EIGHTEENTH CONFERENCE
ON THE
MATHEMATICS OF OPERATIONS RESEARCH

&

FOURTH INTERNATIONAL WORKSHOP
LANDELIJK NETWERK
MATHEMATISCHE BESLISKUNDE

CONFERENCE CENTER 'DE BLIJE WERELT'
LUNTEREN, THE NETHERLANDS

DECEMBER 8-11, 1992

Organized by
CWI (Centrum voor Wiskunde en Informatica)
LNMB (Landelijk Netwerk Mathematische Besliskunde)

Eighteenth Conference on the Mathematics of Operations Research	&	Fourth International Workshop Landelijk Netwerk Mathematische Besliskunde

December 8–11, 1992, Lunteren, The Netherlands

Aim and scope

Like last time the 1993 meeting of the annual Conference on the Mathematics of Operations Research ("Lunteren") is combined with the International Winter Workshop of the Landelijk Netwerk Mathematische Besliskunde, a combination which seems to become a good tradition. (In this once-only occasion the meeting takes place in December 1992 instead of January 1993; as of 1994, the meeting will be in January, as usual.) The aim of the meeting is to promote the research activities and the cooperation between senior and junior researchers in the mathematics of operations research in the Netherlands. The program offers high quality research and applications and should appeal both to academic researchers and to management consultants in trade and industry.

The program should give ample opportunity for informal discussions. The conference center is located in the scenic surroundings of Lunteren, in the center of the Netherlands.

Conference plan

- An important part of the conference are three minicourses, each consisting of four lectures, in which prominent experts from abroad (M.X. Goemans, R.L. Keeney and R. Weber) will present introductions to their field of research.
- A second component of the conference are eight lectures by international specialists (I. Evstigneev, C. Lemaréchal, Th.L. Liebling and J.M. Steele) about new developments in their specialism.
- Each day, except Friday, one hour will be devoted to presentations by Ph.D. students (aio's and oio's).
- During the conference dinner, Wednesday evening, there will be talks by A.H.G. Rinnooy Kan and J.M. Steele.

Speakers

Igor Evstigneev (Central Institute of Mathematical Economics, Academy of Sciences, Moscow, CIS; visiting Hildebrand, University of Bonn, Bonn, Germany) has published widely in probability theory and stochastic mathematical economics including stochastic dynamic programming. Together with Arkin he wrote the monograph 'Stochastic Models of Control and Economic Dynamics'.

Michel X. Goemans (Massachusetts Institute of Technology, Cambridge, Massachusetts, USA) received in 1990 his Ph.D. thesis in operations research from MIT. Research from his dissertation has been rewarded by a second prize in the *1990 George E. Nicholson student paper competition* (awarded by Operations Research Society of America) and by the *A.W. Tucker Prize for an outstanding paper by a student* (awarded by the Mathematical Programming Society at the Mathematical Programming Symposium in Amsterdam, 1991). Currently, Michel Goemans is assistant professor in the mathematics department at MIT. His research area is mainly in combinatorial optimization.

Ralph L. Keeney (Institute of Safety and Systems Management, University of Southern California, Los Angeles, California, USA) is a leading expert in decision analysis, risk management, decision making and value-focused thinking. He has published many articles and various books on these areas. His most recent book is 'Value-Focused Thinking (Harvard University Press, 1992); his minicourse during the meeting will cover parts of that book. Ralph Keeney is president of 'Pros and Cons Consulting', a company consulting on decision making.

Claude Lemaréchal (INRIA Centre Rocquencourt, Le Chesnay, France) is currently 'chef de projet' for Systems Theory and Mathematical Programming in INRIA. He has published widely in the area of nonlinear programming. Together with J.B. Hiriart-Urruty, he wrote the book: 'Convex Analysis and Minimization Algorithms' (Springer Verlag, to appear). Claude Lemaréchal is associate editor of *Mathematical Programming*, and formerly of *SIAM Journal on Control and Optimization*; he is president and main developer of MODULOPT, a French club of users of optimization.

Thomas L. Liebling occupies the Chair in Operations Research in the Mathematics Department of the well-known Swiss Federal Institute of Technology, Lausanne, Switzerland, and is past provost of that institute. He is leading a group of twelve researchers in the areas of combinatorial optimization, modeling and simulation of industrial, physical and biological processes. Thomas Liebling is editorial member of *Management Science, Operations Research, Operations Research Letters, Mathematical Programming* and *OR Spektrum*.

J. Michael Steele is C.F. Koo Professor of Statistics at the Wharton school of the University of Pennsylvania. He is a prominent researcher in applied probability. His research interests include many aspects of that area, but he is particularly involved with problems at the interface of probability and the theory of algorithms. He has just completed service as chairman of the (U.S) National Academy of Science, Panel on Probability and Algorithms; the volume comprising the panel report was published by the Academy this August. Professor Steele currently serves as editor of the *Annals of Applied Probability*.

Richard R. Weber is a lecturer in the Engineering Department at the University of Cambridge, England and a fellow at Queen's College, Cambridge England. He has published extensively on the subject of stochastic scheduling and queueing, while he has also developed an interest in OR models in finance.

Parallel sessions

The aio's and oio's of the Landelijk Netwerk Mathematische Besliskunde will receive a separate invitation (with abstract form) from the LNMB for presenting a paper at the meeting. For each contributed paper by an aio or oio a senior member of the society will be invited to act as discussant.

Program

Tuesday December 8, 1992

10.15	*Registration*
10.45	Opening
11.00–11.45	Richard Weber (1): *Minicourse Probability Models in Operations Management:* Stochastic ordering and majorization, a tutorial
12.00–12.45	Richard Weber (2): *Minicourse Probability Models in Operations Management:* Stochastic ordering in reliability and scheduling problems
12.45	*Lunch*
15.00–16.00	Parallel sessions aio's/oio's
16.15–17.00	Claude Lemaréchal (1): Convex minimization and general decomposition
17.15–18.00	Thomas Liebling (1): Modeling growth processes of polycristals and mycelia
18.30	*Dinner*
20.00	*Ledenvergadering* Landelijk Netwerk Mathematische Besliskunde

Wednesday December 9, 1992

9.00– 9.45	Michel Goemans (1): *Minicourse Approximation by Linear Programmes:* Linear programming relaxations in combinatorial optimization: an overview
10.00–10.45	Michel Goemans (2): *Minicourse Approximation by Linear Programmes:* Structural properties of LP relaxations: illustration on the traveling salesman problem
11.00–11.45	Igor Evstigneev (1): Monotone demand and supply systems
12.00–12.45	Michael Steele (1): What makes probability useful in computational problems?
12.45	*Lunch*
15.00–16.00	Parallel sessions aio's/oio's
16.15–17.00	Ralph Keeney (1): *Minicourse Decision Analysis:* Identifying and structuring values
17.15–18.00	Ralph Keeney (2): *Minicourse Decision Analysis:* Building quantitative models of values
19.00	*Conference Dinner*

Thursday December 10, 1992

9.00– 9.45	Richard Weber (3): *Minicourse Probability Models in Operations Management:* Design and control of flow lines, a survey
10.00–10.45	Richard Weber (4): *Minicourse Probability Models in Operations Management:* Probabilistic analysis of on-line bin packing
11.00–11.45	Claude Lemaréchal (2): Problems raised to design algorithms for convex minimization
12.00–12.45	Thomas Liebling (2): OSCAR: optimal strong connecting arc reversals and related problems
12.45	*Lunch*
15.00–16.00	Parallel sessions aio's/oio's
16.15–17.00	Michel Goemans (3): *Minicourse Approximation by Linear Programmes:* Approximations through LP relaxations
17.15–18.00	Michel Goemans (4): *Minicourse Approximation by Linear Programmes:* Growing moats at the same speed or how to approximate matching and (un)related problems
18.30	*Dinner*
20.00	*Meeting* aio's and oio's

Friday December 11, 1992

9.00– 9.45	Ralph Keeney (3): *Minicourse Decision Analysis:* Creating alternatives
10.00–10.45	Ralph Keeney (4): *Minicourse Decision Analysis:* Identifying decision opportunities
11.00–11.45	Igor Evstigneev (2): Controlled random fields on graphs and stochastic models of economic equilibrium
12.00–12.45	Michael Steele (2): Probability and problems of Euclidean combinatorial optimization
12.45	Closing
13.00	*Lunch*

Location

Conference Center 'De Blije Werelt', Westhofflaan 2, Lunteren, The Netherlands. Telephone +31-8388-4641. Lunteren can be reached by train from Amersfoort and from railway station Ede-Wageningen. The walk from the railway station in Lunteren to 'De Blije Werelt' takes about 15 minutes. Taxi company: call 08388-2139. For directions by car see the maps on the back cover.

Organization

The conference is organized by CWI (Centrum voor Wiskunde en Informatica / Centre for Mathematics and Computer Science) in Amsterdam and the Landelijk Netwerk Mathematische Besliskunde in Groningen under the auspices of the Dutch Research Community in the Mathematics of Operations Research and System Theory, with financial support by the Dutch Mathematical Society.
The Organizing Committee consists of:
A.M.H. Gerards
B.J. Lageweg
W.K. Klein Haneveld

Registration

The registration fee is Dfl. 465.00 for a single room with private shower and toilet. It is also possible to share a room (Dfl. 400,–); in this case, however, one should mention a room mate on the registration form. The price includes board and lodging from Tuesday December 8 before lunch until Friday December 11 after lunch.
Partial arrangements are possible but not encouraged. If a partial arrangement is desired please contact Mrs. Simone van der Wolff, see the address below.
One can register until November 27, 1992 by means of the registration form.

Information

For further information contact: Secretariat:
A.M.H. Gerards +31-20-5924045   CWI
W.K. Klein Haneveld, +31-50-633786   P.O. Box 4079
S. van der Wolff +31-20-5924189   1009 AB Amsterdam
     The Netherlands

Registration Form

I will attend the *Eighteenth Conference on the Mathematics of Operations Research / Fourth International Workshop Landelijk Netwerk Mathematische Besliskunde*, to be held in 'De Blije Werelt', Lunteren, The Netherlands, December 8-11, 1992.

☐ I prefer to have a single room (Dfl. 465)

☐ I prefer to share a room with ＿＿＿＿＿＿＿＿＿＿＿ (Dfl. 400)

Name : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Affiliation : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Department : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Address : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Postal code : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

City : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Telephone : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Date : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Signature : ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Don't send any money now; we will confirm your registration by sending you an invoice for the amount due. Registration costs based on a double room for aio's and oio's belonging to the Landelijk Netwerk Mathematische Besliskunde are paid for by the LNMB.

The completed form should be returned, *before November 27, 1992*, to:
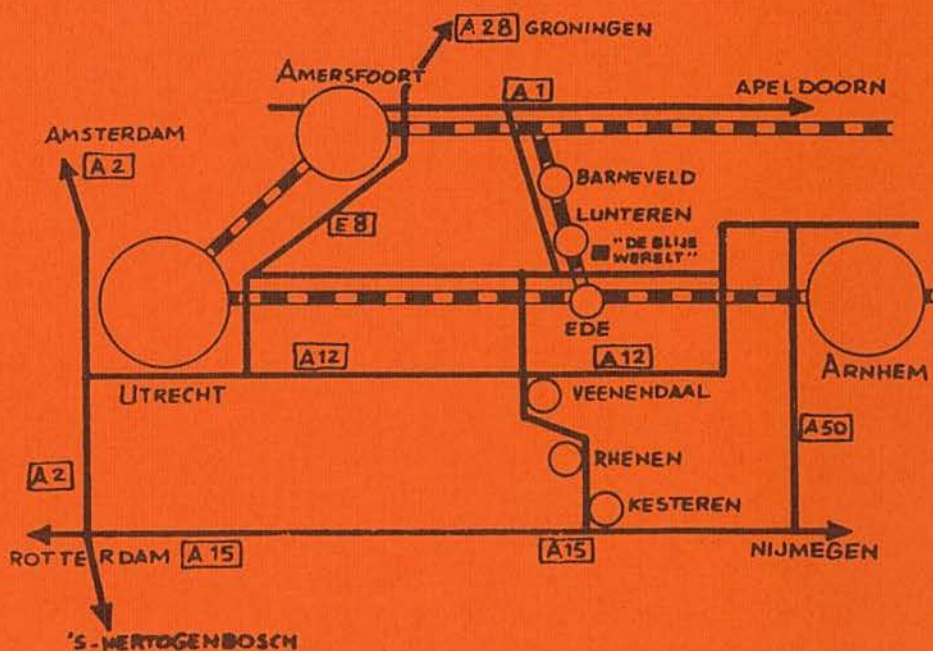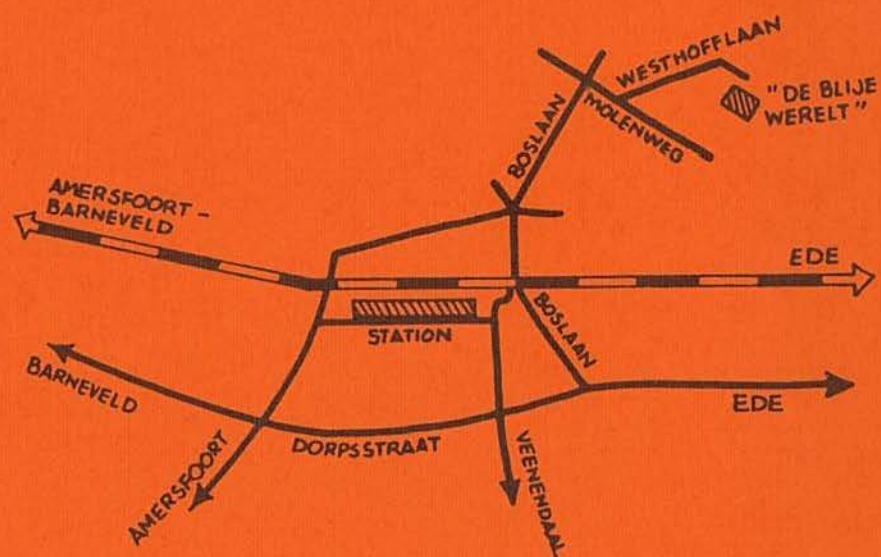Mrs. S. van der Wolff
CWI
P.O. Box 4079
1009 AB Amsterdam
The Netherlands

The location of Lunteren

The location of 'De Blije Werelt'