

18TH ANNUAL MIDWESTERN UNIVERSITIES FLUID MECHANICS RETREAT 1991

APRIL 11, 12, 13

GENEVA CENTER, ROCHESTER, INDIANA

PROGRAM

THURSDAY, APRIL 11

6:00 PM to 11:00 PM      Check-in and Welcoming Party

FRIDAY, APRIL 12

7:30 AM	Breakfast
8:30 AM	Introductory Remarks
8:40 AM	Session I
10:00 AM	Coffee Break
10:20 AM	Session II
12:00 Noon	Lunch
1:30 PM	Session III
3:10 PM	R and R (Coffee and Tea Available)
5:30 PM	Dinner
6:30 PM	Session IV
8:15 to end	Social Gathering at Redwood Lodge

SATURDAY, APRIL 13

7:30 AM	Breakfast
8:30 AM	Session V
9:50 AM	Coffee Break
10:10 AM	Session VI
12:00 Noon	Lunch

Each speaker will be allowed exactly 15 minutes to communicate uninterrupted. A five minute discussion period will follow. We encourage further discussion at another time during the retreat. FROGs are awarded in the MUFMR tradition for the following infractions.

- Speaker exceeds the 15 minutes allotted for speaking
- Speaker exceeds the five minutes allotted for discussion
- Questioner exceeds the two minutes allotted for discussion
- Participants interrupt speaker
- Participants refer to other participants using a titles, such as Professor, Doctor, Your Excellency, Student, or Maestro/a
- Participants mention the names of funding agencies, such as the Michigan Department of Fish Science & Technology
- Participants arrive late for a session
- Other infractions deemed worthy by the KOTGOF

Session chairpersons are responsible for starting the sessions on time and maintaining the schedule. The KOTGOF (Keeper of Time and Giver of FROGs) for each session is responsible for awarding FROGs according to the rules stated. Participants awarded FROGs must redeem them by contributing \$1.00 per FROG to the refreshment fund.

SESSION I (FRIDAY MORNING, APRIL 12)

CHAIRPERSON: S. Kim (UW)

KOTGOF: W. Schultz (UM)

Talk No.	Time	Speaker(s)	Institution	Title
1	8:40	C. Petty	MSU	"Axisymmetric Beltrami Helical Flow within a Hydrocyclone"
2	9:00	D.R. Williams	IIT	"Symmetry of Interacting Modes in a Cylinder Wake"
3	9:20	T.J. Gieseke Y.G. Guezennec	OSU	"Pseudo-Dynamic Reconstruction of Coherent Structures in the Turbulent Wake of a Cylinder"
4	9:40	A. Naguib	IIT	"Exploring Wall Layer Structures Using a Combined Temporal Filtering and Correlation Technique"

10:00

•COFFEE BREAK•

SESSION II (FRIDAY MORNING, April 12)

CHAIRPERSON: C. Petty (MSU)

KOTGOF: C. Wark (IIT)

Talk No.	Time	Speaker(s)	Institution	Title
5	10:20	M. Samimy	OSU	"Oblique Structures in Compressible Mixing Layers"
6	10:40	S. Balachandar	UIUC	"Turbulent Thermal Convection"
7	11:00	D. Mukatmoni K.T. Yang	ND	"Transition to Chaos in Rayleigh-Benard Convection in a Small Aspect Ratio Box"
8	11:20	L. Li	UM	"Hydrodynamic Forces in Forced Convection Boiling"
9	11:40	R. Kamath A. Narain	MTU	"Some Assessments of Interfacial Friction Factor Models for Internal Flows of Vapor Undergoing Film Condensation"

12:00

•LUNCH•

### SESSION III (FRIDAY AFTERNOON, APRIL 12)

CHAIRPERSON: J. Powers (ND)

KOTGOF: R. Kolkka (MTU)

Talk No.	Time	Speaker(s)	Institution	Title
10	1:30	R.E. Johnson	UIUC	"Shape Rolling Aluminum - It Really Is a Flow Problem"
11	1:50	F. Jeske	IIT	"CFD Modeling of the Scavenging and N.G. Injection Process in a Two-Stroke Diesel Engine"
12	2:10	S. Mangkoesoebroto	UW	"Lubrication Flows around Piston Rings"
13	2:30	Y.-J. Jan	UM	"Contaminated Bubbles"
14	2:50	J.J. Chalmers	OSU	"Cell-Bubble Interaction: Mechanism of Cell Damage"
	3:10		R and R	
	5:30		•DINNER•	

### SESSION IV (FRIDAY EVENING, APRIL 12)

CHAIRPERSON: F. A. Morrison (MTU)

KOTGOF: D. Hubbard (MTU)

Talk No.	Time	Speaker(s)	Institution	Title
15	6:30	K. Jayaramin C. Satyadev	MSU	"Calculation of Flow Resistance for Viscoelastic Liquids in Periodic Arrays of Cylinders"
16	6:50	K. Feigl	IIT	"Numerical Simulation of BKZ Fluids through a Four-to-One Contraction"
17	7:10	D. Brune	UW	"Predicting Protein Diffusion Coefficients"
18	7:30	M.M. Koochesfahani C. McKinnon	MSU	"Influence of Forcing on Mixing of Species in Two-Stream Shear Layer"
19	7:50	T. Zaki M. Gad-el-Hak M. Sen	ND	"Experimental and Numerical Investigations of Flow around a Rotatable Square Cylinder"
	8:15		•SOCIAL GATHERING•	

# SESSION V (SATURDAY MORNING, APRIL 13)

CHAIRPERSON: M.W. Johnson (UW)

KOTGOF: R. Johnson (UIUC)

Talk No.	Time	Speaker(s)	Institution	Title
20	8:30	R. Kolkka	MTU	"How Viscoelastic Are Volcanic Magma Melts?"
21	8:50	J. Vallance S. Savage W. Rose	MTU	"Modeling of Volcanic Pyroclastic Flows"
22	9:10	M. Sangalli M.J. McCready H.-C. Chang	ND	"Spatial Evolution of Waves in Stratified Gas-Liquid Flow"
23	9:30	S. Ceccio	UM	"Surface Wave Patterns on Attached Cavities"
	9:50		•COFFEE BREAK•	

# SESSION VI (SATURDAY MORNING, APRIL 13)

CHAIRPERSON: J. Foss (MSU)

KOTGOF: H. Nagib (IIT)

Talk No.	Time	Speaker(s)	Institution	Title
24	10:10	H.-C. Chang S. Kalliadasis	ND	"Large Solitary Waves on a Falling Film"
25	10:30	D.S. Stewart	UIUC	"Numerical Simulation of Transverse Detonation Waves at NCSA"
26	10:50	M.J. Grismer J.M. Powers	ND	"Oblique Detonations: Comparisons of Numerical and Analytical Results"
27	11:10	N. Triguic Y.G. Guezennec	OSU	"Detailed Documentation of the Near Field of Large Eddy Break Up Devices in a Turbulent Boundary Layer"
28	11:30	D. Hathway	IIT	"Some Observations from Three-Dimensional Flow Visualization in a Turbulent Boundary Layer"
	11:50	Closing Remarks		
	12:00		••LUNCH••	