

# DSFD 2006 Conference Programm

University of Geneva, August 21-25, 2006

## Monday Morning, August 21, 2006

### 08:00-08:40 Registration

Session: Invited I

Chairman: U. Frisch

Main auditorium, Uni-Bastion B106

08:45-09:00	Opening
09:00-09:40	Some Highlights of the Early History of the Lattice Gas Algorithm <i>Gary Doolen</i>
09:40-10:20	20 years of lattice dynamics: a personal view <i>Yves Pomeau</i>

### 10:20-10:45 Coffee Break

Session: Theory I

Chairman: J.P Boon

Main auditorium, Uni-Bastion B106

10:45-11:05	Developing lattice Boltzmann method for compressible flows <i>K. Qu</i>
11:05-11:25	Thermal lattice-Boltzmann in two dimensions <i>L. O. E. dos Santos</i>
11:25-11:45	From the continuous to the lattice-Boltzmann equation: beyond BGK collision models <i>L. A. Hegele</i>
11:45-12:05	Efficient discretization and solver techniques for the implicit treatment of the Lattice Boltzmann equation on unstructured grids <i>Thomas Hübner</i>
12:05-12:25	

### 12:30–14:00 Lunch

## Monday afternoon, August 21, 2006

Session Invited II

Chairman: N. Brilliantov

Main auditorium, Uni-Bastion B106

14:00-14:40	Kinetic theory and extrasolar planetary systems <i>Alexander V. Krivov</i>
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Session: theory II

Chairman: N. Brilliantov

Main auditorium, Uni-Bastion B106

14:40-15:00	Entropic thermal lattice Boltzmann method for simulation of fluids of arbitrary Prandtl number <i>N. Prasianakis</i>
15:00-15:20	Entropic lattice Boltzmann models for hydrodynamics in three dimensions <i>Shyam Chikatamarla</i>
15:20-15:40	Fractional volumetric lattice Boltzmann method for high Mach number flows <i>Chenghai Sun</i>
15:40-16:00	Lattice Boltzmann extension for fluid simulation beyond the Navier-Stokes equation <i>Xiaowen Shan</i>

### 16:00-16:30 Coffee Break

Parallel Sessions

	Hybrid Models	Applications
	Room B106	Room B302
16:30-16:50	I. Karlin Dissipative Particle Dynamics Simulations of Multiphase Systems with Thermal Fluctuations <i>Anupam Tiwari</i>	T. Inamuro Lattice Boltzmann Simulations of the Nile At Khartoum <i>M. O. Nasr Eldin</i>
16:50-17:10	Lattice Boltzmann Simulation on Flow in Diesel Particulate Filter <i>Kazuhiro Yamamoto</i>	Hydrodynamic properties of fractal: a Lattice Boltzmann approach <i>H. Nguyen</i>
17:10-17:30	Contact angle hysteresis on chemically and topologically patterned surfaces <i>Halim Kusumaatmaja</i>	Wavelet-based Particle Methods <i>Michael Bergdorf</i>
17:30-17:50	Lattice Boltzmann Simulations of Contact Line Pinning <i>J. B. McLaughlin</i>	Simulation of free-surface irrigation canals with a bi-fluid LB model <i>Olivier Marcou</i>

### 18:30–20:00 Welcome Party: Hotel Metropole

34 Quai General-Guisan

## Tuesday Morning, August 22, 2006

### 08:00-08:40 Registration

Session: Invited III

Chairman: A. Krivov

Main auditorium, Uni-Bastion B106

08:45-09:25	From lattice gases to truncated Euler dynamics <i>Uriel Frisch</i>
09:25-10:05	What can standard BGK lattice Boltzmann models can and cannot do for microchannel flows ? <i>D. d'Humières</i>

### 10:05-10:30 Coffee Break

Session: Theory III

Chairman: D. d'Humières

Main auditorium, Uni-Bastion B106

10:30-10:50	Full Newton Lattice Boltzmann Method for Time Steady Flows <i>David R. Noble</i>
10:50-11:10	Comparison of the three most commonly used hydrodynamic limiting processes <i>Márkus Attila</i>
11:10-11:30	Generalized diffusion <i>Jean Pierre Boon</i>
11:30-11:50	Lattice Boltzmann approach to micro - flows with variable temperature <i>Victor Sofonea</i>
11:50-12:10	Hydrodynamics of ballistically aggregating gas <i>Nikolai V. Brilliantov</i>
12:10-12:30	PMH : Particle-Mesh Hydrodynamics <i>P. Chatelain</i>

### 12:30–14:00 Lunch

## Tuesday afternoon, August 22, 2006

Session Invited IV

Chairman: Y.H. Qian

Main auditorium, Uni-Bastion B106

14:00-14:40	LBE method for microfluids	<i>R. Benzi</i>
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Session: Boundary Conditions

Chairman: Y.H. Qian

Main auditorium, Uni-Bastion B106

14:40-15:00	Immersed boundary method based Lattice Boltzmann method to simulate complex geometry flows	<i>Chao-An Lin</i>
15:00-15:20	On physically valid boundary conditions for fluid flow solvers	<i>Marco D. Mazzeo</i>
15:20-15:40	Second order accurate slip boundary conditions for arbitrary geometries in lattice-Boltzmann simulations	<i>Benjamin Ahrenholz</i>
15:40-16:00	Lattice Boltzmann simulations of free-surface flows with second order boundary conditions	<i>Jonas Tölke</i>

### 16:00-16:30 Coffee Break

Session: Applications and Hybrid Models

Chairman: R. Benzi

Main auditorium, Uni-Bastion B106

16:30-16:50	A Stochastic No-slip Wall Model in Dissipative Particle Dynamics	<i>J. H. Walther</i>
16:50-17:10	Choosing Optimal L-BGK Simulation Parameters for Time Harmonic Flows	<i>Lilit Abrahamyan</i>
17:10-17:30	Method of invariant grids for chemical kinetics	<i>Eliodoro Chiavazzo</i>
17:30-17:50	Lattice Boltzmann Methods for Multiligand chemical processes in aquatic systems	<i>Davide Alemanni</i>

## Wednesday Morning, August 23, 2006

### 08:00-08:40 Registration

Session: Invited V

Chairman: M. Droz

Main auditorium, Uni-Bastion B106

08:45-09:25	Lattice Boltzmann at any Mach number <i>Ilya Karlin</i>
09:25-10:05	A Modified Periodic Boundary Condition with Pressure Gradient for the Lattice Boltzmann Method <i>Daniel Y. Kwok</i>

### 10:05-10:30 Coffee Break

Session: Thermal & multiphase models

Chairman: D. Y Kwok

Main auditorium, Uni-Bastion B106

10:30-10:50	Study of Topology and Wettability Effects in 2D Multiphase Flows by Lattice Boltzmann Method <i>J. J. Huang</i>
10:50-11:10	3-D Simulations of Droplets on Solid Wall by Lattice Boltzmann Method <i>Yosuke Matsukuma</i>
11:10-11:30	Lattice Boltzmann method for two-phase flows: asymptotic analysis and applications <i>T. Inamuro</i>
11:30-11:50	Numerical simulation of isothermal and thermal two-phase flows using phase-field modeling <i>Naoki Takada</i>
11:50-12:10	A two-fluid lattice Boltzmann model for ideal mixtures <i>P. C. Philippi</i>
12:10-12:30	A Lattice Boltzmann Model for the Simulation of Mixtures <i>S. Arcidiacono</i>

### 12:30-14:00 Lunch

## Wednesday afternoon, August 23, 2006

Session Invited VI

Chairman: R. Kapral

Main auditorium, Uni-Bastion B106

14:00-14:40	Modelling biochemical networks using particle-based methods <i>Jaap Kaandorp</i>
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Session: Turbulence & DNS

Chairman: R. Kapral

Main auditorium, Uni-Bastion B106

14:40-15:00	Cascaded lattice Boltzmann automata: arbitrary high Reynolds number simulation without turbulence modeling or stabilization <i>Martin C. Geier</i>
15:00-15:20	Collision of a 2D dipole with a no-slip boundary with a lattice Boltzmann method <i>Jonas Latt</i>
15:20-15:40	An LBM based multiple reference frame (MRF) approach for simulation of turbulent rotating flow around a 4119 Propeller <i>Richard Shock</i>
15:40-16:00	Lattice Boltzmann LES simulations of turbulent open duct flow <i>M. Fernandez</i>
16:00-16:20	Two Dimensional Turbulence Studies: Simulations and Comparison with Experiments <i>Y.H. Qian</i>

**17:00–24:00 Wine Tasting & Conference Dinner**  
**Buses depart from Place Neuve at 17:00**

## Thursday Morning, August 24, 2006

### 08:00-08:40 Registration

Session: Invited VII

Chairman: V. Yakhot

Main auditorium, Uni-Bastion B106

08:45-09:25	Is Lattice Boltzmann Method a Valid Model for Microflow or only a CFD Tool? <i>Santosh Ansumali</i>
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Session: Hybrid Models

Chairman: V. Yakhot

Main auditorium, Uni-Bastion B106

09:25-09:45	Hybrid Lattice Boltzmann - Molecular Dynamics simulations of dense fluids <i>A. Dupuis</i>
09:45-10:05	Computer Simulation of Clay-like Colloids under shear <i>J. Harting</i>

### 10:05-10:30 Coffee Break

Session: Biomedical models

Chairman: Jaap Kaandorp

Main auditorium, Uni-Bastion B106

10:30-10:50	OpenLB: open source library for lattice Boltzmann fluid flow simulations <i>Vincent Heuveline</i>
10:50-11:10	Qualitative comparison of outflow boundary conditions for the lattice-Boltzmann method <i>Keijo Mattila</i>
11:10-11:30	Development of a Lattice Boltzmann Framework for the Numerical Simulation of Thrombosis <i>S.E.Harrison</i>
11:30-11:50	A lattice Boltzmann model for cancer mechanics <i>Alrabab H. Eisa</i>
11:50-12:10	Lattice Boltzmann Modeling of Thrombosis in Giant Aneurysms <i>B. Chopard</i>
12:10-12:30	Direct Simulation of Idealized Tendon Tissue with Lattice Boltzmann <i>David Holdych</i>

### 12:30–14:00 Lunch

## Thursday afternoon, August 24, 2006

Session Invited VIII

Chairman: S. Succi

Main auditorium, Uni-Bastion B106

14:00-14:40	Granular Gases: Playing with Sand <i>Thorsten Pöschel</i>
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Session: Implementation I

Chairman: S. Ansumali

Main auditorium, Uni-Bastion B106

14:40-15:00	Investigations of Drop Impact on Dry and Wet Walls Employing the Lattice-Boltzmann Method <i>Shiladitya Mukherjee</i>
15:00-15:20	One-step LBM Simulation of Aeroacoustic Problems <i>Randolph C. K. Leung</i>
15:20-15:40	Multiscale modelling of liquids with molecular specificity <i>G. De Fabritiis</i>
15:40-16:00	Simulation of macromolecules dynamics: an implicit solvent method <i>G. Giupponi</i>
16:00-16:20	Lattice Boltzmann simulation of laminar flow past a 2D circular cylinder <i>Raoyang Zhang</i>

### 16:20-16:50 Coffee Break

Session Invited IX

Chairman: S. Succi

Room: Uni-Dufour U300

17:00-17:40	Searching for Models in the Computational Universe <i>Stephen Wolfram</i>
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## Friday Morning, August 25, 2006

### 08:00-08:40 Registration

Session: Invited X

Chairman: G. Doolen

Main auditorium, Uni-Bastion B106

08:45-09:25	Relaxation-Time Approximation Far From Equilibrium <i>Viktor Yakhot</i>
09:25-10:05	Structure of colloidal systems in presence of hydrodynamics <i>Simone Melchionna</i>

### 10:05-10:30 Coffee Break

Session: Implementation II

Chairman: S. Melchionna

Main auditorium, Uni-Bastion B106

10:30-10:50	Volume exclusion for reducing compressibility effects in lattice Boltzmann models <i>R. Surmas</i>
10:50-11:10	Lattice Boltzmann versus Molecular Dynamics simulation of nanoflows <i>Sauro Succi</i>
11:10-11:30	An emergent technique towards the numerical simulation of complex fluids <i>Orestis Malaspinas</i>
11:30-11:50	MPI parallelization and performance aspects of a graph based LB flow solver <i>J. Bernsdorf</i>

### 12:00–14:00 Lunch

## Friday afternoon, August 25, 2006

Final Session

Chairman: B. Chopard

Main auditorium, Uni-Bastion B106

14:00-14:30	Round table and closing
14:30-14:45	Closing

**15:00–18:00 Visit at CERN**