

15TH ANNUAL MIDWESTERN UNIVERSITIES
FLUID MECHANICS RETREAT
APRIL 14-16, 1988
GENEVA CENTER, ROCHESTER, INDIANA

PROGRAM

THURSDAY, APRIL 14

6:00 p.m. - 11:00 p.m.	Check-In and Welcoming Party
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FRIDAY, APRIL 14

7:30 a.m.	Breakfast
8:30 a.m.	Introduction
8:35 a.m.	Session I (90 minutes)
10:05 a.m.	Coffee Break
10:30 a.m.	Session II (90 minutes)
12:00 noon	Lunch
1:30 p.m.	Session III (90 minutes)
3:00 p.m.	R and R (Coffee and Tea Available)
5:30 p.m.	Dinner
6:45 p.m.	Session IV (90 minutes)
8:15 p.m. - ? a.m.	Social at Redwood Lodge

SATURDAY, APRIL 16

7:30 a.m.	Breakfast
8:30 a.m.	Session V (90 minutes)
10:00 a.m.	Coffee Break
10:30 a.m.	Session VI (90 minutes)
12:00 noon	Closing Remarks
12:15 p.m.	Lunch

Lots of titles were suggested for presentation this year. To accommodate as many of these requests as possible, each speaker will be given exactly 13 minutes to communicate the essence of their study. A brief 2 minute discussion session will follow each presentation. More extensive exchanges of ideas can be conducted informally during the retreat. Speakers will be awarded a "Frog" at 13 + ϵ minutes which entitles the recipient to make a \$1 contribution to the Refreshment Fund. Super frogs (\$5) are also available this year!

Session Chairmen will be responsible for starting the session on time; the Kotgof (Keeper of time and giver of frogs) may award late attendees a frog.

SESSION I (FRIDAY MORNING)

CHAIRMAN: J. Foss (MSU)

KOTGOF*: T. Corke(IIT)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
1	8:35	D. Malkus	UW	"Rheology Research at UW Madison-Flow of Structurally Complex Liquids"
2	8:50	<i>Jeff Krueger</i> C. Wark H. Nagib	IIT	"Coherent Structures in Near Wall Turbulence"
3	9:05	E. Koch	UM	"Solution to the (static) floating block problem"
4	9:20	<i>Chiu</i> J. Qu G. Treviño	MTU	"Decay Laws for Isotropic Turbulence"
5	9:35	<i>Jim</i> Harrington	ND	"Aeroelastic Instabilities of a Pitching Airfoil with Non- Linear Aerodynamic Forces"
6	9:50	H.I. Lee	UI	"New Theories in Solid-Prope- llant Combustion"

****COFFEE BREAK****

SESSION II - (FRIDAY MORNING)

CHAIRMAN: H. Nagib (IIT)

KOTGOF: D. Hubbard (MTU)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
7	10:30	<i>John Lubbe</i> T. Newell	UI	"Chocolate Chip Formation"
8	10:45	<i>M. Yao</i> <i>& Malkus</i>	UW	"Pressure Drops Over Transverse Slots in Newtonian and Non-Newtonian Flows"
9	11:00	<i>Syed</i> S. Ali	MSU	"Experiments in a Slit-Jet Flow Field"

*, Keeper of time and giver of frogs

SESSION II (cont.)

10	11:15	D. Yerg	MTU	"Observations of Low Frequency Wind Fluctuations within a Forest"
11	11:30	T. Corke	IIT	"Nonlinear Phase Locking and mode Detuning in Transition to Turbulence in Boundary Layers"
12	11:45	G. Brereton	UM	"Deduction of skin friction from profiles of mean velocity in unsteady turbulent boundary layers."

****LUNCH****

SESSION III - (FRIDAY AFTERNOON)

CHAIRMAN: D. Malkus (UW)
KOTGOF: G. Brereton (UM)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
13	1:30	A. Ansari M. Ohadi	MTU	"Is Abrasive Water Cutting a Heat Free Technique?"
14	1:45	E. Selemet	UM	"Use of exponential functions in solutions of differential equations."
15	2:00	C. Chmielewski	MSU	"A Theoretical Study of Hot Melt Impregnations of Fiber Bundles"
16	2:15	N. Ramanan	OSU	"Influence of Magnetic Field on Thermocapillary Convection in Stationary Arc Weld Pools"
17	2:30	S. Stewart	UI	"Phase Plane Analysis for Two Dimensional Detonations"
18	2:45	H. Mansy	IIT	"Feasibility of Fluidic Oscillators As Residential Gas Flow Meters"

****R AND R****
(coffee and tea served)

****DINNER AT 5:30 P.M.****

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Water

Water

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SESSION IV - (FRIDAY EVENING)

CHAIRMAN: B. Graebel (UM)
KOTGOF: Dave Williams (IIT)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
19	6:45	Y. Fuentas Sang Kim	UW	"Hydrodynamics of Polydispensed Suspensions"
20	7:00	Bob R.E. Johnson	UI	"Coating Flows in Rotational Molding"
21	7:15	Terry T.T. Ng	ND	"Control of Leading Edge Vortex Breakdown by Blowing"
22	7:30	Bob B. Kolkka G. Ierley M. Hansen	MTU	"Stability of Parallel Shear Flows of Viscoelastic Liquids"
23	7:45	Bob E. Montividas H. Papazian	IIT	"Manipulation of Vortex Structures Behind Inclined Bodies of Revolution"
(29) 24	8:00	G. Tryggvason	UM	"Vortices and free Surfaces"

****SOCIAL****

SESSION V - (SATURDAY MORNING)

CHAIRMAN: B. Kolkka (MTU)
KOTGOF: T. Ng (ND)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
25	8:30	W. Franke R.J.B. Bouwmeester	MSU	"Flow Field Measurements Underneath Breaking Waves Using Particle Displacement Velocimetry"
26	8:45	N. Acharya	ND	"A Spectral Method Computation of Convection in a Porous Annulus"
27	9:00	J. Krull	IIT	"Seeding the Transitions in the Wake of an Airfoil"
28	9:15	L. Sen G. Huang	MTU	"Discretization of the Convection Terms using Cubic Splines"
29	9:30	Chris C. Schiel	UM	"Vortex interaction with a density interface"
30	9:45	J. Buckmaster	UI	"Structure Instability of Oblique Detonation"

****COFFEE BREAK****

SESSION VI - (SATURDAY MORNING)

CHAIRMAN: B. Johnson (UI)
KOTGOF: Y. Guezennec (OSU)

<u>Talk #</u>	<u>TIME</u>	<u>AUTHORS</u>	<u>SCHOOL</u>	<u>TITLE</u>
31	10:30	T-M. Wang	OSU	"Structure of Longitudinal Rolls of Convective Flow in a Shallow Cavity With Horizontal Heating"
32	10:45	H. Joo	UM	"Singularities at wave-maker contact lines"
33	11:00	P. Reisenthel H. Nagib	IIT	"Global Instability in an Axisymmetric Jet with Enhanced Prepressure Feedback"
34	11:15	O. Kadir D. Hubbard	MTU	"Hot Film Sensor Calibration and Fouling in Water"
35	11:30	J. Fang	ND	"Trailing Vortex Interaction with a Thin Airfoil"
36	11:45	M. Johnson	UW	"Dynamic Behavior of Fluids with Non-Monotone Steady Shear Stress"

****CLOSING REMARKS****

****LUNCH****

Viscous Sheet Advancing over Dry Beds

April 13, 14, 15

D. Mich.

12

1. 1st Title 12min
2. More Discussion
3. 50/50 Faculty

