

IAROR
International Association of Railway Operations Research

Call for Papers

**2nd International Seminar on
Railway Operations Modelling and Analysis**
Engineering and Optimisation Approaches

University of Hannover, Germany
28 – 30 March 2007

BACKGROUND

The success of the 1st International Seminar on Railway Operations Modelling and Analysis in Delft 2005 and the foundation of IAROR with actually 65 members will be followed up by the 2nd Seminar in Germany. Since last year the Technical Specifications for Interoperability (TSI) in Europe have been fixed and implementation plans for ERTMS are progressing. More international passenger and freight train services have been introduced, while the transport market is very contestable. Although the capacity of railway infrastructure is steadily growing by adding new high-speed lines, upgraded links and ETCS equipment of levels 1 and 2 respectively within the Trans European Network (TEN), the performance of the overall train services is still suffering from rigid timetable constraints, bottlenecks in major railway nodes, technical failures and the lack of efficient traffic management. Furthermore, the ongoing deregulation and privatisation of the national state railways in Europe contributes to the fragmentation of the stakeholders and networks.

AIM AND SCIENTIFIC ISSUES

The Seminar wants to improve the still limited international and interdisciplinary knowledge diffusion in the railway operations research area through bringing the analytical, heuristic combinatorial and simulation approaches developed by railway engineers, mathematicians and computer scientists closer together. The following research questions focussing on high quality railway timetabling, efficient and reliable operations of infrastructure and trains will be tackled during the Seminar, among others:

- Which objectives and constraints are suitable to optimise network timetables?
- How to estimate optimal values for track occupancy, frequency and level-of-service?
- What is the optimal size, temporal and spatial distribution of timetable margins?
- Are there generic standards for the quality of timetables and operations?
- How to model capacity in saturated railway nodes and networks?
- Which methods can be developed to automate statistics of service performance?
- How to determine objectively and quickly the responsible party and reason of hinder and estimate its impact in networks with mixed operation/operators?
- Can dynamic delay propagation in bigger networks be forecasted in real-time?
- Are simulation results and timetable-independent stochastic models sufficiently validated?
- Which is the impact of punctuality, comfort and information on customer satisfaction?
- Can stability and performance of networks operations be modelled consistently?
- Under which conditions a network statement of saturated capacity is justified?
- How robust are computerised re-scheduling and dispatching support tools?
- Can dynamic traffic management measures be simulated realistically?

KEYNOTES

Leading railway scientists and experienced researchers from different disciplines and countries have confirmed their contribution as invited speakers:

- M. Grötschel (TU Berlin, Chair of the DFG Research Center Matheon),
- St. Ricci (University of Rome “La Sapienza”),
- A. Wardrop (TMG International, University of Sydney).

ORGANIZATION

The three-day seminar will be held at the University of Hannover from 28 – 30 March 2007. For more information visit the seminar website www.iaror.org/seminars/railHannover_2007. The International Seminar on Railway Operations Modelling and Analysis is organized by IAROR in co-operation with the Universities of Hannover and Braunschweig. The organizing committee consists of:

- I.A. Hansen (Delft University of Technology, Transport and Planning)
- E. Wendler (RWTH Aachen University)
- A. Radtke (University of Hannover)
- J. Pachl (Braunschweig Technical University).

ABSTRACT AND PAPER SUBMISSION

Prospective presenters of contributed papers should submit an extended abstract of maximal 1500 words by **October 31, 2006**. The abstracts will be reviewed by an international scientific committee. The authors of the selected papers will be notified by December 1, 2006. Draft papers of a maximum length of 20 pages are to be submitted by **February 15, 2007**, in accordance to the format described in the Authors section at the seminar website www.iaror.org/seminars/. The papers will be reviewed by independent experts from at least two countries and the accepted final papers will be distributed to all participants at the beginning of the seminar by CD-ROM. Professionals and researchers from the railway industry are also encouraged to present practical studies and open research issues for discussion during the Seminar. The presentation files of the talks will be made available after the seminar on the IAROR-website.

YOUNG RAILWAY OPERATIONS RESEARCH AWARD

Excellent papers on innovative research carried out and presented by participants not older than 35 years are eligible for the YOUNG RAILWAY OPERATIONS RESEARCH AWARD sponsored by the Board of IAROR. The Award is worth €2,500. The winner will be announced during the Seminar.

REGISTRATION

Academics and professionals working on similar topics as listed above are cordially invited to pre-register for participation as soon as possible via the website www.jror.nl/seminars/. The seminar fee is €500 to be paid after confirmation of registration before March 1, 2007. Researchers from academic institutes are entitled to register at a reduced fee of €250.

DEADLINES

Pre-registration and abstracts:	October 15, 2006
Acceptance notification:	December 1, 2006
Paper and presentation submission:	February 15, 2007
Registration and payment:	March 1, 2007