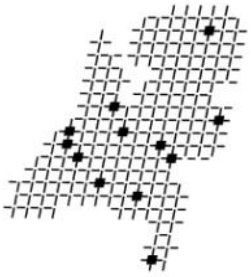


LNMB

Nederlands Genootschap voor Besliskunde

Netherlands Society for Operations Research

Leiden, november 2008

Betreft: NGB/LNMB Seminar Lunteren, 15 januari 2009

Bijgaand treft u de aankondiging en het aanmeldingsformulier aan voor het 11-de "Lunteren Seminar", georganiseerd door het Nederlands Genootschap Besliskunde (NGB) in samenwerking met het Landelijk Netwerk Mathematische Besliskunde (LNMB). Het thema is dit jaar:

"OPERATIONS RESEARCH AND TRAFFIC"

Diverse deskundigen, met uiteenlopende specialiteiten, zullen dit onderwerp nader toelichten. Wij hopen en verwachten dat dit onderwerp en het aangeboden programma uw interesse hebben.

Tevens biedt deze bijeenkomst u de gelegenheid om contacten te leggen en te hernieuwen, niet alleen met de 'professionals', maar ook met personen uit de academische wereld.

Indien u aanwezig wilt zijn, dan ontvangen wij uw aanmeldingsformulier graag zo spoedig mogelijk; de inschrijving sluit op **5 januari 2009**.

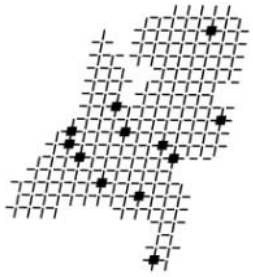
Met vriendelijke groet en in de hoop u in Lunteren te mogen verwelkomen,

Namens het NGB,

Stan van Hoesel

Namens het LNMB,

Lodewijk Kallenberg



LNMB

Nederlands Genootschap voor Besliskunde

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"OPERATIONS RESEARCH AND TRAFFIC"

Jointly organized by the Landelijk Netwerk Mathematische Besliskunde (LNMB) and the Nederlands Genootschap Besliskunde (NGB), Conference Center "De Werelt", Lunteren, January 15, 2009.

The Nederlands Genootschap voor Besliskunde (NGB) and the Landelijk Netwerk Mathematische Besliskunde (LNMB) jointly organize the one-day seminar "Operations Research and Traffic", in Conference Center 'De Werelt', Lunteren, on January 15, 2009. The seminar is chaired by prof.dr.ir. Jo van Nunen, full professor of Logistics and Information Systems at the Rotterdam School of Management, and scientific director of Transumo, institute for sustainable mobility.

The seminar is the 11th annual seminar, following the previous successful seminars:
Operations Research & Enterprise Resource Planning (1999)
*Operations Research in Financial Management (*2000)
E-Commerce & Operations Research (2001)
Capacity Management - How Operations Research models support decision makers (2002)
New developments in Operations Research software (2003)
On-line methods: Challenges for OR in a real-time world (2004)
Mathematical Models for Financial Optimization (2005)
Operations Research and Health Care (2006)
Operations Research and Public Transportation (2007).
Operations Research and Energy (2008).

The Dutch OR Society and the Dutch Network of Operations Research proudly present a collection of presentations which will take the audience through various activities that cannot be achieved without the help of OR in the regulation of traffic.

In many countries, and especially in The Netherlands, traffic congestion has risen to an unacceptable level, not only in large cities, but also on highways. The straightforward strategy of developing more roads with more lanes is not always possible or desirable. Lack of space availability, and specifically for the Netherlands situation: wildlife preservation constraints, are the typical bottlenecks. Changing the behaviour of drivers, such as introducing speed limitations, moving to other means of transportation, spreading the traffic over time, have had limited effects so far, or the effects have been undone by the still growing usage of roads.

A first step in attacking the problem is to gain insight in the structure of traffic by developing models for traffic behaviour. New insights have been obtained here by monitoring traffic in the field (Henk Taale from Rijkswaterstaat, and Elleke Jansen). Marco Duynisveld has developed mathematical models based on the properties of real-life traffic, on which simulation studies and computational experiments can build.

Currently, the hope for congestion reduction is found in another behavioural approach, by introduction of toll prices on roads. Though the introduction in the Netherlands has been (and still is) delayed over and over again, much research has been done on the effects of road pricing. Taede Tillema is one of the leading researchers in the field. The main beneficiary of these tolls is the government. Her main interest is, of course, to reduce the amount of traffic jams, but a side effect is that tolls bring in revenues. Kevin Pak will discuss the expected revenue effects of introducing tolls.

An important user of highway roads are the repair services. For the ANWB, the leading repair service in the Netherlands, Joris van de Klundert has developed models and methods for the real-time planning of broken car maintenance on highways.

SEMINAR PROGRAM

09.30 – 10.00 Registration and Coffee
10.00 – 10.10 Welcome and introduction by the chairman Jo van Nunen
10.10 – 10.50 Henk Taale (Rijkswaterstaat*): Integrated anticipatory control of road networks*
11.00 – 11.40 Luc Wismans (Goudappel Coffeng): *Multi-objective optimization of traffic systems*
11.50 – 12.30 Joris van de Klundert (UM/Mateum): *Quality of service in infrastructure usage*
12.30 – 14.00 Lunch
14.00 – 14.40 Marco Duijnisveld (TNO): *Europeantraffic farecasts: Iron Rhine*
14.50 – 15.30 Taede Tillema (RUG): *Road pricing: analyzing short and long-term behavioural decisions*
15.40 – 16.20 Kevin Pak (ORTEC): *Revenue management techniques for road pricing*
16.30 – 17.10 Elleke Janssen (UT): *Visitor flows in zoos and amusements parks: a case study in Apenheul*
17.10 – 18.00 Drinks

The conference language is English. To participate at the seminar, please fill in the attached registration form and return it **before January 5, 2009**.
The conference fee is € 75 Euro for LNMB and NGB members, and € 125 for others. You will receive an invoice after your registration form has been received. The conference fee covers lunch, coffee, tea, and drinks.

This seminar is organized during the last day of a three days conference on Operations Research. The topics of first two days are more on theory and methods and are mathematically oriented. For information see also www.lnmb.nl/conferences/lunteren2009.

ADDRESS SEMINAR

Conference Center `De Werelt'
Westhofflaan 2
Lunteren
The Netherlands
Tel: 0318 - 484641
For more information, e.g. 'how to reach' see: www.congrescentrum.com

SHORT BIO's

Henk Taale (Rijkswaterstaat)

Henk Taale is a senior consultant employed by the Centre for Transport and Navigation, a department of Rijkswaterstaat. He has 17 years of experience in the fields of traffic management, traffic models and evaluation and was project manager for numerous projects in those fields. Henk Taale has a Master of Science degree in Applied Mathematics from Delft University of Technology and is currently finishing his PhD on the subject of integrated anticipatory control of road networks.

Luc Wismans (Goudappel Coffeng, Deventer)

Luc Wismans received the M.Sc. degree in Civil Engineering in 1999 from the University of Twente, Enschede, The Netherlands. After his study he started working for Goudappel Coffeng and is currently still working for this company. Goudappel Coffeng is a Dutch traffic and transport consultant, which is the largest independent traffic and transport consultancy of the Netherlands. Luc is involved in simulation studies using dynamic microsimulation models related to traffic efficiency and dynamic traffic management, evaluation studies and research and development in particular concerning traffic dynamics and external effects related to dynamic traffic modelling. In 2008 Luc started as a part time Ph.D. student at the University of Twente doing research concerning multi-objective optimization of traffic systems.

Joris van de Klundert (Mateum/EUR)

Joris van de Klundert (1967) studied Managerial Informatics at Erasmus Universiteit Rotterdam. In 1996 he received a Ph.D from Maastricht University in Operations Research. Presently he is Professor of Value Chain Optimization at Maastricht University, employed at the departments of Marketing and Quantitative Economics. He is founder and director of Mateum, a university spin off delivering innovative mathematical software and consultancy for business process improvement. He has been the president of the Dutch Operations Research society from 2004 till 2006. As of January 1, 2009, Joris will be the chair of Health Care Management Science at the Erasmus Medical Center.

Marco Duijnisveld (RUG)

Marco Duijnisveld (1978) was educated at the University of Groningen (1996 – 2002), where he studied Econometrics and Operations Research. After his study he started working at NEA for the Transport Policy Studies Department. His working field concerns transport and traffic modeling including forecasts. He has participated in several studies, mostly governmental studies, developing and using passenger and freight models at a regional, national and international level. Since April 2008, Marco is working as a consultant at TNO in the business unit Mobility and Logistics.

Taede Tillema (RUG)

Taede Tillema (1979) started studying Civil Engineering and Management with a specialization in Traffic and Transportation at the University of Twente in 1997. In 2002 he finished his master thesis on the superposition of speed distributions and on the traffic effects of homogenizing travel speeds. In the same year he became a PhD student at the Faculty of Geosciences, Utrecht University, and started a research about the short and long-term behavioural effects of road pricing policies. From 2006 to 2008 he was working as a post-doctorate researcher at the same institute on a study about people's communication decisions. Currently he is a senior researcher at the University of Groningen within the research program 'Sustainable Infrastructure', which is a cooperation program between the Dutch Ministry of Transport, Water Management & Public Works (Rijkswaterstaat) and the University of Groningen, Faculty of Spatial Sciences.

Kevin Pak (ORTEC)

Kevin Pak is Revenue Management consultant at ORTEC since 2005. Before this, he lectured and did research on Revenue Management at the Erasmus University Rotterdam (EUR). His research has been published in and presented at a number of international journals and conferences. In 2005 he obtained a Ph.D. for his thesis: "Revenue Management: New Features and Models".

Elleke Janssen (UT)

Elleke Janssen has studied Econometrics and Operations Research at Tilburg University. For her master's thesis she conducted a research at Apenheul Zoo in Apeldoorn. This research will be the topic of the presentation. She graduated in May 2005 and started as a PhD student at Tilburg University in September 2005, where she is still working. Currently, she also holds a part time position as a teacher at that same university. Her main research topic is dealing with uncertainties within inventory control.

ABSTRACTS

Henk Taale (Rijkswaterstaat)

Integrated anticipatory control of road networks

In the Netherlands, dynamic traffic management is an important approach to minimize the negative effects of increasing congestion. Measures such as ramp metering and route information, but also the traditional traffic signal control is used. Traditionally, the focus in designing traffic signal control plans has been on local, vehicle actuated signal control. However, there is a tendency to come to a more centralised way of traffic signal control. The interaction with the route choice behaviour and other traffic management measures then becomes an important aspect of the control strategy design. This is called anticipatory control. Anticipatory control can contribute to a better use of the infrastructure in relation with policy objectives. It is a traffic control method, which takes into account dynamic route choice behaviour of travellers. It consists of a game-theoretical framework in which road managers and road users are considered as players in a game, which takes moves in turn and react on one another.

Luc Wismans (Goudappel Coffeng, Deventer)

Multi-objective optimization of traffic systems

Measures to alleviate traffic problems are more and more aimed at network level, because of the correlation between problems and between solutions. Measures are also more and more focussed on optimising the existing traffic system rather than extending the network mainly because of financial considerations and limited space. However this optimisation is nowadays mainly focussed at accessibility, given some boundary conditions concerning traffic safety and liveability. Yet, the quality of traffic systems is not only a matter of accessibility, but also of external effects like traffic safety and liveability. Because of the growing negative impacts of traffic on traffic safety and liveability and increasing attention for these problems, there is a growing need for optimising traffic systems using other objectives than accessibility (e.g. liveability and/or traffic safety).

Joris van de Klundert (Mateum/EUR)

Quality of service in infrastructure usage.

The customer contacts taking place after a sales transaction and the services involved are of increasing importance in contemporary business models. This leads to a changing role of transportation and infrastructure usage. The responsiveness to service requests has become and will remain a key dimension in service quality and therefore an important success factor in this business domain. This responsiveness is of course highly dependent on the operational scheduling or dispatching decisions made in the often dynamic service settings. We consider the problem of optimizing responsiveness to service requests arriving in real time. We consider various models and formulations and present computational results on known solution methods. Moreover, we approach the problem from practical work done with the largest service organization in The Netherlands.

Marco Duijnisveld (RUG)

European traffic forecasts: Iron Rhine

The Iron Rhine (IJzeren Rijn) is the historic railway line that connects the port of Antwerp to the German Ruhr area. Since 1991 this track has not been used anymore for international trains. A study has been made to forecast the amount of rail traffic that will use the new rail connection Iron Rhine. The calculations were done using the Trans-Tools model. The Trans-Tools model used consists of three submodels: a trade model which determines the growth of the trade; a mode-split model which determines the choice of transport mode and an assignment model which allocates the transport flow to different networks. The results give a clear image of the choices in modes and routes for the years 2020 and 2030 under different socio-economic and policy background scenarios. The results presented give an impression of the range of number of freight trains that will use the Iron Rhine.

Taede Tillema (RUG)

Road pricing: analyzing short and long-term behavioural decisions

The introduction of a road pricing measure leads to changes in the transport costs on (certain) roads in a network at a certain time, possibly influencing the accessibility of (groups of) people or firms at certain locations. Within our study we aimed amongst other things to gain greater insight into the behavioural intentions of households and firms as a result of road pricing. We specifically focused on the longer-term behavioural (relocation) effects of households and firms. However, short-term (trip) changes were also analyzed since short-term and longer-term behavioural changes are expected to be interdependent. To gain insight into the intentions to change behaviour and into transport and location preferences under road pricing conditions we applied several stated preference questionnaire techniques and used different multivariate statistical models to analyze the results. In this talk I will discuss the different methods used including their suitability and, furthermore, will present some important findings regarding the intentions to change behaviour as a consequence of road pricing.

Kevin Pak (ORTEC)

Revenue management techniques for road pricing

Revenue Management is the art of managing demand by way of price and availability decisions. It is common practice in many industries among which the airline and hotel industries. In fact, the profitability of many of the companies in these industries depends heavily on the quality of their Revenue Management techniques. This has led to a vast literature on advanced Revenue Management models. Apart from the fact that Revenue Management is normally used to maximize revenues, the similarities between Revenue Management and road pricing are striking. This presentation gives an overview of the Revenue Management concepts and models useful for road pricing and what road pricing can learn from them.

Elleke Janssen (UT)

Visitor flows in zoos and amusement parks: a case study in Apenheul.

Visitors of zoos and amusement parks do not tend to spread equally over the available space in the park. On quiet days this will not cause any problems, but on busy days it could be that certain places within the park get very crowded, while other places are still relatively quiet. A visitor in a crowded place might get annoyed, because of waiting or even simply because of the great amount of people on a small surface. We have studied this phenomenon in Apenheul: a zoo with mostly monkeys in Apeldoorn. We have mapped the routes the visitors take through the park and determined the areas that are extremely busy and the areas that are relatively quiet. Furthermore, we have considered a number of measures that could help spreading the visitors more equally. Using simulation we determined which measure and which combination of measures would have the best effect.

REGISTRATION FORM

I hereby register for the LNBM/NGB seminar "**Operations Research and Traffic**", which will be held in Conference Center "De Werelt", Lunteren, January 15, 2009.

Family name: ……

First name: ……

Title: …… Male / Female

Company/Institute: …….

Address: ……

Postal Code: ……. City:
……

Telephone number: …….. E-mail: ……

Date: ……. Signature:
……

Below, please tick the appropriate box:

I am:

LNMB/NGB member (Registration fee € 75): ☐

Other (Registration fee € 125): ☐

FEE PAYMENT INSTRUCTIONS WILL BE SENT TO YOU AFTER REGISTRATION

Send the registration form before January 5, 2009 by regular mail or e-mail or by fax to

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