Newsletter 6 of EUROPT

The Continuous Optimization Working Group of EURO

http://www.iam.metu.edu.tr/EUROPT/

June 2007

Words from the Chair

Dear Members of EUROPT, dear Friends,

The conference season is coming closer and closer! Many ones of us are very much involved in preparing travels and presentations, or are organizers of events themselves.

Among the places where in early July 2007 scientific events take place, there are Puerto Rico with INFORMS International, and Prague, with EURO XXII and its various satellite events. Among the latter ones, there is also our ***Joint EUROPT-OMS Conference*** http://cio.umh.es/europt-oms/ preceding the EURO conference.

At the occasion or the Joint EUROPT-OMS Conference, we shall also praise and honour our *annual EUROPT fellow*, by a laudatio and certificate. As some of you may remember, in 2006, EUROPT introduced this kind of fellowship for members who served our EURO Working Group with extraordinary achievements.

In this 6th EUROPT e-Newletter, we are lifting the curtain and answer the question who our

EUROPT Fellow 2007

is, and appoint him or her! In order to preserve the excitation a bit before you will read the answer a few pages later: He or she speaks many languages: among them English, French, Dutch and German, he likes to enjoy a glass of good red wine and a pipe, recently also a water pipe...

Let me mention that EUROPT co-organized a successful “Workshop on Sustainable Living at Turkish Rural Countryside” at METU, Ankara on June 8, 2007 (together with Institute of Applied Mathematics (IAM), Middle East Technical University (METU), Balaban Valley Group, Ankara, Turkey, Kerkenes Eco-Center Project, Ankara, Turkey, EURO Working Group “Operational Research for Development” and EURO Working Group on Complex Societal Problems).

Remember that besides of our e-Newsletter, also our homepage http://www.iam.metu.edu.tr/EUROPT/ collects a lot of information and is a forum for exchanging information. Please use this option by reading and sending information all of kinds to us (Kaisa, Basak and me) under kaisa.miettinen at hse.fi, bozturk at metu.edu.tr and gweber at metu.edu.tr. We would like to further serve you by these two media... as well and prompt as we can.

Now, I hope you enjoy reading this 6th Newsletter! Thank you very much, our dear friend and newsletter editor Kaisa, *Prof. Dr. Kaisa Miettinen*, for your care and devotion!

With best wishes, Your sincerely,
Gerhard-Wilhelm Weber, Chair of EUROPT

2nd newsletter on GOR-ORST collaboration is available

at http://www.iam.metu.edu.tr/EUROPT/OnGOR-forORST2.pdf

19th International Conference on Multiple Criteria Decision Making

MCDM for Sustainable Energy and Transportation Systems

The University of Auckland, Auckland, New Zealand

7-12 January 2008

Conference website www.esc.auckland.ac.nz/mcdm2008
Conference email address mcdm2008@esc.auckland.ac.nz

Call for Papers and Sessions

The 21st century heralds an age of exponentially increasing demand for energy and transportation services in a globalised economy. Climate change and other environmental impacts of human economic activity necessitate the consideration of conflicting goals in decision making processes to develop sustainable systems. The science of multiple criteria decision making has a lot to offer in addressing this need. The International Society on Multiple Criteria Decision Making (MCDM) is organising its 19th International Conference under the theme MCDM for Sustainable Energy and Transportation Systems.

Abstracts are now called for and should be submitted by email to mcdm2008@esc.auckland.ac.nz. All areas of MCDM are welcome and papers related to the theme of the conference are especially encouraged.

- Multiple Criteria Decision Aiding
- Multiple Criteria Classification, Ranking, and Sorting
- Multiple Objective Continuous and Combinatorial Optimisation
- Multiple Objective Metaheuristics
- Multiple Criteria Decision Making and Preference Modelling
- Fuzzy Multiple Criteria Decision Making

(Extended) abstracts should be up to two A4 pages in 12pt font or similar. Abstracts must contain the name and affiliation of all authors, plus the email address of the corresponding author for notification of acceptance. Abstracts can be submitted in plain text, Latex, or Word formats, but postscript and pdf files are not acceptable. In order to be included in the conference programme at least one author must have registered and paid the appropriate fee.

Abstract submission deadline: 15 September 2007

Notification of acceptance: 15 October 2007

Colleagues interested in organising invited sessions should contact the organising committee at mcdm2008@esc.auckland.ac.nz as soon as possible.

Track on Evolutionary Multiobjective Optimisation

As part of the conference a special track on Evolutionary Multiobjective Optimisation (EMO) will be organised. EMO utilizes evolutionary computation techniques to determine/approximate Pareto optimal solutions and became very popular in recent years. Besides comparison and integration of EMO and MCDM, the track will also cover EMO algorithm developments, test problems, metrics and comparative studies for EMO as well as real-world and industrial applications of EMO algorithms. It is intended to deepen interactions and collaborations of EMO and MCDM.

The EMO track is organized by Boris Naujoks, University of Dortmund, Germany. For more information contact boris.naujoks@uni-dortmund.de

Proceedings Volume

Springer will publish a proceedings volume in the “Lecture Notes in Economics and Mathematical Systems”. A call for full papers will be published on the conference website.

Registration

Registration is solely via the conference website and is now available. Full registration includes a 2 year electronic subscription to the Journal of Multi-Criteria Decision Analysis published by Wiley (see http://www.wiley.com/WileyCDA/WileyTitle/productCd-MCDA.html for more information on the journal) and free membership in the MCDM society.

Local Organising Committee

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EURO Management Science Strategic Innovation Prize (MSSIP 2009)

EURO Management Science Strategic Innovation Prize (MSSIP) 2009 on the topic of Disruption Management and Robustness in Decision Making

The MSSIP Prize is awarded for an outstanding innovative contribution to Management Science/OR each year when a EURO Conference takes place. This time the subject is **Disruption Management and Robustness in Decision Making** and the prize will be awarded at the EURO 2009 Conference taking place in Bonn (Germany). The submitted work should consist of a recent paper in which a theoretical result or a practical implementation is explained. The prize is sponsored by SAP AG (12000 Euro). Submissions in electronic form should be sent before 1 January 2009 to the Jury Chair, Professor Jens Clausen: jc@imm.dtu.dk and jenclausen@s-tog.dsb.dk

Call for Applications

The prize is intended to recognize the role of Operational Research/Management Science in the context of real-life operations, where existing plans are no longer valid due to minor or major events causing disruptions. Application areas are e.g. transportation (air, rail, or road), telecommunication, and production in general.

Optimization methods currently find its way into an increasing number of industrial sectors, both for larger and companies and small and medium enterprises. At the same time more advanced methods have found their way from academia into classical applications areas, for example in planning in the airline industry. The developments within linear programming and integer programming have made it possible in many cases to solve very large and complex problems not only to near-optimality but to optimality. Furthermore, for problems that are not solved using exact methods the developments within heuristics and metaheuristics have lead to a steady improvement in solution quality and running time.

The enhanced planning methods are sometimes enabling companies to produce plans that are "too good". In planning of schedules for cabin crew in the airlines the utilization of spare time between flights is now so good that there are hardly any buffers left in the plan for absorbing disruptions. The consequence is that operating according to plans, which are optimal in the absence of disturbances, may be considerably more costly than operating according to more robust plans or according to plans, in which disruptions are more easily recovered.

As a consequence, two novel (complementary) lines of research within the Operations Research community have been initiated:

Disruption management: Optimization is used to plan for an optimal or near-optimal return to plan/schedule after a disruption. Disruption management is characterised by time-critical applications and often the complex interaction of several resources. Most existing literature on disruption management are related to airline optimization problems, however results are currently also emerging on rail and road transport applications. A few results exists in production planning and project scheduling.

Robustnes in decision making: It is usually recognised that events of stochastic nature outside the control of a company might influence the planned schedule of operations. The aim is hence often that plans for the operations as a minimum premium incorporate buffers and other characteristics so that the plan remains feasible after a disruption or at least easier to recover. As expected, this leads to a trade-off between robustness and cost of a plan. An important issue here is to define what a robust plan is. Results are few and again mostly based on work on airline optimization problems.

The submission should be a single or jointly authored unpublished paper describing either a successful application of known OR/MS methodologies to a real problem in the broadly defined area of Disruption Management and Robustness in Decision Making or novel methodologies that have been developed in order to solve relevant problems in this area. **Innovative and strategically relevant approaches and results will be privileged given the nature of the prize.**

The paper is to be submitted in electronic form to the chair of the jury, no later than January 1, 2009.

Jens Clausen. Professor of Operations Research and Chief Analyst.Technical University of Denmark and DSB S-tog a/s jc@imm.dtu.dk and jenclausen@s-tog.dsb.dk

Cost IC0602 International Doctoral School

Algorithmic Decision Theory: MCDA and MOO

Session 2007: September 17-21, 2007, Han sur Lesse, Belgium

Organizing and scientific committee: *R. Bisdorff (SMA-UL, Luxembourg), D. Bouyssou (CNRS-LAMSADE, Paris), M. Pirlot (FPMs, Mons, Belgium), A. Tsoukias (CNRS-LAMSADE, Paris).*

This programme is an activity of the COST Action IC0602 "Algorithmic Decision Theory" (http://www.cost.esf.org/index.php?id=1089). It is also supported by EU-DEAL (European Decision Aiding Laboratory).

Goals:

- Promote training and research in the field of multiple criteria decision analysis (MCDA) and multi-objective optimization (MOO)
- Develop contacts and collaboration among researchers in this field.

Target participants: *doctoral students engaged in decision theory or analysis in a broad sense (i.e. MCDA, MOO, decision under risk and uncertainty, algorithmic decision theory, preference modelling and elicitation, etc.)*

Organisation: *during their stay, up to 25 selected doctoral students will receive intensive training in two selected topics dispensed by two prominent scholars; the participants will be given an opportunity to present their own work and receive a feedback. Additional senior researchers will stay for one or two days and give a talk. All presentations and discussions will be in English.*

Practical issues: *the participants will be accomodated in the Centre "Les Masures" located in Han-sur-Lesse, a touristic resort in the Southern part of Belgium (the Belgian Ardennes). The working sessions will take place in the Centre, as well as the meals. Accomodation is in bungalows for 2 persons and some rooms in the main building. The Centre is easy to reach from Brussels, either by road (2h) or by public means (train + bus : 2h as well; about one connection every 3 hours; busses stop in front of the Centre). Further information is available at* ***http://www.restode.cfwb.be/cdpa/pages/han/pub-han.htm****).*

Sketch of the programme: *a typical day will consist of two lectures of two hours on the following topics (provisional titles):*

- Rank-dependent utility: key preference conditions and elicitations, by M. Abdellaoui (CNRS, Paris)
- Multi-objective optimization – Theory, Algorithms, and Applications, by M. Ehrgott (Univ. Auckland and CNRS, Nantes).

About three hours will be devoted to presentation and discussion of their research by the participants. A couple of senior researchers will visit the School and deliver a lecture.

Fee: *the School is supported by the COST Action IC0602 "Algorithmic Decision Theory". The fee for students is 150 € for the entire stay (full pension). Travel expenses are not covered by the organizers.*

Application: *doctoral students, especially those in early stages of their research, are invited to apply for participation to the School by sending a short CV that mentions their background and their research interests and/or achievements. Applications must be sent before* ***June 20, 2007***

to Marc Pirlot (marc.pirlot@fpms.ac.be). The scientific committee will select the participants on the basis of their research interests; priority will be given to students from countries involved in the COST Action. Applicants will be informed of the decision of the committee by July 10, 2007.

For further information send an e-mail to marc.pirlot@fpms.ac.be.

Institute of Applied Mathematics

Middle East Technical University

Ankara, Turkey

http://www3.iam.metu.edu.tr/iam/

The ***Institute of Applied Mathematics*** (***IAM***) is an interdisciplinary centre fostering various researches and teaching activities in mathematical sciences. A major aim of *IAM* is to coordinate mathematically based research and to undertake collaborative research with industry.

History of *IAM*

IAM began functioning in the academic year 2002-03 by offering degree programs leading to a Master of Science (MS.) in the areas of ***Financial Mathematics***, ***Scientific Computing*** and ***Cryptography***. The Cryptography department was the only department offering Doctor of Philosophy (Ph.D.) at that time. In the spring semester of the academic year 2004–05, *IAM* has started offering programs in Ph.D. for Financial Mathematics and Scientific Computing also to satisfy the growing demands of professionally skilled manpower in the field of Applied Mathematics.

Objectives of *IAM*

- To coordinate applied mathematical research at METU and to foster interdisciplinary collaboration.
- To educate graduates from different disciplines in theoretical and practical aspects of mathematical sciences to meet the interdisciplinary needs of the public and private sectors.
- To provide short courses to industrial partners.
- To organize international workshops and summer schools in chosen research areas.

In the years to come, *IAM* will develop new mathematically based interdisciplinary programs.

You are cordially invited to collaborate with ***IAM***! Please also draw the attention of your colleagues and students to *IAM of METU*.

Contacting *IAM*

Prof. Dr. Ersan Akyıldız (Director): ersan@metu.edu.tr ;
Prof. Dr. Hayri Körezlioğlu (Program Chair, Financial Mathematics): hayri@metu.edu.tr ;
Prof. Dr. Bülent Karasözen (Program Chair, Scientific Computing): bulent@metu.edu.tr .

Some of you know IAM of METU *already, since it is hosting the* EUROPT homepage *and* e-mail *since 2003, and it fosters our events. Thanks a lot to the friends from Ankara for their support and friendship!*

Gerhard-Wilhelm Weber (gweber@metu.edu.tr)

Reminder

International Conference on Modelling, Identification and Control, Shanghai, China, June 29 - July 2, 2008
http://icmic.sjtu.edu.cn/

For this Conference, Janos D. Pinter, PhD, DSc, organizes sessions on ”Nonlinear Optimization: Methods, Software, and Applications”. These sessions will consist of three 30-minute talks. Please contact him (jdpinter@hfx.eastlink.ca) if you wish to contribute to these special sessions. For all other details, please visit the Conference webpage, and contact the organizers.

A new book by Springer:
Winfried Schirotzek: Nonsmooth Analysis

Springer, Berlin-Heidelberg-New York, 2007; ISBN-10: 3-540-71332-8, ISBN-13: 978-3-540-71332-6.

The book treats various concepts of generalized derivatives and subdifferentials in normed spaces, their geometric counterparts (tangent and normal cones) and their application to optimization problems. It starts with the subdifferential of convex analysis, passes to corresponding concepts for locally Lipschitz continuous functions and finally presents subdifferentials for general lower semicontinuous functions. All basic tools are presented where they are needed; this concerns separation theorems, variational and extremal principles as well as relevant parts of multifunction theory. The presentation is rigorous, with detailed proofs. Each chapter ends with bibliographic notes and exercises.

Introduction

Optimization techniques pierced through many chapters of OR, because their utilization "facilitates the choice and the implementation of more effective solutions which, typically, may involve complex interactions among people, materials and money problems" (www.euro-online.org). The latter challenge stimulates a study of existing techniques as well as development of new concepts for optimization. Conference EurOPT-2008 aims at a more exhaustive study of optimization and optimal decision making towards knowledge-based technologies.

The scope of the International conference *"Continuous Optimization and Knowledge-Based Technologies"* is to overview trends, to gain a common attitude towards latest challenges in continuous optimization and advanced applications for knowledge-based technologies, such as robust optimization, optimization in finance, supply chain management and data mining. We wish to contribute to education in Europe and the world, and to a deepening and initializing of scientific collaboration in the family of EURO and among our peoples.

EUROPT Fellow 2007: Prof. Dr. Georg Still

On September 5, 2006, EUROPT by the *Extended Table* of its Managing Board and its Honorary Coordinators *Prof. Dr. Tamas Terlaky and Prof. Dr. Tibor Illes*, introduced the special honour and distinguished position of "EUROPT Fellow of the year", that can be given to one or, in special cases, two members of our EURO working group. The first friend who became EUROPT Fellow was *Prof. Dr. Alexander Rubinov* (University of Ballarat, Australia) in 2006. As most of us know, Prof. Rubinov passed away in that same year.

Professor Dr. Georg Still is a acknowledged among the members of EUROPT as a core element, he joined our EURO working group very early and, since then, serves our EUROPT events, our entire community with great care, efficiency and devotion. Georg Still serves at the University of Twente in Enschede, The Netherland, but he is of German nationality. As a renowned expert in the areas of parametric and, in particular, semi-infinite programming (SIP), he and his colleagues contributed a lot to developing EUROPT's profile in these areas. Today, SIP belongs to those domains in our EURO working group where EUROPT has a particular excellence – thanks to Georg and all the other precious colleagues. In nonlinear SIP, he helped for a better understanding of the foundations and gave important contributions to the numerical solution. Prof. Dr. Georg Still was centrally involved in a number of our scientific events since 2000, as well as and in several special issues of EJOR and CEJOR. To give just two examples among many other ones: He coorganized the EUROPT workshop of 2001 in Rotterdam (The Netherlands) and the one of 2006 in Reykjavik (Iceland), and these events showed his unique "fingerprints". Prof. Still has always been kind and helpful, friendly and patient at any moment, he gave a lot of encouragement, advice and comfort.

Thank you very much, dear Georg!

All the best for your future and the one of your family!

For his extraordianary achievement, *EUROPT Managing Board* consisting of the members *Prof. Dr. Florian Jarre, Prof. Dr. Marco A. López-Cerdá, Prof. Dr. Mirjam Dür, Prof. Dr. Kaisa Miettinen, Prof. Dr. Leonidas Sakalauskas and Prof. Dr. Gerhard-Wilhelm Weber*, is appointing *Prof. Dr. Georg Still* as ***EUROPT Fellow 2007***.

At the occasion of the Conference Dinner of *Joint EUROPT-OMS Conference* (Prague, Czech Republic, July 4-7, 2007) which will take place at the evening of July 6, 2007, a *Laudatio* will be given in honour of Professor Still and a *Certificate* on his Appointment as EUROPT Fellow 2007 will be handed out to him, our this year's distinguished member!

In the name of EUROPT Managing Board,
Marco A. López-Cerdá and Gerhard-Wilhelm Weber

May 28, 2007

POSITIONS IN FINANCIAL ENGINEERING AT REYKJAVÍK UNIVERSITY

Reykjavík University is looking to hire faculty members in the area of financial engineering and related fields. We are in the process of establishing a research group in the area, whose members will also be responsible for the teaching of financial engineering in the School of Science and Engineering.

Reykjavík University already has an undergraduate program in financial engineering, and plans are under way for international MSc and PhD programs that will be run jointly by the School of Science and Engineering and the School of Business.

Applicants must hold a Ph.D. degree in financial engineering or closely related fields, and be established members of the international research community. Work experience from financial markets is highly appreciated, as is demonstrated teaching excellence. We are looking for leaders to help us build outstanding research and educational programs.

Position levels can range from assistant professor to full professor, depending on the qualifications of the applicant. Salary level is negotiable and relocation assistance is offered. The position is available August 1, 2007, but starting date is negotiable. All applications will be considered. We may fill more than one position, depending on the number of qualified applicants.

Please contact Dr. Gunnar G. Tomasson (gunnargt@ru.is), dean, for further information. Application cover letters should be sent by email to appl@ru.is (subject "Financial Engineering"), and should include a CV, with a list of publications, together with a few major publications, a statement of research, a statement of teaching, and other relevant information. Please arrange to have letters of recommendation sent directly to us, by email to appl@ru.is. If that is not possible, they should be sent to Dr. Gunnar G. Tomasson, Reykjavík University, Ofanleiti 2, IS-103 Reykjavík, Iceland.

We will start reviewing applications on June 1st, 2007. As we expect to recruit several faculty members for this group over the next two years, however, please do not hesitate to contact us at a later date.

Iceland is home to several financial institutions with substantial international operations. We already have support from some of these for our program in financial engineering, and we expect to establish collaboration with them in developing the program. Furthermore, we have established ties with several leading foreign universities, which will result in visiting lecturers and student exchanges.

Reykjavík University is a young and vibrant university, which is building research groups in various areas. For general information about Reykjavík University and its various position offerings, please visit http://www.ru.is/positions.

Some words from the Newsletter Editor

Dear reader,

Many thanks to all of you who have sent me material for this newsletter, in particular Gerhard-Wilhelm Weber. Material for the next newsletter is always most welcome. Please, send me email with 'EUROPT Newsletter' as the subject! Let me remind you that I have collected links related to conferences in operations research and optimization at **http://www.mit.jyu.fi/miettine/lista.html#Conferences.**

Remember that EUROPT welcomes new members. Becoming a member is easy: fill the form at http://anadolu.lib.metu.edu.tr/EUROPT/h_newuser.php (note that EUROPT has no membership fees!).

I wish you all a very fruitful summer! The next newsletter will be published in August or September.

With best wishes, Kaisa Miettinen (miettine at hse.fi)

EUROPT NEWSLETTER

Editor-in-Chief: Kaisa Miettinen
Co-workers: Gerhard-Wilhelm Weber and Basak Akteke Ozturk