

2nd Annual McMaster Optimization Conference:

Theory and Applications

August 1-3, 2002

Hamilton, Ontario, Canada

Special Lecture Notice:

The Fields Institute Thematic Programs- Numerical Analysis Lecture Series

Speaker: John Betts, Boeing Co.

July 31, 2002

Lecture on Computing Aerodynamic Models using Large Scale Parameter Estimation

Supported by MITACS

<http://www.fields.utoronto.ca/programs/scientific/01-02/numerical/lectures/betts.html>

MOPTA 02 PROGRAM SCHEDULE

Note: Only the presenting author is listed in the program schedule.

Thursday, August 1

- 7:20-8:30 *Breakfast & Registration*
- 8:30-8:45 *Opening Remarks*
Mo Elbestawi, Dean Engineering
McMaster University
Paul Taylor, Chair, Computing & Software
Tamás Terlaky, Conference Chair
- 8:45-9:45 *Invited Talk*
An Optimal Low Thrust Trajectory to the Moon
John T. Betts, The Boeing Company
- 9:45-9:50 *Stretch break*
- 9:50-10:50 *Session 1*
- 9:50 **A Survey of the Trust Region Subproblem Within a Semidefinite Programming Framework**
Henry Wolkowicz, University of Waterloo
- 10:20 **Applications of Semidefinite Optimization in Stochastic Project Scheduling**
Karthik Natarajan, Singapore MIT Alliance
- 10:20 **Ellipsoids, LMI's and Convex Hulls**
Irwin Pressman, Carleton University
- 10:50-11:10 *Coffee break*
- 11:10-12:40 *Session 2*
- 11:10 **Stabilized Column Generation Based on Dual Information**, Jacques Desrosiers, HEC Montréal
- 11:40 **Decomposition of a Class of Variational Inequalities**, J. David Fuller, Management Sciences
- 12:10 **The Analytic Center Cutting Surface Method with Semidefinite or Quadratic Cuts**, Jean-Louis Goffin, McGill University
- 12:40-13:50 *Lunch*
- 13:50-15:20 *Parallel Session 3A*
- 13:50 **Stochastic Iterative Dynamic Programming: A Monte Carlo Algorithm for Dual Adaptive Control**, Adrian Thompson, University of Toronto
- 14:20 **Using Net Flow as a Ranking Algorithm for the Pareto Domain**, Jules Thibault, University of Ottawa
- 14:50 **Chebyshev Series Method for Solving Linear Quadratic Time-delay Optimal Control Problems**, Ken S. Li, Southeastern Louisiana University
- 13:50-15:20 *Parallel Session 3B*
- 13:50 **Example Problems That Illustrate the Measurement of Uncertainty in Optimization Results**, John C. Nash, University of Ottawa
- 14:20 **On the Level-boundedness of the Natural Residual Function for Variational Inequality Problems**, Nobuo Yamashita, Kyoto University
- 14:50 **A Debt Planning System for a Public Utility**, H.I. Gassman, Dalhousie University
- 15:20-15:25 *Stretch break*
- 15:25-16:25 *Invited Talk*
Optimal Design of Analog Circuits via Geometric Programming
Stephen Boyd, Stanford University
- 16:25-16:45 *Coffee break*
- 16:45-18:15 *Parallel Session 4A*
- 16:45 **New Approach to Optimization Engineering Systems under Uncertainty**, Gennadi Ostrovski, University of Connecticut
- 17:15 **Condition and Complexity Measures for Infeasibility**, Hugo Lara, UCLA-Venezuela
- 17:45 **New Class of Search Directions for Linear Optimization**, Zsolt Darvay, Babes-Bolyai University of Cluj-Napoca
- 16:45-17:45 *Parallel Session 4B*
- 16:45 **Comparison of Several Constructive Techniques for VLSI Circuit Placement**, S. Areibi, University of Guelph
- 17:15 **A Stability-oriented Discrete Optimization by Simulated Annealing**, A. Csébfalvi, University of Pécs
- 17:45 **Hybridized Genetic Algorithm for Solving the Dynamic Vehicle Routing Problem**
Abdunnaser Younes, University of Guelph

Friday, August 2

- 7:30-8:15 *Breakfast*
- 8:15-9:15 *Invited Talk*
Deterministic Global Optimization: Advances and Challenges
Christodoulos A. Floudas, Princeton University
- 9:15-9:20 *Stretch break*
- 9:20-10:50 *Session 5*
- 9:20 **Particle Identification Using Light-scattering: a Global Optimization Problem**, M.C. Bartholomew-Biggs, University of Hertfordshire
- 9:50 **Robust Adaptive Beamforming for High-Rank Data Models**, Shahram Shahbazpanahi, University of Duisburg
- 10:20 **Global and (Convex) Nonlinear Optimization in Modeling Environments**, János D. Pintér, Pintér Consulting Services, Inc.
- 10:50-11:10 *Coffee break*
- 11:10-12:40 *Session 6*
- 11:10 **Variable Metrics, Ellipsoids and Primal-Dual Interior-Point Methods for Convex Optimization**, Levent Tuncel, University of Waterloo
- 11:40 **Progress in the Probabilistic Analysis of IPM under the Rotation-Symmetry-Model**, Petra Huhn, University of Augsburg
- 12:10 **Implementing and Benchmarking Self-Regular Proximity Based Interior Point Methods**, G. Zhang, McMaster University
- 12:40-13:50 *Lunch*
- 13:50-15:20 *Parallel Session 7A*
- 13:50 **Implicit Space Mapping Engineering Optimization Exploiting Preassigned Parameters**, Q. Cheng, McMaster University
- 14:20 **Engineering Space Mapping Optimization Exploiting Exact Sensitivities**, Ahmed Sayed Mohamed, McMaster University
- 14:50 **Optimization of White Polychromatic Semiconductor Lamp**, Rimantas Vaicekauskas, Vilnius University
- 13:50-15:20 *Parallel Session 7B*
- 13:50 **Application of the Entropy-like Proximal Method in the Solution of the Probabilistic Constrained Linear Programming Problem**, É. Komáromi, Budapest University of Economics and Public Administration
- 14:20 **Optimal Option Pricing with Linear Transaction Costs**, Thamayanthi Chellathurai, University of Waterloo
- 14:50 **A New Exact Implicit Enumeration Procedure for the Resource Constrained Project Scheduling Problem with Discounted Cash Flows**, G. Csébfalvi, University of Pécs
- 15:20-15:25 *Stretch break*
- 15:25-16:25 *Invited Talk*
Computational and Theoretical Perspectives on Complexity for Linear, Conic, and Non-conic Convex Optimization, Robert M. Freund, MIT
- 16:25-16:45 *Coffee break*
- 16:45-18:15 *Parallel Session 8A*
- 16:45 **The Constraint Consensus Method for Tightening Variable Bounds in Nonlinear Programs**
John W. Chinneck, Carleton University
- 17:15 **Complexity Analysis of Local-Search-Based Solvers for Continuous Constraint Problems**, Yi Shang, Palo Alto Research Center (PARC)
- 17:45 **Hydro Energy Management Optimization in A Deregulated Electricity Market**, K. Ponnambalam, University of Waterloo
- 16:45-18:15 *Parallel Session 8B*
- 16:45 **Transceiver Optimization for Multiple Access through ISI Channels**
Tom Luo, McMaster University
- 17:15 **Spectrum Optimization for Multi-user Communication Systems**
Wei Yu, University of Toronto
- 17:45 **A Lagrangean Decomposition Approach for the Routing and Wavelength Assignment in Multifiber WDM Networks**
Mohammed Saad, McMaster University
- 18:30 *Banquet, Geraldo's at Lasalle Park*
Bus departs at 18:30 from JHE annex.
- Dinner Speakers:
Stephen Boyd, Stanford University
"Circuit Designers, Interior-point Methods, and Venture Capitalists"
Dr. Mamdouh Shoukri
Vice-President, Research & International Affairs
McMaster University

Saturday, August 3

- 7:30-8:15 *Breakfast*
- 8:15-9:15 *Invited talk*
Incremental Randomization in Combinatorial Optimization, Aravind Srinivasan, University of Maryland
- 9:15-9:20 *Stretch break*
- 9:20-10:50 *Parallel Session 9A*
- 9:20 **A Cutting Plane SDP Method for Maxcut Problems**, John Mitchell, Rensselaer Polytechnic Institute
- 9:50 **An Arbitrary Starting Variable Dimension Algorithm for Computing an Integer Point of a Class of Polytopes**, Chuangyin Dang, City University of Hong Kong
- 10:20 **Deterministic Lot-size Inventory Models with Fluctuating Demand and Unit Purchase Cost**
Maw-Sheng Chern, National Tsing Hua University
- 9:20-10:50 *Parallel Session 9B*
- 9:20 **Existence of Efficient Average-optimal Solutions in Deterministic Infinite Horizon Optimization**, Irwin Schochetman, Oakland University
- 9:50 **The Method of Cyclic Projections --- The Inconsistent Case**, Heinz Bauschke, University of Guelph
- 10:20 **A Framework for the Analysis of Sets of Constraints**, Tim Traynor, University of Windsor
- 10:50-11:10 *Coffee break*
- 11:10-12:05 *Invited Talk*
Interpreting the Classical Inverse, Shifted, Inverse, and Rayleigh Quotient Iteration Methods as a Standard Formulation of Newton's Method from the Nonlinear Programming Literature, Richard Tapia, Rice University
- 12:05-13:30 *Lunch*

- 13:30-15:00 *Session 10*
- 13:30 **Symbiosis of Simulation and Optimization Algorithms in the Context of the Optimal Staffing Problem**, Marina Epelman, University of Michigan
- 14:00 **Constrained Transportation Model for Optimizing Crackdowns on Illicit Drug Markets**, Chris Rump, SUNY
- 14:30 **An Inverse Optimization Tool for Conformal Radiation Therapy**, Jin-Ho Lim, University of Wisconsin
- 15:00 **Optimizing Radiotherapy Treatment Designs**, A. Holder, Trinity University
- 15:30-15:45 *Coffee break*
- 15:45-16:45 *Invited Talk*
Improved Complexity Results on Solving Real-Number Linear Feasibility Problems, Yinyu Ye, Stanford University
- 16:45-17:00 *Closing Remarks*
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Poster Presentations

- A New Setup Cost Oriented Bicriteria Resource Leveling Model for Projects**
G. Csébfalvi, University of Pécs
- A New Exact Resource Allocation Model with Hard and Soft Resource Constraints**
G. Csébfalvi, University of Pécs
- An Island Based Genetic Algorithm for Dynamic Optimization Problems**
H. Homayounfar, University of Guelph