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Optimization Methods and Software

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PREFACE

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PREFACE

It is our great pleasure to present Part I of the special issue of *Optimization Methods & Software* composed of carefully peer-reviewed papers presented at the ‘Joint EUROPT-OMS Conference: 2nd Conference on Optimization Methods & Software and 6th EUROPT Workshop Advances in Continuous Optimization’. Part II will appear next year.

This conference took place in Prague, Czech Republic, on 4–7 July, 2007. It was the first joint meeting organized by the Working Group on Continuous Optimization (EUROPT) of the Association of European Operational Research Societies (EURO) and the journal, *Optimization Methods & Software*. The conference was organized in cooperation with EURO, SIAM and its Activity Group on Optimization, and the INFORMS Optimization Society. It was attended by about 160 participants who delivered 150 presentations. The plenary speakers of this event were Frédéric Bonnans (INRIA, France), Yury Evtushenko (Academy of Sciences, Russia), Komei Fukuda (EPF Lausanne and ETH Zurich, Switzerland), Dorit Hochbaum (University of California, USA), Tibor Illés (Eötvös Loránd University, Hungary), Michal Kocvara (University of Birmingham, UK), Adrian Lewis (Cornell University, USA), Carlo Mannino (University of Rome, Italy), Alexander Martin (Technical University of Darmstadt, Germany), Florian Potra (University of Maryland, USA), Liqun Qi (The Hong Kong Polytechnic University, China), Philippe Toint (University of Namur, Belgium), Stefan Ulbrich (Technical University of Darmstadt, Germany), Stephen Wright (University of Wisconsin, USA), Yinyu Ye (Stanford University, USA), and Ya-xiang Yuan (Academy of Sciences, China).

The papers in this special issue deal with a variety of topics within the area of optimization and applications. Part I contains 11 papers and is organized as follows.

The paper by Apostolopoulou, Sotirpoulos and Pintelas concerns the solution of quadratic trust-region subproblems where the Hessian is approximated by a low-memory BFGS matrix. A direction of negative curvature in closed form is obtained in the hard case.

The paper by Astorino, Fuduli and Gorgone is devoted to pattern classification problems in the framework of nonsmooth optimization. The authors show how bundle methods can be applied to these machine learning problems.

The paper by Casado, Martínez, García and Hendrix focuses on Branch-and-Bound interval global optimization and studies ways to exploit the potential parallelism of algorithms.

The paper by Han, Qi and Wu presents an algebraic method for computing fastest and slowest diffusion values in diffusion kurtosis imaging, which is a recently developed magnetic resonance imaging model.

The paper by Hendrix and Olieman presents an analysis of robustness and its optimization, in which the robustness has been measured using a finite set of Monte Carlo samples of values.

In his paper, Hladík provides sensitivity analysis for a class of multi-objective linear programming. He proposes a procedure to compute a tolerance such that certain efficient solutions of the problem remain unchanged within this tolerance.

Hochbaum and Moreno-Centeno use the separation-deviation model to obtain country credit-risk ratings and show some of the advantages of using this approach as compared to other methods.

Luo, Sun and Wu present new convergence properties of the primal-dual methods based on Rockafellar and Wets's augmented Lagrangian function for inequality constrained global optimization problems.

Redondo, Fernández, García and Ortigosa discuss a planar single-facility competitive location and design problem and discuss four parallel implementations of an evolutionary global optimization algorithm.

In her paper, Sukhorukova generalizes the classical Remez algorithm to the problem of linear spline approximation with certain specific conditions on the spline parameters.

The paper by Toledo provides a symmetric approach to the Lipschitz properties of the primal and dual optimal value functions in the setting of linear semi-infinite programming.

Many people contributed to make this special issue possible. First, of course, we are grateful to the contributors. Second, we thank the referees for their careful reviews and their cooperation in meeting tight deadlines. Finally, we would like to thank the Editor-in-Chief, Oleg Burdakov, for his patient assistance and guidance during the editorial process.

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