

Center for Environmental & Applied Fluid Mechanics

JOHNS HOPKINS

and

The Burgers Program
for Fluid Dynamics



2005 Research Symposium on Environmental and Applied Fluid Dynamics

Thursday, May 19, 2005 -
8:30am to 6:30pm

110 Hodson 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>

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. Take an almost immediate right through the university gates. A visitors' lot will be on the left.

Campus maps and events:



JOHNS HOPKINS

2005 Research Symposium on Environmental and Applied Fluid Dynamics May 19, 2005, 110 Hodson Hall, JHU Homewood campus Symposium Schedule:



8:30 am - 9:00 am : **Breakfast and welcome** (F. Soranna)

9:00 am - 9:45 am : **Keynote lecture:** Prof. Ugo Piomelli, *University of Maryland*

TECHNICAL SESSION 1: Turbulent Flows (session chair: A. Pelletier)

9:45 am : O. Sun, "Experimental assessment of subgrid scalar transport and mixing models for LES"

10:02 am : K.R. Kevala, "PIV study of small scale and transient flow structures for turbulent flow in an inline rotor-stator mixer"

10:19 am : F. Soranna, "3D Measurements of the mean velocity and turbulence structure within the near wake of a rotor blade"

10:36 am : J. Chen, "Scale interactions of turbulence subjected to a straining-relaxation-destraining cycle"

10:53 am-11:10 am : **BREAK**

TECHNICAL SESSION 2: Numerical Techniques and Studies (session chair: M. Chamecki)

11:10 am : Y. Wang, "Direct numerical simulation of non-premixed flame-wall interactions"

11:27 am : L. Botto, "Sedimentation of 1,024 particles"

11:44 am : V. Ovchinnikov, "Numerical simulations of boundary layer transition induced by a von Karman vortex street"

12:01 am : C.D. Blakely, "A new Backus-Gilbert meshless approximation method for initial-boundary value partial differential equations"

12:18 am : A. Cristallo and E. Balaras, "Simulation of turbulent flow around prosthetic heart valves"

12:35 pm-2:00 pm : **LUNCH AT THE CORRSIN WIND TUNNEL LABORATORY (Maryland Hall 44)**

TECHNICAL SESSION 3: Multiscale Fluid and Thermal Processes (session chair: C. Brownell)

2:00 pm : C. D. Henry, "Heter size effects on pool-boiling heat transfer in low gravity"

2:17 pm : X. Nie, "Multiscale simulations in fluid mechanics"

2:34 pm : S. Moghaddam, "Microscale study of the nucleation process in low-surface-tension fluids"

2:51 pm : Z. Liu, "Visualizations of bubble formation under the influence of electric fields"

3:08 pm : X. Liu, "The characteristics of microjets formed during water wave breaking in the presence of surfactants"

3:25 pm-3:42 pm : **BREAK**

TECHNICAL SESSION 4: Geophysical and environmental flow and transport (session chair: C. Higgins)

3:42 pm : S. Kim, "Predicting Rapid Climate Change"

3:59 pm : G. Bewley, "Decaying rotating turbulence in water, liquid nitrogen, and liquid helium"

4:16 pm : J. Bai, "Chemical speciation and diffusive transport of uranium (VI) in water-saturated sediments from a DOE contamination site in Hanford, WA"

4:33 pm : E. Bou-Zeid, "A scale-dependent Lagrangian LES model and applications to atmospheric flow over heterogeneous rough terrain"

5:00 pm-6:30 pm : **RECEPTION, The Sherwood Room, Levering Hall.**