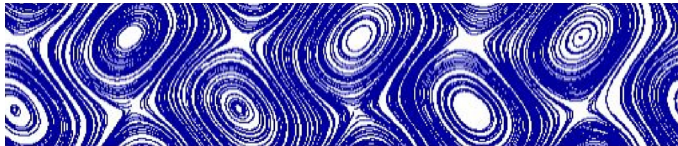


The 14<sup>th</sup> International Conference on  
**Discrete Simulation of Fluid Dynamics  
in Complex Systems**

**Kyoto University, Kyoto, Japan, August 22-26, 2005**

1986 Los Alamos  
1988 Torino  
1989 Los Alamos  
1992 Nice  
1994 Toronto  
1996 Boston  
1998 Oxford



1999 Tokyo  
2000 Santa Fe  
2001 Carghese  
2002 Shanghai  
2003 Beirut  
2004 Boston  
2005 Kyoto

**PROGRAM**

	SUNDAY 21	MONDAY 22	TUESDAY 23	WEDNESDAY 24	THURSDAY 25		FRIDAY 26	
		Room A	Room A	Room A	Room A	Room B	Room A	
9:20- 9:30		opening						
9:30-10:20		<i>Keynote Lecture</i> M. Doi	<i>Keynote Lecture</i> W. E	<i>Keynote Lecture</i> S. Kida	<i>Keynote Lecture</i> S. Troian			<i>Keynote Lecture</i> K. Aoki
10:20-10:30		break	break	break	break	break	break	
10:30-12:35		<i>Session A</i> <i>Method I</i>	<i>Session D</i> <i>Method II</i>	<i>Session G</i> <i>Blood flow</i>	<i>Session J</i> <i>Micro channel</i>	<i>Session K</i> <i>Application</i>	<i>Session L</i> <i>Chemical reaction</i>	
12:35-14:00		lunch	lunch	lunch	lunch		lunch	
14:00-16:05		REGISTRATION  Kyoto Royal Hotel (15:00-18:30)	<i>Session B</i> <i>Two-phase flow I</i>	<i>Session E</i> <i>Two-phase flow II</i>	<i>Session H</i> <i>Two-phase flow III</i>	<i>Keynote Lecture</i> S. Abe		<i>Session M</i> <i>Complex fluid</i>
16:05-16:25			break	break	break	EXCURSION		
16:25-18:30			<i>Session C</i> <i>Particle-laden flow</i> <i>I</i>	<i>Session F</i> <i>Particle-laden flow</i> <i>II</i>	<i>Session I</i> <i>Method III</i>			closing
			RECEPTION			BANQUET		

## MONDAY 22

9:20- 9:30	<i>Opening</i>	
9:30-10:20	<b>Keynote Lecture</b> <b>M. Doi</b> Multi Scale Modeling -A Challenge in the Next Generation Computational Science and Engineering	<i>Chair: J. P. Boon</i>
10:20-10:30	<i>break</i>	
10:30-12:35	<b>Session A: Method I</b> <b>B. M. Boghosian, L. I. Finn</b> A Variational Approach to Vortex Core Identification <b>M. Serrano</b> Efficient numerical integrator for stochastic models <b>E. Tuzel, G. Pan, T. Ihle, D. M. Kroll</b> Consistent Stochastic Rotation Dynamics for non-ideal fluids and binary mixtures <b>C. Shu</b> Fractional Step Lattice Scheme and Its Application to Simulate Incompressible Flows <b>S. Chen</b> Multiscale modeling and simulation of micro-and nano-fluid systems	<i>Chair: J. P. Boon</i>
12:35-14:00	<i>lunch</i>	
14:00-16:05	<b>Session B: Two-Phase flow I</b> <b>J. Zhang, D. Y. Kwok</b> A Mean-Field Free Energy Lattice Boltzmann Approach to Multiphase/Multicomponent Interfacial Systems	<i>Chair: J. Yeomans</i>
		<b>A. Wagner</b> Liquid gas lattice Boltzmann simulations with high density ratios <b>S. Tajiri, M. Tsutahara, K. Ogawa, M. Sakamoto</b> A new Model for Two-Phase Flows with Large Density Difference <b>G. Gonnella, A. Lamura, V. Sofonea</b> Finite-difference Lattice Boltzmann Model for non-isothermal liquid-vapor systems <b>J. Onishi, Y. Chen, H. Ohashi</b> A Lattice Boltzmann Study of the Wake behind a Bubble Rising in a non-Newtonian Fluid
		16:05-16:25 <i>break</i>
		16:25-18:30 <b>Session C: Particle-laden flow I</b> <i>Chair: B. M. Boghosian</i> <b>H. Nguyen, B. Chopard, S. Stoll</b> Hydrodynamic properties of fractal aggregates: a lattice Boltzmann approach <b>D. Jankovic</b> Lattice Type Models: Moisture flow and Crack Modelling in Cement-Based Materials <b>Y. Sakazaki, S. Masuda, J. Onishi, Y. Chen, H. Ohashi</b> Hydrodynamic Analysis of Colloid-Dispersed Fluids by the Real-Coded Lattice Gas <b>J. Hyväluoma et al.</b> Rheology of non-colloidal liquid-particle suspensions <b>R. G. M. van der Sman, G. Brans, J. Kromkamp</b> Lattice Boltzmann simulation of suspension flow at multiple scales

## TUESDAY 23

9:30-10:20 **Keynote Lecture** *Chair: S. Chen*  
**W. E**  
Multiscale Modeling of Complex Fluids

10:20-10:30 *break*

10:30-12:35 **Session D: Method II** *Chair: S. Chen*  
**J. P. Boon**  
q-diffusion as nonlinear response  
**J. Chin, P. V. Coveney**  
Chirality and curvature in the gyroid mesophase  
**G. Giupponi, P. Coveney**  
Bottom up emergence of rheological properties in lattice Boltzmann simulations of complex  
**J. Latt, B. Chopard**  
Lattice Boltzmann Method with regularized nonequilibrium distribution functions  
**N. V. Brilliantov, F. Spahn**  
Aggregation kinetics in a gas of adhesive particles

12:35-14:00 *lunch*

14:00-16:05 **Session E: Two-Phase flow II** *Chair: A. Wagner*  
**X. Jia, J. B. McLaughlin, K. Kontomaris**  
Lattice Boltzmann Simulations of Contact Line Motion on Uniform and Heterogeneous Solid Surfaces  
**C.-L. Lin, T. Lee**  
Lattice Boltzmann Simulations of Virtual Wall Dynamics

**J. Abraham**  
Lattice-Boltzmann Simulations of Physical Processes in Sprays  
**S. van der Graaf, T. Nisisako, R. G. M. van der Sman, R.M. Boom**  
Lattice Boltzmann simulations of droplet formation in a glass chip  
**A. Dupuis, J. Yeomans**  
Wetting and Spreading on Patterned Substrates

16:05-16:25 *break*

16:25-18:30 **Session F: Particle-laden flow II** *Chair: I. Karlin*  
**J. Derksen**  
Simulation of particle-laden fluid flows  
**Y. Inoue, S. Takagi, Y. Matsumoto**  
Development of a simulation model for amphiphilic molecules in a mesoscale solvent  
**D. Qi**  
Simulations of sedimentation of flexible filament suspensions in nonzero Reynolds number flows  
**J. Horbach, A. Chatterji, N. Kikuchi**  
A hybrid LB/MD method for the simulation colloidal systems  
**K. Stratford, I. Pagonbarraga, R. Adhikari, J.-C. Desplat, M. Cates**  
Colloids in Binary Solvents via the Lattice Boltzmann Method

## WEDNESDAY 24

9:30-10:20	<b>Keynote Lecture</b> <b>S. Kida</b> Unstable Periodic Motion of Turbulence	<i>Chair: T. Inamuro</i>	
10:20-10:30	<i>break</i>		
10:30-12:35	<b>Session G: Blood flow</b> <b>H. Fang, H. Li, H. Yi</b> Lattice Boltzmann simulations on blood flow: suspensions and deformation of red blood cells <b>R. Ouared, B. Chopard, D. Rüfenacht</b> A Lattice Boltzmann model for thrombosis and neo-intimal hyperplasia <b>T. Hyakutake, S. Yanase, T. Matsumoto</b> Lattice Boltzmann Simulation of Blood Cell Behavior at Microvascular Bifurcations <b>A. G. Hoekstra</b> Image-based computational hemodynamics of large Arteries with the Lattice-BGK Method <b>K. Xu</b> Microchannel flow simulation using gas-kinetic BGK-Burnett scheme	<i>Chair: T. Inamuro</i>	
12:35-14:00	<i>lunch</i>		
14:00-16:05	<b>Session H: Two-Phase flow III</b> <b>L.-P. Wang</b> Modeling fluid flow and species transport in fuel cells using the lattice-Boltzmann approach	<i>Chair: Y. Chen</i>	
			<b>N. Takada, M. Misawa, A. Tomiyama</b> A Phase-Field Method for Interface-Tracking Simulation of Two-Phase Flows <b>Y. Matsukuma, G. Inoue, M. Minemoto</b> Numerical Simulation of Droplets on Solid Wall by Lattice Boltzmann Method <b>M. Yoshino, Y. Mizutani</b> Lattice Boltzmann Simulation of Liquid-Gas Flows through Solid Bodies in a Square Duct <b>A. Xu</b> Two-fluid lattice Boltzmann model for binary fluids: two-dimensional case
			16:05-16:25 <span style="float: right;"><i>break</i></span>  16:25-18:30 <b>Session I: Method III</b> <span style="float: right;"><i>Chair: B. Chopard</i></span> <b>P. J. Dellar</b> Eigenvalue problems in the determination of lattice Boltzmann equilibria <b>R. Kapral</b> Multi-Particle Collision Dynamics for Reaction-Diffusion Systems <b>J. Steinhoff</b> Modeling Small Vortical Scales as Nonlinear Solitary Waves <b>J. Yopez, G. Vahala, L. Vahala, M. Soe</b> Entropic Lattice Boltzmann Representation of Navier Stokes Turbulence <b>X. Shan</b> Kinetic theory representation of hydrodynamics: A way beyond Navier-Stokes equations

## THURSDAY 25

9:30-10:20 **Keynote Lecture** *Chair: R. Kapral*

**S. Troian**

Molecular Origin and Dynamics Behavior of Slip at Liquid/Solid Interfaces

10:20-10:30 *break*

10:30-13:00 **Session J: Micro channel** *Chair: R. Kapral*

**M. Sbragaglia**

Mesosopic modeling of boundary conditions for microchannel flows

**I. V. Karlin**

Theory and realization of kinetic and hydrodynamic modeling

**S. Ansumali, I. V. Karlin**

Minimal Kinetic Models for Microflow

**S. Arcidiacono, S. Ansumali, I. Karlin, J. Mantzaras**

A Discrete velocity Model for Binary Mixtures

**R. Benzi, L. Biferale, M. Sbragaglia, S. Succi, F. Toschi**

Mesosopic two-phase model for slip dynamics in micro-channel flows

**Z. Guo, T. S. Zhao, Y. Shi**

Simulation of nanoscale fluid flows via a generalized hydrodynamic model

13:00-14:00 *lunch*

14:00-14:50 **Keynote Lecture** *Chair: B. Boghosian*

**S. Abe**

Generalized Boltzmann equation, Stosszahlansatz and nonextensive statistical mechanics

10:30-12:35 **Session K: Application** *Chair: K. Yamamoto*

**G. Mayer, G. Házi**

Direct Numerical Simulation of Longitudinal Flow along Triangular Array of Rods using the Lattice Boltzmann Method

**A. Tamura, M. Tsutahara**

The Finite Difference Lattice Boltzmann Method for Moving Bodies

**J. Latt, B. Chopard, Y. Grillet, P. Wittwer**

Simulating an infinite domain for drag force computations in the Lattice Boltzmann method

**J. Onishi, Y. Chen, H. Ohashi**

Lattice Boltzmann Simulation of a Simple Swimmer at Low Reynolds Number

**M. Parsaei**

Interaction of the Numerical Solution of Hyperbolic Equations With Obstacles in the Flow Direction

## FRIDAY 26

9:30-10:20 **Keynote Lecture** *Chair: S. Succi*  
**K Aoki**  
Anomalous fluid-dynamic limits for a vapor-gas mixture

10:20-10:30 *break*

10:30-12:35 **Session L: Chemical reaction** *Chair: S. Succi*  
**S. P. Sullivan, L. F. Gladden, M. L. Johns**  
3D Chemical Reactor LB Simulations  
**K. Ebihara, H. Kaburaki**  
Lattice Boltzmann Simulation of Solution Chemistry for Crevice Corrosion  
**K. Yamamoto, S. Satake, H. Yamashita, N. Takada, M. Misawa**  
Lattice Boltzmann Simulation on Porous Structure and Soot Accumulation  
**A. N. Chatterjee, S. Joseph, N. R. Aluru**  
Multiscale Computation of Water and Ion Transport in Synthetic Nanopores  
**T. Seta, E. Takegoshi, K. Okui**  
Lattice Boltzmann Simulation of Natural Convection in Porous Media

12:35-14:00 *lunch*

14:00-16:30 **Session M: Complex fluid** *Chair: M. Tsutahara*  
**M. Ripoll, R. G. Winkler, G. Gompper**  
Complex fluids in a mesoscopic solvent under shear flow  
**W. Miller, I. Rasin**  
Time-adaptive kinetic schemes for solving problems of pattern formation during solidification

**M. Hirabayashi, M. Ohta, D. A. Rüfenacht, B. Chopard**  
Numerical analysis of the flow pattern effect on the flow reduction performance in the cerebral aneurysm by stent implantation  
**J. Bernsdorf, S. E. Harrison, S. M. Smith, P. V. Lawford, D. R. Hose**  
Numerical Simulation of Clotting Process: A Lattice Boltzmann Application in Medical Physics  
**T. Tagawa**  
Numerical simulation of two-phase flows in the presence of a magnetic field  
**T. Inamuro, T. Ii**  
Lattice Boltzmann simulation of the dispersion of aggregated particles under shear flows

16:30-16:40 *Closing*

