

## Sunday May 22, 2005

18:30 - 20:30

*Welcome Reception*  
*Lam Woo International Conference Center*

## Monday May 23, 2005

WLB204, Wing Lung Bank Building

08:30

Registration, Coffee/Tea

09:00

**Opening Ceremony**

**Chair: Tao Tang (HKBU)**

Professor C. F. Ng, President, HKBU  
Professor K.C. Chang, Peking University  
Mr. Jim Brookes, MITACS

09:25

**Photo**

**Session A1: Technology/Applications**

**Chair: Yingming Liu (Sichuan Univ)**

09:40 - 10:25

Xuan Zeng (Fudan University)

*Mathematical Challenges in the Design and Verification of High Speed Nanometer SOC Circuits*

10:25 - 11:10

Michael Ng (University of Hong Kong)

*Online Combinational Contract Auction Platform*

11:10

Coffee Break

**Session A2: Wireless Communication**

**Chair: Jiping Zhang (Peking Univ)**

11:30 - 12:15

Yiqiang Zhao (Caleton University)

*Stochastic Modeling on Fairness of Bandwidth Allocation in Wireless Networks*

12:15 - 12:40

Dongfeng Li (Peking University)

*Scheduling in Realistic High Speed Wireless Data Communications*

12:40

Lunch (Renfrew Restaurant)

**Session A3: Dynamical Systems/Biology**

**Chair: Zixin Hou (Nankai Univ)**

02:00 - 02:45

Yongchuan Chen (Nankai University)

*Sequential Dynamical Systems for Computer Simulation*

02:45 - 03:30

Huaping Zhu (York University)

*A Global Stability Theorem of ODE Systems and Applications*

03:30 - 03:55

Yicang Zhou (Xi'an Jiaotong University)

*Periodic Solutions of Infection Disease Models*

03:55

Coffee Break

**Session A4: Dynamical Systems II**

**Chair: Huaxiong Huang (York Univ)**

04:10 - 04:55

Xiaoqiang Zhao (Memorial University of Newfoundland)

*An Epidemic Model in a Patchy Environment*

04:55 - 05:40

Xingfu Zou (University of Western Ontario)

*Co-existence of Chaos and Stable Periodic Orbits in Discrete Neural Networks*

05:40 - 06:25

Yun Tang (Tsinghua University)

*Nonlinear Dynamic Problems Proposed in Sciences and Engineering*

06:30

Dinner (Renfrew Restaurant)

**Tuesday May 24, 2005**

WLB204, Wing Lung Bank Building

08:40

Coffee/Tea

**Session B1: Biology (DNA/RNA)**

**Chair: Jim Brookes (MITACS)**

09:00 - 09:45

Arvind Gupta (MITACS)

*Lattice Structures for Inverse Protein Folding*

09:45 - 10:30

Evangelous Kranakis (Carleton University)

*Folding Energies of Structural and Random RNA*

10:30

Coffee Break

**Session B2: Data Analysis**

**Chair: Lizhi Liao (HKBU)**

10:50 - 11:35

Zongben Xu (Xi'an Jiaotong University)

*A New Approach for Classification and Regression: Visual Simulation Viewpoint*

11:35 - 12:20

Sixun Huang (PLA University of Technology)

*Theoretical Analyses and Numerical Experiments of Variational Data Assimilation with Techniques of Regularization Methods*

12:30

Lunch (Renfrew Restaurant)

**Session B3: Differential Equations**

**Chair: Pingwen Zhang (Peking Univ)**

02:00 - 02:45

John Walsh (University of British Columbia)

*Some Remarks on the Rate of Convergence of Numerical Schemes for the Stochastic Wave Equation*

02:45 - 03:30

Jishou Ruan (Nankai University)

*A Self-Referential Model for Predicting the Coordinates of  $C_\alpha$  Based on its Primary Sequence Alone*

03:30

Coffee Break

**Session B4: Applications I**

**Chair: Chong Sze Tong (HKBU)**

03:50 - 04:35

Jack A. Tuszynsk (University of Alberta)

*The Development of Novel Oncotherapy Approaches Inspired by Computational Biophysics*

04:35 - 05:20

Hongjun Yuan (Jilin University)

*Some Mathematical Problems in Fluid Dynamics*

05:20 - 05:45

Dinghui Yang (Tsinghua University)

*An Optimal Nearly-Analytic Discrete Method for 2D Acoustic and Elastic Wave Equations*

05:45 - 06:10

Shugong Zhang (Jilin University)

*Some Remarks on the Zeros of Polynomials with Restricted Coefficients*

06:30

Dinner (Renfrew Restaurant)

**Wednesday May 25, 2005**

WLB204, Wing Lung Bank Building

08:40

Coffee/Tea

**Session C1: Computing**

**Chair: Zhiming Zheng (Peking Univ)**

09:00 - 09:45

Pingwen Zhang (Peking University)

*The Structure and Stability of Stationary Solutions of Onsager Equation*

09:45 - 10:30

Peter Borwein (Simon Fraser University)

*Computers, Mathematics and Million Dollar Prizes*

10:30

Coffee Break

**Session C2: Finance**

**Chair: Maokang Luo (Sichuan Univ)**

10:50 - 11:35

Yue Kuen Kwok (Hong Kong University of Science and Technology)

*Multiple Optimal Stopping Models in Financial Instruments*

11:35 - 12:00

Jingping Yang (Peking University)

*An Approximation Method for Pricing CDOs*

12:00 - 12:25

Zhaojun Wang (Nankai University)

*Control Charts Based on Likelihood Ratio for Preliminary Analysis of Linear Profile*

12:30

Lunch (Renfrew Restaurant)

**Session C3: Applications II**

**Chair: Xiaonan Wu (HKBU)**

02:00 - 02:45

Maokang Luo (Sichuan University)

*Some Aspects on Mathematical Treatments of Uncertainty and Their Applications*

02:45 - 03:10

Qi-Ru Wang (Sun Yat-Sen (Zhongshan) University)

*Spreading Speed and Traveling Waves for the Diffusive Logistic Equation with a Sedentary Compartment*

03:10 - 03:35

Jiangshe Zhang (Xi'an Jiaotong University)

*Clustering Methods Based on Mechanics of Biological Systems*

03:35

Coffee Break

**Session C4: Modeling/Case Studies**

**Chair: Weimin Xue (HKBU)**

03:50 - 04:35

Yi Li (Hong Kong Polytechnic University)

*Computational Modeling in Engineering Design of Textiles and Apparel Products*

04:35 - 05:00

Sean Bohun (Penn State, USA)

*Crystal Growth from 3D to 1D*

05:00 - 05:25

Jinbiao Wu (Peking University)

*A Semi-Analytical Thermal Elastic Model for Directional Crystal Growth with Weakly Anisotropy*

05:25 - 06:10

Huaxiong Huang (York University)

*Problems from Industry: Case Studies*

06:30 - 10:00

Banquet (Yau Yat Chuen Garden City Club)

Arvind Gupta (MITACS)

*Overview of MITACS Industrial and Research Activities*