



The 34th Midwestern Universities Fluid Mechanics Retreat
MUFMECH'07

March 29–31, 2007
Geneva Center, Rochester, Indiana

P R O G R A M

----- March 30, 2007 -----

7:30–8:10 Breakfast

Session I (Friday Morning, March 30, 2007)

Chairperson: M. Koochesfahani, KOTGOF: T. Corke

Time	Speaker	School	Title
8:10	G. Raman	IIT	Opening Remarks, “The Frog Meeting Rules”
8:20	S. Morris J. Cameron	ND	Fluid Mechanics of Compressor Stall
8:40	D. Qi	WMU	Multi-fiber Interaction in Sediment Flows
9:00	C. Troy	PU	Experiments on Breaking Internal Waves
9:20	N. Mullenix A. Povitsky	UA	Modeling of Ablation of Thermal Protecting Shield and Laser Ablation
9:40	M. Koochesfahani	MSU	QD-101; Introduction to Quantum Dot Imaging for Fluid Flow Studies

10:00–10:20 Coffee Break

Session II (Friday Morning, March 30, 2007)

Chairperson: J. Foss, KOTGOF: Y. Guezennec

Time	Speaker	School	Title
10:20	D. Rempfer	IIT	Boundary Conditions for Incompressible Stokes and Navier-Stokes Problems — the Struggle Continues...
10:40	I. Zinovik A. Povitsky	UA	Modeling of Laser Ablation of Cornea
11:00	C. Park	PU	Determination of the Viscoelastic Properties of Human Red Blood Cell
11:20	O. Shklyaev E. Fried	WUSTL	Stability of Evaporating Thin Liquid Film
11:40	A. Kumar S. Wereley A. Yip	PU	Exploring Diffusive Behavior in a Landscape of Holographic Optical Traps
12:00	C. Aphale W. Schultz A. Cotel	UM	Modeling of Swirling Axisymmetric Heated Jets

12:20–1:30 Lunch

Session III (Friday Afternoon, March 30, 2007)

Chairperson: A. Povitsky, KOTGOF: D. Williams

Time	Speaker	School	Title
1:30	P. Slaboch S. Morris	ND	Resonator-flow Interaction
1:50	M. Vasudevan A. Shen B. Khomami R. Sureshkumar	WUSTL	Effect of Counter-ion Concentration on the Rheology of Shear-thickening Surfactant Solutions
2:10	T. Liu	WMU	Toward a General Method for Determining Velocity and Skin Friction Fields from Images Based on Projected Motion Equations

2:30	S. Zhao A. Povitsky	UA	Boundary Singularity Method with Partial Slip Boundary Conditions for Micro- and Nano-fluids
2:50	J. Foss A. Lawrenz	MSU	Eductor Studies — OFD

3:10–5:30 R&R, Group Photograph, Ping-Pong Open

5:30–6:30 Dinner

Session IV (Friday Evening, March 30, 2007)

Chairperson: D. Rempfer, KOTGOF: C. Petty

Time	Speaker	School	Title
6:30	J. Collins C. Lybolt D. Williams	IIT	Controlling Leading Edge Vortices on Finite Span Airfoils
6:50	A. al-Khateeb J. Powers	ND	Computation of Fine Length Scales in Laminar Flames
7:10	Y. Guezennec	TOSU	A Journey from Fluid Mechanics ... to Automobiles: Challenges Abound
7:30	S. Pantula W. Liou	WMU	Simulation of the Flow over a Cylinder with an Attached Flapping Splitter Plate
7:50	W. Schultz	UM	Oscillatory Contact Lines

8:10–11:00 Evening Social Gathering at Butler Lodge

----- **March 31, 2007** -----

7:30–8:30 Breakfast

Session V (Saturday Morning, March 31, 2007)

Chairperson: P. Merati, KOTGOF: S. Morris

Time	Speaker	School	Title
8:30	C. Petty	MSU	Explicit Realizable Algebraic Closure for the Reynolds Stress
8:50	P. Mokhasi D. Rempfer	IIT	Real Time Flow Estimation Using Kalman Filter
9:10	D. Stephens S. Morris	ND	Effects of Casing Turbulent Boundary Layers on Rotor Leading Edge Noise
9:30	K. Pathak A. Povitsky	UA	Modeling of Plume Dynamics and Shielding Effect in Laser Ablation
9:50	J. Montefort	WMU	Static Extended Trailing Edge for Lift Enhancement

10:10–10:30 Coffee Break, Ping-Pong Championship

Session VI (Saturday Morning, March 31, 2007)

Chairperson: W. Schultz, KOTGOF: S. Stewart

Time	Speaker	School	Title
10:30	E. Matlis T. Corke	ND	Real Time Demodulation of the Alternating Current Plasma Anemometer
10:50	H. Gopalan A. Povitsky	UA	High-order Compact Schemes for Fluid Mechanics and Aeroacoustics in Streamfunction and Potential Function Coordinates
11:10	O. Shklyaev E. Fried	WUSTL	Interaction between a Disclination and a Nematic-isotropic Phase Interface
11:30	S. Holman S. Stewart	UIUC	Modeling Complexity in Condensed Explosives
11:50	J. Peabody	MSU	Velocity and Vorticity Measurements in the Aft Region of an Optimal Airfoil
12:10	G. Raman	IIT	Closing Remarks

12:20–1:30 Lunch