

12th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems

ATMOS'12, September 13, 2012, Ljubljana, Slovenia

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Dedicated to the memory of Alberto Caprara.

■ Contents

Preface	
<i>Daniel Delling and Leo Liberti</i>	ix
A Fast Heuristic Algorithm for the Train Unit Assignment Problem	
<i>Valentina Cacchiani, Alberto Caprara, and Paolo Toth</i>	1
Optimal Freight Train Classification using Column Generation	
<i>Markus Bohlin, Florian H.W. Dahms, Holger Flier, and Sara Gestrelus</i>	10
Real Time Railway Traffic Management Modeling Track-Circuits	
<i>Paola Pellegrini, Grégory Marlière, and Joaquin Rodriguez</i>	23
Reliability and Delay Distributions of Train Connections	
<i>Mohammad H. Keyhani, Mathias Schnee, Karsten Weihe, and Hans-Peter Zorn</i> ..	35
A Direct Connection Approach to Integrated Line Planning and Passenger Routing	
<i>Ralf Borndörfer and Marika Karbstein</i>	47
Multi-Dimensional Commodity Covering for Tariff Selection in Transportation	
<i>Felix G. König, Jannik Matuschke, and Alexander Richter</i>	58
On the Complexity of Partitioning Graphs for Arc-Flags	
<i>Reinhard Bauer, Moritz Baum, Ignaz Rutter, and Dorothea Wagner</i>	71
Speedup Techniques for the Stochastic on-time Arrival Problem	
<i>Samitha Samaranyake, Sebastien Blandin, and Alex Bayen</i>	83
Optimal Algorithms for Train Shunting and Relaxed List Update Problems	
<i>Tim Nonner and Alexander Souza</i>	97
A Dynamic Row/Column Management Algorithm for Freight Train Scheduling	
<i>Brigitte Jaumard, Thai H. Le, Huaining Tian, Ali Akhunduz, and Peter Finnie</i> ..	108
Train Scheduling and Rescheduling in the UK with a Modified Shifting Bottleneck Procedure	
<i>Banafsheh Khosravi, Julia A. Bennell, and Chris N. Potts</i>	120
Probabilistic Airline Reserve Crew Scheduling Model	
<i>Christopher Bayliss, Geert De Maere, Jason Atkin, and Marc Paelinck</i>	132



■ Preface

Transportation networks give rise to very complex and large-scale network optimization problems requiring innovative solution techniques and ideas from mathematical optimization, theoretical computer science, and operations research. Applicable tools and concepts include those from graph and network algorithms, combinatorial optimization, approximation and online algorithms, stochastic and robust optimization. Since 2000, the series of 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 12th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS'12) was held in connection with ALGO 2012, hosted by University of Ljubljana, Slovenia, on September 13, 2012. Topics of interest for ATMOS'12 were all optimization problems for passenger and freight transport, including – but not limited to – Infrastructure Planning, Vehicle Scheduling, Crew and Duty Scheduling, Rostering, Routing in Road Networks, Novel Applications of Route Planning Techniques, Demand Forecasting, Design of Tariff Systems, Delay Management, Mobile Applications, Humanitarian Logistics, Simulation Tools, Line Planning, Timetable Generation, and Routing and Platform Assignment. Of particular interest were: the successful integration of several (sub)problems or planning stages, algorithms operating in an online/realtime or stochastic setting, and heuristic approaches (including approximation algorithms) for real-world instances.

In response to the call for papers we received 22 submissions, all of which were reviewed by at least four referees. The submissions were judged on originality, technical quality, and relevance to the topics of the conference. Based on the reviews, the program committee selected the 12 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, Matthias Müller-Hannemann kindly agreed to complement the program with an invited talk entitled *Algorithm Engineering of Timetable Information*.

We would like to thank all the authors who submitted papers to ATMOS'12, Matthias Müller-Hannemann for accepting our invitation to present an invited talk, and the local organizers for hosting the workshop as part of ALGO 2012.

September 2012

Daniel Delling
Leo Liberti



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