HIGH PERFORMANCE ALGORITHMS AND SOFTWARE FOR NONLINEAR OPTIMIZATION: STATUS AND PERSPECTIVES HPSNO 2004

Ischia (Italy), June 18-20, 2004

June 18

14.00 **REGISTRATION**

14.45 **OPENING SESSION**

INVITED TALKS

Chair**: Almerico Murli**

15.00 **Dimitri P. Bertsekas**
Massachusetts Institute of Technology, USA
A Unified View of Existence of Optimal Solutions, Duality, and Minimax Theory

15.50 **Panos Pardalos**
Dept. of Industrial and Systems Engineering, University of Florida, USA
Multi-Quadratic 01 Programming

16.40 **BREAK**

CONTRIBUTED TALKS

chair: **Gerardo Toraldo**

17.00 **Susana Gomez[1],** J.M. Otero[1], N. del Castillo[1], R. Camacho[2], M.Vasquez[3], G. Fuentes[3]
[1]Departamento de Ingeniería de Sistemas Computacionales y Automatización, IIMAS, Universidad Nacional Autonoma de Mexico, Mexico
[2]PEMEX
[3]Inst. Mex. Petroleo
Designing a Genetic Algorithm for Parameter Estimation in Oil Reservoirs Modelling

17.30 **Manfred Gilli**
University of Geneva and FAME, Switzerland

Meta-Heuristics for Portfolio Optimization

18.00 L. Di Giacomo[1], F. Filippini[1,2], **Giacomo Patrizi**[1]
[1]Dip. di Statistica, Probabilità e Statistiche Applicate, Università di Roma "La Sapienza", Italy
[2]Dexia Crediop SpA, Via XX Settembre, Rome, Italy
Dynamic Optimization in Global Portfolio Management

18.30 I. Sergienko[1], **Mikhail Mikhalevich**[2], L. Koshlai[1]
[1]Institute of Cybernetics, Kiev, Ukraine
[2]Ukrainian Academy of Foreign Trade, Kiev, Ukraine
Application of Numerical Optimization Algorithms in Technological Planning

19.15 **WELCOME RECEPTION**

sponsored by the **Municipality of Ischia**

June 19

INVITED TALK

chair: **Zdenek Dostál**

9.00 **Sven Leyffer**
Mathematics and Computer Science Division, Argonne National Laboratory, USA
Fun and Games: Large-Scale Stackelberg Games

CONTRIBUTED TALKS

chair: **Zdenek Dostál**

9.50 **Stefania Bellavia**, M. Macconi, B. Morini
Dipartimento di Energetica, University of Florence, Italy
On the Numerical Solution of Large-Scale Constrained Nonlinear Systems

10.20 **Silvia Bonettini**[1], V. Ruggiero[2]
[1]Dipartimento di Matematica, Università di Modena e Reggio Emilia, Italy
[2]Dipartimento di Matematica, Università di Ferrara, Italy
Some Iterative Methods for the Solution of a Reduced Symmetric Indefinite KKT System

10.50 **BREAK**

CONTRIBUTED TALKS

chair: **Marina Marino**

11.10 **Giovanni Fasano,** M. Roma
Dipartimento di Informatica e Sistemistica "A. Ruberti", Università "La Sapienza" di Roma, Italy

Issues on the Iterative Computation of Negative Curvature Directions in Large Scale Unconstrained Optimization

11.40 **Zdenek Dostál**
Department of Applied Mathematics, VŠB-Technical University Ostrava, Czech Republic
Optimal Algorithms for Large Scale Quadratic Programming Problems

12.10 **Thomas Serafini**[1], G. Zanghirati[2], L. Zanni[1]
[1]*Department of Mathematics, University of Modena and Reggio Emilia, Italy*
[2]*Department of Mathematics, University of Ferrara, 44100 Ferrara, Italy*
A Gradient Projection-Based Decomposition Software for Large Quadratic Programs in Training Support Vector Machines

12.40 **Lennart Frimannslund**
Department of Informatics, University of Bergen, Norway
A New Generating Set Search Method for Unconstrained Optimization

13.10 **LUNCH**

INVITED TALKS

Chair: **Marco D'Apuzzo**

14.30 **Jeff Linderoth**
Industrial and Systems Engineering, Lehigh University, USA
A Branch-and-Bound Method for Nonconvex Quadratic Programming Implemented on a Computational Grid

15.20 **Christodoulos A. Floudas**
Department of Chemical Engineering , Princeton University, Princeton, USA
Structure Prediction in Protein Folding

16.10 **BREAK**

CONTRIBUTED TALKS

Chair: **Stefania Bellavia**

16.30 **René Meziat[1],** P. Pedregal[2]
[1]*Departamento de Matemáticas, Universidad de los Andes, Bogotá, Colombia*
[2]*Universidad de Castilla la Mancha, Spain*
Analysis of Nonlinear Optimal Control Problems

17.00 **Patrizia Daniele**[1], G. Idone[2], A. Maugeri[1]
[1]*Dipartimento di Matematica e Informatica, Università di Catania, Italy*
[2]*DIMET, Università di Reggio Calabria, Italy*
Variational Inequalities and a Transport Planning for an Elastic and Continuum Model

17.30 **Mahdi Jalili Kharaajoo**
Azad University, Tehran, Iran
Nonlinear Optimal Control of Power Systems via Approximate Solution of Hamilton-Jacobi-Bellman Equation

21.00 **CONFERENCE DINNER**

June 20

INVITED TALK

Chair: **René Meziat**

9.00 **Hans D. Mittelmann**
Dept of Math and Stats, Arizona State University, USA
Automated Performance Analysis in the Evaluation of Nonlinear Programming Solvers

CONTRIBUTED TALKS

Chair: **René Meziat**

9.50 I.F. Vaz , **Edite M.G.P. Fernandes**
Departamento de Produção e Sistemas, Universidade do Minho, Braga, Portugal
An Interface between Matlab and Sipampl for Semi-Infinite Programming Problems

10.20 **Ismael F. Vaz**[1], E.M.G.P. Fernandes[1], M.P.S.F. Gomes[2]
[1]Departamento de Produção e Sistemas, Escola de Engenharia, Universidade do Minho, Portugal
[2]Mechanical Engineering Department, Mechatronics in Medicine Laboratory, Imperial College of Science, Technology and Medicine, United Kingdom
Nsips: Nonlinear Semi-Infinite Programming Solver

10.50 **BREAK**

CONTRIBUTED TALKS

Chair: **Pasquale L. De Angelis**

11.10 **Gianpaolo Ghiani**[1], P. Legato[2], R. Musmanno[2], F. Vocaturo[2]
[1]Dipartimento di Ingegneria dell'Innovazione, Università di Lecce, Italy
[2]Dipartimento di Elettronica, Informatica e Sistemistica, Università della Calabria, Italy
A Simulated Annealing Algorithm with Sampling for Discrete Simulation-Optimization Problems

11.40 P. De Angelis[1], **Paola Festa**[2], G. Toraldo[3]
[1] Statistics and Mathematics Institute, University of Naples PARTHENOPE, Italy
[2]Dept. of Mathematics and Applications, University of Naples Federico II, Italy
[3]Dept. of Agricultural Engineering and Agronomy, University of Naples Federico II, Italy
Randomized Heuristics for Max Clique Problems

12.10 **Antanas Zilinskas**[1], J. Zilinskas[2]
[1]Cardiff University, UK and Institute of Mathematics and Informatics, Vilnius, Lithuania
[2]Kaunas University of Technology, Kaunas, Lithuania
Global Optimization by Means of Stochastic Interval Arithmetic

12.40 **Yaroslav D. Sergeyev**
DEIS, University of Calabria, Italy

Global Optimization with Multiextremal Partially Defined Non-Differentiable Constraints

13.10 **LUNCH**

INVITED TALK

Chair: **Panos M. Pardalos**

14.20 **Marco D'Apuzzo**
Department of Mathematics, Second University of Naples, Italy
Parallel Computing in Nonlinear Optimization

CONTRIBUTED TALKS

Chair: **Panos M. Pardalos**

15.10 **Pando Georgiev**[1], P. Pardalos[2], A. Cichocki[1]
[1]Laboratory for Advanced Brain Signal Processing, Brain Science Institute The Institute for Physical and Chemical Research (RIKEN), Japan
[2]Center for Applied Optimization, University of Florida, USA
Algorithms with High Order Convergence Speed for Blind Source Extraction

15.40 **David Avis**[1], H. Imai[2,3], T. Ito[2], Y. Sasaki[2]
[1]School of Computer Science, McGill University, Montreal, Canada
[2]Department of Computer Science, University of Tokyo, Japan
[3]ERATO Quantum Computation and Information Project, Tokyo, Japan
New Bell Inequalities for Verifying the Non-Locality of Quantum States

16.10 **CLOSING**