

# 1st Annual McMaster Optimization Conference: Theory and Applications

August 2-4, 2001  
Hamilton, Ontario, Canada

## Preliminary Program - updated July 3, 2001

Buffet breakfast and lunches will be served at the conference site. Sessions will take place on the first floor lecture rooms of the Computing and Software building. There will be a banquet dinner on Friday, August 3 at the Royal Hamilton Yacht Club.

### Thursday, August 2

7:20-8:00	<i>Breakfast &amp; Registration</i>	14:50	<b>A New Algorithm for Finding a Nearly Global Optimal Initial Feasible Solution for TSP</b> , Mohammad S. Sabbagh, Isfahan University of Technology
8:00-8:15	<i>Opening Remarks</i> Mamdouh Shoukri, Vice-President, Research McMaster University	13:50-15:20	<i>Parallel Session 3B</i>
8:15-9:15	<i>Invited Talk</i> <b>Pseudonormality and a Lagrange Multiplier Theory for Constrained Optimization</b> Dimitri Bertsekas, MIT	13:50	<b>Geometric Facility Location Problems with Uncertainty</b> , Igor Averbakh and Sergei Bespamyatnikh, University of British Columbia
9:15-9:20	<i>Stretch break</i>	14:20	<b>Sensitivity Analysis for the Objective Function Parameters in Knapsack Optimization Problems</b> , Seth D. Guikema, Stanford University and Mark W. Milke, University of Canterbury
9:20-10:50	<i>Session 1</i>	14:50	<b>Semidefinite Programming and Euclidean Distance Matrix Completions</b> , Henry Wolkowicz, University of Waterloo
9:20	<b>On Cones of Nonnegative Quadratic Functions</b> , Jos F. Sturm and Shuzhong Zhang, Tilburg University/CentER	15:20-15:25	<i>Stretch break</i>
9:50	<b>New Results on Quadratic Function Minimization</b> , Yinyu Ye and Shuzhong Zhang, The Chinese University of Hong Kong	15:25-16:25	<i>Invited Talk</i> <b>Constrained Optimization Using Surrogates</b> John Dennis, Rice University
10:20	<b>The Time-Varying Shortest Path Problem to Minimize the Cost-Reliability Ratio</b> , X. Cai, D. Sha and C.K. Wong*, Chinese University of Hong Kong (*On leave from IBM T.J. Watson Research Center)	16:25-16:45	<i>Coffee break</i>
10:50-11:10	<i>Coffee break</i>	16:45-18:15	<i>Parallel Session 4A</i>
11:10-12:40	<i>Session 2</i>	16:45	<b>A New Bicriteria Resource Leveling Model for Projects</b> , György Csébfalvi, University of Pécs
11:10	<b>Exact Characterizations of Convex Programs with a Duality Gap</b> , Gábor Pataki, University of North Carolina at Chapel Hill	17:15	<b>Performance Measures for Cellular Radio Systems</b> , Madhu Jain, Institute of Basic Science
11:40	<b>Zero Duality Gap for a Large Class of Separable Convex Problems</b> , François Glineur, Faculté Polytechnique de Mons	17:45	<b>Wavelet Methods for Control Problems Involving Elliptic Boundary Value Problems</b> , Angela Kunoth, University of Bonn
12:10	<b>On the Complexity of Computing an Epsilon-Optimal Solution of a Convex Optimization Problem, Based on Geometric Properties of the Problem</b> , Robert M. Freund, MIT	16:45-18:15	<i>Parallel Session 4B</i>
12:40-13:50	<i>Lunch</i>	16:45	<b>Use of Probabilistic Ordinal Optimization for Continuous-Variable Optimization Under Uncertainty</b> , Vicente Romero, Sandia National Laboratories and Chun-Hung Chen, George Mason University
13:50-15:20	<i>Parallel Session 3A</i>	17:15	<b>Expanded Space Mapping Optimization of Microwave Circuits Exploiting Preassigned Parameters</b> , John W. Bandler and Mostafa A. Ismail, McMaster University and Bandler Corporation
13:50	<b>Trace and Log-det Heuristics for Matrix Rank Minimization</b> , Maryam Fazel, Haitham Hindi and Stephen Boyd, Stanford University	17:45	<b>Neural Space Mapping Methods for Device Modeling and Optimal Design</b> , John W. Bandler and José E. Rayas-Sánchez, McMaster University and Bandler Corporation
14:20	<b>Some Results on Practical Estimation of Condition Measures for Optimization</b> , Jorge Vera Andreo, Pontificia Universidad Católica de Chile		

## Friday, August 3

- 7:30-8:15 *Breakfast*
- 8:15-9:15 *Invited Talk*  
**Recent Developments in Nonlinear Generalized Disjunctive Programming**, Ignacio E. Grossmann, Carnegie Mellon University
- 9:15-9:20 *Stretch break*
- 9:20-10:50 *Session 5*  
9:20 **An Overview of the Adaptive Pattern Search Algorithm and its Application to Engineering Optimization Problems**, William E. Hart, Anthony A. Giunta, Andrew G. Salinger, Bart van Bloemen Waanders, Sandia National Laboratories  
9:50 **Simultaneous Solution Strategies For Including Input Saturation In The Optimal Design Of Dynamically Operable Plants**, R. Baker and C.L.E. Swartz, McMaster University  
10:20 **Semi-Infinite Optimization & Optimal Trajectory Generation in Dynamic Systems**, M. Guay, Queen's University and J.F. Forbes, University of Alberta
- 10:50-11:10 *Coffee break*
- 11:10-12:40 *Session 6*  
11:10 **LSCNO: A New Fortran Library for Large Scale Convex Network Optimization**, Aleksandar Donev and Phillip Duxbury, Michigan State University  
11:40 **Discovering the Characteristics of Mathematical Programs via Sampling**, John W. Chinneck, Carleton University  
12:10 **Specifying Software Usage Models via Constraints in TML**, S.J. Prowell and J.H. Poore, The University of Tennessee
- 12:40-13:50 *Lunch*
- 13:50-15:20 *Parallel Session 7A*  
13:50 **One-Operator Two-Machine Open Shop and Flow shop Problems with Setup Times for Machines and Weighted Number of Tardy Jobs Objective**, Mohammed Fazle Baki and Raymond G. Vickson, University of Windsor  
14:20 **A Two-Carousel Storage Location Problem**, Elkafi Hassini and R.G. Vickson, University of Waterloo  
14:50 **More Machine Scheduling with a Rate- Modifying Activity**, Gur Mosheiov, The Hebrew University and Jeffrey Sidney, University of Ottawa
- 13:50-15:20 *Parallel Session 7B*  
13:50 **Discrete Minimal Weight Design of Shallow Space Trusses with a Path-following Stability Constraint**, Anikó Csébfalvi, University of Pécs  
14:20 **New Variational Formulations and Algorithms for Solution of the Contact Problem with Friction in Elastodynamics**, V.V. Zozulya, Centro de Investigacion Cientifica de Yucatan
- 14:50 **Optimization of the Adaptive Cooling in Diode-Pumped Solid-State-Laser**, F. Ivanauskas, L. Giniūnas, J. Dabulytė, Vilnius University
- 15:20-15:25 *Stretch break*
- 15:25-16:25 *Invited Talk*  
**Optimization in the Automotive Industry**  
Donald R. Jones, General Motors Corporation
- 16:25-16:45 *Coffee break*
- 16:45-18:15 *Parallel Session 8A*  
16:45 **Numerical Optimization and Surface Estimation with Imprecise Function Evaluations**, Harry Joe and John C. Nash, University of Ottawa  
17:15 **Applications of the Entropy Programming Problem**, Tamás Nagy, University of Miskolc  
17:45 **Computing Minimum Volume Ellipsoids: an Application from Data Mining**, Peng Sun and Robert M. Freund, MIT
- 16:45-18:15 *Parallel Session 8B*  
16:45 **Completeness of Stratified Graphs**, Yung-Li Lai, National Chia-Yi University  
17:15 **A Fast Algorithm to Minimize the Maximum Lateness in the Two-Machine Flow Shop with Release Times**, George Steiner, McMaster University and Paul Stephenson, Acadia University  
17:45 **Single Machine Scheduling with Non-Additive Performance Criteria**, H. M. Soroush, Kuwait University
- 18:30 *Banquet, Royal Hamilton Yacht Club*

## Saturday, August 4

- 7:30-8:15 *Breakfast*
- 8:15-9:15 *Invited talk*  
**Interior-Point Methods for Semidefinite and Second-Order-Cone Programming**  
Michael Todd, Cornell University
- 9:15-9:20 *Stretch break*
- 9:20-10:50 *Session 9*  
9:20 **Linear Programming (LP) Approaches to Semidefinite Programming (SDP) Problems**, Kartik Krishnan and John Mitchell, Rensselaer Polytechnic Institute
- 9:50 **Semidefinite Cuts in the Analytic Center Cutting Surface Method**, Jean-Louis Goffin, McGill University
- 10:20 **A Weighted Analytic Center for Linear Matrix Inequalities**, Irwin S. Pressman, Carleton University, and Shafiu Jibrin, Northern Arizona University
- 10:50-11:10 *Coffee break*
- 11:10-12:40 *Session 10*  
11:10 **Starting Interior Point Methods: What is the Typical/Average Situation at the Start?**, Petra Huhn, University of Augsburg
- 11:40 **Are Condition Numbers Good Predictors of the Performance of Interior-Point Algorithms on Practical Problems?**, Fernando Ordonez, Marina Epelman and Robert M. Freund, MIT
- 12:10 **Large-Update IPMs, a Natural Choice for LO?**, Jiming Peng and Tamás Terlaky, McMaster University
- 12:40-13:50 *Lunch*

- 13:50-14:50 *Invited Talk*  
**Interior-point Methods for Signal Processing and Control**  
Lieven Vandenberghe, University of California, Los Angeles
- 14:50-14:55 *Stretch break*
- 14:55-16:25 *Session 11*  
14:55 **Algorithms for Data Migration with Forwarding**, Roberto Solis-Oba, University of Western Ontario and Peter Sanders, Max Planck Institut für Informatik
- 15:25 **Time Bounds on Global Convergence for a TCP/IP-Like Protocol**, Naveen Garg, IIT and Neal Young, Akamai Technologies
- 15:55 **The Lovász-Schrijver Operator and the Stable Set Polytope**, Laszlo Liptak, University of Waterloo
- 16:25-16:45 *Coffee break*
- 16:45-17:45 *Invited Talk*  
**The Primal-Dual Method for Approximation Algorithms**, David P. Williamson, IBM Almaden Research Center
- 17:45-18:00 *Closing Remarks*