

Foundation and Centre for Scientific Culture "E. Majorana"

International School of Mathematics "G. Stampacchia"

59th Workshop

June 10-17, 2013

Erice, Italy

**"NONLINEAR OPTIMIZATION:
A BRIDGE FROM THEORY TO APPLICATIONS"**

PROGRAM OF LECTURES

TUESDAY June 11 (Feynman Lecture Hall in San Rocco)

MORNING

8.45 – 9.00 *Opening*

Chairman: G. Di Pillo

9.00 – 9.50 **S. M. ROBINSON**
Reduction Methods for Variational Conditions

9.50 – 10.10 **P. COMBETTES**
Systems of Structured Monotone Inclusions: Duality, Algorithms and Applications

10.10 – 10.30 **S. SALZO**
Consistency of General Variational Learning Schemes

10.30 – 11.00 *Coffee Break*

Chairman: M. Roma

11.00 – 11.50 **Y. X. YUAN**
An Augmented Lagrangian Trust Region Method for Equality Constrained Optimization

11.50 – 12.10 **V. KUNGURTSEV**
A Superlinearly Convergent SQP Algorithm to Second-Order Optimal Points

12.10 – 12.30 **S. SULEIMAN**
Curvilinear Search and Higher Order Methods

AFTERNOON

Session Organized by A. Borzi: “*Optimal control of stochastic processes and mean-field games*”

15.00 – 15.50 **A. BORZÌ**
A Fokker-Planck Strategy for the Optimal Control of Stochastic Processes

15.50 – 16.10 **M. ANNUNZIATO**
An Optimal Control Framework for Piecewise Deterministic Processes

16.10 – 16.40 *Coffee Break*

16.40 – 17.00 **J. FISCHER**
Optimal Control Problems of Quasilinear Equations: Existence of Solutions and Convergence of the Direct Method

17.00 – 17.20 **J. SALOMON**
An Optimization Scheme for the Computation of Mean Field Games Equilibria

17.20 – 17.40 **M. T. WOLFRAM**
A Mean Field Game Approach for Evacuation Situations

WEDNESDAY June 12 (Feynman Lecture Hall in San Rocco)

MORNING

Chairman: S. M. Robinson

9.00 – 9.50 **J. S. PANG**
Recent Applications of Nash Equilibrium in Engineering Economics

9.50 – 10.10 **A. DREVES**
A New Error Bound Result for Generalized Nash Equilibrium Problems and its Algorithmic Application

10.10 – 10.30 **S. SAGRATELLA**
A New Hybrid Interior-Point Algorithm for Quasi-Variational Inequalities

10.30 – 11.00 *Coffee Break*

Chairman: Y. X. Yuan

11.00 – 11.50 **F. FACCHINEI**
Complex Variational Inequalities and Applications

11.50 – 12.10 **L. LAMPARIELLO**
VI-Constrained Hemivariational Inequalities: Distributed Algorithms and Power Control in Ad-hoc Networks

12.10 – 12.30 **H. UMEO**
Optimizing FSSP Algorithms for One-Bit-Communication Cellular Automata

AFTERNOON

Chairman: D. di Serafino

15.00 – 15.50 **T. LUO**
On the Linear Convergence of the Alternating Direction Method of Multipliers

15.50 – 16.10 **A. MANNO**
A New Algorithm for the Solution of Large-Scale Singly Linearly Constrained Problems Subject to Simple Bounds

16.10 – 16.40 *Coffee Break*

16.40 – 17.00 **S. VILLA**
A Proximal Gauss-Newton Method

17.00 – 17.20 **L. BRICENO-ARIAS**
Forward-Partial Inverse Method for Solving Monotone Inclusions: Application to Land-Use-Planning

17.20 – 17.40 **S. D. AHİPAŞAOĞLU**
Unsupervised Visual Object Categorization by Sparse PCA

THURSDAY June 13 (Feynman Lecture Hall in San Rocco)

MORNING

Chairman: J. S. Pang

9.00 – 9.50 **D. DI SERAFINO**

On Preconditioning in Large-Scale Optimization: Updating Techniques for Sequences of Linear Systems

9.50 – 10.10 **M. ROMA**

A Krylov Based Class of Approximate Inverse Preconditioners for Large Indefinite Linear Systems (AINVK)

10.10 – 10.30 **U. DELLEPIANE**

Using SVM for Combining Continuous Heuristics for Global Optimization Problems

10.30 – 11.00 *Coffee Break*

Chairman: F. Facchinei

11.00 – 11.50 **M. GAUDIOSO**

Nonsmooth Optimization Techniques in Practical Optimization Problems

11.50 – 12.10 **E. GUSTAVSSON**

Primal Convergence from Dual Subgradient Methods for Convex Optimization

12.10 – 12.30 **A. SEEGER**

Extremal Problems Under Various Invariance Assumptions

AFTERNOON

Chairman: T. Luo

15.00 – 15.50 **V. F. DEMYANOV**

Constructive Optimality Conditions in Nonsmooth Optimization

15.50 – 16.10 **M. HLADIK**

The Effect of Hessian Evaluations in the Global Optimization α BB Method

16.10 – 16.40 *Coffee Break*

16.40 – 17.00 **S. LUCIDI**

Exploiting Derivative-Free Local Searches in DIRECT-type Algorithms for Global Optimization

17.00 – 17.20 **F. RINALDI**

DIRECT-type Algorithms for Derivative-Free Constrained Global Optimization

17.20 – 17.40 **S. RENZI**

Global Black-Box Optimization in Trading of Securities

20.30 *Social Dinners at Restaurant “La Pineta”*

FRIDAY June 14 – EXCURSION to Mothia, Marsala and the archaeological site in Selinunte

SATURDAY June 15 (Paul A.M. Dirac Lecture Hall in San Domenico)

MORNING

Chairman: G. W. Weber

- 9.00 – 9.50 **G. SCUTARI**
Parallel Optimization of Large-Scale Multi-Agent Systems
- 9.50 – 10.10 **M. T. VESPUCCI**
Optimal Management of Medium-Voltage AC Networks with Distributed Generation and Storage Devices
- 10.10 – 10.30 **F. MAGGIONI**
Bounds and Approximations in Multistage Stochastic Programming
- 10.30 – 11.00 *Coffee Break*

Chairman: K. Miettinen

- 11.00 – 11.50 **D. Y. GAO**
Canonical Duality Theory: a Bridge from Mathematical Optimization to Real-World Applications
- 11.50 – 12.10 **V. LATORRE**
Canonical Duality Theory Approach for the Data Clustering Problem
- 12.10 – 12.30 *A Journey to Endolandia. slide film by V.F. Demyanov*

AFTERNOON

Chairman: V. F. Demyanov

- 15.00 – 15.50 **K. MIETTINEN**
Experiences of Interactive Multiobjective Optimization and Some Engineering Applications
- 15.50 – 16.10 **A. GILA ARRONDO**
Solving a Bi-Objective Facility Location Problem via a New Multi-Objective Evolutionary Algorithm
- 16.10 – 16.40 *Coffee Break*
- 16.40 – 17.00 **D. A. TARZIA**
Convergence of a Family of Discrete Neumann Boundary Elliptic Optimal Control Problems with Respect to a Parameter
- 17.00 – 17.20 **S. A. RESHMIN**
Time-Optimal Feedback Control for Nonlinear Pendulum-Like Systems
- 17.20 – 17.40 **G. DI PILLO**
Yield Optimization in Electronic Circuits Design

SUNDAY June 16 (Feynman Lecture Hall in San Rocco)

MORNING

Chairman: G. Scutari

9.00 – 9.50 **G. W. WEBER**

Recent Advances in Optimization and Optimal Control of Stochastic Dynamics – Applications in Finance, Economics and Life Sciences

9.50 – 10.10 **C. SUN**

Low Complexity Sum Rate Maximization Algorithms for MIMO Relay Networks in Wireless Communications

10.10 – 10.30 **D. NOWAK**

Global Optimization of Uniform Coverage Problems with Modified Remez Algorithm

10.30 – 10.45 *Closing*