

14th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems

ATMOS'14, September 11th, 2014, Wrocław, Poland

Edited by

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Contents

Preface	
<i>Stefan Funke and Matúš Mihalák</i>	i
Delay-Robust Journeys in Timetable Networks with Minimum Expected Arrival Time	
<i>Julian Dibbelt, Ben Strasser, and Dorothea Wagner</i>	1
Shortest Path with Alternatives for Uniform Arrival Times: Algorithms and Experiments	
<i>Tim Nonner and Marco Laumanns</i>	15
Locating Battery Charging Stations to Facilitate Almost Shortest Paths	
<i>Esther M. Arkin, Paz Carmi, Matthew J. Katz, Joseph S. B. Mitchell, and Michael Segal</i>	25
Online Train Shunting	
<i>Vianney Bœuf and Frédéric Meunier</i>	34
Engineering Graph-Based Models for Dynamic Timetable Information Systems	
<i>Alessio Cionini, Gianlorenzo D'Angelo, Mattia D'Emidio, Daniele Frigioni, Kalliopi Giannakopoulou, Andreas Paraskevopoulos, and Christos Zaroliagis</i>	46
Local Search for the Resource Constrained Assignment Problem	
<i>Markus Reuther</i>	62
A Coarse-To-Fine Approach to the Railway Rolling Stock Rotation Problem	
<i>Ralf Borndörfer, Markus Reuther, and Thomas Schlechte</i>	79
Mathematical programming models for scheduling locks in sequence	
<i>Ward Passchyn, Dirk Briskorn, and Frits C.R. Spieksma</i>	92
Simultaneous frequency and capacity setting for rapid transit systems with a competing mode and capacity constraints	
<i>Alicia De-Los-Santos, Gilbert Laporte, Juan A. Mesa, and Federico Perea</i>	107
Timing of Train Disposition: Towards Early Passenger Rerouting in Case of Delays	
<i>Martin Lemnien, Ralf Rückert, Steffen Rechner, Christoph Blendinger, and Matthias Müller-Hannemann</i>	122
Speed-Consumption Tradeoff for Electric Vehicle Route Planning	
<i>Moritz Baum, Julian Dibbelt, Lorenz Hübschle-Schneider, Thomas Pajor, and Dorothea Wagner</i>	138

Preface

Running and optimizing transportation systems give rise to very complex and large-scale optimization problems requiring innovative solution techniques and ideas from mathematical optimization, theoretical computer science, and operations research. Since 2000, the series of Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS) workshops brings together researchers and practitioners who are interested in all aspects of algorithmic methods and models for transportation optimization and provides a forum for the exchange and dissemination of new ideas and techniques. The scope of ATMOS comprises all modes of transportation.

The 14th ATMOS workshop (ATMOS'14) was held in connection with ALGO'14, hosted by the University of Wrocław in Wrocław, Poland, on September 11, 2014. Topics of interest for ATMOS'14 were all optimization problems for passenger and freight transport, including, but not limited to, Demand Forecasting, Models for User Behavior, Design of Pricing Systems, Infrastructure Planning, Multi-modal Transport Optimization, Mobile Applications for Transport, Congestion Modeling and Reduction, Line Planning, Timetable Generation, Routing and Platform Assignment, Vehicle Scheduling, Route Planning, Crew and Duty Scheduling, Rostering, Delay Management, Routing in Road Networks, Traffic Guidance. Of particular interest were papers applying and advancing the following techniques: graph and network algorithms, combinatorial optimization, mathematical programming, approximation algorithms, methods for the integration of planning stages, stochastic and robust optimization, online and real-time algorithms, algorithmic game theory, heuristics for real-world instances, simulation tools.

In response to the call for papers we received 26 submissions, all of which were reviewed by at least three referees. The submissions were judged on originality, technical quality, and relevance to the topics of the workshop. Based on the reviews, the program committee selected the 11 papers which appear in this volume. Together, they quite impressively demonstrate the range of applicability of algorithmic optimization to transportation problems in a wide sense. In addition, Renato Werneck kindly agreed to complement the program with an invited talk that was presented as a global key-note talk of ALGO'14.

We would like to thank the members of the Steering Committee of ATMOS for giving us the opportunity to serve as Program Chairs of ATMOS'14, all the authors who submitted papers, Renato Werneck for accepting our invitation to present an invited talk, the members of the Program Committee and all the additional reviewers for their valuable work in selecting the papers appearing in this volume, and the local organizers for hosting the workshop as part of ALGO'14. We also acknowledge the use of the EasyChair system for the great help in managing the submission and review processes, and Schloss Dagstuhl for publishing the proceedings of ATMOS'14 in its OASICS series.

For the second time in history of ATMOS, the program committee gave a Best-Paper Award: The best paper of ATMOS'14 is "Online Train Shunting" by Vianney Bœuf and Frédéric Meunier.

September, 2014

Stefan Funke
Matúš Mihalák



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