

The Ninth **I**nternational **S**ymposium on **O**perations
Research and its **A**pplications

ISORA 2010
Program

August 19-23, 2010
Chengdu-Jiuzhaigou, China

Local Organizer



Sponsors



ISORA 2010 Program

The 9th International Symposium on Operations Research and its Applications
August 19-23, 2010, Chengdu-Jiuzhaigou, China

August 19 (Thursday)

15:00-22:30 Participants arrival in Chengdu. Check in Tibet Hotel Chengdu. Registration package pick up (Lobby at Tibet Hotel Chengdu)

18:30-20:00 Welcome Reception Dinner (Pearl Star Restaurant, 1st floor)

August 20 (Friday) Technical Sessions

07:00-09:00 Breakfast (at Coffee Shop, 2nd floor)

08:00-11:30 Registration for late arrivals (Tibet Hotel Chengdu Lobby)

08:10-08:30 Opening Session (Location: Himalayan Hall, 17th floor)

08:30-10:30 Plenary Session

Chair: Xiang-Sun Zhang

Location: Himalayan Hall, 17th floor

08:30-09:10 *Sequential Approximate Multiobjective Optimization using Computational Intelligence*, Prof. **Hiroataka Nakayama**, Konan University, Japan

09:10-09:50 *Composition Vector Method for Phylogenetics-A Review*, Prof. **Raymond H. Chan**, The Chinese University of Hong Kong, China

09:50-10:30 *Start your Town Management Marketing from Measuring the Accurate Number of Visitors at Your Own City and How They Shop-around (Kaiyu)*, Prof. **Saburo Saito**, Fukuoka University, Japan

10:30-10:50 Coffee Break

10:50-12:30 Parallel Sessions A1/B1/C1

10:50-12:30 Parallel Session A1: *Networks and Combinatorics*

Chair: Prof. Toshihide Ibaraki

Location: Himalayan Hall, 17th floor

10:50-11:10 *Community Extraction in Hypergraphs Based on Adjacent Numbers*, **Hiroyuki Miyagawa, Maiko Shigeno, Satoshi Takahashi, Mingchao Zhang**, University of Tsukuba, Japan

11:10-11:30 *On Resolution Limit of the Modularity in Community Detection*, **Junhua Zhang**, Xiang-Sun Zhang, Academy of Mathematics and Systems Science, Chinese

Academy of Science, China

- 11:30-11:50 *Locating Flow Capturing Facilities on a Railway Network with Two Levels of Coverage*, **Ken-ichi Tanaka**, **Takehiro Furuta**, the University of Electro-Communications, Japan
- 11:50-12:10 *A Study on Analyzing the Grid Road Network Patterns using Relative Neighborhood Graph*, **Daisuke Watanabe**, Takahiro Majima, Keiki Takadama, Mitujiro Katuhara, Tokyo University of Marine Science and Technology, Japan
- 12:10-12:30 *Analysis of Toll Setting for Japanese Highway Networks Based on Social Optimization*, **Yudai Honma**, **Atsushi Hamada**, Waseda University, Japan

10:50-12:30 Parallel Session B1: Management Sciences

Chair: Prof. Tatsuo Oyama

Location: Himalayan Hall, 17th floor

- 10:50-11:10 *Optimal Stopping Rules of Discrete-Time Callable Financial Commodities with Two Stopping Boundaries*, **Kimitoshi Sato**, Katsushige Sawaki, Hiroyuki Wakinaga, Nanzan University, Japan
- 11:10-11:30 *An Optimal Investment Policy in Equity-Debt Financed Firms with Finite Maturities*, **Kyoko Yagi**, Ryuta Takashima, **Katsushige Sawaki**, Akita Prefectural University, Japan
- 11:30-11:50 *Nonlinear Dynamics in COMEX Gold Futures Basis: LSTAR-EGARCH*, **Chong Chen**, **Shan-Ying Xu**, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- 11:50-12:10 *Valuation of Derivative on Asset with Network Price Externality Effects*, **Yoshio Tabata**, Hiroyasu Akakabe, Nanzan University, Japan
- 12:10-12:30 *Callable Russian Options with the Finite Maturity*, **Atsuo Suzuki**, Meijo University, Japan

10:50-12:30 Parallel Session C1: Queueing Models and Scheduling

Chair: Prof. Wuyi Yue

Location: Red Mountain Hall, 17th floor

- 10:50-11:10 *A New Approach for Scheduling Problem in Multi-Hop Sensor Networks*, **Takamori Ukai**, **Mihiro Sasaki**, **Fumio Ishizaki**, **Atsuo Suzuki**, Nanzan University, Japan
- 11:10-11:30 *Structural Properties for Job Shop Scheduling with Setups in a Local Search Environment*, **Udo Buscher**, **Liji Shen**, Dresden University of Technology, Germany
- 11:30-11:50 *A Solution Method for Manpower Scheduling Problems by RCPSP/t*, **Masanori Horio**, **Atsuo Suzuki**, Nagoya University of Arts and Sciences, Japan
- 11:50-12:10 *A Row-and-Column Generation Method to a Batch Machine Scheduling Problem*, **Gongshu Wang**, Lixin Tang, Northeastern University, China
- 12:10-12:30 *Optimum Design of Storage Cycle Time Analysis using Queueing Theory and Taguchi Method for a Conveyor and a Rotary Rac*, Masatoshi Kitaoka, **Hitoshi Takeda**, **Rui Nakamura**, **Yanwen Dong**, Bunkyo University, Japan

12:30-13:30 Lunch

13:30-15:30 Parallel Sessions A2/B2/C2

13:30-15:30 Parallel Session A2: *Special Session on Marketing Science*

Chair: Prof. Sydney Chu

Location: Himalayan Hall, 17th floor

- 13:30-13:50 *Evaluating the Risk of Urban Redevelopment Viewed as a Social Decision Process*³²⁷, **Saburo Saito, Mamoru Imanishi**, Fukuoka University, Japan
- 13:50-14:10 *Factors to Determine the Length of Staying Time of Consumer Shop-around (Kaiyu) at City Center*, **Saburo Saito, Kosuke Yamashiro**, Mamoru Imanishi, Takanori Sakaki, Yasufumi Igarashi, Masakuni Kakoi, Fukuoka University, Japan
- 14:10-14:30 *Comparing Total Time Allocation to Travel to Daily Shopping Sites in Shanghai and Beijing*, **Saburo Saito, Masakuni Iwami, Xiaonan Chu**, Fukuoka University, Japan
- 14:30-14:50 *Little's Formula and Parking Space Policy Viewed from Consumers' Parking Behaviors at City Center Retail Environment*, **Saburo Saito, Takahiro Sato, Kosuke Yamashiro**, Fukuoka University, Japan
- 14:50-15:10 *Two Case Studies on Marketing Science as OR Application*, **Mingzhe Li**, Hajime Wada, Yuina Sakimoto, Fukuoka University, Japan
- 15:10-15:30 *Optimal Production-Inventory Policy under Energy Buy-Back Program*, **Xiao-Song Ding**, Ji-Hong Zhang, Xi Chen, Wei Shi, Beijing Foreign Studies University, China

13:30-15:30 Parallel Session B2: *Algorithms Design and Analysis*

Chair: Prof. Maciej Ogorzalek

Location: Red Mountain Hall, 17th floor

- 13:30-13:50 *Tractability and Intractability of Problems on Unit Disk Graphs Parameterized by Domain Area*, **Hiro Ito**, Masakazu Kadoshita, Kyoto University, Japan
- 13:50-14:10 *Shift-and-Merge Technique for the DP Solution of the Backpacker Problem*, **Byungjun You**, Takeo Yamada, Department of Computer Science, The National Defense Academy Yokosuka, Japan
- 14:10-14:30 *A Linear Time Algorithm for Edge Searching on 3-Cycle-Disjoint Graphs*, **Boting Yang**, Runtao Zhang, Yi Cao, University of Regina, Canada
- 14:30-14:50 *Polyhedral Split Decomposition of Tropical Polytopes for Directed Distances*, **Shungo Koichi**, Nanzan University, Japan
- 14:50-15:10 *Two-stage Model of Vehicle Routing Problem with Fuzzy Demands and its Ant Colony System Algorithm*, **Yanwen Dong**, Masatoshi Kitaoka, Cluster of Science and Technology, Fukushima University, Japan
- 15:10-15:30 *Approximation Algorithms for the Multiply Constrained Assignment Problem*, **Daisuke Yokoya**, Takeo Yamada, The National Defense Academy Yokosuka, Japan

13:30-15:30 Parallel Session C2: *OR Applications I*

Chair: Prof. Hiroyuki Kawano

Location: Tanggula Hall, 17th floor

- 13:30-13:50 *A New Descriptor for 3D Trajectory Recognition*, J. Y. Yang, **Y. F. Li**, MEEM of City University, Hong Kong
- 13:50-14:10 *An Optimization Model for Fuzzy Binary Clustering*, **Xianwen Ren**, Yong Wang, Jiguang Wang, Xiang-Sun Zhang, Academy of Mathematics and Systems Science, Chinese Academy of Science, China
- 14:10-14:30 *Entry and Exit Decisions of FDI under Foreign Price and Exchange Rate Uncertainties*, **Masaaki Kijima**, Teruyoshi Suzuki, Yuan Tian, Tokyo Metropolitan University, Japan
- 14:30-14:50 *Modeling Risk Control Problems in VE under Complicated Situations and Its Solution Method*, **Min Huang**, Yanli Huo, **Chunhui Xu**, Xingwei Wang, College of Information Science and Engineering Northeastern University, China
- 14:50-15:10 *Constant Time Generation of Trees with Degree Bounds*, **Bingbing Zhuang**, **Hiroshi Nagamochi**, Kyoto University, Japan
- 15:10-15:30 *Proposition of New Network DEA Models Based on the Unified DEA Model*, **Tohru Ueda**, **Hirofumi Amatatsu**, Seikei University, Japan

15:30-16:00 Coffee Break

16:00-18:00 Parallel Sessions A3/B3/C3

16:00-18:00 Parallel Session A3: Optimization and Programming

Chair: Prof. Katsushige Sawaki

Location: Red Mountain Hall, 17th floor

- 16:00-16:20 *Models and Algorithms for the Constrained Orienteering Problem*, **Zhenping Li**, Rui-Sheng Wang, Hong-Wei Liu, Wenfeng Zhou, Beijing Wuzi University, China
- 16:20-16:40 *An Increasing-Mapping Approach to Integer Programming Based on Lexicographic Ordering and Linear Programming*, **Chuangyin Dang**, City University of Hong Kong, China
- 16:40-17:00 *Equivalence between Generalized Saddle Point and Sun-point*, **Jin-Shan Li**, Jia-Rong Gao, Yu-Ying Zhao, Beijing Forestry University, China
- 17:00-17:20 *A Full-Newton Step Infeasible Interior-Point Algorithm for Linear Programming Based on a Special Self-Regular Proximity*, **Zhong-Yi Liu**, Yue Chen, Hohai University, China
- 17:20-17:40 *Global Convergence of the Non-quasi-newton Method with Non-monotone Line Search for Unconstrained Optimization Problem*, **Hong-Wei Liu**, Beijing Wuzi University, China
- 17:40-18:00 *Optimal Policies for a Generational Garbage Collector with Tenuring Threshold*, Xu-Feng Zhao, **Syouji Nakamura**, Cun-Hua Qian, Aichi Institute of Technology, Japan

16:00-18:00 Parallel Session B3: OR Applications II

Chair: Prof. Ling-Yun Wu

Location: Tanggula Hall, 17th floor

- 16:00-16:20 *Staffing Model for Scheduling Simultaneous Interpreters under Tight Constraints*, **Sydney C. K. Chu**, University of Hong Kong, China

- 16:20-16:40 *Determining Storage Locations and Capacities for Emergency Response*, **Jianming Zhu, Degang Liu**, Jun Huang, Jiye Han, Graduate University of Chinese Academy of Sciences, China
- 16:40-17:00 *A Maximal Covering Model for Helicopter Emergency Medical Systems*, **Takehiro Furuta, Ken-ichi Tanaka**, Tokyo University of Science, Japan
- 17:00-17:20 *A Resource Allocation Model Based on DEA Models and Elasticity Analysis*, **Qia Wang**, Jin-Chuan Cui, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- 17:20-17:40 *Effect of Ambulance Station Locations and Number of Ambulances to the Quality of the Emergency Service*, **Keisuke Inakawa, Takehiro Furuta, Atsuo Suzuki**, Akita Prefectural University, Japan
- 17:40-18:00 *Performance Analysis of Sensor Nodes in a WSN with Sleep/Wakeup Protocol*, **Wuyi Yue**, Qingtian Sun, Shunfu Jin, Konan University, Japan

16:00-18:00 Parallel Session C3: OR Application III

Chair: Prof. Hiroshi Nagamochi

Location: Tanggula Hall, 17th floor

- 16:00-16:20 *Management of Storage Devices and File Formats in Web Archive Systems*, **Hiroyuki Kawano**, Nanzan University, Japan
- 16:20-16:40 *A Public Patentee's Technology Transfer under a Leadership Structure*, **Takeshi Ebina, Shin Kishimoto**, Tokyo University of Science, Japan
- 16:40-17:00 *Survey on the Variations and Applications of Nonnegative Matrix Factorization*, **Zhong-Yuan Zhang**, Jie Zhang, Central University of Finance and Economics, China
- 17:00-17:20 *Decision Support System for Skin Cancer Diagnosis*, Karol Przystalski Leszek Nowak, **Maciej Ogorzalek**, Grzegorz Surówka, Jagiellonian University, Poland
- 17:20-17:40 *DEA with Weight Constraints for Evaluation of Work Safety Supervision*, **Ji-Bin Qu**, Ling-Yun Wu, Xiaoping Liao, Yushu Xie, Bingxue Song, Guiying Yan, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- 17:40-18:00 *Scaled Nonlinear Conjugate Gradient Algorithms Applied To Inverse Natural Convection Problem*, **Jeff Wong**, Chinese University of Hong Kong, Hong Kong

18:30-20:00 Banquet & Art Performance (Red Palace Banquet Hall, 2nd floor)

August 21 (Saturday) Technical Sessions

07:00-07:50 Breakfast

08:00-08:20 Check out and departure to the Chengdu Shuangliu Airport

11:05-12:00 Flight to Jiuzhaigou

12:30-13:30 Lunch

14:00-16:00 Conference Activities at Huanglong

APORC Committee Meeting

Special Workshop on OR/MS Journal Improvement

18:00 Dinner

18:30-20:00 Poster Session I

Chair: Prof. Wuyi Yue

Location: Sheraton Hotel (Room to be announced)

- (1) *Mathematical Model and Solving Method Based on Software for the Shortest Time Limited Transportation Problem*, **Zhenping Li**, Qingyun Xu, Na Li, Yuanyuan Ma, Beijing Wuzi University, China
- (2) *Three Kinds of Replacement Models Combined with Additive and Independent Damages*, Xu-Feng Zhao, **Mingchih Chen**, Toshio Nakagawa, Fu Jen Catholic University, Taiwan
- (3) *An Evaluation of Performance of Automakers with DEA*, **Yu Song** and Bin Li, Fukuoka Institute of Technology, Japan
- (4) *Generalized Algorithm of Tchebyshev Scalarization for Set-Valued Maps*, **Bing-Jiang Zhang**, Beijing Information Science and Technology University, China
- (5) *Equitable Coloring of Planar Graphs without 4-cycles*, **Xiang Tan**, Shandong University of Finance, China
- (6) *Performance Analysis of a Geom/Geom/1 Queue with Variable Input Probability*, Zhanyou Ma, **Wuyi Yue**, Xiaoli Su, Xiaoqiong Guo, Konan University, Japan
- (7) *New Method for Basic Road Network Programming*, **Xinwei Lu**, Xiao Hu, Qunqi Wu, Chang'an University, China

August 22 (Sunday) Technical Sessions

07:00-08:00 Breakfast

08:10 Depart to Jiuzhaigou

08:30-17:00 Conference activities at Jiuzhaigou

Discussion on Next ISORA Theme & Plan

18:00-19:30 Dinner

20:30-21:30 Poster Session II

Chair: Prof. Degang Liu

Location: Sheraton Hotel (Room to be announced)

- (8) *Efficient Factors for Improving Survival Rate after Out-of-hospital Cardiac Arrest in Japan*, **Yuriko Isada**, **Nobuko Igaki**, Kwansai Gakuin University, **Fumihiko Isada**, NUCBA Graduate School, Japan
- (9) *On National Inventory System for Responding Disaster Relief Operations in China*, **Degang Liu**, **Jianming Zhu**, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- (10) *Modeling Emergency Plans Against Chemical and Biological Terror Attacks*, **Yu Hua**, Graduate University of Chinese Academy of Sciences, China
- (11) *Analysis on Two-server Queues with a Variant Vacation Policy*, **Dequan Yue**, **Wuyi Yue**,

Ruiling Tian, Yanshan University, China

(12) *Perfect Sorting by Reversals and Deletions/Insertions*, **Hongyu Chen, Xiang Tan**, Guojun Li, Shandong University, China

(13) *Value Chain Management Based on Open Innovation Strategy*, **Yuanzhi Chen**, China Executive Leadership Academy, China

(14) *Resource Planning and Allocation Problem under Uncertain Environment*, **Ju-liang Zhang**, Wen Jiao, Beijing Jiaotong University, China

August 23 (Monday) Technical Sessions

07:00-08:30 Breakfast

08:50 Depart to Jiuzhaigou Airport

12:40-13:30 Flight to Chengdu

14:30-15:30 Lunch

16:00-18:00 Special Session on Inter-University Exchanges (Tibet Hotel Chengdu)
Wrap up Session