Mesh Deformation for Three Dimensional Aircraft Icing Applications on a Swept GLC-305 Airfoil	1530 hrs AIAA-2014-2202 Computational Aerodynamic Analysis of Three-dimensional Ice Shapes on a NACA 23012 Airfoil	1600 hrs AIAA-2014-2203 Large Eddy Simulation of Airfoil Ice Accretion Aerodynamics	
P. Villedieu, P. Tronfin, R. Chauvin, ONERA, Toulouse, France	C. Bidwell, NASA Glenn Research Center, Cleveland, OH	X. Tong, D. Thompson, O. Arnoldus, E. Collins, E. Luke, Mississippi State University, Starkville, MS	G. Jun, University of Michigan, Ann Arbor, Ann Arbor, MI; D. Olden, Arizona State University, Tempe, AZ; M. Potoczak, NASA Glenn Research Center, Cleveland, OH; J. Tsao, Ohio Aerospace Institute, Cleveland, OH	C. Brown, R. Kunz, M. Krizel, J. Lindau, J. Palacios, K. Breither, Pennsylvania State University, University Park, PA	
Monday, 16 June 2014					
53-ASE-4/FT-1					
Chartered by: R. NEECE, NASA Langley Research Center and D. MARTINEZ, NASA-Langley Research Center					
1400 hrs Oral Presentation Convective Induced Turbulence Detection via Total Lightning Sensing (Invited)	1430 hrs Oral Presentation Information Management for Airplane State Awareness: Challenges and Solutions (Invited)	1500 hrs Oral Presentation Laser Imaging Through Obscurants (LITO) (Invited)	1530 hrs AIAA-2014-3365 Investigation of Aircraft Weather Radars with Enhanced Measurement Capabilities (Invited)		
J. Kozel, Innovation Laboratory, Inc., Portland, OR; W. Deierling, R. Sherman, J. Williams, National Center for Atmospheric Research, Boulder, CO	S. Young, T. Daniels, NASA Langley Research Center, Hampton, VA	E. Billmers, R. Billmers, RL Associates, Inc., Yardley, PA	A. Przymny, ProSensing, Inc., Amherst, MA		
Monday, 16 June 2014					
54-ASE-4/FT-2					
Chartered by: R. NEECE, NASA Langley Research Center and D. MARTINEZ, NASA-Langley Research Center					
1400 hrs Oral Presentation Convective Induced Turbulence Detection via Total Lightning Sensing (Invited)	1430 hrs Oral Presentation Information Management for Airplane State Awareness: Challenges and Solutions (Invited)	1500 hrs Oral Presentation Laser Imaging Through Obscurants (LITO) (Invited)	1530 hrs AIAA-2014-3365 Investigation of Aircraft Weather Radars with Enhanced Measurement Capabilities (Invited)		
J. Kozel, Innovation Laboratory, Inc., Portland, OR; W. Deierling, R. Sherman, J. Williams, National Center for Atmospheric Research, Boulder, CO	S. Young, T. Daniels, NASA Langley Research Center, Hampton, VA	E. Billmers, R. Billmers, RL Associates, Inc., Yardley, PA	A. Przymny, ProSensing, Inc., Amherst, MA		

Monday, 16 June 2014		M&S: Flight Simulator Technologies		Hanover G	
54-MST-2 Chaired by: F. STEINLE					
1400 hrs AIAA-2014-2204 The Six Pillars of Simulation Architecture B. Evans, Lockheed Martin Corporation, Marietta, GA	1430 hrs AIAA-2014-2205 Objective Motion Cueing Test - Experiences of a New User C. Seehof, U. Durak, H. Duda, German Aerospace Center (DLR), Braunschweig, Germany	1500 hrs AIAA-2014-2206 Transfer of Training on the Vertical Motion Simulator P. Zaal, San Jose State University Research Foundation, San Jose, CA; J. Schroeder, Federal Aviation Administration, Moffett Field, CA; W. Chung, AMERICAN SYSTEMS Corporation, Lexington Park, MD			
Monday, 16 June 2014					
55-FD-6 Chaired by: S. SPEER, Northrop Grumman Corporation					
1400 hrs AIAA-2014-2207 Velocity/Pressure-Gradient Correlations in a FORAMS Approach to Turbulence Modeling S. Prasad, University of New Mexico, Albuquerque, NM; S. Alurman, NASA Ames Research Center, Moffett Field, CA	1430 hrs AIAA-2014-2208 A New Low Reynolds Number One-Equation Turbulence Model Based on a $k-k\omega$ Closure T. Wray, R. Agarwal, Washington University in St. Louis, St. Louis, MO	1500 hrs AIAA-2014-2209 Wall-Modeled Large-Eddy Simulations of a Supersonic Turbulent Flow in a Square Duct Z. Vane, I. Bernero-Moreno, S. Lele, Stanford University, Stanford, CA	1530 hrs AIAA-2014-2210 Simulation of the FAITH Hill Experiment using a Reynolds Stress Model J. Rodio, C. Pantoni, North Carolina State University, Raleigh, NC; X. Xiao, Corvid Technologies, Inc., Mooresville, NC; H. Hassan, North Carolina State University, Raleigh, NC		Harris
Monday, 16 June 2014					
56-FD-7 Chaired by: K. CASSEL, Illinois Institute of Technology and R. KIMMEL, USAF AFRL/RQHF					
1400 hrs AIAA-2014-2211 Validations of a Local Correlation-Based Transition Model Using an Unstructured Grid CFD Solver J. Wang, C. Sheng, University of Toledo, Toledo, OH	1430 hrs AIAA-2014-2212 Numerical Study of Boundary Layer Receptivity to Free-stream Disturbances and Surface Excrescences A. Secu, Mississippi State University, Mississippi State, MS; M. Viskol, D. Razaetha, Air Force Research Laboratory, Wright Patterson AFB, OH	1500 hrs AIAA-2014-2213 Localized Streak Instabilities in Pressure Gradient Boundary Layers P. Hoek, T. Zaki, Imperial College London, London, United Kingdom			Inman
Monday, 16 June 2014					
57-FD-8 Chaired by: L. MADDALENA, The University of Texas at Arlington					
1400 hrs AIAA-2014-2214 Consideration for Optimization of Fuel Distribution in a Scramjet Engine S. Sato, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan; F. Mitsuaki, Space Service, Kakuda, Japan; T. Watanabe, T. Munakata, Hitachi Solutions East Japan, Ltd., Sendai, Japan	1430 hrs AIAA-2014-2215 Base Flow Characterization of Clustered Linear Aerospike Nozzles in the Presence of External Flow H. Takahashi, T. Tomita, S. Tomioka, N. Sakuramako, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan				Kenneshaw

Monday, 16 June 2014		Propulsion Cycle Performance-Scramjet Tests I		Learning Center	
58-HYTASP-1 Chaired by: F. FALEMPIN, MBDA and M. BULLMAN, Aerojet Rocketdyne Corporation 1400 hrs No Presentations					
1400 hrs	AIAA-2014-2216	1600 hrs	AIAA-2014-2216	1630 hrs	AIAA-2014-2217
Sizing of Solar Thermal Thruster for Satellite Orbital Control Using High Thrust One Tangent Burn M. Soliman, National Authority for Remote Sensing and Space Sciences, Cairo, Egypt	Sizing of Solar Thermal Thruster for Satellite Orbital Control Using High Thrust One Tangent Burn M. Soliman, National Authority for Remote Sensing and Space Sciences, Cairo, Egypt	Sizing of Solar Thermal Thruster for Satellite Orbital Control Using High Thrust One Tangent Burn M. Soliman, National Authority for Remote Sensing and Space Sciences, Cairo, Egypt	Sizing of Solar Thermal Thruster for Satellite Orbital Control Using High Thrust One Tangent Burn M. Soliman, National Authority for Remote Sensing and Space Sciences, Cairo, Egypt	Scramjet Tests in the ONERA F4 Hoisthot Wind Tunnel P. Viguiier, J. Garraud, J. Soutade, ONERA, Mauzac, France; S. Defoort, A. Rstari, Y. Moutle, ONERA, Palaiseau, France	Scramjet Powered Vehicle Tests in the ONERA F4 Hoisthot Wind Tunnel. Comparison to Numerical Simulations M. Ferrer, S. Defoort, P. Viguiier, J. Garraud, J. Soutade, ONERA, Palaiseau, France
Monday, 16 June 2014 59-FC-5 Chaired by: U. KAUL, NASA-Ames and J. LITTLE, The University of Arizona Special Session: Mixing Layer Flow Control Lenox					
1400 hrs	AIAA-2014-2219	1430 hrs	AIAA-2014-2220	1430 hrs	AIAA-2014-2221
Closed-loop control of experimental shear flows using machine learning T. Duriez, V. Parezanovic, J. Laurentie, C. Fourment, J. Delville, J. Bonnet, National Center for Scientific Research (CNRS), Poitiers, France; et al.	Effects of N _s -DBD Plasma Actuators on Turbulent Shear Layers R. Lehmann, D. Akins, J. Little, University of Arizona, Tucson, AZ	On Controlling The Flow in a Mixing Layer or Wake Created Downstream of a 'Lambda' Notch Simulating the Flow Downstream of a Chevron Nozzle or a Lambda Wing E. Suehio, L. Taubert, N. Zaleski, I. Wygnanski, University of Arizona, Tucson, Tucson, AZ	First Principles Based PID Control of Mixing Layer: Role of Inflow Perturbation Spectrum U. Kaul, NASA Ames Research Center, Moffett field, CA	Optimization of Perturbation Parameters for Simulated Free Shear Layer Flow R. Martin, U. Kaul, NASA Ames Research Center, Moffett field, CA	Optimization of Perturbation Parameters for Simulated Free Shear Layer Flow R. Martin, U. Kaul, NASA Ames Research Center, Moffett field, CA
Monday, 16 June 2014 60-ATIO-8 Chaired by: M. BALCHANOS Special Session: Chinese Digital Avionics Marietta					
1400 hrs	AIAA-2014-2224	1430 hrs	AIAA-2014-2225	1500 hrs	AIAA-2014-2226
Research on Integrated Avionics System Safety Methodology G. Wang, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China	An Approach Based on Models to the Design for Integrated Modular Avionics J. Wu, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China	Model-based Safety Analysis for Integrated Avionics System Q. Gu, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China	Model-based Safety Analysis for Integrated Avionics System Q. Gu, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China	Model-based Safety Analysis for Integrated Avionics System Q. Gu, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China	Model-based Safety Analysis for Integrated Avionics System Q. Gu, Chinese Aeronautical Radio Electronics Research Institute, Shanghai, China
Monday, 16 June 2014 61-AMT-3/GT-2 Chaired by: A. FAGAN, NASA Glenn Research Center and J. MICHAEL, Iowa State University Spectroscopic Velocimetry Piedmont					
1400 hrs	AIAA-2014-2227	1430 hrs	AIAA-2014-2228	1500 hrs	AIAA-2014-2229
Oral Presentation Vibrationally excited NO tagging for simultaneous velocimetry and thermometry in gaseous high-speed flows (Invited) R. Sanchez-Gonzalez, R. Bowersox, S. North, Texas A&M University, College Station, TX	Femtosecond Laser Electronic Excitation Tagging (FLEET) Fundamental Pulse Energy and Spectral Response N. Deluca, R. Miles, Princeton University, Princeton, NJ; W. Kulniaka, N. Jiang, Spectral Energies, LLC, Dayton, OH; J. Gord, Air Force Research Laboratory, Wright-Patterson AFB, OH	Three Component Velocity and Acceleration Measurement Using FLEET P. Danely, B. Bothe, NASA Langley Research Center, Hampton, VA; N. Calvert, A. Dogaru, R. Miles, Princeton University, Princeton, NJ	2-D Velocity and Vorticity Measurements with FLEET N. Calvert, A. Dogaru, R. Miles, Princeton University, Princeton, NJ	Planar Doppler Velocimetry for Transonic Flowfields in the AEDC 16T Wind Tunnel J. Wehrmeyer, K. Scott, F. Heltley, R. Porter, Aerospace Testing Alliance, Arnold AFB, TN	Diagnosis of High Speed Flows using Filtered Rayleigh Scattering J. George, T. Jenkins, Metrolaser, Inc., Laguna Hills, CA; R. Miles, Princeton University, Princeton, NJ
1400 hrs	AIAA-2014-2232	1600 hrs	AIAA-2014-2230	1630 hrs	AIAA-2014-2231
Planar Imaging of Shock Waves at Low Pressure using Filtered Rayleigh Scattering T. Jenkins, J. George, Metrolaser, Inc., Laguna Hills, CA; F. Poehlmann, LLC, Newark, CA	Planar Doppler Velocimetry for Transonic Flowfields in the AEDC 16T Wind Tunnel J. Wehrmeyer, K. Scott, F. Heltley, R. Porter, Aerospace Testing Alliance, Arnold AFB, TN	2-D Velocity and Vorticity Measurements with FLEET N. Calvert, A. Dogaru, R. Miles, Princeton University, Princeton, NJ	Planar Doppler Velocimetry for Transonic Flowfields in the AEDC 16T Wind Tunnel J. Wehrmeyer, K. Scott, F. Heltley, R. Porter, Aerospace Testing Alliance, Arnold AFB, TN	Diagnosis of High Speed Flows using Filtered Rayleigh Scattering J. George, T. Jenkins, Metrolaser, Inc., Laguna Hills, CA; R. Miles, Princeton University, Princeton, NJ	Planar Imaging of Shock Waves at Low Pressure using Filtered Rayleigh Scattering T. Jenkins, J. George, Metrolaser, Inc., Laguna Hills, CA; F. Poehlmann, LLC, Newark, CA

Monday, 16 June 2014		Global Reports II		Regency Ballroom V	
62-HYTASP-17 1400 - 1600 hrs					
Chaired by: A. SIEBENTHAAR, Aerojet Rocketdyne					
Participants:					
Michael Smart Australia	Christian Mundi Germany	Mario Cosmo Italy	Masataka Maita Japan	Richard Brown UK	Steve Walker US
Monday, 16 June 2014					
63-PANEL-2 1400 - 1630 hrs		Panel: Transformative Aerospace System Analysis, Design and Certification: A Vision for CFD in 2030		Regency Ballroom VI	
Moderator: Robert D. Gregg III, Boeing Commercial Airplanes Chief Aerodynamicist, The Boeing Company					
Panelists:					
Wilson Felder Distinguished Service Professor School of Systems and Enterprises Stevens Institute of Technology	Parviz Moin Franklin P. and Caroline M. Johnson Professor Department of Mechanical Engineering Stanford University	Stephen Morford Chief Engineer, Systems Analysis and Aerodynamics Pratt & Whitney	Cord-Christian Rossov Director, Institute of Aerodynamics and Flow Technology German Aerospace Center (DLR)	David Schuster NASA Technical Fellow for Aerospace NASA Engineering and Safety Center NASA Langley Research Center	Jeffrey P. Slatinick Boeing Technical Fellow, Computational Sciences & Aerodynamics Boeing Research & Technology
Monday, 16 June 2014					
64-PDL-5		Advanced Concepts and Advanced Computational Modeling of Plasmas and Lasers		Roswell	
Chaired by: S. WU, The University of Alabama in Huntsville and M. PANESI, University of Illinois at Urbana-Champaign					
1400 hrs AIAA-2014-2233 Modeling of an Electric Propulsion System: Towards a Hybrid System A. Chintou, M. Jugroot, Royal Military College of Canada, Kingston, Canada	1430 hrs AIAA-2014-2234 Laser Space Communication Concept for deep-space interplanetary missions using CubeSats A. Raiguna, University of Southern California, Los Angeles, CA; N. Jered, S. Howe, Center for Space Nuclear Research, Idaho Falls, ID; A. Friele, University of Southern California, Los Angeles, CA	1500 hrs AIAA-2014-2235 Modeling of Non-equilibrium Plasmas in an Inductively Coupled Plasma Facility W. Zang, A. Lani, University of Illinois, Urbana-Champaign, Urbana, IL; M. Panesi, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium	1530 hrs AIAA-2014-2236 Normal Glow Discharge with Axial Magnetic Field in Molecular Hydrogen S. Surzhikov, Russian Academy of Sciences, Moscow, Russia; J. Shang, Wright State University, Dayton, OH	1600 hrs AIAA-2014-2238 A Three-Dimensional Numerical Study of Supernova Remnant Type-IA Evolution in an Inhomogeneous Interstellar Medium S. Surzhikov, M. Ermishkin, Russian Academy of Sciences, Moscow, Russia	
Monday, 16 June 2014					
65-PDL-4		Plasma and Laser Enhanced Combustion/Propulsion		Spring	
Chaired by: K. KREMEYER, PM & AM Research and M. KIM, university of Adelaide					
1400 hrs AIAA-2014-2239 Nanosecond Plasma Enhanced Ignition of Transverse Hydrogen Jet Injected into Supersonic Oxygen Crossflow S. Nagaraja, L. Zhang, V. Yang, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-2014-2240 Effects of a microwave induced argon plasma jet on premixed and nonpremixed methane/air mixtures C. Fu, W. Wu, C. Wang, Mississippi State University, Starkville, MS	1500 hrs AIAA-2014-2241 Influence of excited oxygen generated by a RF plasma discharge on atmospheric partially-premixed CH4/O2 and H2/O2 flames K. Zähringer, K. Pilevaka, D. Thevenin, University of Magdeburg, Magdeburg, Germany; N. Kaminer, U. Riedel, University of Stuttgart, Stuttgart, Germany	1530 hrs AIAA-2014-2242 Spark Ignition Studies for Supersonic Combustors S. Bireschenko, Z. Denman, A. Veeraravagan, V. Wheatley, M. Smart, University of Queensland, St. Lucia, Australia	1600 hrs AIAA-2014-2243 Code Development to Determine the Temperature from the OH* Chemiluminescence Recordings in a Supersonic Combusting Flow T. Sonek, S. Bireschenko, P. Lorrain, T. McInyre, R. Boyce, University of Queensland, Brisbane, Australia	1630 hrs AIAA-2014-2244 Two dimensional OH radical measurements in argon plasma-assisted combustion flame of premixed and nonpremixed methane/air mixtures using cavity ringdown spectroscopy W. Wu, C. Fu, C. Wang, Mississippi State University, Starkville, MS
	1700 hrs AIAA-2014-2245 Hydrogen and Ethane Plasma Assisted Ignition by NS discharge behind Reflected Shock Wave A. Shtarkovskiy, Princeton University, Princeton, NJ				

Monday, 16 June 2014		Ablation II		Techwood	
66-TP-4					
Chaired by: A. MAZAHARI, NASA-Tangley Research Center and D. KUNTZ, Sandia National Laboratories					
1400 hrs AIAA-2014-2246	1430 hrs AIAA-2014-2247	1500 hrs AIAA-2014-2248	1530 hrs AIAA-2014-2249	1600 hrs AIAA-2014-2250	1630 hrs AIAA-2014-2251
Pyrolysis Gas Composition for a Phenolic Impregnated Carbon Ablator Heatshield: From Virgin Resin to Boundary Layer	Microscale Simulations of Porous TPS Materials: Application to Permeability	Photogrammetric Surface Analysis of Ablation Processes in High Enthalpy Air Plasma Flow	Numerical study of spallation phenomenon in an arc-jet environment	Ablation Radiation Coupling Investigation in Earth Re-entry Using Plasma Wind Tunnel Experiments	Experimental Characterization of Ablating Species in an Air Plasma Ablating Boundary Layer
J. Raboinvith, V. Marx, G. Blanquart, California Institute of Technology, Pasadena, CA	E. Stern, I. Nompelis, T. Schwarzenruber, G. Candler, University of Minnesota, Minneapolis, MN	S. Loehle, T. Staehler, Institute of Space Systems, Stuttgart, Germany; I. Rainer, German Aerospace Center (DLR), Stuttgart, Germany	R. Davuluri, A. Marin, University of Kentucky, Lexington, Lexington, KY	S. Loehle, T. Herrmann, Institute of Space Centre for Hypersonics, Brisbane, Australia; H. Fulge, T. Marynowski, Institute of Space Systems, Stuttgart, Germany	M. MacDonald, C. Laux, Ecole Centrale de Paris, Châtigny-Malabry, France
Monday, 16 June 2014					
67-TP-5					
Chaired by: T. SHIH, Purdue University and O. EZERKOV, The University of Texas at Austin					
1400 hrs AIAA-2014-2252	1430 hrs AIAA-2014-2253	1500 hrs AIAA-2014-2254	1530 hrs AIAA-2014-2255	1600 hrs AIAA-2014-2256	1630 hrs AIAA-2014-2257
Temperature Profile Inversion From CO ₂ Spectral Intensities Through Levenberg-Marquardt Optimization and Tikhonov Regularization	Turbulent Combustion CFD Solver in a Rule-Based Framework Using a Variable Pressure Flamelet Model	Analysis of Wavelength Modulation Spectroscopy for Water Vapour Measurements in Supersonic Combustion	Flow Investigations and Acoustic Measurements of a Turbulent Jet Flame	Sensitivity Analysis and Verification of a 1-D Surface Solid Combustion Model for a Fire CFD Boundary Condition	Secondary reactions of turbulent reacting flows over a film-cooled surface using OpenFOAM
T. Ren, M. Modest, University of California, Merced, Merced, CA	S. Thakur, Streamline Numerics, Inc., Gainesville, FL	H. Fulge, S. Loehle, S. Fasoulas, University of Stuttgart, Stuttgart, Germany	H. Nawroth, C. Pascheit, Technical University of Berlin, Berlin, Germany	A. Brown, D. Glaze, F. Pierce, Sandia National Laboratories, Albuquerque, NM	E. Ghassami, S. Soleimani, C. Lin, Florida International University, Miami, FL
Monday, 16 June 2014					
68-TP-6					
Chaired by: G. WALKER, Vanderbilt University and O. KORNBERG, Mode Technology Group					
1400 hrs AIAA-2014-2259	1430 hrs AIAA-2014-2260	1500 hrs AIAA-2014-2261	1530 hrs AIAA-2014-2262	1600 hrs AIAA-2014-2263	1700 hrs AIAA-2014-2258
Bubble Growth in Flow Boiling on an Uneven Wall	The unified nondiffusive-diffusive model for phonon transport applied to the transient gratings experiment	Investigation of the Melting Behaviour of Ice Particles in an Acoustic Levitator	Transfer across a Single Infinite Longitudinal Row of Circular Cylinders	Two- and Three-Dimensional Heat Transfer over a Wavy Wall	A Numerical Study of Wind Effect on Wood Chipboard with a Gasoline Fire in a Compartment
T. Ren, M. Modest, University of California, Merced, Merced, CA	A. Ramu, Y. Ma, University of California, Merced, Merced, CA	T. Haak, EMS, Munich, Germany; I. Raïsmann, C. Tropéa, Technical University of Darmstadt, Darmstadt, Germany	O. Khan, Tuskegee University, Tuskegee, AL; W. Khan, National University of Sciences and Technology, Karachi, Pakistan	H. Shmueli, G. Ziskind, R. Lettin, Ben-Gurion University of the Negev, Beer-Sheva, Israel	N. Cai, W. Chow, Hong Kong Polytechnic University, Hong Kong, Hong Kong
Monday, 16 June 2014					
69-NW-2					
1530 - 1600 hrs					
Monday, 16 June 2014					
70-HYTASP-18					
1600 - 1700 hrs					
This panel is a discussion of the different perspectives (government, academia, industry) on CFD.					
Panelists:					
Graham Candler US	Aaron Auslander US	Bob Moehlenkamp US	Laurent Serre ONERA	Vince Wheatley Australia	
Monday Afternoon Networking Coffee Break					
Monday, 16 June 2014					
Fluid Analysis Panel					
Regency Ballroom V					

Monday, 16 June 2014		Edgewood
71-APA-13 1630 - 1730 hrs	Low Reynolds Number Aerodynamics Discussion Panel	
Moderator: Ming Chang, Lockheed Martin Corporation		
The topic of Low Reynolds Number Aerodynamics and Experimental Methods has been flourishing since the 90's with sporadic advances in computational, analytical and experimental methods that has collectively percolated into unique micro vehicle demonstrations. Many of these have been from academia with industry developing niche applications that have become novelty items. This panel seeks to open a discussion forum with researchers, users and developers in this community to exchange scientific and engineering ideas, technical progress and path forward for micro vehicle research and application.		
Panelists:	<p>Michael OI Air Force Research Laboratory</p> <p>Anya Jones University of Maryland</p> <p>Dennis Finley Lockheed Martin Aeronautics</p> <p>Michael Seig University of Illinois, Urbana-Champaign</p>	
Monday, 16 June 2014		
72-LEC-1 1730 - 1830 hrs	Fluid Dynamics Award Lecture: Mixing in Turbulent Combustion: Physics and Computational Challenges	Regency Ballroom VII
<p>Paul E. Dimotakis John K. Northrop Professor of Aeronautics and Professor of Applied Physics California Institute of Technology Pasadena, California</p>		
Tuesday		
Tuesday, 17 June 2014		
73-NW-3 0700 - 0800 hrs	Tuesday Morning Networking Breakfast	Ballroom Level
Tuesday, 17 June 2014		
74-SB-2 0730 - 0800 hrs	Tuesday Morning Speakers' Briefing	Session Rooms
Tuesday, 17 June 2014		
75-PLNRY-2 0800 - 0900 hrs	Tuesday Morning Plenary Panel	Centennial I/II
Moderator: Ben Iannotta, Editor-in-Chief, Aerospace America		
Panelists:	<p>Peter Cerda Senior Vice President, The Americas International Air Transport Association</p> <p>Allan McArtor Chairman and CEO AIRBUS Group, Inc.</p> <p>Tony Ng Lockheed Martin Fellow Lockheed Martin</p> <p>Steve Kong Business and Technical Development Manager Inmarsat Aviation</p>	
Integration and Interoperability: Fly Smarter, Fly Cleaner, Fly Safer		
Tuesday, 17 June 2014		
76-NW-4 0900 - 0930 hrs	Tuesday Morning Networking Coffee Break	Exhibit Hall

Tuesday, 17 June 2014		Embassy C
Transformational Flight: Technical Gaps, Prizes, and Private-Public Partnerships		
81-AT10-5 0930 - 1130 hrs Chaired by: B. GERMAN, Georgia Institute of Technology Moderator: Brian German, Georgia Institute of Technology Panelists:		
Eric Allison Zee Aero	Mark Moore NASA Langley	Bruce Holmes NextGen Aeronautics

Tuesday, 17 June 2014		Embassy D
UAS Integration & Operations I		
Chaired by: V. SCHULTZ, NASA Langley Research Center and A. DESHMUKH, Gulfstream Aerospace Corp.		
0930 hrs AIAA-2014-2283 An Evaluation Framework for Unmanned Aircraft Systems Integration in the National Airspace System J. Dornier, O. Pina-Fischer, N. Knisely, J. Davis, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2284 A Method for Risk Estimation Analysis for Unmanned Aerial System Operation over Populated Areas J. Lazatin, California Polytechnic State University, San Luis Obispo, CA	1030 hrs AIAA-2014-2285 Unmanned Aerial System (UAS) Safety Analysis Model V. Kumar, Intelligent Automation, Inc., Rockville, MD; S. Toussaint, Cohesent Technical Services, Inc., Lexington Park, MD; J. Luxhol, Luxhol Consulting and Research, LLC, Somerset, NJ; F. Wieland, Intelligent Automation, Inc., Rockville, MD
1100 hrs AIAA-2014-2286 Building the Safety Case for UAS Operations in Support of Natural Disaster Response B. Williams, Queensland University of Technology, Brisbane, Australia; R. Collier, RMIT University, Melbourne, Australia; N. Fallon, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Canberra, Australia; S. Johnson, Queensland University of Technology, Brisbane, Australia; X. Lin, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Canberra, Australia; K. Cox, The Boeing Company, Brisbane, Australia	1130 hrs AIAA-2014-2287 Autonomous Control of Uninhabited Combat Air Vehicles in Heavily-Trafficked Military Airspace K. Smith, R. Stengel, Princeton University, Princeton, NJ	1200 hrs AIAA-2014-2288 Exploration of the Trade Space Between Unmanned Aircraft Systems Descent Maneuver Performance and Sense-and-Avoid System Performance Requirements D. Jack, K. Hoffer, Adaptive Aerospace Group, Inc., Hampton, VA

Tuesday, 17 June 2014		Embassy E
ATM-III Air/Ground Trajectory Enhancements		
Chaired by: J. MARIS, Mairmont Corporation		
0930 hrs AIAA-2014-2289 Three-Dimensional Trajectory Design for Reducing Climate Impact of Trans-Atlantic Flights H. Ng, University of California, Santa Cruz, Moffett Field, CA; B. Sidhar, N. Chen, NASA Ames Research Center, Moffett Field, CA; J. Li, Singier Ghaffarian Technologies, Inc., Moffett Field, CA	1000 hrs AIAA-2014-2290 Air to Ground Trajectory Synchronisation through Extended Predicted Profile: A Pilot Study J. Bronsvort, G. McDonald, Airservices Australia, Melbourne, Australia; J. Hochwarth, General Electric Company, Grand Rapids, MI; E. Gallo, The Boeing Company, Madrid, Spain	1030 hrs AIAA-2014-2291 Construction of an aircraft's VNAV flight envelope for in-FMS flight trajectory computation and optimization: Application on the Airbus A310 B. Danclou, R. Botez, École de Technologie Supérieure, Montréal, Canada

Tuesday, 17 June 2014		Structural Analysis, Design, and Optimization of Aircraft		Embassy F
Chaired by: W. CROSSLEY, Purdue University				
0930 hrs AIAA-2014-2292 Preliminary Aero-thermal Structural Simulation C. Pasilio, M. Sysma, Air Force Research Laboratory, Eglin AFB, FL; L. Neegaard, Z. Wittef, Leidos, Eglin AFB, FL; J. Toller, Leidos, King of Prussia, PA	1000 hrs AIAA-2014-2293 Fatigue Behaviour of United Structures Compared to Built-up Structures M. Patel, C. Bil, G. Clark, RMIT University, Melbourne, Australia	1030 hrs AIAA-2014-2294 Structural Design Optimisation and Aeroelastoelastic Analysis of LAPCAT A2 Mach 5 Cruise Vehicle S. Sharifzadeh, P. Hendrick, Université Libre de Bruxelles, Brussels, Belgium; S. D'Amelio, D. Verstraete, University of Sydney, Sydney, Australia; F. Thirifoy, Gennev, Gosselies, Belgium	1100 hrs AIAA-2014-2295 Structural Optimization of Composite Wings in an automated Multi-Disciplinary Environment T. Bach, L. Heinrich, S. Döhne, C. Huehne, German Aerospace Center (DLR), Braunschweig, Germany	1130 hrs AIAA-2014-2296 The Conceptual Structural Design of Re-entry and Landing Capabilities N. Paletta, M. Belardo, D. Lucianiello, M. De Stefano Fumo, U. Mercurio, Italian Aerospace Research Center (CIRA), Capua, Italy
Tuesday, 17 June 2014				
85-MAO-5 Chaired by: V. TOROPOV, Queen Mary, University of London				
0930 hrs AIAA-2014-2297 New Projection Methods for Two-Phase Minimum and Maximum Length Scale Control in Topology Optimization J. Carstensen, J. Guest, Johns Hopkins University, Baltimore, MD	1000 hrs AIAA-2014-2298 Discrete Adjoint Method for Aeroelastic Design Optimization J. Thomas, E. Dowell, Duke University, Durham, NC	1030 hrs AIAA-2014-2299 Aerodynamic Sensitivity Analysis based on Modified Navier-Stokes Equations K. Gobal, R. Grandhi, Wright State University, Dayton, OH	1100 hrs AIAA-2014-2300 An Unsteady Continuous Adjoint Approach for Aerodynamic Design on Dynamic Meshes T. Economou, F. Palacios, J. Alonso, Stanford University, Stanford, CA	Embassy G
Tuesday, 17 June 2014				
86-MAO-6 Chaired by: E. WINER, Iowa State University				
0930 hrs AIAA-2014-2301 Surrogate Models and Mixtures of Experts in Aerodynamic Performance Prediction for Mission Analysis R. Liem, University of Toronto, Toronto, Canada; J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	1000 hrs AIAA-2014-2302 Optimization when Cost of Objective Function is Comparable to the Objective Function A. Chaudhuri, R. Harika, University of Florida, Gainesville, Gainesville, FL	1030 hrs AIAA-2014-2303 Reducing Error of Polynomial Approximation Outside of Designated Design Space for Practical Problems V. Babaranov, O. Weckner, J. Wu, The Boeing Company, Seattle, WA	1100 hrs AIAA-2014-2304 Aero-Structure-Stealth Coupled Optimization for High Aspect Ratio Wing Using Adaptive Metamodeling Method D. Wu, T. Long, Y. Li, M. Jiang, B. Huang, Beijing Institute of Technology, Beijing, China	1130 hrs AIAA-2014-2305 RBF Metamodel Assisted Global Optimization Method Using Particle Swarm Evolution and Fuzzy Clustering for Sequential Sampling G. Xiaosong, T. Long, D. Wu, Z. Wang, L. Liu, Beijing Institute of Technology, Beijing, China
Tuesday, 17 June 2014				
87-APA-18 Chaired by: G. GATLIN and T. DOUVILLE, TLG Aerospace, LLC.				
0930 hrs AIAA-2014-2306 Experimental Investigation of Periodic Wind Gust Generated in a Low Speed Wind Tunnel P. Deshpande, National Aerospace Laboratories, Bangalore, India; S. Singh, Birla Institute of Technology, Ranchi, India; P. Narayanan, Mallick Private, Ltd., Bangalore, India; D. Babu, B. Sundaramoorthy, National Aerospace Laboratories, Bangalore, India	1000 hrs AIAA-2014-2307 Experimental Study of Circulation Control Wings at Low Reynolds Numbers K. Konistas, M. Rutherford, N. Vizilios, K. Valavanis, University of Denver, Denver, CO	1030 hrs AIAA-2014-2308 Experimental investigation of propeller induced ground vortex under headwind condition Y. Yang, A. Sciacchitano, L. Veldhuis, G. Eitelberg, Delft University of Technology, Delft, The Netherlands	1100 hrs AIAA-2014-2309 Experimental Study on Quasi-Limit-Cycle Wing Rock of a Chined Forebody Configuration at High Angle of Attack W. Shi, D. Xueying, Y. Wang, Q. Li, Beihang University, Beijing, China	Fairlie

Tuesday, 17 June 2014		Fluid Structure Interaction I		Greenbriar	
Chaired by: S. SILTON, US Army Research Laboratory					
0930 hrs AIAA-2014-2310 Prediction of Transonic LCO using an Harmonic Balance Method W. Yao, S. Marques, Queen's University Belfast, Belfast, United Kingdom	1000 hrs AIAA-2014-2311 Effects of Flexible Wings in Hover Flight at Fruit Fly Scale M. Sridhar, C. Kang, University of Alabama, Huntsville, Huntsville, AL	1030 hrs AIAA-2014-2312 An ALE Based Hybrid Meshfree Local RBF-Cartesian FD scheme for Incompressible flow around moving boundaries A. Javed, K. Djidjeili, J. Xing, Z. Sun, University of Southampton, Southampton, United Kingdom	1100 hrs AIAA-2014-2313 Numerical Simulations of Streamwise-Oriented Vortex/Flexible Wing Interactions C. Barnes, M. Vissal, Air Force Research Laboratory, Wright-Patterson AFB, OH, G. Huang, Wright State University, Dayton, OH	1130 hrs AIAA-2014-2314 Velocity Measurements behind a Flexible Fence J. Seidel, T. McLaughlin, U.S. Air Force Academy, Colorado Springs, CO	
Tuesday, 17 June 2014					
89-AA-2					
Chaired by: D. CASALINO, EXA GmbH					
0930 hrs AIAA-2014-2315 Performance improvements and new solution strategies of Actran/TM for nacelle simulations B. Van Antwerpen, Y. Detandt, D. Copiello, E. Rosseel, E. Gaudry, Free Field Technologies, Mont-Saint-Guibert, Belgium	1000 hrs AIAA-2014-2316 Enhancing the Resolution Characteristics of Aeroacoustic Time-Reversal Using a Point-Time-Reversal-Sponge-Layer A. Mimami, C. Doolan, P. Medwell, University of Adelaide, Adelaide, Australia	1030 hrs AIAA-2014-2317 A Fast GPU Based Bidiagonal Solver for Computational Aeroacoustics S. Miao, X. Zhang, Q. Parthiment, X. Chen, University of Southampton, Southampton, United Kingdom	1100 hrs AIAA-2014-2318 Adjoint Linearised Euler solver for Goldstein acoustic analogy equations for 3D non-uniform flow sound scattering problems: verification and capability study V. Semilety, S. Karabasov, Queen Mary University of London, London, United Kingdom	1130 hrs AIAA-2014-2319 Comparison of LES and Stochastic Source Generation Methods for Aero- and Hydro-Acoustic Design Guidance M. Allan, O. Darbyshire, BAE Systems, Bristol, United Kingdom	Hanover A
Tuesday, 17 June 2014					
90-AA-3					
Chaired by: N. PEAKE, University of Cambridge					
0930 hrs AIAA-2014-2320 Noise Reduction Studies from the Leading Edge of Serrated Flat Plates S. Narayanan, P. Joseph, S. Haeri, J. Kim, University of Southampton, Southampton, United Kingdom	1000 hrs AIAA-2014-2321 Reduced Dimension Modeling of Leading Edge Turbulent Interaction Noise J. Gill, X. Zhang, P. Joseph, University of Southampton, Southampton, United Kingdom; T. Nodde-Langlois, Airbus, Toulouse, France	1030 hrs AIAA-2014-2322 An analytic approach to high-frequency gust-aerofoil interaction noise in steady shear flows L. Ayrton, N. Peake, University of Cambridge, Cambridge, United Kingdom	1100 hrs AIAA-2014-2323 A Boundary Element Method iterative procedure to compute the compressible response of an airfoil subjected to incoming turbulence L. de Santana, C. Schram, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium; W. Desmet, Catholic University of Leuven, Leuven, Belgium	1130 hrs AIAA-2014-2324 Direct numerical simulation of acoustic reduction using serrated trailing-edge on an isolated airfoil M. Sanjose, C. Meoni, S. Mareau, A. Idier, P. Lafray, University of Sherbrooke, Sherbrooke, Canada	1200 hrs AIAA-2014-2325 3D calculations of aerofoil-turbulence interaction noise and the effect of wavy leading edges S. Haeri, J. Kim, S. Narayanan, P. Joseph, University of Southampton, Southampton, United Kingdom
Tuesday, 17 June 2014					
Leading Edge Noise					
Hanover B					

Tuesday, 17 June 2014		Icing Physics		Hanover C	
Chaired by: R. MOSER, AeroTex UK and K. AL-KHALIL, Cox & Company, Inc.					
0930 hrs AIAA-2014-2326 An Experimental Study of Wind-Driven Water Film Flows over Roughness Array K. Zhang, Y. Liu, A. Rothmayer, H. Hu, Iowa State University, Ames, IA	1000 hrs AIAA-2014-2327 On the Numerical Solution of Three-Dimensional Condensed Layer Films A. Rothmayer, H. Hu, Iowa State University, Ames, IA	1030 hrs AIAA-2014-2328 Effects of Surface Characteristics and Droplet Diameter on the Freezing of Supercooled Water Droplets Impacting a Cooled Substrate J. Blake, D. Thompson, Mississippi State University, Mississippi State, MS; D. Raps, Eurocopter Deutschland, Donauwörth, Germany; T. Ströbl, EADS, Munich, Germany; E. Bonaccorso, Airbus Group Innovations, Munich, Germany	1100 hrs AIAA-2014-2329 Time-Resolved Temperature Distribution of Icing Process of Supercooled Water in Microscopic Scale M. Tanaka, Kanagawa Institute of Technology, Kanagawa, Japan; M. Kanaki, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan; S. Kimura, Kanagawa Institute of Technology, Kanagawa, Japan; H. Sakae, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	1130 hrs AIAA-2014-2330 Ice Roughness in Short Duration SLD Icing Events S. McClain, D. Reed, Baylor University, Waco, TX; M. Vargas, R. Kreeger, NASA Glenn Research Center, Cleveland, OH; J. Tsoo, Ohio Aerospace Institute, Cleveland, OH	1200 hrs AIAA-2014-2331 A Thermal Analysis of a Hot-Wire Probe for Icing Applications P. Sruk, NASA Glenn Research Center, Cleveland, OH; D. Rigby, Vantage Partners LLC, Cleveland, OH; K. Venkatraman, University of Texas, Austin, Austin, TX
Tuesday, 17 June 2014					
Chaired by: A. BROWN, National Research Council Canada and F. PROCTOR, NASA Langley Research Center					
0930 hrs AIAA-2014-2332 ATM Decision Support Tool for Wake Vortex Hazard Management Combining Sensors and Modeling L. Muihl, Thales Group, Seattle, WA; F. Barbaresco, P. Juge, M. Mein, D. Canal, Y. Ricci, Thales Group, Limours, France, et al.	1000 hrs AIAA-2014-2333 In-Flight Wake Encounter Prediction and Advisory System T. Bauer, D. Vechtel, F. Abdelmoula, T. Immisch, German Aerospace Center (DLR), Braunschweig, Germany	1030 hrs AIAA-2014-2334 Investigation of Encounters with Deformed Wake Vortices using a Monte-Carlo Simulation Methodology D. Bieniek, R. Luckner, Technical University of Berlin, Berlin, Germany	1100 hrs AIAA-2014-2335 Topological Approach to Multisensory Realization of Wake Turbulence Y. Takeshima, T. Misaka, S. Obayashi, Tohoku University, Sendai, Japan; H. Kato, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan; S. Takahashi, University of Tokyo, Kashiwa, Japan; I. Fujishiro, Keio University, Yokohama, Japan	1130 hrs AIAA-2014-2336 In-Flight Testing of Airborne LIDAR for Wake Vortex Detection, Characterization and Tracking M. Steen, M. Stanisak, T. Feuerle, P. Hecker, Technical University of Braunschweig, Braunschweig, Germany	1200 hrs AIAA-2014-2337 The Alleviation of Wake Vortex Encounter Loads, A Study of Flight Research Data A. Brown, National Research Council Canada, Ottawa, Canada
Tuesday, 17 June 2014					
Chaired by: S. REDONNET, ONERA					
0930 hrs AIAA-2014-2338 On the Scaling of Jet Noise with Helmholtz Number Close to the Jet Axis U. Michel, CFD Software GmbH, Berlin, Germany; K. Ahuja, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2339 On Coherence of Jet Noise K. Ahuja, Georgia Institute of Technology, Atlanta, GA; D. Nance, Jacobs, Huntsville, AL; J. Corrigan, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2340 Time-dependent prediction of the unsteady pressure near-field from an under-expanded jet A. Rona, D. Di Stefano, A. Mancini, E. Hall, University of Leicester, Leicester, United Kingdom	1100 hrs AIAA-2014-2341 The Prediction of Noise due to Jet Turbulence Convecting past Flight Vehicle Trailing Edges S. Miller, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-2342 Decomposition of the Near-field Pressure in a Forced Subsonic Jet M. Crawley, M. Samimy, Ohio State University, Columbus, OH	
Tuesday, 17 June 2014					
Chaired by: S. REDONNET, ONERA					
0930 hrs AIAA-2014-2338 On the Scaling of Jet Noise with Helmholtz Number Close to the Jet Axis U. Michel, CFD Software GmbH, Berlin, Germany; K. Ahuja, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2339 On Coherence of Jet Noise K. Ahuja, Georgia Institute of Technology, Atlanta, GA; D. Nance, Jacobs, Huntsville, AL; J. Corrigan, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2340 Time-dependent prediction of the unsteady pressure near-field from an under-expanded jet A. Rona, D. Di Stefano, A. Mancini, E. Hall, University of Leicester, Leicester, United Kingdom	1100 hrs AIAA-2014-2341 The Prediction of Noise due to Jet Turbulence Convecting past Flight Vehicle Trailing Edges S. Miller, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-2342 Decomposition of the Near-field Pressure in a Forced Subsonic Jet M. Crawley, M. Samimy, Ohio State University, Columbus, OH	

Tuesday, 17 June 2014		Hybrid Wing Body Aeroacoustics Test I		Hanover F	
Chaired by: C. WHITFIELD, NASA-Langley Research Center					
0930 hrs Oral Presentation Overview of the Hybrid Wing Body Aeroacoustics Test in NASA Langley 14 by 22 Foot Wind Tunnel T. Brooks, F. Hutcheson, M. Dony, W. Humphreys, S. Heath, C. Burley, NASA Langley Research Center, Hampton, VA; et al.	1000 hrs AIAA-2014-2343 Development of a Microphone Phased Array Capability for the Langley 14- by 22-foot Subsonic Tunnel W. Humphreys, T. Brooks, C. Bahir, T. Spall, S. Borntam, W. Culliton, NASA Langley Research Center, Hampton, VA; et al.	1030 hrs AIAA-2014-2344 Calibrations of the NASA Langley 14- by 22-Foot Subsonic Tunnel in Acoustic Configuration T. Spall, T. Brooks, C. Bahir, NASA Langley Research Center, Hampton, VA; L. Becker, D. Stead, Northrop Grumman Corporation, Hampton, VA; G. Plassman, NASA Langley Research Center, Hampton, VA	1100 hrs AIAA-2014-2345 Acoustic Data Processing and Transient Signal Analysis for the Hybrid Wing Body 14- by 22-Foot Subsonic Wind Tunnel Test C. Bahir, T. Brooks, W. Humphreys, T. Spall, NASA Langley Research Center, Hampton, VA; D. Stead, Northrop Grumman Corporation, Hampton, VA	1130 hrs AIAA-2014-2346 Shielding Characteristics using an Ultrasonic Configurable Artificial Noise Source to Generate Modes - Experimental Measurements and Analytical Predictions D. Saffif, NASA Glenn Research Center, Cleveland, OH; B. Walker, Channel Islands Acoustics, Camarillo, CA	
Tuesday, 17 June 2014					
95-MST-3		M&S: Tools and Technologies		Hanover G	
Chaired by: F. CARDULLO, State University of NY					
0930 hrs AIAA-2014-2347 Analysis, Modeling and Simulation of NextGen Trajectory-Based Operations H. Powell, E. Elsayed, Rutgers University, New Brunswick, NJ; C. Falk, D. Livingston, Y. Ebrahimi, Federal Aviation Administration, Atlantic City, NJ	1000 hrs AIAA-2014-2348 Methodology for Runway-Level DNL Contour Calibration in ANGIM to Capture Impacts of Deviation from Standard Day Sea-Level Atmosphere M. Levine, R. Moss, M. Kirby, D. Morris, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2349 User Interface Validation using Mode Confusion Detection J. Suraj Nandiganahalli, S. Lee, J. Hwang, Purdue University, West Lafayette, IN; B. Yang, Optimal Synthesis, Inc., Los Altos, CA	1100 hrs AIAA-2014-2350 Stochastic Spatial Wind Field Simulation using a Potential Field M. Rhuudy, Lafayette College, Easton, PA	1130 hrs AIAA-2014-2351 Right Ways to Use Flight Simulators M. Cevik, Turkish Air Force Air War College, Istanbul, Turkey	
Tuesday, 17 June 2014					
96-FD-10		Hypersonic Boundary Layer Transition I		Inman	
Chaired by: M. BORG, Air Force Research Laboratory and H. JOHNSON, University of Minnesota					
0930 hrs AIAA-2014-2352 Interaction of Acoustic and Entropy Waves with Shocks T. Schilden, W. Schroeder, RWTH Aachen University, Aachen, Germany; S. Ali, R. Radespiel, Technical University of Braunschweig, Braunschweig, Germany	1000 hrs AIAA-2014-2353 Numerical and experimental investigation of laminar-turbulent boundary layer transition on a blunt generic re-entry capsule A. Theiss, German Aerospace Center (DLR), Göttingen, Germany; S. Ali, Technical University of Braunschweig, Braunschweig, Germany; S. Hein, German Aerospace Center (DLR), Göttingen, Germany; D. Heilmann, R. Radespiel, Technical University of Braunschweig, Braunschweig, Germany	1030 hrs AIAA-2014-2354 Numerical Investigation of Unsteady Heat Transfer on a Double Wedge Geometry in Hypervelocity Flows J. Kornives, I. Nompelis, G. Candler, University of Minnesota, Minneapolis, Minneapolis, MN			

Tuesday, 17 June 2014		Aero-Optics I		Kenneshaw
97-PDL-7				
Chaired by: M. STANEK, Wright-Patterson Air Force Base				
0930 hrs AIAA-2014-2355	1000 hrs AIAA-2014-2356	1030 hrs AIAA-2014-2357	1100 hrs AIAA-2014-2358	
Aero-Optical Evaluation of Nonlinear Turrets in Subsonic, Transonic and Supersonic Regimes W. Conter, Kratos/Digital Fusion, Inc., Huntsville, AL; M. Whiteley, D. Goorskey, R. Drye, MZA Associates Corporation, Dayton, OH; J. Banber, J. Stauff, Kratos/Digital Fusion, Inc., Huntsville, AL; et al.	Aero-Optic Characterization of Supersonic Boundary Layers in the Trisonic Gasdynamic Facility D. Wittich, M. Paul, Air Force Research Laboratory, Kirtland AFB, NM; A. Ahmed, H. Ahmed, Auburn University, Auburn, AL; A. Smith, S. Gordeyev, University of Notre Dame, Notre Dame, IN	A Low-Dimensional Model of Shock-Wake Interaction Over Turrets at Transonic Speeds A. Vorobiev, S. Gordeyev, E. Jumper, University of Notre Dame, Notre Dame, IN; S. Gogineni, Spectral Energies, LLC, Dayton, OH; M. Paul, D. Wittich, Air Force Research Laboratory, Kirtland AFB, NM	Investigation of turbulent shock boundary interaction unsteadiness and its effects on aero-optics in a Mach 2 corner flow M. White, Ohio Aerospace Institute, Dayton, OH; M. Visbal, Air Force Research Laboratory, Wright-Patterson AFB, OH	
Tuesday, 17 June 2014				
98-HYTASP-2				
Chaired by: R. BROWN, University of Strathclyde				
0930 hrs AIAA-2014-2359	1000 hrs AIAA-2014-2360	1030 hrs AIAA-2014-2361	1100 hrs AIAA-2014-2362	1130 hrs AIAA-2014-2363
Multidisciplinary Design Optimization of Hypersonic Transport Configurations using Waveriders M. Lobbia, Self, Los Angeles, CA; K. Suzuki, University of Tokyo, Kashiwa, Japan	Multi-Phase Trajectory Optimisation for Access-to-Space with RBCC-Powered TSTO via Surrogated-Assisted Hybrid Evolutionary Algorithms Incorporating Pseudo-Spectral Methods H. Ogawa, RMIT University, Melbourne, Australia; M. Koderu, S. Tomioka, S. Ueda, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan	Design and Optimization of RBCC Powered Suborbital Reusable Launch Vehicle C. Gong, B. Chen, L. Gu, Northwestern Polytechnical University, Xi'an, China	Influence of Boundary Layer Transition on the Trajectory Optimisation of a Reusable Launch Vehicle R. Wujilberca, F. Pescetelli, E. Minisci, R. Brown, University of Strathclyde, Glasgow, United Kingdom	Robust Multidisciplinary Design and Optimisation of a Reusable Launch Vehicle R. Wujilberca, F. Pescetelli, A. Mogavero, E. Minisci, R. Brown, University of Strathclyde, Glasgow, United Kingdom
Tuesday, 17 June 2014				
99-FC-7				
Chaired by: G. DALE, Wright-Patterson Air Force Base and G. WOO, Georgia Institute of Technology				
0930 hrs AIAA-2014-2364	1000 hrs AIAA-2014-2365	1030 hrs AIAA-2014-2366	1100 hrs AIAA-2014-2367	1200 hrs AIAA-2014-2369
Active Flow Separation Control on a NACA 0015 Wing using Fluidic Actuators L. Prack Mellon, NASA Langley Research Center, Hampton, VA	A Theoretical Model for Microjet Separation Control L. Van Dommelen, Florida A&M University-Florida State University, Tallahassee, FL; R. Yopalpani, ANSYS, Inc., Lebanon, NH	A Nonlinear Adaptive Method for Microjet-Based Flow Separation Control B. Reese, F. Alvi, E. Collins, Florida Center for Advanced Aero-Propulsion, Tallahassee, FL	Flow Separation Control Over a Ramp Using Sweeping Jet Actuators M. Koklu, L. Owens, NASA Langley Research Center, Hampton, VA	Control of Shock Wave-Boundary Layer Interaction by Repetitive Laser Energy Depositions A. Sasoh, A. Iwakawa, T. Osuka, R. Maizumi, T. Tambo, T. Sakai, Nagoya University, Nagoya, Japan
Flow Control: Separated Flows				
Lenox				

Tuesday, 17 June 2014					In Honor of Dick Miles's (semi-) Retirement (Invited)		Piedmont
100-AMT-4/GT-3 Chaired by: P. DANEHY, NASA Langley Research Center							
0930 hrs Oral Presentation From Heating Air with 400 MW Laser to Building Plasma Ramparts, And Other Fun Activities at Princeton S. Macheret, Lockheed Martin Corporation, Palmdale, CA	1000 hrs Oral Presentation Gas Phase Coherent Rayleigh-Brillouin Scattering Diagnostics P. Barker, University College London, London, United Kingdom	1030 hrs Oral Presentation Laser Diagnostics with Atomic Vapor Filters A. Yalin, Colorado State University, Fort Collins, CO	1100 hrs Oral Presentation Brief History and Introduction of Radar REMPI: Coherent Microwave Scattering from Resonance Enhanced Multiphoton Ionization Z. Zhang, University of Tennessee, Knoxville, TN; M. Schneider, Princeton University, Princeton, NJ	1130 hrs Oral Presentation The "final" years at Princeton (from a recent grad) J. Michael, Iowa State University, Ames, IA	1200 hrs Oral Presentation Diagnostics by Dissociation R. Miles, A. Dogaru, Princeton University, Princeton, NJ		
Tuesday, 17 June 2014							
101-HYTASP-3 Chaired by: C. GOYNE, University of Virginia and R. FAULKNER, Aerojet Rocketdyne							
0930 hrs AIAA-2014-2370 Cryogenic Propellant Tank and Feedline Design Studies in the Framework of the CHAT Project T. Schwaneckamp, German Aerospace Center (DLR), Bremen, Germany	1000 hrs AIAA-2014-2371 Coupled Simulation of CFD and Flight Mechanics with a Two-Species-Gas-Model for the Hot Staging of a Multistage Rocket Y. Li, B. Reinmann, T. Eggers, German Aerospace Center (DLR), Braunschweig, Germany	1030 hrs AIAA-2014-2372 System Studies on Active Thermal Protection of a Hypersonic Suborbital Passenger Transport Vehicle T. Schwaneckamp, German Aerospace Center (DLR), Bremen, Germany	1100 hrs AIAA-2014-2373 Novel Hybrid Ablative/Ceramic Development for Re-Entry in Planetary Atmospheric Thermal Protection: Interfacial Adhesive Selection and Test Verification Plan J. Barcena, S. Florez, B. Perez, Tecnalia Research & Innovation, San Sebastian, Spain; J. Bouilly, G. Pinaud, Astrium, Saint Médard en Jalles, France; W. Fischer, Astrium, Bremen, Germany, et al.	1130 hrs Oral Presentation Technology Status of Ceramic Matrix Composites for Airbreathing and High Performance Orbital Propulsion Applications S. Beyer, S. Schmidt-Wimmer, F. Wigger, Astrium, Munich, Germany; C. Wilhemi, F. Uhlmann, EADS, Munich, Germany; P. Peres, Astrium, Saint Médard en Jalles, France			Regency Ballroom V
Tuesday, 17 June 2014							
102-PANEL-3 Moderator: Joao Azevedo, Senior Research Engineer, Instituto de Aeronautica e Espaco Panelists: Luis Carlos Alfonso, Chief Operating Officer, Embraer Commercial Aviation Carlos Americo Pacheco, Rector, Instituto Tecnológico de Aeronautica							
0930 - 1100 hrs Panel: Aviation's Challenges & Opportunities - Perspectives from Brazil & China							
Regency Ballroom VI							
Tuesday, 17 June 2014							
103-PDL-8 Chaired by: M. PANESI, University of Illinois at Urbana Champaign and R. GOSSE, AFRL - Air Force Research Laboratory							
0930 hrs AIAA-2014-2374 Characterization of Stagnation-Point Heat Flux for Earth Entry A. Brands, ERC, Inc., Mountain View, CA; C. Johnston, NASA Langley Research Center, Hampton, VA	1000 hrs AIAA-2014-2375 Numerical Investigation of the Dynamic Triggering of Electrodynamic Aerobraking at High Altitudes using an Ablator with Alkali Metal H. Katsuyama, Yamaguchi University, Ube, Japan; T. Abe, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan	1030 hrs AIAA-2014-2376 Non-equilibrium flowfield of RAM-C II probe D. Andrienko, J. Shang, Wright State University, Dayton, OH; S. Suzhikov, Russian Academy of Sciences, Moscow, Russia; G. Huang, Wright State University, Dayton, OH	1100 hrs AIAA-2014-2377 Effect of the Flight Condition on the Thermochemical Non-equilibrium Phenomenon for Super-Orbital Reentry Vehicles H. Otsu, Ryukoku University, Otsu, Japan; T. Abe, K. Yamada, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan	1130 hrs AIAA-2014-2378 Investigation of Dissociation and Ionization Phenomena in Nonequilibrium Shock Layers A. Munafò, K. Herfner, M. Panesi, University of Illinois, Urbana-Champaign, Urbana, IL	1200 hrs AIAA-2014-2379 USV3 Aerodynamics Assessment: a Step Forward in the Ongoing Design Phase D. Cingone, F. Petrosino, G. Pezzello, F. Capizzano, G. Andreuffi, P. Catalano, Italian Aerospace Research Center (CIRA), Capua, Italy, et al.		Roswell
Re-Entry and Spacecraft Concepts							
Zhenghong Gao, Professor, Northwestern Polytechnical University							
Guoqing Wang, President, Chinese Aeronautical Radio Electronics Research Institute							

Tuesday, 17 June 2014		Planetary Entry and Aeroassist Technology		Spring
Chaired by: T. LAVIN, Sandia National Laboratories and G. JOHNSTON, Infotech Enterprises				
0930 hrs AIAA-2014-2381 Extension and Enhancement of the Allen-Eggers Analytic Solution for Ballistic Entry Trajectories Z. Putnam, R. Braun, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2382 Development of an Aerogel Sample Collector for Martian Dust Sample Return T. Ozawa, T. Suzuki, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan; Y. Harakayama, Nihon University, Tokyo, Japan; M. Tabata, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan; K. Fujita, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan	1030 hrs AIAA-2014-2383 Hypersonic Entry Vehicle State Estimation Using High-degree Cubature Kalman Filter T. Sun, M. Xin, University of Missouri, Columbia, Columbia, MO	1100 hrs AIAA-2014-2384 Time-varying entry heating profile replication with a rotating arc jet test article J. Ginstead, E. Venkatapathy, NASA Ames Research Center, Moffett Field, CA; E. Noves, J. Mach, D. Empey, Jacobs, Moffett Field, CA; T. White, ERC, Inc., Moffett Field, CA; et al.	
Tuesday, 17 June 2014				
105-TP-7				
Chaired by: D. PYTEL, Lockheed Martin Space Systems				
0930 hrs Oral Presentation 75 Years of Progress: A History of the ASME Heat Transfer Division (Invited) W. Mamer, University of California, Los Angeles, Los Angeles, CA	1030 hrs AIAA-2014-2385 Extending a Numerical Procedure to Simulate the Micro/Nanoscale Soot Formation in Ethylene-Air Turbulent Flame Using Acetylene-Route Nucleation M. Darbandi, M. Ghafourizadeh, Sharif University of Technology, Tehran, Iran; G. Schneider, University of Waterloo, Waterloo, Canada	1100 hrs AIAA-2014-2386 A Nonlinear, Rescaling Based Inverse Heat Conduction Calibration Method and Optimal Regularization Parameter Strategy Y. Chen, J. Frankel, M. Keyhani, University of Tennessee, Knoxville, Knoxville, TN	1130 hrs AIAA-2014-2387 Transient radiative heat transfer in a suspension of ceria particles undergoing non-stoichiometric reduction L. Gamp, Swiss Federal Institute of Technology Zurich, Zurich, Switzerland; R. Bader, Australian National University, Canberra, Australia; A. Steinfeld, Swiss Federal Institute of Technology Zurich, Zurich, Switzerland; W. Lipinski, Australian National University, Canberra, Australia	Techwood
Tuesday, 17 June 2014				
106-TP-8				
Chaired by: J. ROUX, The University of Mississippi and A. MINNICH				
0930 hrs Oral Presentation Screening of Oxides for Solar Driven Thermochemical Water Splitting A. Henry, C. Jarrett, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2388 Interdisciplinary Analysis of a Turbine Blade With Internal Cooling Including Local Distribution and Rotation Effects B. Nouri, Brandenburg University of Technology, Cottbus, Germany; K. Lehmann, Rolls-Royce Group plc, Dahnleitz, Germany; A. Kuhlhorn, Brandenburg University of Technology, Cottbus, Germany	1030 hrs Oral Presentation Sensitivity Analysis of a High Temperature Liquid Metal Based Solar Receiver A. Henry, A. DeAngelis, Georgia Institute of Technology, Atlanta, GA	1100 hrs Oral Presentation Radiation Heat Sink for Heat Dissipation in Liquid Metal Loops A. Henry, G. Willk, Georgia Institute of Technology, Atlanta, GA	1130 hrs AIAA-2014-2389 A Realistic Radiative Heat Transfer Model for Building Energy Simulation Programs W. Tam, W. Yuen, W. Chow, Hong Kong Polytechnic University, Hong Kong, Hong Kong
University				


Tuesday, 17 June 2014		Best Atmospheric Flight Mechanics Student Paper Competition		Vinings
107-AFM-8 Chaired by: M. GRANT, Purdue University and C. SUCHOMEL, USAF				
0930 hrs AIAA-2014-2390 Parachute Dynamic Stability and the Effects of Apparent Inertia Jason Ginn, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2670 Simultaneous Tracking of Multiple Ground Targets from a Single Multirator UAV Nathaniel R Miller, Texas A&M University, College Station, TX	1030 hrs AIAA-2014-2543 Solution of Lambert's Theorem with Additional Terminal Constraints Karthikeyan Kalirajan, Indian Institute of Technology Bombay, Mumbai, India	1100 hrs AIAA-2014-2381 Extension and Enhancement of the Allen-Eggers Analytic Solution for Ballistic Entry Trajectories Zachary Putnam, Georgia Institute of Technology, Atlanta, GA	
Tuesday, 17 June 2014 108-LNCH-2 1230 - 1400 hrs Awards Luncheon: Celebrating Achievements in Aerospace Sciences Centennial I/II				
Tuesday, 17 June 2014 109-APA-19 Chaired by: R. CUMMINGS, US Air Force Academy Special Session: NATO Task Group AVT-201 IV - Stability and Control Analyses Baker				
1400 hrs AIAA-2014-2391 Static and Dynamic Derivatives on generic UCAC without and with leading edge control J. Le Roy, S. Morgand, D. Farcy, ONERA, Lille, France	1430 hrs AIAA-2014-2392 Stability and Control Assessment of a Generic UCAC Design Using the Edge Flow Solver M. Tomac, Royal Institute of Technology (KTH), Stockholm, Sweden; M. Tomalm, Swedish Defense Research Agency (FOI), Stockholm, Sweden	1500 hrs AIAA-2014-2393 Development of an aerodynamic simulation model of a generic configuration for S&C analyses J. Irving, BAE Systems, Watton, United Kingdom; D. Vicroy, NASA Langley Research Center, Hampton, VA; D. Farcy, ONERA, Lille, France	1530 hrs AIAA-2014-2394 The NATO STO AVT-201 Task Group on Extended assessment of Stability on Control Prediction Methods for NATO Air Vehicles: Summary, Conclusions and Lessons Learned A. Jirasek, R. Cummings, U.S. Air Force Academy, Colorado Springs, CO; A. Schuette, K. Huber, German Aerospace Center (DLR), Braunschweig, Germany	
Tuesday, 17 June 2014 110-APA-20 Chaired by: D. RICHWINE, NASA-Langley Research Center Special Session: Sonic Boom Activities IV - Low Sonic Boom Flight Demonstration Courland				
1400 hrs Oral Presentation Overview of NASA High Speed Project Research and Progress P. Coen, D. Richwine, NASA Langley Research Center, Hampton, VA	1430 hrs Oral Presentation ICAO Supersonics Task Group (SSTG) Status and Progress S. Liu, Federal Aviation Administration, Washington, DC; V. Sparrow, Pennsylvania State University, University Park, PA	1500 hrs Oral Presentation Boeing Low-Boom Flight Demonstrator (LBFD) Concept Formulation Study T. Aitani, H. Wegge, S. Agrawal, C. Nelson, T. Magee, S. Hollowell, The Boeing Company, Seattle, WA; et al.	1600 hrs Oral Presentation Advanced Adjoint Optimization Capabilities in SU2 for the Design of a Low-Boom Flight Demonstrator J. Alonso, F. Palacios, T. Lukaczyk, Stanford University, Stanford, CA	1630 hrs Oral Presentation The Need for Speed R. Cowart, Gulfstream Aerospace Corporation, Savannah, GA

Tuesday, 17 June 2014		Special Session: 2nd High-Lift Prediction Workshop I		Dunwoody	
Chaired by: C. RUMSEY, NASA-Langley Research Center and A. SCIAFANI, Boeing Engineering Operations & Technology					
1400 hrs AIAA-2014-2395 Grid-Adapted FUN3D Computations for the Second High Lift Prediction Workshop (Invited) Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-2396 Summary of JAXA Studies for the 2nd AIAA CFD High Lift Prediction Workshop Using Structured and Unstructured Mesh CFD M. Murayama, K. Yamamoto, Y. Ito, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan; T. Hirai, K. Tanaka, Ryoju Systems Company, Ltd., Tokyo, Japan	1500 hrs AIAA-2014-2397 Investigation of Grid Generation Strategy for prediction of High Lift Flows A. Mohita, P. Gujjar, P. Gupta, D. Rajwanshi, Tata Consultancy Services, Bangalore, India	1530 hrs AIAA-2014-2398 Detached Eddy Simulation of the DLR-F11 wing/body Configuration as a Contribution to the 2nd AIAA CFD High Lift Prediction Workshop J. Escobar, C. Suarez, C. Silva, University of San Buenaventura, Bogota, Colombia; O. Lopez, J. Velandia, C. Lara, University of the Andes, Bogota, Colombia	1600 hrs AIAA-2014-2399 CIAM, Sukhoi NCT and Irkut Contribution to HLiFPW-2 V. Makarov, Y. Fedorchenko, V. Shorostov, Central Institute of Aviation Motors, Moscow, Russia; A. Babulin, K. Bolshunov, United Aircraft Corporation, Moscow, Russia	
Tuesday, 17 June 2014					
Chaired by: D. LACY, Boeing Commercial Airplanes and C. PASILIAO, US Air Force					
1400 hrs AIAA-2014-2400 Evaluation criteria and performance comparison of actuators for bluff-body flow control A. Seifert, Tel Aviv University, Tel Aviv, Israel	1430 hrs AIAA-2014-2401 Towards the Industrial Application of Active Flow Control in Civil Aircraft - An Active HighLift Flap M. Meyer, W. Muchunze, EADS, Munich, Germany; M. Bauer, Technical University of Berlin, Berlin, Germany	1500 hrs AIAA-2014-2402 Thrust Removal Methodology for the FAST-MAC Circulation Control Model Tested in the National Transonic Facility D. Chen, W. Milholen, G. Jones, NASA Langley Research Center, Hampton, VA; S. Goodliff, Jacobs, Hampton, VA	1530 hrs AIAA-2014-2403 Active Flow Control for an Outer Wing Model of a Take-off Transport Aircraft Configuration - A Numerical Study V. Giobara, J. Wild, German Aerospace Center (DLR), Braunschweig, Germany	1630 hrs AIAA-2014-2405 Optimization by CFD analyses of riblet distribution over a transonic civil aircraft configuration B. Mele, R. Tognaccini, University of Naples "Federico II", Naples, Italy; P. Cotalano, Italian Aerospace Research Center (CIRA), Naples, Italy	
1700 hrs AIAA-2014-2406 Linear parameter-varying active flow control for a 3D bluff body exposed to cross-wind gusts J. Pfeiffer, R. King, Technical University of Berlin, Berlin, Germany					
Tuesday, 17 June 2014					
Chaired by: R. MWANGE, Lockheed Martin Corporation					
1400 hrs Oral Presentation Leading Edge Distributed Electric Propulsion Wing Concept for CTOL, STOL, and VTOL Missions M. Moore, W. Fredericks, NASA Langley Research Center, Hampton, VA	1430 hrs Oral Presentation Greased Lightning: A Cruise Efficient VTOL Aircraft W. Fredericks, NASA Langley Research Center, Hampton, VA	1500 hrs AIAA-2014-2407 Conceptual Design of the Joby S2 Electric VTOL PAV A. Stoll, E. Silson, J. Beviri, P. Pei, Joby Aviation, Santa Cruz, CA	1530 hrs AIAA-2014-2408 Design of the ATG Javelin Personal Fighter Jet B. Knapp, Tzunum Aircraft, Redmond, WA	Embassy C	
Tuesday, 17 June 2014					
Chaired by: M. MOORE, NASA Langley Research Center					
1400 hrs No Presentations	1600 hrs AIAA-2014-2409 Future Evaluation Worlds for MASA Aeronomics R&D Portfolio Analysis Y. Gowdiak, MASA Headquarters, Washington, DC; J. Creedon, Old Dominion University, Norfolk, VA; B. Holmes, NextGen AeroSciences, LLC, Williamsburg, VA; S. Trajkov, Scab Sensis Corporation, Washington, DC; M. Markus-Kramer, LMI, McLean, VA; S. Benish, Federal Aviation Administration, Washington, DC, et al.			1630 hrs AIAA-2014-2410 JPDO & NASA ARMD Multimodal Analyses Kramer, LMI, McLean, VA; D. Ballard, GBA, Inc., Jenkintown, PA; J. Creedon, Old Dominion University, Norfolk, VA; R. Hemm, LMI, McLean, VA; et al.	1700 hrs AIAA-2014-2411 Zip Vehicle Commuter Aircraft Demand Estimate: a Multimodal Logit Mode Choice Model D. Pu, A. Trani, N. Hinze, Virginia Polytechnic Institute and State University, Blacksburg, VA
Tuesday, 17 June 2014					
Chaired by: M. MOORE, NASA Langley Research Center					
1400 hrs No Presentations					

Tuesday, 17 June 2014		UAS Integration & Operations II		Embassy D
Chaired by: V. SCHULTZ, NASA Langley Research Center and A. DESHMUKH, Gulfstream Aerospace Corp.				
1400 hrs AIAA-2014-2412 A Family of Well-Clear Boundary Models for the Integration of UAS in the NAS C. Munoz, A. Markawicz, J. Chamberlain, M. Consiglio, J. Upchurch, NASA Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-2413 Investigating Detect-and-Avoid Surveillance Performance for Unmanned Aircraft Systems C. Park, S. Lee, University of California, Santa Cruz, Moffett Field, CA; E. Mueller, NASA Ames Research Center, Mountain View, CA	1500 hrs AIAA-2014-2414 UAS Contingency Management: The Effect of Different Procedures on ATC in Civil Airspace Operations L. Fern, R. Rorie, San Jose State University, Moffett Field, CA; R. Shively, NASA Ames Research Center, Moffett Field, CA	1530 hrs AIAA-2014-2415 UAS for Law Enforcement- A Case Study for Connectivity and Fuel Management D. Akaroy, K. Grentling, D. Morris, Georgia Institute of Technology, Atlanta, GA	1600 hrs AIAA-2014-2416 Generation of Normalized Difference Vegetation Index Map for Precision Agriculture Using Small-Type Unmanned Aerial Vehicle K. Chiba, T. Kamei, T. Ito, S. Sugai, S. Ohno, S. Saito, Hokkaido Institute of Technology, Sapporo, Japan
1630 hrs AIAA-2014-2417 The Ability of RC Pilots to Maintain Visual Line-of-Sight of their Vehicle A. Trujillo, R. Ghatus, NASA Langley Research Center, Hampton, VA; D. Burdette, Northrop Grumman Corporation, Hampton, VA; R. McAdaragh, Stinger Ghaffarian Technologies, Inc., Hampton, VA				
Tuesday, 17 June 2014				
116-ATIO-12				
Chaired by: M. BLOEM, NASA-Ames				
1400 hrs AIAA-2014-2418 Measuring the early impacts of the FAA Surveillance and Broadcast Services Program D. Howell, MCR, LLC, Beaver Creek, OH; J. King, MCR, LLC, Washington, DC	1430 hrs AIAA-2014-2419 System-Level Performance Evaluation of AID-1 Ground-Based Technologies T. Callentine, M. Kupfer, L. Martin, J. Mercer, San Jose State University, Moffett Field, CA; T. Prevot, NASA Ames Research Center, Moffett Field, CA	1500 hrs AIAA-2014-2420 A Frequency Analysis Approach for Categorizing Air Traffic Behavior M. Drew, University of California, Santa Cruz, Santa Cruz, CA; K. Sheri, NASA Ames Research Center, Moffett Field, CA	1530 hrs AIAA-2014-2421 Integrating Advanced Technology into Air Traffic Controller Training S. Schultheis, MITRE Corporation, McLean, VA	1600 hrs AIAA-2014-2422 Modeling the effect of uncertainty and NextGen concepts and technologies on the national airspace system J. Archer, S. Landry, Purdue University, West Lafayette, IN
Tuesday, 17 June 2014				
117-ACD-5				
Chaired by: H. JIMENEZ, Georgia Institute of Technology and T. TAKAHASHI, Arizona State University				
1400 hrs AIAA-2014-2423 Multidisciplinary Design Optimization of a Truss Braced Wing Concept T. Nam, J. Chakraborty, J. Gross, D. Morris, Georgia Institute of Technology, Atlanta, GA; J. Schletz, R. Kanania, Virginia Polytechnic Institute and State University, Blacksburg, VA	1430 hrs AIAA-2014-2424 Analysis of the Effect of Cruise Speed on Fuel Efficiency and Cost for a Truss-Braced Wing Concept I. Chakraborty, J. Gross, T. Nam, C. Perillo, D. Morris, Georgia Institute of Technology, Atlanta, GA	1500 hrs AIAA-2014-2425 Reforming Field Performance Federal Aviation Regulations for Operational Safety and Consistency T. Takahashi, A. Creighton, Arizona State University, Tempe, AZ	1530 hrs AIAA-2014-2426 Platform Selection for an Efficient Supersonic Air Vehicle T. Takahashi, C. Kady, Arizona State University, Tempe, AZ	
Tuesday, 17 June 2014				
118-ACD-6				
Chaired by: H. JIMENEZ, Georgia Institute of Technology and T. TAKAHASHI, Arizona State University				
1400 hrs No Presentations			1600 hrs AIAA-2014-2427 Hybrid-Wing-Body Vehicle Composite Fuselage Analysis and Case Study V. Mukhopadhyay, NASA Langley Research Center, Hampton, VA	1630 hrs AIAA-2014-2428 Assessment of Electrically Actuated Redundant Control Surface Layouts for a Hybrid Wing Body Concept D. Garmanida, I. Chakraborty, D. Trivick, D. Morris, Georgia Institute of Technology, Atlanta, GA

Tuesday, 17 June 2014		Multidisciplinary Analysis and Optimization: Emerging Methods I			Embassy G
119-MAO-7	Chaired by: J. MARTINS, University of Michigan	Multidisciplinary Analysis and Optimization: Emerging Methods I			Embassy G
1400 hrs AIAA-2014-2429	1430 hrs AIAA-2014-2430	1500 hrs AIAA-2014-2431	1530 hrs AIAA-2014-2432	1600 hrs AIAA-2014-2433	1630 hrs AIAA-2014-2434
Multidisciplinary Design Optimization of an Aircraft Wing via a Matrix-Free Approach A. Lamb, University of Toronto, Toronto, Canada; G. Kennedy, Georgia Institute of Technology, Atlanta, GA; J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	Incorporation of Coupling Strength Models in Decomposition Strategies for Value-based MDO H. Kannon, C. Bliebaum, B. Mesmer, Iowa State University, Ames, IA	Improving Contextual Self-Organizing Map Solution Times Using GPU Parallel Training T. Richardson, J. Holub, E. Wimer, Iowa State University, Ames, IA	Profit and Operational-Based Value Functions E. Goetzke, C. Bliebaum, B. Mesmer, Iowa State University, Ames, IA	Parameterized Continuous Representations of the Pareto Frontier as Decision Aids for Multi-Attribute Design M. Deskiewicz, B. German, Georgia Institute of Technology, Atlanta, GA	Optimization Algorithm for Systems Governed by Chaotic Dynamics A. Ashley, J. Hicken, Rensselaer Polytechnic Institute, Troy, NY
1700 hrs AIAA-2014-2435	Fatigue Design Load Development for Conceptual Structural Optimization H. Li, H. Bae, Wright State University, Dayton, OH				
Tuesday, 17 June 2014					
120-MAO-8	Chaired by: V. BALABANOV, Boeing Commercial Airplanes	Multidisciplinary Analysis and Optimization: Metamodeling II			Embassy H
1400 hrs AIAA-2014-2436	1430 hrs AIAA-2014-2437	1500 hrs AIAA-2014-2438	1530 hrs AIAA-2014-2439	1600 hrs AIAA-2014-2440	
Managing Variable Fidelity Models in Population-based Optimization using Adaptive Model Switching A. Mehinani, Syracuse University, Syracuse, NY; S. Chowdhury, A. Messac, Mississippi State University, Mississippi State, MS	Mid-Range Approximations in Sub-Spaces for MDO Problems with Disparate Discipline Attributes J. Ollar, Altair Engineering, Inc., Learnington Spa, United Kingdom; V. Toropov, University of Leeds, Leeds, United Kingdom; R. Jones, Altair Engineering, Inc., Learnington Spa, United Kingdom	Optimistic Bias in Surrogate Prediction near Surrogate Optima A. Choudhuri, R. Haftka, University of Florida, Gainesville, Gainesville, FL	Global Search for Diverse Competitive Designs Y. Zhou, Dalian University of Technology, Dalian, China; A. Choudhuri, R. Haftka, University of Florida, Gainesville, Gainesville, FL; G. Cheng, Dalian University of Technology, Dalian, China	Truss structure satellite bus geometry-structure optimization involving mixed variables and expensive models using metamodel-based optimization strategy L. Peng, L. Liu, T. Long, X. Guo, R. Shi, Beijing Institute of Technology, Beijing, China	
Tuesday, 17 June 2014					
121-APA-23	Chaired by: N. NGUYEN, NASA-Ames Research Center and M. ROGERS, NASA Ames Research Center	Special Session: Aerodynamic-Structural Modeling, Optimization, and Test Techniques for Flexible Wing Technology I			Fairlie
1400 hrs AIAA-2014-2441	1430 hrs AIAA-2014-2442	1500 hrs AIAA-2014-2443	1530 hrs AIAA-2014-2444		
Experimental Investigation of a Flexible Wing with a Variable Camber Continuous Trailing Edge Flap Design N. Nguyen, NASA Ames Research Center, Moffett Field, CA; E. Lurie, N. Precup, University of Washington, Seattle, Seattle, WA; J. Unes, The Boeing Company, St. Louis, MO; C. Nelson, The Boeing Company, Seattle, WA; E. Ting, Singer Graffman Technologies, Inc., Moffett Field, CA; et al.	Design, Construction, and Tests of an Aeroelastic Wind Tunnel Model of a Variable Camber Continuous Trailing Edge Flap (VCCTEF) Concept Wing E. Lurie, N. Precup, M. Mor, University of Washington, Seattle, Seattle, WA	Aeroelastic Modeling and Drag Optimization of Flexible Wing Aircraft with Variable Camber Continuous Trailing Edge Flap S. Lebofsky, E. Ting, Singer Graffman Technologies, Inc., Mountain View, CA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; K. Tinh, Singer Graffman Technologies, Inc., Mountain View, CA	Drag Optimization Study of Variable Camber Continuous Trailing Edge Flap (VCCTEF) Using OVERFLOW U. Kaul, N. Nguyen, NASA Ames Research Center, Moffett Field, CA		
Tuesday, 17 June 2014					
122-FD-11	Chaired by: H. LUO, Vanderbilt University	Fluid Structure Interaction II			Greenbriar
1400 hrs AIAA-2014-2445	1430 hrs AIAA-2014-2446	1500 hrs AIAA-2014-2447	1530 hrs AIAA-2014-2448	1600 hrs AIAA-2014-2449	1630 hrs AIAA-2014-2450
Effect of Wall Deformation on Aerodynamic Performance for Mixed Compression Intake C. Yoo, Z. Liu, J. Wei, S. Qu, G. Zhang, Harbin Institute of Technology, Harbin, China	Computed and Experimental Flutter/LCO Onset for the Boeing Truss-Braced Wing Wind Tunnel Model R. Barfels, R. Scott, NASA Langley Research Center, Hampton, VA	F/A-18 Twin-tail Buffet Modeling Using Non-Linear Eddy Viscosity Models A. Elmeakawy, O. Kamali, O. Baysal, Old Dominion University, Norfolk, VA	Development and Validation of a Partitioned Fluid-Structure Solver for Transonic Panel Flutter with Focus on Boundary Layer Effects M. Alder, German Aerospace Center (DLR), Braunschweig, Germany	Fluid-Structure Interaction in the Context of a Scramjet Intake S. Fruholz, N. Hosters, B. Reinartz, M. Behr, RWTH Aachen University, Aachen, Germany	Aerodynamic and Aeroelastic Analysis of a Cycloidal Rotor L. Gagnon, G. Quaranta, M. Morandini, P. Masantì, Technical University of Milan, Milan, Italy; C. Xisto, J. Páscoa, University of Beira Interior, Covilha, Portugal

Tuesday, 17 June 2014		CAA Sound Generation I		Hanover A	
Chaired by: E. BRAMBLEY, University of Cambridge					
1400 hrs AIAA-2014-2451 The Fast Random Particle Method for Combustion Noise Prediction F. Grimm, German Aerospace Center (DLR), Stuttgart, Germany; R. Ewert, J. Dierke, German Aerospace Center (DLR), Braunschweig, Germany; B. Noll, M. Aigner, German Aerospace Center (DLR), Stuttgart, Germany	1430 hrs AIAA-2014-2452 Internal noise suppression for DNS of a turbulent jet-pipe configuration R. Sandberg, B. Fester, S. Olivetti, University of Southampton, Southampton, United Kingdom	1500 hrs AIAA-2014-2453 Numerical Predictions of Turbulence-Cascade Interaction Noise Using CAA with a Stochastic Model V. Clair, C. Polacsek, I. Le Garrec, ONERA, Châtillon, France; M. Jacob, Ecole Centrale de Lyon, Ecully, France	1530 hrs AIAA-2014-2454 Exploration of temperature effects on the far-field acoustic radiation from a supersonic jet H. Habsteinsson, L. Eriksson, N. Andersson, Chalmers University of Technology, Göteborg, Sweden; P. Moa Sanchez, E. Guimark, University of Cincinnati, Cincinnati, OH; E. Pihel, FMV, Stockholm, Sweden	1600 hrs AIAA-2014-2455 Direct aeroacoustics simulation of automotive engine cooling fan system: effect of upstream geometry on broadband noise M. Piellard, B. Couhy, Delphi Thermal Systems, Besenange, Luxembourg; V. Le Goff, V. Vidal, Eurova, Paris La Defense, France; F. Perot, Exa Corporation, Brisbane, CA	1630 hrs AIAA-2014-2456 Integrating CFD source predictions with time-domain CAA for intake fan noise prediction Z. Rarita, G. Gabard, R. Sugimoto, J. Coupland, R. Ashley, University of Southampton, Southampton, United Kingdom; H. Namgoong, Rolls-Royce Group plc, Derby, United Kingdom; et al.
Tuesday, 17 June 2014					
Chaired by: Y. GÜO, Boeing Defense, Space & Security and M. ROGER, Ecole Centrale de Lyon					
1400 hrs AIAA-2014-2457 Aero-Structural Acoustics of Uneven Surfaces Part 1: A General Model Approach to Radiated Sound W. Blake, University of Notre Dame, Notre Dame, IN; J. Anderson, Naval Surface Warfare Center, West Bethesda, MD; W. Blake, University of Notre Dame, Notre Dame, IN	1430 hrs AIAA-2014-2458 Aero-Structural Acoustics of Uneven Surfaces Part 2: A Specific Forcing by a Rough Wall Boundary Layer J. Anderson, Naval Surface Warfare Center, West Bethesda, MD; W. Blake, University of Notre Dame, Notre Dame, IN	1500 hrs AIAA-2014-2459 Acoustic scattering by finite poroelastic plates A. Cavallieri, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil; W. Wolf, University of Campinas, Campinas, Brazil; J. Jaworski, Lehigh University, Bethlehem, PA	1530 hrs AIAA-2014-2460 The Noise From Separated Flow S. Glegg, B. Byran, Florida Atlantic University, Boca Raton, FL; W. Devenport, M. Awasthi, Virginia Polytechnic Institute and State University, Blacksburg, VA	1600 hrs AIAA-2014-2461 Aeroacoustics of 2D and 3D Surface Discontinuities M. Awasthi, W. Devenport, T. Meyers, W. Alexander, Virginia Polytechnic Institute and State University, Blacksburg, VA; S. Glegg, Florida Atlantic University, Boca Raton, FL	1630 hrs AIAA-2014-2462 Effect of Step Rounding on Noise from Forward-Facing Steps J. Hao, M. Wang, University of Notre Dame, Notre Dame, IN
Tuesday, 17 June 2014					
Chaired by: M. VARGAS, NASA Glenn Research Center and P. VILLEDIEU					
1400 hrs AIAA-2014-2463 Convection from Ice Roughness with Varying Flux Boundary Conditions C. Walker, S. McClain, Baylor University, Waco, TX	1430 hrs AIAA-2014-2464 Transient Heat Transfer Measurements of Surface Roughness due to Ice Accretion Y. Han, J. Palacios, Pennsylvania State University, University Park, PA	1500 hrs AIAA-2014-2465 Infrared and Hot-Wire Investigations of Ice Roughness Induced Transition S. McClain, C. Walker, L. Tesson, Baylor University, Waco, TX	1530 hrs Oral Presentation Boundary layer and heat transfer characterization on surface with academic roughness (Invited) P. Reulet, D. Donjat, F. Micheli, B. Aupeix, ONERA, Toulouse, France	1600 hrs Oral Presentation How Roughness Research can Improve LEWICE (Invited) W. Wright, Vantage Partners, LLC, Cleveland, OH; C. Bröwiel, NASA Glenn Research Center, Cleveland, OH	1630 hrs Open Discussion
Tuesday, 17 June 2014					
Chaired by: A. BROWN, National Research Council Canada and F. PROCTOR, NASA Langley Research Center					
1400 hrs AIAA-2014-2466 Evaluation of Fast-Time Wake Vortex Models using Wake Encounter Flight Test Data N. Ahmad, R. VanValkenburg, R. Bowles, NASA Langley Research Center, Hampton, VA; F. Limon Duparcneaur, Craig Technologies, Inc., Hampton, VA	1430 hrs AIAA-2014-2467 First Results from the NASA Wake Vortex Measurements at the Memphis International Airport D. Delisi, M. Prais, NorthWest Research Associates, Redmond, WA; D. Jacob, Coherent Research Group, LLC, Ormond Beach, FL; D. Lai, NorthWest Research Associates, Redmond, WA	1500 hrs AIAA-2014-2468 Observations of Small-scale Atmospheric Variability and the Importance of Accurate Weather Information in Deterministic and Probabilistic Fast-time Wake Vortex Modeling M. Prais, D. Delisi, NorthWest Research Associates, Redmond, WA	1530 hrs AIAA-2014-2469 Numerical Study of a Long-Lived, Isolated Wake Vortex in Ground Effect F. Proctor, NASA Langley Research Center, Hampton, VA	1600 hrs AIAA-2014-2470 Impact of Wind and Obstacles on Wake Vortex Evolution in Ground Proximity F. Holzäpfel, A. Stephan, M. Tchipuev, T. Heel, S. Körner, German Aerospace Center (DLR), Oberpfaffenhofen, Germany; T. Misaka, Tohoku University, Sendai, Japan	
Tuesday, 17 June 2014					
Chaired by: E. BRAMBLEY, University of Cambridge					
Chaired by: E. BRAMBLEY, University of Cambridge					
Chaired by: E. BRAMBLEY, University of Cambridge					

Tuesday, 17 June 2014		Jet Noise Reduction I		Hanover E	
Chaired by: P. JORDAN, PPRIME					
1400 hrs AIAA-2014-2471	1430 hrs AIAA-2014-2472	1500 hrs AIAA-2014-2473	1530 hrs AIAA-2014-2474	1600 hrs AIAA-2014-2475	1630 hrs AIAA-2014-2476
A Formulation and Implementation of Adjoint-Based Supersonic Jet Noise Reduction A. Corrigan, Z. Spears, J. Liu, R. Ramamuni, K. Kalisznath, Naval Research Laboratory, Washington, DC	Checkpointing Methods for Adjoint-Based Supersonic Jet Noise Reduction Z. Spears, A. Corrigan, K. Kalisznath, Naval Research Laboratory, Washington, DC	Optimization of Blowing in a Convergent-Divergent Nozzle for Noise Reduction N. Sikarwar, P. Morris, Pennsylvania State University, University Park, PA	Supersonic Jet Noise Reduction by Nozzle Fluidic Inserts with Simulated Forward Flight R. Powers, C. Kuo, D. McLaughlin, P. Morris, Pennsylvania State University, University Park, PA	Jet-wing interaction: computational modelling based on MILES CABARET and acoustic analogy V. Semiletov, S. Karabasov, Queen Mary, University of London, London, United Kingdom; G. Faranosov, V. Kopyev, V. Goloviznin, Central Aerohydrodynamic Institute, Moscow, Russia	Thermoacoustics of a turbulent premixed flame G. Geise, RWTH Aachen University, Aachen, Germany; H. Nawroth, Technical University of Berlin, Berlin, Germany; A. Hosseinizadeh, Technical University of Darmstadt, Darmstadt, Germany; F. Zhang, H. Bockhorn, P. Habesreuther, Karlsruhe Institute of Technology, Karlsruhe, Germany, et al.
Tuesday, 17 June 2014					
128-AA-9 NASA Gulfstream Airframe Noise Reduction					
Chaired by: M. KHORRAMI, NASA-Langley Research Center and D. LOCKARD, NASA-Langley Research Center					
1400 hrs Oral Presentation NASA-Gulfstream Joint Effort on Airframe Noise Reduction: An Overview M. Khorrami, NASA Langley Research Center, Hampton, VA; T. Van de Ven, Gulfstream Aerospace Corporation, Savannah, GA	1430 hrs AIAA-2014-2477 Aerodynamic Measurements of a Gulfstream Aircraft Model With and Without Noise Reduction Concepts D. Neuhart, J. Hammon, M. Khorrami, NASA Langley Research Center, Hampton, VA	1500 hrs AIAA-2014-2478 Aeroacoustic Evaluation of Flap and Landing Gear Noise Reduction Concepts M. Khorrami, W. Humphreys, D. Lockard, NASA Langley Research Center, Hampton, VA; P. Ravetta, AVEC, Inc., Blacksburg, VA	1530 hrs AIAA-2014-2479 Flow-Field Investigation of Gear-Flap Interaction on a Gulfstream Aircraft Model C. Yao, L. Jenkins, S. Barrami, J. Harris, M. Khorrami, NASA Langley Research Center, Hampton, VA; W. Mace, Sierra Lobo, Inc., Hampton, VA	1600 hrs AIAA-2014-2480 Towards Full Aircraft Airframe Noise Prediction: Detached Eddy Simulations M. Khorrami, NASA Langley Research Center, Hampton, VA; E. Fares, D. Casalino, Exa Corporation, Stuttgart, Germany	1630 hrs AIAA-2014-2481 Towards Full Aircraft Airframe Noise Prediction: Lattice Boltzmann Simulations M. Khorrami, NASA Langley Research Center, Hampton, VA; E. Fares, D. Casalino, Exa Corporation, Stuttgart, Germany
Tuesday, 17 June 2014					
129-HYTASP-23 Aerodynamic and Propulsion Test Unit (APU) I					
Chaired by: G. GARRARD, Aerospace Testing Alliance (ATA)					
1400 hrs AIAA-2014-2482 Summary of Test Preparations for the Medium Scale Critical Components Test Program at the Aerodynamic and Propulsion Test Unit (Invited) S. Rigney, Aerospace Testing Alliance, Arnold AFB, TN	1430 hrs AIAA-2014-2483 Activation and Calibration Plans for the Aerodynamic and Propulsion Test Unit Heated Fuel System (Invited) K. Holst, Aerospace Testing Alliance, Arnold AFB, TN	1500 hrs AIAA-2014-2484 In Place Calibration of the Aerodynamic and Propulsion Test Unit Air, Isobutane, and Liquid Oxygen System Venturi Tubes (Invited) G. Garrard, Aerospace Testing Alliance, Arnold AFB, TN	1530 hrs AIAA-2014-2485 Design, Analyses, and Planned Calibration Tests for the Medium Scale Critical Components Direct Connect Facility Nozzles at the Aerodynamic and Propulsion Test Unit (Invited) K. Holst, Aerospace Testing Alliance, Arnold AFB, TN		
Tuesday, 17 June 2014					
130-ITAR-2 ITAR-Noise Modeling and Technologies for Quiet UAS 					
Chaired by: E. GARCIA, Georgia Institute of Technology					
1400 hrs No Presentations				1600 hrs AIAA-2014-2486 Aircraft Noise Prediction Using Virtual Lab D. Robertson, C. Marks, University of Dayton Research Institute, Dayton, OH; D. Bryson, G. Reich, Air Force Research Laboratory, Wright-Patterson Laboratory, Wright-Patterson AFB, OH	1630 hrs AIAA-2014-2487 A Framework for Multidisciplinary Conceptual Design of Quiet Small Unmanned Aerial Systems D. Bryson, R. Miller, T. White, G. Reich, Air Force Research Laboratory, Wright-Patterson AFB, OH; D. Robertson, C. Marks, University of Dayton Research Institute, Dayton, OH, et al.

Tuesday, 17 June 2014		Radiation/Aero-Optics II		Harris	
Chartered by: M. RENNIE and M. PANESI, University of Illinois at Urbana Champaign					
1400 hrs AIAA-2014-2488 On View-Factor Approach for Radiation Transfer Equation D. Andrienko, Wright State University, Dayton, OH; S. Surzhikov, Russian Academy of Sciences, Moscow, Russia; J. Shang, G. Huang, Wright State University, Dayton, OH	1430 hrs AIAA-2014-2489 Radiation Transport Analysis of Emission Spectroscopic Measurements in the Plenum Region of the NASA IHF Arc Jet Facility M. Winter, University of Kentucky, Lexington, KY; D. Prabhu, ERC, Inc., Moffett Field, CA; W. Williams, University of Kentucky, Lexington, KY	1500 hrs AIAA-2014-2490 eRC Model for Prediction of Molecular Bands Radiation for Stardust Entry Conditions S. Surzhikov, Russian Academy of Sciences, Moscow, Russia; J. Shang, Wright State University, Dayton, OH	1530 hrs AIAA-2014-2491 Subsonic Boundary-Layer Wavefront Spectra for a Range of Reynolds Numbers A. Smith, S. Gordeyev, University of Notre Dame, Notre Dame, IN; T. Satoru-Fox, B. McLean, California Institute of Technology, Pasadena, CA	1600 hrs AIAA-2014-2492 Simulating jet exhaust plumes for optical propagation calculations O. Palmsted, H. Etefar, C. Fareby, M. Henriksson, S. Peng, S. Wallin, Swedish Defense Research Agency (FOI), Stockholm, Sweden; et al.	1630 hrs AIAA-2014-2493 Shack-Hartmann Wavefront Measurements of Supersonic Turbulent Boundary Layers in the TGF A. Smith, S. Gordeyev, University of Notre Dame, Notre Dame, IN; H. Ahmed, A. Ahmed, Auburn University, Auburn, AL; D. Which, Air Force Research Laboratory, Kirtland AFB, NM
AIAA-2014-2494 The Removal of Tunnel Vibration Induced Corrosion in Aero-Optical Measurements N. De Luca, S. Gordeyev, A. Smith, E. Jumper, University of Notre Dame, Notre Dame, IN; M. Whiteley, MZA Associates Corporation, Dayton, OH; T. Neale, Arnold Engineering Development Center, Arnold AFB, TN					
Tuesday, 17 June 2014					
132-FD-12					
Chartered by: K. CASPER, Sandia National Laboratories and E. WHITE, Texas A&M University					
1400 hrs AIAA-2014-2495 Direct Numerical Simulation of Geometrical Parameter Effects on the Hypersonic Ramp-Induced Transition Z. Duan, Z. Xiao, Tsinghua University, Beijing, China	1430 hrs AIAA-2014-2496 Experimental Investigation of Gas Injection into the Boundary Layer on a Slender Body in Supersonic Flow B. Schmidt, N. Bitter, H. Homung, J. Shepherd, California Institute of Technology, Pasadena, CA	1500 hrs AIAA-2014-2497 Transient Growth in Hypersonic Boundary Layers N. Bitter, J. Shepherd, California Institute of Technology, Pasadena, CA	1530 hrs AIAA-2014-2498 Stability analysis of high-speed boundary-layer flow with gas injection A. Fedorov, V. Soudakov, Moscow Institute of Physics and Technology, Zhukovskiy, Russia; I. Leyva, Air Force Research Laboratory, Edwards AFB, CA	1600 hrs AIAA-2014-2499 Numerical Simulation of Roughness-Induced Instability Growth and Transition at Mach 6 J. Van den Eynde, N. Sandham, University of Southampton, Southampton, United Kingdom	1630 hrs AIAA-2014-2500 Numerical Investigation of transition delay for various controlled breakdown scenarios in a Mach 6 Boundary Layer using porous walls C. Haider, C. Behm, H. Fasel, University of Arizona, Tucson, Arizona
AIAA-2014-2501 An Experimental Study of Roughness-Induced Instabilities in a Supersonic Boundary Layer M. Kegeles, R. King, M. Choudhari, F. Li, A. Norris, NASA Langley Research Center, Hampton, VA					
Tuesday, 17 June 2014					
133-FD-13					
Chartered by: S. YARUSEVICH, University of Waterloo					
1400 hrs AIAA-2014-2502 Investigations of a Self-Sustained Vortex Flow System Inside a Confined Machinery Duct J. Wang, W. Wang, B. Bernardo, The Aerospace Corporation, El Segundo, CA	1430 hrs AIAA-2014-2503 Investigation of the Wake of a Periodically Pitching Airfoil Embedded in a Shear Layer K. Zhang, Xi'an Jiaotong University, Xi'an, China; A. Naguib, M. Koochesfahani, Michigan State University, East Lansing, MI	1500 hrs AIAA-2014-2504 A Computational Fluid Dynamic Study of Intense Cephalopod-like Motions A. Kozakidi, D. Tsakiris, Foundation for Research and Technology—Hellas (FORTI), Heraklion, Greece; F. Sotiropoulos, University of Minnesota, Minneapolis, Minnesota; M.N. J. Ekateriniaris, University of Patras, Patra, Greece	1530 hrs AIAA-2014-2505 Numerical study on low Reynolds number flow past two side by side triangular cylinders S. Kariesan, A. Roy, Indian Institute of Technology Kharagpur, Kharagpur, India		
Tuesday, 17 June 2014					
134-HVTASP-4					
Chartered by: A. VEERARAVAGAN and G. JOHNSTON, Infotech Enterprises					
1400 hrs AIAA-2014-2506 Characterization of a heterodyne LITA setup for simultaneous flow velocity and speed of sound measurements F. Foister, B. Weigand, University of Stuttgart, Stuttgart, Germany	1430 hrs AIAA-2014-2507 Heat Transfer Measurements On Waverider at Hypersonic Mach Numbers N. Kandeepalli, S. Selvaraj, J. Gopalani, K. Reddy, Indian Institute of Science, Bangalore, India	1500 hrs Oral Presentation New Range Safety Display for Launch Operation using Real-Time Impact Point Dispersion Y. Nam, T. Seong, J. Ahn, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	1530 hrs AIAA-2014-2508 Acoustic Interferometry and the Calibration Integral Equation Method for Inverse Heat Conduction J. Franke, D. Barfländer, University of Tennessee, Knoxville, Tennessee, TN	1600 hrs AIAA-2014-2509 Application of CE/SE Method to Study Hypersonic Non-equilibrium Flows over Spheres H. Shen, C. Wen, H. Saldívar Massimi, Hong Kong Polytechnic University, Hong Kong, Hong Kong	1630 hrs AIAA-2014-2510 Investigation of Strut-based RBCC Engine Configuration to Improve Performance in Ramjet Mode W. Yu, Jun, L. Jiang, Q. Fei, H. Guo Qiang, W. Xiang, Geng, L. Xiang, Northwestern Polytechnical University, Xi'an, China
AIAA-2014-2511 Experimental research on thermal vibration characteristics of wing structure for high-speed flight vehicles in high-temperature environment D. Wu, Y. Wang, S. Zhao, B. Pan, S. Wu, Beihang University, Beijing, China					
Tuesday, 17 June 2014					
135-FD-14					
Chartered by: S. YARUSEVICH, University of Waterloo					
Vortex and Wake Dominated Flows					
Kenneshaw					
Learning Center					

Tuesday, 17 June 2014		Aerodynamic Flow Control		Lenox	
Chaired by: E. WHALEN, Boeing Engineering Operations & Technology and S. ANDERS, NASA LARC					
1400 hrs AIAA-2014-2512 Numerical and Experimental Wind Tunnel and Flight Testing of Active Flow Control for Modified NACA 643-618 Airfoil J. Dianics, D. Ohno, S. Foggmann, J. Loy, D. Heim, H. Fesel, University of Arizona, Tucson, AZ	1430 hrs AIAA-2014-2513 On the Effect of Sweep on Separation Control P. Iewes, L. Taubert, I. Wagnanski, University of Arizona, Tucson, AZ	1500 hrs AIAA-2014-2514 Control of laminar separation on airfoils using dynamic roughness A. Rohmayer, Iowa State University, Ames, IA; W. Huebsch, West Virginia University, Morgantown, WV	1530 hrs AIAA-2014-2515 Optimal Design of Active Flow Control for a Complex High-Lift Configuration A. Nemili, E. Ozkaya, N. Gauger, RWTH Aachen University, Aachen, Germany; F. Kramer, T. Hoel, F. Thiele, Technical University of Berlin, Berlin, Germany	1600 hrs AIAA-2014-2516 Reduced Order Modeling of Flow over a MACA 0015 Airfoil For Control Application E. Caraballo, T. Sullivan, Miami University, Oxford, OH; J. Little, University of Arizona, Tucson, AZ	1630 hrs AIAA-2014-2517 A Generalized Reduced-Order Model of Flow around an Airfoil with Circulation Control Sultana, M. Barnazzi, P. Scholz, Technical University of Braunschweig, Braunschweig, Germany, et al.
Chaired by: P. LAVOIE, University of Toronto and J. WEHRMEYER, Aerospace Testing Alliance (ATA)					
1400 hrs AIAA-2014-2519 Application of Stereoscopic Imaging in Airspace Ground Testing B. Winkelman, K. Scott, G. Beitel, I. VanPelt, Aerospace Testing Alliance, Arnold AFB, TX; B. Weaver, M. Conner, U.S. Air Force, Arnold AFB, TX	1430 hrs AIAA-2014-2520 Preliminary Investigation of Three-Dimensional Flame Measurements with a Plenoptic Camera J. Bolam, K. Johnson, B. Thurow, Auburn University, Auburn, AL	1500 hrs AIAA-2014-2521 Visualization of flow separation around an atmospheric re-entry capsule at low-subsonic Mach number using Background-Oriented Schlieren (BOS) T. Mizukaki, Tokai University, Tokyo, Japan; S. Borg, P. Danehy, NASA Langley Research Center, Hampton, VA; S. Muman, NASA-Ames Research Center, Moffett Field, CA	1530 hrs AIAA-2014-2522 Application of a Novel Projection Focusing Schlieren System in NASA Test Facilities A. Fagan, NASA Glenn Research Center, Cleveland, OH; D. L'Esperance, Metrolaser, Inc., Laguna Hills, CA; K. Zaman, NASA Glenn Research Center, Cleveland, OH	1600 hrs AIAA-2014-2523 Free flight measurement technique in shock tunnel B. Martinez, M. Bustide, P. Wey, French-German Research Institute of Saint-Louis (ISL), Saint-Louis, France	1630 hrs AIAA-2014-2524 Development of a diode-pumped 100-ms quasi-continuous burst-mode laser for high-speed combustion diagnostics J. Miller, J. Gord, Air Force Research Laboratory, Wright-Patterson AFB, OH; T. Meyer, Iowa State University, Ames, IA; M. Slipchenko, J. Mance, S. Roy, Spectral Energies, LLC, Dayton, OH
Tuesday, 17 June 2014					
136-AMT-5/GT-4					
Chaired by: P. LAVOIE, University of Toronto and J. WEHRMEYER, Aerospace Testing Alliance (ATA)					
1400 hrs AIAA-2014-2525 WIDECARS Measurements of Major Species Concentration and Temperature Measurements in an Air-Ethylene Flame E. Gallo, L. Cantu, A. Cufier, George Washington University, Washington, DC; H. Chellian, M. Rahimi, University of Virginia, Charlottesville, VA	1430 hrs AIAA-2014-2526 High-Speed Imaging Optical Pyrometry for Study of Boron Nitride Nanotube Generation J. Inman, P. Danehy, S. Jones, J. Lee, J. Imman, P. Danehy, S. Jones, J. Lee, NASA Langley Research Center, Hampton, VA	1500 hrs AIAA-2014-2527 Laser-Induced Gratings Measurements in Compressible, High-Speed Free Jets J. Kueliner, A. Conlon, D. Rodriguez Segura, X. Yang, Washington and Lee University, Lexington, VA	1530 hrs AIAA-2014-2528 Rotational Temperature Measurement in an Arc-Heated Wind Tunnel by Laser Induced Fluorescence of Nitric Oxide A-X(0,0) M. Kirschner, T. Sonder, C. Mundt, University of the German Federal Armed Forces, Neubiberg, Germany	1600 hrs AIAA-2014-2529 Molecular Rayleigh scattering to measure fluctuations in density and temperature in low speed heated wind tunnel flows J. Panda, NASA Ames Research Center, Moffett Field, CA; S. Schery, Aerospace Computing, Inc., Mountain View, CA	1700 hrs AIAA-2014-2518 Experimental research on the effects of stator trailing edge blowing with variable stator on the reduction of stator/rotor interaction noise W. Wang, T. Wang, Beihang University, Beijing, China
Tuesday, 17 June 2014					
136-AMT-6/GT-5					
Chaired by: B. BATHEL, NASA Langley Research Center and C. GOYNE, University of Virginia					
1400 hrs AIAA-2014-2525 WIDECARS Measurements of Major Species Concentration and Temperature Measurements in an Air-Ethylene Flame E. Gallo, L. Cantu, A. Cufier, George Washington University, Washington, DC; H. Chellian, M. Rahimi, University of Virginia, Charlottesville, VA	1430 hrs AIAA-2014-2526 High-Speed Imaging Optical Pyrometry for Study of Boron Nitride Nanotube Generation J. Inman, P. Danehy, S. Jones, J. Lee, J. Imman, P. Danehy, S. Jones, J. Lee, NASA Langley Research Center, Hampton, VA	1500 hrs AIAA-2014-2527 Laser-Induced Gratings Measurements in Compressible, High-Speed Free Jets J. Kueliner, A. Conlon, D. Rodriguez Segura, X. Yang, Washington and Lee University, Lexington, VA	1530 hrs AIAA-2014-2528 Rotational Temperature Measurement in an Arc-Heated Wind Tunnel by Laser Induced Fluorescence of Nitric Oxide A-X(0,0) M. Kirschner, T. Sonder, C. Mundt, University of the German Federal Armed Forces, Neubiberg, Germany	1600 hrs AIAA-2014-2529 Molecular Rayleigh scattering to measure fluctuations in density and temperature in low speed heated wind tunnel flows J. Panda, NASA Ames Research Center, Moffett Field, CA; S. Schery, Aerospace Computing, Inc., Mountain View, CA	1700 hrs AIAA-2014-2518 Experimental research on the effects of stator trailing edge blowing with variable stator on the reduction of stator/rotor interaction noise W. Wang, T. Wang, Beihang University, Beijing, China

Tuesday, 17 June 2014		Vehicle, Mission, and Trajectory		Regency Ballroom V	
Chartered by: I. JAHN, The University of Queensland and B. MCGRATH, JHU/Applied Physics Laboratory					
1400 hrs AIAA-2014-2530 Preliminary Design of a New Hybrid and Technology Innovative Suborbital Vehicle for Space Tourism C. Frank, J. Durand, Georgia Institute of Technology, Atlanta, GA; H. Evinin, C. Yi, F. Mechenet, A. Bannet, University of Toulouse, Toulouse, France; et al.	1430 hrs AIAA-2014-2531 Investigation of Structure, Thermal Protection System, and Passenger Stage Integration for the Hypersonic Transport System SpaceLiner A. Kopp, N. Garbers, German Aerospace Center (DLR), Bremen, Germany	1500 hrs AIAA-2014-2532 Design and full 3D nose-to-tail computation of a turbofan+scramjet Mach 8 civil aircraft S. Datoort, M. Ferner, L. Serre, ONERA, Palaiseau, France	1530 hrs AIAA-2014-2533 L1 Augmentation Configuration for a Lateral/Directional Manoeuvre of a Hypersonic Glider in the Presence of Uncertainties S. Banerjee, M. Creagh, R. Boyce, University of Queensland, Brisbane, Australia	1600 hrs AIAA-2014-2534 Effect of Initial Flight Path Angle Error and Control Constraint on the Optimized Ascent Trajectory of a Typical Launch Vehicle A. Joshi, B. Sudhir Kumar, Indian Institute of Technology/Mumbai, Mumbai, India	
Tuesday, 17 June 2014					
139-PANEL-4		Panel: FAA Has Selected the UAS Test Sites - What Happens Next?		Regency Ballroom VI	
1400 - 1600 hrs					
Moderator: Rich Christiansen, Vice President, Sierra Lobo, Inc. Panelists:					
Ro Bailey Director Pan-Pacific UAS Test Range Complex	Ray Young Technical Director, NUAIR	Rose Mooney Executive Director, Mid-Atlantic Aviation Partnership	Lusi Cifuentes Vice President, Division of Research Commercialization and Outreach Texas A&M University	Elizabeth Soltyz Program Manager, FAA UAS Test Sites	Al Palmer Director, Center for UAS Research, Education and Training for John D. Oregard School of Aerospace Sciences University of North Dakota
Thomas Wilczek Aerospace & Defense Industry Liaison, Governor's Office of Economic Development, Nevada UAS Test Site					
Tuesday, 17 June 2014					
140-AMT-7/PDL-10		Diagnostics II		Roswell	
Chartered by: R. MILES, Princeton University and J. POGGIOE, USAF AFRL/RBAC					
1400 hrs AIAA-2014-2535 The combined use of the Schlieren effect and the absorption spectroscopy for the velocimetry of supersonic and hypersonic flows D. Machado, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil; A. Oliveira, D. Carnhano, Institute for Advanced Studies, São José dos Campos, Brazil	1430 hrs AIAA-2014-2536 Experimental Setup for Vacuum Ultraviolet Spectroscopy for Earth Re-entry Testing T. Hermann, University of Stuttgart, Stuttgart, Germany; F. Zander, University of Queensland, Saint Lucia, Australia; H. Fulge, S. Loehle, S. Fscoulas, University of Stuttgart, Stuttgart, Germany	1500 hrs AIAA-2014-2537 Aerothermodynamic Investigation of Inductively Heated CO2 Plasma Flows for Mars Entry Testing T. Marynowski, S. Loehle, S. Fscoulas, A. Meindl, F. Zander, University of Stuttgart, Stuttgart, Germany	1530 hrs AIAA-2014-2538 Rayleigh and Thomson Scattering Diagnostics of Laser Air Sparks: A Testbed for Tailoring Laser Plasmas C. Limbach, R. Miles, Princeton University, Princeton, NJ	1600 hrs AIAA-2014-2539 Characterization of an Electron Gun Based on a Pseudospark for Application in Hypersonic Shock Tunnels A. Guimarães, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil; D. Carnhano, A. Oliveira, Institute for Advanced Studies, São José dos Campos, Brazil	
Tuesday, 17 June 2014					
141-AFM-11		Launch Vehicle, Missile, and Projectile Flight Dynamics		Spring	
Chartered by: M. XIN, University of Missouri and F. FRESCONI, US Army Research Lab					
1400 hrs No Presentations	1530 hrs AIAA-2014-2540 Advanced Optical Sensor Technology: Launch Vehicle and Spacecraft Applications J. Orr, L. Trevino, C. Dalton, Draper Laboratory, Huntsville, AL	1600 hrs AIAA-2014-2541 Nonlinear Stability Analysis Methods for Guided Artillery Projectiles M. Gross, J. Rogers, M. Costello, Georgia Institute of Technology, Atlanta, GA; F. Fresconi, Army Research Laboratory, Aberdeen Proving Ground, MD	1630 hrs AIAA-2014-2542 Pressure/Temperature Measurement of a Free-Flight Object by PSP/TSP M. Ishii, National Research Institute of Police Science, Kashiwa, Japan; Y. Yamada, T. Miyazaki, University of Electro-Communications, Chofu, Japan; H. Sakane, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan	1700 hrs AIAA-2014-2543 Solution of Lambert's Theorem with Additional Terminal Constraints K. Kalinjan, A. Joshi, Indian Institute of Technology Bombay, Mumbai, India	

Tuesday, 17 June 2014		Nonequilibrium Flows I		Techwood	
Chaired by: B. CRUDEN, NASA-Ames Research Center and P. OOSTHUIZEN, Queen's University					
1400 hrs AIAA-2014-2544 A Direct Simulation Monte Carlo Collision Limiter Scheme for Efficient Simulation of Viscous Continuum Flows J. Burt, E. Josyula, Air Force Research Laboratory, Wright-Patterson AFB, OH	1430 hrs AIAA-2014-2545 Spectroscopic Investigation on Anomalous Heating in Free Piston Shock Tunnel Hiest S. Nomura, H. Takayanagi, K. Fujita, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan; H. Tanno, T. Komuro, K. Itoh, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan	1500 hrs AIAA-2014-2546 Object-Oriented/Data-Oriented Design of a Direct Simulation Monte Carlo Algorithm D. Liechty, NASA Langley Research Center, Hampton, VA	1530 hrs AIAA-2014-2547 Non-Boltzmann Analysis of Hypersonic Air Re-Entry Flows B. Lopez, M. Lino Da Silva, Technical University of Lisbon, Lisbon, Portugal	1600 hrs AIAA-2014-2548 Experimental Study on Heat Flux Augmentation in High-enthalpy Shock Tunnels H. Tanno, T. Komuro, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan; N. Ohnishi, T. Ishihara, Y. Ogino, K. Sawada, Tohoku University, Sendai, Japan	1630 hrs AIAA-2014-2549 Numerical Rebuilding of Shock Tube Experiments in CO2 Flow under Conditions Relevant for Mars Entry Probes P. Noeding, Astrium, Bremen, Germany; J. Martinez Schramm, German Aerospace Center (DLR), Göttingen, Germany
Tuesday, 17 June 2014					
143-TP-10 Heat Transfer Enhancement and Energy Harvesting II					
Chaired by: I. OTANICAR					
1400 hrs AIAA-2014-2550 Enhanced Convective Heat Transfer in Enclosures with Internal Heat Sinks H. Wan, S. Pamaik, Air Force Research Laboratory, Wright-Patterson AFB, OH	1430 hrs AIAA-2014-2551 Effect of Heat Extraction from a Photovoltaic Module by Natural and Forced Air Circulation with and without Pre-Cooling of Air T. Hitchcock, M. Akbar, Tennessee State University, Nashville, TN	1500 hrs AIAA-2014-2552 A Validation of the Thermo-Fluid Characteristics for Laminated Screens Woven Copper Wire Mesh Enhancing the Regenerative Compact Heat Exchanger Heat Transfer Areas F. Sendu, South African Nuclear Energy Corporation, Brits District, South Africa; R. Dabson, University of Stellenbosch, Stellenbosch, South Africa	1530 hrs AIAA-2014-2553 Natural Convection in an Enclosure with Micro Encapsulated Phase Change Material: Experimental and Numerical Study Y. Khakpour, J. Seyed-Yagoobi, Worcester Polytechnic Institute, Worcester, MA	1600 hrs AIAA-2014-2129 Finite Element Method Based Model to Solve Three Dimensional Heat Conduction Equations for Photovoltaic Modules M. Akbar, T. Hitchcock, Tennessee State University, Nashville, TN	University
Tuesday, 17 June 2014					
144-AFM-12 Flight Test and System Identification					
Chaired by: J. GRAUER, NASA Langley Research Center and N. FEZANS, DLR					
1400 hrs AIAA-2014-2554 Real-Time Onboard Global Nonlinear Aerodynamic Modeling from Flight Data J. Brandon, E. Morelli, NASA Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-2555 Aspects of Autonomous Recovery System for High Altitude Payloads by Using a Parafail S. Lee, J. Commer, A. Ariena, Oklahoma State University, Stillwater, OK	1500 hrs AIAA-2014-2556 Real-Time Parameter Estimation using Output Error J. Grauer, NASA Langley Research Center, Hampton, VA	1530 hrs AIAA-2014-2557 Aerodynamic Parameter Estimation of a Missile Without Wind Angle Measurements A. Aksu, ROKETSAN Missiles Industries, Inc., Ankara, Turkey	1600 hrs AIAA-2014-2558 Aerodynamic Modeling and Parameter Estimation of a Quadrotor Helicopter D. Kaya, A. Kutay, Middle East Technical University, Ankara, Turkey	1630 hrs AIAA-2014-2559 Flight Path Reconstruction Techniques Applied to Spin Tests J. Dias, Brazilian Air Force, São José dos Campos, Brazil
Tuesday, 17 June 2014					
145-NW-5 Tuesday Afternoon Networking Coffee Break					
1530 - 1600 hrs					
Tuesday, 17 June 2014					
146-LEC-2 William Littlewood Memorial Lecture					
1730 - 1830 hrs					
Future Aviation Challenges Axel Krahn Senior Vice President, Airbus, UK France Sponsored by Airbus					
Centennial I/II					

Tuesday, 17 June 2014		Embassy A	
Special Panel Session on Future Directions in Plasma Aerodynamics			
Moderator: Jonathan Poggie, Lead, High-Speed Flow Research Group, AFRL/RQHF			
Panelists:			
Lon Enloe United States Air Force Academy	Sergey Leonov Ohio State University	Sergey Macheret Lockheed Martin Corporation	Tom McLaughlin United States Air Force Academy
Richard B. Miles Princeton University	Jonathan Poggie Air Force Research Laboratory (AFRL)	Mo Samimy Ohio State University	Julian Tishkoff Air Force Office of Scientific Research (AFOSR)
Tuesday, 17 June 2014		Exhibit Hall	
148-NW-6 1830 - 2000 hrs	Reception in the Exhibit Hall		
Wednesday			
Wednesday, 18 June 2014		Ballroom Level	
149-NW-7 0700 - 0800 hrs	Wednesday Morning Networking Breakfast		
Wednesday, 18 June 2014		Session Rooms	
150-SB-3 0730 - 0800 hrs	Wednesday Morning Speakers' Briefing		
Wednesday, 18 June 2014		Centennial I/II	
151-PLNRY-3 0800 - 0900 hrs	Wednesday Morning Plenary Panel		
Moderator: Trevor Stansbury, President, Supply Dynamics			
Panelists:			
Duane Hawkins Senior Vice President, Supply Chain Spirit AeroSystems		Fred Ross Vice President F-35 Supply Chain Management Lockheed Martin Aeronautics	
Global Supply Chain Challenges and Opportunities			
Wednesday, 18 June 2014		Exhibit Hall	
152-NW-8 0900 - 0930 hrs	Wednesday Morning Networking Coffee Break		
Wednesday, 18 June 2014		Baker	
153-APA-25	Flow Control (Active and Passive): Computational and Experimental Results IV		
Chaired by: C. BIDWELL, NASA Glenn Research Center			
0930 hrs AIAA-2014-2560	1000 hrs AIAA-2014-2561	1030 hrs AIAA-2014-2562	
Experimental Investigation of a Vortex-Generator-Controlled Intermediate Turbine Duct under the Influence of Rotating Wakes	Experimental Investigation of Active Aerodynamic Load Reduction on a Rotorcraft Fuselage with Rotor Effects	Control of Unsteady Aerodynamic Loads Using Adaptive Blowing	
M. Steiner, E. Göttsch, A. Mann, F. Helmreich, Graz University of Technology, Graz, Austria	N. Schaeffler, B. Allan, NASA Langley Research Center, Hampton, VA; O. Wong, P. Tanner, Joint Research Program Office, Hampton, VA	H. Muelle-Vahl, Technion-Israel Institute of Technology, Haifa, Israel; C. Nayeri, C. Paschereit, Technical University of Berlin, Berlin, Germany; D. Greenblatt, Technion-Israel Institute of Technology, Haifa, Israel	

Wednesday, 18 June 2014		Flight Test Operations		Embassy D
Chaired by: J. BRANDON, NASA-Langley Research Center and K. GARMAN, Federal Aviation Administration				
0930 hrs AIAA-2014-2577 Flight Test Evaluation and System Identification of the Area-I Prototype-Technology-Evaluation Research Aircraft (PTERA) D. Kuelme, N. Alley, C. Phillips, Aeca-I, Kennesaw, GA; B. Cogan, NASA Dryden Flight Research Center, Edwards, CA	1000 hrs AIAA-2014-2578 Evaluation of functional coatings for laminar flow applications on future business jets through ground and flight testing B. Bertoin, J. Courty, Dassault Group, Paris, France; M. Kok, E. Tobin, T. Young, University of Limerick, Limerick, Ireland	1030 hrs AIAA-2014-2579 Recent and Ongoing Hypersonic, Space Transit, and Space Launch Flight Tests T. Jorris, U.S. Air Force, Edwards AFB, CA	1100 hrs AIAA-2014-2580 Flight Tests of ASEI-PD-New Generation Targeting Pod B. Gokce, I. Koc, Y. Eldogan, O. Oztrak, ASELSAN, Inc., Ankara, Turkey	1130 hrs AIAA-2014-2581 Fast and light acoustic flight test measurements in aircraft E. Heffner, O. Deille, J. Briand, O. Deverrier, Airbus, Toulouse, France
Wednesday, 18 June 2014				
Chaired by: J. POST, Federal Aviation Administration				
0930 hrs AIAA-2014-2582 Cloud Computing for Air Traffic Management - Cost/Benefit Analysis L. Ren, B. Beckmann, T. Cirrini, M. Castillo-Effen, General Electric Company, Niskayuna, NY; D. Kulkarni, NASA Ames Research Center, Moffett Field, CA	1000 hrs AIAA-2014-2583 Benefits Analysis of Wind-Optimal Operations For Trans-Atlantic Flights B. Siddhar, NASA Ames Research Center, Moffett Field, CA; H. Ng, University of California, Santa Cruz, CA; F. Linke, German Aerospace Center (DLR), Hamburg, Germany; N. Chen, NASA Ames Research Center, Moffett Field, CA	1030 hrs AIAA-2014-2584 Dynamic Analysis of Multi-Center Benefits Weather Routes K. Sleigh, D. McNally, NASA Ames Research Center, Moffett Field, CA; A. Morando, A. Clymer, J. Lock, J. Petersen, University of California, Santa Cruz, Moffett Field, CA, et al.	1100 hrs AIAA-2014-2585 Computer Simulation Model to Measure Benefits of North Atlantic Data link Mandates and Reduced Separation Minima A. Gummam, GRA, Inc., Washington, DC; A. Trani, T. Li, Virginia Polytechnic Institute and State University, Blacksburg, VA; T. Graham, N. Campos, Federal Aviation Administration, Washington, DC	1200 hrs AIAA-2014-2587 Annualizing Throughput Benefits at Newark Airport using a New Approach to Converging Runway Operations P. Lee, H. Idris, San Jose State University, San Jose, CA; N. Smith, NASA Ames Research Center, Moffett Field, CA
Embassy E				
Chaired by: W. ANEMMAT, DARcorporation and N. HALL, Lockheed Martin Corporation				
0930 hrs AIAA-2014-2588 Gust rejection using force adaptive feedback for roll L. Costanzo, J. Humbert, University of Maryland, College Park, College Park, MD; T. McKeena, Aurora Flight Sciences, McLean, VA	1000 hrs AIAA-2014-2589 Handling Quality of Aircraft Equipped with Sidesticks G. V. Perebatov, TsAGI, Zhukovskiy, Russia	1030 hrs AIAA-2014-2590 An Adaptive Aeroelastic Control Approach using Non Linear Reduced Order Models N. Tantaroudas, University of Liverpool, Liverpool, United Kingdom; A. Da Ronch, University of Southampton, Southampton, United Kingdom; G. Gai, K. Badcock, University of Liverpool, Liverpool, United Kingdom	1100 hrs AIAA-2014-2591 Wake Identification Based Wake Impact Alleviation Control J. Ehlers, D. Fischenberg, D. Niedermaier, German Aerospace Center (DLR), Braunschweig, Germany	1130 hrs AIAA-2014-2592 Stability and Control Effects on the Design Optimization of a Box-Wing Aircraft S. Andrews, R. Perez, Royal Military College of Canada, Kingston, Canada
Embassy F				
Chaired by: J. HICKEN, Rensselaer Polytechnic Institute				
0930 hrs AIAA-2014-2593 Topology Optimisation: Increasing the Speed and Reliability of Design L. Kelly, A. Keane, A. Sabester, D. Toal, University of Southampton, Southampton, United Kingdom	1000 hrs AIAA-2014-2594 Strategies for Solving High-Fidelity Aerodynamic Shape Optimization Problems Z. Lyu, J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	1030 hrs AIAA-2014-2595 Robust Optimizations of Structural and Aerodynamic Designs K. Boopathy, M. Rumpfkeil, University of Dayton, Dayton, OH	Multidisciplinary Analysis and Optimization: Shape and Topology Method Development	
Embassy G				

Wednesday, 18 June 2014		Special Session: Aerodynamic-Structural Modeling, Optimization, and Test Techniques for Flexible Wing Technology II		Fairlie
Chaired by: N. NGUYEN, NASA-Ames Research Center and S. ANDERS, NASA LARC				
0930 hrs AIAA-2014-2596 Trim and Structural Optimization of Subsonic Transport Wings using Nonconventional Aeroelastic Tailoring B. Stanford, NASA Langley Research Center, Hampton, VA	1000 hrs AIAA-2014-2597 Flight Performance Analysis of the Truss-Braced Wing Aircraft K. Reynolds, E. Ting, N. Nguyen, NASA Ames Research Center, Moffett Field, CA	1030 hrs AIAA-2014-2598 Aerodynamic and Static Deflection Analysis of a Flexible Wing Aircraft With Distributed Propulsion A. Itoi, University of Colorado, Boulder, CO; K. Reynolds, N. Nguyen, NASA Ames Research Center, Moffett Field, CA	1100 hrs AIAA-2014-2599 A Model of Fluid-Structure-Interaction for Impulsively Started Spanwise-Flexible Wings M. Jain, Technical University of Darmstadt, Darmstadt, Germany; J. Wong, D. Rival, University of Calgary, Calgary, Canada	
Wednesday, 18 June 2014				
163-FD-14				
Chaired by: D. BODONY, University of Illinois at Urbana-Champaign				
0930 hrs Oral Presentation AFSR Turbulence and Transition Program Overview C. Li, Air Force Office of Scientific Research, Arlington, VA	1000 hrs Oral Presentation Numerical simulations of gas-liquid interfaces in compressible flows: shock waves, droplets and bubbles E. Johnson, M. Henry-de Frahan, S. Alahyan Beg, University of Michigan, Ann Arbor, MI	1030 hrs Oral Presentation Towards Large Eddy Simulation of Turbulent Liquid Atomization O. Desjardins, Cornell University, Ithaca, NY	1100 hrs Oral Presentation Spray Combustion and Large Eddy Simulation V. Raman, University of Texas, Austin, Austin, TX	1130 hrs Oral Presentation Nanofluid Fuels - Liquid Fuels with Stable Suspensions of Nanoparticles L. Qiao, S. Tanvir, Purdue University, West Lafayette, IN
1200 hrs Oral Presentation Recent developments in compressible multiphase flows B. Balachandrar, University of Illinois, Urbana-Champaign, Urbana, IL	New Frontiers of Fluid Dynamics: Multiphase Flows (Invited)			Greenbriar
Wednesday, 18 June 2014				
164-AA-10				
Chaired by: C. TAM, Florida State University				
0930 hrs AIAA-2014-2600 Influence of nozzle-exit boundary-layer profile on high-subsonic jets C. Bogy, O. Marsden, École Centrale de Lyon, Ecally, France	1000 hrs AIAA-2014-2601 Unstructured Large Eddy Simulations for Nozzle Interior Flow Modeling and Jet Noise Predictions G. Bies, S. Bose, F. Ham, Cascade Technologies, Inc., Palo Alto, CA; S. Lele, Stanford University, Stanford, CA	1030 hrs AIAA-2014-2602 Accurate and Efficient Jet Flow and Noise Simulations Using the CDE (Compact Disturbance Equations) Y. Du, P. Morris, Pennsylvania State University, University Park, PA	1100 hrs AIAA-2014-2603 RANS/CAA based Prediction of Jet Mixing Noise in Cruise Flight C. Appel, A. Kibbes, K. Rossignol, M. Herr, German Aerospace Center (DLR), Braunschweig, Germany	1130 hrs AIAA-2014-2604 Numerical Study of Noise Sources Characteristics in An Underexpanded Jet Flow J. Liu, A. Corrigan, K. Kailasath, Naval Research Laboratory, Washington, DC; N. Heeb, E. Gutmark, University of Cincinnati, Cincinnati, OH
1200 hrs AIAA-2014-2605 The Effect of Base-Flow Changes on Kelvin-Helmholtz Instability and Noise Radiation in Jets E. Kay, A. Agarwal, University of Cambridge, Cambridge, United Kingdom; A. Cavalieri, Technological Institute of Aeronautics (ITA), Sao José dos Campos, Brazil	Jet Noise Prediction I			Hanover A
Wednesday, 18 June 2014				
165-AA-11				
Chaired by: M. KINGAN, ISVR				
0930 hrs AIAA-2014-2606 Contra-Rotating Open Rotor Tone Noise Prediction E. Envia, NASA Glenn Research Center, Cleveland, OH	1000 hrs AIAA-2014-2607 Modeling Rotor Unsteady Forces and Sound due to Ingestion of Spatially Inhomogeneous turbulence J. Anderson, M. Gallett, D. Stewart, Naval Surface Warfare Center, West Bethesda, MD	1030 hrs AIAA-2014-2608 Boundary Layer Ingestion Noise and Turbulence Scale Analysis at High and Low Advance Ratios D. Wisda, W. Alexander, W. Deventport, Virginia Polytechnic Institute and State University, Blacksburg, VA; S. Glegg, Florida Atlantic University, Boca Raton, FL	1100 hrs AIAA-2014-2609 Predicting the Tonal Noise of an Open Rotor in a Wind Tunnel with Acoustically Lined Walls P. Sureshkumar, M. Kingan, University of Southampton, Southampton, United Kingdom; A. Parry, Rolls-Royce Group plc, Derby, United Kingdom	1130 hrs AIAA-2014-2610 Prediction of Contra-Rotating Open Rotor broadband noise in isolated and installed configurations T. Nade-Langlois, F. Wlassow, V. Languille, Y. Colin, B. Caruelle, Airbus, Toulouse, France; J. Gill, University of Southampton, Southampton, United Kingdom; et al.
1200 hrs AIAA-2014-2611 Influence of the noise prediction model on the aeroacoustic optimization of a contra-rotating fan G. Grasso, J. Christophe, C. Schram, T. Vestmeire, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium	Propeller Noise I			Hanover B

Wednesday, 18 June 2014		3-D Model Design and Ice Measurement Methods for Experimental Icing Simulation		Hanover C	
Chaired by: J. TSAO, Ohio Aerospace Institute and B. WOODARD, University of Illinois					
0930 hrs AIAA-2014-2612 Ice Shapes on a Tail Rotor R. Kreeger, NASA Glenn Research Center, Cleveland, OH; J. Iseo, Ohio Aerospace Institute, Cleveland, OH	1000 hrs AIAA-2014-2613 Implementation and Validation of 3-D Ice Accretion Measurement Methodology S. Lee, Vantage Partners, LLC, Cleveland, OH; A. Broeen, R. Kreeger, M. Potopczuk, NASA Glenn Research Center, Cleveland, OH; L. Utt, University of Akron, Akron, OH	1030 hrs AIAA-2014-2614 Validation of 3-D Ice Accretion Measurement Methodology for Experimental Aerodynamic Simulation A. Broeen, G. Addy, NASA Glenn Research Center, Cleveland, OH; S. Lee, Vantage Partners, LLC, Cleveland, OH; M. Monastero, University of Illinois, Urbana-Champaign, Urbana, IL	1100 hrs AIAA-2014-2615 Validation of 3-D Ice Accretion Measurement Methodology Using Pressure-Sensitive Paint M. Monastero, M. Bragg, University of Illinois, Urbana-Champaign, Urbana, IL	1130 hrs AIAA-2014-2616 3D Sweep Hybrid Wing Design Method for Icing Wind Tunnel Tests G. Fujiwara, B. Wiberg, B. Woodard, M. Bragg, University of Illinois, Urbana-Champaign, Urbana, IL	1200 hrs AIAA-2014-2617 Large-Scale Sweep-Wing Icing Simulations in the NASA Glenn Icing Research Tunnel Using LEWICE3D B. Wiberg, G. Fujiwara, B. Woodard, M. Bragg, University of Illinois, Urbana-Champaign, Urbana, IL
Wednesday, 18 June 2014					
Chaired by: J. MURRAY, NASA-Langley Research Center and N. KROTKOV, NASA, Goddard Space Flight Center					
0930 hrs Oral Presentation The Airborne Volcanic Object Imaging Detector (AVOID): System description and flight-test results (Invited) F. Prato, Nicarica Aviation, Lillestrom, Norway; F. Deszter, Airbus, Toulouse, France	1000 hrs Oral Presentation In Situ Observations and Sampling of Volcanic Emissions with Unmanned Aircraft (Invited) D. Pexi, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA	1030 hrs Oral Presentation NASA Vehicle Integrated Propulsion Research (VIPR) Project - Low Concentration Volcanic Ash Ingestion Testing (Invited) J. Lekki, NASA Glenn Research Center, Cleveland, OH	1100 hrs Oral Presentation Development of multi-satellite algorithms for global detection and characterization of volcanic clouds (Invited) J. Sieglaff, University of Wisconsin, Madison, WI; M. Pavolonis, National Oceanic and Atmospheric Administration, Madison, WI	1130 hrs AIAA-2014-2618 Real Time Volcanic Cloud Products and Predictions for Aviation Alerts N. Krotkov, S. Hubig, A. da Silva, NASA Goddard Space Flight Center, Greenbelt, MD; E. Hughes, K. Yang, University of Maryland, College Park, College Park, MD; K. Brentzel, NASA Goddard Space Flight Center, Greenbelt, MD; et al.	1200 hrs Oral Presentation Dispersion and microphysical properties of the Kasatochi volcanic plume : a new perspective for aviation safety (Invited) J. Murray, J. Vermer, NASA Langley Research Center, Hampton, VA
Wednesday, 18 June 2014					
Chaired by: K. AHUJA, Georgia Institute of Technology					
0930 hrs AIAA-2014-2619 Reduction of Radiation Efficiency in High-Speed Jets D. Papamoschou, J. Xiong, F. Liu, University of California, Irvine, Irvine, CA	1000 hrs AIAA-2014-2620 On the use of Plasma Synthetic Jets for the control of jet flow and noise M. Huei, ONERA, Châtillon, France	1030 hrs AIAA-2014-2621 Experimental and Numerical Study of Jet Noise Reduction of HBPR Engine by Microjet Injection S. Enomoto, K. Yamamoto, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan; M. Koenig, D. Collin, Snesma, Moissy-Cramayel, France	1100 hrs AIAA-2014-2622 Computational Study of the Effect of Slotted Air Injection on Jet Noise R. Ramamurti, A. Corrigan, J. Liu, K. Kailasanath, Naval Research Laboratory, Washington, DC; B. Henderson, NASA Glenn Research Center, Cleveland, OH	1130 hrs AIAA-2014-2623 Aero-acoustic Characteristics of Compressible Jets from Chevron Nozzle S. Nikam, S. Sharma, Indian Institute of Technology Bombay, Mumbai, India	Hanover E
Wednesday, 18 June 2014					
Chaired by: M. DOTY, NASA - LARC, Aeroacoustics Branch					
0930 hrs AIAA-2014-2624 Shielding of Turbomachinery Broadband Noise from a Hybrid wing Body Aircraft Configuration F. Hurdheson, T. Brooks, C. Burley, C. Bahr, NASA Langley Research Center, Hampton, VA; D. Stead, Northrop Grumman Corporation, Hampton, VA; D. Pope, Analytical Services and Materials, Inc., Hampton, VA	1000 hrs AIAA-2014-2625 Jet Noise Shielding Provided by a Hybrid Wing Body Aircraft M. Doty, T. Brooks, C. Burley, C. Bahr, NASA Langley Research Center, Hampton, VA; D. Pope, Analytical Services and Materials, Inc., Hampton, VA	1030 hrs AIAA-2014-2626 Noise Scaling and Community Noise Metrics for the Hybrid Wing Body Aircraft C. Burley, T. Brooks, F. Hurdheson, M. Doty, L. Lopes, NASA Langley Research Center, Hampton, VA; D. Pope, Analytical Services and Materials, Inc., Hampton, VA	1100 hrs AIAA-2014-2627 Grid Sensitivity Study for Slat Noise Simulations D. Lockard, M. Croudiani, P. Boring, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-2628 Numerical Assessment of Acoustic Installation Effects Characterizing NASA/LaRC Quiet Flow Facility using Computational AeroAcoustics S. Redonnet, ONERA, Châtillon, France	Hanover F

Wednesday, 18 June 2014		ITAR-Experimental Aero, Fluid and Thermal Sciences ITAR		Hanover G	
170-ITAR-3		ITAR-Experimental Aero, Fluid and Thermal Sciences ITAR		Hanover G	
Chartered by: E. GARCIA, Georgia Institute of Technology					
0930 hrs AIAA-2014-2629 The Effect of Surface Roughness on CFD Predictions of HIFRE Flight 2 Experiment J. Liu, C. Tam, K. Lin, Tatech, Inc., Wright-Patterson AFB, OH; M. Gruber, Air Force Research Laboratory, Wright-Patterson AFB, OH	1000 hrs AIAA-2014-2630 Lean Blowout Study on the HIFRE Flight 2 Combustor J. Liu, Tatech, Inc., Wright-Patterson AFB, OH; M. Gruber, Air Force Research Laboratory, Wright-Patterson AFB, OH	1030 hrs AIAA-2014-2631 Investigations of a Backward-Facing Step Flameholder For Scramjet Combustor Applications C. Tam, K. Hsu, M. Gruber, Air Force Research Laboratory, Wright-Patterson AFB, OH	1100 hrs AIAA-2014-2632 The Thermal Environment from Large-scale Composite Avionics Fires A. Brown, Sandia National Laboratories, Albuquerque, NM	1130 hrs AIAA-2014-2633 Calibration, Validation, and Uncertainty Analysis of a Laser-Based Humidity Sensor D. Plemmons, N. Galyen, A. Jackson, Aerospace Testing Alliance, Arnold AFB, TX; R. Hutchings, MIRATEK Corporation, Arnold AFB, TN	
Wednesday, 18 June 2014					
171-FD-15					
Chartered by: N. GATSONIS, Worcester Polytechnic Institute and S. AVERKIN					
0930 hrs AIAA-2014-2634 Automatic derivation of stability equations in arbitrary coordinates and for different flow regimes F. Pinna, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium; K. Groot, Delft University of Technology, Delft, The Netherlands	1000 hrs AIAA-2014-2635 Simulation of Cold Nitrogen Flows in Nano-nozzles with Atmospheric Inlet Pressures N. Gatsonis, S. Averkina, Worcester Polytechnic Institute, Worcester, MA	1030 hrs AIAA-2014-2636 Non-Equilibrium Radiative Gas Dynamics of Small Meteor S. Surzhikov, Russian Academy of Sciences, Moscow, Russia			Harris
Other Topics in Fluid Dynamics					
Wednesday, 18 June 2014					
172-FD-16					
Chartered by: L. DUAN, Missouri University of Science and Technology					
0930 hrs AIAA-2014-2637 The nonlinear instability of the supersonic crossflow vortex G. Xu, G. Liu, X. Jiang, China Aerodynamics Research and Development Center, Miayang, China	1000 hrs AIAA-2014-2638 Flow Disturbance and Surface Roughness Effects on Cross-Flow Boundary-Layer Transition in Supersonic Flows L. Owens, G. Beeler, P. Balakumar, NASA Langley Research Center, Hampton, VA; P. McGuire, University of California, San Diego, San Diego, CA	1030 hrs AIAA-2014-2639 Effects of Forward and Backward Facing Steps on the Crossflow Receptivity and Stability in Supersonic Boundary Layers P. Balakumar, R. King, J. Eppink, NASA Langley Research Center, Hampton, VA	1100 hrs AIAA-2014-2640 DNS of Wave Packets in a Supersonic Boundary Layer: A Validation for a Popular Transition Prediction Method Based on Linear Stability Theory C. Su, Tianjin University, Tianjin, China		Inman
Supersonic Boundary Layers: Transition					
Wednesday, 18 June 2014					
173-FD-17					
Chartered by: K. CASPER, Sandia National Laboratories					
0930 hrs AIAA-2014-2641 Effect of a Normal Shock Wave on Free-stream Total Pressure Fluctuations in a Low-Density Mach 6 Flow C. Mai, R. Bowersox, Texas A&M University, College Station, TX	1000 hrs AIAA-2014-2642 The role of Görtler vortices in the hypersonic boundary layer transition J. Ren, Tsinghua University, Beijing, China; J. Liu, Tianjin University, Tianjin, China; S. Fu, Tsinghua University, Beijing, China	1030 hrs AIAA-2014-2643 Measuring Transition and Instabilities in a Mach 6 Hypersonic Quiet Wind Tunnel B. Chynoweth, C. Ward, S. Schneider, Purdue University, West Lafayette, IN	1100 hrs AIAA-2014-2644 High-Frequency Measurements of Acoustic and Entropy Disturbances in a Hypersonic Wind Tunnel S. Ali, J. Wu, R. Radespiel, Technical University of Braunschweig, Braunschweig, Germany; T. Schilden, W. Schroeder, RWTH Aachen University, Aachen, Germany	1130 hrs AIAA-2014-2645 High-temperature gas effects at a capsule under re-entry and wind-tunnel conditions C. Stemmer, J. Fehn, Technical University of Munich, Munich, Germany	Kenneshaw
Hypersonic Boundary Layer Transition II					

Wednesday, 18 June 2014		M&S: Vehicle Dynamics, Systems, and Environments AND Uninhabited Aircraft Systems		Learning Center
174-MST-4 Chaired by: E. BURNETT, Lockheed Martin Aeronautics				
0930 hrs AIAA-2014-2646 Multi-Body Large Displacement Equations of Motion for Flexible Bodies Represented as Finite Element Models R. McManis, Northrop Grumman Corporation, Orlando Beach, CA	1000 hrs AIAA-2014-2647 Wind Field Velocity and Acceleration Estimation Using a Small UAV M. Rudy, Lafayette College, Easton, PA; Y. Gu, West Virginia University, Morgantown, WV; H. Chao, University of Kansas, Lawrence, Lawrence, KS	1030 hrs AIAA-2014-2648 Computational Improvements to Multibody Projectile Dynamics Simulation M. Gross, J. Rogers, M. Costello, Georgia Institute of Technology, Atlanta, GA		
Wednesday, 18 June 2014				
175-FC-9 Chaired by: W. HUEBSCH, West Virginia University and J. SAHU, US Army Research Laboratory				
0930 hrs AIAA-2014-2649 Direct Numerical Simulation of Geometric Effects on Turbulent Flows over Riblets J. Ng, R. Jaiman, T. Lim, National University of Singapore, Singapore, Singapore	1000 hrs AIAA-2014-2650 Energy and fluid transportation in turbulent boundary-layer under the micro-ramp control B. Wang, L. Weidong, S. Mingbo, Y. Zhao, National University of Defense Technology, Changsha, China	1030 hrs AIAA-2014-2651 Effects of Moving Surface Riblets on a Transitional Flow affected by Adverse Pressure Gradient G. Compitelli, West Virginia University, Morgantown, WV; Y. Krastev, University of Naples "Parthenope", Naples, Italy; W. Hubsch, West Virginia University, Morgantown, WV		Lenox
Flow Control: Boundary Layers				
Wednesday, 18 June 2014				
176-AMT-8/GT-6 Chaired by: J. KEGLMAN, NASA and B. MILLS				
0930 hrs AIAA-2014-2652 Characterization of the NASA Langley Arc Heated Scramjet Test Facility using NO PLIF F. Kidd, V. Narayanaswamy, North Carolina State University, Raleigh, NC; P. Danehy, J. Inman, B. Bathel, K. Cabell, NASA Langley Research Center, Hampton, VA; et al.	1000 hrs AIAA-2014-2653 Design and Calibration of the AEDC H3 Mach 3.0 High Heat Flux Nozzle G. Hammock, Aerospace Testing Alliance, Arnold AFB, TN	1030 hrs AIAA-2014-2654 A Study of Potential Test Capabilities of the NASA Langley 0.3-Meter Transonic Cryogenic Wind Tunnel B. Phillips, C. Bratcher, Old Dominion University, Norfolk, VA	1100 hrs AIAA-2014-2655 Status of the Holloman High Speed Maglev Test Track (HHSMTT) H. Guroi, D. Ketchen, L. Holland, General Atomics, San Diego, CA; M. Hooser, D. Minto, 46th Test Group, Holloman AFB, NM; N. Bosmanjan, The Boeing Company, Seal Beach, CA; et al.	1130 hrs AIAA-2014-2656 Numerical Studies of Acoustic and Thermal Coupling in Sonic Fatigue Tests for Hypersonic Vehicle W. Yu, S. Zhong, X. Huang, Peking University, Beijing, China
1200 hrs AIAA-2014-2657 Multiple Flow Regimes in a Single Hypersonic Shock Tube Experiment M. Kolov, L. Ruleva, S. Soldanovskov, I. Kryukov, S. Surzhikov, Russian Academy of Sciences, Moscow, Russia				Marietta
Ground Test Facility Characterization				
Wednesday, 18 June 2014				
177-AMT-9/GT-7 Chaired by: V. NARAYANASWAMY, North Carolina State Univ and J. WAGNER, Sandia National Laboratories				
0930 hrs AIAA-2014-2658 Hierarchy of Hybrid Unsteady-Flow Simulations Integrating Time-Resolved PIV/PTV with Unsteady CFD F. Yamamoto, T. Suzuki, University of Fukui, Fukui, Japan	1000 hrs AIAA-2014-2659 Time Resolved High Dynamic Range PIV using Local Uncertainty Estimation Methods T. Persoons, Trinity College Dublin, Dublin, Ireland	1030 hrs AIAA-2014-2660 Self-Calibration Performance in a Stereoscopic PIV Acquired in a Transonic Wind Tunnel S. Beresh, J. Wagner, B. Pruett, J. Herfing, R. Spillers, Sandia National Laboratories, Albuquerque, NM; B. Smith, Utah State University, Logan, UT	1100 hrs AIAA-2014-2661 PIV in the Trisonic GasDynamics Facility M. Liber, M. Reeder, D. Wolfe, Air Force Institute of Technology, Wright-Patterson AFB, OH; R. Schmitt, B. Hagen, Air Force Research Laboratory, Wright-Patterson AFB, OH	1130 hrs AIAA-2014-2662 Modeling the Effect of Refraction at a Flat Interface on Plenoptic Particle Reconstruction C. Thomason, T. Frainger, K. Johnson, B. Thuro, Auburn University, Auburn, AL
Developments in Particle Image Velocimetry				
Wednesday, 18 June 2014				
177-AMT-9/GT-7 Chaired by: V. NARAYANASWAMY, North Carolina State Univ and J. WAGNER, Sandia National Laboratories				
0930 hrs AIAA-2014-2659 Time Resolved High Dynamic Range PIV using Local Uncertainty Estimation Methods T. Persoons, Trinity College Dublin, Dublin, Ireland	1000 hrs AIAA-2014-2659 Time Resolved High Dynamic Range PIV using Local Uncertainty Estimation Methods T. Persoons, Trinity College Dublin, Dublin, Ireland	1030 hrs AIAA-2014-2660 Self-Calibration Performance in a Stereoscopic PIV Acquired in a Transonic Wind Tunnel S. Beresh, J. Wagner, B. Pruett, J. Herfing, R. Spillers, Sandia National Laboratories, Albuquerque, NM; B. Smith, Utah State University, Logan, UT	1100 hrs AIAA-2014-2661 PIV in the Trisonic GasDynamics Facility M. Liber, M. Reeder, D. Wolfe, Air Force Institute of Technology, Wright-Patterson AFB, OH; R. Schmitt, B. Hagen, Air Force Research Laboratory, Wright-Patterson AFB, OH	1130 hrs AIAA-2014-2662 Modeling the Effect of Refraction at a Flat Interface on Plenoptic Particle Reconstruction C. Thomason, T. Frainger, K. Johnson, B. Thuro, Auburn University, Auburn, AL

Wednesday, 18 June 2014		Small/Mini/Micro Aerial Vehicles I		Spring
Chaired by: R. LIND, University of Florida and A. DA RONCH, University of Southampton				
0930 hrs AIAA-2014-2669 Implementation and Validation of an Actuator Disk Model for Aerodynamic Analysis of Propelled UAVs G. Guzel, O. Atesoglu, ASELSAN, Inc., Ankara, Turkey	1000 hrs AIAA-2014-2670 Simultaneous Tracking of Multiple Ground Targets from a Single Multicopter UAV N. Miller, Texas A&M University, College Station, TX; J. Rogers, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-2671 Adaptive Robust Attitude Controller Design for a Quadrotor Platform E. Yilmaz, A. Kutay, Middle East Technical University, Ankara, Turkey		
Wednesday, 18 June 2014				
183-TP-11 Chaired by: A. HYATT, European Research Council (ERC) and C. KOBUS, Oakland University				
0930 hrs AIAA-2014-2672 Comprehensive Uncertainty Analysis of Mars Entry Flows over Hypersonic Inflation Atmospheric Decelerators A. Brune, T. West, S. Hoesler, Missouri University of Science and Technology, Rolla, MO; K. Edquist, NASA Langley Research Center, Hampton, VA	1000 hrs AIAA-2014-2673 Assessment of Convective and Radiative Heating for Jupiter Trojan Sample Return Capsule K. Fujita, H. Tokuyama, S. Matsuyama, K. Yamada, T. Abe, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	1030 hrs AIAA-2014-2674 Conceptual Analysis of Electron Transpiration Cooling for the Leading Edges of Hypersonic Vehicles H. Alkanndry, K. Hanquist, I. Boyd, University of Michigan, Ann Arbor, Ann Arbor, MI	1100 hrs AIAA-2014-2675 Features of Afterbody Radiative Heating for Earth Entry C. Johnston, NASA Langley Research Center, Hampton, VA; A. Brandis, ERC, Inc., Mountain View, CA	1130 hrs AIAA-2014-2676 Transpiration Cooling at Hypersonic Flight - AKTIV on SHEFEX II H. Boehlk, German Aerospace Center (DLR), Stuttgart, Germany
Wednesday, 18 June 2014				
184-TP-12 Chaired by: E. KINZEL, Missouri University of Science & Technology				
0930 hrs AIAA-2014-2677 A Finite Volume Based Method for Narrow-Band Simulations of Thermal Radiation from Participating Media A. Sveritskiy, C. Mundi, University of the German Federal Armed Forces, Neubiberg, Germany	1000 hrs Oral Presentation Photogallery: Heat and Mass Transfer Visualization (Invited) C. Chai, Hichang Technological University, Houghton, MI; K. Kihm, University of Tennessee, Knoxville, Knoxville, TN	1130 hrs AIAA-2014-2678 Heat and mass transfers within decomposing carbon fibers/epoxy resin composite materials V. Biasi, G. Lepout, ONERA, Toulouse, France; F. Feyel, P. Beauchet, ONERA, Châtillon, France	1200 hrs AIAA-2014-2679 Uncertainty Quantification for Multiscale Thermal Transport Simulations L. Phinney, J. Lechman, W. Erikson, Sandia National Laboratories, Albuquerque, NM	
Wednesday, 18 June 2014				
185-TP-13 Chaired by: J. MALEN, Carnegie Mellon University and M. MARTIN, Louisiana State University				
0930 hrs Oral Presentation Spectral Phonon Transport Properties from Direct Green-Kubo Thermal Conductivity Decomposition A. Henry, W. Lv, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2680 Measurements of Thermal Conductance of Suspended Polymeric Nanowires Using Novel Bi-Material Cantilever Sensing Technique C. Canetta, A. Narayanaswamy, Columbia University, New York, NY	1030 hrs AIAA-2014-2681 Molecular Dynamics Studies of Thermal Accommodation on Carbon Surfaces N. Mehta, D. Levin, A. van Duin, Pennsylvania State University, University Park, PA	1100 hrs Oral Presentation Tunable Thermal Conductivity of Nanoparticle Beads via Surface Phonon Polaritons B. Cole, Georgia Institute of Technology, Atlanta, GA	1130 hrs Oral Presentation Modal Decomposition of Thermal Transport Across Interfaces K. Gordz, A. Henry, Georgia Institute of Technology, Atlanta, GA
Wednesday, 18 June 2014				
185-TP-13 Chaired by: J. MALEN, Carnegie Mellon University and M. MARTIN, Louisiana State University				
0930 hrs Oral Presentation Spectral Phonon Transport Properties from Direct Green-Kubo Thermal Conductivity Decomposition A. Henry, W. Lv, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2680 Measurements of Thermal Conductance of Suspended Polymeric Nanowires Using Novel Bi-Material Cantilever Sensing Technique C. Canetta, A. Narayanaswamy, Columbia University, New York, NY	1030 hrs AIAA-2014-2681 Molecular Dynamics Studies of Thermal Accommodation on Carbon Surfaces N. Mehta, D. Levin, A. van Duin, Pennsylvania State University, University Park, PA	1100 hrs Oral Presentation Tunable Thermal Conductivity of Nanoparticle Beads via Surface Phonon Polaritons B. Cole, Georgia Institute of Technology, Atlanta, GA	1130 hrs Oral Presentation Modal Decomposition of Thermal Transport Across Interfaces K. Gordz, A. Henry, Georgia Institute of Technology, Atlanta, GA

Wednesday, 18 June 2014		HYTASP Programs		Regency Ballroom V	
186-HYTASP-20 1030 - 1230 hrs					
Chaired by: A. SIEBENTHAAR, Aerojet Rocketdyne					
Participants:					
Roger Longstaff Skylon		Tom Jackson HiFire		Gennaro Russo HYPLANE	
Charles Brink X-51		Francois Falempin MBDA			
Wednesday, 18 June 2014					
187-PANEL-5 1130 - 1230 hrs		Research Networks - Progress and Future Plans		Regency Ballroom VI	
Moderator: Dominique Collin, Head of Acoustics, Safran Group, X-Noise Network Coordinator					
Panelists:					
Janina Scheelhaese ECATS Representative DLR German Aerospace Center		Sylvain Coşky Executive Director GARDN		Ralph Cavalieri Director, FAA Center of Excellence - Alternative Jet Fuels & Environment Washington State University	
Wednesday, 18 June 2014					
188-INCH-3 1230 - 1400 hrs		Luncheon in the Exhibit Hall		Exhibit Hall	
Wednesday, 18 June 2014					
189-APA-30		Flow Control (Active and Passive): Computational and Experimental Results V		Baker	
Chaired by: K. KARA, Khalifa University of Science, Technology & Research and G. ZHA					
1400 hrs AIAA-2014-2682 Co-Flow Jet Airfoil Trade Study Part I: Energy Consumption and Aerodynamic Efficiency A. Lefebvre, G. Zhu, University of Miami, Miami, FL		1430 hrs AIAA-2014-2683 Co-Flow Jet Airfoil Trade Study Part II: Moment and Drag A. Lefebvre, G. Zhu, University of Miami, Miami, FL		1500 hrs AIAA-2014-2684 Wind Tunnel Experiments on a NACA0015 Airfoil Equipped with Vectorizable Dielectric Barrier Discharge Plasma Actuators C. Borghi, A. Cristofolini, A. Rossetti, G. Neretti, S. Paolo, A. Talamelli, University of Bologna, Bologna, Italy	
1530 hrs AIAA-2014-2685 Wall-normal vorticity injection in separation control of NACA 0012 airfoil P. Munday, K. Taira, Florida State University, Tallahassee, FL		1600 hrs AIAA-2014-2686 Hybrid RANS-LES Computation of Flow over NACA0015 Airfoil Manipulated with Jet Actuators S. Peng, A. Jirasek, Swedish Defense Research Agency (FOI), Stockholm, Sweden		1630 hrs AIAA-2014-2687 LES on Turbulent Separated Flow around NACA0015 at Reynolds Number 1,600,000 toward Active Flow Control K. Asada, University of Tokyo, Sagamihara, Japan; M. Sato, T. Nonomura, S. Kawai, H. Aono, A. Yokeno, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan; et al.	
Wednesday, 18 June 2014					
190-APA-31		Aerodynamic Analysis and Design: CFD Methods II		Courtland	
Chaired by: L. WANG, University of Tennessee at Chattanooga and R. VERMEILAND, Lockheed Martin Aeronautics					
1400 hrs AIAA-2014-2688 Shock detection and capturing methods for high order Discontinuous-Galerkin Finite Element Methods A. Shestadr, A. Jameson, Stanford University, Stanford, CA		1430 hrs AIAA-2014-2689 Arbitrary Lagrangian-Eulerian Form of Flowfield Dependent Variation Method for Moving Boundary Problems M. Fadhil, A. Omar, W. Astrar, International Islamic University Malaysia, Kuala Lumpur, Malaysia		1500 hrs AIAA-2014-2690 Comparative study of linear and non-linear RANS models for corner flows M. Bondi, F. Gand, V. Brunet, S. Deck, ONERA, Meudon, France	
1530 hrs AIAA-2014-2691 Assessment of automatic Hybrid RANS/LES Models for industrial CFD G. Pont, P. Cinnella, J. Robinet, P. Benmer, Astrium, Paris, France		1600 hrs AIAA-2014-2692 Prediction of Supersonic Aerodynamics for a Mars Entry Capsule Using Large Eddy Simulation S. Matsuyama, H. Takayanagi, K. Fujita, K. Mitsuo, M. Watanabe, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan; H. Nishijima, IHI Aerospace Engineering Co., LTD., Tokyo, Japan		1630 hrs AIAA-2014-2694 An Improved Object-Oriented Cartesian Grid Framework Implementing Three Dimensional Linebreak Normal Ray Refinement M. Bopp, D. Dement, S. Ruffin, W. Lee, Georgia Institute of Technology, Atlanta, GA	

Wednesday, 18 June 2014		Special Session: 2nd High-Lift Prediction Workshop III		Dunwoody
Chaired by: J. SLOTNICK, Boeing Engineering Operations & Technology				
1400 hrs AIAA-2014-2695 Using XDB Workflows to Analyze the 2nd AIAA CFD High Lift Prediction Workshop Simulations E. Duque, Intelligent Light, Rutherford, NJ	1430 hrs AIAA-2014-2696 OVERFLOW Analysis of the DLR-F11 Configuration from HILIFFPW-2 Including Transition Modeling J. Coder, Pennsylvania State University, University Park, PA	1500 hrs AIAA-2014-2697 High Lift OVERFLOW Analysis of the DLR F11 Wind Tunnel Model T. Pulliam, NASA Ames Research Center, Moffett Field, CA; A. Sclatani, The Boeing Company, Huntington Beach, CA	1530 hrs Open Discussion 30 Minute group discussion to wrap the High-Lift Prediction Workshop	
Wednesday, 18 June 2014				
192-APA-33				
Chaired by: K. DENNISSEN, Sandia National Labs and V. BHAGWANDIN, US Army Research Laboratory				
1400 hrs AIAA-2014-2698 Exploring Vortex Stability on Two-Dimensional Rotating Plates with Varying Sweepback J. Wong, D. Rival, University of Calgary, Calgary, Canada	1430 hrs AIAA-2014-2699 The Effect of Edge Discontinuities and Curvature on Vortex Growth and Stabilization for Low Aspect Ratio Accelerating Plates J. Fernando, D. Rival, University of Calgary, Calgary, Canada	1500 hrs AIAA-2014-2700 On the Stable Leading Edge Vortex in Rotating Systems E. Limacher, D. Rival, University of Calgary, Calgary, Canada	1530 hrs AIAA-2014-2701 A Time-Lag Approach for Prediction of Trailing Edge Separation in Unsteady Flow S. Narasipar, A. Gopalathirnam, J. Edwards, North Carolina State University, Raleigh, NC	1600 hrs AIAA-2014-2702 Numerical Investigation of the Aerodynamics of a Delta Wing in Ground Effect Q. Qu, Z. Lu, P. Liu, Beihang University, Beijing, China; R. Agrawal, Washington University in St. Louis, St. Louis, MO
1630 hrs AIAA-2014-2703 Numerical Investigation of Three-Dimensional Vortical Flow for an Ellipsoid Model A. Haas, University of Arizona, Tucson, AZ; A. Gross, New Mexico State University, Las Cruces, NM; H. Fasel, University of Arizona, Tucson, AZ	Vortical/Vortex Flow I			
Wednesday, 18 June 2014				
193-ATIO-15				
Chaired by: B. ALLEN, NASA Langley Research Center				
1400 hrs Oral Presentation Applied Autonomy for Safety, Efficiency and Mobility in Civil Aviation B. Allen, NASA Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-2704 Software, Hardware, or Software Incapacitation: Observational Methods to Determine When Autonomy Should Assume Control A. Tujillo, J. Gregory, NASA Langley Research Center, Hampton, VA	1500 hrs Oral Presentation Control Automation for Advanced Single Pilot Operations K. Goodrich, P. Schulte, NASA Langley Research Center, Hampton, VA; R. Williams, Analytical Mechanics Associates, Inc., Hampton, VA	1530 hrs Oral Presentation Machine Intelligence for Deciding to Go Around M. Moller, NASA Langley Research Center, Hampton, VA	1600 hrs AIAA-2014-2705 Reducing Size, Weight, and Power (SWaP) of Perception Systems in Small Autonomous Aerial Systems K. Jones, NASA Langley Research Center, Hampton, VA; J. Gross, West Virginia University, Morgantown, WV
1630 hrs Oral Presentation Adaptive Mission Management for Safe, Efficient, Mobility I. Gregory, NASA Langley Research Center, Hampton, VA	1700 hrs Oral Presentation Development and Flight Demonstration of a Variable Autonomy Ground Collision Avoidance System M. Skoog, NASA Dryden Flight Research Center, Edwards, CA	Transformational Flight - Autonomy		
Embassy C				

Wednesday, 18 June 2014		Balloon Systems		Embassy D
Chaired by: Z. MIAN				
1400 hrs AIAA-2014-2706 The French balloon program 2012 - 2015 V. Dubourg, A. Vargas, P. Coquernez, French Space Agency (CNES), Toulouse, France	1430 hrs AIAA-2014-2707 Qualification of the new French balloon system and the new Canadian launch site A. Vargas, French Space Agency (CNES), Toulouse, France; D. Levesque, Canadian Space Agency, Montréal, Canada; V. Dubouge, French Space Agency (CNES), Toulouse, France; S. Laffrance, R. Grenier, Canadian Space Agency, Montréal, Canada	1500 hrs AIAA-2014-2708 Structural feasibility analysis of a large non-conventional stratospheric non-rigid airship A. Sireal, D. Vucinic, Vrije Universiteit Brussel, Brussels, Belgium		
Wednesday, 18 June 2014				
195-LTA-1				
Chaired by: Z. MIAN, Georgia Institute of Technology				
1400 hrs No Presentations		1600 hrs AIAA-2014-2709 An Airship Platform for the Airborne Laser (ABL) R. Savage, Self, Victorville, CA	1630 hrs AIAA-2014-2710 Conceptual Design of a Winged Hybrid Airship A. Haque, W. Asrar, A. Omar, E. Suleiman, J. Ali, International Islamic University Malaysia, Kuala Lumpur, Malaysia	1700 hrs AIAA-2014-2711 Evaluation of a Water Channel-Based Platform for Characterizing Aerostat Flight Dynamics: A Case Study on a Lighter-than-Air Wind Energy System C. Vermillion, B. Glass, Altheos Energies, Boston, MA; S. Greenwood, University of Michigan, Ann Arbor, Ann Arbor, MI
Embassy D				
Lighter-than-Air Systems				
Wednesday, 18 June 2014				
196-ATTO-16				
Chaired by: A. DESHMUKH, Gulfstream Aerospace Corp.				
1400 hrs AIAA-2014-2712 Clustering Days with Similar Airport Weather Conditions S. Grabbe, B. Sridhar, NASA Ames Research Center, Moffett Field, CA; A. Mukherjee, University of California, Santa Cruz, University of California, Santa Cruz, Moffett Field, CA	1430 hrs AIAA-2014-2713 Predicting Ground Delay Program At An Airport Based On Meteorological Conditions A. Mukherjee, University of California, Santa Cruz, Santa Cruz, CA; S. Grabbe, B. Sridhar, NASA Ames Research Center, Moffett Field, CA	1500 hrs AIAA-2014-2714 Representative Weather-Impact Scenarios for Strategic Traffic Flow Planning S. Tien, C. Taylor, C. Wanke, MITRE Corporation, McLean, VA	1530 hrs AIAA-2014-2715 Convective Weather Impact Forecasting in the Terminal Area S. Campbell, R. DeLaura, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA	1600 hrs AIAA-2014-2716 Operational Evaluation of a Weather-Avoidance Rerouting System P. Borchers, NASA Ames Research Center, Moffett Field, CA; K. Roach, University Affiliated Research Center (UARC), Fort Worth, TX; L. Morgan-Ruszkowski, Flatiron Solutions, Inc., Fort Worth, TX
ATM-VI Weather's Role in ATM				
1600 hrs AIAA-2014-2717 Decision Risk in the Use of Convective Weather Forecasts for Trajectory-Based Operations M. Matthews, R. DeLaura, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA				

Wednesday, 18 June 2014		Embassy F	
197-ACD-8			
Chaired by: D. WELLS, NASA Langley Research Center and C. BILL, RMIT University			
1400 hrs AIAA-2014-2718 Unlimited Endurance Low Altitude Wind Powered Unmanned Aerial Vehicle M. Sadraey, Daniel Webster College, Nashua, NH	1430 hrs AIAA-2014-2719 A Multi-Disciplinary Integrated Design Environment for Requirements Development and Performance Evaluation of Autonomous Systems R. Roe, S. Ford, G. Cinar, Z. Mian, D. Morris, Georgia Institute of Technology, Atlanta, GA	1500 hrs AIAA-2014-2720 A Virtual Experimentation Platform Enabling the Design, Testing, and Verification of an Unmanned Aerial Vehicle through Cyber-Physical, Component-Based Design B. Laughlin, S. Briceno, D. Morris, Georgia Institute of Technology, Atlanta, GA	1530 hrs AIAA-2014-2721 Design and Testing of an Air-Deployed Unmanned Underwater Vehicle T. Young, Naval Research Laboratory, Washington, DC
Wednesday, 18 June 2014			
198-ACD-9			
Chaired by: D. WELLS, NASA Langley Research Center and H. JIMENEZ, Georgia Institute of Technology			
1400 hrs No Presentations	1600 hrs AIAA-2014-2722 Optimization Framework for Design of Morphing Wings J. Yang, J. Cooper, University of Bristol, Bristol, United Kingdom; R. Nangia, Nangia Associates, Bristol, United Kingdom; J. Simpson, Fraunhofer, Valley, Germany		1630 hrs AIAA-2014-2723 Studies on Morphing Aircraft Design including Engine parameters using Genetic Algorithm A. Chamarthi, R. Pant, Indian Institute of Technology Bombay, Mumbai, India
			1700 hrs AIAA-2014-2724 Aerodynamic Performance of Corrugated Skins for Spanwise Wing Morphing J. Fincham, Swansea University, Swansea, United Kingdom; R. Alqi, University of Southampton, Southampton, United Kingdom; M. Friswell, Swansea University, Swansea, United Kingdom
Wednesday, 18 June 2014			
199-MAO-10			
Chaired by: H. KIM, University of Illinois			
1400 hrs AIAA-2014-2725 Development of Installed Propulsion Performance Model for High-Performance Aircraft Conceptual Design D. Allison, Optimal Flight Sciences, LLC, Dayton, OH; E. Alvanak, Air Force Research Laboratory, Wright-Patterson AFB, OH	1430 hrs AIAA-2014-2726 Towards Gradient-Based Design Optimization of Flexible Transport Aircraft with Flutter Constraints G. Kennedy, Georgia Institute of Technology, Atlanta, GA; G. Kenway, J. Martins, University of Michigan, Ann Arbor, Ann Arbor, MI	1500 hrs AIAA-2014-2727 A Visually-Informed Decision-Making Platform for Model-based Design of Wind Farms S. Chowdhury, Mississippi State University, Mississippi State, MS; A. Mehmood, W. Tong, Syracuse University, Syracuse, NY; A. Messac, Mississippi State University, Mississippi State, MS	1530 hrs AIAA-2014-2728 Incorporating Value-Driven Design into the Visualization of Design Spaces Using Contextual Self-Organizing Maps: A Case Study of Satellite Design T. Richardson, H. Kannan, C. Bloebaum, E. Wimer, Iowa State University, Ames, IA
			1600 hrs AIAA-2014-2729 Many Objective Visual Analytics: In Search of Search-as-a-Service M. Woodruff, T. Simpson, Pennsylvania State University, University Park, PA; P. Reed, Cornell University, Ithaca, NY
			1630 hrs AIAA-2014-2730 A Hybrid Differential Evolution Self-Organizing-Map Algorithm for Optimization of Expensive Black-box Functions S. Subramanian, D. DeLaurentis, Purdue University, West Lafayette, IN
Wednesday, 18 June 2014			
200-ANERS-1			
Chaired by: R. DEL ROSARIO, NASA Glenn Research Center			
1400 hrs AIAA-2014-2731 Development of Generic Vehicles for Fleet-Level Analysis of Noise and Emissions Tradeoffs M. LeVine, A. Wilson, M. Kirby, D. Morris, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-2014-2732 Design Optimization and Staging Assignment for Long-Range Aircraft Operations R. Perez, P. Jansen, Royal Military College of Canada, Kingston, Canada	1500 hrs AIAA-2014-2733 Flybrid: Envisaging the Future Hybrid-Powered Regional Aviation G. Bona, M. Bucari, A. Castagnoli, L. Trainelli, Technical University of Milan, Milan, Italy	1530 hrs AIAA-2014-2734 Application of Mixture Design of Experiments for Dynamic Fleet-Level Evaluation of Multi-Objective Environmental Technology Trade-offs J. Bernardo, E. Lacouture, M. Kirby, D. Morris, Georgia Institute of Technology, Atlanta, GA
			1600 hrs AIAA-2014-2735 Robust Coupled Optimization of Aircraft Design and Fleet Allocation for Multiple Markets P. Jansen, R. Perez, Royal Military College of Canada, Kingston, Canada
Wednesday, 18 June 2014			
201-ANERS-2			
Chaired by: R. DEL ROSARIO, NASA Glenn Research Center			
1400 hrs AIAA-2014-2736 Development of Generic Vehicles for Fleet-Level Analysis of Noise and Emissions Tradeoffs M. LeVine, A. Wilson, M. Kirby, D. Morris, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-2014-2737 Design Optimization and Staging Assignment for Long-Range Aircraft Operations R. Perez, P. Jansen, Royal Military College of Canada, Kingston, Canada	1500 hrs AIAA-2014-2738 Flybrid: Envisaging the Future Hybrid-Powered Regional Aviation G. Bona, M. Bucari, A. Castagnoli, L. Trainelli, Technical University of Milan, Milan, Italy	1530 hrs AIAA-2014-2739 Application of Mixture Design of Experiments for Dynamic Fleet-Level Evaluation of Multi-Objective Environmental Technology Trade-offs J. Bernardo, E. Lacouture, M. Kirby, D. Morris, Georgia Institute of Technology, Atlanta, GA
			1600 hrs AIAA-2014-2740 Robust Coupled Optimization of Aircraft Design and Fleet Allocation for Multiple Markets P. Jansen, R. Perez, Royal Military College of Canada, Kingston, Canada

Wednesday, 18 June 2014		Engine Icing I - Cloud Measurement and Characterization		Hanover C	
Chaired by: P. STRUK, NASA Glenn Research Center and M. OLIVER, NASA Glenn Research Center					
1400 hrs AIAA-2014-2751 Development of a Sensor for Total Temperature and Humidity Measurements under Mixed-Phase and Glaciated Icing Conditions D. Fuleki, A. Mahallath, T. Currie, J. MacLeod, D. Knezevic, National Research Council Canada, Ottawa, Canada	1430 hrs AIAA-2014-2752 Simulation of fluid flow and collection efficiency for an SEA multi-element probe D. Rigby, Vantage Partners, LLC, Cleveland, OH; P. Struk, C. Bitwell, NASA Glenn Research Center, Cleveland, OH	1500 hrs AIAA-2014-2753 AIRBUS Flight Tests in High Total Water Content Regions A. Grandin, J. Meier, M. Weber, Airbus, Toulouse, France; J. Strapp, Environment Canada, Toronto, Canada; A. Protat, Centre for Australian Weather and Climate Research, Melbourne, Australia; P. King, Coriolis Weather, Toronto, Canada			
Wednesday, 18 June 2014					
205-ASE-12 Numerical Weather Modeling Hanover D					
Chaired by: N. AHMAD, NASA Langley Research Center and G. THOMPSON, NCAR-RAL					
1400 hrs Oral Presentation Global to Local Scale Atmospheric Simulation using an Adaptive Unstructured Grid (Invited) D. Bacon, Leidos Corporation, Sterling, VA, VA	1430 hrs Oral Presentation A Motion-Based Piloted Flight Simulation for a Realistic Weather Environment (Invited) T. Daniels, S. Young, E. Evans, P. Schaffner, NASA Langley Research Center, Hampton, VA	1500 hrs Oral Presentation Recent advances in direct numerical model prediction of supercooled water drops and application to aircraft icing (Invited) G. Thompson, National Center for Atmospheric Research, Boulder, CO	1530 hrs Oral Presentation Numerical Simulations of Cirrus Bands and their Relation to Turbulence (Invited) R. Sharman, S. Titer, National Center for Atmospheric Research, Boulder, CO; J. Kim, NASA Ames Research Center, Moffett Field, CA	1600 hrs Oral Presentation GPU-accelerated Cartesian mesh wind simulations over arbitrarily complex terrain (Invited) J. Senock, Boise State University, Boise, ID	1630 hrs Oral Presentation Medium Range Multi-model Regional Ensemble Forecasting over the Western U.S. (Invited) D. Karacin, J. Lewis, A. Young, Desert Research Institute, Reno, NV; R. Vellare, Indian Institute of Tropical Meteorology, Pune, India
Wednesday, 18 June 2014					
206-AA-16 Jet Noise Prediction II Hanover E					
Chaired by: W. SCHROEDER, RWTH AACHEN					
1400 hrs AIAA-2014-2754 Noise of high-performance aircrafts at afterburner C. Tam, S. Parrish, Florida State University, Tallahassee, FL	1430 hrs AIAA-2014-2755 An Extended Lattice Boltzmann Methodology for High Subsonic Jet Noise Prediction P. Lew, P. Gopalakrishnan, D. Casalino, R. Shock, Y. Li, R. Zhang, Exa Corporation, Burlington, MA; et al.	1500 hrs AIAA-2014-2756 Dual-stream jet noise simulations with realistic nozzle geometries using a fully unstructured LES solver A. Fosso Pouangue, M. Sanjose, S. Moreau, University of Sherbrooke, Sherbrooke, Canada	1530 hrs AIAA-2014-2757 A Complex Ray-Tracing Tool for High-Frequency Mean-Field Flow Interaction Effects in Jets J. Stone, R. Self, C. Howls, University of Southampton, Southampton, United Kingdom	1600 hrs AIAA-2014-2758 A coherence-matched linear model for subsonic jet noise Y. Baqui, A. Aganwal, University of Cambridge, Cambridge, United Kingdom; A. Cavalieri, Technological Institute of Aeronautics (ITA), Sao José dos Campos, Brazil	1630 hrs AIAA-2014-2759 Flow Dynamics and Aeroacoustics of Heated Coaxial Jets at Subsonic Mach Numbers M. Gloor, S. Buehler, L. Kleiser, Swiss Federal Institute of Technology, Zurich, Switzerland
Wednesday, 18 June 2014					
207-AA-17 Airframe Noise II Hanover F					
Chaired by: C. BURLEY, NASA-Langley Research Center					
1400 hrs AIAA-2014-2760 Acoustic Shielding of a Tapered Wing C. Marks, D. Robertson, University of Dayton Research Institute, Dayton, OH; D. Bryson, G. Reich, Air Force Research Laboratory, Wright-Patterson AFB, OH	1430 hrs AIAA-2014-2762 Acoustics and Surface Pressure Measurements from Tandem Cylinder Configurations F. Hurcheson, T. Brooks, D. Lockard, M. Choudhri, NASA Langley Research Center, Hampton, VA; D. Stead, Northrop Grumman Corporation, Hampton, VA	1500 hrs AIAA-2014-2763 On LAGOON Nose Landing Gear CFD/CAA Computation over Unstructured Mesh using a ZDES approach E. de la Puente, L. Sanders, F. Vaillot, ONERA, Châtillon, France	1530 hrs AIAA-2014-2764 Generating Trailing-Edge Noise Predictions Using Synthetic Turbulence A. Job, wavePRO, Turin, Italy; R. Arina, Technical University of Turin, Turin, Italy; P. Batten, S. Chakravarthy, Metacomp Technologies, Agoura Hills, CA		

Wednesday, 18 June 2014		Aerodynamic and Propulsion Test Unit (APTU) II		Hanover G	
208-HYASP-24 Chaired by: G. GARRARD, Aerospace Testing Alliance (ATA)					
1400 hrs AIAA-2014-2765 Upgrades to the Aerodynamic and Propulsion Test Unit Heated Fuel System (Invited) K. Butler, Aerospace Testing Alliance, Arnold AFB, TN	1430 hrs AIAA-2014-2766 Upgrades to the Aerodynamic and Propulsion Test Unit Facility Control System and Simulator in Support of the Medium Scale Critical Components Direct Connect Test Program (Invited) B. Boylston, Aerospace Testing Alliance, Arnold AFB, TN				
Wednesday, 18 June 2014					
209-ITAR-5 Chaired by: E. GARCIA, Georgia Institute of Technology					
1400 hrs No Presentations	1600 hrs AIAA-2014-2767 Flight Test Experiment Design and Aerodynamic Parameter Estimation for the X-51A WaveRider E. Morelli, NASA Langley Research Center, Hampton, VA; S. Rexius, J. Lechniak, Hypersonic Combined Test Force, Edwards AFB, CA	1630 hrs AIAA-2014-2768 Responsive Rocket Vehicles for High Altitude Reconnaissance B. Hellman, Air Force Research Laboratory, Wright-Patterson AFB, OH	1700 hrs AIAA-2014-2769 Comparison of Trajectory Methods for Hypersonic Gliding Vehicles B. Hellman, Air Force Research Laboratory, Wright-Patterson AFB, OH	Hanover G	
Wednesday, 18 June 2014					
210-FD-19 Chaired by: M. YU, University of Maryland, Baltimore County					
1400 hrs AIAA-2014-2770 The Effects of Static Aeroelasticity on the Performance of Supersonic/Hypersonic Nozzles U. Duzel, S. Evi, Middle East Technical University, Ankara, Turkey	1430 hrs AIAA-2014-2771 Wind Tunnel Characterization of Fluid-Structure Interactions for Various Suspension Lines T. Stiefers, T. McLaughlin, U.S. Air Force Academy, Colorado Springs, CO; K. Bergen, Army Research, Development and Engineering Command, Natick, MA	1500 hrs AIAA-2014-2772 Coupled CFD/CSD Simulations of the UH-60A Main Rotor in Forward and Maneuvering Flight J. Ickes, J. Wang, C. Sheng, University of Toledo, Toledo, OH	1530 hrs AIAA-2014-2773 Large displacement body-fitted FSI simulations using a mesh connectivity-change moving mesh strategy N. Barrot, F. Alauzet, French National Institute for Research in Computer Science and Control (INRIA), Le Chesnay, France	Harris	
Wednesday, 18 June 2014					
211-FD-20 Chaired by: H. REED, Texas A&M University and S. SCHNEIDER, Purdue University					
1400 hrs AIAA-2014-2774 High-frequency instabilities along the windward face of a hypersonic yawed circular cone P. Perales, V. Theofilis, Technical University of Madrid, Madrid, Spain; H. Reed, Texas A&M University, College Station, TX	1430 hrs AIAA-2014-2775 Numerical Investigation of Wavepackets in a Hypersonic High-Enthalpy Boundary Layer on a 5deg Sharp Cone L. Salemi, H. Fasel, University of Arizona, Tucson, AZ; S. Wernz, E. Marquardt, Raytheon Missile Systems, Tucson, AZ	1500 hrs AIAA-2014-2776 Numerical Investigation of Laminar-Turbulent Transition for a Flared Cone at Mach 6 J. Sivasubramanian, H. Fasel, University of Arizona, Tucson, Tucson, AZ	1530 hrs AIAA-2014-2777 Nonlinear Detuning of Mack-Mode Instabilities J. Kuehl, H. Reed, T. Kocian, N. Oliveira, Texas A&M University, College Station, TX	1600 hrs AIAA-2014-2778 Experimental and Numerical Investigation of Instabilities in Conical Boundary Layers at Mach 6 F. Munoz, R. Radespiel, A. Theiss, S. Hein, Technical University of Braunschweig, Braunschweig, Germany	1630 hrs AIAA-2014-2779 Hypersonic Boundary Layer Transition on a 7 Degree Half-Angle Cone at Mach 10 G. Grossir, F. Pinau, G. Bonucci, T. Reget, P. Rambaud, O. Chazot, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genese, Belgium
Wednesday, 18 June 2014					
212-FD-21 Chaired by: H. REED, Texas A&M University and S. SCHNEIDER, Purdue University					
1400 hrs AIAA-2014-2774 High-frequency instabilities along the windward face of a hypersonic yawed circular cone P. Perales, V. Theofilis, Technical University of Madrid, Madrid, Spain; H. Reed, Texas A&M University, College Station, TX	1430 hrs AIAA-2014-2775 Numerical Investigation of Wavepackets in a Hypersonic High-Enthalpy Boundary Layer on a 5deg Sharp Cone L. Salemi, H. Fasel, University of Arizona, Tucson, AZ; S. Wernz, E. Marquardt, Raytheon Missile Systems, Tucson, AZ	1500 hrs AIAA-2014-2776 Numerical Investigation of Laminar-Turbulent Transition for a Flared Cone at Mach 6 J. Sivasubramanian, H. Fasel, University of Arizona, Tucson, Tucson, AZ	1530 hrs AIAA-2014-2777 Nonlinear Detuning of Mack-Mode Instabilities J. Kuehl, H. Reed, T. Kocian, N. Oliveira, Texas A&M University, College Station, TX	1600 hrs AIAA-2014-2778 Experimental and Numerical Investigation of Instabilities in Conical Boundary Layers at Mach 6 F. Munoz, R. Radespiel, A. Theiss, S. Hein, Technical University of Braunschweig, Braunschweig, Germany	1630 hrs AIAA-2014-2779 Hypersonic Boundary Layer Transition on a 7 Degree Half-Angle Cone at Mach 10 G. Grossir, F. Pinau, G. Bonucci, T. Reget, P. Rambaud, O. Chazot, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genese, Belgium
Wednesday, 18 June 2014					
213-FD-22 Chaired by: H. REED, Texas A&M University and S. SCHNEIDER, Purdue University					
1400 hrs AIAA-2014-2774 High-frequency instabilities along the windward face of a hypersonic yawed circular cone P. Perales, V. Theofilis, Technical University of Madrid, Madrid, Spain; H. Reed, Texas A&M University, College Station, TX	1430 hrs AIAA-2014-2775 Numerical Investigation of Wavepackets in a Hypersonic High-Enthalpy Boundary Layer on a 5deg Sharp Cone L. Salemi, H. Fasel, University of Arizona, Tucson, AZ; S. Wernz, E. Marquardt, Raytheon Missile Systems, Tucson, AZ	1500 hrs AIAA-2014-2776 Numerical Investigation of Laminar-Turbulent Transition for a Flared Cone at Mach 6 J. Sivasubramanian, H. Fasel, University of Arizona, Tucson, Tucson, AZ	1530 hrs AIAA-2014-2777 Nonlinear Detuning of Mack-Mode Instabilities J. Kuehl, H. Reed, T. Kocian, N. Oliveira, Texas A&M University, College Station, TX	1600 hrs AIAA-2014-2778 Experimental and Numerical Investigation of Instabilities in Conical Boundary Layers at Mach 6 F. Munoz, R. Radespiel, A. Theiss, S. Hein, Technical University of Braunschweig, Braunschweig, Germany	1630 hrs AIAA-2014-2779 Hypersonic Boundary Layer Transition on a 7 Degree Half-Angle Cone at Mach 10 G. Grossir, F. Pinau, G. Bonucci, T. Reget, P. Rambaud, O. Chazot, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genese, Belgium

Wednesday, 18 June 2014		CFD Methods		Kenneshaw	
212-FD-21		CFD Methods		Kenneshaw	
Chaired by: H. HUYNH, NASA Glenn Research Center					
1400 hrs AIAA-2014-2780 Using Multi-Dimensional Linear Discretization Over Unsteady Convection Adapted Control Volumes J. Moore, J. Moore, Self, Blacksburg, VA	1430 hrs AIAA-2014-2781 A Hybridized Discontinuous Galerkin Method for Unsteady Flows with Shock-Capturing A. Jausst, J. Schuertz, M. Woopen, RWTH Aachen University, Aachen, Germany	1500 hrs AIAA-2014-2782 From 2nd Order Accurate to 4th Order Accurate Spatial and Temporal Schemes for Unstructured Grids H. Yang, Z. Chen, A. Przekwas, CFD Research Corporation, Huntsville, AL; J. Dudley, Air Force Research Laboratory, Eglin AFB, FL	1530 hrs AIAA-2014-2783 A Hybridized Discontinuous Galerkin Method for Turbulent Compressible Flow M. Woopen, T. Ludescher, G. Moya, RWTH Aachen University, Aachen, Germany	1600 hrs AIAA-2014-2784 DNS of Flows over Periodic Hills using a Discontinuous Galerkin Spectral-Element Method L. Discardy, S. Murman, NASA Ames Research Center, Moffett Field, CA	1630 hrs AIAA-2014-2785 A hierarchical Cartesian method for conjugated heat transfer G. Brito Gadeschi, M. Meinke, W. Schroeder, RWTH Aachen University, Aachen, Germany
Wednesday, 18 June 2014					
213-HYASP-6		Propulsion Cycle Performance		Learning Center	
Chaired by: L. MCKINNEY, McKinney Associates					
1400 hrs AIAA-2014-2786 Quasi-One-Dimensional Investigation of Combustion Processes on Scramjet Performance T. Vanyai, S. Brieschenk, M. Bricalli, R. Boyce, University of Queensland, Brisbane, Australia	1430 hrs AIAA-2014-2787 Hybrid Propulsion Parametric and Modular Model: a novel engine analysis tool conceived for design optimization A. Magawero, I. Taylor, R. Brown, University of Strathclyde, Glasgow, United Kingdom	1500 hrs AIAA-2014-2788 Design and Optimization of a Notional Scramjet by Means of Stream Thrust Analysis and Design of Experiments M. Akpofor, Atılım University, Ankara, Turkey; K. Tokar, ROKETSAN Missiles Industries, Inc., Ankara, Turkey; M. Genc, Erciyes University, Kayseri, Turkey	1530 hrs AIAA-2014-2789 Fundamental Architecture and Analysis of an Antimatter Ultra-Intense Laser Derived Combined Cycle Ramjet-Rocket Propulsion System R. Lemoyne, Self, Ramming Springs, CA	1600 hrs AIAA-2014-2790 Mach 4 Wind Tunnel Experiment of Hypersonic Pre-Cooled Turbojet Engine H. Inaguchi, K. Harada, H. Kobayashi, M. Horigoh, D. Masaki, S. Nishida, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	
Wednesday, 18 June 2014					
214-FC-11		Flow Control: Active and Passive		Lenox	
Chaired by: L. PACK-MELTON, NASA-Langley Research Center and A. AHMED					
1400 hrs AIAA-2014-2791 Axisymmetric Jet Subjected to Radial and Azimuthal Forcing A. Ahmed, A. Weiner, Auburn University, Auburn, AL	1430 hrs AIAA-2014-2792 Control of Wing Tip Vortex Structure Using Fluidic Actuation M. Dighim, M. Ferchichi, Royal Military College of Canada, Kingston, Canada; M. Berchieski, University of Monastir, Monastir, Tunisia	1500 hrs AIAA-2014-2793 Bleed and Vortex Generator Effectiveness for Separation Prevention in a Transonic Diffuser J. Oorebeek, H. Babinsky, University of Cambridge, Cambridge, United Kingdom	1530 hrs AIAA-2014-2794 Unsteady Flow Injection in Turbulent Cavity Flow M. Garcia-Sanz, J. Delnero, J. Marañon, National University of La Plata, La Plata, Argentina	1600 hrs AIAA-2014-2795 Fully-Resolved Lattice-Boltzmann Simulation of Vane-Type Vortex Generators B. Koenig, E. Fares, Exa Corporation, Stuttgart, Germany	1630 hrs AIAA-2014-2796 PIV Wake Measurements of a Low Aspect Ratio Circulation Control Wing with Spanwise Variation in Efflux D. Miklosovic, M. Perry, U.S. Naval Academy, Annapolis, MD
Wednesday, 18 June 2014					
215-AMT-10/GT-8		Aerodynamic Force and Power Measurement		Marietta	
Chaired by: R. RHEW, NASA-Langley Research Center and T. WADHAM, CUBRC					
1400 hrs Oral Presentation Aerodynamic Force and Power Measurement: A Brief History and Current Capabilities (Invited) R. Rhow, K. Lynn, NASA Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-2797 A New Global Regression Analysis Method for the Prediction of Wind Tunnel Model Weight Corrections N. Ulbrich, Jacobs, Moffett Field, CA; M. Annoya, NASA Ames Research Center, Moffett Field, CA; T. Bridge, Jacobs, Moffett Field, CA	1500 hrs AIAA-2014-2798 Development of a new rig with enhanced specifications for wind tunnel tests of "isolated" CROR propulsion systems J. Séchaud, ONERA, Modane, France	1530 hrs AIAA-2014-2799 Development and Feasibility of a Non-Invasive, Wireless Parachute Load Distribution Measuring System T. Fields, University of Missouri, Kansas City, Kansas City, MO		

Wednesday, 18 June 2014		Surface Sensors and Probes		Piedmont
216-AMT-11/GT-9 Chaired by: T. IOPPOLO, Southern University and J. MELOY, Boeing Test & Evaluation				
1400 hrs Oral Presentation Correction Uncertainty of Remotely Measured Pressure Signals in Tap/Tubing/Transducer Systems M. Hind, J. Naughton, University of Wyoming, Laramie, WY	1430 hrs AIAA-2014-2800 Skin Friction Sensor Validation for High-Speed, High-Enthalpy Flow Applications R. Merrif, J. Schetz, Virginia Polytechnic Institute and State University, Blacksburg, VA	1500 hrs AIAA-2014-2801 Rapid Flow Surveys via Rotating Rake System and Use in Powered Wind Tunnel Models M. Lieu, M. Drelo, A. Uranga, E. Greitzer, Massachusetts Institute of Technology, Cambridge, MA		
Wednesday, 18 June 2014				
217-HYASP-7 Chaired by: M. ONOFRI, University of Rome "La Sapienza" and J. SCHWISSEUR, USAF AFOSR/WA				
1400 hrs AIAA-2014-2803 Experimental Study of Strut Injectors for Scramjet Combustors (Invited) F. Vegiue, L. Maddalena, University of Texas, Arlington, Arlington, TX	1430 hrs AIAA-2014-2804 Permeability Measurements of Complex Porous Structures for Reusable Thermal Protection Systems (Invited) S. Gullf, L. Maddalena, University of Texas, Arlington, Arlington, TX; C. McKeavey, A. Brown, C-CAT, Inc., Kennedale, TX; Y. Nikishkov, A. McKeavey, University of Texas, Arlington, Arlington, TX	1500 hrs AIAA-2014-2805 Uncertainty Analysis of Radiative Heating for Multiple Planetary Entry Cases (Invited) T. West, A. Brune, S. Hosler, Missouri University of Science and Technology, Rolla, MO	1530 hrs AIAA-2014-2806 Airborne Observation of Re-entries - Lessons Learned and Future Perspectives (Invited) M. Winter, University of Kentucky, Lexington, KY	Regency Ballroom V
Wednesday, 18 June 2014				
218-PANEL-6 1400 - 1630 hrs Moderator: John Langford, CEO, Aurora Flight Sciences Panelists: Nicholas Alley, President and CEO, Area-I, Inc. Morgan Cloud, Charles Howard Candler Professor of Law, Emory University Steve Justice, Director, Georgia Center of Innovation for Aerospace John Lambert, Senior Vice President, Nexutech, LLC Rose Mooney, Executive Director, Mid-Atlantic Aviation Partnership Elizabeth Solhys, Program Manager, FAA UAS Test Sites				
Wednesday, 18 June 2014				
219-PDL-12 Chaired by: S. ROY, University of Florida and C. SUCHOMEL, USAF				
1400 hrs Oral Presentation Measurements and Calculations of Thrust for Various Standard and Non-standard DBD Plasma Actuators (Invited) S. Roy, University of Florida, Gainesville, Gainesville, FL	1430 hrs AIAA-2014-2807 Characterization of the time-dependent behaviour of dielectric barrier discharge plasma actuators A. Naghibi Lahouji, R. Pimentel, Defense Research and Development Canada, Québec, Canada; P. Lavoie, University of Toronto, Toronto, Canada	1500 hrs AIAA-2014-2808 Numerical Simulation of sinusoidal DBD actuators and comparison with experiments F. Rogier, G. Dufour, K. Kourizanis, ONERA, Toulouse, France	1530 hrs AIAA-2014-2809 Electromagnetic and Ozone Emissions from Dielectric Barrier Discharge Plasma Actuators N. Houser, P. Lavoie, University of Toronto, Toronto, Canada; R. Pimentel, Y. de Villers, Defense Research and Development Canada, Québec, Canada; T. Ringette, Numerica technologies, Inc., Québec, Canada	1600 hrs AIAA-2014-2810 Evaluation of Dielectric-Barrier-Discharge Actuator Substrate Materials S. Wilkinson, E. Siochi, NASA Langley Research Center, Hampton, VA; G. Swait, T. Xu, National Institute of Aerospace, Hampton, VA; M. Meador, H. Guo, NASA Glenn Research Center, Cleveland, OH
1630 hrs AIAA-2014-2811 Understanding SDBD Actuators: An Experimental Study on Plasma Characteristics P. Leyland, Swiss Federal Institute of Technology, Lausanne, Switzerland; R. Pimentel, Defense Research and Development Canada, Valcartier, Canada; R. Geurs, S. Goekce, P. Peschke, C. Hollenstein, Swiss Federal Institute of Technology, Lausanne, Switzerland; et al.	1700 hrs AIAA-2014-2812 Flow Control at Subsonic Speeds using Serpentine Plasma Actuators K. Komis, H. Zare-Behtesh, University of Glasgow, Glasgow, United Kingdom; S. Roy, University of Florida, Gainesville, Gainesville, FL	Roswell		

Wednesday, 18 June 2014		Small/Mini/Micro Aerial Vehicles II		Spring
Chaired by: M. ABDULRAHIM, AeroVironment Inc. and K. HOFFLER, Adaptive Aerospace Group, Inc.				
1400 hrs AIAA-2014-2813 Computational Studies of Pressure Sensor Placement for a Fish-Inspired UAV R. Ramamurti, J. Geater, A. Thangawong, G. Edelmann, Naval Research Laboratory, Washington, DC	1430 hrs AIAA-2014-2814 Flight Test Protocol for Electric Powered Small Unmanned Aerial Systems M. McCrink, J. Gregory, Ohio State University, Columbus, OH	1500 hrs AIAA-2014-2815 Moment Generation of Stabilizing Axes for Insect-Inspired Flapping Wing Flight L. Faruque, University of Maryland, College Park, College Park, MD; P. Samuel, Daedalus Flight Systems, Rockville, MD; J. Humbert, University of Maryland, College Park, College Park, MD		
Wednesday, 18 June 2014				
221-TP-14				
Chaired by: C. JOHNSTON, NASA-Langley Research Center and K. NAWAZ, Johnson Controls Inc.				
1400 hrs AIAA-2014-2816 Analysis of Tile Calibration Tests in the PTF: Compression-Pad Surface Heating Distribution T. Gokcen, A. Alunni, K. Skokawa, ERC, Inc., Moffett Field, CA; D. Empey, Sierra Lobo, Inc., Moffett Field, CA; Y. Chen, NASA Ames Research Center, Moffett Field, CA	1430 hrs AIAA-2014-2817 Rough wall heat flux augmentation analysis in the framework of the ExoMars project D. Neeb, A. Guelham, German Aerospace Center (DLR), Cologne, Germany; J. Merrifield, Fluid Gravity Engineering, Ltd., Emsworth, United Kingdom	1500 hrs AIAA-2014-2818 Hypersonic Vehicle Leading Thermal Protection Technology F. Li, X. Zhao, China Academy of Aerospace Aerodynamics, Beijing, China		Techwood
Wednesday, 18 June 2014				
222-TP-15				
Chaired by: P. YEE, The Aerospace Corporation and S. SUBIA, Sandia National Laboratories				
1400 hrs AIAA-2014-2819 BGK and MD Simulations of H2O Supersonic Condensed Jets Z. Li, A. Borner, A. Rahmanpour, D. Levin, A. van Duin, Pennsylvania State University, University Park, PA	1430 hrs AIAA-2014-2820 Numerical investigation of ice particle accretion on heated surfaces with application to aircraft engines D. Kintea, I. Roisman, C. Tropea, Technical University of Darmstadt, Darmstadt, Germany	1500 hrs AIAA-2014-2821 Global Temperature Measurement of Boiling Water using Dual-Luminescent Imaging G. Hideki, T. Miyazaki, University of Electro-Communications, Tokyo, Japan; H. Sakaue, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	1600 hrs AIAA-2014-2823 The effect of noncondensables on convection in binary-fluid coolants Y. Li, M. Yoda, Georgia Institute of Technology, Atlanta, GA	1630 hrs AIAA-2014-2824 Preconditioning Methods for Multiphase Flows A. Gupta, K. Sreenivas, L. Taylor, University of Tennessee, Chattanooga, Chattanooga, TN
Wednesday, 18 June 2014				
223-TP-16				
Chaired by: S. GU, Teledyne Scientific & Imaging and J. LEE, The Aerospace Corporation				
1400 hrs AIAA-2014-2825 Two-Dimensional Analysis of Solids Subjected to Exponential Heating and Surface Convection Using Thermal Diffusion and Propagation Models S. Yi, E. Fong, T. Lam, The Aerospace Corporation, El Segundo, CA	1430 hrs AIAA-2014-2826 Simulation of a Two Moving Fronts Ablation in a Composite Thermal Protection System Via an Interface Tracking Method H. Machado, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil	1500 hrs AIAA-2014-2827 A Numerical Study of Opposing Mixed Convective Heat Transfer from a Vertical Isothermal Plate with Laminar and Turbulent Flow P. Oosthuizen, Queen's University, Kingston, Canada	1600 hrs AIAA-2014-2829 Numerical Analysis of Ultrafast Acoustic Wave Generated by Prosecond Laser Pulse in Multilayers D. Wang, Y. Ma, University of California, Merced, Merced, CA	1630 hrs AIAA-2014-2830 Heat Transfer in Cross Flow of Gas over a Smooth and Modified Tube L. Ishay, Y. Aharon, G. Ziskind, Ben-Gurion University of the Negev, Beer-Sheva, Beer-Sheva, Israel
Wednesday, 18 June 2014				
223-TP-17				
Chaired by: S. GU, Teledyne Scientific & Imaging and J. LEE, The Aerospace Corporation				
1400 hrs AIAA-2014-2825 Two-Dimensional Analysis of Solids Subjected to Exponential Heating and Surface Convection Using Thermal Diffusion and Propagation Models S. Yi, E. Fong, T. Lam, The Aerospace Corporation, El Segundo, CA	1430 hrs AIAA-2014-2826 Simulation of a Two Moving Fronts Ablation in a Composite Thermal Protection System Via an Interface Tracking Method H. Machado, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil	1500 hrs AIAA-2014-2827 A Numerical Study of Opposing Mixed Convective Heat Transfer from a Vertical Isothermal Plate with Laminar and Turbulent Flow P. Oosthuizen, Queen's University, Kingston, Canada	1600 hrs AIAA-2014-2829 Numerical Analysis of Ultrafast Acoustic Wave Generated by Prosecond Laser Pulse in Multilayers D. Wang, Y. Ma, University of California, Merced, Merced, CA	1630 hrs AIAA-2014-2830 Heat Transfer in Cross Flow of Gas over a Smooth and Modified Tube L. Ishay, Y. Aharon, G. Ziskind, Ben-Gurion University of the Negev, Beer-Sheva, Beer-Sheva, Israel
Wednesday, 18 June 2014				
223-TP-18				
Chaired by: S. GU, Teledyne Scientific & Imaging and J. LEE, The Aerospace Corporation				
1400 hrs AIAA-2014-2825 Two-Dimensional Analysis of Solids Subjected to Exponential Heating and Surface Convection Using Thermal Diffusion and Propagation Models S. Yi, E. Fong, T. Lam, The Aerospace Corporation, El Segundo, CA	1430 hrs AIAA-2014-2826 Simulation of a Two Moving Fronts Ablation in a Composite Thermal Protection System Via an Interface Tracking Method H. Machado, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil	1500 hrs AIAA-2014-2827 A Numerical Study of Opposing Mixed Convective Heat Transfer from a Vertical Isothermal Plate with Laminar and Turbulent Flow P. Oosthuizen, Queen's University, Kingston, Canada	1600 hrs AIAA-2014-2829 Numerical Analysis of Ultrafast Acoustic Wave Generated by Prosecond Laser Pulse in Multilayers D. Wang, Y. Ma, University of California, Merced, Merced, CA	1630 hrs AIAA-2014-2830 Heat Transfer in Cross Flow of Gas over a Smooth and Modified Tube L. Ishay, Y. Aharon, G. Ziskind, Ben-Gurion University of the Negev, Beer-Sheva, Beer-Sheva, Israel

Wednesday, 18 June 2014					
224-NW-9 1530 - 1600 hrs	Wednesday Afternoon Networking Coffee Break				Exhibit Hall
Wednesday, 18 June 2014					
225-ASE-13 1530 - 1730 hrs	AIRA - Aircraft Icing Research Alliance Panel				Hanover C
Chaired by: J. MACLEOD, National Research Council Canada and M. WADEL, NASA Glenn Research Center					
<p>Panelists:</p> <p><i>HAIC/HIWC International Field Campaign: Overview and Preliminary Outcomes</i></p> <p>Tom Ratovsky NASA</p> <p>Alice Grandin Airbus</p> <p>Fabien Dezitter Airbus</p> <p><i>Overview of NASA's Icing Research Efforts</i></p> <p>Mary Wadel Branch Chief, Aircraft Icing, NASA</p> <p><i>Overview of AIRA Activities and Research Focus Areas</i></p> <p>Jim MacLeod Chair AIRA, NRC</p>					
Wednesday, 18 June 2014					
226-HYTASP-21 1600 - 1730 hrs	Hypersonic Aircraft Technology Advances and Challenges Panel				Regency Ballroom V
Moderator: Ummeel Mehta, NASA Ames Research Center					
Panelists:					
Rob Vermeland US	Roger Longstaff UK	Johan Steelant ESA	Michael Smart Australia	Kevn Bowcutt US	
Wednesday, 18 June 2014					
227-LEC-4 1600 - 1700 hrs	Aerodynamic Measurement Technology Award Lecture: "Nanoscale Instrumentation for Measuring Turbulence"				Regency Ballroom VII
Alexander J. Smits Eugene Higgins Professor of Mechanical and Aerospace Engineering, Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ					
Wednesday, 18 June 2014					
228-ANERS-2 1630 - 1730 hrs	What is the Right Balance Between Design and Operations?				Embassy H
Moderator: Eric Nesbitt, The Boeing Company					
Panelists:					
Juan Alonso Stanford University	John-Paul Clarke Georgia Institute of Technology				
Wednesday, 18 June 2014					
229-LEC-6 1730 - 1830 hrs	Aeroacoustics Lecture: "Turbobfan Noise Research - Reconciling Theory and Measurement"				Regency Ballroom VI
Brian J. Tester ISVR, Southampton University, Highfield Southampton, United Kingdom					

Thursday, 19 June 2014		Other Topics in Applied Aerodynamics - Inlet, Compressor, Diffuser and Nozzle Aerodynamics		Courtland
Chaired by: S. MORRIS, Engineering Systems, Inc. and A. SCLAFANI, Boeing Engineering Operations & Technology				
0930 hrs AIAA-2014-2837	1000 hrs AIAA-2014-2838	1030 hrs AIAA-2014-2839	1100 hrs AIAA-2014-2840	
Effect of number of slots and overlap on the performance of Non-circular Ejector Air Diffuser P. Singh, Defence Research and Development Organization, Delhi, India; S. Singh, Indian Institute of Technology Delhi, New Delhi, India	Numerical Investigation of Engine Exhaust Plume Characteristics of Unmanned Combat Air Vehicles M. Ruefften, S. Karl, German Aerospace Center (DLR), Göttingen, Germany; E. Umdenmeir, German Aerospace Center (DLR), Oberpfaffenhofen, Germany	Experimental Investigation of the Flow in a Stalling Engine Inlet S. Uebelacker, R. Hain, C. Köhler, University of the German Federal Armed Forces, Neuburg, Germany	Application study of the curved surface compression system in three-dimensional sidewall compression inlet L. Zhang, K. Zhang, L. Wang, Nanjing University of Aeronautics and Astronautics, Nanjing, China	
Thursday, 19 June 2014				
238-APA-37				
Chaired by: S. SAXENA, General Electric Company and H. BABINSKY, University of Cambridge				
0930 hrs AIAA-2014-2841	1000 hrs AIAA-2014-2842	1030 hrs AIAA-2014-2843	1100 hrs AIAA-2014-2844	
Supersonic NLF Robustness Flight Testing: Transition Due to Discrete Roughness Elements A. Garzon, J. Marisheck, Aerion Corporation, Reno, NV; D. Banks, M. Frederick, NASA Armstrong Flight Research Center, Edwards, CA	Aeroelastic Effects in Maximum Lift Prediction of a Transport Aircraft and Comparison to Flight Data S. Keye, D. Rohlfmann, German Aerospace Center (DLR), Braunschweig, Germany	High lift INFlight Validation (HINVA) - Overview about the 1st Flight Test Campaign R. Rudnik, German Aerospace Center (DLR), Braunschweig, Germany; D. Schweitzer, Airbus, Bremen, Germany	Aerodynamic Characterization of HEXAFLY Scramjet Propelled Hypersonic Vehicle G. Pezzello, M. Marini, M. Cirala, A. Vitale, Italian Aerospace Research Center (CIRA), Capua, Italy; T. Langener, J. Steelant, ESA, Noordwijk, The Netherlands	Dunwoody
Thursday, 19 June 2014				
239-APA-38				
Chaired by: J. MURRAY, Sandia National Laboratories				
0930 hrs AIAA-2014-2845	1000 hrs AIAA-2014-2846	1030 hrs AIAA-2014-2847	1100 hrs AIAA-2014-2848	
Shape Optimization of NREL S809 Airfoil for Wind Turbine Blades Using a Multi-Objective Genetic Algorithm Y. He, R. Agarwal, Washington University in St. Louis, St. Louis, MO	Combined Upwind/Downwind Plasma-Based Flow Control on a Vertical-Axis Wind Turbine R. Lautman, D. Greenblatt, Technion-Israel Institute of Technology, Haifa, Israel	Development of Free Vortex Wake Method for Yaw Misalignment Effect on the Thrust Vector and Generated Power H. Abedi, L. Davidson, Chalmers University of Technology, Göteborg, Sweden; S. Voutsinos, National Technical University of Athens, Athens, Greece	A Simulation of Operational Damage for Wind Turbine Blades G. Fore, M. Selig, University of Illinois, Urbane-Champaign, Urbana, IL	Edgewood
1130 hrs AIAA-2014-2849				
Inclusion of a Simple Dynamic Inflow Model in the Blade Element Momentum Theory for Wind Turbine Application X. Chen, R. Agarwal, Washington University in St. Louis, St. Louis, MO				
Thursday, 19 June 2014				
240-AT10-17				
Chaired by: S. RIZZI, NASA-Langley Research Center				
0930 hrs AIAA-2014-2850	1000 hrs AIAA-2014-2851	1030 hrs AIAA-2014-2852	1100 hrs	
Transpace Exploration of Distributed Propulsors for Advanced On-Demand Mobility Concepts N. Borer, M. Moore, A. Turnbull, NASA Langley Research Center, Hampton, VA	Drag Reduction Through Distributed Electric Propulsion A. Stoll, J. Beirnt, Joby Aviation, Santa Cruz, CA; M. Moore, W. Frederick, N. Borer, NASA Langley Research Center, Hampton, VA	Wing Aerodynamic Analysis Incorporating One-Way Interaction with Distributed Propellers M. Pottason, B. Germain, Georgia Institute of Technology, Atlanta, GA	Oral Presentation A Modeling Approach to Predict Cabin Noise due to Distributed Asynchronous Propellers A. Allen, R. Cabell, D. Nark, NASA Langley Research Center, Hampton, VA	Embassy C

Thursday, 19 June 2014		Embassy D			
General Aviation					
<p>241-AT10-18</p> <p>Chartered by: C. BILL, RWIT University</p> <p>0930 hrs AIAA-2014-2853 Ground Performance of a Light Airplane on a Grassy Airfield J. Pytko, L. Kaznowski, Lublin University of Technology, Lublin, Poland</p>	<p>1000 hrs AIAA-2014-2854 Subsonic Business-Class Jet Design: A Systems Approach to Aircraft Synthesis and Optimization K. Bowerman, P. Chandran, D. Ixtabalan, D. Sheets, T. Takahashi, Arizona State University, Tempe, AZ</p>	<p>1030 hrs AIAA-2014-2855 A Preliminary Study of High Lift System Design and Actuation for a Personal Air Vehicle Concept L. Chakraborty, B. Lozano, T. Nam, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1100 hrs AIAA-2014-2856 Feasibility Focused Design of Electric On-demand Aircraft Concepts E. Estrada Rodas, J. Leive, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1130 hrs AIAA-2014-2857 Development of a Casting Nosegear for a Tandem Wing Light Aircraft I. Faruque, University of Maryland, College Park, College Park, MD</p>	<p>1200 hrs AIAA-2014-2858 Pitfalls in Future Air Vehicle Design: Transformational Requirements B. Seelley, CAEE Foundation, Santa Rosa, CA</p>
Thursday, 19 June 2014					
<p>242-AT10-19</p> <p>Chartered by: A. MUIKHERJEE, University of California Santa Cruz</p> <p>0930 hrs AIAA-2014-2859 An Independent and Coordinated Criterion for Kinematic Aircraft Maneuvers A. Narkowicz, C. Munoz, G. Hagen, NASA Langley Research Center, Hampton, VA</p>	<p>1000 hrs AIAA-2014-2860 An Overview of Current Capabilities and Research Activities in the Airspace Operations Laboratory at NASA Ames Research Center T. Prevot, N. Smith, E. Palmer, NASA Ames Research Center, Moffett Field, CA; T. Callantine, P. Lee, J. Mercer, San Jose State University, Moffett Field, CA; et al.</p>	<p>1030 hrs AIAA-2014-2861 Autonomous System for Air Traffic Control in Terminal Airspace A. Nikolelis, H. Erzberger, NASA Ames Research Center, Moffett Field, CA</p>	<p>1100 hrs AIAA-2014-2862 Requirements for Communication Systems in Future Passenger Air Transportation J. Zambano, O. Yeste, R. Landry, University of Québec, Montréal, Canada</p>	<p>1130 hrs AIAA-2014-2863 Large-Scale Data Analysis for Characterization of the Effect of Wind Forecast Errors on ETAs V. Vaidi, P. Sengupta, M. Tandale, Optimal Synthesis, Inc., Los Altos, CA; J. Robinson III, NASA Ames Research Center, Moffett Field, CA</p>	Embassy E
Thursday, 19 June 2014					
<p>243-ACD-10</p> <p>Chartered by: P. RAI, Virginia Polytechnic Institute and State University</p> <p>0930 hrs AIAA-2014-2864 Parametric Design Space Exploration and Uncertainty Characterization of Advanced Concepts Using Gaussian Processes H. Schwartz, Georgia Institute of Technology, Atlanta, GA</p>	<p>1000 hrs AIAA-2014-2865 Drag Model for Airplanes with Propellers N. Pfeiffer, Pfeiffer Consulting, Wichita, KS; D. Lednicer, Aeromechanical Solutions, Redmond, WA</p>	<p>1030 hrs AIAA-2014-2866 A Study of Airplane Excrescence Drag N. Pfeiffer, Pfeiffer Consulting, Wichita, KS; D. Lednicer, Aeromechanical Solutions, Redmond, WA</p>	<p>1100 hrs AIAA-2014-2867 UCAV Shape Design with Variable-Fidelity Aerodynamic Analysis Using Kriging Surrogate Model with Regression Y. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; S. Choi, Virginia Polytechnic Institute and State University, Blacksburg, VA; D. Lee, Korea Advanced Institute of Science and Technology, Daejeon, South Korea</p>	<p>1130 hrs AIAA-2014-2868 Platform Optimization of a Flying Wing with a Solid Homogeneous Structure D. Pate, B. German, Georgia Institute of Technology, Atlanta, GA</p>	<p>1200 hrs AIAA-2014-2869 Shape and Kinematic Design Optimization of the Pterosaur replica M. Zakaria, H. Taha, M. Haji, Virginia Polytechnic Institute and State University, Blacksburg, VA</p>
Thursday, 19 June 2014					
<p>244-MAO-11</p> <p>Chartered by: R. CANFIELD, Virginia Tech</p> <p>0930 hrs AIAA-2014-2870 Statistical Sensitivity Analysis Considering both Aleatory and Epistemic Uncertainties in Multidisciplinary Design Z. Jiang, W. Chen, Northwestern University, Evanston, IL; B. German, Georgia Institute of Technology, Atlanta, GA</p>	<p>1000 hrs AIAA-2014-2871 Uncertainty Propagation for a Subsonic Aircraft in a Coupled Fluid-Structure Interaction Environment during Conceptual Design K. Raghunath, U.S. Air Force, Robins AFB, GA; D. Rancourt, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1030 hrs AIAA-2014-2872 Covariance Matching Collaborative Optimization for Uncertainty-based Multidisciplinary Aircraft Design S. Ghosh, C. Lee, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1100 hrs AIAA-2014-2873 Multidisciplinary Analysis and Optimization: Uncertainty I</p>	Embassy F	
Thursday, 19 June 2014					
<p>245-MAO-12</p> <p>Chartered by: R. CANFIELD, Virginia Tech</p> <p>0930 hrs AIAA-2014-2874 Statistical Sensitivity Analysis Considering both Aleatory and Epistemic Uncertainties in Multidisciplinary Design Z. Jiang, W. Chen, Northwestern University, Evanston, IL; B. German, Georgia Institute of Technology, Atlanta, GA</p>	<p>1000 hrs AIAA-2014-2875 Uncertainty Propagation for a Subsonic Aircraft in a Coupled Fluid-Structure Interaction Environment during Conceptual Design K. Raghunath, U.S. Air Force, Robins AFB, GA; D. Rancourt, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1030 hrs AIAA-2014-2876 Covariance Matching Collaborative Optimization for Uncertainty-based Multidisciplinary Aircraft Design S. Ghosh, C. Lee, D. Morris, Georgia Institute of Technology, Atlanta, GA</p>	<p>1100 hrs AIAA-2014-2877 Multidisciplinary Analysis and Optimization: Uncertainty II</p>	Embassy G	

Thursday, 19 June 2014		ANERS-Technology		Embassy H
245-ANERS-3 Chaired by: F. COLLIER, NASA-Langley Research Center				
0930 hrs AIAA-2014-2873	1000 hrs AIAA-2014-2874	1030 hrs AIAA-2014-2875	1100 hrs AIAA-2014-2876	1130 hrs AIAA-2014-2877
Assessing the potential benefit of future technologies to reduce the environmental impact of airport operations N. Dzikus, German Aerospace Center (DLR), Hamburg, Germany; R. Wollenheit, Braunschweig, Germany; M. Schaefer, German Aerospace Center (DLR), Cologne, Germany; V. Gollnick, German Aerospace Center (DLR), Hamburg, Germany	Updated Estimates of N+2 Aircraft Technologies Towards meeting a 2020 Carbon Neutral Goal H. Pfander, H. Jimenez, J. Schutte, D. Mavis, Georgia Institute of Technology, Atlanta, GA	Technology Portfolio Analysis for Environmentally Responsible Aviation T. Thompson, Metron Aviation, Inc., Dulles, VA	Analysis of Vehicle Class Contributions to Total DNIL Response J. Bernardo, O. Kiehl, M. Kirby, D. Mavis, Georgia Institute of Technology, Atlanta, GA	DNL Contour Area Sensitivity to Fleet-Level Operational Characteristics J. Bernardo, M. Kirby, D. Mavis, Georgia Institute of Technology, Atlanta, GA
1200 hrs AIAA-2014-2878	1200 hrs AIAA-2014-2878			Representing Multiple Airlines to Study Fleet-Level Environmental Metrics L. Tetzloff, W. Crossley, Purdue University, West Lafayette, IN
Thursday, 19 June 2014 246-APA-39 Chaired by: M. CALVERT, U.S. Army AMRDEC and M. SYTSMA, University of Florida				
0930 hrs AIAA-2014-2879	1000 hrs AIAA-2014-2880	1030 hrs AIAA-2014-2881	1100 hrs AIAA-2014-2882	
Flapping Wing Aerodynamics on 3D Flow Field Investigations H. Ehlers, R. Konath, German Aerospace Center (DLR), Göttingen, Germany; R. Wokocek, R. Radespiel, Technical University of Braunschweig, Braunschweig, Germany	Visualization and PIV Measurements of Leading-edge Vortex generated by Rigid Flapping Wings of Different Platforms P. Deshpande, R. Antony, National Aerospace Laboratories, Bangalore, India; P. Narayanan, Naltech Private, Ltd., Bangalore, India; A. Rajeshon, National Institute of Technology, Trichy, India; D. Singh, Manipal Institute of Technology, Manipal, India; G. Ramesh, National Aerospace Laboratories, Bangalore, India	Aerodynamics of Pitching Wings: Theory and Experiments H. Yu, L. Bemal, University of Michigan, Ann Arbor, Ann Arbor, MI; K. Granlund, M. OI, Air Force Research Laboratory, Wright-Patterson AFB, OH; L. Bernal, University of Michigan, Ann Arbor, Ann Arbor, MI	Non-linearity of apparent mass for multi-element bodies K. Granlund, M. OI, Air Force Research Laboratory, Wright-Patterson AFB, OH; L. Bernal, University of Michigan, Ann Arbor, Ann Arbor, MI	
Thursday, 19 June 2014 247-FD-22 Chaired by: B. THURLOW, Auburn University				
0930 hrs AIAA-2014-2883	1000 hrs AIAA-2014-2884	1030 hrs AIAA-2014-2885	1100 hrs AIAA-2014-2886	1130 hrs AIAA-2014-2887
Phase Relationships in Presence of a Synthetic Large-Scale in a Turbulent Boundary Layer S. Duvvuri, B. McKeon, California Institute of Technology, Pasadena, CA	On non-parallel-flow effects on boundary-layer instability: a non-perturbative approach based on local expansion Z. Huang, Tianjin University, Tianjin, China; X. Wu, Imperial College London, London, United Kingdom	On the Growth of Görtler Vortices Excited by Distributed Roughness Elements A. Sescu, R. Pendyala, D. Thompson, Mississippi State University, Mississippi State, MS	Stability of a boundary layer flow in the wake of a medium height roughness element B. Plagmann, W. Wuerz, E. Kraemer, University of Stuttgart, Stuttgart, Germany	Comparison of Large Scale Features in Zero and Adverse Pressure Gradient Turbulent Boundary Layers M. Melnick, B. Thurow, Auburn University, Auburn, AL
1200 hrs AIAA-2014-2888		1200 hrs AIAA-2014-2888		
Distributed Roughness Shielding in a Blasius Boundary Layer M. Koesler, Texas A&M University, College Station, TX; A. Sharma, University of Texas, Austin, TX; E. White, Texas A&M University, College Station, TX; D. Goldstein, University of Texas, Austin, TX				
Thursday, 19 June 2014 247-FD-22 Chaired by: B. THURLOW, Auburn University				
Low-Speed Boundary Layers: Stability, Transition, and Turbulent Structure				
Greenbriar				

Thursday, 19 June 2014		Jet Noise Measurements I		Hanover A	
Chartered by: P. MORRIS, Pennsylvania State University					
0930 hrs AIAA-2014-2889 An experimental investigation into noise radiation from thin rectangular jets	1000 hrs AIAA-2014-2890 Twin Jet Effects on Noise of Round and Rectangular Jets: Experiment and Model	1030 hrs AIAA-2014-2891 Instability Modes in Screeching Elliptical Jets			
R. Henrywood, A. Agarwal, H. Babinsky, University of Cambridge, Cambridge, United Kingdom	R. Bozak, NASA Glenn Research Center, Cleveland, OH	D. Mitchell, D. Homery, J. Soric, Monash University, Clayton, Australia			
Thursday, 19 June 2014					
249-AA-19		CAA Sound Generation II		Hanover B	
Chartered by: T. IWAMURA, The University of Tokyo					
0930 hrs AIAA-2014-2892 Evaluation of a time-linearized Navier-Stokes method for booster tone noise analyses	1000 hrs AIAA-2014-2893 Numerical Investigation of Active Flow Control using Steady Blowing for Landing Gear Noise Reduction	1030 hrs AIAA-2014-2894 Lattice-Boltzmann Simulations of the Aeroacoustics Properties of Round Cavities			
N. Wukie, P. Okwis, University of Cincinnati, Cincinnati, OH; J. Wojno, T. Goerg, General Electric Company, Cincinnati, OH	M. Aubert, O. Stanley, D. Angland, X. Zhang, University of Southampton, Southampton, United Kingdom	A. Hazi, D. Casolino, R. Denis, A. Ribeiro, Exa Corporation, Stuttgart, Germany			
Thursday, 19 June 2014					
250-ASE-14/GT-10		NASA Propulsion Systems Laboratory Ice Crystal Engine Icing Test		Hanover C	
Chartered by: M. BRAVIN and J. PATRICK, Lockheed Martin Corporation					
0930 hrs AIAA-2014-2895 Turbofan Ice Crystal Rollback Investigation and Preparations	1000 hrs AIAA-2014-2896 PSI Icing Facility Upgrade Overview	1030 hrs AIAA-2014-2897 NASA Glenn Propulsion Systems Lab: 2012 Inaugural Ice Crystal Cloud Calibration	1100 hrs AIAA-2014-2898 Validation Ice Crystal Icing Engine Test in the Propulsion Systems Laboratory at NASA Glenn Research Center	1200 hrs AIAA-2014-2899 Modeling of Commercial Turbofan Engine with Ice Crystal Ingestion; Follow-On	
R. Goodwin, D. Dischinger, Honeywell International, Inc., Phoenix, AZ	T. Griffin, NASA Glenn Research Center, Cleveland, OH; P. Lizanich, Sierra Lobo, Inc., Cleveland, OH; D. Dicki, NASA Glenn Research Center, Cleveland, OH	J. Van Zante, NASA Glenn Research Center, Cleveland, OH; B. Rosine, Jacobs, Cleveland, OH	M. Oliver, NASA Glenn Research Center, Cleveland, OH	J. Veves, P. Jorgerson, NASA Glenn Research Center, Cleveland, OH; R. Coeneni, Kent State University, Kent, OH	
Thursday, 19 June 2014					
251-ASE-15		Airspace Systems Hazards and Constraints		Hanover D	
Chartered by: J. MURRAY, NASA-Langley Research Center and M. POLITOVICH, National Center for Atmospheric Research					
0930 hrs AIAA-2014-2900 Airline and airport operations under lightning threats - Safety risks, impacts, uncertainties, and how to deal with them all	1000 hrs AIAA-2014-2901 Observed Heuristics and Biases in Air Traffic Management Decision Making Using Convective Weather Uncertainty	1030 hrs AIAA-2014-2902 An Optimized Neural Network Approach for Rapid Unpressurized Compartment Venting Predictions			
M. Steiner, W. Deierling, K. Ikeda, E. Nelson, National Center for Atmospheric Research, Boulder, CO; R. Bass, Federal Aviation Administration, Washington, DC	W. Gibbons, General Dynamics Corporation, Washington, DC; J. Jonsson, HI-Ice Systems, Washington, DC; S. Abelman, R. Bass, Federal Aviation Administration, Washington, DC	P. Rodi, Lockheed Martin Corporation, Houston, TX			

Thursday, 19 June 2014		Jet Noise Prediction III		Hanover E	
252-AA-20		Jet Noise Prediction III		Hanover E	
Chaired by: R. EWERT, DLR - German Aerospace Center					
0930 hrs AIAA-2014-2903 Continued development of the one-way Euler equations: application to jets A. Towne, T. Colonius, California Institute of Technology, Pasadena, CA	1000 hrs AIAA-2014-2904 Experiments on Exhaust Noise of Tightly Integrated Propulsion Systems J. Bridges, C. Brown, R. Bozak, NASA Glenn Research Center, Cleveland, OH	1030 hrs AIAA-2014-2905 Analysis of LES for source modeling in jet noise A. Bassetti, German Aerospace Center (DLR), Berlin, Germany; J. Nichols, University of Minnesota, Minneapolis, Minneapolis, MN	1100 hrs AIAA-2014-2906 Acoustic waveforms produced by a laboratory scale supersonic jet R. Fievet, C. Timney, University of Texas, Austin, TX; W. Baars, University of Melbourne, Melbourne, Australia	1130 hrs AIAA-2014-2907 How Small can a Nozzle be for Accurately Scaling Jet Noise to a Larger Nozzle? A. Karan, K. Ahuja, Georgia Institute of Technology, Atlanta, GA	
Thursday, 19 June 2014					
253-AA-21		Boundary Layer Noise		Hanover F	
Chaired by: W. DEVENPORT, Virginia Tech					
0930 hrs AIAA-2014-2908 Noise from Boundary Layer Flow over Fabric Covered Perforate Panels W. Alexander, W. Deavenport, Virginia Polytechnic Institute and State University, Blacksburg, VA	1000 hrs AIAA-2014-2909 An experimental characterisation of wall pressure wavevector-frequency spectra in the presence of pressure gradients E. Salze, C. Bailly, O. Marsden, E. Jondeau, D. Juve, Ecole Centrale de Lyon, Ecully, France	1030 hrs AIAA-2014-2910 Empirical Spectral Model of Surface Pressure Fluctuations beneath Adverse Pressure Gradients M. Collier, J. Forest, J. Anderson, D. Stewart, Naval Surface Warfare Center, West Bethesda, MD	1100 hrs AIAA-2014-2911 The Noise Generating and Suppressing Characteristics of Bio-Inspired Rough Surfaces I. Clark, W. Deavenport, Virginia Polytechnic Institute and State University, Blacksburg, VA; J. Jaworski, Lehigh University, Bethlehem, PA; C. Dohy, N. Peake, University of Cambridge, Cambridge, United Kingdom; S. Glegg, Florida Atlantic University, Boca Raton, FL	1130 hrs AIAA-2014-2912 Analysis of Numerical Simulation Database for Acoustic Radiation from High-Speed Turbulent Boundary Layers L. Duan, Missouri University of Science and Technology, Rolla, MO; M. Choudhari, NASA Langley Research Center, Hampton, VA	
Thursday, 19 June 2014					
254-AA-22		Acoustic Beamforming I		Hanover G	
Chaired by: R. DOUGHERTY, OptiNav Inc					
0930 hrs AIAA-2014-2913 Predicting far-field broadband noise levels from in-duct phased array measurements B. Tester, University of Southampton, Southampton, United Kingdom; Y. Özyavuk, Middle East Technical University, Ankara, Turkey	1000 hrs AIAA-2014-2914 On Using Functional Beamforming To Resolve Noise Sources On A Large Wind Turbine R. Ramachandran, G. Raman, Illinois Institute of Technology, Chicago, IL	1030 hrs AIAA-2014-2915 A Two-Microphone Method For The Estimation Of The Mode Amplitude Distribution on Multimode Broadband Sound Field in Fine-Length Ducts With Uniform Mean Flow P. Joseph, University of Southampton, Southampton, United Kingdom; F. Mouries, Saecma, Paris, France; L. Enghardt, German Aerospace Center (DLR), Berlin, Germany	1100 hrs AIAA-2014-2916 Detection of Non-Stationary Aeroacoustic Sources by Time-Domain Imaging Methods I. Rakotonirainy, J. Fischer, D. Marx, V. Valeau, C. Prax, L. Brizzi, National Center for Scientific Research (CNRS), Poitiers, France; et al.	1130 hrs AIAA-2014-2917 An Experimental Comparison of Beamforming, Time-reversal and Near-field Acoustic holography for Aeroacoustic Source Localization Z. Prime, A. Mimani, D. Moreau, C. Doolan, University of Adelaide, Adelaide, Australia	1200 hrs AIAA-2014-2918 Compressive sensing based beamforming and its application in aeroacoustic experiment Q. Wei, W. Yu, X. Huang, Peking University, Beijing, China
Thursday, 19 June 2014					
255-FD-23		Multiphase Flows I: Non-Newtonian Liquids, Atomization, and Surface Tension Effects		Harris	
Chaired by: C. TSAI, Lockheed Martin Space Systems and R. SINGH, General Electric Global Research					
0930 hrs AIAA-2014-2919 Breakup of non-Newtonian Liquid Droplets P. Khare, V. Yang, Georgia Institute of Technology, Atlanta, GA	1000 hrs AIAA-2014-2920 Predicted Liquid Atomization from a Spent Nuclear Fuel Reprocessing Pressurization Event A. Brown, F. Gelbard, D. Louie, C. Feng, N. Bixler, Sandia National Laboratories, Albuquerque, NM	1030 hrs AIAA-2014-2921 Transients in Surface Tension Driven Flows under Microgravity A. Kanam, R. Basavanahalli, Indian Institute of Science, Bangalore, India	1100 hrs AIAA-2014-2922 Fluid-Particle Interaction in Vortex-Induced Dual-Phase Flows Above a Sediment Bed J. Kowalewski, J. Leishman, University of Maryland, College Park, College Park, MD		

Thursday, 19 June 2014		Simulation Algorithms II		Inman
256-FD-24		Simulation Algorithms II		Inman
Chaired by: J. EDWARDS and J. SITARAMAN, University of WY				
0930 hrs AIAA-2014-2923 A Guide to the Implementation of Boundary Conditions in Compact High-Order Methods for Compressible Aerodynamics G. Mengaldo, D. De Grazia, F. Witherden, A. Frington, P. Vincent, S. Sherwin, Imperial College London, United Kingdom; et al.	1000 hrs AIAA-2014-2924 Energy stable overset grid methods for hyperbolic problems N. Saram, C. Pantano, D. Bodony, University of Illinois, Urbana-Champaign, Urbana, IL	1030 hrs AIAA-2014-2925 Multi-scale mesh adaptation for viscous flows A. Loselle, V. Menier, French National Institute for Research in Computer Science and Control (INRIA), Paris, France		
Thursday, 19 June 2014				
257-FD-25		Airfoils and Wings		Kenneshaw
Chaired by: J. SCHEITZ, Virginia Polytechnic Institute and State University and K. GRANLUND, Air Force Research Laboratory				
0930 hrs AIAA-2014-2926 Unsteady aerodynamics of an airfoil in an oscillating free stream C. Strangfeld, Technical University of Berlin, Berlin, Germany; H. Mueller-Vahl, D. Greenblatt, Technion-Israel Institute of Technology, Haifa, Israel; C. Nayeri, C. Pascheit, Technical University of Berlin, Berlin, Germany	1000 hrs AIAA-2014-2927 Airfoils Supporting Non-unique Transonic Solutions for Unsteady Viscous Flows K. Ou, Honda Aircraft Company, Greensboro, NC; A. Jameson, Stanford University, Stanford, CA; J. Vassberg, The Boeing Company, Long Beach, CA	1030 hrs AIAA-2014-2928 Studies of Wings Supporting Non-unique Solutions in Transonic Flows K. Ou, Honda Aircraft Company, Greensboro, NC; A. Jameson, Stanford University, Stanford, CA; J. Vassberg, The Boeing Company, Long Beach, CA	1100 hrs AIAA-2014-2929 Transitional Flow and Aeroacoustic Prediction of MACA0018 at $Re=1.6 \times 10^5$ F. Mendonca, CD-adapco, London, United Kingdom; S. Kumar Bonithu, G. Kim, CD-adapco, Seoul, South Korea	
Thursday, 19 June 2014				
258-HYASP-8		Propulsion Cycle Performance-Scramjet Tests II		Learning Center
Chaired by: M. MAITA, Japan Aerospace Exploration Agency and M. KNISKERN, Sandia National Laboratories				
0930 hrs AIAA-2014-2930 Experimental Testing of an Airframe Integrated 3-D Scramjet at True Mach 10 Flight Conditions L. Doherty, M. Smart, D. Mee, University of Queensland, Brisbane, Australia	1000 hrs AIAA-2014-2931 Freejet Testing of the 75%-scale HIFIRE 7 REST Scramjet Engine Y. Wilson Chan, S. Razaq, D. Wise, M. Smart, University of Queensland, Brisbane, Australia	1030 hrs AIAA-2014-2932 Combustion of hydrogen in hot air flows within LAPCAT-II Dual Mode Ramjet combustor at Onera-LAERTE facility - Experimental and Numerical Investigation A. Vincenik-Kandoinier, Y. Moule, M. Ferrier, ONERA, Palaiseau, France	1100 hrs AIAA-2014-2933 Experimental and Numerical Investigations of a Scramjet Model Tested in the H2K Blow Down Wind Tunnel at Mach 7 Flight Condition J. Riehlmer, German Aerospace Center (DLR), Cologne, Germany; E. Rabadan, University of Stuttgart, Stuttgart, Germany; A. Guelhan, German Aerospace Center (DLR), Cologne, Germany; B. Weigand, University of Stuttgart, Stuttgart, Germany	1130 hrs AIAA-2014-2934 Experimental Investigation of the Starting Behavior of a three-dimensional Scramjet Intake with a Movable Cowl and Exchangeable Numbers A. Flock, A. Guelhan, German Aerospace Center (DLR), Cologne, Germany

Thursday, 19 June 2014		Closed-Loop Flow Control		Lenox	
Chartered by: D. WILLIAMS, Illinois Institute of Technology and S. GORDEYEV, University of Notre Dame					
0930 hrs AIAA-2014-2935 Closed-loop Control of Shock Location in Mach 1.8 Direct Connect Wind Tunnel J. Ashley, M. Szumik, N. Clemens, M. Akella, University of Texas, Austin, Austin, TX; J. Donbar, Air Force Research Laboratory, Wright- Patterson AFB, OH; S. Gogineni, Spectral Energies, LLC, Dayton, OH	1000 hrs AIAA-2014-2936 Robust Nonlinear Control of Airfoil Gust-Induced Limit Cycle Oscillations Using Synthetic Jet Actuators V. Golubev, L. Nguyen, M. Counts, B. Guenther, W. MacKunis, N. Ramos, Embry-Riddle Aeronautical University, Daytona Beach, FL	1030 hrs AIAA-2014-2937 Two-Dimensional Optimisation by Iterative Learning for Flow Separation Control Z. Cai, D. Angland, X. Zhang, University of Southampton, Southampton, United Kingdom; P. Chen, China Aerodynamics Research and Development Center, Mianyang, China	1100 hrs AIAA-2014-2938 Indirect adaptive control of unknown diffusion equation T. Aïmeche, C. Collewet, National Institute for Research in Computer Science and Control, Rennes, France		
Thursday, 19 June 2014					
260-AMT-12/GT-11					
Chartered by: M. REEDER, Air Force Institute of Technology and K. LOWE, Virginia Tech					
0930 hrs AIAA-2014-2939 Transition Detection for Low Speed Wind Tunnel Testing using Infrared Thermography L. Joseph, A. Borgoltz, W. Devenport, Virginia Polytechnic Institute and State University, Blacksburg, VA	1000 hrs AIAA-2014-2940 Large-Span, Non-Contact Surface Profilometry for Laminar-Flow Diagnostics B. Crawford, G. Duncan, D. West, W. Sartc, Texas A&M University, College Station, TX	1030 hrs AIAA-2014-2941 Characterization of Signal Output of Pressure-Sensitive Paint by Quantum Efficiency using Integration Sphere H. Soeki, H. Ishikawa, Tokyo University of Science, Kasushika, Japan; H. Sakauye, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan	1100 hrs AIAA-2014-2942 Temperature Cancellation Method of Motion-Capturing PSP System Y. Yamada, T. Okabe, T. Miyazaki, University of Electro-Communications, Chofu, Japan; H. Sakauye, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan	1130 hrs AIAA-2014-2943 Fast Response PSP Measurement In a Hypersonic Wind Tunnel X. Xiang, M. Yuan, J. Yu, China Academy of Aerospace Aerodynamics, Beijing, China; L. Chen, Chinese Academy of Sciences, Beijing, China	Marietta
Thursday, 19 June 2014					
261-AA-23					
Chartered by: L. LIEBER, Honeywell Aerospace					
0930 hrs AIAA-2014-2944 Analysis of Mean Loading Effects in Fan Broadband Noise Simulations S. Grace, Boston University, Boston, MA; L. Ayrton, University of Cambridge, Cambridge, United Kingdom	1000 hrs AIAA-2014-2945 Modelling the Nonlinear Sound Propagation and Radiation of Supersonic Fan Tones O. Adefifa, A. McAlpine, G. Gabard, University of Southampton, Southampton, United Kingdom	1030 hrs AIAA-2014-2946 RANS-informed fan noise prediction: separation and extrapolation of rotor wake and potential field R. Jaron, A. Moreau, S. Guerin, German Aerospace Center (DLR), Berlin, Germany	1100 hrs AIAA-2014-2947 Direct Noise Computation of Linear and Nonlinear Rotor-Stator Interaction Modes in Transonic Cascades B. Pimenta, R. Bobenieth Misendo, University of Brasilia, Brasilia, Brazil	1200 hrs AIAA-2014-2949 Tonal noise generation mechanisms in low-speed mixed-flow fans T. Newman, A. Agarwal, A. Dowling, University of Cambridge, Cambridge, United Kingdom; R. Simpson, Dyson, Ltd., Malmesbury, United Kingdom	Piedmont
Thursday, 19 June 2014					
262-HYTASP-9					
Chartered by: A. VIVIANI, Seconda Università di Napoli and R. STARKEY, University of Colorado Boulder					
0930 hrs AIAA-2014-2950 Combustor and Material Integration for high speed aircraft in the European research Program ATLAS2 M. Bouchez, B. Le Nour, MBDA, Bourges, France; C. Davoine, J. Justit, ONERA, Châtillon, France; J. von Wolferdorf, M. Abdelmalek, University of Stuttgart, Stuttgart, Germany, et al.	1000 hrs AIAA-2014-2951 Mixing and Mass Exchange for Cavities in Supersonic Flows F. Barnes, Q. Tu, C. Segal, University of Florida, Gainesville, Gainesville, FL	1030 hrs AIAA-2014-2952 Design of a Model Scramjet Combustor for Vortex-Enhanced Mixing and Combustion Studies C. Ground, W. Zhu, L. Maddalena, University of Texas, Arlington, Arlington, TX	1100 hrs AIAA-2014-2953 Experimental Design of a Cavity Flameholder in a Mach 8 Shape-Transitioning Scramjet Z. Denman, S. Brieschenk, A. Veeraravagan, V. Wheatley, M. Smart, University of Queensland, Brisbane, Australia	1130 hrs AIAA-2014-2954 Inverse Simulation for Hypersonic Vehicle Analysis S. Forbes-Spyrianos, I. John, D. Prielor, M. Smart, University of Queensland, Brisbane, Australia	Regency Ballroom V

Thursday, 19 June 2014		Towards an Integrated Global ATM - NextGen/Sesar		Regency Ballroom VI	
263-PANEL-7 0930 - 1100 hrs Moderator: Victoria Cox, Former Assistant Administrator for NextGen, FAA (retired) Panelists:		Edward Bolton Assistant Administrator for NextGen FAA ANG-1		Marc Hamy Vice President, SESAR Deployment, Airbus ProSky	
Thursday, 19 June 2014					
264-AA-24					
Chaird by: G. EFRAMSSON, KTH Royal Institute Of Technology					
0930 hrs AIAA-2014-2955 Comparison of impedance eduction results using different methods and test rigs L. Zhou, H. Boden, Royal Institute of Technology (KTH), Stockholm, Sweden; C. Lahiri, F. Bake, L. Enghardt, German Aerospace Center (DLR), Berlin, Germany; S. Busse-Geestengarbe, Technical University of Berlin, Berlin, Germany; et al.	1000 hrs AIAA-2014-2956 Determination of Liner Impedance under High Temperature and Grazing Flow Conditions R. Kahral, H. Boden, Royal Institute of Technology (KTH), Stockholm, Sweden; T. Elnooby, Ain Shams University, Cairo, Egypt	1030 hrs AIAA-2014-2957 Experimental evaluation of the acoustic damping effect of single-layer perforated liners with joint bias-grazing flow C. Ji, D. Zhao, S. Li, X. Li, Nanyang Technological University, Singapore, Singapore	1100 hrs AIAA-2014-2958 A new computational model for circumferentially non-uniform liner X. Wang, Beihang University, Beijing, China; L. Huang, University of Hong Kong, Hong Kong, China; X. Sun, Beihang University, Beijing, China	1130 hrs AIAA-2014-2959 Combined Numerical and Experimental Study of a Slit Resonator Under Grazing Flow H. Denoyer, Catholic University of Leuven, Leuven, Belgium; J. Bourmaire, LMS International, Leuven, Belgium; W. De Roeck, W. Desmet, Catholic University of Leuven, Leuven, Belgium; P. Martinez-Lera, LMS International, Leuven, Belgium	1200 hrs AIAA-2014-2960 Simulations of acoustic wave propagation in an impedance tube using a frequency-domain linearized Navier-Stokes methodology W. Na, S. Boij, G. Efraimsson, Royal Institute of Technology (KTH), Stockholm, Sweden
Spring					
Thursday, 19 June 2014					
265-TP-17					
Chaird by: D. LIECHTY, NASA-Langley Research Center and C. KOBUS, Oakland University					
0930 hrs AIAA-2014-2961 Nonequilibrium Modeling of Oxygen in Reflected Shock Tube Flows K. Weitzel, J. Kim, I. Boyd, University of Michigan, Ann Arbor, Ann Arbor, MI	1000 hrs AIAA-2014-2962 Measurement and Characterization of Mid-wave Infrared Radiation in CO2 Shocks B. Cuden, A. Brandis, D. Prabhu, ERC, Inc., Moffett Field, CA	1030 hrs AIAA-2014-2963 Thermochemical Nonequilibrium Modeling of Electronically Excited Molecular Oxygen J. Kim, I. Boyd, University of Michigan, Ann Arbor, Ann Arbor, MI	1100 hrs AIAA-2014-2964 Quasistatic Trajectory Analysis of the N2-N2 Reaction Using New Ab Initio Potential Energy Surfaces J. Bender, G. Candler, S. Doraiswamy, University of Minnesota, Minneapolis, Minneapolis, MN	1130 hrs AIAA-2014-2965 Radiation intensity measurement in VUV wavelength region behind strong shock wave for future sample return missions H. Takayanagi, K. Fujita, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan; H. Ishida, Waseda University, Shinjuku, Japan; K. Yamada, T. Abe, Japan Aerospace Exploration Agency (JAXA), Chofu, Japan	1200 hrs AIAA-2014-2966 Development of Mutation++: Multicomponent Thermodynamic and Transport Properties for Ionized Plasmas written in C++ J. Scoggins, T. Magin, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium
Techwood					
Thursday, 19 June 2014					
266-TP-18					
Chaird by: K. NAMAZ, Johnson Controls Inc. and H. JIA, University of Missouri					
0930 hrs AIAA-2014-2967 Convective heat transfer characteristics of supercritical hydrocarbon fuel in small non-circular cross-section channels Y. Guo, Z. Yang, L. Jiang, Z. Liu, Q. Bi, Xi'an Jiaotong University, Xi'an, China	1000 hrs Oral Presentation Measurement of Interface Thermal Resistance with Neutron Diffraction S. Lee, Columbia University, New York, NY	1030 hrs AIAA-2014-2968 Heat transfer characteristics of hydrocarbon fuel in a horizontal small tube under different pressures Z. Yang, L. Jiang, Y. Guo, Z. Liu, Q. Bi, Xi'an Jiaotong University, Xi'an, China			
University					

Thursday, 19 June 2014		Propeller Noise III		Vinnings	
Chartered by: D. LOCKARD, NASA-Langley Research Center					
0930 hrs AIAA-2014-2969 Influence of Torque Ratio on Counter Rotating Open Rotor Interaction Noise G. Deloffre, ONERA, Meudon, France; F. Falissard, ONERA, Châtillon, France	1000 hrs AIAA-2014-2970 Open Rotor Blade Leading Edge Optimization to Mitigate Noise Increase Due to Flow Incidence H. Namgoong, Rolls-Royce Group plc, Derby, United Kingdom	1030 hrs AIAA-2014-2971 Installation Effects on Contra-Rotating Open Rotor Noise at High-Speed Y. Colin, F. Wissow, B. Caruelle, T. Nade-Langlais, M. Omais, P. Spiegel, Airbus, Toulouse, France, et al.	1100 hrs AIAA-2014-2972 Aerodynamic and Aeroacoustics Predictions of Wells Turbines Using LBM M. Meskine, F. Perot, M. Kim, Exa Corporation, Brisbane, CA; R. Straszmann, T. Carolus, University of Siegen, Siegen, Germany	1130 hrs AIAA-2014-2973 Cyclostationary Spectral Analysis for the Measurement of and Prediction of Wind Turbine Swishing Noise Kraer, P. Joseph, University of Southampton, Southampton, United Kingdom	
Thursday, 19 June 2014					
268-LNCH-4 1230 - 1400 hrs		Awards Luncheon: Celebrating Achievements in Aircraft and Atmospheric Systems			
Thursday, 19 June 2014					
269-APA-40		Flow Control (Active and Passive): Computational and Experimental Results VI			
Chartered by: V. BHAGWANDIN, US Army Research Laboratory and G. GATLIN					
1400 hrs AIAA-2014-2974 Improving robust stability by increasing the number of controlled degrees of freedom T. Arimoto, C. Collewel, National Institute for Research in Computer Science and Control, Rennes, France	1430 hrs AIAA-2014-2975 Towards the Noise Reduction of Piezoelectrical-Driven Synthetic Jet Actuators M. Jabbar, S. Kykkolis, Brunel University, Uxbridge, United Kingdom	1500 hrs AIAA-2014-2976 Effectiveness of Flow Separation Control on Contour Bumps under a March 1.3 Freestream: An Experimental Study K. Lo, University of Manchester, Manchester, United Kingdom; H. Zare-Behzad, K. Kontis, University of Glasgow, Glasgow, United Kingdom	1530 hrs AIAA-2014-2977 Comparison of Experimental and Computational Flow Structure Investigations of a Normal-Hole Bled Supersonic Boundary Layer J. Orebeck, H. Babinsky, University of Cambridge, Cambridge, United Kingdom; M. Ugolotti, P. Okwis, S. Duncan, University of Cincinnati, Cincinnati, OH	1600 hrs AIAA-2014-2978 Large Low-Frequency Oscillations Initiated by Sub-Optimal Flow Control on a Post-Stall Airfoil C. Bernardin, S. Benoni, K. Hipp, J. Bons, Ohio State University, Columbus, OH	1630 hrs AIAA-2014-2979 Active Control of Flow over Backward Facing Step by Synthetic Jets Z. Zhang, D. Li, Northwestern Polytechnical University, Xi'an, China; X. Ming, Nanjing University of Aeronautics and Astronautics, Nanjing, China
Thursday, 19 June 2014					
270-APA-41		Aerodynamic Analysis and Design: Higher Order Methods in CFD			
Chartered by: J. SLOTNICK, Boeing Engineering Operations & Technology and P. MORGAN, Ohio Aerospace Institute					
1400 hrs AIAA-2014-2980 A Streamline/Uprwind Petrov Galerkin Overset Grid Scheme for the Navier-Stokes Equations with Moving Domains C. Liu, J. Newman, W. Anderson, University of Tennessee, Chattanooga, Chattanooga, TN	1430 hrs AIAA-2014-2981 A High-Order Discontinuous Galerkin Method for External Aerodynamics I. Bosnyakov, S. Lyapunov, A. Troshin, V. Vlasenko, A. Volkov, TsAGI, Zhukovskiy, Russia; C. Hirsch, NUMECA International, Brussels, Belgium	1500 hrs AIAA-2014-2982 Time-integration for incompressible viscous flows: Stepsize and order selection based on the BDF A. Hay, S. Etienne, D. Peletier, Ecole Polytechnique de Montréal, Montréal, Canada	1530 hrs AIAA-2014-2983 High-Order Finite-Element Method and Dynamic Adaptation for Two-Dimensional Laminar and Turbulent Navier-Stokes B. Reza Ahmadi, W. Anderson, J. Newman, University of Tennessee, Chattanooga, Chattanooga, TN	1600 hrs AIAA-2014-2984 A Comparative Study of Discontinuous High Order Methods for Compressible Flows C. Breviglieri, L. Paula, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil; W. Wolf, F. Moreira, University of Campinas, Campinas, Brazil; J. Azevedo, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil	1630 hrs AIAA-2014-2985 High-order residual-based compact schemes for compressible flows on overset grids P. Outier, C. Content, P. Cinnella, Paris Institute of Technology, Paris, France
1700 hrs AIAA-2014-2986 A high-order and conservative method is developed for the numerical treatment of interface conditions in patched grids, based on the use of a fictitious grid methodology. The proposed approach is compared with a non-conservative interpolation of the state variables from the neighbouring domain for selected internal flow problems B. Maugars, ONERA, Châtillon, France; P. Cinnella, Paris Institute of Technology, Paris, France; B. Michel, ONERA, Châtillon, France					

Thursday, 19 June 2014		Aerodynamic Analysis and Design: Analysis Methods I			Dunwoody
Chartered by: K. VANDEN, USAF and D. LACY, Boeing Commercial Airplanes					
1400 hrs AIAA-2014-2987 Development of a Transonic Fin Aerodynamic Database for Incorporation into Missile Datomic W. Coiter, J. Sturts, Kratos/Digital Fusion, Inc., Huntsville, AL; C. Rosema, Army Aviation and Missile Research Development and Engineering Center, Huntsville, AL	1430 hrs AIAA-2014-2988 Highly non-planar Lifting Systems: A relative assessment of existing Potential-Methodologies to accurately estimate the Induced Drag J. Schiro, RMIT University, Melbourne, Australia; J. Wamuff, M. Rauscher, Aachen University of Applied Sciences, Aachen, Germany	1500 hrs AIAA-2014-2989 Application of Non-Planar Lifting-Line Theory to Simple Aeroelastic Problems A. Kuenen, L. Klimant, K. Rokhsaz, Wichita State University, Wichita, KS	1530 hrs AIAA-2014-2990 Aerodynamic Analysis of Next Generation Supersonic Decelerators S. Muppidi, EBC, Inc., Moffett Field, CA; C. Tang, NASA Ames Research Center, Moffett Field, CA; J. Van Norman, NASA Langley Research Center, Hampton, VA; D. Bose, NASA Ames Research Center, Moffett Field, CA	1600 hrs AIAA-2014-2991 Development and Application of a New Unsteady Far-Field Drag Decomposition Method H. Toubin, D. Bailly, ONERA, Meudon, France	1630 hrs AIAA-2014-2992 Investigation on Non-linear Characteristic of Yawing Moment of Twin-tailed Configuration Y. Qin, Y. Wang, Q. Li, Beihang University, Beijing, China
Thursday, 19 June 2014					
Chartered by: L. WANG, University of Tennessee at Chattanooga and J. LATZ, Northrop Grumman Aerospace Systems					
1400 hrs AIAA-2014-2993 Experimental Dynamic Stall Study In An Airfoil J. Mariani, J. Delnero, A. Carochero, National University of La Plata, La Plata, Argentina	1430 hrs AIAA-2014-2994 Investigation of Unsteady Flow on a High Aspect Ratio Wing S. Skomorokhov, B. Nikolay, G. Mansur, TsAGI, Zhukovskiy, Russia	1500 hrs AIAA-2014-2995 Impact of Mean Flow Shear on the Wake Vortical Structure behind Oscillating Airfoils M. Yu, Z. Wang, S. Farakhi, University of Kansas, Lawrence, Lawrence, KS	1530 hrs AIAA-2014-2996 Multifidelity Airfoil Shape Optimization Using Adaptive Meshing D. Dalle, K. Frickowski, University of Michigan, Ann Arbor, Ann Arbor, MI	1600 hrs AIAA-2014-2997 Feature Based Grid Adaption for the Study of Dynamic Stall K. Ford, Y. Liu, University of Louisville, Louisville, KY	1630 hrs AIAA-2014-2998 Non-Linear Aerodynamic Modeling of Airfoils for Accurate Blade Element Propeller Performance Predictions J. Dorfing, K. Rokhsaz, Wichita State University, Wichita, KS
Thursday, 19 June 2014					
Chartered by: B. GERMAN, Georgia Institute of Technology					
1400 hrs AIAA-2014-2999 NASA Langley Distributed Propulsion VTOL TiltWing Aircraft Testing, Modeling, Simulation, Control, and Flight Test Development P. Rothhaar, P. Murphy, B. Bacon, I. Gregory, J. Grauer, R. Busan, NASA Langley Research Center, Hampton, VA; et al.	1430 hrs AIAA-2014-3000 Enabling Advanced Wind-Tunnel Research Methods Using the NASA Langley 12-Foot Low Speed Tunnel R. Busan, P. Rothhaar, M. Croon, P. Murphy, NASA Langley Research Center, Hampton, VA; S. Grafton, Analytical Mechanics Associates, Inc., Hampton, VA; A. O'Neal, VIGYAN, Inc., Hampton, VA	1500 hrs Oral Presentation Rapid Control Law Development Enabled By General Dynamics Formulation and Modular Simulation Environment for VTOL TiltWing UAV with Distributed Propulsion - Challenges and Opportunities I. Gregory, MSA Langley Research Center, Hampton, VA	1530 hrs Oral Presentation Streamlined Methods for Flight Test Evaluation of Unique Distributed Propulsion Concepts P. Rothhaar, MSA Langley Research Center, Hampton, VA		
Thursday, 19 June 2014					
Chartered by: V. DALABANOV, Boeing Commercial Airplanes and S. ROWE, NASA Marshall Space Flight Center					
1400 hrs AIAA-2014-3001 'Project Epervier': Design, Build and Flight Test of a Full-Scale Aerobatic Aircraft at the Universite de Sherbrooke D. Rancourt, M. Lavoie, F. Charon, University of Sherbrooke, Sherbrooke, Canada	1430 hrs AIAA-2014-3002 Analysis of Aspect Ratio and Winglet Height of a Box Wing Design P. Kumar, A. Khalid, Southern Polytechnic State University, Marietta, GA	1500 hrs AIAA-2014-3003 Aerial Robotic Autonomous Patrol and Surveillance System A. Khalid, Southern Polytechnic State University, Marietta, GA	1530 hrs AIAA-2014-3004 Optimization of Air Distribution in a Preliminary Design Stage of an Aero-Engine Combustor A. Angersbach, D. Bestle, Brandenburg University of Technology, Cottbus, Germany	1600 hrs AIAA-2014-3005 Project Pegase: Increasing Interest in STEM Through Design and Flight of a Human Powered Aircraft F. Bolduc-leasdale, E. Demers Bouchard, D. Rancourt, F. Charon, University of Sherbrooke, Sherbrooke, Canada	Embassy D

Thursday, 19 June 2014		Enroute Operations		Embassy E
275-ATIO-22				
Chaired by: K. MARAIS, Purdue University				
1400 hrs No Presentations		1600 hrs AIAA-2014-3006 Commercial Airline Altitude Optimization Strategies for Reduced Cruise Fuel Consumption L. Jensen, R. Hansman, Massachusetts Institute of Technology, Cambridge, MA; J. Yanuti, T. Reynolds, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA	1630 hrs AIAA-2014-3007 Total Fuel Reduction via Formation Flights: A New Approach to Air-Corridor Path Optimization F. Asadi, S. Maleki, Sharif University of Technology, Tehran, Iran	
Thursday, 19 June 2014				
276-ACD-11				
Chaired by: M. HOLLY, Boeing Defense, Space & Security				
1400 hrs AIAA-2014-3008 Design of Hybrid-Electric Propulsion Systems for Light Aircraft C. Friedrich, P. Robertson, University of Cambridge, Cambridge, United Kingdom	1430 hrs AIAA-2014-3009 The Application of LENS to Synergistic Mission Capabilities D. Wells, NASA Langley Research Center, Hampton, VA; D. Mavis, Georgia Institute of Technology, Atlanta, GA			Embassy F
Thursday, 19 June 2014				
277-ACD-12				
Chaired by: J. MERRET, Gulfstream Aerospace Corporation				
1400 hrs No Presentations		1600 hrs AIAA-2014-3010 Design of an Improved Green Taxing System Focused around the Landing Gear C. Frank, J. Durand, W. Levy, F. Allair, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1630 hrs AIAA-2014-3011 System-Level Performance Impact of Active Flow Control Vertical Tails on a Commercial Transport Model Family R. Jacobs, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1700 hrs AIAA-2014-3012 Vehicle and Mission Level Subsystem Architecture Comparison Using Parelab SysArc I. Chakraborty, D. Trarwick, D. Mavis, Georgia Institute of Technology, Atlanta, GA; M. Emeneth, A. Schneegans, PACE America, Inc., Seattle, WA
Thursday, 19 June 2014				
278-MAO-12				
Chaired by: B. MESMER, Iowa State Univ				
1400 hrs AIAA-2014-3013 Multi-Fidelity Uncertainty Quantification: Application to a Vertical Axis Wind Turbine Under an Extreme Gust A. Padron, J. Alonso, F. Palacios, Stanford University, Stanford, CA; M. Barone, M. Eldred, Sandia National Laboratories, Albuquerque, NM	1430 hrs AIAA-2014-3014 Decoupled UMDO formulation for interdisciplinary coupling satisfaction under uncertainty L. Brevault, M. Balesdent, N. Berend, ONERA, Palaiseau, France; R. Le Riche, National Center for Scientific Research (CNRS), St. Etienne, France	1500 hrs AIAA-2014-3015 The Multi-disciplinary Robust Optimization for Tailless Aircraft M. Liu, Y. Hu, Northwestern Polytechnical University, Xi'an, China		Embassy G

Thursday, 19 June 2014		Embassy H	
ANERS-ATM Operations			
Chaired by: P. HULLAH, Eurocontrol			
1400 hrs AIAA-2014-3016 Identification of Flights for Cost-Efficient Climate Impact Reduction N. Chen, NASA Ames Research Center, Moffett Field, CA; P. Kirschen, University of Michigan, Moffett Field, CA; B. Sidhar, NASA Ames Research Center, Moffett Field, CA; H. Ng, University of California, Santa Cruz, Moffett Field, CA	1430 hrs AIAA-2014-3017 Achieving Climate-optimal Trajectories: How Do We Allocate Responsibilities? T. Thompson, Meitron Aviation, Inc., Dulles, VA	1500 hrs AIAA-2014-3018 Climb, Cruise and Descent 3D Trajectory Optimization Algorithm for the FMS CMA-9000 R. Félix Patiño, Y. Barrau, R. Botez, École de Technologie Supérieure, Montréal, Canada	1600 hrs AIAA-2014-3020 Runway Shape Optimization for Reducing Airport Environmental Impact and Increasing Aircraft Productivity A. Elham, R. Curran, Delft University of Technology, Delft, The Netherlands
Chaired by: C. ROSEMA, US Army AARDEC and K. DENNISSEN, Sandia National Labs			
1400 hrs AIAA-2014-3021 Numerical Experiments on Finned Bodies S. Siliton, Army Research Laboratory, Aberdeen Proving Ground, MD	1430 hrs AIAA-2014-3022 Effect of Projectile Aft End on Stability, Range, and Maneuverability S. Siliton, F. Fresconi, Army Research Laboratory, Aberdeen Proving Ground, MD	1500 hrs AIAA-2014-3023 Turbulence Model Effects on Cold-Gas Lateral Jet Interaction in a Supersonic Crossflow J. DeSpirito, Army Research Laboratory, Aberdeen Proving Ground, MD	1600 hrs AIAA-2014-3025 Complex Geometry Effects on Open Cavity Dynamics K. Casper, J. Wagner, S. Beresh, J. Herffling, R. Spillers, B. Pruett, Sandia National Laboratories, Albuquerque, NM
Chaired by: J. BRIDGES, NASA Glenn Research Center			
1400 hrs AIAA-2014-3028 Detonation initiation and propagation in the nonuniform supersonic combustible mixtures X. Cai, J. Liang, Z. Lin, National University of Defense Technology, Changsha, China; F. Zhuang, Academy of Equipment, Beijing, China	1430 hrs AIAA-2014-3029 Detonation initiation and propagation in supersonic combustible mixtures with a cavity embedded in the channel X. Cai, J. Liang, Z. Lin, National University of Defense Technology, Changsha, China; F. Zhuang, Academy of Equipment, Beijing, China	1500 hrs AIAA-2014-3030 Large-Eddy Simulation of Supersonic Reacting Mixing Layers A. Kartha, P. Subbareddy, G. Candler, University of Minnesota, Minneapolis, MN; P. Dimotakis, California Institute of Technology, Pasadena, CA	1700 hrs AIAA-2014-3027 Joint Experimental/Computational Investigation into the Effects of Finite Width on Transonic Cavity Flow S. Arunajatesan, M. Barone, J. Wagner, K. Casper, S. Beresh, Sandia National Laboratories, Albuquerque, NM
Chaired by: J. BRIDGES, NASA Glenn Research Center			
1400 hrs AIAA-2014-3032 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-1. Project Overview and Focus on Installation J. Huber, G. Drochon, C. Bonnaud, A. Prinsde-Peno, Airbus, Toulouse, France; F. Cléro, ONERA, Châtillon, France; G. Bodard, Snerma, Villaroche, France	1430 hrs AIAA-2014-3033 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-2. Optimisation of chevron design aimed at jet noise reduction of future turbofans M. Koenig, G. Bodard, I. Kernemp, Snerma, Moissy-Cramayel, France	1500 hrs AIAA-2014-3034 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-3. Hybrid RANS-CAA methods for noise prediction of dual stream jets G. Bércheff, G. Bodard, M. Koenig, Snerma, Moissy-Cramayel, France	1630 hrs AIAA-2014-3026 Mitigation of Wind Tunnel Wall Interactions in Subsonic Cavity Flows J. Wagner, K. Casper, S. Beresh, B. Pruett, R. Spillers, J. Herffling, Sandia National Laboratories, Albuquerque, NM
Chaired by: J. BRIDGES, NASA Glenn Research Center			
1400 hrs AIAA-2014-3037 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-5. Analysis of jet-airfoil interaction noise by microphone array techniques V. Fleury, R. Davy, ONERA, Châtillon, France	1530 hrs AIAA-2014-3035 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-4. Flows characterization with PW in the CEPR19 anechoic wind tunnel of ONERA F. David, J. Jourdan, F. Cléro, ONERA, Châtillon, France; J. Huber, Airbus, Toulouse, France; M. Koenig, Snerma, Moissy-Cramayel, France	1600 hrs AIAA-2014-3036 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-5. Analysis of jet-airfoil interaction noise by microphone array techniques V. Fleury, R. Davy, ONERA, Châtillon, France	1630 hrs AIAA-2014-3037 Unstructured LES of the baseline EXEJET dual-stream jet M. Sanjose, A. Fosso Pouaque, S. Moreau, G. Wang, T. Padois, University of Sherbrooke, Sherbrooke, Canada
Chaired by: J. BRIDGES, NASA Glenn Research Center			
1400 hrs AIAA-2014-3038 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-1. Project Overview and Focus on Installation J. Huber, G. Drochon, C. Bonnaud, A. Prinsde-Peno, Airbus, Toulouse, France; F. Cléro, ONERA, Châtillon, France; G. Bodard, Snerma, Villaroche, France	1430 hrs AIAA-2014-3033 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-2. Optimisation of chevron design aimed at jet noise reduction of future turbofans M. Koenig, G. Bodard, I. Kernemp, Snerma, Moissy-Cramayel, France	1500 hrs AIAA-2014-3034 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-3. Hybrid RANS-CAA methods for noise prediction of dual stream jets G. Bércheff, G. Bodard, M. Koenig, Snerma, Moissy-Cramayel, France	1630 hrs AIAA-2014-3026 Mitigation of Wind Tunnel Wall Interactions in Subsonic Cavity Flows J. Wagner, K. Casper, S. Beresh, B. Pruett, R. Spillers, J. Herffling, Sandia National Laboratories, Albuquerque, NM
Chaired by: J. BRIDGES, NASA Glenn Research Center			
1400 hrs AIAA-2014-3037 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-5. Analysis of jet-airfoil interaction noise by microphone array techniques V. Fleury, R. Davy, ONERA, Châtillon, France	1530 hrs AIAA-2014-3035 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-4. Flows characterization with PW in the CEPR19 anechoic wind tunnel of ONERA F. David, J. Jourdan, F. Cléro, ONERA, Châtillon, France; J. Huber, Airbus, Toulouse, France; M. Koenig, Snerma, Moissy-Cramayel, France	1600 hrs AIAA-2014-3036 Large-Scale Jet Noise Testing, Reduction and Methods Validation "EXEJET"-5. Analysis of jet-airfoil interaction noise by microphone array techniques V. Fleury, R. Davy, ONERA, Châtillon, France	1630 hrs AIAA-2014-3037 Unstructured LES of the baseline EXEJET dual-stream jet M. Sanjose, A. Fosso Pouaque, S. Moreau, G. Wang, T. Padois, University of Sherbrooke, Sherbrooke, Canada

Thursday, 19 June 2014		Trailing Edge Noise I			Hanover B	
Chaired by: P. JOSEPH, University of Southampton						
1400 hrs AIAA-2014-3038 Noise Sources of Trailing-Edge Turbulence Controlled by Porous Media S. Koh, M. Meinke, W. Schroeder, B. Zhou, N. Gauger, RWTH Aachen University, Aachen, Germany	1430 hrs AIAA-2014-3039 Trailing Edge Noise of Partially Porous Airfoils T. Geyer, E. Sarradj, Brandenburg University of Technology, Cottbus, Germany	1500 hrs AIAA-2014-3040 Adjoint-based Trailing-Edge Noise Minimization using Porous Material B. Zhou, N. Gauger, S. Koh, M. Meinke, W. Schroeder, RWTH Aachen University, Aachen, Germany	1530 hrs AIAA-2014-3041 Specification of Porous Materials for Low-Noise Trailing-Edge Applications M. Herr, K. Rossignol, J. Dells, German Aerospace Center (DLR), Braunschweig, Germany, N. Lipitz, M. MaBner, Technical University of Braunschweig, Braunschweig, Germany	1600 hrs AIAA-2014-3042 Volume Noise Sources in Turbulent Wake Interaction Problems: True Quadrupole Noise? C. Yu, S. Lele, Stanford University, Stanford, CA	1630 hrs AIAA-2014-3043 Simulation of Tonal Noise Generated by Transition Flow Past Airfoil Using High-Order Schemes on Unstructured Grids H. Yang, CFD Research Corporation, Huntsville, AL	
Thursday, 19 June 2014 284-ASE-16 Chaired by: C. TAN, GE Global Research and D. FULEKI, National Research Council Canada						
1400 hrs AIAA-2014-3044 Possible Mechanisms for Turboman Engine Ice Crystal Icing at High Altitude J. Tsao, Ohio Aerospace Institute, Cleveland, OH; P. Sruk, M. Oliver, NASA Glenn Research Center, Cleveland, OH	1430 hrs AIAA-2014-3045 Ice Particle Impacts on a Moving Wedge M. Vargas, P. Sruk, R. Kreeger, NASA Glenn Research Center, Cleveland, OH; J. Palacios, Pennsylvania State University, University Park, PA; K. Iyer, R. Gold, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1500 hrs AIAA-2014-3046 Investigation of the Impact Behaviour of Ice Particles T. Haak, EADS, Munich, Germany; J. Roisman, C. Tropea, Technical University of Darmstadt, Darmstadt, Germany	1530 hrs AIAA-2014-3047 Experimental Measurement of Frozen and Partially Melted Water Droplet Impact Dynamics J. Palacios, S. Yan, Pennsylvania State University, University Park, PA; C. Tan, General Electric Company, Niskayuna, NY; R. Kreeger, NASA Glenn Research Center, Cleveland, OH	1600 hrs AIAA-2014-3048 Modeling and Analysis of Ice Shed in Multistage Compressor of Jet Engines R. Kundu, J. Prasad, Georgia Institute of Technology, Atlanta, GA; R. Singh, S. Soaven, General Electric Company, Niskayuna, NY; A. Beeze-Stringfellow, T. Nakano, General Electric Company, Cincinnati, OH	1630 hrs AIAA-2014-3049 Experimental Studies of Mixed-Phase Sticking Efficiency for Ice Crystal Accretion in Jet Engines T. Corrie, D. Fuleki, A. Mahallati, National Research Council Canada, Ottawa, Canada	
Thursday, 19 June 2014 285-AA-28 Chaired by: J. COUPLAND, University of Southampton						
1400 hrs AIAA-2014-3050 Wall-resolved Large Eddy Simulation of a highlift airfoil: detailed flow analysis and noise generation study M. Terracol, E. Manoha, ONERA, Châtillon, France	1430 hrs AIAA-2014-3051 Variations on the same BANC Category 8 theme: Towards the Development of a High Fidelity Acoustic Hybrid Method using Computational AeroAcoustics S. Radonnet, ONERA, Châtillon, France; G. Umha, National Institute for Space Research (INPE), São Paulo, Brazil	1500 hrs AIAA-2014-3052 High-Order Discontinuous Galerkin and Hybrid RANS/LES Method for Prediction of Launch Vehicle Lift-Off Acoustic Environments R. Harris, CFD Research Corporation, Huntsville, AL; E. Collins, A. Sescu, E. Luke, Mississippi State University, Mississippi State, MS	1530 hrs AIAA-2014-3053 Linear- and Non-Linear Perturbation Equations with Relaxation Source Terms for Forced Eddy Simulation of Aeroacoustic Sound Generation R. Ewert, J. Dietke, A. Neef, German Aerospace Center (DLR), Braunschweig, Germany; M. Alavi Moghadam, RWTH Aachen University, Aachen, Germany	1600 hrs AIAA-2014-3054 Prediction of harmonic sound power generated by a modern turbofan with heterogeneous OGV and internal bifurcations V. Bonneau, Saecma, Villoroche, France; C. Polacsek, ONERA, Châtillon, France; R. Barrier, ONERA, Meudon, France	1630 hrs AIAA-2014-3055 Large-Scale High-Lift CAA-RPM Simulations A. Kolb, EADS, Munich, Germany; A. Buescher, Airbus, Bremen, Germany; R. Ewert, German Aerospace Center (DLR), Braunschweig, Germany	
CAA Sound Generation III Hanover D						

Thursday, 19 June 2014		Jet Noise Prediction IV		Hanover E	
Chartered by: D. McLAUGHLIN, Pennsylvania State University					
1400 hrs AIAA-2014-3056 Thoughts on Use of University-Scale Rocket Models to Study Launch Acoustics K. Ahuja, D. Alward, J. Montgolfy, J. Mittelman, D. Dickey, D. Alward, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-2014-3057 Recent progress in LES computation for aeroacoustics of turbulent hot jet. Comparison to experiments and near field analysis M. Lortieau, F. Clério, F. Vuillot, ONERA, Châtillon, France	1500 hrs AIAA-2014-3058 ARMAX system identification applied to a subsonic turbulent jet S. Prantanda, M. Le Gallic, P. Jordan, T. Duriez, National Center for Scientific Research (CNRS), Poitiers, France	1530 hrs AIAA-2014-3059 Towards Prediction of Jet Noise Installation Effect using Stochastic Source Modeling A. Neifeld, R. Ewert, M. Steger, D. Keller, German Aerospace Center (DLR), Braunschweig, Germany; M. Steger, Rolls-Royce Deutschland, Blankenfelde-Mahlow, Germany	1600 hrs AIAA-2014-3060 Numerical and Experimental Study of JFI Effect on Swept Wing V. Kopiev, I. Belyaev, G. Furanov, V. Kopiev, N. Ostrikov, M. Zaytsev, TsAGI, Moscow, Russia; et al.	1630 hrs AIAA-2014-3061 Just enough jitter for jet noise? M. Zhang, P. Jordan, G. Lehnasch, National Center for Scientific Research (CNRS), Poitiers, France; A. Cavalieri, Technological Institute of Aeronautics (ITA), São Paulo, Brazil; A. Agarwal, University of Cambridge, Cambridge, United Kingdom
Thursday, 19 June 2014					
Chartered by: C. BÄHR, NASA-Langley Research Center					
1400 hrs AIAA-2014-3062 An Experimental Investigation of the 30°30N Multi-Element High-Lift Airfoil K. Pasconi, L. Camuffo, Florida State University, Tallahassee FL; M. Choudhuri, NASA Langley Research Center, Hampton, VA	1430 hrs AIAA-2014-3063 Experimental study of a noise reduction concept for realistic landing gear geometries I. Belyaev, V. Kopiev, I. Pankratov, M. Zaytsev, TsAGI, Moscow, Russia	1500 hrs AIAA-2014-3064 Listening to Turbulence: Measuring Coherence Decay at Different Positions on an Aircraft in Cruise Flight S. Haxter, C. Spehr, German Aerospace Center (DLR), Göttingen, Germany	1530 hrs AIAA-2014-3065 Composite Materials Providing Improved Acoustic Transmission Loss for UAVs J. Callicott, R. Goeta, J. Jacob, Oklahoma State University, Stillwater, OK		
Thursday, 19 June 2014					
Chartered by: P. SUJISMA, National Aerospace Laboratory (NAL)					
1400 hrs AIAA-2014-3066 Functional Beamforming for Aeroacoustic Source Distributions R. Dougherty, OptiNav, Inc., Bellevue, WA	1430 hrs AIAA-2014-3067 Engine noise source breakdowns from an improved inverse method (AFINDS) of processing phased array measurements B. Tester, University of Southampton, Southampton, United Kingdom	1500 hrs AIAA-2014-3068 Validation of Beamforming Analysis Methodology with Synthesized Acoustic Time History Data: Sub-Scale Fan Rig System T. Marotta, L. Lieber, Honeywell International, Inc., Phoenix, AZ; R. Dougherty, OptiNav, Inc., Bellevue, WA	1530 hrs AIAA-2014-3069 Phased-array measurements of full-scale military jet noise B. Harter, K. Gee, T. Neilsen, Brigham Young University, Provo, UT; A. Wall, Air Force Research Laboratory, Wright-Patterson AFB, OH; M. James, Blue Ridge Research and Consulting, LLC, Asheville, NC	1600 hrs AIAA-2014-3070 Microphone-array measurements of a Rolls-Royce BR700 series aeroengine in an indoor test-bed and comparison with free-field data S. Franke, H. Siler, W. Hage, German Aerospace Center (DLR), Berlin, Germany; O. Lemke, Rolls-Royce Group plc, Dohlewitz, Germany	1630 hrs AIAA-2014-3071 Advanced Aeroacoustic Testing Techniques Using Various Methods of Acoustic Holography K. Chelliah, G. Raman, Illinois Institute of Technology, Chicago, IL
Thursday, 19 June 2014					
Chartered by: P. ANSELL					
1400 hrs AIAA-2014-3072 A 3D Mesh Deformation Technique for Irregular In-Flight Ice Accretion Shapes A. Penderiza, W. Habachi, M. Fossari, McGill University, Montreal, Canada	1430 hrs AIAA-2014-3073 Icing Collection Efficiency Prediction Using an Eulerian-Eulerian Approach D. da Silva, Embraer, São José dos Campos, Brazil; N. Bechtan, J. Kim, O. Perocian, Metacomp Technologies, Los Angeles, CA	1500 hrs AIAA-2014-3074 Unsteady Modes in the Flowfield about an Airfoil with a Horn-Ice Shape P. Ansell, University of Illinois, Urbana-Champaign, Urbana, IL; M. Bragg, University of Washington, Seattle, Seattle, WA	1530 hrs AIAA-2014-3075 Virus Transport Aboard Commercial Regional Aircraft S. Ingherai, H. Rahai, J. Bonifacio, California State University, Long Beach, CA; R. Horstman, Self, Snohomish, WA	1600 hrs AIAA-2014-3076 Multi-Phase Modeling of Rainbird Water Injection B. Yu, N. Moss, Z. Sampson, NASA Kennedy Space Center, Cape Canaveral, FL	
Thursday, 19 June 2014					
Chartered by: P. ANSELL					
Multiphase Flows II: Air/Water Systems and Icing					
Harris					

Thursday, 19 June 2014		Supersonic Boundary Layers: Fundamental Studies		Inman
290-FD-28	Chaired by: H. JOHNSON, University of Minnesota			
1400 hrs AIAA-2014-3077 Spectral Analysis of Stationary Crossflow Vortex Tracks in Sublimating Chemical Using Image Processing P. McGuire, University of California, San Diego, La Jolla, CA	1430 hrs AIAA-2014-3078 DNS of a flat-plate supersonic boundary layer using the discontinuous Galerkin spectral element method M. Atak, University of Stuttgart, Stuttgart, Germany; J. Larsson, University of Maryland, College Park, College Park, MD; G. Gassner, C. Munz, University of Stuttgart, Stuttgart, Germany	1500 hrs AIAA-2014-3079 Effects of Surface Curvature on Flow Interactions of Small Cylindrical Protuberances and the Supersonic Turbulent Boundary Layer E. Stephen, K. Hupfh, A. Kwakernat, E. McGartney, R. Decker, T. McLaughlin, U.S. Air Force Academy, Colorado Springs, CO		
291-FD-29	Chaired by: C. ROY, Virginia Tech and H. LUO, North Carolina State University			Kenneshaw
1400 hrs AIAA-2014-3080 Parallelization of Unsteady Adaptive Mesh Refinement for Unstructured Navier-Stokes Solvers A. Schwing, NASA Johnson Space Center, Houston, TX; I. Nompelis, G. Candler, University of Minnesota, Minneapolis, Minneapolis, MN	1430 hrs AIAA-2014-3081 On the Multi-GPU Computing of a Reconstructed Discontinuous Galerkin Method for Compressible Flows on 3D Hybrid Grids Y. Xia, L. Luo, H. Luo, J. Lou, J. Edwards, F. Mueller, North Carolina State University, Raleigh, NC	1500 hrs AIAA-2014-3082 Accelerating Finite-Volume Based Lattice Boltzmann Flow Solutions on a Graphics Processing Unit Using CUDA G. Guzel, T. Akgun, ASELSAN, Inc., Ankara, Turkey	1600 hrs AIAA-2014-3084 A Preconditioned Non-Singular Eigensystem for the Navier-Stokes Equations with Finite-Rate Chemistry N. Carrier, K. Sreenivas, University of Tennessee, Chattanooga, Chattanooga, TN	1630 hrs AIAA-2014-3085 Implicit Runge-Kutta Physical-Time Marching in Low Mach Preconditioned Density-Based Methods L. Alves, Federal University of Rio Grande do Sul, Niteroi, Brazil; C. Falcão, Fluminense Federal University, Porto Alegre, Brazil; F. Medeiros, Military Institute of Engineering, Rio de Janeiro, Brazil
292-HYTASP-10	Chaired by: R. BROWN, University of Strathclyde and T. O'BRIEN, Aerojet Rocketdyne			Learning Center
1400 hrs AIAA-2014-3086 Low-Order Modelling of the Non-Local Acoustic Reacting Combustion Chamber-Dome Interface in Rocket Engines M. Schulze, T. Sattelmayer, Technical University of Munich, Garching, Germany	1430 hrs AIAA-2014-3087 Semi-Zonal Hybrid RANS/LES Turbulence Modelling with RANS Sensor Based Interfacing Applied to Supersonic Flows K. Makowka, M. Gurrner, D. Prukner, T. Sattelmayer, O. Haich, Technical University of Munich, Munich, Germany	1500 hrs AIAA-2014-3088 Validation of a Novel OpenFOAM Solver using a Supersonic, Non-reacting Channel Flow M. Draeske, University of Stuttgart, Stuttgart, Germany; K. Makowka, Technical University of Munich, Munich, Germany; P. Nizenkov, J. Vellamrakodiyil, University of Stuttgart, Stuttgart, Germany; T. Sattelmayer, Technical University of Munich, Munich, Germany; J. von Wolfersdorf, University of Stuttgart, Stuttgart, Germany	1530 hrs AIAA-2014-3089 Testing of DLR C/C-SiC and C/C for HIFIRE 8 Scramjet Combustor D. Glass, D. Capriotti, NASA Langley Research Center, Hampton, VA; T. Reimer, M. Kutenmeyer, German Aerospace Center (DLR), Stuttgart, Germany; M. Smart, University of Queensland, Brisbane, Australia	1600 hrs AIAA-2014-3090 Numerical Simulation of RBCC Single Expansion Ramp Nozzle in Ejector Mode Z. Zhengze, L. Peijin, Q. Fei, W. Xiang, Geng, L. Xiang, H. Guo, Qiang, Northwestern Polytechnical University, Xi'an, China
1400 hrs AIAA-2014-3086 Low-Order Modelling of the Non-Local Acoustic Reacting Combustion Chamber-Dome Interface in Rocket Engines M. Schulze, T. Sattelmayer, Technical University of Munich, Garching, Germany	1430 hrs AIAA-2014-3087 Semi-Zonal Hybrid RANS/LES Turbulence Modelling with RANS Sensor Based Interfacing Applied to Supersonic Flows K. Makowka, M. Gurrner, D. Prukner, T. Sattelmayer, O. Haich, Technical University of Munich, Munich, Germany	1500 hrs AIAA-2014-3088 Validation of a Novel OpenFOAM Solver using a Supersonic, Non-reacting Channel Flow M. Draeske, University of Stuttgart, Stuttgart, Germany; K. Makowka, Technical University of Munich, Munich, Germany; P. Nizenkov, J. Vellamrakodiyil, University of Stuttgart, Stuttgart, Germany; T. Sattelmayer, Technical University of Munich, Munich, Germany; J. von Wolfersdorf, University of Stuttgart, Stuttgart, Germany	1530 hrs AIAA-2014-3089 Testing of DLR C/C-SiC and C/C for HIFIRE 8 Scramjet Combustor D. Glass, D. Capriotti, NASA Langley Research Center, Hampton, VA; T. Reimer, M. Kutenmeyer, German Aerospace Center (DLR), Stuttgart, Germany; M. Smart, University of Queensland, Brisbane, Australia	1600 hrs AIAA-2014-3090 Numerical Simulation of RBCC Single Expansion Ramp Nozzle in Ejector Mode Z. Zhengze, L. Peijin, Q. Fei, W. Xiang, Geng, L. Xiang, H. Guo, Qiang, Northwestern Polytechnical University, Xi'an, China

Thursday, 19 June 2014		Cavity and Shear Flows		Lenox	
293-FD-30 Chaired by: R. SCHMIT, USAF AFRL and M. SAMIMY, The Ohio State University					
1400 hrs AIAA-2014-3092 Numerical Simulations of Subsonic and Transonic Open-Cavity Flows Y. Sun, A. Nair, K. Inoue, L. Cantafesta, Florida State University, Tallahassee, FL; G. Brés, Cascade Technologies, Inc., Palo Alto, CA; L. Ukeiley, University of Florida, Gainesville, Gainesville, FL	1430 hrs AIAA-2014-3093 Predicting Acoustic Wave Generation and Amplification inside a Rectangular Cavity R. Schmit, J. Grove, Air Force Research Laboratory, Wright-Patterson AFB, OH	1500 hrs Oral Presentation Shear Layer Growth Rate of a Rectangular Cavity R. Schmit, J. Grove, Air Force Research Laboratory, Wright-Patterson AFB, OH; M. Frede, University of Dayton Research Institute, Dayton, OH	1530 hrs Oral Presentation Compressibility Effects in the Shear Layer over a Finite-Width Rectangular Cavity S. Beresh, J. Wagner, B. Pruett, J. Hennling, R. Spillers, Sandia National Laboratories, Albuquerque, NM	1600 hrs AIAA-2014-3094 High-Speed Schlieren Imaging of a High-Speed Jet Impinging on a Flat Plate J. Diebold, G. Elliott, University of Illinois, Urbana-Champaign, Urbana, IL	1700 hrs AIAA-2014-3096 On the Growth of a Plane Mixing Layer from Laminar or Turbulent Initial Conditions W. McMillan, University of Leicester, Leicester, United Kingdom
Thursday, 19 June 2014					
294-APA-45 Chaired by: A. JONES, University of Maryland and M. CHANG, Lockheed Martin Aeronautics					
1400 hrs AIAA-2014-3097 Numerical investigation on the development of the Phantom Yaw Effect on a maneuvering missile C. Schepf, O. Wysocki, E. Schuelen, German Aerospace Center (DLR), Göttingen, Germany	1430 hrs AIAA-2014-3098 Investigation of Turbulence Models for the Supersonic Transport Configuration at Low-Speed and High Alpha Flight Condition K. Ohira, Ryosyu Systems Company, Ltd., Nagoya, Japan; D. Kwak, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan	1500 hrs AIAA-2014-3099 Pressure Field of High Reynolds Number Turbulent Pulsed Jets J. Calzada, I. Chouripalli, University of Texas, Pan American, Edinburg, TX	1530 hrs AIAA-2014-3100 Off Ship Measurement of Ship Air Wakes Using Instrumented Unmanned Aerial Vehicles M. Snyder, U.S. Naval Academy, Annapolis, MD; A. Kumar, P. Ben-Tzvi, George Washington University, Washington, DC	Marietta	
Thursday, 19 June 2014					
295-AA-32 Chaired by: M. DAHL, NASA Glenn Research Center					
1400 hrs AIAA-2014-3101 Towards Lattice-Boltzmann Prediction of Turbofan Engine Noise D. Gasolino, A. Ribeiro, E. Fanes, S. Noelling, Exa Corporation, Stuttgart, Germany; A. Mann, F. Perot, Exa Corporation, Brisbane, CA, et al.	1430 hrs AIAA-2014-3102 Turbofan Inlet Distortion Noise Prediction with a Hybrid CFD-CAA Approach J. Winkler, C. Reimann, R. Reba, United Technologies Corporation, East Hartford, CT; J. Gibson, Pratt & Whitney, East Hartford, CT	1500 hrs AIAA-2014-3103 Improved Broadband Liner Optimization Applied to the Advanced Noise Control Fan D. Mark, M. Jones, NASA Langley Research Center, Hampton, VA; D. Saultiff, NASA Glenn Research Center, Cleveland, OH	1530 hrs AIAA-2014-3104 On the generation and propagation of multiple pure tones inside turbofans at transonic regime J. Thesse, C. Polacsek, S. Lévy, ONERA, Châtillon, France; A. Lafitte, Svecma, Villaroche, France	1600 hrs AIAA-2014-3105 Prediction of BPF tones emitted by the inlet of an aero-engine model using in-duct angular mode spectrum measurements G. Rejoul, C. Polacsek, G. Billamet, ONERA, Châtillon, France; J. Roux, Svecma, Moissy-Cramayel, France	1630 hrs AIAA-2014-3106 Preliminary Study on Acoustic Detection of Faults Experienced by a High-Bypass Turbofan Engine D. Boyle, NASA Dryden Flight Research Center, Edwards, CA
Thursday, 19 June 2014					
296-HVTASP-11 Chaired by: M. IMAITA, Japan Aerospace Exploration Agency and S. SCHNEIDER, Purdue University					
1400 hrs AIAA-2014-3107 The reacting transverse jet in supersonic crossflow: physics and properties (invited) M. Gamba, University of Michigan, Ann Arbor, Ann Arbor, MI; Y. Miller, Stanford University, Stanford, CA; G. Munjal, Santa Clara University, Santa Clara, CA	1430 hrs AIAA-2014-3108 Mach 10 Boundary Layer Transition Experiments on Sharp and Blunted Cones (Invited) E. Maroneau, D. Lewis, G. Moraru, J. Lafferty, Arnold Engineering Development Center, Silver Springs, MD	1500 hrs AIAA-2014-3109 Free-flight aerodynamic tests of reentry vehicles in high-temperature real-gas flow (Invited) H. Imano, K. Sato, T. Komuro, K. Itoh, Japan Aerospace Exploration Agency (JAXA), Kakuda, Japan	1530 hrs AIAA-2014-3110 Visualization of Hypersonic Boundary-Layer Transition on a Slender Cone (Invited) S. Laurence, A. Wagner, H. Ozawa, K. Hanneemann, German Aerospace Center (DLR), Göttingen, Germany	1600 hrs AIAA-2014-3111 MDO for Hypersonic Scramjet Vehicle Development (Invited) R. Starkey, University of Colorado, Boulder, Boulder, CO	Regency Ballroom V

Thursday, 19 June 2014		Regency Ballroom VI	
<p>297-PANEL-8 1400 - 1600 hrs</p> <p>Moderators: B. Danelle Allen, Chief Technologist for Autonomy, NASA Langley Research Center Primal Kopardekar, Manager, NextGen Concepts and Technology Development Project, NASA Ames Research Center</p> <p>Panelists: Jesse Kallman, Global Business Development & Regulatory Affairs, Airware Andrew Lacher, UAS Integration Research Lead, The MITRE Corporation David Maroney, principle Systems Engineer - Civil UAS Integration The MITRE Corporation Rose Mooney, Executive Director, MIT-Atlantic Aviation Partnership Mark Moore, Aerospace Engineer, NASA Langley Research Center</p>			
<p>Thursday, 19 June 2014</p> <p>298-AA-33</p> <p>Chaired by: W. EVERSIMAN, Missouri University of Science and Technology</p>			
1400 hrs AIAA-2014-3112	1430 hrs AIAA-2014-3113	1500 hrs AIAA-2014-3114	1530 hrs AIAA-2014-3115
Duct spinning mode's particle velocity imaging with in-duct circular microphone array Q. Wei, X. Huang, Peking University, Beijing, China	The Effect of Steady Flow Distortion on Mode Propagation in a Turbofan Intake R. Astley, R. Sugimoto, G. Gobard, University of Southampton, Southampton, United Kingdom; E. Nords, E. Giff, University of Twente, Twente, The Netherlands; M. Bocquier, Ecole Centrale de Lyon, Lyon, France	A three-dimensional cylindrical model for non-linear propagation prediction in lined intake ducts with uniform flow M. Kassem, Airbus, Toulouse, France; A. Bernani, Ecole Polytechnique, Palaiseau, France	Generation and scattering of acoustic modes in ducts with flow S. Sack, M. Abom, Royal Institute of Technology (KTH), Stockholm, Sweden; C. Schram, K. Karakocakun, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium
1600 hrs AIAA-2014-3116	1630 hrs AIAA-2014-3117	<p>Duct Propagation I</p> <p>Spring</p>	
Numerical Analysis of the Tonal Sound Pressure Level Distribution in the Vaned Diffuser of a Centrifugal Compressor M. Bonica, M. Fischer, H. Feld, ABB Group, Baden, Switzerland; R. Habing, German-Dutch Wind Tunnels, Emmeloord, The Netherlands; C. Spinder, ABB Group, Baden, Switzerland	Acoustic eigenmode analysis for ducted inhomogeneous mean flow C. Weckmüller, S. Guerin, L. Enghardt, J. Hurst, German Aerospace Center (DLR), Berlin, Germany		
<p>Thursday, 19 June 2014</p> <p>299-TP-19</p> <p>Chaired by: A. WILLIAMS, Air Force Research Laboratory and L. PHINNEY, Sandia National Laboratories</p>			
1400 hrs AIAA-2014-3118	1430 hrs AIAA-2014-3119	1500 hrs AIAA-2014-3120	1530 hrs AIAA-2014-3121
Electro-Wetting of a Heated Surface in the Presence and Absence of Gravity to Enhance Liquid Film Boiling Heat Transfer V. Patel, Worcester Polytechnic Institute, Worcester, MA; F. Robinson, NASA Goddard Space Flight Center, Greenbelt, MD; J. Seyed-Yagoobi, Worcester Polytechnic Institute, Worcester, MA; J. Didion, NASA Goddard Space Flight Center, Greenbelt, MD	Controllable Nanoparticle Radiative Properties for High-Turndown Ratio Heat Rejection T. Otanicar, R. Smith, University of Tulsa, Tulsa, OK	Thermal-Electromagnetic Analysis of Infrared Antennas J. Wilson, E. Kinzel, Missouri University of Science and Technology, Rolla, MO; J. Ginn, Plasmonics, Inc., Orlando, FL; B. Lail, Florida Institute of Technology, Melbourne, FL; G. Boreman, University of North Carolina, Charlotte, Charlotte, NC	Performance of Thermally Radiating Fractal Extended Surfaces of Varying Cross-Section D. Calamas, P. Hines, Georgia Southern University, Statesboro, GA
1600 hrs AIAA-2014-3122	1630 hrs AIAA-2014-3123	<p>Thermal Management and Heat Pipes</p> <p>Techwood</p>	
Simulation of thermal storage in wax-impregnated porous foams with a pore-scale submodel G. Jackson, K. Smith, T. Fisher, P. McCarthy, Purdue University, West Lafayette, IN	Numerical simulation, parametric study and optimization of thermoelectric generators for self-cooling of devices R. Kiffenarim, C. Lin, R. Moosavi, Florida International University, Miami, FL		
<p>Thursday, 19 June 2014</p> <p>300-TP-20</p> <p>Chaired by: P. HOPKINS</p>			
1400 hrs	1430 hrs	1500 hrs	1530 hrs
Wetting the Surface: Thermal Confinement with Liquids in Thin Silicon B. Donovan, P. Hopkins, University of Virginia, Charlottesville, Charlottesville, VA	Thermal Boundary Conductance between Carbon Nanotube and Silicon Oxide with Surface Functionalization L. Chen, S. Kumar, Georgia Institute of Technology, Atlanta, GA	An Experiment to Measure Near-field Radiation between Planar Surfaces at Nanoscale Distances J. Watjen, B. Zhao, Z. Zhang, Georgia Institute of Technology, Atlanta, GA	Minimum Radiative Heat Transfer Between Two Planar Metallic Surfaces J. Mayo, A. Narayanaswamy, Columbia University, New York, NY
1600 hrs	1630 hrs	<p>Multi-Scale Heat Transfer III</p> <p>University</p>	
Oral Presentation Connections between Time Domain Thermoreflectance and Broadband Frequency Domain Thermoreflectance for Measuring Phonon Mean Free Paths X. Chen, C. Hui, A. Mirmich, California Institute of Technology, Pasadena, CA	Oral Presentation Influence of Non-thermal Electron Dynamics on Electron Phonon Coupling in Thin Gold Films A. Giri, J. Gaskins, P. Hopkins, University of Virginia, Charlottesville, Charlottesville, VA	Oral Presentation Impact of Non-thermal Electron Dynamics on Electron Phonon Coupling in Thin Gold Films A. Giri, J. Gaskins, P. Hopkins, University of Virginia, Charlottesville, Charlottesville, VA	Oral Presentation Minimum Radiative Heat Transfer Between Two Planar Metallic Surfaces J. Mayo, A. Narayanaswamy, Columbia University, New York, NY

Thursday, 19 June 2014			
301-NW-12 1530 - 1600 hrs	Thursday Afternoon Networking Coffee Break		Meeting Room Foyers
Thursday, 19 June 2014			
367-AT10-27 1600 - 1730 hrs	New Directions for NASA's Airspace R&D		Embassy C
Moderator: John Cavolowsky, Director, Airspace Systems Program, NASA Panelists:	John Cavolowsky Director, Airspace Systems Program NASA	Akbar Sultan Deputy Director, Airspace Systems Program NASA	Leighton Quon Project Manager, System Analysis and Integration Evaluation NASA
			Parimal Kopardekar Project Manager, Concepts and Technology Development Project NASA
Thursday, 19 June 2014			
302-ANERS-5 1630 - 1730 hrs	How Far Can We Get With Technology and Operations?		Embassy H
Chaired by: F. COLLIER, NASA-Langley Research Center Moderator: Fay Collier Panelists:	Charles Eiter Gulfstream Aerospace Corporation	Jeff Schutte Georgia Institute of Technology	Chris Markou International Air Transport Association (IATA)
Thursday, 19 June 2014			
303-HYTASP-22 1630 - 1730 hrs	Future of Hypersonics Panel		Regency Ballroom V
Chaired by: L. MADDALENA, The University of Texas at Arlington Participants:	Peter Erbland US	Chris Gettinger US	Vince Wheatley Australia
		Francois Folempin France	
Thursday, 19 June 2014			
304-LEC-8 1730 - 1830 hrs	Aerodynamics Award Lecture "Low-Speed Airfoil Design and Application"		Regency Ballroom VII
	Michael S. Seig Associate Professor, Aerospace Engineering Department University of Illinois at Urbana-Champaign, Urbana, IL		
Friday			
Friday, 20 June 2014			
305-SB-5 0730 - 0800 hrs	Friday Morning Speakers' Briefing		Session Rooms

Friday, 20 June 2014		Friday Morning Plenary Panel		Centennial I/II
306-PLNRY-5 0800 - 0900 hrs				
Moderator: Glenn Roberts, Chief Engineer, The MITRE Corporation				
Panelists:				
Al Romig Vice President & Program Manager, Skunk Works Engineering and Advanced Systems Lockheed Martin Aeronautics		Steve Bradford Chief Scientist, Architecture & NextGEN Development Office of the Chief Scientist, ANG-3		Sprio Lekoudis Director of Weapons Systems Office of the Assistant Secretary of Defense for Research and Engineering United States Department of Defense
Jaiwon Shin Associate Administrator for Aeronautics Research Mission Directorate NASA Headquarters				
Friday, 20 June 2014				
307-NW-13 0900 - 0930 hrs		Friday Morning Networking Coffee Break		Meeting Room Foyers
Friday, 20 June 2014				
308-APA-46		Other Topic in Applied Aerodynamics - UAVs and Other Similar Vehicles		Baker
Chaired by: M. Ol, Air Force Research Laboratory				
0930 hrs AIAA-2014-3125	1000 hrs AIAA-2014-3126	1030 hrs AIAA-2014-3127	1100 hrs AIAA-2014-3128	1130 hrs AIAA-2014-3129
Scale and origin of the dynamics of an air outlet T. Gerke, P. Scholz, Technical University of Braunschweig, Braunschweig, Germany	The effect of wheel geometry on the total aerodynamic drag of a road vehicle M. Tsubokura, R. Kobayashi, S. Ota, Hokkaido University, Sapporo, Japan; S. Okamine, T. Onuma, TOPY Industries, Ltd., Toyokawa, Japan; N. Sasuga, DOME, Maibara, Japan; et al.	Boomerang Flight Tests B. Pomeroy, D. Uhlig, University of Illinois, Urbana-Champaign, Urbana, IL	The Effect of Passive Deformation on the Lift Produced by a Rotating Hinged Wing N. Beals, A. Jones, University of Maryland, College Park, College Park, MD	Investigation of the Unsteady Aerodynamic Characteristics of a Unmanned Aerial Vehicle with a Variable-Sweep Morphing H. Han, J. Hu, Y. Yu, Beijing Institute of Technology, Beijing, China
Friday, 20 June 2014				
309-APA-47		Propeller Aerodynamics		Courtland
Chaired by: A. MCOMAS, TLG Aerospace				
0930 hrs AIAA-2014-3131	1000 hrs AIAA-2014-3132	1030 hrs AIAA-2014-3133		
Time-Accurate Simulations of a Spinning Propeller Using OVERFLOW2 W. Westmoreland, Dynamics Inc., Huntsville, AL; M. McDaniel, Z. Hall, Army Aviation and Missile Research Development and Engineering Center, Redstone Arsenal, AL	Optimal Circulation Distribution on Propeller with the Influence of Viscosity J. Kleso, University of West Bohemia, Pizen, Czech Republic	Validation of Aerodynamic and Aeroacoustic Simulations of Contra-Rotating Open Rotors at Low-Speed Flight Conditions A. Stuermer, R. Akkermans, German Aerospace Center (DLR), Braunschweig, Germany		

Friday, 20 June 2014		Aerodynamic Testing: Flight, Wind Tunnel and Numerical Correlations V		Dunwoody
Chartered by: K. KARA, Khalifa University of Science, Technology & Research				
0930 hrs AIAA-2014-3134 Aerodynamic Shape Optimization of the Front Part of an Anti-Tank Missile Based on Wind Tunnel Testing and CFD Simulation G. Orkolic, Military Technical Institute, Belgrade, Serbia; B. Rusuo, A. Benqin, University of Belgrade, Belgrade, Serbia	1000 hrs AIAA-2014-3135 MASA Common Research Model Test Envelope Extension with Active Sing Damping at NTF M. Rivers, NASA Langley Research Center, Hampton, VA; S. Balakrishna, VIGIAN, Inc., Hampton, VA	1030 hrs AIAA-2014-3136 Experimental and Numerical Analysis of the Flow Patterns Around a Sounding Rocket in the Transonic Regime A. Avelar, J. Falc, Aeronautics and Space Institute (IAE), Sao José dos Campos, Brazil; J. Jia Ling Hsu, University of Vale do Paraíba, São José dos Campos, Brazil; E. Basso, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil; P. Martinez Romero, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil	1100 hrs AIAA-2014-3137 Plume-Induced Effects on the Near-Wake Region of a Generic Space Launcher Geometry D. Sallé, A. Guellian, German Aerospace Center (DLR), Cologne, Germany	1130 hrs AIAA-2014-3138 A Numerical Analysis of Unsteady Aerodynamics of Formula Car During Dynamic Cornering Motion K. Nara, M. Tsubokura, J. Ikeda, Hokkaido University, Sapporo, Japan
Friday, 20 June 2014				
311-APA-49				
Chartered by: M. CONWAY, The Aerospace Corporation				
0930 hrs AIAA-2014-3139 Flow Physics and Performance of Vertical Axis Wind Turbine Arrays K. Duraisamy, University of Michigan, Ann Arbor, Ann Arbor, MI; V. Lakshminarayan, Stanford University, Stanford, CA	1000 hrs AIAA-2014-3140 Coriolis Effect on Dynamic Stall in a Vertical Axis Wind Turbine at Moderate Reynolds Number H. Hsieh-chen, T. Colonus, California Institute of Technology, Pasadena, CA	1030 hrs AIAA-2014-3141 Experimental and Computational Wake Characterization of a Vertical Axis Wind Turbine D. Barsky, A. Posci, M. Rahmoustaqim, M. Leftrich, E. Balaras, George Washington University, Washington, DC	1100 hrs AIAA-2014-3142 Dynamic separation on a pitching and surging airfoil as a model for flow over vertical axis wind turbine blades R. Dunne, B. McKeon, California Institute of Technology, Pasadena, CA	Edgewood
Friday, 20 June 2014				
312-MAO-13				
Chartered by: P. ROHL, Advatech Pacific Inc				
0930 hrs AIAA-2014-3143 MDO and Cross-Disciplinary Practice in R&D: A Portrait of Principles and Current Practice A. McGowan, NASA Langley Research Center, Hampton, VA; P. Papadimitros, University of Michigan, Ann Arbor, Ann Arbor, MI	1000 hrs AIAA-2014-3144 On Using Genetic Algorithm Optimized Activation Functions to Increase Neural Network Accuracy P. Rodi, Lockheed Martin Corporation, Houston, TX	Multidisciplinary Analysis and Optimization: Emerging Methods III		
Embassy D				

Friday, 20 June 2014		Airline Operations I		Embassy E	
313-ATIO-23 Chartered by: D. THIPPAVONG, NASA Ames Research Center					
0930 hrs AIAA-2014-3145 An Approach to Forecast Air Traffic Movements at Capacity-Constrained Airports S. Wenzel, K. Koelker, German Aerospace Center (DLR), Hamburg, Germany; P. Biesch, Hamburg University of Technology, Hamburg, Germany; K. Löffers, German Aerospace Center (DLR), Hamburg, Germany	1000 hrs AIAA-2014-3146 A study into modeling coordination in disruption management by Airline Operations Control S. Bouarfa, H. Blom, R. Curran, K. Hinrikus, Delft University of Technology, Delft, The Netherlands	1030 hrs AIAA-2014-3147 Agent Based Modeling of Air Carrier Behavior for Evaluation of Technology Equipped and Adoption B. Hario, A. DeCocco, V. Strauffer, S. Hasan, R. Rosenbaum, JMI, McLean, VA; J. Smith, NASA Langley Research Center, Hampton, VA	1100 hrs AIAA-2014-3148 An Evaluation of a Flight Deck Interval Management Algorithm including Delayed Target Trajectories K. Swearingen, M. Underwood, B. Bamore, R. Leonard, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-3149 A New Spacing Algorithm to Support Near-term Interval Management Operations L. Weitz, MITRE Corporation, McLean, VA	
Friday, 20 June 2014 314-ATIO-24 Chartered by: P. BORCHERS, NASA Ames Research Center					
0930 hrs AIAA-2014-3150 Kinematic Modeling of Separation Compression for Paired Approaches to Closely-Spaced Parallel Runways M. Moaden, NASA Langley Research Center, Hampton, VA	1000 hrs AIAA-2014-3151 Enhancement of a time and energy management algorithm for continuous descent operations X. Prats, C. Borrado, M. Perez-Bautle, Technical University of Catalonia, Barcelona, Spain; S. Viladaga, ASCAMM, Barcelona, Spain; I. Bos, F. Birling, GTD, Barcelona, Spain; et al.	1030 hrs AIAA-2014-3152 Precision Arrival Scheduling for Tactical Reconfiguration S. Zelinski, NASA Ames Research Center, Moffett Field, CA	1100 hrs AIAA-2014-3153 Analytical Assessment of Simultaneous Parallel Approach Feasibility from Total System Error M. Moaden, NASA Langley Research Center, Hampton, VA	1130 hrs AIAA-2014-3154 Evaluation of Temporal Spacing Errors Associated with Interval Management Algorithms X. Bai, S. Vaidi, Optimal Synthesis, Inc., Los Altos, CA; D. Mullinger, NASA Ames Research Center, Moffett Field, CA	1200 hrs AIAA-2014-3155 Decentralized Automated Algorithm for Self-merging and Self-spacing in the Next Generation Air Traffic Control M. Fruhnert, J. Guo, Purdue University, West Lafayette, IN
Friday, 20 June 2014 315-MAO-14 Chartered by: I. TAKAHASHI, Arizona State University					
0930 hrs AIAA-2014-3156 A Multi-Disciplinary Survey of Energy Maneuverability for Subsonic Endurance Based Aircraft C. Geedon, I. Takahashi, Arizona State University, Tempe, AZ	1000 hrs AIAA-2014-3157 Creating a Test Validated Structural Dynamic Finite Element Model of the X 56A Aircraft C. Pak, S. Iuonig, NASA Dryden Flight Research Center, Edwards, CA	1030 hrs AIAA-2014-3158 A Design Study Employing Aeroelastic Tailoring and an Active Aeroelastic Wing Design Approach on a Tallless Lambda Wing Configuration E. Aynak, E. Penlidion, Air Force Research Laboratory, Wright-Patterson AFB, OH	1100 hrs AIAA-2014-3159 Characterization of an Aero-Structural Interaction for the Hybrid Wing Body Center Section in Conceptual Phase Structural Sizing J. Corman, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1130 hrs AIAA-2014-3160 Stochastic Multicriteria Acceptability Analysis for Nominal is Best MCDA in the context of Generic Vehicles M. LeVine, L. Huynh, M. Kirby, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1200 hrs AIAA-2014-3161 Exploring Composite Panels Using Multi-Objective Optimization and Varying Load Conditions K. Von Hagel, S. Joglekar, M. Pankow, S. Ferguson, North Carolina State University, Raleigh, NC
Friday, 20 June 2014 316-ANERS-6 Chartered by: R. MIKALE-YE, Aerodyne Research Inc					
0930 hrs AIAA-2014-3162 Verification of Noise Forecast Capabilities for Application to Full-scale Supersonic-capable Jet Engine Development W. Lunenberg, D. Dye, Air Force Life Cycle Management Center, Wright-Patterson AFB, OH	1000 hrs AIAA-2014-3163 En Route Jet Aircraft Noise Analysis M. Hassan, J. Tai, R. Denney, B. Havrilesko, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-3164 Implementation of INM and ECAC 3rd Edition in Noise Mapping Software/Assessing all Noise Sources in one Model A. Notario, F. Probst, DataKustik GmbH, Griefenberg, Germany	1100 hrs AIAA-2014-3165 Long-term Alternative Fuels Scenarios H. Pfreundler, A. Payan, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1130 hrs AIAA-2014-3166 Meeting Emissions Reduction Targets: A Probabilistic Lifecycle Assessment of the Production of Alternative Jet Fuels A. Payan, M. Kirby, C. Justin, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1200 hrs AIAA-2014-3167 Test Cell Emission Measurement of Commercial Aircraft Engine: CFM56-7B26 E. Turgut, M. Cavcar, O. Yay, E. Yilmaz, Anadolu University, Eskişehir, Turkey; M. Ucaisu, Turkish Technic, Istanbul, Turkey; O. Usamamz, Anadolu University, Eskişehir, Turkey; et al.
Friday, 20 June 2014 317-ANERS-7 Chartered by: R. MIKALE-YE, Aerodyne Research Inc					
0930 hrs AIAA-2014-3168 Verification of Noise Forecast Capabilities for Application to Full-scale Supersonic-capable Jet Engine Development W. Lunenberg, D. Dye, Air Force Life Cycle Management Center, Wright-Patterson AFB, OH	1000 hrs AIAA-2014-3169 En Route Jet Aircraft Noise Analysis M. Hassan, J. Tai, R. Denney, B. Havrilesko, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-3170 Implementation of INM and ECAC 3rd Edition in Noise Mapping Software/Assessing all Noise Sources in one Model A. Notario, F. Probst, DataKustik GmbH, Griefenberg, Germany	1100 hrs AIAA-2014-3171 Long-term Alternative Fuels Scenarios H. Pfreundler, A. Payan, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1130 hrs AIAA-2014-3172 Meeting Emissions Reduction Targets: A Probabilistic Lifecycle Assessment of the Production of Alternative Jet Fuels A. Payan, M. Kirby, C. Justin, D. Mavis, Georgia Institute of Technology, Atlanta, GA	1200 hrs AIAA-2014-3173 Test Cell Emission Measurement of Commercial Aircraft Engine: CFM56-7B26 E. Turgut, M. Cavcar, O. Yay, E. Yilmaz, Anadolu University, Eskişehir, Turkey; M. Ucaisu, Turkish Technic, Istanbul, Turkey; O. Usamamz, Anadolu University, Eskişehir, Turkey; et al.

Friday, 20 June 2014		Aerodynamic Analysis and Design: Analysis Methods II		Fairlie
Chaired by: R. VERMELAND, Lockheed Martin Aeronautics and A. SCIAFANI, Boeing Engineering Operations & Technology				
0930 hrs AIAA-2014-3168 Verification and Validation of HiFLES: a High-Order LES unstructured solver on multi-GPU platforms M. López, A. Sieshadi, J. Bull, T. Economou, J. Romero, J. Watkins, Stanford University, Stanford, CA, et al.	1000 hrs AIAA-2014-3169 Enforcing Boundary Conditions for Discrete Nonlinear Aerodynamic Reduced-Order Models K. Washabough, C. Farhat, Stanford University, Stanford, CA	1030 hrs AIAA-2014-3170 New Numerical Study of Boundary Layer Behavior on A Morphing Wing-with-Aileron System A. Korenishi, S. Oliviu, R. Bolez, École de Technologie Supérieure, Montréal, Canada	1100 hrs AIAA-2014-3171 the Effects of Turbulence Model Corrections on Drag Prediction of NASA Common Research Model J. Chen, China Aerodynamics Research and Development Center, Mianyang, China	1130 hrs AIAA-2014-3172 A Method to Allocate Camber, Thickness and Incidence on a Swept Wing T. Takahashi, D. Dulin, C. Kady, Arizona State University, Tempe, AZ
Friday, 20 June 2014				
318-APA-51		Aerodynamic Analysis and Design: Optimization Methods I		Greenbriar
Chaired by: J. LATZ, Northrop Grumman Aerospace Systems				
0930 hrs AIAA-2014-3173 Single-objective and Multi-objective Robust Optimization of Airfoils using Adjoint Solutions G. Petrone, ANSYS, Inc., Sheffield, United Kingdom; C. Hill, ANSYS, Inc., Lebanon, NH; M. Biancolini, Tor Vergata University, Rome, Italy	1000 hrs AIAA-2014-3174 Track by Track Robust Optimization of a F1 Front Wing using Adjoint Solutions and Radial Basis Functions G. Petrone, ANSYS, Inc., Sheffield, United Kingdom; C. Hill, ANSYS, Inc., Lebanon, NH; M. Biancolini, Tor Vergata University, Rome, Italy	1030 hrs AIAA-2014-3175 Uncertainty Propagation for Robust Aerodynamic Shape Optimization D. Papadimitriou, C. Papadimitriou, University of Thessaly, Volos, Greece	1100 hrs AIAA-2014-3176 Adjoint-Based Shape Optimization for the Aerodynamic Components of Drag in Viscous Flows F. Bisson, S. Nadarajah, McGill University, Montréal, Canada	1130 hrs AIAA-2014-3177 Comparison of Newton and Newton-GMRES Methods for Three Dimensional Supersonic Nozzle Design B. Yildizlar, S. Eyr, Middle East Technical University, Ankara, Turkey; M. Yumusak, ROKETSAN Missiles Industries, Inc., Ankara, Turkey
Friday, 20 June 2014				
319-AA-34		Fluid Acoustic Phenomena II		Hanover A
Chaired by: M. POTT-POLLENSKE, DLR - German Aerospace Center				
0930 hrs AIAA-2014-3178 Spectral Broadening by Shear Layers of Open Jet Wind Tunnels P. Sijtsma, National Aerospace Laboratory (NLR), Emmeloord, The Netherlands; S. Oerlemans, Siemens, Breda, Denmark; T. Tibbe, Philips, Drachten, The Netherlands	1000 hrs AIAA-2014-3179 Resonance Frequency of Helmholtz Dampers in the Presence of High-Temperature Grazing Flows D. Wassmer, B. Gosic, C. Pascherath, Technical University of Berlin, Berlin, Germany	1030 hrs AIAA-2014-3180 Tonal Noise Excited by Plasma in Cylinder Wakes Using Closed-loop Control W. Yu, X. Huang, Peking University, Beijing, China	1100 hrs AIAA-2014-3181 Aeroacoustic tunnel effect in noise shielding problems J. Delfs, German Aerospace Center (DLR), Braunschweig, Germany	1130 hrs AIAA-2014-3182 Large Eddy Simulation of Stall Noise W. Wolf, University of Campinas, Campinas, Brazil; J. Kocheemoolayil, S. Lele, Stanford University, Stanford, CA
Friday, 20 June 2014				
320-AA-35		General Acoustics II		Hanover B
Chaired by: M. HERR, DLR - German Aerospace Center				
0930 hrs AIAA-2014-3183 Feedback Control of Transient Growth of Thermoacoustic Oscillations D. Zhao, Nanyang Technological University, Singapore, Singapore; M. Reylhanoglu, Embry-Riddle Aeronautical University, Daytona Beach, FL	1000 hrs AIAA-2014-3184 Noise Source Ranking of a Hairdryer B. Akhmetov, S. Gupta, K. Ahuja, Georgia Institute of Technology, Atlanta, GA	1030 hrs AIAA-2014-3185 Creative Means of Making Acoustic Measurements Inexpensively with Hair Dryer Noise Reduction as an Example S. Gupta, B. Akhmetov, K. Ahuja, Georgia Institute of Technology, Atlanta, GA	1100 hrs AIAA-2014-3186 Synthesis of a Rotor BVI Noise Active Controller Through an Efficient Aerodynamics/Aeroacoustics Solver A. Arobbile, G. Bernardini, Roma Tre University, Rome, Italy; C. Iesta, Italian Institute for Naval Hydrodynamic Research and Ship Model Basin, Rome, Italy; M. Gennarelli, Roma Tre University, Rome, Italy	1130 hrs AIAA-2014-3187 Active noise control simulation of tonal turbofan noise in aero engines Y. Pasco, T. Guédeney, A. Leung-Tack, A. Berry, S. Moreau, P. Masson, University of Sherbrooke, Sherbrooke, Canada

Friday, 20 June 2014		Low Noise Systems Integration		Hanover C	
Chaired by: L. ENGHARDT, DLR - German Aerospace Center					
0930 hrs AIAA-2014-3188	1000 hrs AIAA-2014-3189	1030 hrs AIAA-2014-3190	1100 hrs AIAA-2014-3191	1130 hrs AIAA-2014-3192	
Simulation of the Installation Effects of the Aircraft Engine Rear Fan Noise with ACTRAN/DGM	Installation Effects of a Propeller Mounted on a Wing with Coanda Flap. Part II: Numerical Investigation and Experimental Validation	A coupling of computational methods for CROR installation effects	Installation Effects of a Propeller Mounted on a High-Lift Wing with a Coanda Flap. Part I: Aeroacoustic Experiments	Effect of water-droplets on flow-induced pulsations in pipe with two closed-side branches: an experimental study	
A. Masson, Airbus, Toulouse, France; D. Binet, J. Capille, Free Field Technologies, Toulouse, France	J. Dierke, R. Akkermans, J. Dells, R. Ewert, German Aerospace Center (DLR), Braunschweig, Germany	L. Sanders, D. Milica, W. Denis, ONERA, Châtillon, France; P. Viragiano, M. Minervino, Italian Aerospace Research Center (CIRA), Naples, Italy; J. Kennedy, Trinity College Dublin, Dublin, Ireland; et al.	R. Akkermans, M. Pol-Palenske, H. Buchholz, J. Dells, D. Almonet, German Aerospace Center (DLR), Braunschweig, Germany	F. Sanna, J. Gollard, TNO, Delft, The Netherlands	
Friday, 20 June 2014					
322-AA-37					
Chaired by: J. GALLMAN, Gulfstream					
0930 hrs AIAA-2014-3193	1000 hrs AIAA-2014-3194	1030 hrs AIAA-2014-3195	1100 hrs AIAA-2014-3196	1130 hrs AIAA-2014-3197	
Acoustic-entropy coupling behavior and acoustic scattering properties of a Laval nozzle	Further development of a time domain boundary integral equation method for aeroacoustic scattering computations	Predicting the Noise Transmission through a Structure Loaded with a Low Mach Number Turbulent Flow	Wave Confinement: Long-Distance Acoustics Propagation through Realistic Environments	Effects of distance between plates on flows around a cascade of flat plates with acoustic resonance	
W. Ulrich, J. Gikadi, C. Joig, T. Sattelmayer, Technical University of Munich, Garching, Germany	F. Hu, Old Dominion University, Norfolk, VA	S. Caro, CD-adapco, Lyon, France; F. Mendonca, CD-adapco, London, United Kingdom; V. Cotoni, CD-adapco, San Diego, CA; P. Shorter, T. Connelly, CD-adapco, Detroit, MI	J. Steinhoff, A. Wilson, S. Chitto, WavePC, Inc., Ithaca, NY; F. Caradonna, Army Aviation and Missile Research Development and Engineering Center, Moffett Field, CA	H. Yokoyama, H. Yamamoto, K. Kitamiya, A. Iida, Toyohashi University of Technology, Toyohashi, Japan	
Friday, 20 June 2014					
323-AA-38					
Chaired by: A. AGARWAL, University of Cambridge					
0930 hrs AIAA-2014-3198	1000 hrs AIAA-2014-3199	1030 hrs AIAA-2014-3200	1100 hrs AIAA-2014-3201	1130 hrs AIAA-2014-3202	
Jet-Surface Interaction Test: Flow Measurement Results	Comparison of two time-domain measures of nonlinearity in near-field propagation of high-power jet noise	Far-Field Acoustic Measurements of Dual Impinging Scale Model Jets	Near-field Shocks Radiated by High-Speed Free-Shear-Flow Turbulence	Noise from a Supersonic Round Jet Discharging into a Duct	
C. Brown, M. Wemmer, NASA Glenn Research Center, Cleveland, OH	K. Gee, T. Nielsen, D. Thomas, B. Reidman, M. Muhlestein, Brigham Young University, Provo, UT; J. Downing, Blue Ridge Research and Consulting, LLC, Asheville, NC; et al.	L. Myers, C. Kuo, D. McLaughlin, Pennsylvania State University, University Park, PA	D. Buchta, A. Anderson, J. Freund, University of Illinois, Urbana-Champaign, Urbana, IL	K. Zaman, A. Fagan, NASA Glenn Research Center, Cleveland, OH	
Friday, 20 June 2014					
324-AA-39					
Chaired by: E. ENWIA, NASA Glenn Research Center and J. COUPLAND, University of Southampton					
Moderators: Edmund Envia, John Coupland					
0930 - 1230 hrs					
Broadband Fan Noise Panel Discussion					
Hanover F					

The *Broadband Fan Noise Panel Discussion* will serve as a forum for assessing the current state of the art in predicting fan broadband noise using a portfolio of benchmark problems for which information on the mean flow, turbulence characteristics, and the sound field exists.

Friday, 20 June 2014		Galerkin Methods		Lenox
Chaired by: K. FIDKOWSKI, University of Michigan				
0930 hrs AIAA-2014-3219	1000 hrs AIAA-2014-3220	1030 hrs AIAA-2014-3221	1100 hrs AIAA-2014-3222	
A Reconstructed Discontinuous Galerkin Method Based on a Gas Kinetic Scheme for Compressible Flows on Arbitrary Grids L. Xu, Y. Xia, H. Luo, North Carolina State University, Raleigh, NC	An implicit, reconstructed discontinuous Galerkin method for the unsteady compressible Navier-Stokes equations on 3D hybrid grids Y. Xia, H. Luo, C. Wang, North Carolina State University, Raleigh, NC; R. Nourgaliev, Lawrence Livermore National Laboratory, Livermore, CA	Analysis of Improved Advection Schemes for Discontinuous Galerkin Methods L. Kheif, E. Johnsen, University of Michigan, Ann Arbor, Ann Arbor, MI	Exploration of POD-Galerkin Method in Developing a Flame Model for Combustion Instability Problems C. Huang, W. Anderson, C. Meikle, Purdue University, West Lafayette, IN	
Friday, 20 June 2014				
330-APA-52		Aerodynamic Analysis and Design: Optimization Methods II		Marietta
Chaired by: G. ZHA				
0930 hrs AIAA-2014-3223	1000 hrs AIAA-2014-3224	1030 hrs AIAA-2014-3254	1100 hrs AIAA-2014-3255	
Comparison of Local and Global Constrained Aerodynamic Shape Optimization D. Poole, C. Allen, T. Rendall, University of Bristol, Bristol, United Kingdom	Simulation-Driven Aerodynamic Shape Optimization with Automated Low-Fidelity Model Setup S. Koziel, L. Leifsson, Y. Testaumeqni, Reykjavik University, Reykjavik, Iceland	Aerodynamic Modeling Techniques for Efficient Supersonic Air Vehicle Multidisciplinary Design Optimization C. Meekstroth, University of Dayton Research Institute, Dayton, OH; E. Akyanak, N. Lindsley, M. Gabbard, Air Force Research Laboratory, Wright-Patterson AFB, OH; A. Hutton, Ohio Aerospace Institute, Dayton, OH	Analysis and Design Optimization of Blunt Bodies in Hypersonic Flow T. Piskin, S. Eyi, Middle East Technical University, Ankara, Turkey; M. Yumusak, ROKETSAN Missiles Industries, Inc., Ankara, Turkey	
Friday, 20 June 2014				
331-HVTASP-13		Propulsion Component Performance-Inlets		Regency Ballroom V
Chaired by: M. BILIMAN, Aerojet Rocketdyne Corporation				
0930 hrs AIAA-2014-3227	1000 hrs AIAA-2014-3228	1030 hrs AIAA-2014-3229	1100 hrs AIAA-2014-3230	
Stability analysis of Busemann intakes with overboard spillage N. Moradian, E. Timofeev, McGill University, Montréal, Canada; R. Tahir, RBT Consultants, Erbilcok, Canada; S. Molder, Smart Aeronomics, Toronto, Canada	Sensitivity of the Performance of a 3-Dimensional Hypersonic Inlet to Shape Deformations H. Kline, F. Palacios, J. Alonso, Stanford University, Stanford, CA	Integration methodology for waverider-derived hypersonic inlet and vehicle forebody Y. Li, P. An, C. Pan, R. Chen, Y. You, Xiamen University, Xiamen, China	Investigation into the Flow Physics of Hypersonic Variable Geometry Inlet Starting A. Grainger, S. Brieschenk, University of Queensland, Brisbane, Australia; R. Boyce, University of New South Wales at the Australian Defence Force Academy, Canberra, Australia; R. Malpress, D. Buttsworth, University of Southern Queensland, Toowoomba, Australia	
Friday, 20 June 2014				
332-PANEL-9		Panel: NASA Aeronautics Vision for the 21st Century: Why a New Strategy?		Regency Ballroom VI
0930 - 1130 hrs				
Moderator: Robert Pearce, Director, Strategy, Architecture & Analysis, NASA Aeronautics Research Mission Directorate; NASA Headquarters				
Panelists:				
John Civolowsky Program Director - Airspace Operations and Safety NASA Aeronautics Research Mission Directorate NASA Headquarters		Jay Dryer Program Director - Advanced Air Vehicles Program NASA Aeronautics Research Mission Directorate NASA Headquarters		Ed Waggoner Program Director - Integrated Aviation Systems NASA Aeronautics Research Mission Directorate NASA Headquarters

Friday, 20 June 2014		Duct Propagation II		Spring
Chaired by: S. RIENSTRA, Technische Universiteit Eindhoven				
0930 hrs AIAA-2014-3231 In-Duct and Farfield Experimental Measurements from the ANCF for the Purpose of Improved Broadband Liner Optimization D. Saffir, NASA Glenn Research Center, Cleveland, OH; W. Jones, NASA Langley Research Center, Hampton, VA; D. Mark, NASA Glenn Research Center, Cleveland, OH	1000 hrs AIAA-2014-3232 Generation and transmission of spiral acoustic waves in multi-stage subsonic radial compressors M. Roger, Ecole Centrale de Lyon, Lyon, France; S. Moreau, A. Marsan, University of Sherbrooke, Sherbrooke, Canada	1030 hrs AIAA-2014-3233 Theoretical Study and Numerical Validation of Sound Radiation from Coaxial Annular Duct X. Liu, X. Huang, Peking University, Beijing, China		
Chaired by: H. BODEN				
0930 hrs No Presentations	1100 hrs AIAA-2014-3225 Noise Produced by a Tandem Diaphragm: Experimental and Numerical Investigations U. Karim, G. Ogus, K. Karakocakun, C. Schram, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium; C. Soward, W. Polifke, Technical University of Munich, Garching, Germany	1130 hrs AIAA-2014-3226 Optimized cloaking design in moving fluid based on the scattering analysis method X. Huang, S. Zhong, Peking University, Beijing, China		
Chaired by: C. LIN, Florida International University and D. HASH, NASA Ames Research Center				
0930 hrs AIAA-2014-3234 Thermal Analysis of a Satellite instrument B. Chen, Chinese Academy of Sciences, Beijing, China	1000 hrs AIAA-2014-3235 Optimization of Heat Exchanger of Vuilleumier Heat Pump using Teaching-Learning Based Algorithm S. Gadiqaju, Y. Bedekar, J. Longtin, Stony Brook University, Stony Brook, NY; S. Paul, H. Peter, Y. Huang, ThermoLift, Inc., Stony Brook, NY	1100 hrs AIAA-2014-3236 Investigation of Kinetics of Iso-Octane Autoignition Q. Chen, Y. Hong, W. Zhao, L. Li, Academy of Equipment, Beijing, China	1100 hrs AIAA-2014-3237 Steady State Simulation of Gaseous Combustor Using Local Extinction Eddy Dissipation Concept S. Soleimani, E. Ghasemi, C. Lin, Florida International University, Miami, FL	
Chaired by: G. ZISKIND, Ben-Gurion University of the Negev and A. ALEXEENKO, Purdue University				
0930 hrs AIAA-2014-3238 A Robustness Study for a D-Boy Grid Generation Criteria using Surrogate Models M. Pustelnik, L. Santos, Embraer, São José dos Campos, Brazil; D. Ferrari, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil	1000 hrs AIAA-2014-3239 Thermal Environmental Stress Screen Optimization A. Whelan, Raytheon Company, Tucson, AZ	1030 hrs AIAA-2014-3240 Non-Destructive Testing of Materials Using Thermal Imaging R. McMaster, Virginia Military Institute, Lexington, VA		

Friday, 20 June 2014		General Acoustics I		Spring
Chaired by: H. BODEN				
0930 hrs No Presentations	1100 hrs AIAA-2014-3225 Noise Produced by a Tandem Diaphragm: Experimental and Numerical Investigations U. Karim, G. Ogus, K. Karakocakun, C. Schram, von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse, Belgium; C. Soward, W. Polifke, Technical University of Munich, Garching, Germany	1130 hrs AIAA-2014-3226 Optimized cloaking design in moving fluid based on the scattering analysis method X. Huang, S. Zhong, Peking University, Beijing, China		
Chaired by: C. LIN, Florida International University and D. HASH, NASA Ames Research Center				
0930 hrs AIAA-2014-3234 Thermal Analysis of a Satellite instrument B. Chen, Chinese Academy of Sciences, Beijing, China	1000 hrs AIAA-2014-3235 Optimization of Heat Exchanger of Vuilleumier Heat Pump using Teaching-Learning Based Algorithm S. Gadiqaju, Y. Bedekar, J. Longtin, Stony Brook University, Stony Brook, NY; S. Paul, H. Peter, Y. Huang, ThermoLift, Inc., Stony Brook, NY	1100 hrs AIAA-2014-3236 Investigation of Kinetics of Iso-Octane Autoignition Q. Chen, Y. Hong, W. Zhao, L. Li, Academy of Equipment, Beijing, China	1100 hrs AIAA-2014-3237 Steady State Simulation of Gaseous Combustor Using Local Extinction Eddy Dissipation Concept S. Soleimani, E. Ghasemi, C. Lin, Florida International University, Miami, FL	
Chaired by: G. ZISKIND, Ben-Gurion University of the Negev and A. ALEXEENKO, Purdue University				
0930 hrs AIAA-2014-3238 A Robustness Study for a D-Boy Grid Generation Criteria using Surrogate Models M. Pustelnik, L. Santos, Embraer, São José dos Campos, Brazil; D. Ferrari, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil	1000 hrs AIAA-2014-3239 Thermal Environmental Stress Screen Optimization A. Whelan, Raytheon Company, Tucson, AZ	1030 hrs AIAA-2014-3240 Non-Destructive Testing of Materials Using Thermal Imaging R. McMaster, Virginia Military Institute, Lexington, VA		

Friday, 20 June 2014		Other Heat Transfer Topics		Techwood
Chaired by: G. ZISKIND, Ben-Gurion University of the Negev and A. ALEXEENKO, Purdue University				
0930 hrs AIAA-2014-3238 A Robustness Study for a D-Boy Grid Generation Criteria using Surrogate Models M. Pustelnik, L. Santos, Embraer, São José dos Campos, Brazil; D. Ferrari, Technological Institute of Aeronautics (ITA), São José dos Campos, Brazil	1000 hrs AIAA-2014-3239 Thermal Environmental Stress Screen Optimization A. Whelan, Raytheon Company, Tucson, AZ	1030 hrs AIAA-2014-3240 Non-Destructive Testing of Materials Using Thermal Imaging R. McMaster, Virginia Military Institute, Lexington, VA		

Friday, 20 June 2014		Multi-Scale Heat Transfer IV		Vinings	
Chaired by: A. HENRY, Georgia Institute of Technology and T. FISHER					
0930 hrs AIAA-2014-3242 A numerical study of 2D AC electrothermal pump by lattice Boltzmann method Q. Ren, C. Chan, University of Arizona, Tucson, Tucson, AZ	1000 hrs Oral Presentation Thermal Conductivity Spectroscopy: Analysis of Spot Size Suppression Using Monte Carlo Simulations D. Ding, A. Minnich, California Institute of Technology, Pasadena, CA	1030 hrs Oral Presentation Ballistic phonon transport in cryogenic InP transistors J. Scheeh, Chalmers University of Technology, Göteborg, Sweden; J. Moteas, University of Salamanca, Salamanca, Spain; N. Wadefalk, J. Grahn, Chalmers University of Technology, Göteborg, Sweden; A. Minnich, California Institute of Technology, Pasadena, CA	1100 hrs Oral Presentation Size Effects on the Thermal Conductivity of Amorphous Silicon and Carbon Films J. Gaskins, University of Virginia, Charlottesville, Charlottesville, VA; M. Elahi, Z. Leseman, University of New Mexico, Albuquerque, Albuquerque, NM; P. Hopkins, University of Virginia, Charlottesville, Charlottesville, VA	1130 hrs Oral Presentation Electrically Tunable & Highly Reversible Thermal Transport in a Lithium Ion Battery Y. Hu, G. Chen, Massachusetts Institute of Technology, Cambridge, MA	
Friday, 20 June 2014					
338-LNCH-5					
1230 - 1400 hrs					
Friday Networking Lunch					
Lunch on Own					
Friday, 20 June 2014					
339-APA-53					
Chaired by: J. GUGLIELMO, Boeing Defense, Space & Security and A. JONES, University of Maryland					
1400 hrs AIAA-2014-3243 Effective Angle of Attack Control of a Flat Plate Flapping-Foil Turbine C. Usoh, J. Young, J. Lai, M. Ashraf, University of New South Wales at the Australian Defence Force Academy, Canberra, Australia	1430 hrs AIAA-2014-3244 Influence of Trailing Edge Brushes on Upstream Moving Pressure Waves in Transonic Flow J. Nies, H. Olivier, RWTH Aachen University, Aachen, Germany	1500 hrs AIAA-2014-3245 CFD evaluation of the effects of stall control devices and transition tapes on stall behavior of airplanes A. Molitor, Tata Consultancy Services, Bangalore, India	1530 hrs AIAA-2014-3246 Measurements of a Symmetric Airfoil Morphed by Macro Fiber Composite Actuators Y. Bouremel, W. Chan, National University of Singapore, Singapore; G. Jones, Imperial College London, London, United Kingdom; M. Debbasi, National University of Singapore, Singapore, Singapore	1600 hrs AIAA-2014-3247 2D Numerical and Experimental Investigation on the Effect of a Fowler Flap Gap and Overlap Size on the Flow Field M. Farhachi, S. Graveline, D. Demel, Royal Military College of Canada, Kingston, Canada	1630 hrs AIAA-2014-3248 Computational and Experimental Characterization of Dynamic Stall on 9-12% Thick Airfoils P. Davidson, J. Stitke, M. Hind, J. Srinaman, J. Naughton, University of Wyoming, Laramie, Laramie, WY
Baker					
Airfoil/Wing/Configuration Aerodynamics III					
Friday, 20 June 2014					
340-APA-54					
Chaired by: J. PINIER, NASA-Langley Research Center and K. VANDEN, USAF					
1400 hrs AIAA-2014-3249 Proper Orthogonal Decomposition of a Turbulent Pulsed Jet O. Huerta, University of Texas, Pan American, Edinburg, TX; D. Hernandez, Center for Research in Optics, Leon Guanajuato, Mexico; I. Chouatqalli, University of Texas, Pan American, Edinburg, TX	1430 hrs AIAA-2014-3250 Physically-based reduced order model for unsteady aerodynamic loads of a L-shaped Gurney flap V. Motta, G. Quaranta, Technical University of Milan, Milan, Italy	1500 hrs AIAA-2014-3251 ANUFT Technique for Flow Fluctuation Analysis Based on the Unsteady Flow Simulation with Variable Physical Time Stepping Scheme G. Wang, Y. Liu, H. Miao, Z. Ye, Northwestern Polytechnical University, Xi'an, China	1530 hrs AIAA-2014-3252 Progress Towards Aeroelastic Modeling of Wind Turbine Blades using Harmonic Balance and the Gamma-Re_Theta Transition Model J. Howison, K. Ekcic, University of Tennessee, Knoxville, Knoxville, TN	1600 hrs AIAA-2014-3253 Computational Analysis of a Tip Vortex Structure Shed from a Bio-inspired Blade S. Gomez, L. Gilkey, B. Kasper, S. Ponsova, University of New Mexico, Albuquerque, Albuquerque, NM	
Courland					
Vortical/Vortex Flow III					

Friday, 20 June 2014		Rotorcraft Aerodynamics		Edgewood
Chaired by: M. CALVERT, U.S. Army AMRDEC				
1400 hrs AIAA-2014-3256 Quantification of the Evolution of a Vortical Sheet in the Wake of a Hovering Rotor J. Milluzzo, U.S. Naval Academy, Annapolis, MD; J. Leishman, University of Maryland, College Park, College Park, MD	1430 hrs AIAA-2014-3257 Classical and snapshot forms of the POD technique applied to a helical vortex filament S. Mulo, C. Cameron, C. Timney, J. Sirohi, University of Texas, Austin, Austin, TX	1500 hrs AIAA-2014-3258 Time-Spectral Rotorcraft Simulations on Overset Grids J. Leffel, Stanford University, Stanford, CA; S. Murrain, T. Pulliam, NASA Ames Research Center, Moffett Field, CA	1530 hrs AIAA-2014-3259 Efficient and Adaptive Algorithms for Aerodynamic Investigations of Micro Helicopters M. Gloor, P. Jenny, Swiss Federal Institute of Technology, Zurich, Switzerland	
Friday, 20 June 2014				
343-ACD-13 VSTOL				
Chaired by: R. IWANGE, Lockheed Martin Corporation and J. SOKHEY, Rolls-Royce Corporation				
1400 hrs AIAA-2014-3260 Computational design of a concept helicopter's fuselage P. Yadav, R. Yadav, G. Gupta, Indian Institute of Technology Bombay, Mumbai, India	1430 hrs AIAA-2014-3261 An investigation into the effect of the airfoil on the aerodynamics of the MAV scale cycloidal propeller under hovering status Y. Hu, Northwestern Polytechnical University, Xi'an, China	1500 hrs AIAA-2014-3262 Application of the finite element method to study the dynamics of a helicopter T. Gorecki, Institute of Aviation, Warsaw, Poland		Embassy D
Friday, 20 June 2014				
344-ATIO-25 Airline Operations II				
Chaired by: D. DELAURENTIS, Purdue University				
1400 hrs AIAA-2014-3263 Optimizing Commercial Flight Fuel Consumption Through Changes in Federal Regulations and Pilot Techniques N. Heitzman, T. Takahashi, Arizona State University, Tempe, AZ	1430 hrs AIAA-2014-3264 Influence of SHM Techniques on Scheduled Maintenance for Aircraft Composite Structures X. Chen, C. Bili, H. Ren, RMIT University, Melbourne, Australia	1500 hrs AIAA-2014-3265 Modeling Delay and Delivery Accuracy for Mixed Absolute and Relative Spacing Operations I. Levitt, Federal Aviation Administration, Atlantic City, NJ; L. Weitz, MITRE Corporation, McLean, VA; B. Barmore, NASA Langley Research Center, Hampton, VA; M. Castle, Aurora Sciences, LLC, Washington, DC	1530 hrs AIAA-2014-3266 Electric Taxi Systems: An operations and value estimation C. Wintterp, P. Rilling, Delft University of Technology, Delft, The Netherlands; W. Wilde, KLM Royal Dutch Airlines, Schiphol, The Netherlands; R. Curran, Delft University of Technology, Delft, The Netherlands	1600 hrs AIAA-2014-3267 A Multi-Tier Evolution Model of Air Transportation Networks K. Song, J. Lewe, D. Morris, Georgia Institute of Technology, Atlanta, GA
1400 hrs AIAA-2014-3268 Optimizing Commercial Flight Fuel Consumption Through Changes in Federal Regulations and Pilot Techniques N. Heitzman, T. Takahashi, Arizona State University, Tempe, AZ			1630 hrs AIAA-2014-3268 Function-Structure Interdependence of Passenger Air Transportation: Application of a Systemic Approach S. Lehner, V. Gollnick, German Aerospace Center (DLR), Hamburg, Germany	Embassy E
Friday, 20 June 2014				
345-ATIO-26 Aircraft Economics				
Chaired by: F. WIELAND, Intelligent Automation, Inc.				
1400 hrs AIAA-2014-3269 Strategic Evolution in Aviation Modeling & Requirements Analysis Y. Gawlatik, NASA Headquarters, Washington, DC; J. Creecher, OH Dominion University, Norfolk, VA; V. Stauffer, LMJ, McLean, VA; R. Hamm, NextGen AeroSciences, LLC, Hampton, VA; M. MarkusKammer, LMJ, McLean, VA; S. Trajkov, Scab Sensis Corporation, Washington, DC, et al.	1430 hrs AIAA-2014-3270 Transportation System-of-Systems Simulator for Multimodal Demand and Emissions Forecasts J. Lewe, H. Pfenander, L. Hwin, L. Zhang, D. Morris, Georgia Institute of Technology, Atlanta, GA	1500 hrs AIAA-2014-3271 Identification of Key Factors in Integrating Aircraft and the Associated Supply Chains during Early Design Phases Z. Tang, O. Pinon-Fischer, D. Morris, Georgia Institute of Technology, Atlanta, GA	1530 hrs AIAA-2014-3272 Improving Feasibility of Point to Point Operations Through Civil Aerial Refuelling R. McRoberts, J. Early, M. Price, Queen's University Belfast, Belfast, United Kingdom	1600 hrs AIAA-2014-3273 Value assessment method applied to aircraft exterior cleaning to aircraft exterior cleaning J. Sluis, P. Rilling, Delft University of Technology, Delft, The Netherlands; J. Berg, KLM Royal Dutch Airlines, Schiphol, The Netherlands; R. Curran, Delft University of Technology, Delft, The Netherlands
Embassy F				

Friday, 20 June 2014		Embassy G	
346-MAO-15			
Multidisciplinary Analysis and Optimization: Applications II			
Chaired by: S. FERGUSON, North Carolina State University			
1400 hrs AIAA-2014-3274 Aerostructural optimization of the Common Research Model configuration G. Kenway, G. Kennedy, University of Michigan, Ann Arbor, MI, J. Martins, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-2014-3275 Aerodynamic Shape Optimization of an Adaptive Morphing Trailing Edge Wing Z. Lyu, J. Martins, University of Michigan, Ann Arbor, MI	1500 hrs AIAA-2014-3276 The Influence of Structural Variability on Limit Cycle Oscillation Behaviour R. Hayes, W. Yao, S. Marques, Queen's University Belfast, Belfast, United Kingdom	1530 hrs AIAA-2014-3277 Optimization of a Lunar Pallet Lander Reinforcement Structure Using a Genetic Algorithm A. Burt, P. Hui, NASA Marshall Space Flight Center, Huntsville, AL
1400 hrs AIAA-2014-3278 Reducing Spacecraft Jitter During Satellite Reorientation Maneuvers via Solar Array Dynamics D. Heber, J. McDonald, University of Illinois, Urbane-Champaign, Urbana, IL, O. Alvarez-Solazar, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, G. Krishnan, J. Allison, University of Illinois, Urbane-Champaign, Urbana, IL			
Friday, 20 June 2014			
347-ANERS-7			
ANERS-Policy and Economics			
Chaired by: D. DIMITRIU, Manchester Metropolitan University			
1400 hrs AIAA-2014-3279 Climate-related Regulatory Fees: How Do They Compare to Operating Costs? T. Thompson, Meltron Aviation, Inc., Dulles, VA	1430 hrs AIAA-2014-3280 Scenario Exploration for Sustainability of the Multimodal Inter-city Transportation System L. Hivin, J. Lewe, H. Pfander, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1500 hrs AIAA-2014-3281 Best options for regulating air transport's full climate impact from an economic and environmental point of view - Main results from DLR research project AviCim J. Scheelhaase, R. Sausen, K. Dahlmann, M. Jung, H. Keimel, H. Niess, German Aerospace Center (DLR), Cologne, Germany, et al.	
Friday, 20 June 2014			
348-APA-57			
Low Speed, Low Reynolds Number, Transonic, Supersonic and Hypersonic Aerodynamics IV			
Chaired by: J. DESPIRITO, US Army Research Laboratory and S. SAXENA, General Electric Company			
1400 hrs AIAA-2014-3282 Glow Discharge Visualization of Hypersonic Separated Flow past Cylinder/Plate Junction H. Itoh, T. Ishida, Y. Miyoshi, M. Mizoguchi, National Defense Academy, Yokosuka, Japan	1430 hrs AIAA-2014-3283 Numerical Simulation of Flow Field around an Inflatable Reentry Vehicle during a Demonstration Flight Y. Takahashi, D. Ito, Hokkaido University, Sapporo, Japan; K. Yamada, T. Abe, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan	1500 hrs AIAA-2014-3284 Predictive wall model for temperature fluctuations in hypersonic turbulent boundary layers C. Helm, P. Martin, University of Maryland, College Park, College Park, MD	1530 hrs AIAA-2014-3285 Numerical analysis of static and dynamic performances of grid fin controlled missiles A. Despreyroux, R. Desaulnier, R. Luciano, M. Piotrowski, J. Hickey, X. Wu, Royal Military College of Canada, Kingston, Canada; et al.
Greenbriar			

Friday, 20 June 2014		Acoustic Measurements		Hanover A	
Chartered by: F. HUTCHESON, NASA-Langley Research Center					
1400 hrs AIAA-2014-3286 Extraction of Turbofan Combustion Noise Spectra Using a combined Coherence-Beamforming Technique P. Rodriguez-Garcia, K. Holland, B. Tester, University of Southampton, Southampton, United Kingdom	1430 hrs AIAA-2014-3287 Flow modelling and noise generation of interacting prisms Z. Prine, D. Moreau, C. Doolan, University of Adelaide, Adelaide, Australia; M. Mat Ali, Malaysia-Japan International Institute of Technology, Kuala Lumpur, Malaysia	1500 hrs AIAA-2014-3288 Design of a low-noise aeroacoustic wind tunnel facility at Brunel University A. Varytiakos, T. Chong, Brunel University, Uxbridge, United Kingdom	1530 hrs AIAA-2014-3289 Improving the performance of aeroacoustic measurements beneath a turbulent boundary layer in a wake flow S. Hoxler, C. Spahr, German Aerospace Center (DLR), Göttingen, Germany; M. Hartmann, Volkswagen AG, Wolfsburg, Germany; J. Otker, Porsche AG, Weissach, Germany; H. Tokuno, Daimler AG, Sindelfingen, Germany; G. Wickern, Audi AG, Ingolstadt, Germany		
Friday, 20 June 2014 350-AA-43 Chartered by: D. JUVE, Ecole Centrale de Lyon					
1400 hrs AIAA-2014-3290 An Experimental Study of the Flow-induced Noise Created by a Wall-mounted Finite Length Airfoil D. Moreau, Z. Prine, C. Doolan, University of Adelaide, Adelaide, Australia	1430 hrs AIAA-2014-3291 Effect of Mach number on boundary layer noise X. Gloorfelt, Paris Institute of Technology, Paris, France; F. Margnat, National Center for Scientific Research (CNRS), Poitiers, France	1500 hrs AIAA-2014-3292 Experimental and numerical investigation on noise induced by a butterfly valve A. Chauvin, M. Sanjose, G. Label, S. Moreau, M. Brauillaitte, University of Sherbrooke, Sherbrooke, Canada	1530 hrs AIAA-2014-3293 Simulation of Sound Generated by Large-Scale Vortices in a Shear Layer by Hybrid DVM/APE Approach X. Jing, L. Wu, X. Dai, M. Song, X. Sun, Beihang University, Beijing, China	1600 hrs AIAA-2014-3294 Tandem Cylinder Flow and Noise Control H. Liu, Xi'an Jiaotong University, Xi'an, China; M. Azarpeyvand, University of Bristol, Bristol, United Kingdom; C. Ilario da Silva, Embraer, São José dos Campos, Brazil; J. Wei, Xi'an Jiaotong University, Xi'an, China	1630 hrs AIAA-2014-3295 Aerodynamic Noise Prediction for a Rod-Airfoil Configuration using Large Eddy Simulations B. Agrawal, A. Sharma, Iowa State University, Ames, IA
Friday, 20 June 2014 351-AA-44 Chartered by: V. GOLUBEV, Embry-Riddle Aeronautical University (ERAU) and S. GLEGG, Florida Atlantic University					
1400 hrs AIAA-2014-3296 Trailing edge noise prediction for rotating serrated blades S. Srinayoko, University of Southampton, Southampton, United Kingdom; M. Azarpeyvand, University of Bristol, Bristol, United Kingdom; B. Lyu, University of Cambridge, Cambridge, United Kingdom	1430 hrs AIAA-2014-3297 Experimental and numerical study on noise reduction mechanisms of the airfoil with serrated trailing edge L. Ji, W. Qiao, F. Tong, K. Xu, W. Chen, Northwestern Polytechnical University, Xi'an, China	1500 hrs AIAA-2014-3298 Generic Airfoil Trailing-Edge Noise Prediction using Stochastic Sound Sources from Synthetic Turbulence C. Rautmann, J. Dierke, R. Ewert, N. Hu, J. Delfs, German Aerospace Center (DLR), Braunschweig, Germany	1530 hrs AIAA-2014-3299 Predictions of the effect of wing camber and thickness on airfoil self-noise C. Marks, M. Rumpfkeil, University of Dayton Research Institute, Dayton, OH; G. Reich, Air Force Research Laboratory, Wright-Patterson AFB, OH	1600 hrs AIAA-2014-3300 Reduction of Bluntness-induced Vortex Shedding Noise Using Plasma Actuators J. Kim, L. Al-Sadawi, T. Chong, Brunel University, Uxbridge, United Kingdom	1630 hrs AIAA-2014-3301 Tomographic PIV for Revealed Trailing Edge Aeroacoustics S. Pröbsting, A. Gupta, F. Scarano, Delft University of Technology, Delft, The Netherlands; Y. Guan, S. Morris, University of Notre Dame, Notre Dame, IN
Friday, 20 June 2014 351-AA-44 Chartered by: V. GOLUBEV, Embry-Riddle Aeronautical University (ERAU) and S. GLEGG, Florida Atlantic University					
1400 hrs AIAA-2014-3296 Trailing edge noise prediction for rotating serrated blades S. Srinayoko, University of Southampton, Southampton, United Kingdom; M. Azarpeyvand, University of Bristol, Bristol, United Kingdom; B. Lyu, University of Cambridge, Cambridge, United Kingdom	1430 hrs AIAA-2014-3297 Experimental and numerical study on noise reduction mechanisms of the airfoil with serrated trailing edge L. Ji, W. Qiao, F. Tong, K. Xu, W. Chen, Northwestern Polytechnical University, Xi'an, China	1500 hrs AIAA-2014-3298 Generic Airfoil Trailing-Edge Noise Prediction using Stochastic Sound Sources from Synthetic Turbulence C. Rautmann, J. Dierke, R. Ewert, N. Hu, J. Delfs, German Aerospace Center (DLR), Braunschweig, Germany	1530 hrs AIAA-2014-3299 Predictions of the effect of wing camber and thickness on airfoil self-noise C. Marks, M. Rumpfkeil, University of Dayton Research Institute, Dayton, OH; G. Reich, Air Force Research Laboratory, Wright-Patterson AFB, OH	1600 hrs AIAA-2014-3300 Reduction of Bluntness-induced Vortex Shedding Noise Using Plasma Actuators J. Kim, L. Al-Sadawi, T. Chong, Brunel University, Uxbridge, United Kingdom	1630 hrs AIAA-2014-3301 Tomographic PIV for Revealed Trailing Edge Aeroacoustics S. Pröbsting, A. Gupta, F. Scarano, Delft University of Technology, Delft, The Netherlands; Y. Guan, S. Morris, University of Notre Dame, Notre Dame, IN

Friday, 20 June 2014

352-AA-45

CAA Propagation and Scattering II

Hanover D

Chaired by: R. ASTLEY, ISVR, University of Southampton	
1400 hrs AIAA-2014-3302 A Complex Equivalent Source Method for Scattering Effect of Aircraft Noise Y. Hou, X. Zhang, D. England, University of Southampton, Southampton, United Kingdom	1430 hrs AIAA-2014-3303 Effect of Upstream Turbulence on Flow-Acoustic Resonance Interactions in Transitional Airfoils V. Golubev, L. Nguyen, R. Manikbadi, Embry-Riddle Aeronautical University, Daytona Beach, FL; M. Roger, Ecole Centrale de Lyon, Ecully, France; J. Dudley, Air Force Research Laboratory, Eglin AFB, FL; M. Visbal, Air Force Research Laboratory, Wright-Patterson AFB, OH
1500 hrs AIAA-2014-3304 Wall Modeled Large Eddy Simulation of Airfoil Trailing Edge Noise J. Kocheemoovijil, S. Lee, Stanford University, Stanford, CA	1530 hrs AIAA-2014-3305 Rnoise: A RAMS Based Airfoil Trailing-edge Noise Prediction Model M. Kamuzamam, D. Bekiropoulos, A. Wolf, T. Lutz, E. Kraemer, University of Stuttgart, Stuttgart, Germany
1600 hrs AIAA-2014-3306 Gradient Term Filtering for Stable Sound Propagation with Linearized Euler Equations X. Zhang, X. Chen, J. Gill, Southampton University, Southampton, United Kingdom	1630 hrs AIAA-2014-3307 Development of Higher-Order Accurate Spatial Interpolation Scheme for Unstructured Cartesian Grids Y. Tamaki, T. Imamura, University of Tokyo, Tokyo, Japan

Friday, 20 June 2014

353-AA-46

Jet Noise Near Field II

Hanover E

Chaired by: A. PILON, Lockheed Martin Aeronautics	
1400 hrs AIAA-2014-3308 Numerical Prediction of an Acoustic Field of a Supersonic Jet Impinging on a Plate at Different Inclination Angles V. Golubev, A. Iyinitzis, R. Manikbadi, Embry-Riddle Aeronautical University, Daytona Beach, FL; K. Kurahashi, ANSYS, Inc., Lebanon, NH; B. Guenther, Embry-Riddle Aeronautical University, Daytona Beach, FL	1430 hrs AIAA-2014-3309 The Azimuthal Variations of Near Field Pressure Fluctuations in Elliptical Jets S. Sharma, A. Chatterjee, Indian Institute of Technology Bombay, Mumbai, India; M. Kanniyam Natarajan, National Aerospace Laboratories, Bangalore, India
1500 hrs AIAA-2014-3310 Pressure-density gradient correlations in the near-field of a transonic jet E. Migue, National Research Council (CNR), Rome, Italy; L. Geten, Roma Tre University, Rome, Italy; C. Freitas, S. Gizzi, National Research Council (CNR), Rome, Italy; R. Comuzzi, Roma Tre University, Rome, Italy; M. Felli, National Research Council (CNR), Rome, Italy	1530 hrs AIAA-2014-3312 Investigation of Supersonic Jet Flow Using Modal Decomposition R. Larsson, H. Hatstenoss, N. Andersson, L. Eriksson, Chalmers University of Technology, Göteborg, Sweden
1600 hrs AIAA-2014-3313 Aeroacoustic study of Internal Mixing Nozzles with Forced Lobed Mixers using a High-Mach Subsonic Lattice Boltzmann Scheme K. Habibi, L. Mongeau, McGill University, Montreal, Canada; D. Casalino, Exa Corporation, Stuttgart, Germany; P. Lew, Exa Corporation, Burlington, MA	1630 hrs AIAA-2014-3314 Acoustics of Jet Surface Interaction - Scrubbing Noise A. Khavari, NASA Glenn Research Center, Cleveland, OH

Friday, 20 June 2014

354-AA-47

Turbomachinery and Propeller Noise

Hanover F

Chaired by: W. ALEXANDER, Virginia Tech	
1400 hrs AIAA-2014-3315 On the generation of indirect combustion noise C. Tam, S. Parrish, Florida State University, Tallahassee, FL	1430 hrs AIAA-2014-3316 Analysis of Dual Rotating Rake Data from the NASA Glenn Advanced Noise Control Fan Duct with Artificial Sources M. Dahi, D. Saffiff, NASA Glenn Research Center, Cleveland, OH
1500 hrs AIAA-2014-3317 A cross-comparison of different post-processing and acoustic measurement devices for high speed near field noise on the STMA BHCN open rotor test rig F. Mery, ONERA, Modane, France	1530 hrs AIAA-2014-3318 Radial mode analysis of broadband noise in flow ducts using a combined axial and azimuthal sensor array U. Tapken, D. Gutschke, L. Enghardt, German Aerospace Center (DLR), Berlin, Germany
1600 hrs AIAA-2014-3319 Acoustic Localization of Vane Faults in Turbomachinery Based on Source Modeling W. Jürgens, U. Tapken, O. Lemke, I. Röhrle, L. Enghardt, German Aerospace Center (DLR), Berlin, Germany	1630 hrs AIAA-2014-3320 Non-orthogonality and Transient Growth Analysis of a Premixed Flame-Acoustic Interaction in a Choked Combustor D. Zhao, C. Ji, S. Li, X. Li, Nanyang Technological University, Singapore, Singapore
1700 hrs AIAA-2014-3321 Core noise - Identification of broadband noise sources of a turbo-shaft engine B. Pardowitz, U. Tapken, K. Knobloch, F. Bock, German Aerospace Center (DLR), Berlin, Germany; E. Bouty, Turbomeca, Bardes, France; I. Davis, Trinity College Dublin, Dublin, Ireland; et al.	

Friday, 20 June 2014		Low-Speed Separated Flows		Harris	
Chaired by: D. WILLIAMS, Illinois Institute of Technology					
1400 hrs AIAA-2014-3322 Cylinder in the vicinity of a bluff body leading edge T. Michiels, M. Konsonis, Delft University of Technology, Delft, The Netherlands	1430 hrs AIAA-2014-3323 Analysis of Unsteady Flow Past a Circular Cylinder Using a Harmonic Balance Method E. Clark, K. Ekici, University of Tennessee, Knoxville, TN; P. Beran, Air Force Research Laboratory, Wright-Patterson AFB, OH	1500 hrs AIAA-2014-3324 Investigation of the MACA 4412 Trailing Edge Separation Using a Lattice-Boltzmann Approach B. Koenig, E. Fares, Exa Corporation, Stuttgart, Germany; A. Jammalamadaka, Y. Li, Exa Corporation, Burlington, MA	1530 hrs AIAA-2014-3325 Experimental and Numerical Flow Analysis around Circular Cylinders Using POD and DMD M. Sakai, Y. Sunada, T. Imamura, K. Rinoie, University of Tokyo, Tokyo, Japan	1600 hrs AIAA-2014-3326 Wind Tunnel Investigation of the Wind Flow Patterns in the Neighborhood of the Mobile Integration Tower (MIT) in the Centro de Lançamento de Alcântara (CLA) F. Brasileiro, University of Vale do Paraíba, São José dos Campos, Brazil; A. Avelar, A. Faria, G. Fisch, Aeronautics and Space Institute (IAE), São José dos Campos, Brazil	1630 hrs AIAA-2014-3327 Attached and Separated Flow Simulations with Realizable Unified RANS-LES Methods M. Stoellinger, S. Heinz, University of Wyoming, Laramie, Wyoming, WY; P. Balakumar, NASA Langley Research Center, Hampton, VA
Friday, 20 June 2014					
Chaired by: G. BLAISDELL, Purdue University and O. KHAN, Tuskegee Univ					
1400 hrs AIAA-2014-3328 Large-Scale Structures in Implicit Large-Eddy Simulation of Compressible Turbulent Flow J. Poggie, Air Force Research Laboratory, Wright-Patterson AFB, OH	1430 hrs AIAA-2014-3329 Detached-Eddy Simulation of a Rectifying Shear Layer in Compressible Turbulent Flow T. Leiger, J. Poggie, Air Force Research Laboratory, Wright-Patterson AFB, OH	1500 hrs AIAA-2014-3330 A Gas-Kinetic Scheme for Turbulent Flow M. Righi, Zurich University of Applied Sciences, Winterthur, Switzerland	1530 hrs AIAA-2014-3331 Improvements to Rahman-Agarwal-Siikonen One-Equation Turbulence Model Based on k-epsilon Closure M. Rahman, Aalto University, Helsinki, Finland; R. Agarwal, Washington University in St. Louis, St. Louis, MO; M. Lamminen, T. Siikonen, Aalto University, Helsinki, Finland	Inman	
Friday, 20 June 2014					
Chaired by: J. BENEK					
1400 hrs AIAA-2014-3332 Effects of Laminar-Turbulent Transition on the Shock-Wave/Boundary-Layer Interaction E. Schuelén, German Aerospace Center (DLR), Göttingen, Germany	1430 hrs AIAA-2014-3333 High-resolution PIV measurements of a transitional shock wave-boundary layer interaction R. Giepmans, F. Schrijer, B. van Oudheusden, Delft University of Technology, Delft, The Netherlands	1500 hrs AIAA-2014-3334 An investigation of interactions between normal shocks and transitional boundary layers T. Davidson, H. Babinsky, University of Cambridge, Cambridge, United Kingdom	1530 hrs AIAA-2014-3335 High-Order Implicit Large-Eddy Simulations of a Supersonic Corner Flow over a Compression Ramp N. Bisek, Air Force Research Laboratory, Wright-Patterson AFB, OH	1600 hrs AIAA-2014-3336 The Effect of Wind Tunnel Size and Shock Strength on Incident Shock Boundary Layer Interaction Experiments J. Benek, C. Suchyira, Air Force Research Laboratory, Wright-Patterson AFB, OH; H. Babinsky, University of Cambridge, Cambridge, United Kingdom	1630 hrs AIAA-2014-3337 Numerical Prediction of Shock-Boundary Layer Interaction between a Pair of Fins in Hypersonic Flow V. Bhagwandin, Army Research Laboratory, Aberdeen Proving Ground, MD
Friday, 20 June 2014					
Chaired by: J. BENEK					
Shock-Boundary Layer Interactions					
Kenneshaw					

Friday, 20 June 2014		Acoustic and Unsteady Flows		Lenox	
Chartered by: P. MORRIS, Pennsylvania State University and L. CATTAFESTA, FAMU-FSU College of Engineering					
1400 hrs AIAA-2014-3338 Determination of Acoustic Scattering Matrices Using Nonlinear Disturbance Equations S. Koegemeier, Technical University of Munich, Munich, Germany, R. Kaess, Auburn, Munich, Germany, T. Sattelmayer, Technical University of Munich, Munich, Germany	1430 hrs AIAA-2014-3339 Acoustic streaming and its modeling in a traveling-wave thermoacoustic heat engine C. Scalo, S. Lele, L. Hesselink, Stanford University, Stanford, CA	1500 hrs AIAA-2014-3340 A Method for Estimating Surface Pressure Forces and Far-Field Acoustics A. Nickels, L. Ukley, University of Florida, Gainesville, Gainesville, FL, R. Reger, L. Cattafesta, Florida State University, Tallahassee, FL	1530 hrs AIAA-2014-3341 Study of unsteady shock motion in shock/turbulence interaction P. Seshiath, Y. Madras Sethuraman, Indian Institute of Technology Bombay, Mumbai, India; J. Larsson, University of Maryland, College Park, College Park, MD; K. Srinha, Indian Institute of Technology Bombay, Mumbai, India	1600 hrs AIAA-2014-3342 A combustion instability model accounting for dynamic flame-flow-acoustic interactions R. Assier, X. Wu, Imperial College London, London, United Kingdom	
Friday, 20 June 2014					
359-FD-39 Comparison between CFD and Measurements in Hypervelocity Flows Part II: Shockwave Turbulent Boundary Layer Interaction in High Reynolds Number Duplicating Mach 5 - 8 Flows					
Chartered by: M. MACLEAN, CUBRC and T. WADHAMS, CUBRC					
1400 hrs Oral Presentation Measurements of Shockwave Turbulent Boundary Layer Interaction for High Reynolds Number Duplicated Mach 5 - 8 Flows (Invited) M. Holden, T. Wadhams, M. MacLean, CUBRC, Inc., Buffalo, NY	1430 hrs Oral Presentation US3D Simulations of High-Reynolds Number Hypersonic Separated Flows (Invited) G. Candler, J. Nompelis, University of Minnesota, Minneapolis, MN	1500 hrs Oral Presentation Comparison of turbulence Models for Prediction of Shockwave Turbulent Boundary Layer Interaction in Hypervelocity Flow (Invited) R. Bowersox, Texas A&M University, College Station, TX	1530 hrs Oral Presentation Shock Wave Interactions: A CFD Study of CUBRC LENS-II Turbulent Experiments (Invited) D. Prabhu, ERC, Inc., Moffett Field, CA	1600 hrs Oral Presentation Simulations of Separated Turbulent Flow with LAURA and FUN3D (Invited) P. Gnoffo, NASA Langley Research Center, Hampton, VA	1630 hrs Oral Presentation Comparison between CFD and Measurements for Shockwave Turbulent Boundary Layer Interaction for High Reynolds Number Duplicated Mach 5 - 8 Flows (Invited) T. Wadhams, M. Holden, M. MacLean, CUBRC, Inc., Buffalo, NY
Friday, 20 June 2014					
360-AA-48 Fan Noise III					
Chartered by: D. NARK, NASA-Langley Research Center					
1400 hrs AIAA-2014-3344 On the influence of Rotor Design on an Acoustically 3d-Designed Turbine Exit Guide Vane T. Selic, A. Marn, Graz University of Technology, Graz, Austria	1430 hrs AIAA-2014-3345 The effect of airfoil clacking on noise generation and propagation in a two shaft test turbine C. Faustmann, S. Bauninger, A. Marn, E. Göttlich, Graz University of Technology, Graz, Austria	1500 hrs AIAA-2014-3346 An experimental study on router cooling fan noise reduction by inflow screens Y. Xu, X. Li, Beihang University, Beijing, China	1530 hrs AIAA-2014-3347 Experimental study and velocity scaling of the tip-leakage noise generated by low-speed axial flow-fans E. Canepa, A. Cattanei, F. Mazzocut Zecchin, University of Genoa, Genoa, Italy	1600 hrs AIAA-2014-3348 Noise generation and propagation for different turning mid turbine frame setups in a two shaft test turbine C. Faustmann, S. Zerbin, A. Marn, Graz University of Technology, Graz, Austria; M. Spitalny, German Aerospace Center (DLR), Berlin, Germany; D. Brozart, MTU Aero Engines AG, Munich, Germany; E. Göttlich, Graz University of Technology, Graz, Austria	1630 hrs AIAA-2014-3349 Experimental and Numerical Study on Noise Reduction Mechanisms of the Linear Cascade with Serrated Trailing Edge W. Qiao, L. Ji, F. Tong, W. Chen, K. Xu, Northwestern Polytechnical University, Xi'an, China
Friday, 20 June 2014					
361-AA-49 Duct Liners II					
Chartered by: W. WATSON, NASA-Langley Research Center					
1400 hrs AIAA-2014-3350 Hard wall-soft wall-vorticity scattering in shear flow S. Rienstra, D. Singh, Technical University of Eindhoven, Eindhoven, The Netherlands	1430 hrs AIAA-2014-3351 Single Mode Theory for Impedance Eduction in Large-Scale Ducts with Grazing Flow W. Watson, M. Jones, NASA Langley Research Center, Hampton, VA; J. June, University of Florida, Gainesville, Gainesville, FL	1500 hrs AIAA-2014-3352 Evaluation of a Variable-Impedance Ceramic Matrix Composite Acoustic Liner M. Jones, W. Watson, D. Nark, B. Howerton, NASA Langley Research Center, Hampton, VA	1530 hrs AIAA-2014-3353 Nonlinear absorption characteristics and micro flow physics of resonator under high sound intensity J. Xu, X. Li, Y. Guo, Beihang University, Beijing, China	1600 hrs AIAA-2014-3354 Direct numerical simulation and analytical modeling of locally reacting liners with turbulent grazing flow Q. Zhang, D. Bodony, University of Illinois, Urbana-Champaign, Urbana, IL	
Spring					

Friday, 20 June 2014

366-ANERS-8

1630 - 1730 hrs

Moderator: Lourdes Maurice

Panelists:

John Carowlosky
NASA

Kevin Welsh
FAA

Goergeta Dinu
TAROM

Can We Resolve the Most Pressing Modeling, Policy, and Economic Challenges?

Embassy H

Author/Session Chair Index

- Abdallah, A., 51-AFM-5
- Abdelmoula, F., 92-ASE-6/AFM-6/FT-2
- Abdelmoula, M., 262-HYTASP-9
- Abdoh-Hamid, K., 7-APA-4
- Abdulrahim, M., 220-AFM-14
- Abe, T., 103-PDL-8, 183-TP-11, 265-TP-17, 348-APA-57
- Abedi, H., 239-APA-38
- Abelman, S., 251-ASE-15
- Ábom, M., 298-APA-33
- Acharya, T., 30-AMT-2/PDL-2
- Adamovich, I., 30-AMT-2/PDL-2
- Addy, G., 166-ASE-9
- Adefifa, O., 261-AA-23
- Adrianansen, D., 18-ASE-2
- Agarwal, A., 164-AA-10, 206-AA-16, 248-AA-18, 261-AA-23, 286-AA-29, 323-AA-38
- Agarwal, R., 55-FD-6, 192-APA-33, 239-APA-38, 325-FD-31, 356-FD-36
- Agostinelli, C., 6-APA-3
- Agrawal, S., 350-AA-43
- Agrawal, S., 110-APA-20
- Agui, J., 363-TP-25
- Aharon, Y., 223-TP-16
- Alimad, N., 126-ASE-8/AFM-9/FT-3, 205-ASE-12
- AlimadBeygi, S., 42-ATIO-4
- Alimed, A., 97-PDL-7, 131-PDL-9, 214-FC-11
- Alimed, H., 97-PDL-7, 131-PDL-9
- Alimied, H., 97-PDL-7, 131-PDL-9
- Almija, K., 93-AA-4, 168-AA-12, 252-AA-20, 286-AA-29, 320-AA-35
- Aligner, M., 123-AA-6
- Arimifioye, T., 259-FC-12, 269-APA-40
- Ajaji, R., 198-ACD-9
- Akbar, M., 143-TP-10
- Akella, M., 259-FC-12
- Akgun, T., 291-FD-29
- Akhmetov, B., 320-AA-35
- Akins, D., 59-FC-5
- Akkermans, R., 309-APA-47, 321-AA-36
- Akmandor, I., 39-APA-9/FC-4
- Akpolat, M., 213-HYTASP-6
- Aksamy, D., 115-ATIO-11
- Aksu, A., 144-AFM-12
- Al-Khalil, K., 91-ASE-5
- Al-Sadawi, L., 351-AA-44
- Alahyari Beig, S., 163-FD-14
- Alam, M., 7-APA-4, 180-FC-10/PDL-11
- Alauzet, F., 210-FD-19
- Alavi Moghadam, M., 285-AA-28
- Albert, M., 11-MAO-1
- Alder, M., 122-FD-11
- Alexander, W., 124-AA-7, 165-AA-11, 203-AA-15, 253-AA-21, 354-AA-47
- Alexeenko, A., 336-TP-22
- Ali, J., 195-LIA-1
- Ali, M., 155-APA-27
- Ali, S., 96-FD-10, 173-FD-17
- Alkandry, H., 32-TP-1, 183-TP-11, 327-FD-33
- Allair, F., 277-ACD-12
- Allan, B., 153-APA-25
- Allan, M., 89-AA-2
- Allen, A., 240-ATIO-17
- Allen, B., 193-ATIO-15
- Allen, C., 10-ACD-1, 330-APA-52
- Allen, J., 12-MAO-2
- Alley, N., 158-FT-4
- Allison, D., 199-MAO-10
- Allison, J., 346-MAO-15
- Almonetti, D., 321-AA-36
- Alonso, J., 85-MAO-5, 110-APA-20, 278-MAO-12, 331-HYTASP-13
- Alumini, A., 221-TP-14
- Amiz, A., 156-APA-28
- Ajora, N., 40-APA-10
- Aurajaitesam, S., 22-FD-2, 280-APA-44
- Asada, K., 180-FC-10/PDL-11, 189-APA-30
- Asadi, F., 275-ATIO-22
- Ashley, A., 119-MAO-7
- Ashley, J., 259-FC-12
- Ashraf, M., 7-APA-4, 339-APA-53
- Asrar, W., 190-APA-31, 195-LIA-1
- Assier, R., 358-FD-38
- Astley, R., 123-AA-6, 229-LEC-6, 298-AA-33, 352-AA-45
- Atak, M., 290-FD-28
- Atesoglu, Ö., 182-AFM-13
- Aimaull, O., 156-APA-28
- Aubert, M., 249-AA-19
- Aubert, R., 52-ASE-3
- Aupoix, B., 125-ASE-7
- Avelar, A., 310-APA-48, 355-FD-35
- Alverkin, S., 171-FD-15
- Awasthi, M., 124-AA-7
- Ayton, L., 90-AA-3, 261-AA-23
- Azarpeyvand, M., 350-AA-43, 351-AA-44
- Azevedo, J., 40-APA-10, 270-APA-41
- Baars, W., 252-AA-20
- Babinsky, H., 13-APA-5/FC-1, 214-FC-11, 238-APA-37, 248-AA-18, 269-APA-40, 357-FD-37
- Babu, D., 87-APA-18
- Babulin, A., 111-APA-21
- Bach, T., 84-ACD-4
- Bachchan, N., 289-FD-27
- Bacon, B., 273-ATIO-20
- Bacon, D., 205-ASE-12
- Bartcock, K., 37-APA-7, 160-ACD-7
- Barker, R., 105-TP-7
- Bae, H., 119-MAO-7
- Baer, S., 16-AFM-2
- Bahr, C., 0-, 94-AA-5, 169-AA-13, 287-AA-30
- Bai, X., 314-ATIO-24
- Bailey, C., 202-AA-14, 253-AA-21
- Bailey, D., 271-APA-42
- Bake, F., 264-AA-24, 354-AA-47
- Balabanov, V., 86-MAO-6, 120-MAO-8, 274-DE-1
- Balachandrar, B., 163-FD-14
- Balakrishna, S., 310-APA-48
- Balakrishnan, G., 364-TP-26
- Balakumar, P., 172-FD-16, 355-FD-35
- Balaras, E., 311-APA-49
- Balas, M., 15-AFM-1
- Balchamos, M., 60-ATIO-8
- Balesdent, M., 278-MAO-12
- Baistrier, C., 79-APA-16
- Balford, D., 114-ATIO-10
- Bambas, N., 9-ATIO-2
- Banejee, S., 138-HYTASP-5
- Bangert, L., 38-APA-8
- Banica, M., 298-APA-37
- Banks, D., 238-APA-37
- Baqui, Y., 206-AA-16
- Barad, M., 23-FD-3
- Barbaresco, E., 92-ASE-6/AFM-6/FT-2
- Barber, J., 97-PDL-7
- Barcena, J., 101-HYTASP-3
- Barker, P., 100-AMT-4/GT-3
- Barmore, B., 313-ATIO-23, 344-ATIO-25
- Barnes, C., 88-FD-9
- Barnes, F., 262-HYTASP-9
- Barnhardt, M., 32-TP-1
- Barone, M., 278-MAO-12, 280-APA-44
- Barrado, C., 314-ATIO-24
- Barracl, N., 210-FD-19
- Barrier, R., 285-AA-28
- Barsky, D., 311-APA-49
- Alvarez-Salazar, O., 346-MAO-15
- Alves, L., 291-FD-29
- Alvi, F., 99-FC-7
- Alvard, D., 286-AA-29
- Alvanak, E., 199-MAO-10, 315-MAO-14, 330-APA-52
- Almar, A., 32-TP-1
- Amaya, M., 215-AMT-10/GT-8
- Amrikar, A., 236-APA-35
- An, P., 331-HYTASP-13
- Ananda Krishnan, G., 40-APA-10
- Anders, S., 135-FC-8/APA-24, 162-APA-29
- Anderson, A., 323-AA-38
- Anderson, J., 124-AA-7, 165-AA-11, 253-AA-21
- Anderson, M., 362-TP-24
- Anderson, W., 270-APA-41, 326-FD-32, 329-FD-34
- Andersson, M., 123-AA-6, 353-AA-46
- Andreutti, G., 103-PDL-8, 308-APA-46
- Andrews, S., 160-ACD-7
- Andrienko, D., 103-PDL-8, 131-PDL-9
- Anemaat, W., 10-ACD-1, 160-ACD-7
- Angersbach, A., 274-DE-1
- Angland, D., 249-AA-19, 259-FC-12, 352-AA-45
- Anisimov, K., 24-FD-4
- Anna, A., 327-FD-33
- Anobile, A., 320-AA-35
- Ansell, P., 289-FD-27
- Antoni, T., 110-APA-20
- Antony, R., 246-APA-39
- Aono, H., 40-APA-10, 180-FC-10/PDL-11, 189-APA-30
- Appel, C., 164-AA-10
- Appelbaum, J., 39-APA-9/FC-4
- Atari, T., 328-HYTASP-12
- Archer, J., 116-ATIO-12
- Areno, A., 144-AFM-12
- Arima, R., 207-AA-17
- Arnoldus, O., 52-ASE-3

Author/Session Chair Index

- Bourles, R., 122-FD-11
 Borriram, S., 94-AA-5, 128-AA-9
 Bos, I., 314-AIT0-24
 Bosvanathalli, R., 255-FD-23
 Boss, R., 251-ASE-15
 Bossotti, A., 252-AA-20
 Basso, E., 310-APA-48
 Bostidle, M., 136-AMF5/GT-4
 Bouthel, B., 61-AMT3/GT-2, 37-AMT6/GT-5, 176-AMT8/GT-6
 Boffren, P., 207-APA-17
 Bower, M., 112-APA-22
 Bower, T., 92-ASE-6/AFM-6/FT-2
 Bouinger, S., 360-AA-48
 Bouschat, M., 271-APA-42
 Boys, L., 41-AIT0-3
 Boydal, O., 122-FD-11
 Beads, N., 308-APA-46
 Beauchene, P., 184-TP-12
 Bebernis, T., 14-FD-1
 Beck, A., 202-AA-14
 Becker, L., 94-AA-5
 Beckmann, B., 159-AIT0-14
 Beekler, Y., 335-TP-21, 362-TP-24
 Beeler, G., 172-FD-16
 Béguin, C., 222-TP-15
 Behr, M., 122-FD-11
 Beitel, G., 136-AMF5/GT-4
 Bekropoulos, D., 352-AA-45
 Beland, M., 84-ACD-4
 Bellemans, A., 325-FD-31
 Belyaev, I., 20-AA-1, 286-AA-29, 287-AA-30
 Ben-Tzvi, P., 294-APA-45
 Benavides, J., 51-AFM-5
 Benchiek, M., 214-FC-11
 Bender, J., 265-TP-17
 Benet, J., 357-FD-37
 Bengin, A., 310-APA-48
 Benjami, A., 298-AA-33
 Benjami, L., 17-ASE-1
 Benoit, T., 16-AFM-2
 Benton, S., 269-APA-40
 Beran, P., 355-FD-35
 Benard, M., 278-MA0-12
 Beresh, S., 48-FD-5, 177-AMT9/GT-7, 280-APA-44, 293-FD-30
 Berg, J., 345-AIT0-26
 Bergeron, K., 210-FD-19, 236-APA-35
 Berguin, S., 45-MA0-3
 Bermejo-Moreno, I., 55-FD-6
 Bernad, L., 246-APA-39
 Bernardini, A., 51-AFM-5
 Bernadini, C., 269-APA-40
 Bernardini, G., 320-AA-35
 Bernardo, B., 133-FD-13
 Bernardo, J., 200-ANERS-1, 245-ANERS-3
 Berrou, Y., 279-ANERS-4
 Berry, A., 261-AA-23, 320-AA-35
 Bertish, S., 114-AIT0-10
 Bertion, B., 158-FI-4
 Bertoni, J., 203-AA-15
 Bertsch, L., 20-AA-1, 43-ACD-2
 Bestle, D., 11-MA0-1, 274-DE-1
 Bevir, J., 113-AIT0-9, 240-AIT0-17
 Beyer, S., 101-HYTASP-3
 Bhagwandin, V., 192-APA-33, 269-APA-40, 357-FD-37
 Bhumia, A., 33-TP-2
 Bi, Q., 266-TP-18
 Biancolini, M., 318-APA-51
 Biasi, V., 184-TP-12
 Bidwell, C., 52-ASE-3, 125-ASE-7, 153-APA-25, 204-ASE-11
 Bieniek, D., 92-ASE-6/AFM-6/FT-2
 Bieslich, P., 41-AIT0-3, 313-AIT0-23
 Bijl, C., 84-ACD-4, 197-ACD-8, 241-AIT0-18, 344-AIT0-25
 Billmers, E., 53-ASE-4/FF1
 Billmers, R., 53-ASE-4/FF1
 Billonnet, G., 295-AA-32
 Binet, D., 321-AA-36
 Birch, T., 4-APA-1, 37-APR-7
 Birling, F., 314-AIT0-24
 Bisek, N., 181-PD-6/FC-6, 357-FD-37
 Bisson, F., 318-APA-51
 Bitter, N., 132-FD-12
 Bixler, N., 255-FD-23
 Black, J., 18-ASE-2
 Blaissell, G., 202-AA-14, 356-FD-36
 Blake, J., 91-ASE-5
 Blake, W., 124-AA-7
 Blanquart, G., 66-TP-4
 Bloebaum, C., 46-MA0-4, 119-MA0-7, 199-MA0-10
 Bloem, M., 9-AIT0-2, 116-AIT0-12
 Blom, H., 313-AIT0-23
 Bobenieth Mserdo, R., 261-AA-23
 Bockhorn, H., 127-AA-8
 Bocquier, M., 298-AA-33
 Bodard, G., 282-AA-26
 Bodony, D., 14-FD-1, 25-FC-2, 48-FD-5, 163-FD-14, 256-FD-24, 361-AA-49
 Boelink, H., 183-TP-11
 Boelers, O., 37-APA-7
 Bogey, C., 164-AA-10
 Boij, S., 264-AA-24
 Bolam, J., 136-AMF5/GT-4
 Bolduc-leastale, E., 274-DE-1
 Bolender, M., 16-AFM-2
 Bolshunov, K., 111-APA-21
 Bona, G., 200-ANERS-1
 Bonaccorso, E., 91-ASE-5
 Bond, C., 80-APA-17
 Bonifacio, J., 289-FD-27
 Bonnaud, C., 282-AA-26
 Bonneau, V., 285-AA-28
 Bonnet, J., 59-FC-5
 Bono, J., 42-AIT0-4
 Bons, J., 269-APA-40
 Bonucci, G., 211-FD-20
 Boopathy, K., 161-MA0-9
 Bopp, M., 190-APA-31
 Borchers, P., 196-AIT0-16, 314-AIT0-24
 Bordji, M., 190-APA-31
 Boreman, G., 299-TP-19
 Borer, N., 240-AIT0-17
 Borg, M., 96-FD-10
 Borg, S., 136-AMF5/GT-4
 Borghi, C., 181-PD-6/FC-6, 189-APA-30
 Borgoltz, A., 27-AMT1/GT-1, 260-AMT12/GT-11
 Borner, A., 222-TP-15
 Bose, D., 271-APA-42
 Bose, S., 164-AA-10
 Bosmaoin, N., 176-AMT8/GT-6
 Bosnyakov, I., 270-APA-41
 Bossou, C., 8-AIT0-1
 Botez, R., 49-AFM-3, 79-APA-16, 83-AIT0-7, 279-ANERS-4, 317-APA-50
 Bottlander, D., 134-HYTASP-4
 Bouafra, S., 313-AIT0-23
 Bouchez, M., 262-HYTASP-9
 Bouilly, J., 101-HYTASP-3
 Bouremel, Y., 339-APA-53
 Bouvy, E., 354-AA-47
 Bowerman, K., 241-AIT0-18
 Bowesox, R., 48-FD-5, 61-AMT-3/GT-2, 173-FD-17, 359-FD-39
 Bowles, R., 126-ASE-8/AFM-9/FT-3
 Boyce, R., 24-FD-4, 65-PD-4, 138-HYTASP-5, 213-HYTASP-6, 331-HYTASP-13
 Boyd, I., 32-TP-1, 183-TP-11, 265-TP-17, 27-FD-33
 Boyle, D., 295-AA-32
 Boylston, B., 208-HYMSP-24
 Bozak, R., 248-AA-18, 252-AA-20
 Bragg, M., 166-ASE-9, 289-FD-27
 Brambley, E., 123-AA-6
 Brandis, A., 103-PD-8, 183-TP-11, 265-TP-17
 Brandon, J., 144-AFM-12, 158-FI-4
 Brasileiro, F., 355-FD-35
 Braun, R., 104-AFM-7, 107-AFM-8
 Bravini, M., 250-ASE-14/GT-10
 Breaze-Stringfellow, A., 284-ASE-16
 Brihm, C., 23-FD-3, 132-FD-12
 Bremner, M., 15-AFM-1, 49-AFM-3
 Bremner, P., 190-APA-31
 Brenner, K., 52-ASE-3
 Brentzel, K., 167-ASE-10/FF5
 Briès, G., 164-AA-10, 293-FD-30
 Brevault, L., 278-MA0-12
 Breviglieri, C., 270-APA-41
 Briand, J., 158-FI-4
 Bricalli, M., 24-FD-4, 213-HYTASP-6
 Briceno, S., 197-ACD-8
 Brichet, G., 282-AA-26
 Bridge, T., 215-AMT-10/GT-8
 Bridges, J., 252-AA-20, 282-AA-26
 Brieschenk, S., 65-PD-4, 213-HYTASP-6, 262-HYTASP-9, 331-HYTASP-13
 Bright, I., 34-TP-3
 Briomaud, R., 155-APA-27
 Britcher, C., 176-AMT-8/GT-6
 Britchford, K., 203-AA-15
 Britto Godeschij, G., 212-FD-21
 Bizzi, L., 254-AA-22
 Broeren, A., 166-ASE-9
 Bromberg, E., 42-AIT0-4
 Bronsvort, J., 83-AIT0-7
 Brooks, T., 94-AA-5, 169-AA-13, 207-AA-17
 Broszat, D., 360-AA-48
 Brioulette, M., 350-AA-43
 Brown, A., 67-TP-5, 92-ASE-6/AFM-6/FT-2, 126-ASE-8/AFM-9/FT-3, 170-TP-3, 217-HYTASP-7, 255-FD-23
 Brown, C., 52-ASE-3, 252-AA-20, 323-AA-38
 Brown, K., 27-AMT-1/GT-1
 Brown, L., 24-FD-4
 Brown, M., 79-APA-16
 Brown, R., 98-HYTASP-2, 213-HYTASP-6, 292-HYTASP-10
 Brune, A., 183-TP-11, 217-HYTASP-7
 Brunet, A., 138-HYTASP-5
 Brunet, V., 190-APA-31
 Bryan, B., 124-AA-7
 Bryson, D., 130-TP-2, 207-AA-17
 Bucari, M., 200-ANERS-1
 Buchholz, H., 321-AA-36
 Buchta, D., 323-AA-38
 Buehler, S., 206-AA-16
 Buescher, A., 285-AA-28
 Bull, J., 317-APA-50, 326-FD-32
 Bulman, M., 58-HYTASP-1, 331-HYTASP-13
 Buning, P., 169-AA-13
 Buonanno, M., 38-APA-8, 110-APA-20
 Burdette, D., 115-AIT0-11
 Burke, J., 42-AIT0-4
 Burley, C., 94-AA-5, 169-AA-13, 207-AA-17, 240-AIT0-17
 Burmazzi, M., 135-FC-8/APA-24
 Burnett, E., 174-MST-4
 Burt, A., 45-MA0-3, 346-MA0-15
 Burt, J., 142-TP-9
 Burton, S., 46-MA0-4
 Busan, R., 273-AIT0-20
 Bush, R., 22-FD-2
 Busse-Gerstengarne, S., 264-AA-24
 Butler, K., 208-HYTASP-24
 Buttsworth, D., 331-HYTASP-13
 Cabell, K., 176-AMT-8/GT-6
 Cabell, R., 240-AIT0-17
 Caccamo, M., 154-APA-26
 Cai, N., 67-TP-5
 Cai, S., 33-TP-2, 223-TP-16
 Cai, X., 281-FD-26
 Cai, Z., 259-FC-12
 Cain, A., 27-AMT-1/GT-1
 Calamas, D., 299-TP-19
 Callantine, T., 116-AIT0-12, 242-AIT0-19
 Callicut, J., 287-AA-30
 Calvert, M., 246-APA-39, 342-APA-56
 Calvert, N., 61-AMT-3/GT-2
 Calzada, J., 294-APA-45
 Cameron, C., 342-APA-56
 Campbell, R., 78-APA-15
 Campbell, S., 196-AIT0-16
 Campitelli, G., 175-FC-9
 Campos, N., 159-AIT0-14
 Canussi, R., 353-AA-46
 Canali, D., 92-ASE-6/AFM-6/FT-2
 Canchero, A., 272-APA-43
 Candler, G., 66-TP-4, 96-FD-10, 265-TP-17, 281-FD-26, 291-FD-29, 325-FD-31, 326-FD-32, 327-FD-33, 359-FD-39
 Canepa, E., 360-AA-48
 Canetto, C., 185-TP-13, 364-TP-26
 Canfield, R., 12-MA0-2, 244-MA0-11
 Cansler, E., 12-MA0-2
 Cantu, L., 137-AMT-6/GT-5
 Capizzano, F., 103-PD-8, 308-APA-46
 Capps, A., 8-AIT0-1
 Capritie, J., 321-AA-36
 Capriotti, D., 292-HYTASP-10
 Caraballo, E., 135-FC-8/APA-24
 Caradonna, F., 322-AA-37
 Cardullo, F., 95-MST-3

Author/Session Chair Index

- Carinhano, D., 140-AMT7/PDL-10
 Caro, S., 322-AA-37
 Carolus, T., 267-AA-25
 Carrigan, J., 93-AA-4
 Carstensen, J., 85-MAO-5
 Carter, M., 38-APA-8, 78-APA-15
 Caruelle, B., 165-AA-11, 267-AA-25
 Casalino, D., 39-APA-9/FC-4, 89-AA-2, 128-AA-9, 206-AA-16, 249-AA-19, 295-AA-32, 353-AA-46
 Casper, K., 48-FD-5, 132-FD-12, 173-FD-17, 280-APA-44
 Casper, M., 39-APA-9/FC-4
 Cassel, K., 56-FD-7
 Castagnoli, A., 200-ANERS-1
 Castano, L., 160-ACD-7
 Costero, P., 31-FC-3/PDL-3
 Castillo-Effen, M., 159-ATIO-14
 Castle, M., 344-ATIO-25
 Catalano, P., 103-PDL-8, 112-APA-22
 Carleif, M., 165-AA-11, 253-AA-21
 Carfagna, L., 287-AA-30, 293-FD-30, 358-FD-38
 Cattanei, A., 360-AA-48
 Cavallieri, A., 124-AA-7, 164-AA-10, 206-AA-16, 286-AA-29
 Cover, M., 316-ANERS-6
 Levik, M., 95-MSF-3
 Ceze, M., 156-APA-28
 Choi, S., 39-APA-8
 Chakraborty, I., 117-ACD-5, 118-ACD-6, 241-ATIO-18, 277-ACD-12
 Chakravarthy, S., 207-AA-17
 Chamrathi, A., 198-ACD-9
 Chamberlain, J., 115-ATIO-11
 Chan, C., 337-TP-23
 Chan, D., 112-APA-22
 Chan, W., 339-APA-53
 Chandran, P., 241-ATIO-18
 Chang, M., 294-APA-45
 Chao, H., 174-MSF-4
 Chaplin, R., 201-APA-34
 Charay, C., 27-AMF1/GT-1
 Charron, E., 274-DE-1
 Chatterjee, A., 353-AA-46
 Chauhan, A., 33-TP-2
 Chaudhuri, A., 86-MAO-6, 120-MAO-8
 Chauvin, A., 350-AA-43
 Chauvin, R., 17-ASE-1, 52-ASE-3
 Chazot, O., 32-TP-1, 154-APA-26, 211-FD-20
 Chechiro, R., 364-TP-26
 Chellihi, H., 137-AMF6/GT-5
 Chellihi, K., 288-AA-31
 Chen, B., 98-HYTASP-2, 335-TP-21
 Chen, E., 47-APA-11
 Chen, G., 337-TP-23
 Chen, J., 155-APA-27, 317-APA-50
 Chen, L., 260-AMF12/GT-11, 300-TP-20
 Chen, N., 83-ATIO-7, 159-ATIO-14, 279-ANERS-4
 Chen, P., 259-FC-12
 Chen, Q., 335-TP-21
 Chen, R., 331-HYTASP-13
 Chen, W., 244-MAO-11, 325-FD-31, 351-AA-44, 360-AA-48
 Chen, X., 89-AA-2, 239-APA-38, 300-TP-20, 344-ATIO-25, 352-AA-45
 Chen, Y., 32-TP-1, 105-TP-7, 221-TP-14
 Chen, Z., 99-FC-7, 212-FD-21
 Cheng, G., 120-MAO-8
 Cheng, K., 9-ATIO-2
 Cheng, P., 15-AFM-1, 49-AFM-3
 Cheong, C., 267-AA-25
 Chemyshev, I., 20-AA-1
 Chiba, K., 115-ATIO-11
 Chin, A., 15-AFM-1
 Chitale, K., 155-APA-27
 Chitta, S., 322-AA-37
 Chivukula, S., 236-APA-35
 Choi, C., 184-TP-12
 Choi, S., 243-ACD-10
 Chong, T., 349-AA-42, 351-AA-44
 Choudhri, M., 20-AA-1, 132-FD-12, 169-AA-13, 207-AA-17, 253-AA-21, 287-AA-30
 Choudhry, I., 294-APA-45, 340-APA-54
 Chow, W., 67-TP-5, 106-TP-8
 Chowdhury, S., 46-MAO-4, 120-MAO-8, 199-MAO-10
 Christensen, T., 236-APA-35
 Christophe, J., 165-AA-11
 Christou, A., 64-PDL-5
 Chudnovsky, Y., 33-TP-2
 Chung, H., 15-AFM-1
 Chung, W., 54-MSF-2
 Chynoweth, B., 173-FD-17
 Cicola, M., 238-APA-37
 Cimen, T., 21-MSF-1
 Cinar, G., 197-ACD-8
 Cinnello, P., 190-APA-31, 270-APA-41
 Cnquegrano, D., 103-PDL-8
 Cobacco, V., 112-APA-22
 Ciriotti, T., 159-ATIO-14
 Clair, V., 123-AA-6
 Clark, E., 355-FD-35
 Clark, G., 84-ACD-4
 Clark, I., 107-AFM-8, 253-AA-21
 Clarke, S., 157-ATIO-13
 Clemens, N., 259-FC-12
 Cléro, F., 282-AA-26, 286-AA-29
 Clift, L., 78-APA-15
 Cliff, S., 38-APA-8
 Clifford, C., 39-APA-9/FC-4
 Clothier, R., 82-ATIO-6
 Clymer, A., 159-ATIO-14
 Coqueret, P., 194-BA-1
 Codar, J., 191-APA-32
 Codron, D., 30-AMF2/PDL-2
 Coen, P., 110-APA-20
 Coenen, R., 250-ASE-14/GT-10
 Cogan, B., 158-FI-4
 Coggin, J., 15-AFM-1
 Cohen, J., 25-FC-2
 Coirier, W., 79-APA-16, 97-PDL-7, 271-APA-42
 Cob, B., 185-TP-13, 364-TP-26
 Coleman, G., 22-FD-2
 Colin, Y., 165-AA-11, 267-AA-25
 Colletti, C., 259-FC-12, 269-APA-40
 Collier, F., 245-ANERS-3, 302-ANERS-5
 Collin, D., 168-AA-12
 Collins, E., 52-ASE-3, 99-FC-7, 285-AA-28
 Colonus, T., 252-AA-20, 311-APA-49
 Conton, A., 137-AMF6/GT-5
 Connelly, T., 322-AA-37
 Conner, J., 144-AFM-12
 Conner, M., 136-AMT-5/GT-4
 Conners, T., 78-APA-15
 Consiglio, M., 115-ATIO-11
 Content, C., 270-APA-41
 Conway, M., 311-APA-49
 Cooper, J., 198-ACD-9
 Copello, D., 89-AA-2
 Coppin, J., 37-APA-7
 Corman, J., 315-MAO-14
 Correale, G., 31-FC-3/PDL-3
 Corrigan, A., 127-AA-8, 164-AA-10, 168-AA-12
 Cosic, B., 319-AA-34
 Costello, M., 141-AFM-11, 174-MSF-4
 Cotoni, V., 322-AA-37
 Cotoras, I., 364-TP-26
 Coffing, M., 50-AFM-4, 51-AFM-5
 Counts, M., 259-FC-12
 Coupland, J., 123-AA-6, 285-AA-28, 324-AA-39
 Courty, J., 158-FI-4
 Courty, B., 123-AA-6
 Cowart, R., 110-APA-20
 Cox, K., 82-ATIO-6
 Crawford, B., 260-AMF12/GT-11
 Crawley, M., 93-AA-4
 Creagh, M., 138-HYTASP-5
 Creedon, J., 114-ATIO-10, 345-ATIO-26
 Creighton, A., 117-ACD-5
 Cristofolini, A., 181-PDL-6/FC-6, 189-APA-30
 Croom, M., 273-ATIO-20
 Crossley, W., 84-ACD-4, 245-ANERS-3
 Crowell, A., 48-FD-5
 Crowther, W., 79-APA-16
 Crozier, P., 27-AMF1/GT-1
 Cruden, B., 30-AMF2/PDL-2, 142-TP-9, 265-TP-17
 Culliton, W., 94-AA-5
 Cummings, R., 4-APA-1, 37-APA-7, 77-APA-14, 109-APA-19, 236-APA-35
 Cunha, G., 285-AA-28
 Cunniff, G., 18-ASE-2
 Cunningham, K., 51-AFM-5
 Curran, R., 10-ACD-1, 279-ANERS-4, 313-ATIO-23, 344-ATIO-25, 345-ATIO-26
 Currie, T., 204-ASE-11, 284-ASE-16
 Currier, N., 291-FD-29
 Currier, A., 137-AMT-6/GT-5
 Cybyk, B., 39-APA-9/FC-4, 154-APA-26
 D'Mello, S., 84-ACD-4
 Da Ronce, A., 77-APA-14, 160-ACD-7, 182-AFM-13
 da Silva, A., 167-ASE-10/FT-5
 da Silva, D., 289-FD-27
 Degrug, F., 5-APA-2
 Daham, J., 20-AA-1
 Dahl, M., 295-AA-32, 354-AA-47
 Dahmann, K., 347-ANERS-7
 Dähne, S., 84-ACD-4
 Dai, X., 350-AA-43
 Dale, G., 99-FC-7
 Daliri, A., 47-APA-11
 Dalle, D., 272-APA-43
 Dalton, C., 141-AFM-11
 Daly, C., 253-AA-21
 Damodaran, M., 26-APA-6, 79-APA-16
 Dancilo, B., 83-ATIO-7
 Danehy, P., 61-AMT-3/GT-2, 100-AMT-4/GT-3, 136-AMT-5/GT-4, 137-AMT-6/GT-5, 176-AMT-8/GT-6
 Daniels, T., 53-ASE-4/FT-1, 205-ASE-12
 Dantsker, O., 154-APA-26
 Darbandi, M., 105-TP-7
 Darbyshire, O., 89-AA-2
 Daszkiewicz, M., 44-ACD-3, 119-MAO-7
 David, E., 282-AA-26
 Davidson, L., 239-APA-38
 Davidson, P., 339-APA-53
 Davidson, T., 357-FD-37
 Davis, I., 354-AA-47
 Davoine, C., 262-HYTASP-9
 Davuluri, R., 66-TP-4
 Davy, R., 282-AA-26
 Dawson, R., 201-APA-34
 De Grazia, D., 256-FD-24
 de la Puente, F., 207-AA-17
 De Lurca, N., 131-PDL-9
 De Marco, A., 6-APA-3
 De Roock, W., 264-AA-24
 De Roo, R., 16-AFM-2
 de Santana, L., 90-AA-3
 De Stefano Fumo, M., 84-ACD-4
 de Villiers, Y., 219-PDL-12
 DeAngelis, A., 106-TP-8
 DeArmon, J., 42-ATIO-4
 Deaton, J., 11-MAO-1
 Debiasi, M., 339-APA-53
 DeChant, L., 22-FD-2
 DeCicco, A., 313-ATIO-23
 Deck, S., 190-APA-31
 Decker, R., 290-FD-28
 Defoort, S., 58-HYTASP-1, 138-HYTASP-5
 Degrez, G., 325-FD-31
 Deringling, W., 53-ASE-4/FT-1, 251-ASE-15
 Delle, O., 158-FI-4
 Del Rosario, R., 200-ANERS-1
 Deldtfe, G., 203-AA-15, 267-AA-25
 Delaur, R., 196-ATIO-16
 Delaurentis, D., 21-MSF-1, 199-MAO-10, 344-ATIO-25
 Dells, J., 283-AA-27, 319-AA-34, 321-AA-36, 351-AA-44
 Delisi, D., 126-ASE-8/AFM-9/FT-3
 Delnero, J., 214-FC-11, 272-APA-43
 Deloach, R., 79-APA-16
 Deluca, N., 61-AMT-3/GT-2
 Delverdier, O., 158-FT-4
 Delville, J., 59-FC-5
 Demeel, D., 339-APA-53
 Dement, D., 190-APA-31
 Demers Bouchard, E., 274-DE-1
 Demeritrou, M., 25-FC-2
 Denayer, H., 264-AA-24
 Deng, S., 154-APA-26
 Deng, Y., 155-APA-27
 Denis, R., 249-AA-19
 Denis, W., 321-AA-36
 Denissen, K., 192-APA-33, 280-APA-44
 Denman, Z., 65-PDL-4, 262-HYTASP-9
 Denney, R., 316-ANERS-6
 Desaulnier, R., 348-APA-57
 Deshmukh, A., 82-ATIO-6, 115-ATIO-11, 196-ATIO-16
 Deshmukh, R., 48-FD-5
 Deshpande, P., 87-APA-18, 246-APA-39
 Desjardins, O., 163-FD-14
 Desmet, W., 90-AA-3, 264-AA-24
 Despreux, A., 348-APA-57
 DeSpirito, J., 201-APA-34, 280-APA-44, 348-APA-57

Author/Session Chair Index

- Desjarac, D., 156-APA-28
 Desyatnik, P., 160-ACD-7
 Detandt, Y., 89-AA-2
 Detars, R., 40-APA-10
 Devenport, W., 27-AMT-1/GT-1, 124-AA-7, 165-AA-11, 203-AA-15, 253-AA-21, 260-AMT-12/GT-11
 165-AA-11, 203-AA-15, 253-AA-21, 260-AMT-12/GT-11
 165-AA-11, 203-AA-15, 253-AA-21, 260-AMT-12/GT-11
 Dezhnev, E., 167-ASE-10/FT-5
 Dghim, M., 214-FC-11
 Dhali, R., 42-ATIO-4
 Di Stefano, D., 93-AA-4
 Diannics, J., 135-FC-8/APA-24
 Dias, J., 144-AFM-12
 Dickey, D., 286-AA-29
 Dicki, D., 250-ASE-14/GT-10
 Dionon, J., 299-TP-19
 Diebold, J., 293-FD-30
 Dierke, J., 123-AA-6, 285-AA-28, 321-AA-36, 351-AA-44
 Dimitriu, D., 347-ANERS-7
 Dimotakis, P., 281-FD-26, 326-FD-32
 Ding, D., 337-TP-23
 Diosady, L., 212-FD-21
 Dischinger, D., 250-ASE-14/GT-10
 Djidjeli, K., 88-FD-19
 Doobson, R., 143-TP-10
 Dogararu, A., 61-AMT-3/GT-2, 100-AMT-4/GT-3
 Domercq, J., 82-ATIO-6
 Donbar, J., 259-FC-12
 Dong, H., 13-APA-5/FC-1
 Donjat, D., 125-ASE-7
 Doonovan, B., 300-TP-20
 Doonan, C., 89-AA-2, 254-AA-22, 349-AA-42, 350-AA-43
 Doraiswamy, S., 265-TP-17
 Dorfing, J., 272-APA-43
 Dory, M., 94-AA-5, 169-AA-13
 Dougherty, R., 254-AA-22, 288-AA-31
 Douville, T., 6-APA-3, 87-APA-18
 Dowell, E., 85-MAO-5
 Dowling, A., 261-AA-23
 Downing, J., 323-AA-38
 Dragonas, F., 181-PDL-6/FC-6
 Drake, M., 43-ACD-2
 Drela, M., 216-AMF-11/GT-9
 Drew, M., 116-ATIO-12
 Drochon, G., 282-AA-26
 Droecke, N., 292-HYTASP-10, 328-HYTASP-12
 Dnye, D., 316-ANERS-6
 Dnye, R., 97-PDL-7
 Du, Y., 164-AA-10
 Duann, L., 172-FD-16, 253-AA-21
 Duani, P., 8-ATIO-1
 Duann, Z., 132-FD-12
- Dubourg, V., 194-BA-1
 Duda, H., 54-MST-2
 Dudley, J., 212-FD-21, 352-AA-45
 Dufour, G., 219-PDL-12
 Dufrene, A., 327-FD-33
 Duilin, D., 317-APA-50
 Dumitrac, C., 19-PDL-1
 Durcan, G., 260-AMT-12/GT-11
 Durcan, S., 269-APA-40
 Dunne, R., 311-APA-49
 Duque, E., 191-APA-32
 Duraisamy, K., 311-APA-49
 Durak, U., 54-MST-2
 Durand, J., 138-HYTASP-5, 277-ACD-12
 Duriez, T., 59-FC-5, 286-AA-29
 Durston, D., 38-APA-8
 Dutzler, G., 202-AA-14
 Duvvuri, S., 48-FD-5, 247-FD-22
 Duzeil, U., 101-FD-19
 Dwivedi, V., 26-APA-6, 79-APA-16
 Dzikus, N., 245-ANERS-3
 Early, J., 345-ATIO-26
 Eason, T., 14-FD-11
 Ebrahimji, Y., 95-MST-3
 Ebrahimji, Y., 95-MST-3
 Economou, T., 85-MAO-5, 112-APA-22, 317-APA-50
 Edebur, H., 131-PDL-9
 Edelmann, G., 220-AFM-14
 Edquist, K., 183-TP-11
 Edwards, J., 19-PDL-1, 24-FD-4, 192-APA-33, 256-FD-24, 291-FD-29
 Eggers, T., 101-HYTASP-3
 Egorova, T., 25-FC-2
 Ehlers, H., 246-APA-39
 Ehlers, J., 160-ACD-7
 Ehelberg, G., 87-APA-18
 Ekaterinaris, J., 133-FD-13
 Ekić, K., 340-APA-54, 355-FD-35
 Ekoule, C., 203-AA-15
 El Sayed, Y., 25-FC-2, 135-FC-8/APA-24
 Elkhiti, M., 337-TP-23
 Eldogon, Y., 158-FT-4
 Eldred, M., 278-MAO-12
 Elham, A., 279-ANERS-4
 Elias, P., 31-FC-3/PDL-3
 Eliasson, P., 23-FD-3
 Elliott, G., 293-FD-30
 Elliott, M., 42-ATIO-4
 Elmekawy, A., 122-FD-11
 Elmiligui, A., 38-APA-8, 78-APA-15
 Emdy, T., 264-AA-24
 Emsayed, E., 95-MST-3
- Emeneth, M., 277-ACD-12
 Empey, D., 104-AFM-7, 221-TP-14
 Endo, H., 17-ASE-1
 Engelland, S., 8-ATIO-1
 Enghardt, L., 254-AA-22, 264-AA-24, 298-AA-33, 321-AA-36, 354-AA-47
 Enomoto, S., 168-AA-12
 Envia, E., 165-AA-11, 203-AA-15, 324-AA-39
 Eppink, J., 172-FD-16
 Epstein, J., 34-TP-3
 Eriksson, W., 184-TP-12
 Eriksson, L., 123-AA-6, 353-AA-46
 Ermishkin, M., 64-PDL-5
 Erzberger, H., 242-ATIO-19
 Escobar, J., 111-APA-21
 Espinal, D., 26-APA-6
 Estrada Rodas, E., 241-ATIO-18
 Etienne, S., 222-TP-15, 270-APA-41
 Evain, H., 138-HYTASP-5
 Evans, B., 54-MST-2
 Evans, E., 205-ASE-12
 Everhart, J., 27-AMT-1/GT-1
 Eversman, W., 298-AA-33
 Ewert, R., 123-AA-6, 252-AA-20, 285-AA-28, 286-AA-29, 321-AA-36, 351-AA-44
 Eyi, S., 210-FD-19, 318-APA-51, 330-APA-52
 Eymann, T., 23-FD-3
 Ezekoye, O., 67-TP-5
 Ezra, K., 21-MST-1
 Fadhi, M., 190-APA-31
 Fagan, A., 61-AMT-3/GT-2, 136-AMT-5/GT-4, 323-AA-38
 Fahnring, T., 177-AMT-9/GT-7
 Fairfax, J., 51-AFM-5
 Falck, J., 310-APA-48
 Falcao, C., 291-FD-29
 Folempin, E., 58-HYTASP-1, 328-HYTASP-12
 Faler, A., 64-PDL-5
 Folgoust, J., 30-AMT-2/PDL-2
 Foissard, F., 203-AA-15, 267-AA-25
 Folk, C., 95-MST-3
 Fornosos, G., 127-AA-8, 286-AA-29
 Forbar, E., 32-TP-1
 Farcy, D., 109-APA-19
 Fares, E., 128-AA-9, 214-FC-11, 295-AA-32, 355-FD-35
 Farhat, C., 317-APA-50
 Faria, A., 355-FD-35
 Farokhi, S., 272-APA-43
 Farrington, A., 256-FD-24
 Faruque, I., 220-AFM-14, 241-ATIO-18
 Fasel, H., 132-FD-12, 135-FC-8/APA-24, 192-APA-33, 211-FD-20
 Fassoulas, S., 67-TP-5, 140-AMT-7/PDL-10
- Faulkner, R., 101-HYTASP-3
 Faustmann, C., 360-AA-48
 Favoloro, N., 308-APA-46
 Fedorchenko, Y., 111-APA-21
 Fedorov, A., 132-FD-12
 Fehn, J., 173-FD-17
 Fei, Q., 134-HYTASP-4, 292-HYTASP-10
 Fei, X., 43-ACD-2
 Feld, H., 298-AA-33
 Félix Patron, R., 279-ANERS-4
 Felli, M., 353-AA-46
 Feltrap, E., 80-APA-17
 Fenbert, J., 38-APA-8, 159-ATIO-14
 Feng, C., 255-FD-23
 Feng, W., 236-APA-35
 Ferchichi, M., 214-FC-11, 339-APA-53
 Ferguson, S., 12-MAO-2, 315-MAO-14, 346-MAO-15
 Fern, L., 115-ATIO-11
 Fernando, J., 192-APA-33
 Fernando, R., 203-AA-15
 Ferrari, D., 336-TP-22
 Ferrero, P., 325-FD-31
 Ferrer, M., 58-HYTASP-1, 138-HYTASP-5, 258-HYTASP-8
 Feuete, T., 92-ASE-6/AFM-6/FT-2
 Feyel, F., 184-TP-12
 Fezans, N., 16-AFM-2, 144-AFM-12
 Fidkowski, K., 156-APA-28, 272-APA-43, 329-FD-34
 Fields, T., 215-AMT-10/GT-8
 Fiévet, R., 252-AA-20
 Fincham, J., 198-ACD-9
 Fink, L., 38-APA-8
 Finley, D., 6-APA-3
 Fiore, G., 239-APA-38
 Fisch, G., 355-FD-35
 Fischenberg, D., 160-ACD-7
 Fischer, J., 254-AA-22
 Fischer, M., 298-AA-33
 Fischer, W., 101-HYTASP-3
 Fisher, T., 299-TP-19, 337-TP-23
 Flad, D., 202-AA-14
 Flafferty, A., 78-APA-15
 Fleury, V., 282-AA-26
 Flork, A., 258-HYTASP-8
 Florez, S., 101-HYTASP-3
 Fong, E., 223-TP-16
 Forbes-Spyratos, S., 262-HYTASP-9
 Ford, A., 41-ATIO-3
 Ford, S., 197-ACD-8
 Forest, J., 253-AA-21
 Förster, F., 134-HYTASP-4
 Fossati, M., 289-FD-27
 Fosso Poumque, A., 206-AA-16, 282-AA-26
- Foster, T., 157-ATIO-13
 Fourment, C., 59-FC-5
 François, D., 156-APA-28
 Frank, C., 138-HYTASP-5, 277-ACD-12
 Frankel, J., 105-TP-7, 134-HYTASP-4
 Fraunholz, S., 122-FD-11
 Frede, M., 293-FD-30
 Frederick, M., 238-APA-37
 Fredericks, W., 113-ATIO-9, 240-ATIO-17
 Freitas, C., 353-AA-46
 Fresconi, F., 50-AFM-4, 141-AFM-11, 280-APA-44
 Friend, J., 25-FC-2, 323-AA-38
 Friedman, A., 25-FC-2
 Friedrich, C., 276-ACD-11
 Frink, N., 4-APA-1, 37-APA-7
 Friswell, M., 198-ACD-9
 Fruhnert, M., 314-ATIO-24
 Fu, S., 173-FD-17
 Fugal, S., 38-APA-8
 Fuggmann, S., 135-FC-8/APA-24
 Fuhi, C., 65-PDL-4
 Fujii, K., 180-FC-10/PDL-11
 Fujishiro, I., 92-ASE-6/AFM-6/FT-2
 Fujita, K., 104-AFM-7, 142-TP-9, 183-TP-11, 190-APA-31, 265-TP-17
 Fujiwara, G., 166-ASE-9
 Fuleki, D., 204-ASE-11, 284-ASE-16
 Fulge, H., 66-TP-4, 67-TP-5, 140-AMT-7/PDL-10
 Fulton, M., 82-ATIO-6
 Funke, S., 288-AA-31
 Fureby, C., 131-PDL-9
 Gabard, G., 123-AA-6, 261-AA-23, 298-AA-33
 Gabbard, M., 330-APA-52
 Gadiraju, S., 335-TP-21
 Gaeta, R., 287-AA-30
 Gagnon, L., 122-FD-11
 Gai, G., 160-ACD-7
 Gaitonde, D., 180-FC-10/PDL-11
 Gallman, J., 229-LEC-6, 322-AA-37
 Gallo, E., 83-ATIO-7, 137-AMT-6/GT-5
 Galven, N., 170-HIAR-3
 Gamba, M., 296-HYTASP-11
 Gamp, L., 105-TP-7
 Gan, J., 26-APA-6
 Gaud, F., 190-APA-31
 Gandjalikhon Nasab, S., 333-TP-2
 Gao, Z., 26-APA-6
 Gathers, N., 138-HYTASP-5
 Garbo, A., 43-ACD-2
 Garcia, E., 20-AA-1, 130-HIAR-2, 170-HIAR-3, 209-HIAR-5
 Garcia Sainz, M., 214-FC-11
 García-Magariño, A., 363-TP-25

Author/Session Chair Index

- Hereth, L., 80-APA-17
 Heifricer, K., 103-PDL-8
 Herrmann, T., 66-TP-4, 140-AMT-7/PDL-10
 Hernandez, D., 340-APA-54
 Herr, M., 164-AA-10, 283-AA-27, 320-AA-35
 Hesselink, L., 358-FD-38
 Hicken, J., 119-MAO-7, 161-MAO-9
 Hickey, J., 348-APA-57
 Hideki, G., 222-TP-15
 Hilbert, C., 80-APA-17
 Hill, C., 202-AA-14, 318-APA-51
 Hind, M., 39-APA-9/FC-4, 216-AMT-11/GT-9, 339-APA-53
 Hindriks, K., 313-ATIO-23
 Hines, P., 299-TP-19
 Hinze, N., 114-ATIO-10
 Hipp, K., 269-APA-40
 Hirai, T., 111-APA-21
 Hirsch, C., 270-APA-41
 Hirschcock, T., 143-TP-10
 Hitzel, S., 77-APA-14
 Hivin, L., 345-ATIO-26, 347-ANERS-7
 Ho, T., 30-AMT-2/PDL-2
 Hochwarth, J., 83-ATIO-7
 Hoell, T., 135-FC-8/APA-24
 Hoffler, K., 82-ATIO-6, 220-AFM-14
 Hoholis, G., 37-APA-7
 Holden, M., 327-FD-33, 359-FD-39
 Holland, K., 349-AA-42
 Hollend, L., 176-AMT-8/GT-6
 Hollenstein, C., 219-PDL-12
 Hollowell, S., 110-APA-20
 Holly, M., 276-ACD-11
 Holman, D., 155-APA-27
 Holmes, B., 114-ATIO-10
 Holst, K., 129-HYTASP-23
 Holub, J., 119-MAO-7
 Holzäpfel, F., 126-ASE-8/AFM-9/FT-3
 Hong, Y., 335-TP-21
 Hongoh, M., 213-HYTASP-6
 Honnery, D., 248-AA-18
 Hooser, M., 176-AMT-8/GT-6
 Hopkins, P., 300-TP-20, 337-TP-23, 364-TP-26
 Hord, K., 272-APA-43
 Horió, B., 313-ATIO-23
 Hornung, H., 132-FD-12
 Hornung, M., 17-ASE-1
 Horstmann, R., 289-FD-27
 Hostler, S., 183-TP-11, 217-HYTASP-7
 Hosseinzadeh, A., 127-AA-8
 Hosters, N., 122-FD-11
 Hou, K., 236-APA-35
 Hou, Y., 352-AA-45
 Houser, N., 219-PDL-12
 Housman, J., 5-APA-2
 Hovsopian, R., 80-APA-17
 Howard, D., 15-AFM-1
 Howe, S., 64-PDL-5
 Howell, D., 116-ATIO-12
 Howerton, B., 361-AA-49
 Howison, J., 340-APA-54
 Howis, C., 206-AA-16
 Hsieh-chen, H., 311-APA-49
 Hsu, K., 170-ITAR-3
 Hu, F., 322-AA-37
 Hu, H., 80-APA-17, 91-ASE-5
 Hu, J., 308-APA-46
 Hu, N., 351-AA-44
 Hu, Y., 10-ACD-1, 278-MAO-12, 337-TP-23, 343-ACD-13
 Hua, C., 300-TP-20, 364-TP-26
 Huang, B., 86-MAO-6
 Huang, C., 329-FD-34
 Huang, G., 88-FD-9, 103-PDL-8, 131-PDL-9
 Huang, L., 264-AA-24
 Huang, X., 176-AMT-8/GT-6, 254-AA-22, 298-AA-33, 319-APA-34, 333-AA-41, 334-AA-40
 Huang, Y., 335-TP-21
 Huang, Z., 247-FD-22
 Huber, J., 282-AA-26
 Huber, K., 4-APA-1, 37-APA-7, 109-APA-19, 155-APA-27
 Hubin, A., 32-TP-1
 Huebner, A., 4-APA-1
 Huebsch, W., 13-APA-5/FC-1, 135-FC-8/APA-24, 175-FC-9
 Huehne, C., 84-ACD-4
 Huerita, O., 340-APA-54
 Huet, M., 168-AA-12
 Hughes, E., 167-ASE-10/FT-5
 Hul, P., 346-MAO-15
 Hullah, P., 279-ANERS-4
 Humbert, J., 160-ACD-7, 220-AFM-14
 Hummel, D., 77-APA-14
 Humphreys, W., 94-AA-5, 128-AA-9
 Hunter, G., 9-ATIO-2
 Hunter, P., 48-FD-5
 Hutton, A., 330-APA-52
 Hüppe, A., 202-AA-14
 Hurst, J., 298-AA-33
 Hutcherson, F., 94-AA-5, 169-AA-13, 207-AA-17, 349-AA-42
 Hutchings, R., 170-ITAR-3
 Huynh, H., 212-FD-21
 Huynh, K., 290-FD-28
 Hyunh, L., 315-MAO-14
 Hwang, I., 95-MST-3
 Hwang, J., 12-MAO-2
 Hyams, D., 80-APA-17
 Hyatt, A., 183-TP-11
 Hyugaji, T., 17-ASE-1
 Ickes, J., 210-FD-19
 Idler, A., 90-AA-3
 Idris, H., 41-ATIO-3, 159-ATIO-14
 Iida, A., 322-AA-38
 Ikeda, J., 310-APA-48
 Ilario da Silva, C., 350-AA-43
 Imamura, T., 249-AA-19, 352-AA-45, 355-FD-35
 Inmisch, T., 92-ASE-6/AFM-6/FT-2
 Inman, J., 137-AMT-6/GT-5, 176-AMT-8/GT-6
 Iob, A., 207-AA-17
 Ioppolo, T., 216-AMT-11/GT-9
 Irving, J., 4-APA-1, 77-APA-14, 109-APA-19
 Ishay, L., 223-TP-16
 Ishida, H., 265-TP-17
 Ishida, T., 348-APA-57
 Ishihara, T., 142-TP-9
 Ishii, M., 141-AFM-11
 Ishikawa, H., 260-AMT-12/GT-11
 Ito, T., 115-ATIO-11
 Ito, Y., 20-AA-1, 111-APA-21
 Itoh, H., 7-APA-4, 348-APA-57
 Itoh, K., 142-TP-9, 296-HYTASP-11
 Ivanov, Y., 202-AA-14
 Iwakawa, A., 99-FC-7
 Ixtabalan, D., 241-ATIO-18
 Iyer, K., 284-ASE-16
 Jabbar, M., 269-APA-40
 Jack, D., 82-ATIO-6
 Jackson, A., 170-ITAR-3
 Jackson, G., 299-TP-19
 Jacob, D., 126-ASE-8/AFM-9/FT-3
 Jacob, J., 287-AA-30
 Jacob, M., 123-AA-6
 Jacobs, R., 272-ACD-12
 Jadhav, I., 202-AA-14
 Jain, I., 138-HYTASP-5, 262-HYTASP-9
 Jainan, R., 175-FC-9
 Jain, A., 40-APA-10
 Jain, M., 162-APA-29
 Jambunathan, R., 34-TP-3
 James, M., 288-AA-31
 James, S., 21-MST-1
 Jameson, A., 112-APA-22, 190-APA-31, 257-FD-25, 326-FD-32
 Jammalamadaka, A., 355-FD-35
 Jansen, K., 155-APA-27
 Jansen, P., 200-ANERS-1
 Jaron, R., 261-AA-23
 Jarrett, C., 106-TP-8
 Jaust, A., 212-FD-21
 Javed, A., 88-FD-9
 Jaworski, J., 124-AA-7, 253-AA-21
 Jenkins, L., 128-AA-9, 154-APA-26
 Jenkins, T., 61-AMT-3/GT-2
 Jemmy, P., 342-APA-56
 Jensen, L., 275-ATIO-22
 Jerred, N., 64-PDL-5
 Jeyapaul, E., 22-FD-2
 Ji, C., 264-AA-24, 354-AA-47
 Ji, L., 351-AA-44, 360-AA-48
 Jia Ling Hsu, J., 310-APA-48
 Jiang, L., 134-HYTASP-4, 266-TP-18
 Jiang, M., 86-MAO-6
 Jiang, N., 61-AMT-3/GT-2
 Jiang, X., 172-FD-16
 Jiang, Z., 244-MAO-11
 Jimenez, H., 44-ACD-3, 117-ACD-5, 118-ACD-6, 198-ACD-9, 245-ANERS-3
 Jing, X., 350-AA-43
 Jirasek, A., 37-APA-7, 77-APA-14, 109-APA-19, 189-APA-30, 236-APA-35
 Jo, Y., 243-ACD-10
 Jogekar, S., 315-MAO-14
 Johnson, E., 163-FD-14, 329-FD-34
 Johnson, H., 96-FD-10, 290-FD-28
 Johnson, K., 136-AMT-5/GT-4, 177-AMT-9/GT-7
 Johnson, S., 82-ATIO-6
 Johnston, C., 103-PDL-8, 183-TP-11, 221-TP-14
 Johnston, G., 104-AFM-7, 134-HYTASP-4
 Jondeaur, E., 253-AA-21
 Jones, A., 294-APA-45, 308-APA-46, 339-APA-53
 Jones, G., 112-APA-22, 339-APA-53
 Jones, K., 193-ATIO-15
 Jones, M., 295-AA-32, 333-AA-41, 361-AA-49
 Jones, R., 120-MAO-8
 Jones, S., 137-AMT-6/GT-5
 Jones, T., 78-APA-15
 Jonsson, J., 251-ASE-15
 Jordan, P., 127-AA-8, 286-AA-29
 Jörg, C., 322-AA-37
 Jorgenson, P., 250-ASE-14/GT-10
 Jorris, T., 158-FT-4
 Joseph, L., 260-AMT-12/GT-11
 Joseph, P., 90-AA-3, 254-AA-22, 267-AA-25, 283-AA-27
 Joshi, A., 138-HYTASP-5, 141-AFM-11
 Josyula, E., 142-TP-9
 Jourdan, J., 282-AA-26
 Juge, P., 92-ASE-6/AFM-6/FT-2
 Jugroot, M., 64-PDL-5
 Julliard, E., 203-AA-15
 Jumper, E., 97-PDL-7, 131-PDL-9
 Jun, G., 52-ASE-3
 June, J., 361-AA-49
 Jung, J., 42-ATIO-4
 Jung, M., 347-ANERS-7
 Jung, Y., 9-ATIO-2
 Jürgens, W., 354-AA-47
 Justin, J., 262-HYTASP-9
 Justis, C., 316-ANERS-6
 Juve, D., 253-AA-21, 350-AA-43
 Kabral, R., 264-AA-24
 Kady, C., 117-ACD-5, 317-APA-50
 Kaess, R., 358-FD-38
 Köhler, C., 237-APA-36
 Kalasamath, K., 127-AA-8, 164-AA-10, 168-AA-12
 Kaiser, B., 80-APA-17, 340-APA-54
 Kajikawa, Y., 7-APA-4
 Kaliranjani, K., 141-AFM-11
 Kalivarapu, V., 11-MAO-1
 Kalra, T., 80-APA-17
 Kaltenbacher, M., 202-AA-14
 Kamei, T., 115-ATIO-11
 Kamruzzaman, M., 352-AA-45
 Kanderpalli, N., 134-HYTASP-4
 Kandil, O., 122-FD-11
 Kanesige, J., 51-AFM-5
 Kang, C., 88-FD-9
 Kannan, H., 119-MAO-7, 199-MAO-10
 Kanniyam Natarajan, M., 353-AA-46
 Kapania, R., 10-ACD-1, 15-AFM-1, 117-ACD-5
 Kara, K., 189-APA-30, 310-APA-48
 Karabasov, S., 89-AA-2, 127-AA-8
 Karbon, U., 334-AA-40
 Karl, S., 237-APA-36
 Karanam, A., 255-FD-23
 Karon, A., 252-AA-20
 Kartha, A., 281-FD-26
 Kartuzova, O., 363-TP-25
 Kassem, M., 298-AA-33
 Kassemi, M., 363-TP-25
 Kattiresan, S., 133-FD-13
 Kato, H., 92-ASE-6/AFM-6/FT-2
 Katsurayama, H., 103-PDL-8
 Katuaki, M., 17-ASE-1, 91-ASE-5
 Kaul, U., 59-FC-5, 121-APA-23
 Kawaj, S., 189-APA-30, 201-APA-34
 Kay, E., 164-AA-10
 Kaya, D., 144-AFM-12

Author/Session Chair Index

- Kayran, A., 15-AFM-1
Kazaklid, A., 133-FD-13
Kaznowski, L., 241-AT10-18
Keane, A., 161-WAO-9
Kearney, J., 13-APA-5/FC-1
Kegeles, M., 132-FD-12
Keimel, H., 347-ANERS-7
Keller, D., 286-AA-29
Kelly, L., 161-WAO-9
Kennedy, G., 119-WAO-7, 199-WAO-10, 346-WAO-15
Kennedy, J., 321-APA-36
Kennedy, K., 201-APA-34
Kenneth, D., 37-APA-7
Kenway, G., 12-WAO-2, 199-WAO-10, 346-WAO-15
Keogh, R., 157-AT10-13
Kerho, M., 51-AFM-5
Kernemp, L., 282-AA-26
Kerchen, D., 176-WMT-8/GT-6
Keve, S., 238-APA-37
Keyhani, M., 105-TP-7
Khakpour, Y., 143-TP-10
Khalid, A., 274-DE-1
Khan, O., 68-TP-6, 356-FD-36
Khan, W., 68-TP-6
Khare, P., 255-FD-23
Khavaran, A., 353-AA-46
Kheui, L., 329-FD-34
Khordeaj, A., 202-AA-14
Khorrami, M., 128-AA-9
Khosravi, S., 45-WAO-3
Kidd, E., 176-WMT-8/GT-6
Kiehl, D., 245-ANERS-3
Kiflemariam, R., 33-TP-2, 299-TP-19, 363-TP-25
Kilim, K., 184-TP-12
Kim, G., 257-FD-25
Kim, H., 199-WAO-10
Kim, J., 289-FD-27
Kim, J., 90-AA-3, 205-ASE-12, 265-TP-17, 351-AA-44
Kim, M., 65-PDL-4, 267-AA-25
Kimmel, R., 14-FD-1, 56-FD-7
Kimura, S., 17-ASE-1, 91-ASE-5
King, J., 116-AT10-11
King, P., 204-ASE-11
King, R., 112-APA-22, 132-FD-12, 172-FD-16
Kington, M., 165-AA-11, 203-AA-15
Kintea, D., 222-TP-15
Kinzal, E., 184-TP-12, 299-TP-19
Kipouris, M., 52-ASE-3
Kipouris, T., 6-APA-3
Kirby, M., 95-MST-3, 200-ANERS-1, 245-ANERS-3, 315-WAO-14, 316-ANERS-6
Kiss, C., 5-APA-2
Kirk, B., 32-TP-1
Kirschen, P., 279-ANERS-4
Kirschner, M., 137-AMT-6/GT-5
Kisler, M., 8-AT10-1
Kitamiya, K., 322-AA-37
Klabes, A., 164-AA-10
Kleb, W., 38-APA-8
Klein, M., 92-ASE-6/AFM-6/FT-2
Kleser, L., 206-AA-16
Kleso, J., 309-APA-47
Kliment, L., 271-APA-42
Kline, H., 331-HYTASP-13
Kloesel, K., 157-AT10-13
Knapp, B., 113-AT10-9
Knezevic, D., 204-ASE-11
Knisely, N., 82-AT10-6
Kniskern, M., 258-HYTASP-8
Knobloch, K., 354-AA-47
Kobayashi, H., 213-HYTASP-6
Kobayashi, R., 308-APA-46
Kobus, C., 183-TP-11, 265-TP-17
Koc, I., 158-FT-4
Kocheemoolyil, J., 319-AA-34, 352-AA-45
Kocian, T., 211-FD-20
Koderer, M., 98-HYTASP-2
Koegmeier, S., 358-FD-38
Koelker, K., 313-AT10-23
Koenig, B., 214-FC-11, 355-FD-35
Koenig, M., 168-AA-12, 282-AA-26
Koh, S., 283-AA-27
Kozumi, H., 19-PDL-1
Kok, M., 158-FT-4
Koklu, M., 99-FC-7
Kolb, A., 285-AA-28
Kolony, R., 45-WAO-3, 46-WAO-4
Komives, J., 96-FD-10
Komurasaki, K., 19-PDL-1
Komuro, T., 142-TP-9, 296-HYTASP-11
Konath, R., 246-APA-39
Konits, K., 219-PDL-12, 269-APA-40
Koochesfahani, M., 133-FD-13
Kopiev, V., 20-AA-1, 127-AA-8, 286-AA-29, 287-AA-30
Kopp, A., 138-HYTASP-5
Koracin, D., 205-ASE-12
Koremschi, A., 79-APA-16, 317-APA-50
Kornberg, O., 68-TP-6
Körner, S., 126-ASE-8/AFM-9/FT-3
Korov, M., 176-WMT-8/GT-6
Korisani, M., 31-FC-3/PDL-3, 355-FD-35
Kourtzamidis, K., 219-PDL-12
Kozak, Y., 33-TP-2
Kozel, S., 330-APA-52
Kraemer, E., 247-FD-22, 352-AA-45
Kramer, B., 51-AFM-5
Kramer, F., 135-FC-8/APA-24
Krause, V., 175-FC-9
Kreger, R., 17-ASE-1, 91-ASE-5, 166-ASE-9, 284-ASE-16
Kriemeyer, K., 19-PDL-1, 65-PDL-4
Krisnan, G., 346-WAO-15
Kroelmer, A., 39-APA-9/FC-4
Krokov, N., 167-ASE-10/FT-5
Krozel, J., 53-ASE-4/FT-1
Kruer, J., 42-AT10-4
Kryukov, I., 176-WMT-8/GT-6
Kucukcoskun, K., 298-AA-33, 334-AA-40
Kuehl, J., 211-FD-20
Kuehne, J., 158-FT-4
Kuehner, J., 137-AMT-6/GT-5
Kuenn, A., 271-APA-42
Kuester, M., 247-FD-22
Kühnorn, A., 106-TP-8
Kühnel, W., 202-AA-14
Kulatilaka, W., 61-AMT-3/GT-2
Kulkarni, D., 9-AT10-2, 159-AT10-14
Kulkarni, M., 12-WAO-2
Kumar, A., 294-APA-45
Kumar, P., 25-FC-2, 274-DE-1
Kumar, R., 236-APA-35
Kumar, S., 300-TP-20
Kumar, V., 42-AT10-4, 82-AT10-6
Kumar Bonthu, S., 257-FD-25
Kundu, R., 284-ASE-16
Kuntner, N., 65-PDL-4
Kuntz, D., 32-TP-1, 66-TP-4
Kunz, D., 51-AFM-5
Kunz, R., 52-ASE-3
Kuo, C., 127-AA-8, 323-AA-38
Kupfer, M., 116-AT10-12
Kurbatskii, K., 353-AA-46
Kutrov, A., 144-AFM-12, 182-AFM-13
Kütemeyer, M., 292-HYTASP-10
Kuzenov, V., 19-PDL-1
Kwak, D., 294-APA-45
Kwakent, A., 290-FD-28
Kykkois, S., 269-APA-40
L'Esperance, D., 136-WMT-5/GT-4
Laaf, J., 41-AT10-3
Labour, D., 279-ANERS-4
Lacouture, E., 200-ANERS-1
Lacy, D., 112-APA-22, 271-APA-42
Laffay, P., 90-AA-3
Lafferty, J., 296-HYTASP-11
Laffitte, A., 295-AA-32
Lafrance, S., 194-BA-1
Lahiri, C., 264-AA-24
Lai, D., 126-ASE-8/AFM-9/FT-3
Lai, J., 7-APA-4, 339-APA-53
Lai, B., 299-TP-19
Lakshminarayan, V., 311-APA-49
Lam, T., 223-TP-16
Lambe, A., 119-WAO-7
Lamboume, A., 17-ASE-1
Lampinen, M., 356-FD-36
Landoit, S., 18-ASE-2
Landy, R., 242-AT10-19
Landy, S., 116-AT10-12
Langener, T., 238-APA-37
Langville, V., 165-AA-11
Lani, A., 64-PDL-5
Lara, C., 111-APA-21
Larsson, J., 290-FD-28, 358-FD-38
Larsson, R., 353-AA-46
Latz, J., 272-APA-43, 318-APA-51
Loughlin, B., 197-ACD-8
Laurence, S., 296-HYTASP-11
Laurentie, J., 59-FC-5
Lauroman, R., 239-APA-38
Laux, C., 31-FC-3/PDL-3, 66-TP-4
Lavin, T., 50-AFM-4, 104-AFM-7
Lavoie, M., 274-DE-1
Lavoie, P., 136-AMT-5/GT-4, 219-PDL-12
Lay, J., 135-FC-8/APA-24
Lazatin, J., 82-AT10-6
Le Garrec, T., 123-AA-6
Le Goff, V., 123-AA-6
Le Naour, B., 262-HYTASP-9
Le Raillie, M., 286-AA-29
Le Roy, J., 109-APA-19
Lebofsky, S., 121-APA-23
Lechman, J., 184-TP-12
Lechniak, J., 209-STAR-5
Lednicher, D., 243-ACD-10
Lee, C., 44-ACD-3, 244-WAO-11
Lee, D., 243-ACD-10
Lee, J., 137-AMT-6/GT-5, 223-TP-16
Lee, P., 159-AT10-14, 242-AT10-19
Lee, S., 95-MST-3, 115-AT10-11, 144-AFM-12, 166-ASE-9, 266-TP-18
Lee, W., 190-APA-31
Lee-Rausch, E., 111-APA-21
Leenaert, C., 10-ACD-1
Lefantzi, S., 22-FD-2
Lefebvre, A., 26-APA-6, 189-APA-30
Lefell, J., 342-APA-56
Lefwich, M., 311-APA-49
Leger, T., 356-FD-36
Lehmann, K., 106-TP-8
Lehmann, R., 59-FC-5
Lehnasch, G., 286-AA-29
Lehner, S., 344-AT10-25
Leitsoni, L., 330-APA-52
Leishman, J., 255-FD-23, 342-APA-56
Lekki, J., 167-ASE-10/FT-5
Lelo, S., 55-FD-6, 164-AA-10, 283-AA-27, 319-AA-34, 352-AA-45, 358-FD-38
Lenke, O., 288-AA-31, 354-AA-47
Lemmens, Y., 16-AFM-2
Lemoine, R., 213-HYTASP-6
Lempert, W., 30-AMT-2/PDL-2
Leonard, N., 43-ACD-2
Leonard, R., 313-AT10-23
Leplat, G., 184-TP-12
Leroux, M., 203-AA-15
Leseman, Z., 337-TP-23
Letan, R., 68-TP-6, 223-TP-16
Leung-lack, A., 320-AA-35
Levesque, D., 194-BA-1
Levin, D., 34-TP-3, 185-TP-13, 222-TP-15, 325-FD-31
LeVine, M., 95-MST-3, 200-ANERS-1, 315-WAO-14
Levitt, I., 344-AT10-25
Lewy, W., 277-ACD-17
Lew, P., 206-AA-16, 353-AA-46
Lewe, J., 241-AT10-18, 344-AT10-25, 345-AT10-26, 347-ANERS-7
Lewis, D., 296-HYTASP-11
Lewis, J., 205-ASE-12
Lewis, M., 180-FC-10/PDL-11
Lewis, T., 42-AT10-4
Lévy, S., 295-AA-32
Leyland, P., 219-PDL-12
Leyva, I., 132-FD-12
Li, C., 13-APA-5/FC-1, 163-FD-14, 180-FC-10/PDL-11
Li, D., 269-APA-40
Li, F., 132-FD-12, 221-TP-14
Li, G., 40-APA-10
Li, H., 119-WAO-7
Li, J., 83-AT10-7
Li, L., 335-TP-21
Li, M., 45-WAO-3
Li, N., 15-AFM-1
Li, Q., 26-APA-6, 87-APA-18, 271-APA-42
Li, S., 264-AA-24, 354-AA-47
Li, T., 159-AT10-14
Li, W., 15-AFM-1
Li, X., 264-AA-24, 354-AA-47, 360-AA-48, 361-AA-49
Lofitz, A., 295-AA-32
Lofrance, S., 194-BA-1
Lohri, C., 264-AA-24
Loi, D., 126-ASE-8/AFM-9/FT-3
Loi, J., 7-APA-4, 339-APA-53
Loui, B., 299-TP-19
Lokshminarayan, V., 311-APA-49
Lom, T., 223-TP-16
Lombe, A., 119-WAO-7
Lomboume, A., 17-ASE-1
Lampinen, M., 356-FD-36
Landoit, S., 18-ASE-2
Landy, R., 242-AT10-19
Landy, S., 116-AT10-12
Langener, T., 238-APA-37
Langville, V., 165-AA-11
Lani, A., 64-PDL-5
Lara, C., 111-APA-21
Larsson, J., 290-FD-28, 358-FD-38
Larsson, R., 353-AA-46
Latz, J., 272-APA-43, 318-APA-51
Loughlin, B., 197-ACD-8
Laurence, S., 296-HYTASP-11
Laurentie, J., 59-FC-5
Lauroman, R., 239-APA-38
Laux, C., 31-FC-3/PDL-3, 66-TP-4
Lavin, T., 50-AFM-4, 104-AFM-7
Lavoie, M., 274-DE-1
Lavoie, P., 136-AMT-5/GT-4, 219-PDL-12
Lay, J., 135-FC-8/APA-24
Lazatin, J., 82-AT10-6
Le Garrec, T., 123-AA-6
Le Goff, V., 123-AA-6
Le Naour, B., 262-HYTASP-9
Le Raillie, M., 286-AA-29
Le Roy, J., 109-APA-19
Lebofsky, S., 121-APA-23
Lechman, J., 184-TP-12
Lechniak, J., 209-STAR-5
Lednicher, D., 243-ACD-10
Lee, C., 44-ACD-3, 244-WAO-11
Lee, D., 243-ACD-10
Lee, J., 137-AMT-6/GT-5, 223-TP-16
Lee, P., 159-AT10-14, 242-AT10-19
Lee, S., 95-MST-3, 115-AT10-11, 144-AFM-12, 166-ASE-9, 266-TP-18
Lee, W., 190-APA-31
Lee-Rausch, E., 111-APA-21
Leenaert, C., 10-ACD-1
Lefantzi, S., 22-FD-2
Lefebvre, A., 26-APA-6, 189-APA-30

Author/Session Chair Index

- Li, Y., 86-MAO-6, 101-HYIASP-3, 206-AA-16, 222-TP-15, 331-HYIASP-13, 355-FD-35
 Li, Z., 222-TP-15, 325-FD-31
 Lim, Y., 272-APA-43
 Liang, J., 281-FD-26, 362-TP-24
 Liber, M., 177-AMT-9/GT-7
 Lieber, L., 261-AA-23, 288-AA-31
 Liechty, D., 142-TP-9, 265-TP-17
 Liem, R., 86-MAO-6
 Liesch, C., 4-APA-1
 Lieu, M., 216-AMT-11/GT-9
 Lim, T., 175-F-9
 Limacher, E., 192-APA-33
 Limbach, C., 30-AMT-2/PDL-2, 140-AMT-7/PDL-10
 Limon Duparcmeur, F., 126-ASE-8/AFM-9/FT-3
 Lin, C., 33-TP-2, 67-TP-5, 299-TP-19, 335-TP-21, 363-TP-25
 Lin, J., 39-APA-9/FC-4
 Lin, K., 170-ITAR-3
 Lin, X., 82-ATIO-6
 Lin, Y., 157-ATIO-13
 Lin, Z., 281-FD-26
 Lind, R., 182-AFM-13
 Lind, J., 52-ASE-3
 Lindemeyer, E., 237-APA-36
 Lindsley, M., 330-APA-52
 Linke, F., 159-ATIO-14
 Lino Da Silva, M., 142-TP-9
 Lipinski, W., 105-TP-7
 Lippitz, N., 283-AA-27
 Little, J., 59-FC-5, 135-FC-8/APA-24, 201-APA-34
 Liu, C., 270-APA-41
 Liu, F., 168-AA-12
 Liu, G., 172-FD-16
 Liu, H., 47-APA-11, 350-AA-43
 Liu, J., 127-AA-8, 164-AA-10, 168-AA-12, 170-ITAR-3, 173-FD-17
 Liu, L., 86-MAO-6, 120-MAO-8
 Liu, M., 10-ACD-1, 278-MAO-12
 Liu, P., 192-APA-33
 Liu, S., 110-APA-20
 Liu, S., 347-TP-3, 333-AA-41
 Liu, Y., 91-ASE-5, 325-FD-31, 340-APA-54
 Liu, Z., 122-FD-11, 266-TP-18, 362-TP-24
 Livingston, D., 95-MSF-3
 Livne, E., 121-APA-23
 Litznitch, P., 250-ASE-14/GT-10
 Lo, K., 269-APA-40
 Lobbia, M., 98-HYIASP-2
 Lobel, G., 350-AA-43
 Locantelli, D., 10-ACD-1
 Lock, J., 159-ATIO-14
 Lockard, D., 128-AA-9, 169-AA-13, 207-AA-17, 267-AA-25
 Loehle, S., 66-TP-4, 67-TP-5, 140-AMT-7/PDL-10
 Loeser, T., 4-APA-1
 Loffhouse, A., 77-APA-14, 236-APA-35
 Logan, M., 79-APA-16
 Lohr, G., 159-ATIO-14
 Long, T., 86-MAO-6, 120-MAO-8
 Longini, J., 335-TP-21
 Lopes, L., 169-AA-13
 Lopez, B., 142-TP-9
 Lopez, O., 111-APA-21
 López, M., 317-APA-50
 Lorrain, P., 65-PDL-4
 Lorteau, M., 286-AA-29
 Loseille, A., 5-APA-2, 256-FD-24
 Loth, E., 17-ASE-1
 Lou, J., 291-FD-29
 Loubeau, A., 78-APA-15
 Louie, D., 255-FD-23
 Lowe, K., 260-AMT-12/GT-11
 Lozano, B., 241-ATIO-18
 Lu, Z., 192-APA-33
 Lucariello, D., 84-ACD-4
 Luciano, R., 348-APA-57
 Luckner, R., 92-ASE-6/AFM-6/FT-2
 Luedscher, T., 212-FD-21
 Lular, M., 48-FD-5
 Lukaczyk, T., 110-APA-20
 Luke, E., 52-ASE-3, 285-AA-28
 Lummer, M., 43-ACD-2
 Lunderberg, W., 316-ANERS-6
 Luo, H., 40-APA-10, 122-FD-11, 291-FD-29, 329-FD-34
 Luo, L., 291-FD-29
 Lüftens, K., 41-ATIO-3, 313-ATIO-23
 Lutz, T., 352-AA-45
 Luxhoj, J., 82-ATIO-6
 Lv, W., 185-TP-13, 364-TP-26
 Lyapunov, S., 270-APA-41
 Lynn, K., 215-AMT-10/GT-8
 Lyritis, A., 202-AA-14, 353-AA-46
 Lyu, B., 351-AA-44
 Lyu, Z., 161-MAO-9, 346-MAO-15
 Ma, H., 266-TP-18
 Ma, J., 99-F-7
 Ma, Y., 68-TP-6, 223-TP-16
 MacDonald, M., 66-TP-4
 Mace, W., 128-AA-9
 Mach, J., 104-AFM-7
 Machado, D., 140-AMT-7/PDL-10
 Machado, H., 223-TP-16
 Machner, S., 100-AMT-4/GT-3
 Macchuzze, W., 112-APA-22
 MacKunis, W., 259-F-12
 MacLean, M., 327-FD-33, 359-FD-39
 MacLead, J., 204-ASE-11, 225-ASE-13
 Maddalena, L., 57-FD-8, 217-HYIASP-7, 262-HYIASP-9, 303-HYIASP-22, 328-HYIASP-12
 Madden, M., 314-ATIO-24
 Madras Sathuraman, Y., 358-FD-38
 Magee, T., 38-APA-8, 110-APA-20
 Magin, T., 32-TP-1, 265-TP-17, 325-FD-31
 Magne, S., 261-AA-23
 Magstadt, A., 39-APA-9/FC-4
 Mahallati, A., 204-ASE-11, 284-ASE-16
 Mai, C., 173-FD-17
 Maita, M., 258-HYIASP-8, 296-HYIASP-11
 Majima, R., 99-F-7
 Makarov, B., 202-AA-14
 Makarov, V., 111-APA-21
 Makeyev, A., 217-HYIASP-7
 Makowka, K., 292-HYIASP-10, 328-HYIASP-12
 Maldek, S., 275-ATIO-22
 Maldonado, V., 46-MAO-4
 Malen, J., 34-TP-3, 185-TP-13
 Malpress, R., 331-HYIASP-13
 Manca, J., 136-AMT-5/GT-4
 Mancini, A., 93-AA-4
 Mancauso, R., 154-APA-26
 Mangalam, A., 49-AFM-3
 Mange, R., 113-ATIO-9, 343-ACD-13
 Manikbadi, R., 352-AA-45, 353-AA-46
 Mann, A., 295-AA-32
 Manohar, E., 285-AA-28
 Manosalvas, D., 112-APA-22
 Mansour, N., 32-TP-1
 Mansur, G., 272-APA-43
 Marais, K., 275-ATIO-22
 Marañón, J., 214-FC-11, 272-APA-43
 Marconi, F., 38-APA-8
 Margnat, F., 350-AA-43
 Marinneau, E., 296-HYIASP-11
 Marini, M., 238-APA-37
 Marks, J., 42-ATIO-4, 83-ATIO-7
 Marks, C., 130-ITAR-2, 207-AA-17, 351-AA-44
 Mam, A., 153-APA-25, 360-AA-48
 Mamer, W., 105-TP-7
 Marotta, E., 33-TP-2
 Marotta, T., 288-AA-31
 Marquart, E., 211-FD-20
 Marques, S., 88-FD-9, 346-MAO-15
 Marsan, A., 333-AA-41
 Marsden, O., 164-AA-10, 253-AA-21
 Martin, A., 32-TP-1, 66-TP-4
 Martin, L., 42-ATIO-4, 116-ATIO-12
 Martin, M., 30-AMT-2/PDL-2, 185-TP-13
 Martin, P., 348-APA-57
 Martin, R., 59-F-5
 Martinelli, L., 43-ACD-2
 Martinez, B., 136-AMT-5/GT-4
 Martinez, D., 53-ASE-4/FT-1
 Martinez Romero, P., 310-APA-48
 Martinez Schramm, J., 142-TP-9
 Martinez-Lera, P., 264-AA-24
 Martins, J., 12-MAO-2, 86-MAO-6, 119-MAO-7, 161-MAO-9, 199-MAO-10, 346-MAO-15
 Marx, D., 254-AA-22
 Marx, V., 66-TP-4
 Marynowski, T., 66-TP-4, 140-AMT-7/PDL-10
 Masaaki, F., 57-FD-8
 Masaki, D., 213-HYIASP-6
 Masarati, P., 51-AFM-5, 122-FD-11
 Masek, T., 9-ATIO-2, 42-ATIO-4
 Masson, P., 320-AA-35
 Mat Ali, M., 349-AA-42
 Mareescu, D., 7-APA-4
 Mateos, J., 337-TP-23
 Matheou, G., 326-FD-32
 Matishack, J., 238-APA-37
 Matsuyama, S., 183-TP-11, 190-APA-31
 Mathews, M., 196-ATIO-16
 Marfing, J., 286-AA-29
 Mattson, C., 12-MAO-2, 46-MAO-4
 Maugars, B., 270-APA-41
 Mavris, D., 6-APA-3, 10-ACD-1, 11-MAO-1, 15-AFM-1, 16-AFM-2, 44-ACD-3, 45-MAO-3, 46-MAO-4, 82-ATIO-6, 95-MSF-3, 115-ATIO-11, 117-ACD-5, 118-ACD-6, 197-ACD-8, 200-ANERS-1, 241-ATIO-18, 244-MAO-11, 245-ANERS-3, 76-ACD-11, 277-ACD-12, 315-MAO-14, 316-ANERS-6, 344-ATIO-25, 345-ATIO-26, 347-ANERS-7
 May, G., 212-FD-21
 Mayo, J., 300-TP-20, 364-TP-26
 Mazaheri, A., 23-FD-3, 66-TP-4
 Marzocut Zecchin, E., 360-AA-48
 McAldaragh, R., 115-ATIO-11
 McAlpine, A., 261-AA-23
 McCabe, G., 18-ASE-2
 McCarthy, P., 299-TP-19
 McCarmey, E., 290-FD-28
 McClain, S., 91-ASE-5, 125-ASE-7
 McComas, A., 26-APA-6, 309-APA-47
 McCrim, M., 220-AFM-14
 McDaniell, M., 79-APA-16, 309-APA-47
 McDonald, G., 83-ATIO-7
 McDonald, J., 346-MAO-15
 McDonald, R., 44-ACD-3
 McDonough, L., 15-AFM-1
 McFarland, J., 362-TP-24
 McGaughey, A., 34-TP-3
 McGowan, A., 312-MAO-13
 McGrath, B., 138-HYIASP-5, 236-APA-35
 McGuire, P., 172-FD-16, 290-FD-28
 McGuire, S., 30-AMT-2/PDL-2
 McInyre, T., 65-PDL-4
 McKeivry, C., 217-HYIASP-7
 McKeown, T., 160-ACD-7
 McKeon, B., 48-FD-5, 131-PDL-9, 247-FD-22, 311-APA-49
 McKinney, L., 213-HYIASP-6
 McKirrick, K., 362-TP-24
 McLaughlin, D., 127-AA-8, 286-AA-29, 323-AA-38
 McLaughlin, T., 88-FD-9, 210-FD-19, 290-FD-28
 McMasters, R., 336-TP-22
 McMonagle, R., 174-MSF-4
 McMullan, W., 293-FD-30
 McNally, D., 159-ATIO-14
 McNamara, J., 48-FD-5
 McNamara, P., 27-AMT-1/GT-1
 McRoberts, R., 345-ATIO-26
 Meador, M., 219-PDL-12
 Mechtel, F., 138-HYIASP-5
 Meckstroth, C., 330-APA-52
 Medeiros, F., 291-FD-29
 Medida, S., 80-APA-17
 Medwell, P., 89-AA-2
 Mee, D., 258-HYIASP-8
 Mehmari, A., 120-MAO-8, 199-MAO-10
 Mehta, N., 185-TP-13
 Meindl, A., 140-AMT-7/PDL-10
 Meinke, M., 212-FD-21, 283-AA-27
 Meisel, N., 11-MAO-1
 Mele, B., 112-APA-22
 Meinick, M., 247-FD-22
 Meloy, J., 216-AMT-11/GT-9
 Mendonca, F., 257-FD-25, 322-AA-37
 Mengaldo, G., 256-FD-24
 Menier, V., 256-FD-24
 Meon, C., 90-AA-3
 Mercer, J., 116-ATIO-12, 242-ATIO-19
 Mercurio, U., 84-ACD-4
 Merritt, R., 216-AMT-11/GT-9
 Merkle, C., 329-FD-34
 Merle, J., 204-ASE-11
 Merlen, A., 156-APA-28
 Merret, J., 277-ACD-12

Author/Session Chair Index

- Merrifield, J., 221-TP-14
 Mery, E., 354-AA-47
 Mesh, M., 48-FD-5
 Meskine, M., 267-AA-25
 Mesmer, B., 46-MAO-4, 119-MAO-7, 278-MAO-12
 Messac, A., 120-MAO-8, 199-MAO-10
 Meyer, M., 112-APA-22
 Meyer, T., 136-AMT-5/GT-4
 Meyers, L., 124-AA-7
 Mianke-Lye, R., 316-ANERS-6
 Mian, H., 340-APA-54
 Miani, Z., 194-BA-1, 195-LIA-1, 197-ACD-8
 Miao, S., 89-AA-2
 Michael, J., 61-AMT-3/GT-2, 100-AMT-4/GT-3
 Michel, B., 270-APA-41
 Michel, U., 93-AA-4
 Micheli, F., 125-ASE-7
 Michels, T., 355-FD-35
 Miguel, E., 353-AA-46
 Mikkelson, C., 201-APA-34
 Mikosovic, D., 214-FC-11
 Miles, R., 30-AMT-2/PDI-2, 61-AMT-3/GT-2, 100-AMT-4/GT-3, 140-AMT-7/PDI-10
 Milholen, W., 112-APA-22
 Miller, J., 136-AMT-5/GT-4
 Miller, N., 182-AFM-13
 Miller, R., 130-ITR-2
 Miller, S., 46-MAO-4, 93-AA-4
 Miller, V., 296-HYTASP-11
 Mills, B., 176-AMT-8/GT-6
 Milluzzo, J., 342-APA-56
 Mimani, A., 89-AA-2, 254-AA-22
 Minco, D., 321-AA-36
 Mineck, R., 128-AA-9
 Minevino, M., 321-AA-36
 Ming, X., 269-APA-40
 Mingbo, S., 175-FC-9
 Minisci, E., 98-HYTASP-2
 Minnich, A., 106-TP-8, 300-TP-20, 337-TP-23, 364-TP-26
 Minro, D., 176-AMT-8/GT-6
 Miskco, T., 92-ASE-6/AFM-6/FT-2, 126-ASE-6/AFM-9/FT-3
 Mitchell, D., 248-AA-18
 Mitsuo, K., 190-APA-31
 Mittal, A., 80-APA-17
 Mitelman, J., 286-AA-29
 Miyazaki, T., 141-AFM-11, 222-TP-15
 Miyazaki, T., 260-AMT-12/GT-11
 Miyoshi, Y., 348-APA-57
 Mizoguchi, M., 7-APA-4, 348-APA-57
 Mizukaki, T., 136-AMT-5/GT-4
 Muffinger, D., 314-ATIO-24
 Muniño, A., 325-FD-31
 Munafó, A., 32-TP-1, 103-PDI-8
 Munakata, T., 57-FD-8
 Munday, P., 189-APA-30
 Mundt, C., 137-AMT-6/GT-5, 184-TP-12
 Mungel, G., 296-HYTASP-11
 Munoz, C., 115-ATIO-11, 242-ATIO-19
 Munoz, F., 211-FD-20
 Munz, C., 202-AA-14, 290-FD-28
 Muppidi, S., 32-TP-1, 271-APA-42
 Murayama, M., 20-AA-1, 111-APA-21
 Murman, S., 55-FD-6, 136-AMT-5/GT-4, 212-FD-21, 342-APA-56
 Murphy, P., 51-AFM-5, 154-APA-26, 273-ATIO-20
 Murray, J., 18-ASE-2, 167-ASE-10/FT-5, 239-APA-38, 251-ASE-15
 Murieta Mendoza, A., 279-ANERS-4
 Mutuel, L., 92-ASE-6/AFM-6/FT-2
 Myers, L., 323-AA-38
 Na, W., 264-AA-24
 Nabawy, M., 79-APA-16
 Nadarajah, S., 318-APA-51
 Nagaraja, S., 65-PDI-4
 Naghib Lahouti, A., 219-PDI-12
 Nagle, G., 9-ATIO-2
 Naguib, A., 133-FD-13
 Nair, A., 293-FD-30
 Najafiyazi, A., 326-FD-32
 Najafiyazi, M., 326-FD-32
 Nakakita, K., 20-AA-1
 Nakano, T., 284-ASE-16
 Naci, M., 15-AFM-1
 Nam, T., 46-MAO-4, 117-ACD-5, 241-ATIO-18
 Nam, Y., 134-HYTASP-4
 Nangoong, H., 123-AA-6, 267-AA-25
 Nance, D., 93-AA-4
 Nangia, R., 198-ACD-9
 Nara, K., 310-APA-48
 Narayanan, P., 87-APA-18, 246-APA-39
 Narayanan, S., 90-AA-3
 Narayanarao, B., 155-APA-27
 Narayanaswamy, A., 34-TP-3, 185-TP-13, 300-TP-20, 364-TP-26
 Narayanaswamy, V., 31-FC-3/PDI-3, 176-AMT-8/GT-6, 177-AMT-9/GT-7
 Nark, D., 240-ATIO-17, 295-AA-32, 333-AA-41, 360-AA-48, 361-AA-49
 Narkowicz, A., 115-ATIO-19
 Narkus-Kramer, M., 114-ATIO-10, 345-ATIO-26
 Narsipur, S., 192-APA-33
 Natranjan, M., 25-FC-2
 Naughton, J., 39-APA-9/FC-4, 216-AMT-11/GT-9, 339-APA-53
 Nawaz, K., 221-TP-14, 266-TP-18
 Nawroth, H., 67-TP-5, 127-AA-8
 Nayani, S., 78-APA-15
 Nayeri, C., 153-APA-25, 257-FD-25
 Neale, T., 131-PDI-9
 Neeb, D., 221-TP-14
 Neece, R., 53-ASE-4/FFI
 Neegaard, L., 84-ACD-4
 Neffeld, A., 285-AA-28, 286-AA-29
 Neilsen, T., 288-AA-31, 323-AA-38
 Neitzel, K., 265-TP-17
 Nelson, C., 110-APA-20, 121-APA-23
 Nelson, E., 251-ASE-15
 Nemili, A., 135-FC-8/APA-24
 Nepak, A., 6-APA-3
 Neretti, G., 181-PDI-6/FC-6, 189-APA-30
 Neuhart, D., 128-AA-9
 Neville, A., 325-FD-31
 Newman, B., 51-AFM-5
 Newman, J., 270-APA-41
 Newman, T., 261-AA-23
 Newton, M., 15-AFM-1
 Ng, H., 83-ATIO-7, 159-ATIO-14, 279-ANERS-4
 Ng, J., 175-FC-9
 Nguyen, L., 259-FC-12, 352-AA-45
 Nguyen, N., 121-APA-23, 162-APA-29
 Nichols, J., 252-AA-20
 Nickels, A., 358-FD-38
 Nicolosi, F., 6-APK-3
 Niedermeier, D., 160-ACD-7
 Nies, J., 339-APA-53
 Niesse, H., 347-ANERS-7
 Nikami, S., 168-AA-12
 Nikshkov, Y., 217-HYTASP-7
 Nikolay, B., 272-APA-43
 Nikoleris, A., 242-ATIO-19
 Nkoueyem, P., 39-APA-9/FC-4
 Nishida, S., 213-HYTASP-6
 Nishijima, H., 190-APA-31
 Nishikawa, H., 23-FD-3
 Nizenkov, P., 292-HYTASP-10
 Nodé-Langlois, T., 90-AA-3, 165-AA-11, 267-AA-25
 Noeding, P., 142-TP-9
 Noelling, S., 295-AA-32
 Noll, B., 123-AA-6
 Nompelis, I., 66-TP-4, 96-FD-10, 291-FD-29, 325-FD-31, 327-FD-33, 359-FD-39
 Nomura, S., 142-TP-9
 Nonomura, T., 180-FC-10/PDI-11, 189-APA-30
 Norde, E., 298-AA-33
 Norris, A., 132-FD-12
 North, S., 61-AMT-3/GT-2
 Notario, A., 316-ANERS-6
 Notrebrock, B., 25-FC-2
 Nourgaliev, R., 329-FD-34
 Nouri, B., 106-TP-8
 Noyes, E., 104-AFM-7
 Nysevoid, T., 46-MAO-4
 O'Brien, D., 154-APA-26
 O'Brien, E., 34-TP-3
 O'Brien, T., 292-HYTASP-10
 O'Neal, A., 273-ATIO-20
 O'Reilly, C., 20AA-1
 Obayashi, S., 92-ASE-6/AFM-6/FT-2
 Ocker, J., 349-AA-42
 Ocokoljic, G., 310-APA-48
 Oerlemans, S., 319-AA-34
 Ofosu, J., 19-PDI-1
 Ogata, S., 181-PDI-6/FC-6
 Ogawa, H., 98-HYTASP-2
 Ogino, Y., 142-TP-9
 Ogus, G., 334-AA-40
 Ohira, K., 294-APA-45
 Ohnishi, N., 142-TP-9
 Ohno, D., 135-FC-8/APA-24
 Ohra, S., 115-ATIO-11
 Okabe, T., 260-AMT-12/GT-11
 Okamine, S., 308-APA-46
 Oj, M., 79-APA-16, 246-APA-39, 308-APA-46
 Olander, D., 52-ASE-3
 Oliveira, A., 140-AMT-7/PDI-10
 Oliver, M., 204-ASE-11, 250-ASE-14/GT-10, 284-ASE-16
 Olivetti, S., 123-AA-6
 Olivier, H., 339-APA-53
 Oliviero, N., 211-FD-20
 Oliviu, S., 79-APA-16, 317-APA-50
 Ollar, J., 120-MAO-8
 Omats, M., 267-AA-25
 Omar, A., 190-APA-31, 195-LIA-1
 Omran, A., 51-AFM-5
 Ong, W., 34-TP-3
 Onofri, M., 217-HYTASP-7
 Onuma, T., 308-APA-46
 Oorebeek, J., 214-FC-11, 269-APA-40
 Oosthuizen, P., 142-TP-9, 223-TP-16, 362-TP-24
 Ordoz, I., 38-APK-8
 Orlkwis, P., 249-AA-19, 269-APA-40
 Or, J., 141-AFM-11
 Oseguera-Lohr, R., 159-ATIO-14
 Oshiman, Y., 25-FC-2
 Ostreich, C., 48-FD-5
 Ostrikov, N., 286-AA-29

Author/Session Chair Index

- Ousika, T., 99FC7
 Ota, S., 308-APA-46
 Otanicar, T., 143-TP-10, 299-TP-19
 Otero, E., 23-FD-3
 Otsu, H., 103-PDL-8
 Ou, K., 257-FD-25
 Outtier, P., 270-APA-41
 Owens, L., 99FC7, 172-FD-16
 Ozawa, H., 296-HYTASP-11
 Ozawa, T., 104-AFM-7
 Özbay, A., 80-APA-17
 Özkaya, E., 135-FC8/APA-24
 Ozonowski, L., 38-APA-8, 78-APA-15
 Öztürk, O., 158-FI-4
 Özyürek, Y., 254-AA-22
 Pack Mellon, L., 99FC7, 214-FC-11
 Padois, T., 282-AA-26
 Padron, A., 278-MAO-12
 Pak, C., 15-AFM-1, 315-MAO-14
 Palacios, F., 85-MAO-5, 110-APA-20, 112-APA-22, 278-MAO-12, 331-HYTASP-13
 Palacios, J., 17-ASE-1, 52-ASE-3, 125-ASE-7, 284-ASE-16
 Palotta, N., 84-ACD-4
 Palmer, E., 242-ATIO-19
 Palmer, G., 32-TP-1
 Palumbo, D., 240-ATIO-17
 Pan, B., 134-HYTASP-4
 Pan, C., 331-HYTASP-13
 Pan, Y., 362-TP-24
 Panahi, A., 7-APA-4
 Panda, J., 137-AMT-6/GT-5
 Panda, R., 51-AFM-5
 Panesi, M., 64-PDL-5, 103-PDL-8, 131-PDL-9, 325-FD-31
 Panikow, M., 315-MAO-14
 Pankratov, I., 287-AA-30
 Pant, R., 41-ATIO-3, 198-ACD-9
 Pantano, C., 256-FD-24
 Paolo, S., 189-APA-30
 Papadimitriou, C., 318-APA-51
 Papadimitriou, D., 318-APA-51
 Papalambros, P., 312-MAO-13
 Papamichosou, D., 168-AA-12
 Paquet, C., 203-AA-15
 Parchment, O., 89-AA-2
 Pardowitz, B., 354-AA-47
 Paredes, P., 211-FD-20
 Parente, A., 325-FD-31
 Parezanovic, V., 59-FC-5
 Park, C., 115-ATIO-11, 363-TP-25
 Park, M., 5-APA-2, 38-APA-8, 111-APA-21
 Parmed, O., 131-PDL-9
 Parri, S., 206-AA-16, 354-AA-47
 Parry, A., 165-AA-11, 203-AA-15
 Parsons, N., 325-FD-31
 Paschereit, C., 67-TP-5, 153-APA-25, 257-FD-25, 319-APA-34
 Pascioni, K., 287-AA-30
 Pasco, Y., 320-AA-35
 Pascoa, J., 122-FD-11
 Pasilio, C., 84-ACD-4, 112-APA-22
 Pate, D., 243-ACD-10
 Patel, M., 84-ACD-4
 Patel, R., 46-MAO-4
 Patel, V., 299-TP-19
 Patil, M., 12-MAO-2
 Patil, Y., 155-APA-27
 Patraik, S., 143-TP-10
 Patrick, J., 250-ASE-14/GT-10
 Patterson, M., 240-ATIO-17
 Paurton, C., 55-FD-6
 Paukner, D., 292-HYTASP-10, 328-HYTASP-12
 Paul, M., 97-PDL-7
 Paul, S., 335-TP-21
 Paula, L., 270-APA-41
 Pavolonis, M., 167-ASE-10/FT-5
 Payan, A., 316-ANERS-6
 Pazmany, A., 53-ASE-4/FF-1
 Pearce, N., 90-AA-3, 253-AA-21
 Pei, P., 113-ATIO-9
 Pejtin, L., 292-HYTASP-10
 Pekoz, H., 79-APA-16
 Pellaifer, D., 222-TP-15, 270-APA-41
 Pendeza, A., 289-FD-27
 Penderton, E., 315-MAO-14
 Pendyala, R., 247-FD-22
 Peng, L., 120-MAO-8
 Peng, S., 131-PDL-9, 189-APA-30
 Percin, M., 154-APA-26
 Perebratov, V., 160-ACD-7
 Pares, P., 101-HYTASP-3
 Parez, B., 101-HYTASP-3
 Parez, R., 160-ACD-7, 200-ANERS-1
 Parez-Battile, M., 314-ATIO-24
 Peroomoni, O., 289-FD-27
 Perrot, F., 123-AA-6, 267-AA-25, 295-AA-32
 Perry, M., 214-FC-11
 Perross, T., 177-AMT-9/GT7
 Perullo, C., 46-MAO-4, 117-ACD-5
 Pescetelli, F., 98-HYTASP-2
 Peschke, P., 219-PDL-12
 Peter, H., 335-TP-21
 Petersen, J., 159-ATIO-14
 Petrone, G., 318-APA-51
 Petrosino, F., 103-PDL-8
 Pezzella, G., 103-PDL-8, 238-APA-37
 Pfander, H., 245-ANERS-3, 316-ANERS-6, 345-ATIO-26, 347-ANERS-7
 Pfeiffer, J., 112-APA-22
 Pfeiffer, K., 243-ACD-10
 Phillips, B., 176-AMT-6/GT-6
 Phillips, C., 158-FI-4
 Phillips, T., 156-APA-28
 Plimney, L., 184-TP-12, 299-TP-19
 Phontanongkolkij, N., 159-ATIO-14
 Pichon, K., 21-AMT-1
 Piantanida, S., 286-AA-29
 Pichon, R., 27-AMT-1/GT-1
 Pidoparti, S., 362-TP-24
 Piellard, M., 123-AA-6
 Pierce, F., 67-TP-5
 Pieri, D., 167-ASE-10/FT-5
 Pignatiello, A., 79-APA-16
 Pilon, A., 353-AA-46
 Pimenta, B., 261-AA-23
 Pimentel, R., 219-PDL-12
 Pinaud, G., 101-HYTASP-3
 Pinner, J., 47-APA-11, 340-APA-54
 Pinna, F., 171-FD-15, 211-FD-20
 Pinar-Fischer, O., 82-ATIO-6, 345-ATIO-26
 Pintado-Pena, A., 282-AA-26
 Piotrowski, M., 348-APA-57
 Piskin, T., 330-APA-52
 Plassman, G., 94-AA-5
 Plemmons, D., 170-TAR-3
 Pliavaika, K., 65-PDL-4
 Plogmann, B., 247-FD-22
 Poehmann, F., 61-AMT-3/GT-2
 Poggie, J., 14-FD-1, 30-AMT-2/PDL-2, 140-AMT-7/PDL-10, 326-FD-32, 356-FD-36
 Polasek, C., 173-AA-6, 285-AA-28, 295-AA-32
 Polet, D., 236-APA-35
 Polifke, W., 334-AA-40
 Polivovich, M., 18-ASE-2, 251-ASE-15
 Pomeroy, B., 308-APA-46
 Ponnappan, R., 14-FD-1
 Pont, G., 190-APA-13
 Pontelandolfo, P., 79-APA-16
 Poole, D., 10-ACD-1, 330-APA-52
 Pope, D., 169-AA-13
 Poroseva, S., 22-FD-2, 55-FD-6, 80-APA-17, 340-APA-54
 Porteous, A., 80-APA-17
 Porter, R., 61-AMT-3/GT-2
 Posta, A., 311-APA-49
 Post, J., 159-ATIO-14
 Potapczuk, M., 52-ASE-3, 166-ASE-9
 Potramostacim, M., 311-APA-49
 Raj, P., 243-ACD-10
 Rajasthesan, A., 246-APA-39
 Rajguru, A., 64-PDL-5
 Rajnarayan, D., 45-MAO-3
 Rajvanshi, D., 111-APA-21
 Rakatourison, I., 254-AA-22
 Rallabhandi, S., 78-APA-15
 Ramachandran, R., 254-AA-22
 Ramamoorthy, K., 9-ATIO-2
 Ramamurthi, R., 127-AA-8, 168-AA-12, 220-AFM-14
 Ramon, G., 254-AA-22, 288-AA-31
 Ramon, V., 163-FD-14
 Rambaud, P., 211-FD-20
 Ramchandran, G., 6-APA-3
 Ramesh, G., 246-APA-39
 Ramos, N., 259-FC-12
 Rampurawala, A., 6-APA-3
 Ramu, A., 68-TP-6
 Ran, H., 6-APA-3
 Ranade, A., 41-ATIO-3
 Ramcourt, D., 44-ACD-3, 244-MAO-11, 274-DE-1
 Ranjan, D., 362-TP-24
 Raps, D., 91-ASE-5
 Rarata, Z., 123-AA-6
 Rasmussen, R., 30-AMT-2/PDL-2
 Rasquin, M., 155-APA-27
 Rasio, B., 310-APA-48
 Rath, J., 19-PDL-1
 Rauleder, J., 255-FD-23
 Rautmann, C., 351-AA-44
 Ravetta, P., 128-AA-9
 Ravichandran, N., 364-TP-26
 Ravindra, K., 155-APA-27
 Ray, J., 22-FD-2
 Razaqji, S., 258-HYTASP-8
 Reba, R., 295-AA-32
 Reboul, G., 295-AA-32
 Reddy, A., 43-ACD-2
 Reddy, K., 134-HYTASP-4
 Redonnet, S., 93-AA-4, 169-AA-13, 285-AA-28
 Reed, D., 91-ASE-5
 Reed, H., 211-FD-20, 231-FD-18
 Reed, P., 199-MAO-10
 Reeder, M., 177-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32
 Reiss, F., 103-AMT-9/GT7, 260-AMT-12/GT-11
 Reese, B., 99FC-7
 Reger, R., 358-FD-38
 Regert, T., 211-FD-20
 Reich, G., 130-TAR-2, 207-AA-17, 351-AA-44
 Reichman, B., 323-AA-38
 Reimann, B., 101-HYTASP-3
 Reimann, C., 295-AA-32

Author/Session Chair Index

- Reimer, T., 66-TP-4, 292-HYATSP-10
 Rein, M., 4-APA-1
 Reinartz, B., 122FD-11
 Reinhardt, T., 80-APA-17
 Remes, B., 154-APA-26
 Ren, H., 344-ATIO-25
 Ren, J., 173-FD-17
 Ren, L., 8-ATIO-1, 159-ATIO-14
 Ren, Q., 337-TP-23
 Ren, T., 67-TP-5
 Ren, Y., 13-APA-5/FC-1
 Rendall, L., 10-ACD-1, 330-APA-52
 Rennie, M., 27-AMT-1/GT-1, 131-PDL-9
 Reppenthaugen, A., 202-AA-14
 Reuler, P., 125-ASE-7
 Reuter, B., 38-APA-8
 Reverdy, P., 43-ACD-2
 Rexius, S., 209-ITAR-5
 Reyhanguju, M., 320-AA-35
 Reynolds, K., 162-APA-29
 Reynolds, T., 275-ATIO-22
 Reza Akbari, B., 270-APA-41
 Rhew, R., 215-AMT-10/GT-8
 Rhuay, M., 95-MST-3, 174-MST-4
 Ribeiro, A., 249-AA-19, 295-AA-32
 Ricci, M., 157-ATIO-13
 Ricci, Y., 92-ASE-6/AFM-6/FT-2
 Riccardi, G., 222-TP-15
 Richardson, T., 119-MAO-7, 199-MAO-10
 Richwine, D., 110-APA-20
 Ricot, D., 156-APA-28
 Ricouard, J., 203-AA-15
 Riedel, U., 65-PDL-4
 Riehmer, J., 258-HYATSP-8
 Rienstra, S., 333-AA-41, 361-AA-49
 Rigby, D., 91-ASE-5, 204-ASE-11
 Rigby, G., 4-APA-1
 Rigins, B., 10-ACD-1
 Right, M., 356-FD-36
 Rigney, S., 129-HYATSP-23
 Ringueite, L., 219-PDL-12
 Rinoie, K., 355-FD-35
 Risti, A., 58-HYATSP-1
 Rivai, D., 162-APA-29, 192-APA-33, 236-APA-35
 Rivers, M., 310-APA-48
 Rizzetta, D., 56-FD-7, 180-FC-10/PDL-11
 Rizzi, A., 6-APA-3
 Rizzi, S., 203-AA-15, 240-ATIO-17
 Roach, K., 196-ATIO-16
 Robertson, D., 130-ITAR-2, 207-AA-17
 Robertson, P., 27-ACD-11
 Robic, B., 10-ACD-1
 Robinet, J., 190-APA-31
 Robinson, E., 299-TP-19
 Robinson III, J., 242-ATIO-19
 Rodi, P., 251-ASE-15, 312-MAO-13
 Rodio, J., 55-FD-6
 Rodriguez Segura, D., 137-AMT-6/GT-5
 Rodriguez-Garcia, P., 349-AA-42
 Roe, P., 23-FD-3
 Roe, R., 197-ACD-8
 Roetgen, A., 30-AMT-7/PDL-2
 Roger, M., 124-AA-7, 333-AA-41, 352-AA-45
 Rogers, J., 141-AFM-11, 174-MST-4, 182-AFM-13
 Rogers, M., 121-APA-23
 Rogier, E., 219-PDL-12
 Rohl, P., 312-MAO-13
 Rohle, L., 354-AA-47
 Rohlf, D., 4-APA-1
 Rohmann, D., 238-APA-37
 Roisman, I., 68-TP-6, 222-TP-15, 284-ASE-16
 Rokitsaz, K., 271-APA-42, 272-APA-43
 Røling, P., 41-ATIO-3, 344-ATIO-25, 345-ATIO-26
 Romero, J., 317-APA-50
 Rona, A., 93-AA-4
 Rorie, R., 115-ATIO-11
 Rosema, C., 271-APA-42, 280-APA-44
 Rosenbaum, R., 313-ATIO-23
 Rosine, B., 250-ASE-14/GT-10
 Rosseel, E., 89-AA-2
 Rossenti, A., 189-APA-30
 Rossignol, K., 144-AA-10, 283-AA-27
 Roth, B., 12-MAO-2
 Rothacker, B., 156-APA-28
 Rothhaar, P., 273-ATIO-20
 Rothmayer, A., 91-ASE-5, 135-FC-8/APA-24
 Roiter, T., 364-TP-26
 Roux, J., 106-TP-8, 295-AA-32
 Rowe, S., 274-DE-1
 Roy, A., 133-FD-13
 Roy, C., 156-APA-28, 291-FD-29
 Roy, S., 42-ATIO-4, 136-AMT-5/GT-4, 219-PDL-12
 Roy, X., 34-TP-3
 Rozenfeld, T., 33-TP-2
 Rudnik, R., 155-APA-27, 238-APA-37
 Ruefren, M., 237-APA-36
 Ruffin, S., 190-APA-31
 Ruleva, L., 176-AMT-8/GT-6
 Rumpffkeil, M., 161-MAO-9, 351-AA-44
 Rumsey, C., 22-FD-2, 111-APA-21
 Rutherford, M., 87-APA-18
 Ryzhkov, S., 19-PDL-1
 Sack, S., 298-AA-33
 Sadraey, M., 197-ACD-8
 Saeedi, H., 17-ASE-1, 91-ASE-5, 141-AFM-11, 222-TP-15, 240-AMT-12/GT-11
 Sakaue, S., 328-HYATSP-12
 Sakraker, J., 154-APA-26
 Sakuramaka, N., 57-FD-8
 Salah El Din, I., 5-APA-2
 Saldívar Massimi, H., 134-HYATSP-4
 Salemi, L., 211-FD-20
 Salvage, R., 195-ITR-1
 Satze, E., 253-AA-21
 Samimy, M., 39-APA-9/FC-4, 93-AA-4, 293-FD-30
 Sanders, L., 207-AA-17, 321-AA-36
 Sandham, N., 132-FD-12
 Sandberg, R., 123-AA-6
 Sander, T., 137-AMT-6/GT-5
 Sancho-Gonzalez, R., 61-AMT-3/GT-2
 Sanchez-R., 123-AA-6
 Sanghi, S., 40-APA-10
 Sanjose, M., 90-AA-3, 206-AA-16, 261-AA-23, 282-AA-26, 350-AA-43
 Santos, L., 336-TP-22
 Saraf, A., 9-ATIO-2, 41-ATIO-3
 Saric, W., 260-AMT-12/GT-11
 Sarraji, E., 283-AA-27
 Sashittal, P., 358-FD-38
 Sasoh, A., 99-FC-7
 Sasuga, N., 308-APA-46
 Sathire, P., 236-APA-35
 Sato, K., 296-HYATSP-11
 Sato, M., 180-FC-10/PDL-11, 189-APA-30
 Sato, S., 57-FD-8
 Satorji, S., 115-ATIO-11
 Sattelmayer, T., 292-HYATSP-10, 372-AA-37, 378-HYATSP-12, 358-FD-38
 Sathler, S., 135-FC-8/APA-24
 Sausen, R., 347-ANERS-7
 Saufi, G., 219-PDL-12
 Savaglio, C., 21-MST-1
 Savill, A., 6-APA-3
 Sawada, K., 142-TP-9
 Saxena, S., 238-APA-37, 284-ASE-16, 348-APA-57
 Saxton-Fox, T., 131-PDL-9
 Scalco, C., 358-FD-38
 Scarano, F., 351-AA-44
 Schaefer, M., 245-ANERS-3
 Schneffler, N., 153-APA-25
 Schaffner, P., 205-ASE-12
 Scheelhaase, J., 347-ANERS-7
 Schery, S., 137-AMT-6/GT-5
 Schetz, J., 10-ACD-1, 15-AFM-1, 117-ACD-5, 216-AMT-11/GT-9, 257-FD-25
 Schilden, T., 96-FD-10, 173-FD-17
 Schiltgen, B., 157-ATIO-13
 Schira, J., 271-APA-42
 Schlee, J., 337-TP-23
 Schmidt, B., 132-FD-12
 Schmidt-Wimmer, S., 101-HYATSP-3
 Schmissser, J., 217-HYATSP-7, 325-FD-31
 Schmitz, R., 177-AMT-9/GT-7, 293-FD-30
 Schneegans, A., 277-ACD-12
 Schneider, G., 105-TP-7
 Schneider, S., 173-FD-17, 211-FD-20, 296-HYATSP-11
 Schnepf, C., 294-APA-45
 Scholz, P., 39-APA-9/FC-4, 135-FC-8/APA-24, 308-APA-46
 Schram, C., 90-AA-3, 165-AA-11, 298-AA-33, 334-AA-40
 Schrijer, F., 357-FD-37
 Schroeder, J., 54-MST-2
 Schroeder, M., 41-ATIO-3
 Schroeder, W., 25-FC-2, 96-FD-10, 173-FD-17, 206-AA-16, 212-FD-21, 283-AA-27
 Schuelein, E., 294-APA-45, 357-FD-37
 Schueffe, A., 4-APA-1, 37-APA-7, 109-APA-19
 Schuetz, J., 212-FD-21
 Schultheis, S., 116-ATIO-12
 Schultz, V., 82-ATIO-6, 115-ATIO-11
 Schulte, M., 292-HYATSP-10
 Schutte, P., 193-ATIO-15
 Schwonekamp, T., 101-HYATSP-3
 Schwartz, A., 18-ASE-2
 Schwartz, H., 243-ACD-10
 Schwartzentruber, T., 66-TP-4
 Schwaetler, D., 238-APA-37
 Schwing, A., 291-FD-29
 Sciorchiano, A., 87-APA-18
 Sclafani, A., 111-APA-21, 191-APA-32, 237-APA-36, 317-APA-50
 Scroggins, J., 265-TP-17
 Scott, K., 61-AMT-3/GT-2, 136-AMT-5/GT-4
 Scott, R., 122-FD-11
 Séchaud, J., 215-AMT-10/GT-8
 Seefoh, C., 54-MST-2
 Sealey, B., 241-ATIO-18
 Segal, C., 262-HYATSP-9
 Segawa, T., 181-PDL-6/FC-6
 Seidel, J., 88-FD-9, 236-APA-35
 Seifert, A., 112-APA-22
 Self, R., 206-AA-16
 Selic, T., 360-AA-48
 Selig, M., 40-APA-10, 154-APA-26, 239-APA-38
 Selvaraj, S., 134-HYATSP-4
 Semnan, R., 25-FC-2, 135-FC-8/APA-24
 Semiletov, V., 89-AA-2, 127-AA-8
 Sendo, F., 143-TP-10
 Sengupta, P., 242-ATIO-19
 Senocak, I., 205-ASE-12
 Seong, T., 134-HYATSP-4
 Sepathi Younsi, J., 47-APA-11
 Serre, L., 138-HYATSP-5
 Sescu, A., 56-FD-7, 247-FD-22, 285-AA-28
 Seyed-Yagoobi, J., 143-TP-10, 299-TP-19
 Shang, J., 64-PDL-5, 103-PDL-8, 131-PDL-9
 Sharar, N., 256-FD-24
 Sharifzadeh, S., 84-ACD-4
 Sharma, A., 247-FD-22, 350-AA-43
 Sharma, S., 51-AFM-5, 168-AA-12, 353-AA-46
 Sharmar, R., 53-ASE-4/FT-1, 205-ASE-12
 Shaw, S., 38-APA-8
 Shay, R., 8-ATIO-1
 Sheets, D., 241-ATIO-18
 Shen, H., 134-HYATSP-4
 Shen, N., 41-ATIO-3
 Shende, N., 155-APA-27
 Sheng, C., 56-FD-7, 210-FD-19
 Shepherd, J., 132-FD-12
 Sherwin, S., 256-FD-24
 Sheshadri, A., 190-APA-31, 317-APA-50
 Sheth, K., 116-ATIO-12, 159-ATIO-14
 Shi, R., 120-MAO-8
 Shi, W., 26-APA-6, 87-APA-18
 Shih, T., 67-TP-5
 Shimamura, K., 19-PDL-1
 Shimoyama, K., 201-APA-34
 Shirayama, A., 24-FD-4
 Shively, R., 115-ATIO-11
 Shkarayev, S., 236-APA-35
 Shkurenkov, I., 30-AMT-2/PDL-2
 Shimueli, H., 68-TP-6, 223-TP-16
 Shneider, M., 19-PDL-1, 100-AMT-4/GT-3
 Shock, R., 206-AA-16
 Shorstov, V., 111-APA-21
 Shorter, P., 322-AA-37
 Shrestha, P., 281-FD-26
 Sidharth, G., 326-FD-32
 Sneki, H., 260-AMT-12/GT-11
 Saffari, H., 363-TP-25
 Sogout, P., 156-APA-28
 Sahai, A., 20-AA-1, 325-FD-31
 Sahu, J., 50-AFM-4, 175-FC-9, 280-APA-44
 Saile, D., 310-APA-48
 Sakai, M., 355-FD-35
 Sakai, T., 99-FC-7
 Sakae, H., 17-ASE-1, 91-ASE-5, 141-AFM-11, 222-TP-15, 240-AMT-12/GT-11
 Sakaue, S., 328-HYATSP-12
 Sakraker, J., 154-APA-26
 Sakuramaka, N., 57-FD-8
 Salah El Din, I., 5-APA-2
 Saldívar Massimi, H., 134-HYATSP-4
 Salemi, L., 211-FD-20
 Salvage, R., 195-ITR-1
 Satze, E., 253-AA-21
 Samimy, M., 39-APA-9/FC-4, 93-AA-4, 293-FD-30
 Sanders, L., 207-AA-17, 321-AA-36
 Sandham, N., 132-FD-12
 Sandberg, R., 123-AA-6
 Sander, T., 137-AMT-6/GT-5
 Sancho-Gonzalez, R., 61-AMT-3/GT-2
 Sanchez-R., 123-AA-6
 Sanghi, S., 40-APA-10
 Sanjose, M., 90-AA-3, 206-AA-16, 261-AA-23, 282-AA-26, 350-AA-43
 Santos, L., 336-TP-22
 Saraf, A., 9-ATIO-2, 41-ATIO-3
 Saric, W., 260-AMT-12/GT-11
 Sarraji, E., 283-AA-27
 Sashittal, P., 358-FD-38
 Sasoh, A., 99-FC-7
 Sasuga, N., 308-APA-46
 Sathire, P., 236-APA-35
 Sato, K., 296-HYATSP-11
 Sato, M., 180-FC-10/PDL-11, 189-APA-30
 Sato, S., 57-FD-8
 Satorji, S., 115-ATIO-11
 Sattelmayer, T., 292-HYATSP-10, 372-AA-37, 378-HYATSP-12, 358-FD-38
 Sathler, S., 135-FC-8/APA-24
 Sausen, R., 347-ANERS-7
 Saufi, G., 219-PDL-12
 Savaglio, C., 21-MST-1
 Savill, A., 6-APA-3
 Sawada, K., 142-TP-9
 Saxena, S., 238-APA-37, 284-ASE-16, 348-APA-57
 Saxton-Fox, T., 131-PDL-9

Author/Session Chair Index

- Siebenhaar, A., 28-HYTIASP-15, 35-HYTIASP-16, 62-HYTIASP-17, 178-HYTIASP-19, 186-HYTIASP-20
 Siefert, T., 210-FD-19
 Sieglaff, J., 167-ASE-10/FT-5
 Sirkonen, T., 326-FD-32, 356-FD-36
 Sitsman, P., 288AA-31, 319AA-34
 Sikanwar, M., 127-AA-8
 Siller, H., 288AA-31
 Sifton, S., 13-APA-5/FC-1, 88-FD-9, 280-APA-44
 Silva, C., 111-APA-21
 Simon, A., 79-APA-16
 Simpson, J., 198-ACD-9
 Simpson, T., 46-MAO-4, 199-MAO-10
 Sinayoko, S., 351-AA-44
 Singh, A., 40-APA-10
 Singh, D., 246-APA-39, 361-AA-49
 Singh, K., 15-AFM-1
 Singh, R., 237-APA-36
 Singh, R., 255-FD-23, 284-ASE-16
 Singh, S., 87-APA-18, 237-APA-36
 Singhal, A., 39-APA-9/FC-4
 Sinha, K., 358-FD-38
 Siroti, E., 219-PDL-12
 Sirohi, J., 342-APA-56
 Sitarman, J., 256-FD-24, 339-APA-53
 Siu, N., 154-APA-26
 Sivasubramanian, J., 211-FD-20
 Skokova, K., 221-TP-14
 Skomorokhov, S., 272-APA-43
 Skoog, M., 193-ATIO-15
 Slipchenko, M., 136-AMT-5/GT-4
 Slomick, J., 191-APA-32, 270-APA-41
 Sluis, J., 345-ATIO-26
 Smart, M., 65-PDL-4, 258-HYTIASP-8, 262-HYTIASP-9, 292-HYTIASP-10
 Smith, A., 97-PDL-7, 131-PDL-9
 Smith, B., 22-FD-2, 177-AMT-9/GT-7
 Smith, D., 39-APA-9/FC-4
 Smith, J., 313-ATIO-23
 Smith, K., 82-ATIO-6, 281-FD-26, 299-TP-19
 Smith, N., 159-ATIO-14, 242-ATIO-19
 Smith, R., 299-TP-19
 Snyder, M., 294-APA-45
 Sobester, A., 161-MAO-9
 Sobolewski, M., 46-MAO-4
 Sokhey, J., 17-ASE-1, 343-ACD-13
 Soleimani, S., 67-TP-5, 335-TP-21
 Soliman, M., 58-HYTIASP-1
 Solodovnikov, S., 176-AMT-8/GT-6
 Solitani, M., 47-APA-11
 Song, J., 40-APA-10
 Song, K., 344-ATIO-25
 Song, M., 350-AA-43
 Sopek, T., 65-PDL-4
 Sor, S., 363-TP-25
 Soira, J., 248AA-18
 Sotiriopoulos, F., 133-FD-13
 Soudakov, V., 132-FD-12
 Soutade, J., 58-HYTIASP-1
 Soudari, C., 334-AA-40
 Sozer, E., 5-APA-2
 Spalt, T., 94-AA-5
 Sparrow, V., 110-APA-20
 Speers, Z., 177-AA-8
 Speer, S., 55-FD-6
 Speltz, C., 287-AA-30, 349-AA-42
 Spiegel, P., 203-AA-15, 267-AA-25
 Spillers, R., 48-FD-5, 177-AMT-9/GT-7, 280-APA-44, 293-FD-30
 Spinder, C., 298-AA-33
 Spintahn, M., 360-AA-48
 Spottswood, S., 14-FD-1
 See, D., 203-AA-15
 Seenivas, K., 23-FD-3, 80-APA-17, 222-TP-15, 291-FD-29
 Sridhar, B., 9-ATIO-2, 83-ATIO-7, 159-ATIO-14, 196-ATIO-16, 279-ANERS-4
 Sridhar, M., 88-FD-9
 Staebler, T., 66-TP-4
 Stanek, M., 97-PDL-7
 Stanford, B., 162-APA-29
 Stanisak, M., 92-ASE-6/AFM-6/FT-2
 Stanlov, O., 249-APA-19
 Starikovskiy, A., 65-PDL-4
 Starkley, R., 262-HYTIASP-9, 296-HYTIASP-11
 Starzmann, R., 267-AA-25
 Stead, D., 94-AA-5, 169-AA-13, 207-AA-17
 Steelant, J., 238-APA-37
 Steen, M., 92-ASE-6/AFM-6/FT-2
 Steger, M., 286-AA-29
 Steglinski, M., 51-AFM-5
 Steiner, M., 153-APA-25, 251-ASE-15
 Steinfield, A., 105-TP-7
 Steinhoff, J., 372-AA-37
 Steinle, E., 54-MSF-2
 Stenmer, C., 173-FD-17
 Stengel, R., 82-ATIO-6
 Stephan, A., 126-ASE-8/AFM-9/FT-3
 Stephen, E., 290-FD-28
 Stephens, D., 203-AA-15
 Stern, E., 66-TP-4
 Stevens, P., 47-APA-11
 Stevenson, G., 157-ATIO-13
 Stewart, D., 165-AA-11, 253-AA-21
 Stilson, E., 113-ATIO-9
 Stimpson, R., 261-AA-23
 Stoelinger, M., 355-FD-35
 Stoll, A., 113-ATIO-9, 240-ATIO-17
 Stone, J., 206-AA-16
 Storm, S., 17-ASE-1
 Stouffer, V., 313-ATIO-23, 345-ATIO-26
 Strangfield, C., 257-FD-25
 Strapp, J., 204-ASE-11
 Strike, J., 39-APA-9/FC-4, 339-APA-53
 Strick, J., 17-ASE-1, 91-ASE-5
 Struk, P., 91-ASE-5, 204-ASE-11, 284-ASE-16
 Stuermer, A., 309-APA-47
 Stump, G., 46-MAO-4
 Stumpf, E., 20-AA-1
 Sturdza, P., 45-MAO-3
 Stuffs, J., 97-PDL-7, 271-APA-42
 Su, C., 172-FD-16
 Suarez, C., 111-APA-21
 Subbareddy, P., 281-FD-26, 325-FD-31
 Subia, S., 222-TP-15
 Subramanian, S., 199-MAO-10
 Suchmel, C., 107-AFM-8, 181-PDL-6/FC-6, 219-PDL-12
 Suchyta, C., 357-FD-37
 Sud, V., 42-ATIO-4
 Sudhir Kumar, B., 138-HYTIASP-5
 Suehio, E., 59-FC-5
 Sugai, S., 115-ATIO-11
 Sugimoto, R., 123-AA-6, 298-AA-33
 Suh, P., 15-AFM-1
 Sulceman, E., 195-TP-1
 Sullivar, T., 135-FC-8/APA-24
 Sultana, K., 135-FC-8/APA-24
 Sun, T., 104-AFM-7
 Sun, X., 264-AA-24, 350-AA-43
 Sun, Y., 293-FD-30
 Sun, Z., 88-FD-9
 Sunada, Y., 355-FD-35
 Sundaramoorthy, B., 87-APA-18
 Sünel, A., 13-APA-5/FC-1, 194-BA-1
 Surej Nandigamhanalli, J., 95-MSF-3
 Sureshkumar, P., 165-AA-11
 Surzhikov, S., 64-PDL-5, 103-PDL-8, 131-PDL-9, 171-FD-15, 176-AMT-8/GT-6
 Surliffe, P., 27-AMT-1/GT-1
 Surliff, D., 94-AA-5, 295-AA-32, 335-AA-41, 354-AA-47
 Suzuki, K., 78-APA-15, 98-HYTIASP-2
 Sventitskiy, A., 184-TP-12
 Swieringa, K., 8-ATIO-1, 313-ATIO-23
 Swift, S., 202-AA-14
 Thakur, S., 67-TP-5
 Thandavamoorthy, G., 156-APA-28
 Thangwang, A., 220-AFM-14
 Theiss, A., 96-FD-10, 211-FD-20
 Theofilis, V., 211-FD-20
 Thevenin, D., 65-PDL-4
 Thiele, E., 135-FC-8/APA-24
 Thiphatwong, D., 313-ATIO-23
 Thiphatwong, J., 42-ATIO-4
 Thirifay, F., 84-ACD-4
 These, J., 295-AA-32
 Thomas, D., 323-AA-38
 Thomas, G., 157-ATIO-13
 Thomas, J., 85-MAO-5
 Thomason, C., 177-AMT-9/GT-7
 Thompson, D., 17-ASE-1, 52-ASE-3, 91-ASE-5, 247-FD-22
 Thompson, G., 18-ASE-2, 205-ASE-12
 Thompson, K., 50-AFM-4
 Thompson, T., 245-ANERS-3, 279-ANERS-4, 347-ANERS-7
 Thuroy, B., 136-AMT-5/GT-4, 177-AMT-9/GT-7, 247-FD-22
 Tian, W., 80-APA-17
 Tibbe, T., 319-AA-34
 Tibor, E., 46-MAO-4
 Tien, S., 9-ATIO-2, 42-ATIO-4, 196-ATIO-16
 Tilmann, C., 201-APA-34
 Timofeev, E., 331-HYTIASP-13
 Ting, E., 121-APA-23, 162-APA-29
 Tinker, M., 45-MAO-3
 Timney, C., 252-AA-20, 342-APA-56
 Titchener, N., 154-APA-26
 Tixier, E., 222-TP-15
 Toal, D., 161-MAO-9
 Tobin, E., 158-FT-4
 Tognaccini, R., 112-APA-22
 Toker, K., 213-HYTIASP-6
 Tokuno, H., 349-AA-42
 Tomac, M., 109-APA-19
 Tomioka, S., 57-FD-8, 98-HYTIASP-2
 Tomita, T., 57-FD-8
 Tong, F., 351-AA-44, 360-AA-48
 Tong, W., 199-MAO-10
 Tong, X., 52-ASE-3
 Tornalm, M., 109-APA-19
 Toropov, V., 85-MAO-5, 120-MAO-8
 Toubin, H., 271-APA-42
 Tourmadre, J., 264-AA-24
 Toussaint, S., 82-ATIO-6
 Towery, C., 281-FD-26
 Towne, A., 252-AA-20
 Tsytma, M., 84-ACD-4, 246-APA-39
 Szmuk, M., 259-FC-12
 Tabata, M., 104-AFM-7
 Taffi, D., 236-APA-35
 Taghnia, J., 326-FD-32
 Taguchi, H., 213-HYTIASP-6
 Taha, H., 243-ACD-10
 Taherani, S., 289-FD-27
 Tahir, R., 331-HYTIASP-13
 Tai, J., 316-ANERS-6
 Taira, K., 189-APA-30, 293-FD-30
 Takahashi, H., 57-FD-8
 Takahashi, S., 92-ASE-6/AFM-6/FT-2
 Takahashi, T., 10-ACD-1, 117-ACD-5, 118-ACD-6, 241-ATIO-18, 292-HYTIASP-10, 315-MAO-14, 317-APA-50, 344-ATIO-25
 Takahashi, Y., 348-APA-57
 Takayanagi, H., 142-TP-9, 183-TP-11, 190-APA-31, 265-TP-17
 Takeshima, Y., 92-ASE-6/AFM-6/FT-2
 Tadmelli, A., 189-APA-30
 Tam, C., 164-AA-10, 170-TMR-3, 206-AA-16, 354-AA-47
 Tam, W., 106-TP-8
 Tamaki, Y., 352-AA-45
 Tan, C., 284-ASE-16
 Tanaka, K., 111-APA-21
 Tanaka, M., 91-ASE-5
 Tanba, T., 99-FC-7
 Tandale, M., 242-ATIO-19
 Tang, C., 271-APA-42
 Tang, H., 8-ATIO-1
 Tang, W., 45-MAO-3
 Tang, Z., 345-ATIO-26
 Tanner, P., 153-APA-25
 Tanno, H., 142-TP-9, 296-HYTIASP-11
 Tantaroudas, N., 160-ACD-7
 Tanvir, S., 163-FD-14
 Tapken, U., 354-AA-47
 Taubert, L., 59-FC-5, 135-FC-8/APA-24
 Taylor, C., 9-ATIO-2, 42-ATIO-4, 196-ATIO-16
 Taylor, I., 213-HYTIASP-6
 Taylor, L., 80-APA-17, 222-TP-15, 326-FD-32
 Tchipev, N., 126-ASE-8/AFM-9/FT-3
 Tecson, L., 125-ASE-7
 Tekinlap, O., 21-MSF-1
 Tenaglia, A., 154-APA-26
 Terracol, M., 285-AA-28
 Testahuegn, Y., 330-APA-52
 Testa, C., 320-AA-35
 Tester, B., 123-AA-6, 254-AA-22, 288-AA-31, 349-AA-42
 Tetzloff, I., 245-ANERS-3
 Tewes, P., 135-FC-8/APA-24

Author/Session Chair Index

- Trainelli, L., 200-ANERS-1
 Trajkov, S., 114-ATIO-10, 345-ATIO-26
 Trani, A., 114-ATIO-10, 159-ATIO-14
 Trapani, G., 6-APA-3
 Trawick, D., 118-ACD-6, 277-ACD-12
 Trebs, A., 303-HYTASP-22
 Trevino, L., 141-AFM-11
 Trer, S., 205-ASE-12
 Trinh, K., 121-APA-23
 Triscione, G., 79-APA-16
 Troller, J., 84-ACD-4
 Trotini, P., 17-ASE-1, 52-ASE-3
 Tropea, C., 68-TP-6, 222-TP-15, 284-ASE-16
 Troshin, A., 270-APA-41
 Trojillo, A., 115-ATIO-11, 193-ATIO-15
 Truong, S., 315-MAO-14
 Tsai, C., 255-FD-23
 Tsakiris, D., 133-FD-13
 Isoa, J., 52-ASE-3, 91-ASE-5, 166-ASE-9, 284-ASE-16
 Isoi, A., 162-APA-29
 Tsubokuro, M., 308-APA-46, 310-APA-48
 Tu, Q., 262-HYTASP-9
 Turchi, A., 32-TP-1
 Turgut, E., 316-ANERS-6
 Turnbull, A., 240-ATIO-17
 Tyagi, G., 42-ATIO-4
 Tyl, C., 138-HYTASP-5
 Uebelacker, S., 237-APA-36
 Ucarsu, M., 316-ANERS-6
 Ueda, S., 98-HYTASP-2
 Ugolotti, M., 269-APA-40
 Uhlrig, D., 308-APA-46
 Uhlmann, F., 101-HYTASP-3
 Uijt De Haag, M., 8-ATIO-1
 Ukewley, L., 293-FD-30, 358-FD-38
 Ulbrich, N., 215-AMT-10/GT-8
 Ulrich, W., 322-AM-37
 Unrigar, E., 362-TP-24
 Underwood, M., 313-ATIO-23
 Upchurch, J., 115-ATIO-11
 Ura, H., 20-AM-1
 Urango, A., 154-APA-26, 216-AMT-11/GT-9
 Urnes, J., 121-APA-23
 Usanmaz, O., 316-ANERS-6
 Usobi, C., 339-APA-53
 Uht, L., 166-ASE-9
 Uzol, O., 39-APA-9/FC-4
 Vaddi, S., 314-ATIO-24
 Vaddi, V., 242-ATIO-19
 Valavanis, K., 87-APA-18
 Valeau, V., 254-AA-22
 Valenzuela-del Rio, J., 10-ACD-1
 Van Aken, J., 27-AMT-1/GT-1
 Van Antwerpen, B., 89-AA-2
 Van Bavel, L., 16-AFM-2
 Van de Ven, T., 128-AA-9
 Van den Eynde, J., 132-FD-12
 Van Duijn, A., 185-TP-13, 222-TP-15
 Van Norman, J., 271-APA-42
 van Oudheusden, B., 154-APA-26, 357-FD-37
 Van Schoor, M., 281-FD-26
 Van Zante, D., 203-APA-15
 Van Zante, P., 250-ASE-14/GT-10
 Vandenberg, R., 126-ASE-8/AFM-9/FT-3
 Vandenberg, R., 126-ASE-8/AFM-9/FT-3
 Vanyai, T., 213-HYTASP-6
 Vargas, A., 194-BA-1
 Vargas, M., 91-ASE-5, 125-ASE-7, 284-ASE-16
 Vassberg, J., 257-FD-25
 Vathylakis, A., 349-AA-42
 Vatsa, V., 39-APA-9/FC-4
 Vechtel, D., 92-ASE-6/AFM-6/FT-2
 Veeravagan, A., 65-PDL-4, 134-HYTASP-4, 262-HYTASP-9
 Velandita, J., 111-APA-21
 Velthuis, L., 87-APA-18
 Vellaramkaivij, J., 292-HYTASP-10, 328-HYTASP-12
 Vellora, R., 205-ASE-12
 Venkatapathy, E., 104-AFM-7
 Venkataraman, K., 91-ASE-5
 Venuti, J., 275-ATIO-22
 Verbeke, J., 16-AFM-2
 Veres, J., 250-ASE-14/GT-10
 Veigine, F., 217-HYTASP-7, 328-HYTASP-12
 Vermeeland, R., 190-APA-31, 317-APA-50
 Vermillion, C., 195-ITA-1
 Verrier, J., 167-ASE-10/FT-5
 Verstraete, D., 84-ACD-4
 Verstraete, T., 165-AA-11
 Vicroy, D., 4-APA-1, 51-AFM-5, 77-APA-14, 109-APA-19, 154-APA-26
 Vidali, V., 123-AA-6
 Viguer, P., 58-HYTASP-1
 Vilarago, S., 8-ATIO-1, 314-ATIO-24
 Villedieu, P., 17-ASE-1, 52-ASE-3, 125-ASE-7
 Vincent, P., 256-FD-24
 Vincent-Randomnier, A., 258-HYTASP-8
 Vinokur, M., 325-FD-31
 Visbal, M., 13-APA-5/FC-1, 14-FD-1, 26-APA-6, 31-FC3/PDL-3, 56-FD-7, 88-FD-9, 97-PDL-7, 180-FC10/PDL-11, 352-AA-45
 Vitagliano, P., 321-AA-36
 Vitale, A., 238-APA-37
 Vizilanos, N., 87-APA-18
 Viviani, A., 262-HYTASP-9
 Vlasenko, V., 270-APA-41
 Von Hugel, K., 315-MAO-14
 von Wolfersdorf, J., 262-HYTASP-9, 292-HYTASP-10, 328-HYTASP-12
 Vorobiev, A., 27-AMT-1/GT-1, 97-PDL-7
 Voutsinos, S., 239-APA-38
 Vu, B., 289-FD-27
 Vucinic, D., 13-APA-5/FC-1, 194-BA-1
 Vuillot, F., 207-AA-17, 286-AA-29
 Vyas, V., 48-FD-5
 Wadealk, N., 337-TP-23
 Wadel, M., 225-ASE-13
 Wadhams, T., 215-AMT-10/GT-8, 327-FD-33, 359-FD-39
 Waggoner, E., 78-APA-15
 Wagner, A., 296-HYTASP-11
 Wagner, J., 48-FD-5, 177-AMT-9/GT-7, 280-APA-44, 293-FD-30
 Waithie, K., 5-APA-2
 Waldron, T., 41-ATIO-3
 Walker, B., 94-AA-5
 Walker, C., 125-ASE-7
 Walker, E., 38-APA-8
 Walker, G., 68-TP-6
 Wall, A., 288-AA-31
 Wallin, S., 131-PDL-9
 Wan, H., 143-TP-10
 Wan, Y., 9-ATIO-2
 Wang, B., 175-FC-9
 Wang, C., 7-APA-4, 65-PDL-4, 329-FD-34
 Wang, D., 223-TP-16
 Wang, G., 60-ATIO-8, 282-AA-26, 340-APA-54
 Wang, J., 56-FD-7, 133-FD-13, 210-FD-19
 Wang, L., 180-FC10/PDL-11, 190-APA-31, 237-APA-36, 272-APA-43, 326-FD-32
 Wang, M., 124-AA-7
 Wang, S., 7-APA-4
 Wang, T., 135-FC8/APA-24
 Wang, W., 133-FD-13, 135-FC8/APA-24
 Wang, X., 48-FD-5, 264-AA-24
 Wang, Y., 9-ATIO-2, 26-APA-6, 87-APA-18, 134-HYTASP-4, 271-APA-42
 Wang, Z., 86-MAO-6, 272-APA-43
 Wanke, C., 9-ATIO-2, 42-ATIO-4, 196-ATIO-16
 Ward, C., 173-FD-17
 Washbaugh, K., 317-APA-50
 Wassmer, D., 319-AA-34
 Watanahe, M., 190-APA-31
 Williams, C., 11-MAO-1
 Williams, D., 259-FC-12, 355-FD-35
 Williams, J., 53-ASE-4/FFI
 Williams, R., 193-ATIO-15
 Williams, W., 131-PDL-9
 Wilson, A., 200-ANERS-1, 322-AA-37
 Wilson, J., 299-TP-19
 Wilson, S., 8-ATIO-1
 Wilson Chan, Y., 258-HYTASP-8
 Winer, E., 86-MAO-6, 119-MAO-7, 199-MAO-10
 Wing, D., 42-ATIO-4
 Winkelman, B., 136-AMT-5/GT-4
 Winkler, J., 295-AA-32
 Winski, C., 38-APA-8
 Winter, M., 131-PDL-9, 217-HYTASP-7
 Wisda, D., 165-AA-11, 203-AA-15
 Wise, D., 258-HYTASP-8
 Witteof, Z., 84-ACD-4
 Witherden, E., 256-FD-24
 Wittich, D., 97-PDL-7, 131-PDL-9
 Wlascow, F., 165-AA-11, 267-AA-25
 Wojno, J., 203-AA-15, 249-AA-19
 Wokoock, R., 246-APA-39
 Wolf, A., 352-AA-45
 Wolf, W., 124-AA-7, 270-APA-41, 319-AA-34
 Wolfe, D., 177-AMT-9/GT-7
 Wolff, C., 18-ASE-2
 Wolkoy, A., 270-APA-41
 Wollenheit, R., 245-ANERS-3
 Wolpert, D., 42-ATIO-4
 Wong, C., 180-FC10/PDL-11
 Wong, J., 162-APA-29, 192-APA-33
 Wong, O., 153-APA-25
 Woo, G., 99-FC-7
 Woodard, B., 166-ASE-9
 Woodruff, M., 199-MAO-10
 Woopen, M., 212-FD-21
 Woszdlo, R., 25-FC-2
 Wray, T., 55-FD-6
 Wright, W., 52-ASE-3, 125-ASE-7
 Wu, D., 86-MAO-6, 134-HYTASP-4
 Wu, J., 60-ATIO-8, 86-MAO-6, 173-FD-17
 Wu, L., 350-AA-43
 Wu, S., 64-PDL-5, 134-HYTASP-4
 Wu, W., 65-PDL-4
 Wu, X., 247-FD-22, 348-APA-57, 358-FD-38
 Wu, Y., 31-FC3/PDL-3
 Wu, Z., 180-FC10/PDL-11
 Wuerz, W., 247-FD-22
 Wuilberq, R., 98-HYTASP-2
 Wukie, N., 249-AA-19
 Wygnanski, I., 59-FC-5, 135-FC8/APA-24

Author/Session Chair Index

- Wysocki, O., 294-APA-45
Xia, Y., 291-FD-29, 329-FD-34
Xiang, L., 134-HYTASP-4, 292-HYTASP-10
Xiang, X., 260-AMF-12/GF11
Xiang Geqiang, W., 134-HYTASP-4, 292-HYTASP-10
Xiao, X., 55-FD-6
Xiao, Z., 132-FD-12
Xiaosong, G., 86-MAO-6
Xie, D., 42-ATIO-4
Xie, J., 9-ATIO-2
Xin, M., 104-AFM-7, 141-AFM-11
Xing, J., 88-FD-9
Xiong, J., 168-AA-12
Xisto, C., 122-FD-11
Xu, G., 172-FD-16
Xu, J., 361-AA-49
Xu, K., 351-AA-44, 360-AA-48
Xu, L., 329-FD-34
Xu, M., 13-APA-5/FC1
Xu, T., 219-PDL-12
Xu, Y., 360-AA-48
Xue, M., 8-ATIO-1
Xueying, D., 87-APA-18
Yu Jun, W., 134-HYTASP-4
Yadav, P., 343-ACD-13
Yadav, R., 343-ACD-13
Yakeno, A., 180-FC10/PDL-11, 189-APA-30
Yalin, A., 19-PDL-1, 100-AMF-4/GF3
Yamada, K., 103-PDL-8, 183-TP-11, 265-TP-17, 348-APA-57
Yamada, Y., 141-AFM-11, 260-AMF-12/GF11
Yamagishi, Y., 17-ASE-1
Yamamoto, F., 177-AMF-9/GF7
Yamamoto, H., 322-AA-37
Yamamoto, K., 20-AA-1, 111-APA-21, 168-AA-12
Yamashita, R., 78-APA-15
Yamouchi, Y., 328-HYTASP-12
Yan, S., 284-ASE-16
Yang, B., 95-MST-3
Yang, H., 212-FD-21, 283-AA-27
Yang, J., 198-ACD-9
Yang, K., 167-ASE-10/FT-5
Yang, V., 65-PDL-4, 255-FD-23
Yang, X., 137-AMF-6/GF5
Yang, Y., 87-APA-18
Yang, Z., 47-APA-11, 79-APA-16, 266-TP-18
Yao, C., 122-FD-11, 128-AA-9
Yao, W., 88-FD-9, 346-MAO-15
Yanpalparvi, R., 99-FC7
Yarusevich, S., 7-APA-4, 133-FD-13
Yashin, Y., 160-ACD7
Yay, O., 316-ANERS-6
Ye, Z., 340-APA-54
Yee, P., 222-TP-15
Yeong, Y., 17-ASE-1
Yeste, O., 242-ATIO-19
Yi, S., 223-TP-16
Yildizlar, B., 318-APA-51
Yilmaz, E., 187-AFM-13, 316-ANERS-6
Yoda, M., 222-TP-15
Yokoyama, H., 322-AA-37
You, Y., 331-HYTASP-13
Young, A., 205-ASE-12
Young, J., 7-APA-4, 339-APA-53
Young, M., 37-APA-7, 77-APA-14
Young, S., 53-ASE-4/FT-1, 205-ASE-12
Young, T., 158-F4, 197-ACD-8
Yu, C., 283-AA-27
Yu, H., 246-APA-39
Yu, J., 260-AMF-12/GF11
Yu, M., 210-FD-19, 272-APA-43
Yu, W., 176-AMF-8/GF-6, 254-AA-22, 319-AA-34
Yu, Y., 308-APA-46
Yuan, M., 260-AMF-12/GF11
Yuen, W., 106-TP-8
Yumusak, M., 318-APA-51, 330-APA-52
Zaal, P., 54-MST-2
Zähringer, K., 65-PDL-4
Zaichik, L., 160-ACD-7
Zaidi, T., 44-ACD-3
Zakaria, M., 243-ACD-10
Zaki, T., 56-FD-7
Zalewski, N., 59-FC-5
Zaman, K., 136-AMF-5/GF4, 323-AA-38
Zaman, R., 7-APA-4
Zambano, J., 242-ATIO-19
Zander, F., 66-TP-4, 140-AMF-7/PDL-10
Zang, W., 64-PDL-5
Zare-Behrosh, H., 219-PDL-12, 269-APA-40
Zaytsev, M., 20-AA-1, 286-AA-29, 287-AA-30
Zeinski, S., 8-ATIO-1, 314-ATIO-24
Zerobin, S., 360-AA-48
Zha, G., 26-APA-6, 189-APA-30, 330-APA-52
Zhang, B., 99-FC7
Zhang, F., 127-AA-8
Zhang, G., 122-FD-11
Zhang, K., 91-ASE-5, 133-FD-13, 237-APA-36
Zhang, L., 65-PDL-4, 237-APA-36, 345-ATIO-26
Zhang, M., 6-APA-3, 286-AA-29
Zhang, Q., 361-AA-49
Zhang, R., 206-AA-16
Zhang, S., 99-FC7
Zhang, X., 89-AA-2, 90-AA-3, 249-AA-19, 259-FC-12, 352-AA-45
Zhang, Y., 155-APA-27
Zhang, Z., 34-TP-3, 100-AMF-4/GF-3, 269-APA-40, 300-TP-20
Zhao, B., 300-TP-20
Zhao, D., 264-AA-24, 320-AA-35, 354-AA-47
Zhao, J., 34-TP-3
Zhao, S., 134-HYTASP-4
Zhao, W., 325-FD-31, 335-TP-21
Zhao, X., 10-ACD-1, 47-APA-11, 221-TP-14
Zhao, Y., 175-FC-9
Zhengze, Z., 292-HYTASP-10
Zhong, S., 176-AMF-8/GF-6, 334-AA-40
Zhou, B., 283-AA-27
Zhou, L., 264-AA-24
Zhou, N., 155-APA-27
Zhou, Y., 7-APA-4, 9-ATIO-2, 120-MAO-8, 180-FC-10/PDL-11
Zhu, C., 40-APA-10
Zhu, T., 325-FD-31
Zhu, W., 262-HYTASP-9
Zhuang, F., 281-FD-26
Zilberter, I., 19-PDL-1
Zimpe, D., 4-APA-1, 77-APA-14
Zingg, D., 45-MAO-3
Ziskind, G., 33-TP-2, 68-TP-6, 223-TP-16, 336-TP-22, 362-TP-24

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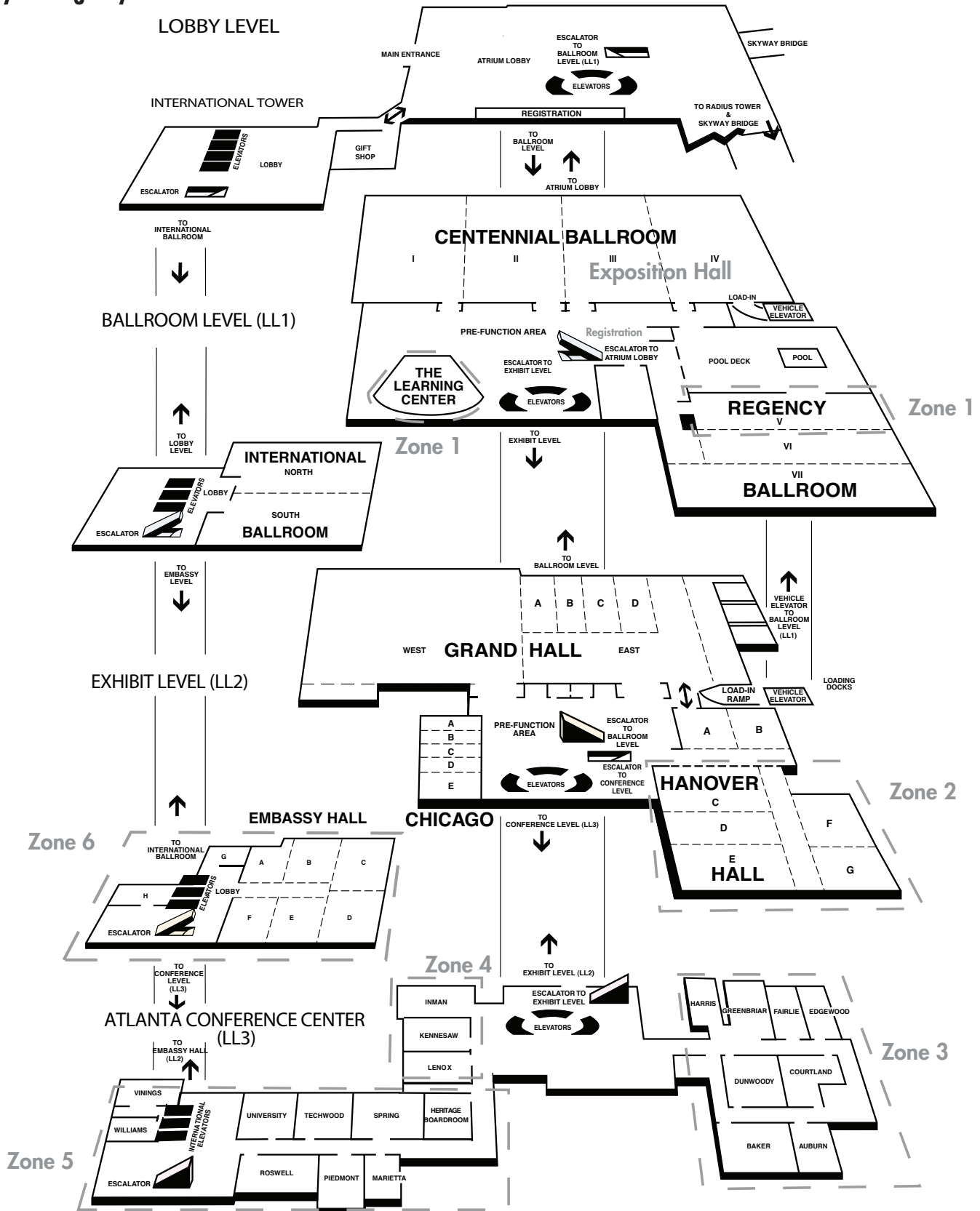
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- AIAA Complex Aerospace Systems Exchange (CASE)
- 22nd AIAA Computational Fluid Dynamics Conference
- AIAA Flight Testing Conference
- 45th AIAA Fluid Dynamics Conference
- 22nd AIAA Lighter-Than-Air Systems Technology Conference
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