

9.00

Invited Lecture I

Chairperson: José Paixão

Models and Algorithms for Train Timetabling and Railway Crew Planning

Paolo Toth

Room A

10.00

Logistics I

Chairperson: Mike Ball

Reoptimizing Shortest Paths

Paola Festa, Stefano Pallottino, Maria Grazia Scutellà

Multicriteria Shortest Paths in Stochastic Networks for the Transportation of Hazardous Materials

P. Dell'Olmo, M. Gentili, A. Scozzari

11.30

Logistics II

Chairperson: Gilbert Laporte

Map-Based Logistics Support with Dynamic Routing

Janny M.Y. Leung, C.H. Cheng, Jacky C.F. Wong, Paul T.W. Fung

The Berth Allocation and Scheduling Problem

Raymond K. Cheung, Chung-Lun Li, Wen-Qiang Xiao, Yongpei Guan

Optimal Allocation Plan for Distribution Centers of a Frozen Food Company

Gaia Nicosia, Gianpaolo Oriolo, Andrea Pacifici

14.00

Logistics III

Chairperson: Maria Grazia Speranza

The Multi-Layered Resource Scheduling Problem

Hugo P. Simão, Warren B. Powell

Estimating the Terminal Reliability of Degradable Transport Networks

Michael G H Bell, Yasunori Iida

Models for the Design and Analysis of a Large Package Sort Facility

Paul McAree, Lawrence Bodin, Michael Ball

16.30

Congestion Pricing

Chairperson: Maurizio Bielli

Must Congestion be Priced? How to Quantify and Deal with this Problematic Urban Impairment

Faustino Gomes, Paulo Martins

Analysis of Real-Time Road Pricing Systems with Microsimulation Modelling

Dave Milne, Ronghui Liu

The Multiclass Network Toll Design Problem with Social and Spatial Equity Constraints

Hai Yang, Xiaoning Zhang

Room B

10.00

Tutorial

Chairperson: Anton Kleywegt

Adaptive Dynamic Programming for Dynamic Resource Management

Warren B. Powell, Huseyin Topaloglu

11.30

Traffic Management

Chairperson: Hai Yang

Multiclass Multilane Network Modelling and Prediction

Serge P. Hoogendoorn, Hans Van Lint, Piet H.L. Bovy

Accelerated Averaging Methods for Fixed Point Problems in Transportation Analysis and Planning

Jon Bottom, Ismail Chabini

A Decision Support Methodology for Strategic Traffic Management

Torbjörn Larsson, Jan T. Lundgren, Clas Rydergren, Michael Patriksson

14.00

Algorithms for Traffic Assignment I

Chairperson: Thanasis Ziliascopoulos

Network Equilibrium Models: a Class of Column Generation/Simplicial Decomposition Algorithms

Ricardo García, Angel Marín, Michael Patriksson

The Macroscopic Analysis of Markovian Traffic Assignment Models

David Watling, Martin Hazelton

Using ACCPM in the Master Problem of a Restricted Simplicial Decomposition Algorithm for the Traffic Assignment Problem

Dulce Rosas, Jordi Castro, Lúcia Montero

16.30

Algorithms for Traffic Assignment II

Chairperson: Michel Bierlaire

Sensitivity Analysis of Traffic Equilibria Revisited

Michael Patriksson, R. Tyrrell Rockafellar

Optimising Timetable-Based Stochastic Transit Assignment Models

Otto Anker Nielsen, Rasmus Dyhr Frederiksen

Combined Trip Matrix Estimation and Traffic Assignment on Congested Networks in Saturn

Ronghui Liu, Dirck Van Vliet, Michael J. Maher, Xiaoyan Zhang

Room C

10.00

Crew Scheduling I

Chairperson: Paolo Toth

Stabilized Column Generation for Crew Scheduling Problems

Jacques Desrosiers, Marius M. Solomon, Daniel Villeneuve, Hatem Ben Amor

The Crew Timetabling Problem: an Extension of the Crew Scheduling Problem

Marta Castilho Gomes, Luis Cavique, Isabel Themido

11.30

Location I

Chairperson: Martine Labbé

Facility Location in Supply Chain Design

Jörg Kalcsics, Teresa Melo, Stefan Nickel

Optimal Location of Intermodal Freight Hubs

Illia Racunica, Laura Wynter

Inspection Facilities on a Network: Optimal Locations and Inspection Equilibrium

Pitu B. Mirchandani, David E. Lucas, Ranjit Rebello, Ferenc Szidarovszky

14.00

Location II

Chairperson: Maria Teresa Melo

The Cycle-Location Problem

Martine Labbé, I. Rodríguez-Martín, J.-J. Salazar-González

New Polyhedral Aspects of Hub Location Problems

Horst W. Hamacher, Martine Labbé, Stefan Nickel, Tim Sonneborn

An Effective Heuristic for Large-Scale Capacitated Plant Location Problems

Pasquale Avella, Maurizio Boccia, Antonio Sforza

16.30

Transportation I

Chairperson: Cynthia Barnhart

Bartoc – A Booking Algorithm for Routing and Timing of Customers

Oli B.G. Madsen

Models and Techniques for Passenger Train Dispatching

R. Freling, R.M. Lentink, G. Gallo, L.G. Kroon

Approximate Solutions for the CPP on a Mixed Graph

A. Corberán, R. Martí, J.M. Sanchis

TRISTAN IV Triennial Symposium on Transportation Analysis

THURSDAY
June 14

9.00

Invited Lecture II

Chairperson: Angel Corberán

Recent Algorithmic Advances for Arc Routing Problems

Gianpaolo Ghiani, Alain Hertz, Gilbert Laporte

TRISTAN IV Triennial Symposium on Transportation Analysis

FRIDAY
June 15

Room A

10.00

Air Transportation I

Chairperson: Lucio Bianco

The Approximate Network Delays Model

Kerry M. Malone, Amedeo R. Odoni

A Comparison Among Random Utilities and Time Series Models to Forecast Air Travel Demand

M.N. Postorino, F. Russo

11.30

Air Transportation II

Chairperson: Kerry Malone

Aircraft Flow Scheduling in the Terminal Maneuvering Area

Lucio Bianco, Paolo Dell'Olmo, Stefano Giordani

Analysis of Demand Uncertainty Effects in Ground Delay Programs

Michael Ball, Thomas Vossen, Robert Hoffman

Airline Fleet Assignment and Extensions: A New Model and Solution Approach

Cynthia Barnhart, Amr Farahat, Manoj Lohatepanont

14.00

Dynamic Assignment I

Chairperson: Mike Bell

Modeling Travel Times in Dynamic Transportation Networks; A Fluid Dynamics Approach

Soulaymane Kachani, Georgia Perakis

Time-of-day Modeling Using a Quasi-dynamic Equilibrium Assignment Approach

Jim Stada, Steven Logghe, Griet De Ceuster, Ben Immers

Analytical Multiclass Dynamic Traffic Assignment: Some Results Concerning Model Inputs and Outputs

Michiel C.J. Bliemer, Piet H.L. Bovy

16.30

Dynamic Assignment II

Chairperson: Georgia Perakis

A Combinatorial User Optimal Dynamic Traffic Assignment Algorithm

S. Travis Waller, Thanasis Ziliaskopoulos

Continuous and Discrete Trajectory Models for Dynamic Traffic Assignment

Hillel Bar-Gera, David Boyce

Algorithms for Shortest Path Problems in Continuous-Time Dynamic Networks

Ismail Chabini

18.00

Panel I

Chairperson: Teodor Gabriel Crainic

E-commerce, Transportation, Operations Research

Maria Grazia Speranza, Amelia Regan, Paolo Dell'Olmo

Room B

10.00

Transportation II

Chairperson: Shoshana Anily

The Vehicle Routing Problem with Simultaneous Pickup and Delivery

Bernard Gendron, Frédéric Semet, Cyril Strozzyk

Dispatching of an Electric Monorail System: Applying Meta-Heuristics to an Online Pickup and Delivery Problem

Kai Gutenschwager, Christian Niklaus, Stefan Voß

11.30

Simulation

Chairperson: Ismail Chabini

Mesosimulation of Within-day Dynamics in Transportation Systems

Mauro Dell'Orco

A Multi-Lane Extension of the Space-Time Queue Model of Traffic Dynamics

M. Mahut

Calibration of Microscopic Traffic Simulation Models

M. Ben-Akiva, A. Davol, H. N. Koutsopoulos, T. Toledo

14.00

ITS and Advanced Technologies

Chairperson: Jean-Patrick Lebacque

Transportation and Information Management to Facilitate Mass Customization

June Ma, Linda K. Nozick, Mark A. Turnquist, Jeffrey Tew, Lynn Truss, Ted Costy

A Doubly Dynamic Assignment Model for the Simulation of Advanced Travels Information System

Ennio Cascetta, Pierluigi Coppola

An ITS Model for Motorway Traffic Management and Control

R. Camus, G. Longo

16.30

Traffic Control

Chairperson: Mauro Dell'Orco

A Motorway-to-Motorway Control: Overview of Simulation and Field Trial Results in France

Habib Haj-Salem

Speed Limit Control: a Problem Formulation and Theoretical Discussions

Jean Patrick Lebacque, Habib Haj-Salem

Logic Programming for Intelligent Traffic Control

Giovanni Felici, Giovanni Rinaldi, Antonio Sforza, Klaus Truemper

Room C

10.00

Crew Scheduling II

Chairperson: Jacques Desrosiers

Improving Crew Scheduling by Incorporating Key Maintenance Routing Decisions

Amy Mainville Cohn, Cynthia Barnhart

Robust Airline Crew Scheduling

Diego Klabjan, Andrew J. Schaefer, Ellis L. Johnson, Anton J. Kleywegt, George Nemhauser

11.30

Vehicle and Crew Scheduling

Chairperson: Janny Leung

An Integrated Approach to Vehicle and Crew Scheduling

Dennis Huisman, Richard Freling, Albert P.M. Wagelmans

Simultaneous Multi-Depot Bus and Driver Scheduling

Guy Desaulniers, Jean-François Cordeau, Jacques Desrosiers

A Polyhedral Approach to Simplified Crew Scheduling and Vehicle Scheduling Problems

Matteo Fischetti, Andrea Lodi, Silvano Martello, Paolo Toth

14.00

Arc Routing

Chairperson: Oli Madsen

A Branch and Price Approach for a Profitable Arc Routing Problem

Dominique Feillet, Pierre Dejax, Michel Gendreau

The Capacitated Arc Routing Problem with Vehicle/Site Dependencies

John Sniezek, Lawrence Bodin, Laurence Levy, Michael Ball

A Variable Neighbourhood Descent for the Undirected Capacitated Arc Routing Problem

Alain Hertz, Michel Mittaz

16.30

Transportation III

Chairperson: Lawrence Bodin

Flexible Many-to-few + Few-to-many = an Almost Personalized Transit System

Teodor Gabriel Crainic, Federico Malucelli, Maddalena Nonato

Bee System: Modeling Combinatorial Optimization Transportation Engineering Problems by Swarm Intelligence

Panta Lucic, Dušan Teodorovic

The Vehicle Routing Game: An Application of Cost Allocation in a Gas and Oil Company

Stefan Engevall, Maud Göthe-Lundgren, Peter Värbrand

9.00

Invited Lecture III

Chairperson: Michael Patriksson

Network Assignment Problems: Achievements and Challenges

Michael Florian

TRISTAN IV Triennial Symposium on Transportation Analysis

MONDAY
June 18

Room A

10.00

Traffic Flow Models

Chairperson: Warren B. Powell

Route Choice: Choice Set Generation and Probabilistic Choice Models

Shlomo Bekhor, Moshe E. Ben-Akiva, M. Scott Ramming

Modelling the Retail System Competition

Luigi De Giovanni, Franco Sanlorenzo, Roberto Tadei

11.30

Network Design I

Chairperson: Teodor Gabriel Crainic

Optimal Pricing and Network Design of a Multi-Modal Transport Network

Laura Wynter

A New Design Methodology for Large-Scale Logistic Integrated Networks

Maurizio Bielli, Agostino Villa

A Bilevel Model for a Network Design and Tariff Setting Problem

Luce Brotcorne, Martine Labbé, Patrice Marcotte, Gilles Savard

14.00

Network Design II

Chairperson: Mikael Rönnqvist

Cycle-Based Meta-Heuristics for Fixed-Charge Capacitated Multicommodity Network Design

Teodor Gabriel Crainic, Ilfat Ghamlouche, Michel Gendreau

Network Design through Sensitivity Analysis an Singular Value Decomposition

Guido Gentile, Natale Papola

Valid Inequalities for Multicommodity Capacitated Fixed Charge Network Design

Mervat Chouman, Teodor Gabriel Crainic, Bernard Gendron

16.30

Public Transportation

Chairperson: Michael Florian

A Dynamic Approach to Vehicle Scheduling

Dennis Huisman, Richard Freling, Albert P.M. Wagelmans

Mixed-Integer Models for the Delay Management Problem

Anita Schöbel

Multi-Modal Network with Probable Transfer Rules and Nonlinear Fare Structure

Hong K. Lo, C.W. Yip

Room B

10.00

Integrated Models in Logistics I

Chairperson: George Nemhauser

A Multi-Item Transportation Problem with a Inventory Costs

Shoshana Anily, Michal Tzur

A Local Search Algorithm for a Complex Distribution Network Design Problem

Daniela Ambrosino

11.30

Vehicle Routing I

Chairperson: Frederic Semet

Vehicle Routing with Time Dependent Demand

Ann Melissa Campbell, Martin Savelsbergh

Benders' Cuts for Solving Pickup-and-Delivery Travelling Salesman Problems

Juan-José Salazar-González

The Vehicle Routing Problem with Double and Triple Capacity, General Distances and Multiple Customer Visits

C. Archetti, R. Mansini, M.G. Speranza

14.00

Vehicle Routing with Time Windows

Chairperson: J.-J. Salazar-González

The Shortest Path Problem with K-Cycle Elimination ($K \geq 3$): Improving a Branch and Price Algorithm for the VRPTW

Stefan Irnich

A Dual Algorithm for the Vehicle Routing Problem with Time Windows

Brian Kallehauge

The Vehicle Routing Problem with Time Windows and Simultaneous Pick-up and Delivery

E. Angelelli, Renata Mansini

16.30

Panel I

Chairperson: Lawrence Bodin

Routing and Scheduling – Where Have We Come and Where Are We Going

Room C

10.00

Rail Transportation

Chairperson: Alain Hertz

Train Scheduling in Regional Railway Networks

Alessandro Mascis, Dario Pacciarelli, Marco Pranzo

Optimizing Complex Operational Problems under Incomplete Information, with an Application to Locomotive Power Management

Belgacem Bouzaiene-Ayari, Warren B. Powell, Arun Marar

11.30

Demand Estimation I

Chairperson: Gang Xu

A Method to Approximate the Steepest Descent Direction of the O-D Matrix Adjustment Problem

Esteve Codina, Lidia Montero

A New Algorithm for Real-Time Estimation of Dynamic OD Tables

Michel Bierlaire, Frank Crittin, Benoît Emonet

Estimation of the Time-Varying O/D Transit Matrices from Traffic Counts

A. Nuzzolo, U. Crisalli

14.00

Demand Estimation II

Chairperson: Esteve Codina

Dynamic OD Estimation Using Additional Information from Traffic Signal Lights Timing

Irina Matschke, Bernhard Friedrich

Modeling Spatial Characteristics of Transport Demand using GIS and Household Interview Survey Data

Soi-Hoi Lam, Chenfei Song

A Bi-Level Programming Approach for Trip Matrix Updating and Network Calibration

G. Xu, W.H.K. Lam

16.30

Demand Estimation III

Chairperson: Markos Papageorgiou

Traffic Sensor Location Strategies for Deriving Network and Origin/Destination Flows

Lucio Bianco, Giuseppe Confessore, Pierfrancesco Reverberi

Maximizing the Traffic Flow Information from a Partial Sensor Location

Lucio Bianco, Giuseppe Confessore, Monica Gentili

9.00
Invited Lecture IV

Chairperson: Jaime Barceló

Overview of Advanced Traffic Control Issues in ITS
Markus Papageorgiou

Room A

10.00
Traffic Systems

Chairperson: Pitu Michandani

Irreducibility of Traffic Systems
Srinivas Peeta, Raghubhushan Pasupathy

A Computational Method for Dynamic and Stochastic Revenue, Management Problems
Anton J. Kleywegt, Vijay Bharadwaj

11.30
Real Time Operations in Transportation

Chairperson: Stefano Pallottino

Exploiting Knowledge About Future Demands for Real-Time Vehicle Dispatching
Soumia Ichoua, Michel Gendreau, Jean-Yves Potvin

Real-Time Transportation Systems: Modeling, Analysis and Design
Pitu B. Mirchandani

Optimizing Real Time Operations in Transportation with an Ant System
Karl Doerner, Manfred Gronalt, Richard F. Hartl, Marc Reimann

14.00
Real Time Operations in Traffic Control

Chairperson: Jean-Yves Potvin

A New Algorithm for Real-Time Estimation of Dynamic OD Tables
Michel Bierlaire, Frank Crittin, Benoît Emonet

An Expected Opportunity Loss in Information Acquisition Processes Under ATIS
Eiji Hato, Yasuo Asakura, Masuo Kashiwadani

Integrating Real-Time Bus Priority Control with Robust Arterial Signal Progression
Meenakshy Vasudevan, Gang-Len Chang

Room B

10.00
Freight Transportation I

Chairperson: Hani S. Mahmassani

A Forecasting Model for Inland Navigation
Stella Fiorenzo Catalano, Nanne Van der Zijpp

A Column Generation Scheme for Shipment Planning at an Oil Refinery
Maud Göthe-Lundgren, Jan T. Lundgren, Jan A. Persson

11.30
Freight Transportation II

Chairperson: Maud Gothe-Lundgren

Routing of Hazardous Materials on Dissimilar Paths
Pasquale Carotenuto, Giuseppe Confessore, Salvatore Ricciardelli

Planning Models for Freight Transportation in Congested Urban Areas
Teodor Gabriel Crainic, Nicoletta Ricciardi, Giovanni Storchi

Heuristic Algorithms for Solving Hazardous Materials Transportation and Emergency Response Problems
Konstantinos G. Zografos, Konstantinos N. Androutsopoulos

14.00
Freight Transportation III

Chairperson: Jan Lundgren

Auction Mechanisms for Freight Transportation
Jawad Abrache, Teodor Gabriel Crainic, Michel Gendreau

Dynamic and Stochastic Fleet and Freight Management: Algorithm Development and Performance Analysis
Xiangwen Lu, Amelia Regan, Sandra Irani

Dynamic Truck Operation Strategies for Truckload Pickup and Delivery Problems with Time Windows
Yongjin Kim, Patrick Jaillet, Hani S. Mahmassani

Room C

10.00
Panel II

Chairperson: Michel Gendreau

Computational Testing

11.30
Integrated Models in Logistics II

Chairperson: Jorge Pinho de Sousa

Frequency-Based Algorithms for the Minimization of the Transportation and Inventory Costs on a Single Link
Luca Bertazzi, Maria Grazia Speranza

An Integrated Model for Logistics Network Design
Jean-François Cordeau, Federico Pasin, Marius M. Solomon

Terminal Location Integrated with Ship Routing
Mikael Rönnqvist, Dick Carlsson

14.00
Vehicle Routing II

Chairperson: Michael Gendreau

Ship Scheduling with Restricted Port Opening Hours
Marielle Christiansen, Kjetil Fagerholt

Cost Models in Vehicle Routing Problems
Lawrence Bodin, John Sniezek

Vehicle Routing for the Collection of Recyclable Waste – A Case Study
João Teixeira, António Antunes, Jorge Pinho de Sousa