

International Society on Multiple Criteria Decision Making



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Letter from the President

As I write this letter it is but a few days to Christmas, and unbelievably it's virtually the end of the year 2006. It's been a good year for the MCDM Society and some of our sister societies. Our biennial conference in Crete in June was a wonderful occasion for all those who were privileged to attend, and will be long remembered as contributing to the great traditions of our long line of MCDM conferences over 30+ years now.

I understand that the 7th International Conference of the MOPGP group (Multi-Objective and Goal Programming), held in the Loire Valley, France, was equally successful.

Earlier this month, a few of us experienced the excitement of participating in a small working seminar on "Practical Approaches to Multi-Objective Optimization" held at the Dagstuhl Schloss in Germany. The seminar sought to bring together small groups of researchers from the traditional MCDM community and from the newer EMO (evolutionary multiple objective) group. From the MCDM community, the prime mover was our society secretary Kaisa Miettinen, to whom a deep vote of thanks is due, while Kalyan Deb led the EMO group. The seminar led to most productive interactions between the two groups which are hoped to find expression in a book to be published by Springer.

During the meeting, some of us had informal discussions on the possibility of the two groups collaborating in the development of new initiatives for expanding the range and impact of the *Journal of Multi-Criteria Decision Analysis*. We will keep you fully informed of any changes which may be forthcoming.

I would like to take this opportunity to recognize another milestone that was reached in July 2006. This was the 80th birthday of Tomas Gal who was organizer of two of the international conferences in MCDM (Königswinter, 1979, and Hagen, 1995). At a personal level I also value his leadership in the creation of the volume on Multicriteria Decision Making: Advances in MCDM Models, Algorithms, Theory, and Applications (Kluwer 1999). Although co-edited with myself and Thomas Hanne, it was his initiative and drive that made the book a reality.

Thinking of milestones, another "old" stalwart, past president and senior advisor of the society, Stan Zionts reaches his 70th birthday early in the new year. Many happy returns, Stan!

I was able to meet personally with Matthias Ehrgott recently, and confirmed that the next conference scheduled for January 2008 in New Zealand is well on track. You will soon be getting more information on this meeting which I am sure will be a worthy successor to our preceding 18 international conferences.

It remains for me to thank the members of the executive committee for their valuable support over the past year, and to wish you all a fulfilling and prosperous new year 2007.

Theo Stewart
Cape Town, December 2006

1 19th International Conference on MCDM

Matthias Ehrgott, University of Auckland

The 19th International Conference on Multiple Criteria Decision Making will be held from 7th to 12th January 2008 in New Zealand, organized by Matthias Ehrgott. The venue is yet to be decided between Auckland, city of sails and Polynesian hub of the South Pacific and Rotorua, the major tourist destination in New Zealand's north island, home of hot springs, bad smells, and lively Maori culture. For more information on

- New Zealand: <http://www.newzealand.com>
- Auckland: <http://www.aucklandnz.com>
- Rotorua: <http://www.rotoruanz.com>
- The University of Auckland: <http://www.auckland.ac.nz>
- Matthias Ehrgott: <http://www.esc.auckland.ac.nz/ehrgott/>

You can contact the organiser at m.ehrgott@auckland.ac.nz

2 Society news

2.1 Results of the elections related to four vacant positions in the Executive Committee

In 2006, the members of the International Society on Multiple Criteria Decision Making elected the following persons to the International Executive Committee for four-year terms 2006-2010:

- Salvatore Greco (University of Catania, Italy)
- Kathrin Klamroth (University of Erlangen Nuremberg, Germany)
- Daniel Vanderpooten (Université Paris Dauphine, France)
- Luis Vargas (University of Pittsburgh, USA)

3 Past conferences, workshops, and other news

3.1 International Summer School on Multiple Criteria Decision Making, July 2–25, 2006, Taiwan

Gwo-Hshiung Tzeng, Kainan University

School Location: Kainan University (near Taipei's International Airport) No. 1, Kainan Road, Luchu, Taoyuan 338, Taiwan

<http://mcdm.knu.edu.tw>

Hosted by Kainan University and National Chiao Tung University

Two weeks of the international summer school on MCDM 2006 have successfully finished in Kainan University of Taiwan. The basic and state of art knowledge of MCDM were introduced for solving real life MCDM problems efficiently and effectively, including theoretical developments, computation methods, applications, empowering MCDM with Habitual Domains and Competence Set and so on. The lecturers and its topics are included as follows:

1. Deb, Kalyanmoy: Introduction to Evolutionary Optimization; Introduction to Evolutionary Multi-Objective Optimization; Application Studies in EMO; Advanced EMO
2. Li, Han-Lin: Decision Ball Model: Methods and Applications
3. Nakayama, Hirotaka: Aspiration Level Methods in Interactive Multi-objective Programming and their Engineering Applications; Aspiration Level Approach to Interactive Multi-objective Programming; DEA (GDEA) & Generation of Pareto Frontier; Support Vector Machines based on MOP/GP; Approximate (Multi-objective) Optimization using SVM(SVR); Support Vector Machines using MOP/GP Techniques
4. Romero, Carlos: Group Decision Making: an MCDM Perspective; Goal Programming: Theory and Applications in Natural Resources Planning
5. Salo, Ahti: Managing Uncertainty through Preference Programming; Supporting Decisions with Preference Programming; Preference Programming - Methods, Tools, and Case Studies; RICH - Rank Inclusion in Criteria Hierarchies; RPM - Robust Portfolio Modelling; DECISIONARIUM: Aiding Decisions, Negotiating and Collecting Opinions on the Web; PAIRS - Preference Assessment by Imprecise Ratio Statements; RICHER - Rank Inclusion in Criteria Hierarchies with Extended Rankings; Introduction to Value Tree Analysis; PRIME - Preference Ratios in Multiattribute Evaluation
6. Shi, Young: Multiple Criteria Optimization-based Data Mining Techniques with Applications
7. Slowinski, Roman: Rule-Based multicriteria decision support using rough set approach
8. Spronk, Jaap: Why Multiple Goals in Finance?; Finance in a Nutshell; Performance Evaluation; Multi-Attribute Portfolio Analysis and Selection; A Framework for managing a Portfolio of Socially Responsible Investments
9. Steuer, Ralph E.: Multiple Criteria Optimization and Interactive Procedures; Introduction to Multiple Criteria Portfolio Selection
10. Tzeng, Gwo-Hshiung: Structural model for criteria: ISM, DEMATEL, Fuzzy Cognitive Maps; Preference measures for weightings: AHP (independence in criteria), ANP (feedback in criteria), Fuzzy Integral (interrelation in criteria); New Frontiers in Fuzzy MCMD for Promoting Value-Created Business Competitiveness in E-Era
11. Wang, Hsiao-Fan: Multicriteria Decision Applications of the Computational Intelligence Technologies
12. Yu, Po-Lung: Evolution of MCDM; Wonderful World of Human Behaviors
13. Zeleny, Milan: Elimination of Tradeoffs; Eight Concepts of Optimality; Risk Measures and Portfolio Analysis; The KM-MCDM Interface: Tradeoffs-Free Innovation And Solution by Dissolution



List of participants:

Alan Klanac; Geraldine Bous; Petri Eskelinen; Olli-Matti Verta; Tomohiro Hayashida; Wolf Wenger; Chang, Ching-Liang; Chang, Fred; Chen, Feng-Chin; Chien, An-Jan; Chiu, Jui-Man; Chuang, Chun-Ling; Hsia, Jung-Sheng; Hsu, Cheng-Yi; Shiu, Jiun-Yi; Hsu, Yao; Huang, Kuang-Chung; Hwang, Heung-Suk; Huang, Tsung Dow; Huang, Chun-Nen; Hu, Kai-Chieh; Kuan, Meng-Chung; Yen, Leon; iao, Kuei-Feng; Lin, Chen; Lin, Tseng-Cheng; Lin, Cheng-Wei; Lin, Cheng-Wen; Lin, Shui-Chi; Lin, Dah-June; in, Rih-Dong; Liou, James; Liou, Yi-ting; Lu, Shih-Tong; Ou, Chung-Ming; Shyu, Tay-Woei; Tseng, Fan-Chen; Wang, Ding-San; Wang, Shiu-Ping; Wei, Min; Wu, Hung-Yi; Yang, Chih-Chin; Yeh, Yi-Der; Tsai, Li-Min; Chen, Chun-Wen; Chen, Chin-Yi; Huang, Chi-Yo; Huang, Chih-Hao; Hung, Ching-Tsung; Hung, Tsang-Kai; Chung, Jain-Shone; Lee, Chien-Wei; Lee, Ta-Wei; Lin, Chia-Li; Lin, Wen-Bin; Lin, Wen-Ya; Qui, Pei-Wen; Shieh, Jia-Hong; Tsai, Jung-Fa; Wang, Hao-Hsiang; Wang, Min-Tzu; Wu, Chih-Hung; Yan, Chang-Ming; Yu, Jing-Rung; Lin, Che-Wei; Wu, Iu-Wei; Tzeng, Chen-Wen; Yeh, Karen; Li, Tod; Ho, Justin; Chen, Cathy; Chien, Angel; Lin, Nick; Hsieh, Jay; Yeh, Sabrina; Huang, Jimmy; Cho, Ju-Yin; Huang, Chang-Hsueh; Yen, Jia-Ch; Gwo-Hshiung Tzeng; P. L. Yu

3.2 64th Meeting of the EURO Working Group on Multicriteria Decision Aiding, September 28–30, 2006, Larissa, Greece

George Samaras (University of Cyprus), Pandelis Ipsilandis (Technological Education Institute of Larissa), Nickolaos Matsatsinis

The 64th meeting of the European Working Group “Multiple Criteria Decision Aiding” was held in Larissa, Greece, in 28-30 September 2006, at the Technological Education Institute of Larissa (Departments of Project Management). George Samaras, Pandelis Ipsilandis and Nickolaos Matsatsinis were the organisers, with the support of Ntina Tzavella and Joanne Ipsilandis. The organisation was supported by HELORS (Hellenic Operational Research Society) and the Technical University of Crete, while financial support was provided by the Piraeus Bank, and the

Municipality of Larissa. EURO supported the participation of some PhD students. The meeting was attended by almost 47 participants from 10 different countries, around the main theme of Multicriteria Decision Support Systems, but with a large diversity of contributions from different areas, as reported in the programme.

The participants received a bag with the conference logo containing conference related material (programme, abstracts etc.) plus a booklet and CD with tourist information and a bottle of local spirit (ouzo) kindly offered by a local producer.

Scientific programme

The scientific programme included seven (7) sessions which besides the main theme of the conference on multicriteria decision support systems included papers on theoretical aspects, modelling techniques and applications of multicriteria analysis. A total of 40 papers included in the programme, 23 of them for presentation (see below) and the rest 17 for discussion.

Submitted papers will undergo a two-fold blind review to be selected for publication in a special issue of ORIJ - "Operation Research: An International Journal" published by HELORS (Hellenic Operational Research Society).

Social programme

The social programme included a visit to the site of Meteora where conference participants had a chance to visit monasteries that were built during the Byzantine era (10th - 14th century ac.) on steep and tall rocks. Participants were guided by a local guide and had a chance to see small chapels with frescos and icons from those years handicrafts, old scripts and the organization of monastic life. The visit ended with lunch at the footsteps of the rocks with a magnificent view of the scenery.

Presentations

- Bernard Roy: "A propos de la signification des dépendances entre critères : Quelle place et quels modes de prise en compte pour l'aide à la décision ?" (présentation type A)
- José Figueira, Salvatore Greco, Bernard Roy: "Methodes Electre Avec Interaction Entre Criteres: Une Generalisation De L'Indice De Concordance"
- Juan Carlos Leyva Lopez, Lizbeth Dautt Sánchez, Miguel Angel Aguilera Contreras: "A Multicriteria Decision Support System with an Evolutionary Algorithm for Deriving Final Ranking from a Fuzzy Outranking Relation"
- Maria Franca Norese, Simona Borrelli: "An MC System to support Monitoring in the public administration"
- Nabil Belgasmi, Lamjed Ben Sad, Khaled Ghédira: "Spatial Decision Support Systems for localizing landfills"
- Serre D., Peyras L., Maurel P., Diab Y.: "Multicriteria decision model integrated in a GIS to optimize inspection, maintenance and reparation operations of river levees"
- Fotios Thomaidis, Popi Konidari: "Ranking of the Energy Community countries' prospects for integration into a regional competitive gas market"
- Cedomir Beljic, Zoran Gligoric: "Multiple Criteria Decision Making as Support to Opening (development) Underground Mine of Gold"

- Patrizia Lombardi, Agata Spaziante and Chiara Murano: “Problem Structuring and Participation in Sustainable Urban Planning”
- Panos Pardalos: “Recent Developments in Multiobjective Optimization” (type A presentation)
- Vasile Postolica: “A Survey On The Efficiency” (type A presentation)
- Horst W. Hamacher, Stefan Ruzika: “Solving Bicriteria Real-World Problems”
- George Mavrotas: “Effective implementation of the e-constraint method for the generation of efficient solutions in multiobjective mathematical programming problems”
- Trabelsi Hedia: “Aide multicritère à la décision participative et gestion durable des nappes souterraines”
- Dimos Loukas, Ioannis Papadimitriou: “Choosing a final set of indices: Correspondence analysis as a tool to MCDA”
- Vladimir I. Kalika: “Modeling stock buying-selling on stock exchange using a new MCDM methodology accounting for uncertainty”
- Inès Saad, Camille Rosenthal-Sabroux: “L’apport de l’aide multicritère à la décision pour la gestion des connaissances”
- George Rigopoulos, John Psarras, Dimitrios Askounis: “A Framework for Group Multicriteria Decision Support on Financial Sorting Decisions”
- Risto Lahdelma, Pekka Salminen: “Modelling incomplete preference information through probability distributions”
- Edmond E. Vardumyan, Aram Arakelyan: “Foreign trade as a MCDM problem”
- Nebojsa Bojovic, Milos Milenkovic: “Determining an optimal rail fleet composition”
- Yoannis Marinakis, Magdalene Marinaki, Michael Doumpos, Y. Efremidis, Nikolaos Matsatsinis, Constantin Zopounidis: “Metaheuristic Algorithms for Feature Selection in Credit Risk Assessment”
- Stelios Rozakis, Nikos Boretos: “Enhancing optimisation capacities of GIS for bioenergy project evaluation”

Papiers Soumis à Discussion / Papers Submitted for Discussion

- Vassilios N. Pagounis, George Stavridis: “Operational Research for Engineering Applications. Optimization methods for logistics design of GPS network design”
- Roman Slowinski, Salvatore Greco: “Necessary and possible ranking constructed using a set of utility functions or a set of decision rules compatible with holistic preference information”
- Willem Karel M. Brauers: “A Critical Analysis of Goal Programming for a Wellbeing Economy”
- Evangelos Grigoroudis, Yoannis Siskos, Yoannis Politis: “Self assessment for measuring business excellence: A multistage multicriteria approach”
- A. Benamar, M. Benbouziane: “Nonlinearity and Long Memory Process: A Joint Hypothesis for the Purchasing Power Parity in MENA Countries”

- Pavlos Delias, Nikolaos F. Matsatsinis: “Assigning Work Items in a Workflow Management System Using a Multiple Criteria Methodology”
- Ivan Blečić, Arnaldo Cecchini, Clara Pusceddu: “Constructing Strategies in Strategic Planning: A Decision Support Evaluation Model”
- Nikos F. Matsatsinis, Konstantinos-Dimitrios Tzoannopoulos: “Multiple Criteria Group Decision Support through the Usage of Argumentation-Based Multi-Agent Systems: An Overview.”
- Sghaier Tahar, Khouja Mohamed Larbi: “Comportement des provenances de pin d’Alep (*Pinus halepensis* Mill.) dans le semi aride tunisien”
- Popi Konidari, Fotios Thomaidis: “Clim-AMS the software tool for climate policy evaluations”
- Nikos Tsourakis, Dimitris Pratsolis, Nikos Matsatsinis: “Web-Based Decision Support System for the Quantitative Analysis of the Customers’ Behavior”
- Vladimir I. Kalika: “A New MCDM Methodology Accounting For Uncertainty And Its Application For Modeling Stock Buying-Selling On Stock Exchange”
- Nabil Belgasmi, Lamjed Ben Said, Khaled Ghdira: “Evolutionary Multiobjective Optimization of The Multi-Location Transshipment Problem”
- XIE Zhi-jian, BO Yu-cheng: “Evaluating Weapon Systems by means of a New Method”
- S. Kotsiantis, A. Kostoulas, S. Lykoudis, A. Argiriou, K. Menagias: “A Hybrid Data Mining Technique For Estimating Mean Daily Temperature Values”
- Rigas G., Kantas D., Rigas N., Goulas P., Makridis Ch.: “Production function and total cost function in determining optimum factor input. An empirical evidence for turkeys.”
- Georgios Samaras, Pandelis Ipsilandis, Nikos Mplanas, Ilia Spyrou: “A MUSA Application for Evaluation of Programme Results”

4 Upcoming events

4.1 CORS’2007, May 14–16, 2007, London (Ontario), Canada

Belaid Aouni, Laurentian University

The CORS’2007 Conference will take place from May 14 to 16, 2007 at the University of Western Ontario in London, Ontario (Canada). I am organizing a cluster on Multicriteria Decision Aid and Multi-Objective Programming. I would like to invite you to participate in this cluster. The guidelines for submitting abstracts are available online at the conference web page: <http://www.cors2007.ca/>. Please send me a copy of your abstract or submit it through the conference website. Please do not forget to specify that your abstract is for the Multicriteria Decision Aid Cluster.

The deadline for submitting an abstract is **Friday March 16, 2007**. Abstract received by that date will receive preference in scheduling. For additional information on the CORS2007 meeting, please go to the conference web page. Please send me a notice if you plan to participate in this Conference.

My e-mail is: baouni@laurentian.ca.

4.2 2007 Joint Rough Set Symposium (JRS07), May 14–16, 2007, Toronto, Canada

Salvatore Greco (University of Catania), Wojtek Michalowski (University of Ottawa), Roman Slowinski (Poznan University of Technology)

Multiple Criteria Decision Analysis (MCDA) is a research field that provides theoretical basis and methodologies to deal with complex problems involving a plurality of viewpoints and often plurality of the participants. MCDA proved its applicability to many domains, including environmental management and sustainable development, finance and banking, energy planning, clinical decision making and health care. Recent methodological developments associated with the exploration of new research tools, mainly originating from various sub-fields of artificial intelligence, promise to provide new insight into the MCDA. This is combined with an exploration of new domains such as world wide web or ubiquitous decision support. Contributions dealing with these new advances are invited. Topics appropriate for this special session include, but are not limited to, the following area:

- Rough sets and soft computing approaches to MCDA
- MCDA using fuzzy integrals
- Multiple objective programming and normative decision making
- Decisions with a plurality of decision makers
- Supporting decisions in complex environments

Deadline for Submission: **January 01, 2007**

Acceptance Notification: **February 01, 2007**

Camera ready submission: **February 15, 2007**

Manuscripts should be submitted as PDF-file, directly to one of the session organizers, according to the guidelines specified in the JRS07 website at <http://www.infobright.com/jrs07/>

4.3 EURO XXII, July 8–11, 2007, Prague, Czech Republic

The 22nd European Conference on Operational Research EURO XXII will be organized by the Czech Society for Operational Research in cooperation with the University of Economics, Prague. The Conference will be held in the campus of the University of Economics which is situated very close to the Prague historical center.

The organizers invite all researchers, academicians, practitioners, as well as students interested in all branches of operational research, mathematical modelling and economic analyses to participate at the conference and to present their papers. Areas of interest include Multiple Criteria Decision Making and Optimization, Decision Analysis & Decision Support Systems, Fuzzy Sets & Expert Systems, among many others.

Deadline for abstract submission: **February 28, 2007**

Conference website: <http://euro2007.vse.cz/>

5 New Books

- Levin, Mark Sh.: Composite Systems Decisions, Springer Verlag 2006, ISBN-10: 1-84628-001-X.

Composite decisions consist of interconnected parts or subdecisions and correspond to a composite (composable, modular, decomposable) system. The composite decision approach extends the traditional paradigm of decision making of Herbert A. Simon, i.e. choice of the best alternative(s), and realizes a two-stage solving scheme: (a) the selection of alternatives as the best subdecisions or local decisions and (b) composition of the selected local decisions into a composite global decision while taking into account the quality of the local decisions and their compatibility.

Composite Systems Decisions describes an educational approach that is based on systems engineering and considered modular design of composite decisions. Divided into four parts, this book contains descriptions of basic systems approaches and examines basic ‘technological’ problems for composite systems, including: modular hierarchical design; multistage design; multistage planning; redesign/improvement/adaptation; evaluation; and, combinatorial evolution/development.

Applied researchers, undergraduate and graduate students, and practitioners in many domains will find *Composite Systems Decisions* a valuable reference. The basic systems problems, solving schemes, and applied examples contained in the book will also be of interest to various scientists (e.g., mathematicians, computer scientists, economists, social engineers, etc.).

6 Sources of information

- Homepage of the International Society on Multiple Criteria Decision Making. Website: <http://www.terry.uga.edu/mcdm/>
- Kaisa Miettinen’s website has several interesting links with Operational Research and Multi-Criteria websites (scientific societies, journals, conferences, etc.). Website: <http://www.mit.jyu.fi/miettine/lista.html>
- The website of the EURO Working Group on Multicriteria Decision Aiding has lots of useful information on multi-criteria. Website: <http://www.inescc.pt/~ewgmcd/index.html>
- Vincent Mousseau’s database of research publications on MCDA has more than 2400 records, and it is a good source of information. Website: <http://www.lamsade.dauphine.fr/mcda/biblio/>
- Carlos A. Coello Coello maintains the EMOO web page, an archive of publications, software and other material related to multi objective optimization. Website: <http://www.lania.mx/~ccoello/EMOO/>

Imprint

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