

The First International Symposium on Optimization and Systems Biology (OSB 2007)

Local Organizer



Organizers



Sponsors



August 8-10, 2007
Beijing, China

北京友谊宾馆示意图

Plan of Beijing Friendship Hotel



YingBin Restaurant Lunch

**Building 8
Registration
Meeting room**

Building 2

**Friendship Palace
Welcome reception**

Schedule

August 7 Tuesday	15:00–19:00	Registration	
	19:00–20:00	Welcome reception at hotel	
August 8 Wednesday	08:30–08:50	Opening session	
		Symposium co-chair speech	
	08:50–10:30	Plenary session I (two speakers)	
	10:30–10:50	Coffee break, taking pictures	
	10:50–12:30	Plenary session II (two speakers)	
	12:30–13:30	Lunch	
	13:30–15:10	Parallel session A1	Parallel session B1
		Systems Biology I	Bioinformatics I
	15:10–15:30	Coffee break	
15:30–16:50	Parallel session A2	Parallel session B2	
	Systems Biology II	Theory & Applications of SVM	
17:10–19:00	Dinner		
19:15–20:30	Acrobatic show at Beijing Chaoyang Theater		
August 9 Thursday	08:30–10:10	Plenary session III (two speakers)	
	10:10–10:30	Coffee break	
	10:30–12:30	Parallel session A3	Parallel session B3
		Systems Biology III – Networks in Cellular System	Optimization I
	12:30–13:30	Lunch	
	13:30–15:30	Parallel session A4	Parallel session B4
		Systems Biology IV – Dynamics of Molecular Networks	Bioinformatics II – Feature Selection & Extraction
	15:30–15:50	Coffee break	
	15:50–17:50	Parallel session A5	Parallel session B5
Optimization II		Bioinformatics III – Computational Models & Algorithms	
18:10–20:00	Banquet		
August 10 Friday	08:00–13:00	One day excursion (Great Wall)	
	13:00–14:30	Lunch	
	14:30	Back to hotel	

OSB 2007 Program

August 8-10, Beijing, China

(Rev. 6, Last Updated: 2007-08-07)

August 7 (Tuesday) Registration

15:00-19:00 Registration, Lobby Building 8, Beijing Friendship Hotel (BFH)

19:00-20:00 Welcome reception, First floor, Friendship Palace, BFH

August 8 (Wednesday) Technical sessions (Building 8)

08:30-08:50 Opening session (Meeting room No. 1)

08:50-10:30 Plenary session I (Meeting room No. 1)

Chair: Stephen TC Wong

08:50-09:40 *A Systems-Biology View to Diabetes*

Jiarui Wu

Chinese Academy of Sciences, China

09:40-10:30 *Non-unique Probe Selection with Group Testing*

Ding-Zhu Du

Xi'an Jiaotong University, China

10:30-10:50 Coffee break (taking picture)

10:50-12:30 Plenary session II (Meeting room No. 1)

Chair: Ding-Zhu Du

10:50-11:40 *An LP-based Approach towards Detecting Community Structures in Networks*

Andreas Dress

CAS-MPG Partner Institute for Computational Biology, China

11:40-12:30 *Computational Systems Biology on Networks and Dynamics*

Luonan Chen

Shanghai University, China

12:30-13:30 Lunch break

13:30-15:10 Parallel session A1 (Meeting room No. 3)

Topic: Systems Biology I

Chair: Doheon Lee

13:30-13:50 *Loosely Coupled Architecture for Bio-Network Reverse Engineering*

Sungwon Jung, **Sangwoo Kim**, Doheon Lee
Korea Advanced Institute of Science and Technology, Korea

13:50-14:10 *Optimal Finite-Horizon Control for Probabilistic Boolean Networks with Hard Constraints*

Wai-Ki Ching, Shu-Qin Zhang, **Yue Jiao**, Tatsuya Akutsu, Alice S. Wong
University of Hong Kong, Hong Kong

14:10-14:30 *Analysis of Signaling Pathway for the Differentiation of Neural Stem Cells*

Wei Lu, Jiao Wang, **Tieqiao Wen**
Shanghai University, China

14:30-14:50 *An Optimization Model for Gene Regulatory Network Reconstruction with Known Biological Information*

Jinshan Li, Xiang-Sun Zhang
Beijing Forestry University, China

14:50-15:10 *Use of a Rank Method for the Analysis of Gene Expression Data: Decoding the Nucleoid Organization of Bacillus Subtilis and Escherichia coli*

Anne-Sophie Carpentier, Bruno Torresani, **Alex Grossmann**, Alain Henaut
Université d'Evry, France

13:30-15:10 Parallel session B1 (Meeting room No. 2)

Topic: Bioinformatics I

Chair: Michael K. Ng

13:30-13:50 *Missing Enzyme Identification Using Reversible-Jump Markov-Chain-Monte-Carlo Learning Approach*

Bo Geng, **Xiaobo Zhou**, Jinmin Zhu, Y. S. Hung, Stephen Wong
Harvard Medical School, USA

13:50-14:10 *Local Similarities and Clustering of Biological Sequences: New Insights from N-local Decoding*

Eduardo Corel, Ramzi El Fegalhi, Fanny Gérardin, Mark Hoebeke, Marc Nadal, **Alexandre Grossmann**, Claudine Devauchelle
Université d'Evry, France

14:10-14:30 *Analyzing Protein Sequences Using Quantitative Association Rule*

Meng Ma, Shuangping Chen, Junqing Niu, Xufa Wang
University of Science and Technology of China, China

14:30-14:50 *An Approach for Clustering Protein Pockets into Similar Groups*

Zhi-Ping Liu, Ling-Yun Wu, Yong Wang, Xiang-Sun Zhang, Luonan Chen
Chinese Academy of Sciences, China

14:50-15:10 *Large Validation of Anti-learnable Signature in Classification of Response to Chemoradiotherapy in Esophageal Adenocarcinoma Patients*

Adam Kowalczyk, Danielle M. Greenawalt, **Justin Bedo**, Cuong Duong, Garvesh Raskutti, Robert J. S. Thomas, Wayne A. Phillips
University of Melbourne, Australia

15:10-15:30 Coffee break

15:30-16:50 Parallel session A2 (Meeting room No. 3)

Topic: Systems Biology II

Chair: Xiaobo Zhou

15:30-15:50 *Emerging Collective Behaviors of Animal Groups*

Jinhu Lu

Chinese Academy of Sciences, China

15:50-16:10 *Application of Self-Organizing Map to Structure-Odour Relationships*

Koki Sato, Atsushi Miyazaki, **Shin-ya Takane**, John B. O. Mitchell

Osaka Sangyo University, Japan

16:10-16:30 *Integrated Data Mining Strategy for Effective Metabolomic Data Analysis*

Younghoon Kim, Inho Park, Doheon Lee

Korea Advanced Institute of Science and Technology, Korea

16:30-16:50 *Periodic Oscillation of Piecewise Linear Three-gene Regulatory Network with Negative Feedback Loops*

Yi Wang, Jian-Wei Shen, Zengrong Liu

Shanghai University, China

15:30-16:50 Parallel session B2 (Meeting room No. 2)

Topic: Theory & Applications of SVM

Chair: Ling Jing

15:30-15:50 *Second Order Cone Programming Formulations for Robust Support Vector Ordinal Regression Machine*

Zhi-Xia Yang, Ying-Jie Tian, Nai-Yang Deng

China Agricultural University, China

15:50-16:10 *SVM-based Automatic Classification for Protein Structural Domain*

Xiao-Jian Shao, Ying-Jie Tian, Nai-Yang Deng

China Agricultural University, China

16:10-16:30 *An MPEC Model for Selecting Optimal Parameter in Support Vector Machines*

Yu-Lin Dong, Zun-Quan Xia, Ming-Zheng Wang

Shandong University of Science and Technology, China

16:30-16:50 *Decremental Learning Algorithms for Nonlinear Lagrangian and Least Squares Support Vector Machines*

Hua Duan, Hua Li, Guoping He, Qingtian Zeng

Shanghai Jiaotong University, China

17:10 Departure to theater in front of Building 8

18:00-19:00 Dinner (at a restaurant near by the theater)

19:15-20:30 Acrobatic show (Beijing Chaoyang Theater)

August 9 (Thursday) Technical sessions (Building 8)

08:30-10:10 Plenary session III (Meeting room No. 1)

Chair: Andreas Dress

08:30-09:20 *Computational Systems Biology*

Satoru Miyano

University of Tokyo, Japan

09:20-10:10 *Computational Approaches to Gene Regulation*

Jun Liu

Harvard University, USA

10:10-10:30 Coffee break

10:30-12:30 Parallel session A3 (Meeting room No. 3)

Topic: Systems Biology III - Networks in Cellular Systems

Chair: Xing-Ming Zhao

10:30-10:50 *Targeting Spatio---Temporal Patterns in Chaotic Neural Network*

Manish Dev Shrimali, Guoguang He, Kazuyuki Aihara

University of Tokyo, Japan

10:50-11:10 *Gene Function Prediction with the Shortest Path in Functional Linkage Graph*

Xing-Ming Zhao, Luonan Chen, Kazuyuki Aihara

University of Tokyo, Japan

11:10-11:30 *Establishing Protein Functional Linkage in a Systematic Way*

Yong Wang, Rui-Sheng Wang, Xiang-Sun Zhang, Luonan Chen

Chinese Academy of Sciences, China

11:30-11:50 *Semi-synthetic Analysis toward Validating Roles of a Transcription/Translation Feedback Process for the Cyanobacterial KaiC-protein-based Circadian System in Escherichia coli*

Hirokazu Tozaki, Taiichiro Kobe, Kazuyuki Aihara, Hideo Iwasaki

University of Tokyo, Japan

11:50-12:10 *New Insights into Network Motif Clusters from the Views of Cellular Localizations and Signal Pathways*

Guangxu Jin, Shihua Zhang, Xiang-Sun Zhang, Luonan Chen

Chinese Academy of Sciences, China

12:10-12:30 *Detecting Community Structures in Gene Networks using Gene-Ontology Annotation*

Lihuan Dong, Winking Q. Yu, Andreas M. W. Dress

CAS-MPG Partner Institute for Computational Biology, China

10:30-12:30 Parallel session B3 (Meeting room No. 1)

Topic: Optimization I

Chair: Degang Liu

10:30-10:50 *Remodelling of the Inverse DEA Model: A Prediction Tool for Not-for-profit*

Organizations

Jin-Chuan Cui, Xiang-Sun Zhang, Xiao-Ya Li
Chinese Academy of Sciences, China

10:50-11:10 *The Optimum Method of Prior Parameters in Survival Analysis*

Ming Han
Fujian University of Technology, China

11:10-11:30 *A New T-F Function Theory and Algorithm for Nonlinear Integer Programming*

Wei-Xiang Wang, You-Lin Shang, Lian-Sheng Zhang
Shanghai University, China

11:30-11:50 *A Framework of Optimization Method for Classification*

Juliang Zhang, Yong Shi
Beijing Jiaotong University, China

11:50-12:10 *Extra Resource Allocation Problem with the Most Compromise Common Weights Based on DEA*

Xiao-Ya Li, Jin-Chuan Cui
Chinese Academy of Sciences, China

12:10-12:30 *A Trust Region Algorithm Model With Radius Bounded Below for Minimization of Locally Lipschitzian Functions*

Houchun Zhou, Dexue Zhang, Wenyu Sun
Linyi Teachers College, China

12:30-13:30 Lunch break

13:30-15:30 Parallel session A4 (Meeting room No. 3)

Topic: Systems Biology IV - Dynamics of Molecular Networks

Chair: Ruiqi Wang

13:30-13:50 *Noise-induced Robust Collective Behaviors in a Multicellular System*

Ruiqi Wang, Luonan Chen, Kazuyuki Aihara
Shanghai University, China

13:50-14:10 *Four Examples of Phase Synchronization in Oscillator Networks*

Wenqiao He, Jianhua Xu, **Zengrong Liu**
Shanghai University, China

14:10-14:30 *Qualitative Cellular Dynamics Analysis with Gene Regulatory Information and Metabolic Pathways*

Hojung Nam, Kwang H. Lee, Doheon Lee
Korea Advanced Institute of Science and Technology, Korea

14:30-14:50 *Numerical Modeling of the Transmission Dynamics of Influenza*

Wirawan Chinviriyasit
King Mongkut's University of Technology Thonburi, Thailand

14:50-15:10 *Synchronizing Independent Gene Oscillators by Common Noisy Signaling Molecule*

Tianshou Zhou, Yanbin Zhang, Anlong Xu, Luonan Chen
Zhongshan University, China

15:10-15:30 *Robust Impulsive Synchronization of Delayed Dynamical Networks and Its Applications*

Lan Xiang, Zengrong Liu, Jin Zhou
Shanghai University, China

13:30-15:30 Parallel session B4 (Meeting room No. 1)

Topic: Bioinformatics II - Feature Selection & Extraction

Chair: Guo-Zheng Li

13:30-13:50 *Peak Detection with Chemical Noise Removal Using Short-Time FFT for a Kind of MALDI Data*

Shu-Qin Zhang, **Xiaobo Zhou**, Honghui Wang, Anthony Suffredini, Denise Gonzales,
Wai-Ki Ching, Michael K. Ng, Stephen Wong
University of Hong Kong, Hong Kong

13:50-14:10 *Reducing Error of Tumor Classification by Using Dimension Reduction with Feature Selection*

Hua-Long Bu, **Guo-Zheng Li**, Xue-Qiang Zeng
Shanghai University, China

14:10-14:30 *Two Improvements of NMF Used for Tumor Clustering*

Zhong-Yuan Zhang, Xiang-Sun Zhang
Chinese Academy of Sciences, China

14:30-14:50 *Simple Gene Selection Method for Microarray Data Analysis*

Michael K. Ng, **Eric S. Fung**
Hong Kong Baptist University, Hong Kong

14:50-15:10 *A Discriminate Multidimensional Mapping for Small Sample Database*

Xiaoqin Hu, **Ling Jing**, Qian Li
China Agricultural University, China

15:10-15:30 *Robust Measurement Selection for Biochemical Pathway Experimental Design*

Martin Brown, **Fei He**, Lam Fat Yeung
University of Manchester, UK

15:30-15:50 Coffee break

15:50-17:50 Parallel session A5 (Meeting room No. 3)

Topic: Optimization II

Chair: Jin-Chuan Cui

15:50-16:10 *Vehicle Routing for Medical Supplies in Large-Scale Emergencies*

Degang Liu, Jiye Han, Jianming Zhu
Chinese Academy of Sciences, China

16:10-16:30 *A Posteriori Error Estimator for Linear Elliptic Problem*

S. Chinviriyasit
King Mongkut's University of Technology Thonburi, Thailand

16:30-16:50 *The Auxiliary Problem Algorithm for Generalized Linear Complementarity Problem Over a Polyhedral Cone*

Dexue Zhang, Hongchun Sun
Linyi Teachers College, China

16:50-17:10 *The Incidence Chromatic Number of 2-connected 1-trees*

Hua Duan, Qingtian Zeng, Congying Han, Wenjun Lian
Shanghai Jiaotong University, China

17:10-17:30 *Parallel Simulation of Compressible Fluid Dynamics Using Lattice Boltzmann Method*
Bing He, Wei-Bing Feng, Wu Zhang, Yu-Ming Cheng
Shanghai University, China

17:30-17:50 *A Quadratic Programming Model for Political Districting Problem*
Zhenping Li, Rui-Sheng Wang, **Yong Wang**
Chinese Academy of Sciences, China

15:50-17:50 Parallel session B5 (Meeting room No. 1)

Topic: Bioinformatics III - Computational Models & Algorithms

Chair: Zhijun Wu

15:50-16:10 *Solving Large Double Digestion Problems for DNA Restriction Mapping by Using Branch-and-Bound Integer Linear Programming*
Zhijun Wu, Yin Zhang
Iowa State University, USA

16:10-16:30 *Weighted Local Least Squares Imputation Method for Missing Value Estimation*
Wai-Ki Ching, Kwai-Wa Cheng, Li-Min Li, Nam-Kiu Tsing, Alice S. Wong
University of Hong Kong, Hong Kong

16:30-16:50 *Integer Programming-based Approach to Allocation of Reporter Genes for Cell Array Analysis*
Morihiro Hayashida, Fuyan Sun, Sachiyo Aburatani, Katsuhisa Horimoto, Tatsuya Akutsu
Kyoto University, Japan

16:50-17:10 *Linkage Disequilibrium Map by Unidimensional Nonnegative Scaling*
Michael K. Ng, Eric S. Fung, Hai-Yong Liao
Hong Kong Baptist University, Hong Kong

17:10-17:30 *Two Phase Evolutionary Method for Multiple Sequence Alignments*
Farhana Naznin, **Morikazu Nakamura**, Takeo Okazaki, Yumiko Nakajima
University of the Ryukyus, Japan

17:30-17:50 *Assessing Distance Measures for Protein Structure Comparison*
Zikai Wu, Yong Wang, Enmin Feng, Luonan Chen
Dalian University of Technology, China

18:10 **Departure to restaurant at the front of Building 8**

18:30-20:00 Banquet (Peking Duck Restaurant)

August 10 (Friday) One-day excursion

08:00 Departure to Great Wall (Gathering & departing at Building 2)

13:00 Lunch

14:30 Back to hotel

*The above program subjects to revision based on further registration and updated information.