

13th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems

Daniele Frigioni, Sebastian Stiller

► **To cite this version:**

Daniele Frigioni, Sebastian Stiller. 13th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems. Daniele Frigioni and Sebastian Stiller. ATMOS - 13th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems - 2013, Sep 2013, Sophia Antipolis, France. <hal-00872213>

HAL Id: hal-00872213

<https://hal.inria.fr/hal-00872213>

Submitted on 11 Oct 2013

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13th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems

ATMOS'13, September 5, 2013, Sophia Antipolis, France

Edited by

Daniele Frigioni
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ACM Classification 1998

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

ISBN 978-3-939897-58-3

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/978-3-939897-58-3>.

Publication date

September, 2013

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.2013.i

ISBN 978-3-939897-58-3

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

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. 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 13th ATMOS workshop (ATMOS'13) was held in connection with ALGO'13, by INRIA and Campus SophiaTech, in Sophia Antipolis, France, on September 5, 2013. Topics of interest for ATMOS'13 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 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, Tobias Harks kindly agreed to complement the program with an invited talk entitled *Modeling and Optimizing Traffic Networks*.

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'13, all the authors who submitted papers, Tobias Harks 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'13. 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'13 in its OASiCS series.

Finally, we are pleased to announce that this year, for the first time, ATMOS PC awards a Best Paper Award. The Best Paper of ATMOS 2013 is *A Configuration Model for the Line Planning Problem* by Ralf Borndörfer, Heide Hoppmann, and Marika Karbstein.

September, 2013

Daniele Frigioni

Sebastian Stiller



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