

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

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

Edited by

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ACM Classification 1998

F.2 Analysis of Algorithms and Problem Complexity, G.1.6 Optimization, G.2.1 Combinatorics, G.2.2 Graph Theory, G.2.3 Applications

ISBN 978-3-939897-75-0

Published online and open access by

Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, Saarbrücken/Wadern, Germany. Online available at <http://www.dagstuhl.de/dagpub/978-3-939897-75-0>.

Publication date

September, 2014

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

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Digital Object Identifier: 10.4230/OASlcs.ATMOS.2014.i

ISBN /978-3-939897-75-0

ISSN 2190-6807

<http://www.dagstuhl.de/oasics>

OASlcs – OpenAccess Series in Informatics

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ISSN 2190-6807

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■ 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 Boëuf and Frédéric Meunier.

September, 2014

Stefan Funke
Matúš Mihalák



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