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Integer Programming and Combinatorial Optimization

7th International IPCO Conference Graz, Austria, June 9-11, 1999 Proceedings



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Preface

This volume contains the papers selected for presentation at IPCO VII, the Seventh Conference on Integer Programming and Combinatorial Optimization, Graz, Austria, June 9–11, 1999. This meeting is a forum for researchers and practitioners working on various aspects of integer programming and combinatorial optimization. The aim is to present recent developments in theory, computation, and applications of integer programming and combinatorial optimization. Topics include, but are not limited to: approximation algorithms, branch and bound algorithms, computational biology, computational complexity, computational geometry, cutting plane algorithms, diophantine equations, geometry of numbers, graph and network algorithms, integer programming, matroids and submodular functions, on-line algorithms, polyhedral combinatorics, scheduling theory and algorithms, and semidefinite programs.

IPCO was established in 1988 when the first IPCO program committee was formed. IPCO I took place in Waterloo (Canada) in 1990, IPCO II was held in Pittsburgh (USA) in 1992, IPCO III in Erice (Italy) 1993, IPCO IV in Copenhagen (Denmark) 1995, IPCO V in Vancouver (Canada) 1996, and IPCO VI in Houston (USA) 1998. IPCO is held every year in which no MPS (Mathematical Programming Society) International Symposium takes place: 1990, 1992, 1993, 1995, 1996, 1998, 1999, 2001, 2002, 2004, 2005, 2007, 2008, Since the MPS meeting is triennial, IPCO conferences are held twice in every three-year period. As a rule, in even years IPCO is held somewhere in Northern America, and in odd years it is held somewhere in Europe.

In response to the call for papers for IPCO'99, the program committee received 99 submissions, indicating a strong and growing interest in the conference. The program committee met on January 10 and January 11, 1999, in Oberwolfach (Germany) and selected 33 contributed papers for inclusion in the scientific program of IPCO'99. The selection was based on originality and quality, and reflects many of the current directions in integer programming and optimization research. The overall quality of the submissions was extremely high. As a result, many excellent papers could not be chosen.

We thank all the referees who helped us in evaluating the submitted papers: Karen Aardal, Norbert Ascheuer, Peter Auer, Imre Bárány, Therese Biedl, Hans Bodlaender, Andreas Brandstädt, dan brown, Peter Brucker, Alberto Caprara, Eranda Çela, Sebastian Ceria, Chandra Chekuri, Joseph Cheriyan, Fabian Chudak, William H. Cunningham, Jesus De Loura, Friedrich Eisenbrand, Matteo Fischetti, Michel Goemans, Albert Gräf, Jens Gustedt, Leslie Hall, Christoph Helmberg, Winfried Hochstättler, Stan van Hoesel, Han Hoogeveen, Mark Jerrum, Olaf Jahn, Michael Jünger, Howard Karloff, Samir Khuller, Bettina Klinz, Dieter Kratsch, Monique Laurent, Jan Karel Lenstra, Martin Loebl, Alexander Martin, Ross McConnell, S. Tom McCormick, Petra Mutzel, Michael Naatz, Karl Nachtigall, John Noga, Andreas Nolte, Alessandro Panconesi, Chris Potts, Mau-

rice Queyranne, Jörg Rambau, R. Ravi, Gerhard Reinelt, Franz Rendl, Günter Rote, Juan José Salazar, Rüdiger Schultz, Andreas S. Schulz, Petra Schuurman, András Sebő, Jay Sethuraman, Martin Skutella, Frits Spieksma, Angelika Steger, Cliff Stein, Mechthild Stoer, Frederik Stork, Leen Stougie, Éva Tardos, Gottfried Tinhofer, Zsolt Tuza, Marc Uetz, Vijay Vazirani, Albert Wagelmans, Dorothea Wagner, Robert Weismantel, David Williamson, Laurence Wolsey, Günter M. Ziegler, and Uwe Zimmermann. This list of referees is as complete as we could make it, and we apologize for any omissions or errors.

The organizing committee for IPCO'99 essentially consisted of Eranda Çela, Bettina Klinz, and Gerhard Woeginger. IPCO'99 was conducted in cooperation with the Mathematical Programming Society (MPS), and it was sponsored by the Austrian Ministry of Science, by Graz University of Technology, by the Province of Styria, and by the City of Graz.

March 1999

Gérard Cornuéjols Rainer E. Burkard Gerhard J. Woeginger

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