

Cordial Invitation

to
MATHEMATICAL PROGRAMMING

EURO XXI 2006

21st European Conference
on Operational Research

in Reykjavik, Iceland, July 2-5, 2006

<http://www.euro2006.org/>

For EURO 2006 a Mathematical Programming stream now in preparation and you are cordially invited to participate, present a paper and exchange ideas with others on all stages of this area of application developed by modern OR! This stream will consist of six or more sessions which are going to draw a state-of-the-art picture of Mathematical Programming and its future challenges. The stream and session organizers represent its backgrounds in both mathematics and computer science, along with theory and methods in many applications of science, technology, economics and public life. Special emphasis will be given to methods drawn from all of OR. Papers in all aspects of mathematical programming and its applications are welcome. The following topics are weakly or not represented in other streams, therefore we particularly welcome papers in these topics:

- Large-scale problems
- Boolean programming
- Integer programming
- Mixed integer programming
- Quadratic programming
- Nonconvex programming
- Nonlinear programming (aspects which are not entirely covered by continuous optimization, industrial applications and nonlinear semi-infinite optimization)
- Sensitivity, stability, parametric optimization
- Fractional programming
- Complementarity problems
- Markov and semi-Markov decision processes
- Optimality conditions, duality
- Minimax problems
- Programming in abstract spaces
- Extreme-point and pivoting methods (aspects which are not entirely covered by linear programming)

- Interior-point methods (aspects which are not entirely covered by linear programming)
- Methods of reduced gradient type
- Methods of quasi-Newton type
- Methods of successive quadratic programming type
- Polyhedral combinatorics, branch-and-bound, branch-and-cut (aspects which are not entirely covered by combinatorial optimization).
- Approximation methods and heuristics
- Abstract computational complexity for mathematical programming problems
- Fuzzy programming
- Applications of mathematical programming (aspects which are not entirely covered by industrial applications of nonlinear programming algorithms)
- Methods of successive approximations
 - Methods based on necessary conditions
 - Methods of Newton-Raphson, Galerkin and Ritz types
 - Methods of relaxation type
 - Discrete approximations
 - Decomposition methods
 - Methods involving duality
 - Other methods, not based on necessary conditions (penalty function, etc.)
 - Methods of nonlinear programming type
- Mathematical programming, optimization and variational techniques
 - Mathematical programming algorithms
 - Optimization and variational techniques
- Hamilton-Jacobi theories, viscosity solutions
- Miscellaneous topics
 - Linear optimal control problems
 - Linear-quadratic problems
 - Duality theory
 - Periodic optimization
 - Impulsive optimal control problems
 - Problems with incomplete information
 - Optimal feedback synthesis
 - Inverse problems
 - Regularity of solutions
 - Differential games
 - Pursuit and evasion games
 - Applications of optimal control and differential games

- Necessary conditions and sufficient conditions for optimality
 - Free problems in one independent variable
 - Free problems in two or more independent variables
 - Problems involving ordinary differential equations
 - Problems involving partial differential equations
 - Problems involving integral equations
 - Problems involving differential inclusions
 - Problems involving equations with retarded arguments
 - Problems in abstract spaces
 - Optimal solutions belonging to restricted classes
 - Minimax problems
 - Sensitivity, stability, well-posedness
 - Problems involving randomness

Please note that the following topics are entirely or partly covered by other streams. Therefore, it might be a better idea to submit your paper to these streams.

- *Linear programming* is entirely covered by the stream *Linear Programming*.
- *Special problems of linear programming (transportation, multi-index, etc.)* is entirely covered by the stream *Linear Programming*.
- *Stochastic programming* is entirely covered by the stream *Stochastic Programming*.
- *Semidefinite programming* is entirely covered by the stream *Semidefinite Programming*.
- *Convex programming* is entirely covered by the stream *Convex Optimization Methods*.
- *Combinatorial optimization* is entirely covered by the stream *Combinatorial Optimization*.
- *Multi-objective and goal programming* is entirely covered by the stream *Multiobjective Optimization*.
- *Nonlinear programming* is partly covered by the streams *Continuous Optimization*, *Industrial Applications of Nonlinear Programming Algorithms* and *Nonlinear Semi-Infinite Optimization*.
- *Semi-infinite programming* is entirely covered by the streams *Linear Semi-Infinite Optimization* and *Nonlinear Semi-Infinite Optimization*.
- *Programming involving graphs or networks* is entirely covered by the stream *Network Optimization*.
- *Dynamic programming* is entirely covered by the stream *Dynamic Programming*.
- *Extreme-point and pivoting methods* is partly covered by the stream *Linear Programming*.
- *Interior-point methods* is partly covered by the stream *Linear Programming*.
- *Derivative-free methods* is entirely covered by the stream *Global and Local Derivative-free optimization*.
- *Applications of mathematical programming* is partly covered by *Industrial Applications of Nonlinear Programming Algorithms*.

- *Polyhedral combinatorics, branch-and-bound, branch-and-cut* is partly covered by the stream *Combinatorial Optimization*.
- *Hamilton-Jacobi theories, dynamic programming method* is entirely covered by the stream *Dynamic Programming*.

EURO XXI 2006 wishes to serve as a facility for deepening and further initiation of scientific exchanges, collaboration and friendships in Mathematical Programming as well as with the other working groups of OR, operating for the benefit of people in our discipline and a good future.

You are cordially welcome and, wouldn't it be a pleasure to enjoy together

- a European conference with an international flavour,
- the first EURO conference in a Nordic country since Finland 1992,
- exotic nature, glaciers, volcanic lava and waterfalls,
- excellent conference facilities,
- good organisation,
- the midnight sun,
- valuable satellite events

and, for the football fans among you ...
 a screen for watching the World Cup provided.

Stream Organizers and Contacts:

- Raphael Hauser (Oxford University, United Kingdom)
 e-mail: hauser@comlab.ox.ac.uk
- Sándor Zoltán Németh (The University of Birmingham, United Kingdom)
 e-mail: nemeths@for.mat.bham.ac.uk
- Mustafa Pinar (Bilkent University, Ankara, Turkey)
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Two Working Groups are also hosting related streams at the conference – on Continuous Optimization:

- EURO Working Group on Continuous Optimization (EUROPT):
 <http://www.iam.metu.edu.tr/EUROPT/>,
- The Pacific Optimization Research Activity Group (POP):
 <http://www.polyu.edu.hk/ama/links/pop/an1.html>.

Furthermore, we will have a special theme for the whole conference:

OR for Better Management of Sustainable Development, Plenary and Semi-Plenary Lectures, and a special issue of European Journal of Operational Research (EJOR) for the conference proceedings.

Important Dates:

- On-line submission of abstracts:
now in operation
- Deadline for abstract submission:
March 1st, 2006
- Deadline for early registration:
April 1st, 2006
- Deadline for author registration (for inclusion in the programme):
May 15th, 2006
- Conference:
July 2-5th, 2006

Pre-Conference Workshops:

- 5th EUROPT Workshop
Advances in Continuous Optimization,
Reykjavik, Iceland, June 30 July 1, 2006,
<http://wwhome.math.utwente.nl/stillgj/COPT06/>
- Maximal Software - Optimization Modeling in Practice,
<http://www.maximalsoftware.com/>.

Looking forward to sharing an exciting, and hopefully valuable, time with you on Iceland,

Gerhard-Wilhelm Weber (<http://www.iam.metu.edu.tr/EUROPT/>)
and Maurice Shutler