Center for Environmental & Applied Fluid Mechanics

JOHNS HOPKINS UNIVERSITY

and

UNIVERSITY OF MARYLAND 1856

The Burgers Program for Fluid Dynamics

2007 Research Symposium on Enironmental and Applied Fluid Dynamics

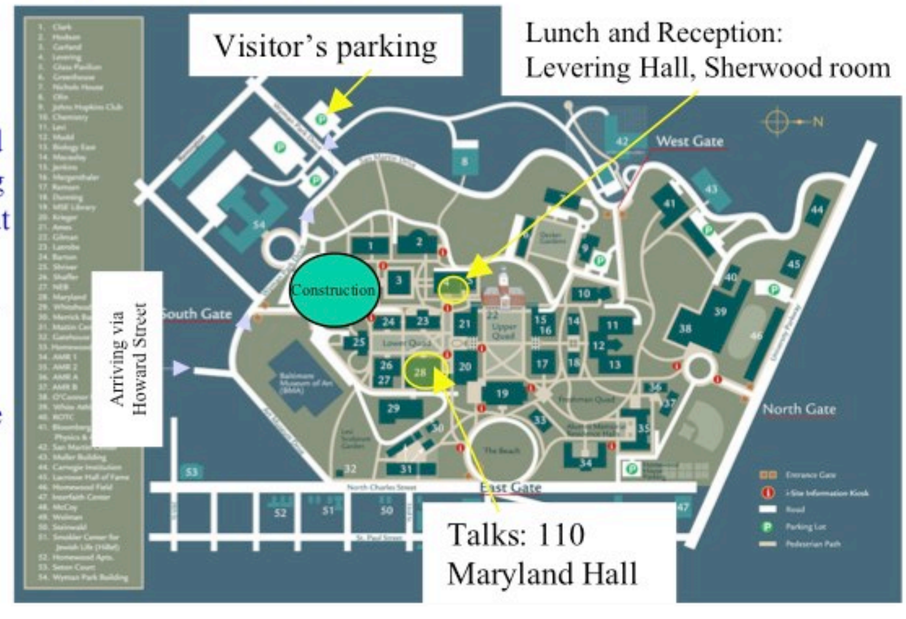
Friday, May 4, 2007 -
8:30am to 6:30pm
110 Maryland Hall, Homewood Campus.

You are cordially invited to this one-day event. Graduate students and post-doctoral fellows will be presenting ongoing research in fluid mechanics at Johns Hopkins University and University of Maryland, College Park.

See also http://www.jhu.edu/~ceafm

CEAFM
Nigel Assam
Johns Hopkins University
3400 N. Charles St. –128 Latrobre Hall
Baltimore, MD 21218

Campus maps and events:



Driving directions:

From I-95 (northbound): Take exit 53 onto I-395 north toward downtown Baltimore, then take the exit to Martin Luther King Jr. Follow Martin Luther King Boulevard north until it ends at Howard Street (remain in one of the middle lanes of King Boulevard to avoid a premature forced right or left turn). Turn left at Howard Street and proceed about 2 miles. One block past 29th Street, turn left at the traffic island (just before the Baltimore Museum of Art) onto Wyman Park Drive. Continue past the construction site (which will be to your right) and at the stop sign take a left to continue on Wyman Park Drive. Make an immediate right, then left into the visitors parking lot.

2007 Research Symposium on Environmental and Applied Fluid Dynamics

May 4, 2007, 110 Maryland Hall, JHU Homewood campus

Symposium Schedule:

8:30am-9:00am	**Breakfast and welcome** (C. Meneveau)
9:00am-9:40am	**Keynote lecture: *Prof. James Duncan***, *University of Maryland*
TECHNICAL SESSION 1: Multiphase and granular flows (session chair: Lorenzo Botto)	
9:45am-10:00am	*Lagrangian motion of slightly buoyant droplets in isotropic turbulence* Balaji Gopalan & J. Katz
10:02am-10:17am	*Droplet tracking simulations and drop size distribution prediction in an inline rotor-stator mixer* Karl R. Kevala, Richard V. Calabrese and Kenneth T. Kiger
10:19am-10:34am	*The average stress in disperse fluid-particle systems* Quan Zhang & Andrea Prosperetti
10:36am-10:51am	*Microscopic 3D rearrangements of dense granular matter during compaction* Steven Slotterback, Masahiro Toiya, Leonard Goff, Wolfgang Losert
10:51am-11:10am	**COFFEE BREAK**
TECHNICAL SESSION 2: Ocean flows - currents, waves, and transport (session chair: Erin Hackett)	
11:10am-11:25am	*An experimental investigation of wind- and mechanically-generated short wavelength spilling breakers* J. D. Diorio, X. Liu, and J. H. Duncan
11:27am-11:42am	*Rip currents - mechanisms and observations* Varjola Nelko & Robert Dalrymple
11:45am-12:00	*Sediment suspension events from ripple beds in oscillatory flow* Philip Knowles and Ken Kiger
12:02pm-12:17pm	*An in-situ digital holographic imaging system for imaging microscopic organism behavior and interaction with flow in the ocean* Woody Pfitsch & J. Katz
12:20pm - 1:30pm	**LUNCH, SHERWOOD ROOM, LEVERING HALL**
TECHNICAL SESSION 3: Turbulence, Complex Flow & Thermal Processes (session chair: Olivia Sun)	
1:30pm-1:45pm	*Correlating for structure in boundary and mixing layer* Douglas H. Kelley, James Diorio, and James M. Wallace
1:47pm-2:02pm	*A constrained subgrid-scale stress model* Zuoli Xiao & Shiyi Chen
2:04pm-2:19pm	*Direct numerical simulation of turbulent, non-premixed, non-adiabatic, boundary layer combustion* Praveen Narayan and Arnaud Trouvé
2:21pm-2:36pm	*Adaptive mesh refinements for fluid-structure interactions in viscous incompressible flow* Marcos Vanella and Elias Balaras
TECHNICAL SESSION 4: Multi-scale Fluid & Transport Processes (session chair: Vijayant Kumar)	
2:40pm-2:55pm	*Critical times for the onset of density-driven convection in porous media* Saikiran Rapaka & Shiyi Chen
2:57pm-3:12pm	*Red blood cell and artificial capsule deformation with the spectral boundary element algorithm* Walter R. Dodson III and Panagiotis Dimitrakopoulos
3:12pm - 3:30pm	**AFTERNOON BREAK**
3:30pm-3:45pm	*Spontaneous pattern formation by dip coating of colloidal suspensions on homogeneous surfaces* Moniraj Ghosh & Kathleen Stebe
3:47pm-4:02pm	*Molecular simulations of contact line motion for partially miscible fluids* Shengfeng Cheng, Colin Denniston & Mark Robbins
TECHNICAL SESSION 5: Atmospheric flow - transport and forecasting (session chair: Yi Li)	
4:05pm - 4:20pm	*Ensemble Kalman filter correction for model bias in global weather forecasting* Seung-Jong Baek, and E. Ott
4:22pm-4:37pm	*Modeling the tracer transport from volcanic eruptions and regional nuclear conflicts* Luke Oman
4:39pm-4:54pm	*Improved analyses and forecasts with AIRS satellite observations* Hong Li, Elana Fertig, Junjie Liu and E. Kalnay
4:56pm-5:11pm	*Concentration profiles of particles settling in the neutral and stratified atmospheric boundary layer* Marcelo Chamecki, Rene Van Hout, Charles Meneveau & Marc Parlange

CLOSING RECEPTION IMMEDIATELY FOLLOWING THE LAST TALK, SHERWOOD ROOM, LEVERING HALL