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Evolutionary Multi-Criterion Optimization

Third International Conference, EMO 2005
Guanajuato, Mexico, March 9-11, 2005
Proceedings

Springer

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Preface

Multicriterion optimization refers to problems with two or more objectives (normally in conflict with each other) which must be simultaneously satisfied. Multicriterion optimization problems have not one but a set of solutions (which represent trade-offs among the objectives), which are called Pareto optimal solutions. Thus, the main goal in multicriterion optimization is to find or to approximate the set of Pareto optimal solutions. Evolutionary algorithms have been used for solving multicriterion optimization problems for over two decades, gaining an increasing popularity over the last 10 years.

The 3rd International Conference on Evolutionary Multi-criterion Optimization (EMO 2005) was held during March 9–11, 2005, in Guanajuato, México. This was the third international conference dedicated entirely to this important topic, following the successful EMO 2001 and EMO 2003 conferences, which were held in Zürich, Switzerland in March 2001, and in Faro, Portugal in April 2003, respectively.

The EMO 2005 scientific program included two keynote addresses, one given by Peter Fleming on an engineering design perspective of many-objective optimization, and the other given by Milan Zeleny on the evolution of optimality. In addition, three tutorials were presented, one on metaheuristics for multiobjective combinatorial optimization by Xavier Gandibleux, another on multiobjective evolutionary algorithms by Gary B. Lamont, and a third one on performance assessment of multiobjective evolutionary algorithms by Joshua D. Knowles.

In response to the call for papers, 115 papers from 30 countries were submitted, each of which was independently reviewed by at least three members of the Program Committee. This volume contains the 59 papers that were accepted for presentation at the conference, together with contributions based on the invited talks and tutorials. It is worth noting that the number of submissions to the EMO conference has steadily increased over the years. For EMO 2001, 87 papers were submitted (from which 45 were accepted). For EMO 2003, 100 papers were submitted (from which 56 were accepted). This is a clear indication of the growing interest in this research field.

We would like to express our appreciation to the keynote and tutorial speakers for accepting our invitation. We also thank all the authors who submitted their work to EMO 2005, and the members of the Program Committee for their thorough reviews. The organizers are particularly thankful to the Honda Research Institute Europe for funding two student travel grants through Dr. Yaochu Jin to support students to attend the conference. Finally, we are also very thankful to Edgar Chávez and the Universidad Michoacana for providing us with technical support and for hosting the website that was used for submitting papers to the conference.

March 2005

Carlos A. Coello Coello,
Arturo Hernández Aguirre, and Eckart Zitzler

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EMO 2005 was organized by the Centro de Investigación en Matemáticas (CIMAT) and the Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN) with the support of the Consejo de Ciencia y Tecnología del Estado de Guanajuato (CONCyTEG). The organizers also acknowledge support from the Mexican Consejo Nacional de Ciencia y Tecnología (CONACyT).

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Acknowledgments

Invited Speakers

We thank the keynote and tutorial speakers for their talks given at the conference.

Keynote Speakers

Milan Zeleny	Fordham University, USA
Peter Fleming	University of Sheffield, UK

Tutorial Speakers

Xavier Gandibleux	Université de Nantes, France
Gary B. Lamont	Air Force Institute of Technology, USA
Joshua D. Knowles	University of Manchester, UK

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