Industriemathematik und Angewandte Mathematik

Karl-Heinz Küfer
Heinrich Rommelfanger
Christiane Tammer
Kristin Winkler
(Eds.)

Multicriteria Decision Making and Fuzzy Systems

Theory, Methods and Applications

Shaker Verlag
Aachen 2006

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

Printed in Germany.

ISBN-10: 3-8322-5540-0
ISBN-13: 978-3-8322-5540-4
ISSN 1615-6390

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen
Phone: 0049/2407/9596-0 • Telefax: 0049/2407/9596-9
Internet: www.shaker.de • e-mail: info@shaker.de

Preface

Multicriteria Decision Making and Fuzzy Systems are rapidly growing fields of management, engineering and other areas. Bringing together theory and applications, the *German Working Group on Decision Theory and Practice* within the *Gesellschaft für Operations Research (GOR)* organizes a workshop every year. In 2006 the meeting was managed in cooperation with the *German Working Group on Fuzzy Systems, Neural Networks and Artificial Intelligence*. More than thirty persons attended the workshop, which took place from March 6th to March 7th at the *Fraunhofer Institut für Techno- und Wirtschaftsmathematik* in Kaiserslautern. The participants came from universities, research institutes and companies in Germany and from abroad.

The concept of bringing together two working groups and their corresponding members in a single event turned out to be successful. It combines specific research with ideas from other fields. Taking into account the discussion during the workshop, some problems form fields for joint work within the scope of interdisciplinary projects.

The topics discussed during the workshop reflect the latest results concerning theory, methodology and applications of Multicriteria Decision Making and Fuzzy Systems. The contents of the lectures can be found slightly changed in these proceedings.

This book will hopefully contribute to the advancement of Multicriteria Decision Making and Fuzzy Systems in theory, methods and applications. It should serve as a valuable reference for both scientists and practitioners who are looking for authoritative discussions of current results and for new topics of study.

Last but not least, the editors express their gratitude to Karl-Heinz Küfer and the *Fraunhofer Institut für Techno- und Wirtschaftsmathematik* in Kaiserslautern for the hospitality during the workshop. Further, we like to thank the *Gesellschaft für Operations Research (GOR)* for the financial support of the workshop.

Kaiserslautern, Frankfurt a. Main, Halle (Saale),
September 2006

Karl-Heinz Küfer
Heinrich Rommelfanger
Christiane Tammer
Kristin Winkler

Contents

Part III Applications