



Ettore Majorana Centre for Scientific Culture
International School of Mathematics "G. Stampacchia"
Erice, Italy

33rd Workshop

HIGH PERFORMANCE ALGORITHMS AND SOFTWARE
FOR NONLINEAR OPTIMIZATION

30 June - 8 July 2001.

PROGRAM

JULY 1, Sunday

09.00-09.20 Opening

Chair: G. Di Pillo

09.20-10.10 **M. Wright**, *Combining primal-dual and sequential quadratic programming methods for nonlinear programming*

10.10-11.00 **P. E. Gill**, *Numerical issues in large-scale nonlinear optimization*

— coffee break —

11.30-12.20 **R. J. Vanderbei**, *Interior-point methods for NLP*

12.20-12.50 G. Toraldo, *Building interior point software for BCQP problems*

Chair: M. Roma

15.00-15.50 **D. Shanno**, *Linear algebra, starting points, and infeasibility detection for large scale interior point methods*

15.50-16.20 J. L. Morales, *Combining trust region and line searches in KNITRO, an interior point solver for nonlinear programming*

16.20-16.50 T. Rapcsák, *Interior point algorithms for smooth nonlinear optimization problems*

JULY 2, Monday

Chair: M. H. Wright

09.00-09.50 **S. Lucidi**, *On the fruitful uses of smooth exact merit functions in constrained optimization*

09.50-10.20 G. Liuzzi, *A primal-dual shifted barrier approach for large scale nonlinear programming problems*

10.20-10.50 M. Kocvara, *An exterior point method for nonlinear semidefinite programs*

— coffee break —

Chair: P. E. Gill

11.10-12.00 **Y. G. Evtushenko**, *New perspective on the theorems of alternatives*

12.00-12.30 G. Fasano, *A new negative curvature direction for algorithms converging to second order points*

12.30-13.00 M. Diehl, *Newton type methods for the approximate solution of nonlinear programming problems in real-time*

Chair : R. J. Vanderbei

15.00-15.50 **J. C. Gilbert**, *Using quasi-Newton techniques in interior point algorithms*

15.50-16.20 J. Herskovits, *An infeasible reduced interior point algorithm for nonlinear optimization*

— coffee break —

16.40-17.10 M. Al Baali, *Limited-memory quasi-Newton method for large-scale nonlinear least-squares*

17.10-17.40 F. Lepore, *A low complexity generalization of BFGS method*

JULY 3, Tuesday

Chair: D. Goldfarb

09.00-09.50 **V. J. Torczon**, *Asynchronous parallel pattern search*

09.50-10.40 **J. Dennis**, *A Direct search filter method for nonlinear constraints*

— coffee break —

Chair: D. Shanno

11.00-11.30 B. Colson, *Constrained derivative-free optimization using an SQP-filter approach*

11.30-12.00 C. Price, *A convergent variant of the Nelder Mead algorithm*

12.00-12.30 Y. D. Sergeyev, *Derivative-free constrained global optimization method using local tuning*

12.30-13.00 D. Calvetti, *An approximate trust region method for large-scale problems*

Chair : J. C. Gilbert

15.00-15.50 **R. Fletcher**, *Filter methods for solving nonlinear systems*

15.50-16.20 D. Orban, *Componentwise fast convergence in the solution of full-rank system of nonlinear equations*

16.20-16.50 M. Sanguineti, *The extended Ritz method and the curse of dimensionality*

JULY 4, Wednesday

EXCURSION

JULY 5, Thursday

Chair: V. Torczon

09.00-09.50 **J. Moré**, *Reaction pathways and saddle points*

09.50-10.40 **A. R. Conn**, *Small changes – big effects in the optimization of high performance digital circuits*

— coffee break —

Chair: J. Dennis

11.00-11.30 C. Gonzaga, *Examples of ill-behaved convex optimization problems*

11.30-12.00 A. Rubinov, *Cutting angle method in constrained global optimization*

12.00-12.30 R. Meziat, *The method of moments in optimisation*

12.30-13.00 G. Maier, *Some mathematical programming problems in structural engineering of large dams*

Chair : R. Fletcher

15.00-15.50 **E. J. Polak**, *Smoothing Techniques for the solution of semi-infinite min-max-min problems*

15.50-16.20 S. Bellavia, *A globalization strategy for interior point methods for mixed complementarity problems*

16.20-16.50 S. Pieraccini, *Interior point algorithms with nonmonotone complementarity gaps*

JULY 6, Friday

Chair: J. Moré

09.00-09.50 **D. Goldfarb**, *Robust portfolio optimization and second-Order cone programming*

09.50-10.40 **P. Boggs**, *A Software system for PDE-based Optimization*

— coffee break —

Chair: A. R. Conn

11.00-11.30 J. Fliege, *Calculating approximations to the efficient set of convex quadratic multiobjective problems*

11.30-12.00 P. Georgiev, *Algorithms for blind source separation with high-order convergence speed*

12.00-12.30 A. Sofer, *Optimization of biopsy schemes for detection of prostate cancer*

F R E E

JULY 7, Saturday

Chair: E. Polak

09.00-09.50 **J. Z. Zhang**, *Efficiency analysis and improvement of Newton-PCG algorithms*

09.50-10.40 **S. G. Nash**, *Multigrid algorithms for discretized optimization problems*

— coffee break —

Chair: P. Boggs

11.00-11.30 J. Goffin, *Semidefinite cuts in the analytic center cutting surface method*

11.30-12.00 P. Lotito, *Issues on the implementation of a disaggregated simplicial decomposition (DSD) algorithm for the traffic networks*

12.00-12.30 B. Addis, *Bio-molecular docking by means of nonlinear optimization algorithms*

12.30-13.00 G. Zanghirati, *Parallel solution of quadratic programs in training support vector machines*

Chair : J. Z. Zhang

15.00-15.30 P. D. Tao, *A combined DCA and branch and bound techniques for globally solving multicommodity network optimization problems*

15.30-16.00 L.T. Hoai An, *A new d.c. optimization approach to large scale molecular structures via distance geometry problems*

16.00-16.30 J. Ranta, *Optimal collision avoidance using nonlinear programming*

16.30-17.00 M. Kitti, *Distributed computation of incentive Stackelberg solution*

17.00-17.10 Closing