3 Schedule

Monday, June 28, 2010

Time	Presentation	Page
8:35-8:40	Welcome	
	Harold Layton, Chair, Department of Mathematics, Duke University	
8:40-8:45	Opening remarks	
	Thomas Witelski	
	Morning Session, Jian-Guo Liu, Chair	
8:45-9:25	Climate Science, Waves, and PDE's for the Tropics: Observations, Theory, and Numerics	6
	Andrew J. Majda	
9:30-10:10	Steady rotational water waves	6
	Walter Strauss	
10:15-10:45	*Break/Refreshments*	
10:45-11:25	Pattern formations of Benard-Marangoni heat convection problems	7
	Takaaki Nishida	
11:30-12:10	Novel phenomena in active and driven complex fluids	7
	Michael Shelley	
12:15-1:45	*Lunch (provided)*	
	Afternoon Session, Zhilin Li, Chair	
1:45- 2:25	Multidimensional aggregation equations and finite-time blowup	8
	Andrea L. Bertozzi	
2:30-3:10	On the singularity formation of a 3D model for Incompressible Euler and Navier-Stokes equations	8
	Thomas Y. Hou	
3:15-3:45	*Break/Refreshments*	
3:45-4:25	Moving interface problems for elliptic systems	9
	John A. Strain	
4:30-5:10	Existence problems in interfacial fluid dynamics	9
	David M. Ambrose	
5:15-5:45	*Break/Refreshments*	
6:00-8:00	*Conference Banquet Dinner*: The Commons Dining Room	

Tuesday, June 29, 2010

Time	Presentation	Page
	Morning Session, Anita Layton, Chair	
8:45-9:25	Vanishing viscosity limits for a class of circular pipe flows, and related singular perturbation problems Michael E. Taylor	10
9:30-10:10	Wellposedness of the two and three dimensional full water wave problem Sijue Wu	10
10:15-10:45	*Break/Refreshments*	
10:45-11:25	On accurate methods for field interpolation in particle mesh calculations Anita Mayo	11
11:30-12:10	Well-balanced methods for conservation laws with source terms Randall J. LeVeque	11
12:15-2:15	*Lunch (provided)*	
	Poster Session	5, 14
	Afternoon Session, Andrea Bertozzi, Chair	
2:15- 2:55	Immersed boundary methods for interfacial flows Ming-Chih Lai	11
3:00-3:40	Solving the immersed interface problem using the decomposition with boundary integral approach Anita T. Layton	12
3:45-4:15	*Break/Refreshments*	
4:15-4:55	Implicit particle filters with applications to ocean data Alexandre J. Chorin	12

Wednesday, June 30, 2010

Time	Presentation	Page
	Morning Session, Michael Minion, Chair	
9:00-9:40	Lagrangian blob methods applied to biological fluid flow problems Ricardo Cortez	13
9:45-10:25	Stabilizing fluid-fluid interfaces using colloidal particles John S. Lowengrub	13
10:30-11:00	*Break/Refreshments*	
11:00-11:40	Blob methods for free surface flows Gregory R. Baker	13
11:45	Closing remarks	

Poster Presentations

- Using regularized Stokeslets to model inextensible fibers in Stokes flow
  Elizabeth Bouzarth (*Duke University*)
- Multi-Scale Stochastic Finite Element Method (MSFEM) for stochastic partial differential equations
  Mulin Cheng (*Caltech*)
- A numerical investigation of plasma expansion due to laser ablation using an efficient finite-volume method
  Sean Cohen (*North Carolina State University*)
- Selected integration techniques for 2D Stokes flow
  Breschine Cummins and Mike Nicholas (*Tulane University*)
- Shallow-water surface waves and bed ripples due to erosion
  Matthew Emmett (*University of Alberta*)
- An all-speed asymptotic-preserving method for isentropic Euler and Navier-Stokes equations
  Jeffrey Haack (*University of Wisconsin-Madison*)
- Modeling and simulation of the fluid flow around the bell of the upside-down jellyfish
  Christina Hamlet (*University of North Carolina-Chapel Hill*)
- Solving matrix coefficient elliptic equations with sharp-edged interfaces
  Songming Hou (*Louisiana Tech University*)
- Lagrangian panel method for vortex sheet motion in 3D flow
  Robert Krasny (*University of Michigan*)
- Analysis of dynamics of Doi-Onsager phase transition
  Jian-Guo Liu (*Duke University*) (with Pierre Degond and Amic Frouvelle)
- Particle-laden viscous thin-film flows on an incline
  Nebojsa Murisic (*UCLA*)
- Fluid dynamics of the dinoflagellate transverse flagellum
  Hoa Nguyen (*Tulane University*)
- Gradient-augmented level set methods and interface tracking with subgrid resolution
  Benjamin Seibold (*Temple University*)
- Generalized Birkhoff-Rott equation for 2D active scalar problems
  Paul Hui Sun (*UCLA*) (with David Uminsky)
- A priori estimates for periodic viscous surface waves without surface tension
  Ian Tice (*Brown University*)
- Long-time behavior of weak solutions in Hele-Shaw flow problem
  Suleyman Ulusoy (*University of Maryland*)
- Exporting shock-capturing schemes from gas dynamics to elasticity
  Knut Waagan (*University of Maryland*)
- A mechanical and computational model of mucus penetration in mucociliary transport
  Xingzhou Yang (*Mississippi State University*)
- A fourth order Cartesian grid method for the Helmholtz equation with geometrically complicated material interfaces
  Shan Zhao (*University of Alabama*)