

Ettore Majorana Centre for Scientific Culture  
International School of Mathematics “G. Stampacchia”

Erice, Italy

*40th Workshop*

# LARGE SCALE NONLINEAR OPTIMIZATION

22 June – 1 July 2004.

List of invited and contributed talks

## Invited talks

**A. Ben–Tal**, *Israel Institute of Technology, Haifa, Israel*

Simple Methods for Extremely Large–Scale Convex Problems

**D.P. Bertsekas**, *MIT, Boston, USA*

A Unified View of Existence of Optimal Solutions, Duality, and Minimax Theory

**F. Bonnans**, *INRIA, Paris, France*

Fast Linear Algebra for Multiarc Trajectory Optimization

**O. Burdakov**, *Linköping University, Sweden*

An  $O(n^2)$  Algorithm for Isotonic Regression Problems

**Y. Evtushenko**, *Computing Center of the Academy of Science, Moscow, Russia*

Augmented Lagrangian Method for Large–Scale Linear Programming Problem

**F. Facchinei**, *Università di Roma “La Sapienza”, Italy*

Exact Penalty Methods for Generalized Nash Problems

**J. Gondzio**, *University of Edinburgh, UK*

Parallel Interior Point Solver for Very Large Scale Nonlinear Optimization

**N. Gould**, *Rutherford Appleton Laboratory, Chilton, UK*

Constrain Preconditioners for Large–Scale Nonlinear Optimization

**A. Griewank**, *Humboldt University, Berlin, Germany*

Jacobian–free Optimization

**S. Leyffer**, *Argonne National Laboratory, USA*

Gradient Projection for General Quadratic Programs

**L. Luksan**, *Academy of Science of the Czech Republic, Praha*

New Methods for Large–Scale Unconstrained Optimization

**J. Moré**, *Argonne National Laboratory, USA*

Computing Transition States: Background, Theory, and Computational Experiments

**J. Nocedal**, *Northwestern University, Evanston, USA*

Interior–Point and Penalty Methods for Nonlinear Programming

**J.S. Pang**, *The Johns Hopkins University, Baltimore, USA*

Recent Applications of Nash equilibria and their computations

**M.J.D. Powell**, *University of Cambridge, UK*

The NEWUOA Software for Unconstrained Optimization without Derivatives

**L. Qi**, *The Hong Kong Polytechnic University, China*

A Smoothing Constrained Equation Algorithm for Semi-Infinite Programming

**E.W. Sachs**, *University of Trier, Germany*

New Challenges in PDE-Constrained Optimization

**S. Scholtes**, *University of Cambridge, UK*

Recent Developments for Mathematical Programs with Equilibrium Constraints

**J.P. Vial**, *University of Geneva, Switzerland*

Multicommodity Flows

**S. Wright**, *University of Wisconsin, Madison, USA*

Rapidly Convergent Algorithms for Degenerate Nonlinear Programming

**J. Zhang**, *City University of Hong Kong, China*

Algorithms for Solving Mathematical Programs with Complementarity Constraints

## Contributed talks

**W. Achtziger**, *University of Dortmund, Germany*

Optima and Optimality Conditions for Problems with Switch-Off Constraints

**B. Addis**, *Università di Firenze, Italy*

Local Optima Smoothing for Global Optimization

**M. Al-Baali**, *Sultan Qaboos University, Oman*

Properties of Quasi-Wolfe Conditions for Quasi-Newton Methods on Large Scale Optimization Problems

**K. Allali**, *Faculté des Sciences et Techniques de Settat, Marocco*

Approximate Subdifferentials of Value Functions

**I. Bomze**, *University of Vienna, Austria*

Towards Efficient and Cheap Bounds for StQPs

**M.E. Bruni**, *Università della Calabria, Italy*

Branch and Bound Method for Nonlinear Mixed Integer Stochastic Programming

**M. D'Apuzzo**, *Seconda Università di Napoli and ICAR-CNR, Italy*

Linear Algebra Issues in Developing Potential Reduction Software for Large-Scale Quadratic Programs

**C. Di Fiore**, *Università di Roma "Tor vergata". Italy*

Adaptive Low Complexity Algorithms for Unconstrained Optimization

**CANCELLED**

**L. Di Giacomo**, *Università di Roma "La Sapienza", Italy*

A General Algorithm for Simultaneous Estimation and Nonlinear Optimization of Constrained Problems

**G. Di Pillo**, *Università di Roma "La Sapienza", Italy*

Preliminary Numerical Experiences with an Exact Augmented Lagrangian Approach to NLP

**Z. Dostal**, *VSB-Technical University Ostrava - Czech Republic*

Quadratic Programming Algorithms for Large Scale Problems

**S.D. Flam**, *University of Bergen - Norway*

Large Production Games and Approximate Core Solutions

**M. Gaudio**, *Università della Calabria, Italy*

Generalized Cutting Plane for Minimizing Nonsmooth Nonconvex functions

**G. Giallombardo**, *Università della Calabria, Italy*

Exploiting Convergence of Multipliers in a Trust-Region Decomposition Method for MPEC

**A. Gnudi**, *Università di Bergamo, Italy*

The Proximal Point Method for Monmonotone Variational Inequalities

**R. Griesse**, *University of Graz, Austria*

Parametric Sensitivity Analysis for a Perturbed 3D Reaction-Diffusion

**C. Gutiérrez**, *University of Valladolid, Spain*

Conditions and Parametric Characterizations for Approximate Minimal Elements of a Set through Scalarization

**M. Haarala**, *University of Jyväskylä, Finlandia*

New Limited Memory Bundle Method for Large-Scale Nonsmooth Optimization

**L. Liberti**, *Politecnico di Milano, Italy*

Tight Convex Relaxations of Bilinear Programs

**G. Liuzzi**, *Università di Roma “La Sapienza”, Italy*

A New Global Optimization Algorithm and its Application to a Magnetic Resonance Optimal Design Problem

**S. Lucidi**, *Università di Roma “La Sapienza”, Italy*

A Derivative-Free Algorithm for Linearly Constrained Finite Minimax Problems

**G. Mastroeni**, *Università di Pisa, Italy*

A Variational Approach for Minimum Cost Flow Problems

**M. Mikhalevich**, *Ukrainian Academy of Foreign Trade, Ukraine*

A Nonlinear Optimization Model of Economic Development

**T. Munson**, *Argonne National Laboratory, USA*

Decomposition Games for Constrained Nonlinear Optimization

**D. Orban**, *Ecole Polytechnique de Montreal, Canada*

An Interior-Point L1-Penalty Method for Nonlinear Optimization

**B. Panicucci**, *Università di Pisa, Italy*

A Path-Based Extragradient Algorithm for Network Equilibrium Problems

**G. Patrizi**, *Università di Roma “La Sapienza”, Italy*

Solving Large Protein Folding Problems by Linear Complementarity Algorithms with  $\{0, 1\}$  Variables

**D. Peri**, *INSEAN – The Italian Ship Model Basin – Rome, Italy*

Multi-Objective Optimization of Expensive Objective Functions with Variable-Fidelity Models

**H.J. Pesch**, *University of Bayreuth, Germany*

Optimal Control of a Large Scale PDAE-Model Describing the Dynamical Behaviour of Molten Carbonate Fuel Cells

**B.D. Rouhani**, *Shahid Beheshti University, Iran*

On the Ergodic Convergence of Solutions for Some Nonlinear Evolution Equations

**M. Roma**, *Università di Roma “La Sapienza”, Italy*

A General CG-based Preconditioner for Truncated Newton Methods in Unconstrained Optimization

**F. Schoen**, *Università di Firenze, Italy*

An Integrated Approach for Solving Large Scale Global Optimization Problems

**Y. Sergeyev**, *Università della Calabria, Italy*

Algorithms and Partition Strategies for Lipschitzian Global Optimization

**A. Strekalovsky**, *Institute of System Dynamics and Control Theory, Russia*

New Approach to Nonconvex Constrained Optimization

**F. Tardella**, *Università di Roma “La Sapienza”, Italy*

An Extension of the Fundamental Theorems of Linear and Quadratic Programming and Applications

**R. Waltz**, *Northwestern University, Evanston, USA*

Advances in SLQP Algorithms for Large-Scale Nonlinear Optimization