



THE THIRD INTERNATIONAL CONFERENCE ON MULTI-OBJECTIVE PROGRAMMING AND GOAL PROGRAMMING: THEORY AND APPLICATIONS

QUÉBEC CITY, MAY 31 and JUNE 1-3, 1998

Conference Preliminary Program

Sunday, May 31, 1998

16:00 Inscription

17:00 Opening Session

18:00 *Welcoming Cocktail*

Monday, June 1, 1998

09:00 **Plenary Session MO1:** Data Envelopment Analysis
P. Lang (Canada)

10:00 ☞ *Coffee Brake*

10:20	Session MO-A1: Data Envelopment Analysis I	Session MO-A2: Analysis of/on Efficient Sets	Session MO-A3: Operations Management	Session MO-A4: MCDM Analysis I
MO-A1-1	<i>An Application of DEA in Expressing Preference by the Criteria Weights in MCDM</i> S. Opricovic (Yugoslavia)	MO-A2-1 <i>An Outer Approximation Method for Optimization over the Efficient Set</i> S. Yamada, T. Tanino and M. Inuiguchi (Japan)	MO-A3-1 <i>Towards an Optimum Scan Time of Programmable Logic Controllers Using Multiple Criteria</i> A. W. Labib (United Kingdom)	MO-A4-1 <i>MCDA: A Constructivist Approach to the Management of HR at Sea</i> L. Ensslin, A. Dutra and S. R. Ensslin (Brazil)
MO-A1-2	<i>Structural Comparison of Data Envelopment Analysis and Multiple Objective Linear Programming</i> T. Joro (Finland), P. Korhonen (Austria) and J. Wallenius (Finland)	MO-A2-2 <i>On Efficient Sets of Payoff Values for Multicriteria Two-Person Zero-Sum Matrix Games</i> T. Tanaka and Y. Kikuchi (Japan)	MO-A3-2 <i>Logistics Management in a Supply - Chain - A Multi-objective Approach</i> K. R. Kumar and H. M. Chouhan (India)	MO-A4-2 <i>Application of Splines for the Solution of MCDM Problem of Optimal Control</i> A. Arakelyan (Armenia), T. Arakelyan (USA)
MO-A1-3	<i>Evaluation of DEA Validity as a MCDM Method</i> F. Farinaccio and A. Ostanello (Italy)	MO-A2-3 <i>On Semicontinuity of Marginal Functions</i> T. Tanaka, Y. Kimura and K. Tanaka (Japan)	MO-A3-3 <i>Critical Review of Evaluation Methodologies for Transport Networks Redesign</i> J. R. Figuera, J. Carrasco and C. Mataix (Spain)	MO-A4-3 <i>The Performance Assessment of European Airlines "Data envelopment Analysis" vs "Multicriteria Decision Aid"</i> R. Khamliche and B. Mareschal (Belgium)

12:00 *Lunch*

13:30 **Plenary Session TU2:**

14:30	Session MO-B1: Data Envelopment Analysis II	Session MO-B2: Natural Resources Management I	Session MO-B3: De Novo Programming	Session MO-B4: Modeling and Optimal Control
	MO-B1-1 <i>An Extended DEA Model: Appending an Additional Input to Make all DMUs Efficient</i> E. Takeda (Japan)	MO-B2-1 <i>Multi-Objective Programming in Irrigation Planning a Case study in India</i> K. S. Raju (India)	MO-B3-1 <i>De Novo Programming Approach to Multidisciplinary Product Design Development</i> S. Myint (Thailand)	MO-B4-1 <i>Reference Multifunction Approach to Preference Modeling in Multicriteria Optimal Control Problems</i> A. M. J. Skulimowski (Poland)
	MO-B1-2 <i>Measuring Efficiencies and Returns to Scale of Japanese Electric Utilities (1981-1995)</i> T. Sueyoshi, M. Goto and M. Tsutsui (Japan)	MO-B2-2 <i>Land Management Using GIS and Multicriteria Analysis</i> F. Joerin (Switzerland)	MO-B3-2 <i>Implicit Trade-offs in Multiple-Objective De Novo Programming</i> S. Schenkerman (USA)	MO-B4-2 <i>Interactive Fuzzy and Stochastic Goal Programming Approach to Multi-Objective Control Problems</i> V. N. Sastry (India)
	MO-B1-3 <i>DEA Returns to Scale (RTS) in Production and Cost Analyses: An Application to Japan Agriculture Cooperative"</i> T. Sueyoshi (Japan)	MO-B2-3 <i>Goal Programming: Application in the Management of the Miombo Forest in Mozambique</i> I. Nhantumbo (Mozambique), J.B. Dent (United Kingdom), G. S. Kowero (Indonesia) and D. O. Glethorpe (United Kingdom)	MO-B3-3 <i>Inherent Tradeoff Regimes in Multiple-Objective De Novo Programming</i> S. Schenkerman (USA)	MO-B4-3 <i>A Stochastic Goal Programming Model for Multi-Reservoir Problems</i> F. Ben Abdelaziz and S. Mejri (Tunisia)

16:00 ☕ *Coffee Brake*

16:20	Session MO-C1: Data Envelopment Analysis III	Session MO-C2: Natural Resources Management II	Session MO-C3: Fuzzy Logic and MOP Approach	Session MO-C4: Education Management
	MO-C1-1 <i>Nondominated Facets in Multiple Objective Linear Programming and DEA: A Computational Investigation</i> R. E. Steuer (USA)	MO-C2-1 <i>Integration of Analytic Hierarchy Process and Goal Programming Approach For Waste Management Strategy: A Case Study On Surabaya River Indonesia</i> U. Ciptomulyono (France)	MO-C3-1 <i>Fuzzy Logic in Multicriteria Analysis. Implementation of a Software for Environmental Assessment</i> A. Boggia and G. Massei (Italy)	MO-C4-1 <i>Strategy for the Identification of Actions to Improve the Faculty Staff Performance</i> L. Ensslin and E. Ensslin (Brazil)
	MO-C1-2 <i>Criteria Importance Theory in Data Envelopment Analysis</i> V. Podinovski and V. N. Bondarenko (Russia)	MO-C2-2 <i>Multi-Objective Programming of Gas Gathering Pipeline Network System</i> Y. Z. Ming (China)	MO-C3-2 <i>Feasible Goals Method</i> A. V. Lotov (Russia)	MO-C4-2 <i>Model of Evaluation of Some Effects of the Total Quality Control in the Faculty of Engineering of The National University of Trujillo</i> B. U. Rubio and Z. A. Izaguirre (Peru)

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| <p>MO-C1-3 <i>Connections Between Efficient Points and Relative Weak Efficient Points in Multi-Objective Programming</i>

A. Bakunda (Belgium)</p> | <p>MO-C2-3 <i>Multi-objective Programming of the Chain of Cut, Boost and Transportation of Sugar Cane</i>

Msc. F. Marrero Delgado, J. Asencio Garcia and I. Gonzalez Duran (Cuba)</p> | <p>MO-C3-3 <i>Implementation of Non-Linear Optimization Algorithms</i>

G. J. Palencia Fernandez, V. Molina Padron and V. Llano Rodriguez (Cuba),</p> | <p>MO-C4-3 <i>A MCDA Approach to Improve an English Language School in Brazil</i>

L. Ensslin and Z. P. de Souza (Brazil)</p> |
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18:30 *Banquet a board of the Louis Joliette Boat*

Tuesday, June 2, 1998

09:00 **Plenary Session TU1:** Extended Lexicographic Goal Programming: An Unifying Approach
C. Romero (Spain)

10:00 *Coffee Brake*

10:20 Session TU-A1: Data Envelopment Analysis IV	Session TU-A2: Decision Support System I	Session TU-A3: Applications I	Session TU-A4: Methodology I
<p>TU-A1-1 <i>The Role of DEA and Goal Programming in Classification Problems</i> W. D. Cook and H. J. Tuentler (Canada)</p> <p>TU-A1-2 <i>Improvement Strategies for the Logging Industry Based on DEA Radial and Non-Radial Efficiency Ratios</i> L. LeBel (Canada) and K. P. Triantis (USA)</p> <p>TU-A1-3 <i>Prioritizing Benchmark Bank Branches: the Concept of Representativeness</i> W. D. Cook and M. Hababou (Canada)</p>	<p>TU-A2-1 <i>Implementation and Application of a Negotiation Support Software that Uses Multi-objective Programming Techniques</i> M. Installé (Belgium)</p> <p>TU-A2-2 <i>Spreadsheet Modules for Multicriteria Modeling</i> H. Brozava, T. Subrt and M. Houska (Czech Republic)</p> <p>TU-A2-3 <i>EZMod: A Mathematical Programming Modeling Environment</i> O. Kettani, K. Khélifi (Canada)</p>	<p>TU-A3-1 <i>Efficient Assignment of Financial Resources within a University System: Case Study at the University of Malaga (Spain)</i> R. Caballero, T. Galache, T. Gomez and A. Torrico (Spain)</p> <p>TU-A3-2 <i>A Fuzzy Goal Programming Approach to a Portfolio Selection</i> M. Arenas Parra, A. Bilbao Terol, E. Lafuente Robledo and M.V. Rodriguez Uriá (Spain)</p> <p>TU-A3-3 <i>Strategic Planning Model to Examine the Impact of Natural Gas Introduction in Israel</i> D. Soloveitchik and M. Grinman (Israel)</p>	<p>TU-A4-1 <i>Goal programming Decomposition-Coordination Methods in Hierarchical Organizations with Multiple Objectives</i> T. Gomez, M. Gonzalez, M. Luque, F. Miguel and F. Ruiz (Spain)</p> <p>TU-A4-2 <i>Decision Criteria with Partial Information</i> F. R. Fernandez, A. Marmol, L. Monroy and J. Puerto (Spain)</p> <p>TU-A4-3 <i>Fixed hierarchy in Multi objective Dynamic Goal Programming</i> T. Trzaskalik (Poland)</p>

12:00 *Lunch*

13:30 **Plenary Session TU2:** Illusions of Optimality
J. Ignizio (USA)

14:30	Session TU-B1: Special Issues I	Session TU-B2: Project Management & DSS	Session TU-B3: Transportation Systems	Session TU-B4: MOP/GP & Social, Collective & / or Group Choice
	TU-B1-1 <i>A Multiple Objective Approach to the Millennium Bug</i> A. W. Labib (United Kingdom)	TU-B2-1 <i>A Proposed DSS for Multi-Objective Scheduling Project</i> M. Gagnon and G. D'Avignon (Canada)	TU-B3-1 <i>Integrated the Fuzzy Set Theory and DEA for Efficiency Evaluation: Case of Forecasting Evaluation of Operation Efficiency of Taipei Bus Company</i> G.-H. Tzeng and C.-T. Kang (USA)	TU-B4-1 <i>Goal Programming as a Tool for Preference Modeling</i> J. Gonzalez-Pachon and M. I. Rodriguez Galiano (Spain)
	TU-B1-2 <i>A Hybrid Dynamic Programming/Kth Best Solution Technique for Solving: Multi-Criteria Aircraft Loading</i> K. Y. K. Ng and N. G. F. Sancho (Canada)	TU-B2-2 <i>Decision Support in Large-Scale Decentralized Hierarchical Systems</i> M. D. Godlevsky and V. A. Shekhovtsov (Ukraine)	TU-B3-2 <i>A Contribution in the Structure and Construction of Model of an Urban Transportation System - Fuzzy Evaluation</i> S. E. C. Aranda and B. U. Rubio (Peru)	TU-B4-2 <i>Stream-Fed Irrigation, Sustainability and Social Welfare</i> M. A. Ridgley (USA)
	TU-B1-3	TU-B2-3 <i>Using the Multicriteria Analysis to Guide the Choice of The Best Correction in the Agreement Error Correction Process</i> L. Belguith (Tunisie)	TU-B3-3 <i>An Integrated Methodology for Inter-mode Transport Systems Development : A Multi-Objective Decision Making Approach</i> T. Achmadi and B. E. Afiatno (Indonesia)	TU-B4-3 <i>Global Programming Choice Based on Consensus and Consistent Measures of a Fuzzy Preference Relation</i> J. Montero (Spain)
16:00	<i>Coffee Brake</i>			
16:20	Session TU-C1: Network Programming	Session TU-C2: Combinatorial Algorithms	Session TU-C3: Collective Evaluations	Session TU-C4: Collective Decision Making
	TU-C1-1 <i>Goal Network Programs: A Specialized Algorithm and an application</i> A. Iqbal Ali, T. Blanco and B. Buclatin (USA)	TU-C2-1 <i>Approximation Algorithms for Combinatorial Multicriteria Problems</i> M. Ergott (Germany)	TU-C3-1 <i>The Hierarchical Aggregation Method of Multiple Criteria Group Evaluation</i> H. Wenxiu and O. Hong (China)	TU-C4-1 <i>Removing the Emotion from Environmental Investments Integrating Stakeholder Values into Corporate Decisions</i> G. Earl (United Kingdom)
	TU-C1-2 <i>Continuous Time Hopfield Neural Network Computing Method and Convergence in The Vector Optimization</i> Z. Shounan (China)	TU-C2-2 <i>The MOSA Method: A Tool for Solving Multi-Objective Combinatorial Optimization Problems</i> D. Tuytens and J. Teghem (Belgium)	TU-C3-2 <i>Multicriteria Approach for Assortment Formation</i> S. Leontiev (Russia)	TU-C4-2 <i>Application of Reference Points to Represent Expert Information in Multicriteria Decision Support</i> H. Gorecki and A. M.J. Skulimowski (Poland)
	TU-C1-3 <i>Ideal Points in Vector Optimization</i> A. Balbas, M.E. Ballvé and P. J. Guerra (Espana)	TU-C2-3 <i>Cluster Algorithms in Multiset Metric Spaces</i> A. B. Petrovsky (Russia)	TU-C3-3 <i>A Model for Hierarchical Evaluation and Analysis of Nation's Competitiveness</i> H. Chabchoub (Tunsia)	TU-C4-3 <i>Ordered Weighted Operator Applied for Evaluation of Multiple Data Sources</i> V. Chen and M. Roussel (France)

Wednesday, June 3, 1998

09:00 Plenary Session WE1: Pareto efficiency and its extensions to integer GP
M. Tamiz (United Kingdom)

10:00 ☞ Coffee Brake

10:20 Session WE-A1: Resource Allocation & Strategy	Session WE-A2: Portfolio Selection & Livestock	Session WE-A3: Non-conventional Problems	Session WE-A4: Health Care and Biology
<p>WE-A1-1 <i>A Comparison of Results Using Goal Programming, the Shapely Value and the Nucleolus as Cost Allocation Methods in Multicriteria Optimization</i></p> <p>L. Jenkins (Canada)</p>	<p>WE-A2-1 <i>A Bi-Reference Interactive Credit Portfolio Structure Optimization</i></p> <p>P. Gasiorowski (Poland)</p>	<p>WE-A3-1 <i>On the Solution of Unstable Optimization Problems</i></p> <p>O. Varmann and (Estonia)</p>	<p>WE-A4-1 <i>A Goal Programming Model to Cut Medical Subsidies</i></p> <p>E. Ballester, E. R. Sanchez and J. Maldonado (Spain)</p>
<p>WE-A1-2 <i>Mechanisms of Strategy of Decision Making on the Basis of Model of System Optimization</i></p> <p>V. Trenev, I. Agreev and V. Iriko (Russia)</p>	<p>WE-A2-2 <i>Minimizing Small Returns: An Efficient Frontier for Portfolio Selection</i></p> <p>E. Ballstero (Spain)</p>	<p>WE-A3-2 <i>Conditions for a Solution to Multiple-Criteria Decision-Making through the Game of Deterrence Approach</i></p> <p>M. Rudnianski (France)</p>	<p>WE-A4-2 <i>Cheap Hospital</i></p> <p>A. Gabor (Hungary)</p>
<p>WE-A1-3 <i>Trajectory Approach to Multi-Criteria Resource Distribution Subsystem Design in Decision Support System for Planning the Development of the Electricity Generation Industry</i></p> <p>I. Ageev (Russia)</p>	<p>WE-A2-3 <i>A Multiobjective Approach to Portfolio Selection Using Technical Indicators</i></p> <p>J. M. C. Gonzalez, A. M. Cano Capurro and F. Ruiz de la Rua (Spain)</p>	<p>WE-A3-3 <i>About a Pareto Optimal Equilibrium for an N-Person Game Under Uncertainty</i></p> <p>H. Lebbah, and M. Larbani (Algeria)</p>	<p>WE-A4-3 <i>Multi-Objective Programming for Combined Effect of Biologically Active Substances</i></p> <p>A. N. Voronin and A. V. Chubenko (Ukraine)</p>

12:00 Lunch

13:30 Plenary Session WE2: Problems with AHP Priorities
J. Barzilai and W. C. Wedley (Canada)

14:30 Session WE-B1: AHP Methodology I	Session WE-B2: Enterprise Management & Livestock	Session WE-B3: Methodology II	Session WE-B4: Special Issues II
<p>WE-B1-1 <i>Preference Function Modeling (PFM) - A New MCDM Methodology</i></p> <p>J. Barzilai (Canada)</p>	<p>WE-B2-1 <i>Incorporating Livestock Growth Models into a Multi objective Programming Framework for Ration Formulation</i></p> <p>P. Lara (Spain)</p>	<p>WE-B3-1 <i>Adaptive Interactive Procedures and Directional Derivations Methods</i></p> <p>R. Y. Sarkissian (Russia)</p>	<p>WE-B4-1 <i>Aspiration-Level Interactive Method for Purchasing Problem</i></p> <p>Z. A. Zerrin (Turkey)</p>

WE-B1-2 <i>On a Modification of the Analytic Hierarchy Process and Rank Reversal</i>	WE-B2-2 <i>Method Analysis Based on the Multi-Objective Decision Making to the Economic Benefits of Accounting Information System in Enterprises</i>	WE-B3-2 <i>Sensitivity Analysis via Scalarization in Multi-Objective Programming</i>	WE-B4-2 <i>Break Even Point in the Case of Multiple Payment Tools</i>
O. L. Zhykharev (Ukraine)	F. Shi (China)	T. Tanino (Japan)	O. I. Dranko (Russia)
WE-B1-3 <i>Benefits, Costs and Ratios with the Analytic Hierarchy Process</i>	WE-B2-3 <i>Distributed Procedure to Form Management Decision under Enterprise Restructuration</i>	WE-B3-3 <i>Multicriteria Optimization of Large-Scale Systems</i>	WE-B4-3 <i>Goal Programming in Transition Period</i>
W. C. Wedley, E. U. Choo and B. Schonher (Canada)	N. Trenev and V. Trenev (Russia)	R. B. Statnikov, J. B. Matusov and O. A. Frolova (Russia)	V. Toroyan (Armenia)

16:00 ☞ *Coffee Brake*

16:20	Session WE-C1: Application of AHP I	Session WE-C2: Heuristics I	Session WE-C3: Uncertainty in MCDM	Session WE-C4: Methodology III
WE-C1-1	<i>Social Research on Car Consumer's Environmental Preference Using AHP</i>	WE-C2-1 <i>An Investigation of Genetic Algorithms for the Optimization of Multi-objective Fisheries Bioeconomic Models</i>	WE-C3-1 <i>A Probability-Based Approach to Uncertainty Modeling in Multi-Objective Programming</i>	WE-C4-1 <i>On the Duality Theorems in Nonsmooth Generalized Convex Mathematical Programming</i>
	Z. Liu and H. Inooka (Japan)	S. Mardle, S. Pascoe and M. Tamiz (United Kingdom)	A. Goicoechea (USA)	R. Zeng (China)
WE-C1-2	<i>A Multicriteria Support System for Project Appraisal in Brazilian Development Banks</i>	WE-C2-2 <i>Using Genetic Algorithms to Solve Difficult Goal Programs</i>	WE-C3-2 <i>Multi-Criteria Selection from a Vast Number of Initial Alternatives Considering Uncertainty</i>	WE-C4-2 <i>Local Search Interactive Method For Multiple Objective Integer Programming Problems</i>
	I. Ricardo Gartner, N. Casarotto Filho and B. Hartmut Kopittke (Brazil)	D. Jones, M. Tamiz and K. Mir-Razavi (United Kingdom)	V. I. Kalika (Israel)	O. A. Kulagin (Russia)
WE-C1-3	<i>Action Planning for Quality and Productivity Management in Brazilian Urban Transportation Enterprises</i>	WE-C2-3 <i>A Tabu Search Interactive heuristic for Multi-Objective Knapsack Problems</i>	WE-C3-3 <i>Multi-Criteria Analysis Accounting for Uncertainty in Medium/Long Term Power Generation Expansion Planning</i>	WE-C4-3 <i>Optimality Conditions and Duality in Multi-Objective Nonlinear Programming Involving Semilocally B-vex and Related Functions</i>
	A. Figueiredo and I. Ricardo Gartner (Brazil)	F. Ben Abdelaziz and S. Krichen (Tunisia)	V. I. Kalika (Israel)	I. M. Stancu-Minasian (Romania)

19:30

Thursday, June 4, 1998

Post-Conference Tour

Please visit the Conference Web Site for more updates: <http://www.fsa.ulaval.ca/mogpp/>