

Flow Interactions and Control Program Review

Dr. Doug Smith | 17-19 August 2010 | Destin, FL

AGENDA Day 1 - Tuesday, August 17, 2010

Time	Title of Project	Speaker
7:30-8:00	Registration/Breakfast	
8:00-8:20	Welcome Remarks	Douglas Smith AFOSR/RSA
SESSION I: Flow Physics & Control		
8:20-8:50	Control of Boundary Layer Separation for Lifting Surfaces: Investigations using Numerical Simulations, Theory, Wind/Water Tunnel and Free-Flight Experiments	Hermann Fasel University of Arizona
8:50-9:20	An Integrated Study of Separation Control – Flow Physics, Nonlinear Dynamics and Effective Control Strategies	Lou Cattafesta University of Florida
9:20-9:50	Understanding the Flow Physics of Energy Extraction from Gusting Flows to Enhance Micro Air Vehicle Performance	Dave Williams IIT
9:50-10:10	BREAK	
10:10-10:30	Aero-Effected Flight Control using Distributed Active Bleed	Ari Glezer Georgia Institute of Technology
10:30-10:50	Fundamental Experimental and Numerical Investigation of Active Control of 3-D Flows	Miki Amitay RPI
10:50-11:10	Development and Implementation of High-Bandwidth Pulsed Microactuators for Sub- and Supersonic Applications	Farrukh Alvi Florida State University
11:10-11:30	Development And Application of a High-Speed Three-Dimensional Density Measurement Techniques for Aero-Optic Applications (YIP08)	Brian Thurow Auburn University
11:30-1:00	LUNCH	
1:00-1:20	On Controlling the Flow in a Mixing Layer or Wake Created Downstream of a "Λ" Notch Simulating the Flow	Israel Wygnanski University of Arizona
1:20-1:40	Loss Mechanisms in Three Dimensional Boundary Layer Separation	Scott Morris Notre Dame University
1:40-2:00	Unsteady Interaction and Heat Transfer in Highly Loaded High Pressure Turbines	John Clark AFRL/RZTT
2:00-2:20	Modeling Complex Dynamics Interactions of Nonlinear Aeroelastic Multistage and Localization Phenomena in Turbine Engines	Bogdan Epureanu University of Michigan
2:20-2:40	BREAK	
2:40-3:00	Flow Control for Flight Control	Jurgen Seidel USAFA
3:00-3:20	Pulsed Plasma Arrays for Turbulence Control	Haris Catrakis University of California - Irvine
3:20-3:40	Multidimensional Forcing Strategies for Wake Control	Jim Gregory Ohio State University
3:40-4:10	Computational Fluid Mechanics & Plasma FC	Miguel Visbal AFRL/RBAC

4:10-5:30	POSTER SESSION
5:30	MEETING ADJOURNED FOR THE DAY



POSTER SESSION

Tuesday, August 17, 2010
4:10-5:30

	Title of Poster	Presenter
1	The Physics Of Boundary-Layer Aero-Optic Effects	Stanislav Gordeyev Notre Dame University
2	On The Flow Physics Of Effectively Controlled Open Cavity Flows	Larry Ukeiley University of Florida – REEF
3	Development And Application Of Energetic Actuators For Shear And Vortex Dominated Flow Control	Farrukh Alvi , Florida State University Bo Cybyk , JHU/APL
4	Real Gas Characterization Of Plasma Flow Control-An Integrated Approach	Subrata Roy University of Florida
5	Transition Control With Dielectric Barrier Discharge Plasmas	Cam Tropea TU – Darmstadt
6	Development Of A Compact And Easy-To-Use 3-D Camera For High-Speed Turbulent Flow Fields	Brian Thurow Auburn University
7	Low Pressure Turbine Flow Control	Rolf Sondergaard AFRL/RZTT
8	Multidisciplinary Investigations Of Unsteady Aerodynamics And Flight Dynamics In Rapidly Maneuvering Micro Air Vehicles	Sergey Shkarayev University of Arizona
9	Active Control Of Unsteady Gasdynamics For Shock Compression And Turbulence Generation	Adonios Karpetsis Texas A&M

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AGENDA Day 2 - Wednesday, August 18, 2010

Time	Title of Project	Speaker
7:00-7:30	Registration/Breakfast	
7:30-9:45	Emerging Innovators Workshop , By invitation only.	
SESSION II: Flow Interactions		
10:00-10:20	An Integrated Study of Flight Stabilization with Flapping Wings in Canonical Urban Flows	Rajat Mittal Johns Hopkins University
10:20-10:40	MAV Unsteady Aerodynamics	Comrade Michael OI AFRL/RBAA
10:40-11:00	Unsteady Lift Generation for MAVs	Holger Babinsky Cambridge University
11:00-11:20	Flapping-Wing Propulsion Characterized using Optimal Vortex Formation (YIP10)	Matt Ringuette SUNY – Buffalo
11:20-11:40	Unsteady Flow Structure on Low Aspect Ratio Wings	Don Rockwell Lehigh University
11:40-1:00	LUNCH	
1:00-1:20	Theoretical, Computational, and Experimental Studies of the Aerodynamics of Perching Flight	Ashok Gopalarathnam North Carolina State University.
1:20-1:40	Experimental and Computation Analysis Of Intermittent Flapping Flight	Scott Thomson Brigham Young University
1:40-2:00	A Comprehensive Study of Aeroelasticity in Flapping-Wing Mavs (YIP09)	Rob Wood Harvard University
2:00-2:20	Characterization of the Time-Dependent Fluid-Structure Interaction and Passive Flow Control of Low Reynolds Number Membrane Wings	Paul Hubner University of Alabama
2:20-2:40	BREAK	
2:40-3:00	Unsteady Aerodynamics of Flapping Wings with/without a Flexible Trailing Edge using High Resolution MTV Measurements	Manooch Koochesfahani Michigan State University
3:00-3:20	High Fidelity Simulation of Highly Flexible Membrane Wings for Small/Mini/Micro Air Vehicles	Ray Gordnier AFRL/RBAC
3:20-3:40	Control of Low Reynolds Number Flows with Fluid-Structure Interactions	Ismet Gursul University of Bath
3:40-4:00	Physics-Based Design of Micro Air Vehicles	Rich Snyder AFRL/RBSD
4:00-5:00	Business Meeting & Closing Remarks	Douglas Smith AFOSR/RSA
5:00	MEETING ADJOURNED	