

Wednesday December 11, 2002

19:00 *Welcome Reception*
Lam Woo International Conference Center

20:30 *End of Reception*

Thursday December 12, 2002

8:30 *Registration, Coffee/Tea*
WLB203

9:00 **Opening Ceremony** **Chair: Tao Tang (HKBU)**
Professor C. F. Ng, President, HKBU
Professor Fred Hickernell, Director of JRIAM
Professor Chi-Wang Shu, Co-organizer

9:25 **Photo**

Plenary Session A: **Chair: Guillermo Sapiro (Minnesota)**

9:40 Daniel D Joseph (University of Minnesota)
Floating Particles

10:30 Dimitri Vvedensky (Imperial College, United Kingdom)
Stochastic Differential Equations for Driven Lattice Systems

11:20 *Coffee Break*

Contributed Talk Session A: **Chair: Jun Zou (CUHK)**

11:40 Guowei Wei (Michigan State University)
A Local Spectral Method for Scientific Computing

12:00 Fred J. Hickernell (Hong Kong Baptist University)
Trigonometric Spectral Methods on Lattices

12:20 *Lunch*

Plenary Session B: **Chair: Zhong-Ci Shi (Chinese Academy of Sciences)**

2:00 Chia-Kun Chu (Columbia University)
A Revisit of Mixed Elliptic-Hyperbolic Equations

2:50 Endre Süli (University of Oxford, United Kingdom)
hp-Adaptive Finite Element Approximation of Partial Differential Equations with Nonnegative Characteristic Form

3:40 *Coffee Break*

Contributed Talk Session B: **Chair: Xu-Dong Liu (UCSB)**

4:00 Kun Xu (Hong Kong University of Science and Technology)
Gas-kinetic Schemes for Fluid Simulations

4:20 Ning Zhao (Nanjing University of Aeronautics and Astronautics, China)
Applications of Ghost Fluid Methods to Instabilities of Fluid Interfaces and Synthetic Jet

4:40 Antonio Marquina (University of Valencia, Spain)
Capturing Material Interfaces with High Order Conservative Methods

5:00 Weijun Tang (Institute of Applied Physics and Computational Mathematics, China)
Simulation of Fluid Interface Instability

5:20 Dong Li (Princeton University)
Chebyshev Spectral Methods on Lattices

5:40 Zhongyi Huang (Tsinghua University, China)
Atomistic-Continuum Method for the Simulation of Crystalline Materials

6:30 *Dinner (Refrew Seafood Restaurant, Baptist University Campus)*

Friday December 13, 2002

- 8:40 *Coffee/Tea*
WLB203
- Plenary Session C:** **Chair: David Gottlieb (Brown)**
- 9:00 Fanghua Lin (Courant Institute, NYU)
Multi-Energy Levels and Time Scales for Coupled Schrodinger Dynamics
- 9:50 Yann Brennier (CNRS Nice and Universite Paris 6, France)
Extended Optimal Transportation Theory
- 10:40 *Coffee Break*
- Contributed Talk Session C:** **Chair: Xiao-Ping Wang (HKUST)**
- 11:00 I-Liang Chern (National Taiwan University, Taiwan)
Acceleration Methods for Total Variation-based Image Restoration
- 11:20 Ola Marius Lysaker (University of Bergen, Norway)
Noise Removal Using Fourth-Order Partial Differential Equations with Applications to Medical Magnetic Resonance Images in Space and Time
- 11:40 Guojun Liao (University of Texas)
An Adaptive Moving Mesh Algorithm for Finite Elements
- 12:00 Justin Wan (University of Waterloo, Canada)
Essentially Nonoscillatory Multigrid Time Stepping Schemes
- 12:20 Boris N. Azerenok (Computing Center of Russian Academy of Sciences, Russia)
Adaptive Mesh Redistribution Method in Hyperbolic Problems of Gas Dynamics
- 12:40 *Lunch*
- Plenary Session D:** **Chair: Jian-Guo Liu (Maryland)**
- 2:10 Zhong-Ci Shi (Chinese Academy of Sciences, China)
Some Low Order Quadrilateral Reissner-Mindlin Plate Elements
- 3:00 Guillermo Sapiro (University of Minnesota)
Image Inpainting and Camouflage: Do Not Believe What You See
- 3:50 *Coffee Break*
- Contributed Talk Session D:** **Chair: Xiaonan Wu (HKBU)**
- 4:10 Huaxiong Huang (York University, Canada)
Motion of Liquid Drops on a Solid Surface
- 4:30 De-Kang Mao (Shanghai University, China)
Towards Front-Tracking Based on Conservation in Two Space Dimensions, Tracking Fronts on Cartesian Grid
- 4:50 Francesc Arandiga (University of Valencia, Spain)
Zooming into an Image with ENO Interpolation
- 5:10 Susana Serna (University of Valencia, Spain)
Power ENO Methods: A Fifth Order Accurate Weighted Power ENO Method
- 5:30 Chi-Tien Lin (Providence University, Taiwan)
Revisit Convex ENO Schemes
- 6:00 *Bus to Kowloon Club, Tsim Sha Tsui*
- 6:30 *Drink session (harbour view)*
- 7:30 *Conference Banquet at Kowloon Club, Tsim Sha Tsui*

Saturday December 14, 2002

- 8:40 *Coffee/Tea*
WLB203
- Plenary Session E:** **Chair: Fred Hickernell (HKBU)**
- 9:00 Tony Chan (UCLA)
PDE and Wavelet Techniques for Image Compression
- 9:50 Zhouping Xin (The Chinese University of Hong Kong)
Shock Wave for Supersonic Flow Past a Perturbed Cone
- 10:40 *Coffee Break*
- Contributed Talk Session E:** **Chair: Michael Ng (HKU)**
- 11:00 Jun Zou (The Chinese University of Hong Kong)
Some Iterative Solutions of Saddle-point and Saddle-point Like Systems
- 11:20 Xiao-Ping Wang (Hong Kong University of Science and Technology)
On Moving Contact Line Hydrodynamics of Immiscible Fluid
- 11:40 Hua Chen (Wuhan University, China)
On the Simplified Keller-Segel System Modelling Chemotaxis
- 12:00 Wei-Cheng Wang (National Tsing Hua University, Taiwan)
A Jump Condition Capturing Scheme for Elliptic Interface Problems
- 12:20 Rosa Donat (University of Valencia, Spain)
Shock-Vortex Interaction at High Mach Numbers
- 12:40 *Lunch*
- Plenary Session F:** **Chair: Hongkai Zhao (UC Irvine)**
- 2:10 Yoshikazu Giga (Hokkaido University, Japan)
A Level Set Approach for Solutions with Shocks of Order Preserving Evolution Equations
- 3:00 Roland Glowinski (University of Houston)
Numerical Methods for the Solution of a System of Eikonal Equations with Dirichlet Boundary Conditions
- 3:50 *Coffee Break*
- Contributed Talk Session F:** **Chair: Weiwei Sun (CityU)**
- 4:10 Chong Sze Tong (Hong Kong Baptist University)
Advances in Snake Algorithms
- 4:30 Steve Bryson (NASA Ames Research Center)
High-Order Semi-Discrete Central-Upwind Schemes for Multi-Dimensional Hamilton-Jacobi Equations
- 4:50 Vicente F. Candela (University of Valencia, Spain)
How Accurate can we Compute the Length of Level Curves?
- 5:10 Yu-Xin Ren (Tsinghua University, China)
A Shock Instability Free FDS Scheme Based on Rotated Riemann Solvers
- 5:30 Shu Wang (Vienna University, Austria)
Quasineutral Limit of Euler-Poisson System with and without Viscosity

Sunday December 15, 2002

- 8:40 *Coffee/Tea*
WLB203
- Plenary Session G:** **Chair: Bjorn Engquist (Princeton/UCLA)**
- 9:00 David Gottlieb (Brown University)
Special Methods for Discontinues Problems
- 9:50 Takashi Yabe (Tokyo Institute of Technology, Japan)
Universal Solver CIP for All Phases of Matter
- 10:40 *Coffee Break*
- Contributed Talk Session G:** **Chair: Zhen-Huan Teng (Peking)**
- 11:00 Jian-Guo Liu (University of Maryland)
Energy and Helicity Preserving Scheme
- 11:20 Steve Ruuth (Simon Fraser University, Canada)
Recent Advances in Strong-Stability-Preserving Runge-Kutta Methods
- 11:40 Wai-Sun Don (Brown University)
Spectral Convergence of Mapped Chebyshev Methods
- 12:00 Xu-Dong Liu (University of California, Santa Barbara)
A Numerical Method for Solving Variable Coefficient Elliptic Equation with Interfaces
- 12:30 *Lunch*
- Plenary Session H:** **Chair: Shiu-Yuen Cheng (HKUST)**
- 2:00 Barry Merriman (UCLA)
A Mathematician's Perspective on Molecular Biology
- 2:50 Bjorn Engquist (UCLA & Princeton, USA)
Heterogenoeus Multiscale Methods
- 3:40 **Closing Session** **Chair: Chi-Wang Shu (Brown)**