4th International Conference on Optimization Methods and Software

(December 16-20, Havana, Cuba)

CONFERENCE PROGRAM

Saturday, December 16

9:30-11:30 Registration
11:30-12:30 Opening session. Aula Magna
12:30-13:00 Tour around the Campus
18:00 Welcome party – Casa de la FEU,
address: 27 and K, Vedado

Sunday, December 17

8:30-12:30 Registration

Plenary talks, Chair: José Mario Martinez (Theater Verona)
9:00-9:40 Philippe Toint: Recent progress in the analysis of evaluation complexity for nonconvex optimization
9:40-10:20 Fabio Schoen: New Perspectives on Clustering Methods for Global Optimization

10:20-10:40 Coffee break

Plenary talks, Chair: Philippe Toint (Theater Verona)
10:40:11:20 Andreas Griewank: Relaxing kink qualifications and proving linear or quadratic convergence in piecewise smooth optimization.
11:20-12:00 Florian Potra: A superquadratic variant of Newton's method

12:00-13:30 Lunch

Session S1-1: Derivative Free Optimization, **Chair Chayne Planiden** (Theater Verona)
13:30-13:55 Asma Atamna, COCO: A platform for benchmarking derivative free optimizers
13:55-14:20 Yves Lucet, A linear-time algorithm to check convexity of piecewise linear-quadratic functions
14:20-14:45 Chayne Planiden, A Derivative-free VU-algorithm for Convex Finite-max Functions

Session S1-2: Sequential Optimality Conditions, **Chair José Marió Martinez** (Small room 1)
13:30-13:55 Natasa Krejic, Inexact Newton Methods for Minimizing Large Sums
13:55-14:20 Ivan Nascimento, Splitting a Matrix into the Sparse-Plus-Low-Rank Format: Smoothing Approaches and Applications
14:20-14:45 Roberto Andreani, A sequential optimality condition related to the quasinormality constraint qualification And its algorithmic consequences

Session S1-3: Equilibrium Problems and Algorithms, **Chair Gábor Kassay** (Small room 2)
13:30-13:55 Gábor Kassay, Coupling Popov's algorithm with subgradient extragradient method for solving equilibrium problems
13:55-14:20 Giancarlo Bigi, Semi-infinite programming via generalized Nash equilibria
14:20-14:45 Mauro Passacantando, Algorithms for quasi-equilibria

Session S1-4: Global Optimization, Chair Ambros Gleixner (Small room 3)
13:30-13:55 Diego Oliva, Opposition-based slap swarm optimization for feature selection
13:55-14:20 Julien Alexandre dit Sandretto, Adjoint Function as Bisection Heuristic for Guaranteed Global Optimization with Nonlinear Ordinary Differential Equations
14:20-14:45 Ambros Gleixner, Optimization-Based Convexification of Bilinear Terms

Session S2-1: Applications of Optimization and Interior-Point Methods, **Chair Jordi Castro** (Theater Verona)
14:45-15:10 Eugenio Mijangos, An efficient BFC based metheuristic algorithm for solving multistage stochastic 0-1 convex problems
15:10-15:35 Javier Heredia, A Multistage stochastic programming model for the optimal bid of wind-BESS virtual power plants to electricity markets
15:35-16:00 Jordi Castro, Interior-point method for support vector machines through multiple variable splitting

Session S2-2: Sequential Optimality Conditions, **Chair Ana Friedlander** (Small room 1)
14:45-15:10 José Marió Martinez, Complexity on the minimization of functions whose evaluation is intrinsically inexact
15:10-15:35 Viana Daiana, Optimality condition and global convergence for nonlinear semidefinite programming
15:35-16:00 Gabriel Haesler, On the behavior of Lagrange multipliers in convex and non-convex infeasible interior point methods

Session S2-3: Vector Optimization**, Chair Gábor Kassay** (Small room 2)
14:45-15:10 Marius Durea, Regularity and penalization in constrained vector optimization
15:10-15:35 Radu Strugariu, On some new methods to derive optimality conditions in vector optimization
15:35-16:00 Ovidiu Bagdasar, Transportation management: On the interplay between optimization and equilibrium problems

Session S2-4: Linear and Nonlinear Optimization, **Chair Qinghong Zhang** (Small room 3)
14:45-15:10 Min Tao, On Glowinski's Open Question of Alternating Directions Method of Multipliers
15:10-15:35 Victor Blanco, Locating separating hyperplanes with maximum lp-norms margins
15:35-16:00 Qinghong Zhang, On a Compound Duality Classification for Geometric Programming

16:00-16:20 Coffee break

Session S3-1: Large Scale Optimization, **Chair Peter Richtarik** (Theater Verona)
16:20-16:45 Pilip Hanzely, Randomized and Accelerated for Minimizing Relatively Smooth Functions
16:45-17:10 Mark Schmidt, Let's Make Block Coordinate Descent Go Fast
17:10-17:35 Peter Richtarik, Stochastic primal-dual hybrid gradient algorithm with arbitrary sampling and imaging applications

Session S3-2 Integer and Combinatorial Optimization, **Chair Sira Allende** (Small room 1)
16:20-16:45 Dafne Garcia de Armas, Multi-phase strategy for heterogeneous vehicle routing problem with multicompartment and split delivery
16:45:17:10 Dragana Makajic-Nikolic, Optimization based determination of the set of multi-state components critical to system reliability
17:10-17:35 Gordana Savic, Mixed-integer Programming DEA-based Efficiency Evaluation and Selection

Session S3-3: Optimization Software, **Chair Dominic Calleja** (Small room 2)
16:20-16:45 Rainer Llera, NGAT: Framework for working with transport networks
16:45:17:10 Fernando Rodrigez Flores, An agile approach for the evaluation of VRP solutions
17:10-17:35 Dominic Calleja, Presentation of a framework for optimisation in the presence of uncertainty: COSSAN a general purpose UQ software library

Session S3-4 Optimization Applications, **Chair Maria Teresa Vespucci** (Small room 3)
16:20-16:45 Vivak Patel, Towards Direct Stochastic Analogues of Deterministic Optimization Methods using Statistical Filters
16:45:17:10 Hassan Anis, Optimal Dynamic Portfolio Liquidation with Lower Partial Moments
17:10-17:35 Maria Teresa Vespucci, Optimization models for the participation of active power distribution networks to the ancillary services

Monday, December 18 ***Excursion***

Excursion to Valle Viñales, Pinar del Rio.

Tuesday, December 19

Session T1-1: Nonlinear Optimization, **Chair Ya-xian Yuan** (Small room 1)

8:30-8:55 Cong Sun, Splitting a Matrix into the Sparse-Plus-Low-Rank Format: Smoothing Approaches and Applications
8:55-9:20 Hongchao Zhang, An Active Set Algorithm for Nonlinear Optimization with Polyhedral Constraints
9:20-9:45 Jinyan Fan, The global complexity of the inexact Levenberg-Marquardt method
9:45-10:10 Gemayqzel Bouze Allende, Convergence analysis of two smoothing approaches for mathematical programs with complementarity constraints

Session T1-2: Interior Point Methods, **Chair Aurelio Oliveira** (Small room 2)

8:30-8:55 Julio Goéz, Valid conic inequalities for hyperboloids and non-convex quadratic cones
8:55-9:20 Paul Armand, A nonlinear optimization algorithms with rapid infeasibility detection capabilities
9:20-9:45 Marta Velazco, Computing search directions in interior point methods with alternative linear systems
9:45-10:10 Aurelio Oliveira, Incomplete Choleky Factorizations for the direct solution of linear systems arising from the interior point methods

Session T1-3: Linear and Integer Optimization, **Chair Ivet Galambova** (Small room 3)

8:30-8:55 Emre Cimen, Separation via weighted-norm cones
8:55-9:20 Nebojsa Nikolic, Exact values of the metric dimension of n-dimensional hypercube for up to n=13
9:20-9:45 GustavoGarcia Gonzales, A proposal for optimizing computational time in 3D solving geometric constraints problems
9:45-10:10 Ivet Galambova, An approximate augmented Lagrangian algorithm for fast bounds on quadratic assignment linearisations

10.10-10:25 Coffee break

Session T2-1: Network Optimization, **Chair Claudio Sterle** (Small room 1)

10:25-10:50 Brad Woods, The Quadratic Travelling Salesman Problem on Halin graphs
10:50-11:15 Kiyoshi Sawada, Forming a simple cycle to a level of a complete K-ary tree maximizing total shortening distance
11:15-11:40 Nenad Mladenovich, Sequential community detection in complex networks
11:40-12:05 Claudio Sterle, Multi-commodity location-routing problems: formulations, solving approaches and sustainability perspectives

Session T2-2: Global Optimization, **Chair Emilie Joannopoulos** (Small room 2)

10:25-10:50 Tatiana Gruzdeva, Optimization of Copper Flotation by a Biobjective DC Programming
10:50-11:15 Michael Souza, Improvements on the pruning phase of the branch-and-prune algorithm for the molecular distance geometry problem
11:15-11:40 Andrei Orlov, The global search theory approach to equilibrium and bilevel problems with a bilinear structure
11:40-12:05 Emilie Joannopoulos, Global convergence analysis of a bilinear model with applications in the feed industry

Session T2-3: Tools for Nonlinear Optimization, Chair Orest Mikhaskiv (Small room 3)

10:25-10:50 Anke Trötzsch, The SQP trust-region algorithm ECDFO applied to the optimization of an aero engine performance model
10:50-11:15 Maibeth Sanchez-Riveiro, Leak localization in water distribution networks using differential evolution
11:15-11:40 Mladen Banovic, Improved algorithmic differentiation of the Open CASCADE Technology CAD kernel applied to gradient-based optimisation of TU Berlin TurboLab Stator with constraint imposition
11:40-12:05 Orest Mikhaskiv, Some assumptions and their implications on correctness of MPI adjoints

12:05-13:30 Lunch

Session T3-1: Nonlinear Optimization (1) **Chair Philippe Toint** (Theater Verona)
13:30-13:55 Roummel Marcia, Compact Representation of Quasi-Newton matrices
13:55-14:20 Serge Gratton ?????
14:20-14:45 Oleg Burdakov, Limited memory algorithms with cubic regularizationr

Session T3-2: Linear and Nonlinear Optimization, **Chair Geoff Pond** (Small room 1)
13:30-13:55 Meriem Ben Messac, A detailed mathematical model for the aircraft landing problem on a multiple runway system
13:55-14:20 Bismak Singh, Optimizing vaccine allocations for pandemic influenza
14:20-14:45 Geoff Pond, Optimization of workforce scheduling with mentoring

Session T3-3: Optimization Methods, **Chair Vivak Patel** (Small room 2)
13:30-13:55
13:55-14:20 Elias David Nino Ruiz, A line search method for non-linear data assimilation via multiple descent directions
14:20-14:45 Vivak Patel, The impact of local geometry and batch size on convergence and divergence of stochastic gradient descent

Session T3-4: Linear and Nonlinear Optimization, **Chair Walter Gomez** (Small room 3)
13:30-13:55 Somayya Komal, Best proximity point theorems via simulation functions
13:55-14:20 Surafel Luleseged Tilahun, Parallel prey-predator algorithm
14:20-14:45 Walter Gomez, Combining multiple Kernels in Recurrent Least Squares Support Vector Machines

Session T4-1: Nonlinear Optimization (2) **Chair Serge Gratton** (Theater Verona)
14:45-15:10 Dominique Orban, Factorization-free methods for computed tomography
15:10-15:35 Johannes Brust, Dense initializations for limited-memory Quasi-Newton methods
15:35-16:00 Philippe Toint, Derivative-free gray-box optimization of structured problems with BFO

Session T4-2: Integer and Combinatorial Optimization, **Chair Jordi Pereira** (Small room 1)
14:45-15:10 Bogdan Zvalnij, Clique size estimate based on coloring of the nodes
15:10-15:35 David Romero, Combinatorial optimization approach to political districting in Mexico
15:35-16:00 Jordi Pereira, Simple Assembly Line Balancing: what makes an instance difficult

Session T4-3: Convex and Nonsmooth Optimization, Chair Sabrina Fiege (Small room 2)
14:45-15:10 Gulcin Dinc Yalcin, Approximation of weak subgradient and the weak subgradient algorithm in nonconvex optimization
15:10-15:35 Mario Banuelos, Sparsity-Constrained Optimization Tools for Structural Variant Detection
15:35-16:00 Sabrina Fiege, Minimizing piecewise linear objective functions: A comparison of stationarity tests

Session T4-4: Optimal Control, Chair Elena Ravve (Small room 3)
14:45-15:10 Pavel Otta, Newton Projection with Proportioning for Model Predictive Control with Long Prediction Horizon
15:10-15:35 Silvere Paul Nuiro, Diabetes, Complications, and limit cycles
15:35-16:00 Elena Ravve, Incremental Optimization and Control of Strongly Distributed Data Streams

16:00-16:15 Coffee break

Plenary talks, Chair: E. Alper Yildirim (Theater Verona)
16:15-16:55 Claudia D'Ambrosio: Challenging Problems in Energy in Optimization: the Hydro Unit Commitment
16:55-17:35 Thorsten Koch: SCIP-Jack: A Solver for Steiner Tree Problems in Graphs and their Relatives
17:35-18:15 Dominique Orban: Iterative Linear Algebra for Optimization

19:00-22:00 Conference Dinner

Wednesday, December 20

Session W1-1: Optimization Software, **Chair Yuji Shinano** (Theater Verona)
8:30-8:55 Ioannis Demetriou, The performance of two Fortran packages for piecewise monotonic approximation on large sequences of highly irregular data
8:55-9:20 Julian Hall, The value of an advanced basis crash for the dual revised simplex method
9:20-9:45 Joanna Campbell, Heuristic base on meta heuristic Simulating Annealing to solve Mixed Chinese Postman Problem MCPP
9:45-10:10 Yuji Shinano**,** ParaXpress - A Massively Parallel Mixed Integer Linear Programing Solver with the Potential to Harness over a million CPU cores

Session W1-2: Convex Nonsmooth Optimization, Chair Johannes Persch (Small room 1)
8:30-8:55 Lisa Hagerhorst, Optimality conditions for nonsmooth constrained optimization problems
8:55-9:20 Max L.N. Gonzalves, Pointwise and ergodic convergence rates of a variable metric proximal ADMM
9:20-9:45 Manuel Radons, An open Newton method for piecewise smooth equation systems
9:45-10:10 Johannes Persch, A parallel Douglas–Rachford algorithm for minimizing ROF-like functionals on images with values in symmetric Hadamard manifolds

Session W1-3: Linear and Nonlinear Optimization, **Chair Carlos N, Bouza-Herrera** (Small room 2)
8:30-8:55 Elias David Nino Ruiz, A hybrid method based on line search and genetic algorithms for non-linear variational data assimilation via multiple descent directions
8:55-9:20 Maria Beatriz Bernábe, Improving a cluster analysis for decision making in an ornamental Japanese fish aquarium
9:20-9:45 Ivan Derpich, A new Phase I method for LP based on normal projections.
9:45-10:10 Carlos N, Bouza-Herrera, Optimal sample size for stratified sampling: a numerical study

Session W1-4: (Small room 3) No scheduled talks

10.10-10:25 Coffee break

Session W2-1: Linear and Nonlinear Optimization, Chair Gabriele Steidl (Theatre Verona)
10:25-10:50 Leo Liberti, Random projections in linear programming
10:50-11:15 Asjbörn Nielsen Riseth, Objective acceleration for unconstrained optimization
11:15-11:40 Tangi Migot, Regularization methods for degenerate non-linear program
11:40-12:05 Gabriele Steidl, Iterative Multiplicative Filters for Data Labeling

Session W2-2: Linear and Nonlinear Optimization, **Chair** Orest Myhaskiv (Small room 1)
10:25-10:50 Gürhan Ceylan, Soft margin polyhedral conic function algorithm
10:50-11:15 Victor Fuentes, Sparse pseudoinverses via relaxations of Moore-Penrose
11:15-11:40 Orest Myhaskiv, Aerodynamic optimisation with NURBS: flexible space and constraints
11:40-12:05

Session W2-3: Multiobjective Optimization, **Chair Sandra Silva** (Small room 2)
10:25-10:50 Eric Rosado-Tamariz, Operational management of combined cycle plants applying multi-objective optimization
10:50-11:15 Christopher Schneider, Benson's algorithm for regularization parameter tracking
11:15-11:40 Victor Shi, Contract design for supply chain coordination under multiple objectives
11:40-12:05 Sandra Silva, An integrated multicriteria spatial decision support system for locating a biogas plants

Session W2-4: Stochastic Optimization, **Chair Omid Nejadseyfi** (Small room 3)
10:25-10:50 Aydin Teymourifan, A Bi-level Solution Method for a Hierarchical Problem of Pricing and Capacity Decisions Based on a Contract Mechanism between the Government and a Private Hospital
10:50-11:15 Vincent Leclere, Stochastic dynamic programming: an open-source library for multistage stochastic optimization
11:15-11:40 Omid Nejadseyfi, Comparison of Monte Carlo and analytical approach during sequential improvement in robust optimization
11:40-12:05 No scheduled talk

12:05-13:30 Lunch

Plenary talks, Chair: Claudia D'Ambrosio (Theater Verona)
13:30-14:10 Serge Gratton: Truncated primal-dual iterative methods for large-scale nonlinear least-squares problems
14:10-14:50 Roland Herzog: Total Variation Image Reconstruction on Surfaces
14:50-15:30 Anthony Man-Cho So: Towards Understanding the Convergence Behavior of Newton-Type Methods for Structured Optimization Problems

15:30-15:50 Coffee break

Plenary talks, Chair: Andreas Griewank (Theater Verona)
15:50-16.30 Ya-xian Yuan: Non-monotone properties of the BB method
16:30-17:10 Alper Yildirim: Mixed Integer Linear Programming Formulations of Standard Quadratic Programs
17:10-17:50 Tamás Terlaky: On Mixed Integer Second Order Cone Optimization
17:50-18:00 Closing remarks