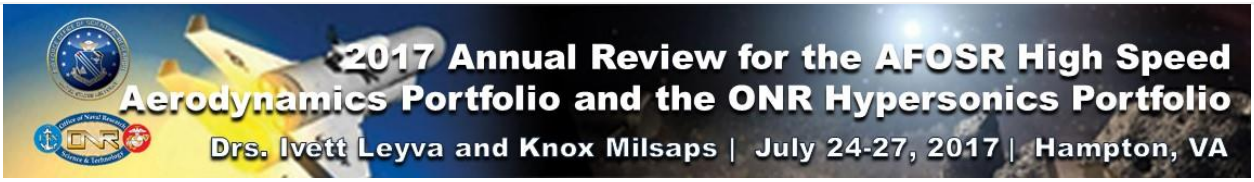

NASA Langley Research Center
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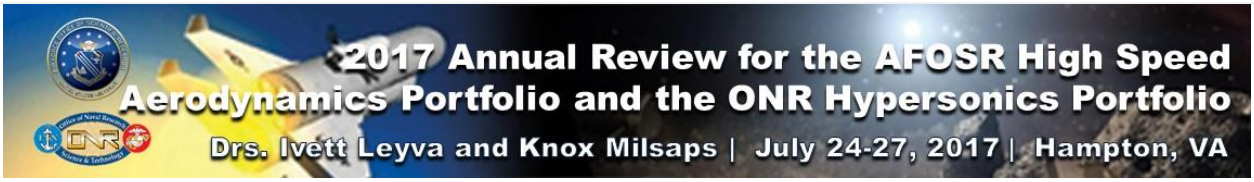
Agenda Day 1 | Mon., 24 July 2017

Time	Thrust Area	Title	PI
06:30-09:20		**Registration**	
09:20-09:40		**Welcome and Opening Remarks**	Ivett Leyva, AFOSR
09:40-10:30	SBLI - 3D	3-D Shock/Turbulent BL Interaction Physics: Flow Morphology and System Dynamics through Imposed Disturbances	F. Alvi, FSU D. Gaitonde, OSU N. Clemens, U of TX R. Kumar, FSU B. Thurow, Auburn
10:30-11:05	SBLI - 3D	Investigation of 3D Shock-Boundary Layer Interaction: A Combined Approach using Experiments, Numerical Simulations and Stability Analysis	J. Little, U of AZ, H. Fasel, U of AZ A. Gross, NMSU
11:05-11:20	**BREAK**		
11:20-11:55	SBLI -2D	Flow Instability Analyses of Shock-Induced Separation Bubbles	P. Martin, U of MD V. Theofilis, U of Liverpool
11:55-13:10	**LUNCH**		
13:10-13:30	SBLI	The Effects of Strong Wall Cooling on Supersonic and Hypersonic Shock/boundary-Layer Interactions	J. Larsson, U of MD
13:30-13:50	SBLI	Inlet Isolator and Combustor Physics at Take-Over Region of Scramjet Engines	T. Lee, UIUC, V. Narayanaswamy, NCSU
13:50-14:10	SBLI	(YIP) Investigation of Shock Boundary Layer Interactions to Unravel the Physics of Unstart in Axisymmetric Inlets	V. Narayanaswamy, NSCU
14:10-14:35	SBLI	Experimental Hypersonic SWBLI and Passive Hypersonic Transition Control	A. Wagner, DLR Goettingen
14:35-14:50	**BREAK**		
14:50-15:10	Elliptic Cone Studies (ECS)	Measurement of Hypersonic Glide Vehicle Flow Fields	R. Kimmel, AFRL/RQ

15:10-15:30	ECS	Global Transient Growth Mechanisms in High-Speed Flows with Application to the Elliptic Cone	T. Vassilis, U of Liverpool
15:30-16:05	ECS	Cross-flow Instability Receptivity to Environmental Disturbances at Hypersonic Speeds	R. Bowersox, TAMU H. Reed, TAMU
16:05-16:20	**BREAK**		
16:20-16:40	*Transition*	ONR - A Systematic Characterization of the Structure and Dynamics of Transitional Shock/boundary Layer Interactions	*J. Schmisseur (ONR), U of TN*
16:40-17:00	*Transition*	ONR - Analysis and Simulations of the Structure and Dynamics of Transitional Shock/boundary Layer Interactions	*G. Candler (ONR), U of MN*
		MEETING ADJOURN	



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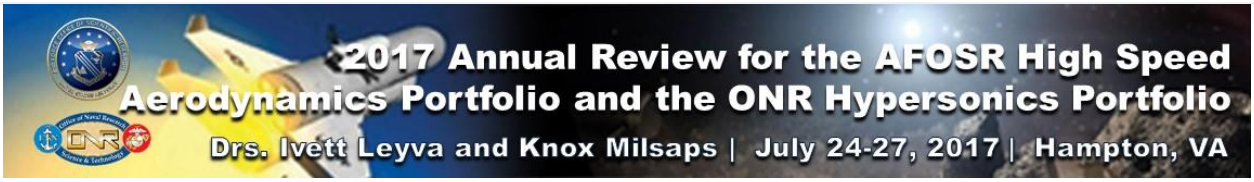
Agenda Day 2 | Tue., 25 July 2017

Time	Thrust Area	Title	PI
07:30-8:00		**BADGING & COFFEE**	
08:00-8:10		**Opening Remarks**	Knox Millsaps, ONR
08:10-8:30	Transition	Passive and Active Patterned Roughness for Cross-flow Transition Control at Mach 6	T. Corke, U of ND T. McLaughlin, USAFA
08:30-8:50	Transition	Laminar-to-turbulence Transition in Hypersonic B/L: Mode Interactions and Sensitivities to Mean-flow	T. Zaki, JHU
08:50-9:10	Transition	Non-linear Growth and Breakdown toward Turbulence in Hypersonic Boundary Layers	S. Girimaji, TAMU
09:10-9:25	**BREAK**		
09:25-9:45	Transition	(YIP) Numerical Simulation of Free-stream Acoustic Disturbances in Hypersonic Ground Facilities & Their Effect on BLT	L. Duan, MUS&T (Rolla)
09:45-10:05	Transition	Hypersonic Transition Experiments in Ludweig Tubes	Rolf Radespiel, TU of Braunschweig
10:05-10:25	Transition	(HBCU) The Effect of Multi-mode Induced Transition in a Hypersonic Boundary Layers	S. Smith, Howard U
10:25-10:45	Transition	Measurements of BL Instability and Transition in the M-6 Quiet Tunnel	S. Schneider, Purdue U
10:45-12:00	**LUNCH**		
12:00-12:20	Transition	Direct Numerical Simulation of Hypersonic Transition Delay over Carbon/Carbon Ultrasonically Absorptive Coatings	C. Scalo, Purdue U
12:20-12:40	Transition	Nonlinear Transition Stages in Hypersonic Boundary Layers: Fundamental Physics, Transition Control and Receptivity	H. Fasel, U of AZ
12:40-13:00	Transition	A DNS Study on Hypersonic BL Receptivity	X. Zhong, UCLA
13:00-13:20	Transition	Plasma-Actuated Flow Control of Hypersonic Crossflow-Induced B/L Transition in a Quiet Tunnel	T. Juliano, U of ND

13:20-13:35	**BREAK**		
13:35-13:55	Transition	Klebanoff Modes in Hiemenz Boundary Layer	P. Ricco, The U of Sheffeld, UK
13:55-14:15	*Transition*	*ONR - Towards a Mechanism-based Procedure for Predicting B/L Transition on Sender Models with Highly Swept Fins*	*S. Schneider, Purdue U*
14:15-14:35	*Transition*	*ONR - Hypersonic Stability Predictions*	*H. Reed, TAMU*
14:35-14:50	**BREAK**		
14:50-15:05	*Transition*	*ONR - Predicting Hypersonic Laminar-Turbulent Transition with Direct Numerical Simulation*	*J. Poggie (new start), Purdue U*
15:05-15:20	*Transition*	*ONR - Numerical Investigations of the Nonlinear Transition Stages in Hypersonic Boundary Layers for Navy Relevant Mach Numbers and Model Geometries/ Nonlinear Interaction Between First and Mack-mode Instabilities in High-Supersonic Flows*	*H. Fasel ,A. Caig (new start), U of AZ.*
15:20-15:35	*Transition*	*ONR - Nonlinear Optimization in High-speed B/L: The most Unstable Nonlinear Disturbances & Robust Flow Design*	*T. Zaki (new start), JHU*
15:35-15:50	*Transition*	*ONR - Adjoint methods for understanding distributed induced transition in hypersonic B/L*	*J. Nichols (new start/YIP), U of MN*
15:50-16:05	*Transition*	*ONR - Understanding hypersonic transition mechanisms through interactions between hydrodynamic, acoustic and thermal modes*	*D. Gaitonde (new start), OSU*
16:05-16:20	Transition	(YIP) The Influence of Multiple Interacting Primary Modes and Mode Representation on Hypersonic Boundary-layer Stability and Transition Prediction	J. Kuehl, Baylor U
16:20-16:40	TM	(YIP) Theoretical and Experimental Characterization of Turbulent Heat Transfer in Compressible Flows	M. Hultmark, Princeton U
		MEETING ADJOURN	



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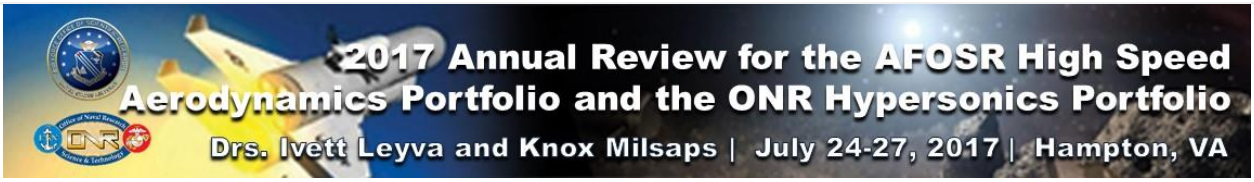
Agenda Day 3 | Wed., 26 July 2017

Time	Thrust Area	Title	PI
07:30-08:00		**BADGING & COFFEE**	
08:00-08:25	**Invited Speaker**	A Perspective on Computational Aerothermodynamics at NASA	P. Gnoffo, NASA Langley
08:25-08:55	FSI	Characterization and Control of a Flap Undergoing Hypersonic FSI	A. Neely, UNSW, Australia
08:55-09:30	FSI	Developing an Experimental/Computational Methodology to Investigate the Response of Flexible Panels to Shockwave	S. Laurence, U of MD, D. Bodony, UIUC
09:30-09:50	FSI	Reduced Order Modeling for Hypersonic Aeroelasticity	P. Tiso, ETH, Switzerland
09:50-10:10	FSI	Direct Numerical Simulation of Compressible Turbulent Flows with Compliant Boundaries	D. Bodony, UIUC
10:10-10:25	**BREAK**		
10:25-10:45	*DFI*	ONR - Advancing Transition Experiments in High Enthalpy Flows	J. Austin, Caltech
10:45-11:05	DFI	Investigating Sensor Characteristics for Scramjet Engine Control	K. Busa, J. Donbar, AFRL/RQ
11:05-11:25	DFI	(STTR) Shear Sensors for High Speed, High Temperature Flow Applications	N. Hall, Silicon Audio
11:25-12:55	**LUNCH/TOUR**		
12:55-13:15	DFI	(YIP) Instantaneous Velocity Profiles of Wall-Bounded Shear Flows in Thermochemical Non-Equilibrium	N. Parziale, Stevens I Tech
13:15-13:35	*DFI*	ONR - Hypervelocity Expansion Facility for Fundamental High-enthalpy Research	R. Bowersox, TAMU
13:35-13:55	*DFI*	ONR - Laminar Flow Control in Hypersonic Quiet Nozzle using Wall Suction: Feasibility Studies	S. Schneider, Purdue U
13:55-14:15	DFI	Femtosecond Laser Electronic Excitation Tagging (FLEET) for Quantitive Measurements in Turbulent Flows	R. Miles, TAMU, Princeton

14:15-14:30	**BREAK**		
14:30-14:50	NEE	Non-equilibrium and Basic Energy Exchange Mechanisms in High Energy Flows	E. Josyula, AFRL/RQ
14:50-15:25	NEE	Multi-Step Computational Modeling and Shock-Tube Study of Energy Transfer Processes in High-Enthalpy Air	I. Boyd, U of MI R. Hanson, Stanford
15:25-15:45	NEE	Mechanisms of Energy Transport in Gaseous Media	G. Candler, U of MN
15:45-16:05	NEE	Rapidly Expanding Non Equilibrium Hypersonic Flow	R. Morgan, A. Veeraragavan, U of Queensland, Australia
16:05-16:25	NEE	Nonequilibrium Kinetics in High-Enthalpy Air	T. Schwartzentruber, G. Candler, D. Truhlar, U of MN
16:25-16:45	NEE	Small-Molecule Reactions Relevant to the Hypersonic Flight Regime	Markus Meuwly, U of Basel
		MEETING ADJOURN	



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Agenda Day 4 | Thur., 27 July 2017

Time	Thrust Area	Title	PI
07:30-08:00		**BADGING & COFFEE**	
08:00-08:25	**Invited Speaker**	Flight Experiment Verification of Shuttle Boundary Layer Transition Prediction Tool	S. Berry, NASA Langley
08:25-08:40	*NEE*	ONR -Real Gas Effects on Sound Radiation by Unstable Modes in Hypersonic B/L	A. Tumin, (new start), U of AZ
08:40-09:00	*NEE*	(YIP) Reduced-order Modeling Approach to Enable Kinetic Simulations of Non-equilibrium Hypersonic Flows	M. Panesi, UIUC
09:00-09:35	NEE	Non-equilibrium Shock-shock and SBLI	J. Austin, Caltech D. Levin, UIUC
09:35-09:55	NEE	Validation of Models via Comparison with Data for Non-eq Hypersonic Flows	I. Wysong, AFRL/RQ
09:55-10:10	**BREAK**		
10:10-10:25	*TM*	ONR - Aero-Thermo-Servo-Elastic analysis and optimization for high speed vehicles	D. Mavriplis (new start), U of Wyoming
10:25-10:45	TM	The Role of Kinetic Fluctuations in Laminar-Turbulent Transition of High-Speed Boundary-Layer Flows	A. Tumin, U of AZ
10:45-11:05	TM	Resolvent analysis for compressible wall turbulence	B. McKeon, Caltech
11:05-11:25	TM	Physics Based Modeling of Compressible Turbulence	P. Moin, Stanford U
11:25-12:55	**LUNCH**		
12:55-13:20	TM	Effects of wall curvature on hypersonic turbulent spatially-developing boundary layers	G. Araya, U of PR, K. Jansen, U of Co
13:20-13:35	*TM*	ONR - Global stability and sensitivity analysis of a hypersonic slender cone	P. Moin (new start), Stanford U
13:35-13:50	TM	(YIP) A Multiscale Morphing Continuum Analysis on Energy Cascade of Compressible Turbulence	J Chen, Kansas State University

13:50-14:05	**BREAK**		
14:04-14:20	Ablation	(YIP) Fundamental Energy Transfer Mechanisms in High Temperature Phonon-Mediated Gas-Surface Interactions	K. Stephani
14:20-14:35	Ablation	Nonequilibrium Gas-Surface Interactions at High Temperature	T. Schwartentruber, G. Candler, U of MN T. Minton, MSU E. Corral, U of AZ J. Perepezko, U of WI Madison
14:35-15:15	Other	(MURI) Integrated Measurement and Modeling Characterization of Stratospheric Turbulence	B. Argrow, U of CO, D. Fritts, Embry-Riddel Aero U, G. Candler, U of MN, D. Lawrence, U of CO, A. Muschinski, U of CO, A. Barjatva, Embry-Riddel Aero U
15:15-15:35	SBLI	Characterization of Secondary Flows in Turbulent Supersonic and Hypersonic Corners	J. Hofferth, N. Bisek, B. Rice, S. Peltier, B. Kocher, AFRL/RQ
15:35-16:15	Other		BOLT
		MEETING ADJOURN	