

3rd International Conference on Optimization Methods and Software (May 13-17, 2012, Chania, Greece)

CONFERENCE PROGRAM

Saturday, May 12

17:00-19:00 **Registration**
19:00-20:00 **Welcome Reception**
20:00 **Dinner**

Sunday, May 13

7:00-19:00 **Registration**
8:40-9:00 **Opening remarks** (Large room)
Plenary talks, Chair: Ioannis Demetriou (Large room)
9:00-9:40 M.J.D. Powell *Linearly constrained optimization without derivatives*
9:40-10:20 Luis Nunes Vicente *Sparse Hessian recovery and trust-region methods based on probabilistic models*
10:20-11:00 Andrzej Ruszczyński *Alternating linearization for structured regularization problems*
11:00-11:20 **Coffee break**
Plenary talks, Chair: E. Alper Yildirim (Large room)
11:20-12:00 Marco Sciandrone *Inexact decomposition methods for constrained convex optimization problems and application to network equilibrium problems*
12:00-12:40 Yury Evtushenko *Libraries of algorithms for solving large-scale LP problem and for global optimization*
13:00-14:00 **Lunch**
Nonlinear Optimization: Algorithms and Applications, Part I, Organizer & Chair: Ya-xiang Yuan (Medium room)
14:00-14:25 Yu-Hong Dai *A BBCG method for unconstrained optimization*
14:25-14:50 Yanfei Wang *Sparse optimization methods for seismic data regularization*
14:50-15:15 Xin Liu *Alternating direction method of multiplier: Theory and applications*
15:15-15:40 Jennifer Erway *Barrier methods for critical exponent problems in general relativity*
15:40-16:05 Emilio Spedicato *A new model for Moon's origin and its modeling via nonlinear optimization*
Algorithms and Technologies for Network Analysis, Organizers & Chairs: Boris Goldengorin and Panos M. Pardalos (Small room)
14:00-14:25 Mikhail Batsyn *Tolerance based algorithms for the asymmetric capacitated VRP*
14:25-14:50 Victor Zamaraev *Tolerance based BnB algorithm for the weighted maximum independent set problem*
14:50-15:15 Vladimir Matveenko *Optimal paths in graphs, powers with an idempotent operation, and an application to analysis of agglomerations*
15:15-15:40 Anton Kocheturov *Pseudo-Boolean approach to market graphs analysis by means of the p-median model*

15:40-16:05 Evgeny Maslov *Improved Branch-and-Bound algorithm for the maximum clique problem*

16:05-16:20 **Coffee break**

Linear and Nonlinear Optimization, Part I, Chair: Marco Sciandrone (Medium room)

16:20-16:45 Jacek Gondzio *Matrix-free interior point method for large-scale optimization problems*

16:45:17:10 Kimon Fountoulakis *Matrix-free interior point method for compressed sensing problems*

17:10-17:35 Trond Steihaug *Structure in Optimization*

17:35-18:00 Vitaly Zhadan *On some variants of locally convergent affine-scaling methods for linear semidefinite programming problems*

Integer, Combinatorial and Network Optimization, Chair: Francesca Guerriero (Small room)

16:20-16:45 Armen Asratian *Transformations of proper edge colorings of graphs and their application in scheduling*

16:45:17:10 Luigi Di Puglia Pugliese *On the shortest path problem with negative cost cycles*

17:10-17:35 Nikolay Kuzyurin *New class of optimization algorithms for multiple strip packing*

17:35-18:00 Yudai Hiranuma *A semi-fixed Branch and Bound method for the traveling salesman problem*

Beyond Scientific Program (Medium room)

18:10 Emilio Spedicato *On the end of Ice Age and Atlantis, and the origin of the Moon*

20:00 **Dinner**

Monday, May 14

Plenary talks, Chair: Trond Steihaug (Large room)

9:00-9:40 Frédéric Bonnans *Second-order optimality conditions and shooting algorithms for optimal control problems*

9:40-10:20 Michal Kocvara *Domain decomposition techniques in topology optimization*

10:20-11:00 Ekkehard Sachs *Preconditioning techniques for optimization with PDEs*

11:00-11:20 **Coffee break**

Plenary talks, Chair: Masao Fukushima (Large room)

11:20:12:00 Philippe Toint *Complexity Issues in Nonconvex Optimization*

12:00-12:40 Andreas Griewank *Cubic overestimation and secant updating for unconstrained optimization*

13:00-14:00 **Lunch**

Optimization Algorithms for Modern Large-Scale Applications, Organizer & Chair: Coralia Cartis (Medium room)

14:00-14:25 Coralia Cartis *On the evaluation of cubic regularization methods for potentially rank-deficient nonlinear least-squares problems and its relevance to constrained nonlinear optimization*

14:25-14:50 Jared Tanner *GPU accelerated greedy algorithms for compressed sensing*

14:50-15:15 Peter Richtarik *Solving regularized convex problems in huge dimensions via greedy, randomized, serial and parallel coordinate descent*

15:15-15:40 Martin Lotz *A new approach to compressed sensing thresholds*
15:40-16:05 Spartak Zikrin *Sparse optimization techniques for solving multilinear least-squares problems with application to design of filter networks*

Optimal Control, Part I, Chair: Stefan Ulbrich (Small room)

14:00-14:25 Emanuele Frandi *Coordinate search algorithms in multigrid optimization*
14:25-14:50 Dmitry Zavalishchin *Movement of solids in multiphase viscous medium*
14:50-15:15 Sebastian Pfaff *Optimal boundary control for nonlinear hyperbolic conservation laws with source terms*
15:15-15:40 Galina Timofeeva *Optimization and stabilization of traffic flow on the base of the hybrid model*
15:40-16:05 Boris Vexler *Higher-order discontinuous Galerkin methods for temporal discretization of parabolic optimal control problems*
16:05-16:20 **Coffee break**

Automatic Differentiation, Organizer & Chair: Andreas Griewank (Medium room)

16:20-16:45 Simon Funke *A new approach for developing discrete adjoint models*
16:45-17:10 Patrick Farrell *Automated derivation of the discrete adjoint of high-level transient finite element programs*
17:10-17:35 Hernan Leövey *Automatic evaluation and bounding of cross-derivatives: Optimal weights for high dimensional integration*
17:35-18:00 Oscar Peredo *Adjoint-based nonlinear optimization of complex systems governed by partial differential equations using high-performance computing techniques: Implementation issues and examples*

Monotonic Regression, Organizer & Chair: Oleg Burdakov (Small room)

16:20-16:45 Ioannis Demetriou *Piecewise monotonic approximation: Applications to signal restoration*
16:45-17:10 Evangelos Vassiliou *A Fortran software package for piecewise monotonic data smoothing combined with a test for trends*
17:10-17:35 John Dunn *A coupled monotonic regression problem*
17:35-18:00 Oleg Burdakov *Monotonicity recovering optimization methods for postprocessing finite element solutions*
18:00-19:00 **Round table for OMS readers, authors and board members** (medium room)
19:00-20:00 **OMS board meeting**
20:00 **Dinner**

Tuesday, May 15

20:00 **One day excursion**
Conference dinner

Wednesday, May 16

Plenary talks, Chair: Yury Evtushenko (Large room)

9:00-9:40 Yurii Nesterov *Subgradient methods for huge-scale optimization problems*

9:40-10:20	Yinyu Ye	<i>The simplex and policy-iteration methods are strongly polynomial for the Markov decision problem with a constant discount factor</i>
10:20-11:00	Mehiddin Al-Baali	<i>Enforcing convergence to all members of the Broyden family of methods for unconstrained optimization</i>
11:00-11:20	Coffee break	
Plenary talks , Chair: Mehiddin Al-Baali (Large room)		
11:20:12:00	Michael Hintermueller	<i>MPECs in function space</i>
12:00-12:40	Stefan Ulbrich	<i>Multilevel methods for PDE-constrained optimization involving adaptive discretizations and reduced order models</i>
13:00-14:00	Lunch	
Optimal Control, Part II , Chair: Michael Hintermueller (Medium room)		
14:00-14:25	Radoslaw Pytlak	<i>Numerical procedures for optimal control problems described by higher index differential-algebraic equations</i>
14:25-14:50	Tomasz Tarnawski	<i>Network based computing environment for solving optimal control problems</i>
14:50-15:15	Charles Pearce	<i>The duration problem with multiple exchanges</i>
15:15-15:40	Jane Ghiglieri	<i>Optimal flow control based on POD and MPC for the cancelation of Tollmien-Schlichting waves by plasma actuators</i>
15:40-16:05	Taher Elshiekh	<i>Optimal design and operation of transmission gas pipelines</i>
Optimization of Stochastic Models , Organizer & Chair: Andrzej Ruszczyński (Small room)		
14:00-14:25	Darinka Dentcheva	<i>Decomposition methods for two-stage problems with stochastic order constraints</i>
14:25-14:50	Nikolay Timofeev	<i>Loan portfolio reservation in condition of incomplete information</i>
14:50-15:15	Gaik Tamazian	<i>A variation of the pure adaptive random search</i>
15:15-15:40	Xiaoling Sun	<i>Penalty decomposition methods for probabilistically constrained convex programs</i>
16:05-16:20	Coffee break	
Linear and Nonlinear Optimization, Part II , Chair: Jacek Gondzio (Medium room)		
16:20-16:45	Gabriel Haeser	<i>New weak constraint qualifications with applications</i>
16:45:17:10	Remigijus Paulavicius	<i>Simplicial Lipschitz optimization without the Lipschitz constant</i>
17:10-17:35	Georgi Smirnov	<i>Newton's method for equations with geometric constraints</i>
17:35-18:00	Haibin Zhang	<i>On proximal gradient method for a class of nonsmooth convex minimization problems</i>
20:00	Dinner	

Thursday, May 17

Plenary talks, Chair: Luis Nunes Vicente (Large room)

9:00-9:40	Masao Fukushima	<i>Smoothing approach to equilibrium problems with shared complementarity constraints</i>
9:40-10:20	Ya-xiang Yuan	<i>Hybrid algorithm for power maximization interference alignment problem of MIMO channels</i>
10:20-11:00	E. Alper Yildirim	<i>The Frank-Wolfe algorithm, away steps, and core sets in optimization</i>
11:00-11:20	Coffee break	

Plenary talks, Chair: Yurii Nesterov (Large room)

11:20-12:00 Panos M. Pardalos *Detecting critical subsets (nodes, edges, shortest paths, or cliques) in large networks*

12:00-12:25 Boris Goldengorin *Uniqueness of an optimal solution in combinatorial optimization*

13:00-14:00 **Lunch**

Nonlinear Optimization: Algorithms and Applications, Part II, Organizer: Ya-xiang Yuan, Chair: Yu-Hong Dai (Medium room)

14:00-14:25 Roummel Marcia *Limited-memory BFGS with diagonal updates*

14:25-14:50 Bo Jiang *A bilevel optimization approach to air flow control problem in the mine ventilation network*

14:50-15:15 Mikhail Posypkin *A deterministic algorithm for multi-objective optimization problems*

15:15-15:40 Xiao Wang *An augmented Lagrangian trust region algorithm for nonlinear programming*

15:40-16:05 Anna von Heusinger *A composite SQP-Newton method for nonlinear programs*

Optimization Applications, Chair: Vitaly Zhadan (Small room)

14:00-14:25 Michael Katehakis *Dynamic pricing and channel preference in a dual channel environment*

14:25-14:50 Rubem Mondaini *Methods of combinatorial optimization as applied to protein structures*

14:50-15:15 Viet Nga Pham *DC programming approaches for discrete portfolio optimization under concave transaction costs*

15:15-15:40 Rajluxmi Murthy *Facilitating green building adoption - an optimization based decision support tool*

20:00 **Dinner**