21st Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems

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Edited by

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Preface

Transportation is one of the key aspects in the development of a society. There are countless examples of cities, regions, or even countries which have witnessed enormous increases in their well-being after investments in their transportation systems. This improvement in the quality of life might be observed in several ways: less traveling times for people, moving goods more efficiently, access to a larger variety of products, among many others. The constant evolvement of transportation systems gives rise to new and more complex optimization problems, which in turn require the development of more efficient algorithms for solving them. The ever increasing volume of goods and people being transported imply more and more complexity in the problems to be solved, and therefore ask for new procedures for finding solutions to them, or even the need for new approaches. Although these new challenges have always been present, the COVID-19 pandemic has made the world reconsider many aspects of their "normal" functioning, among them of course: transportation. Will commerce go more local? Will telecommuting become the norm, and therefore the equilibria found in the transportation of people will change? These are only two examples of the questions that should be answered in the near future. Researchers and practitioners have the opportunity (or even the obligation) to answer these questions. The Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS) symposia, which have been running since 2000, are an excellent opportunity to show the latest advances in the approaches to model and solve the different problems arising in any transportation system.

Sadly, another consequence of the COVID-19 pandemic, is the fact that traditional conferences (like ATMOS) have gone online. Although ATMOS 2021 was meant to happen in Lisbon (Portugal), the mobility restrictions and the minimization of contagion risks, made the chairs of ALGO (the conference where ATMOS is included) take the difficult decision of running this conference online. This format has made the organization of ATMOS 2021 an even greater challenge. However, thanks to the help of the ALGO chairs, the ATMOS steering committee, and the outstanding ATMOS 2021 Program Committee (PC), we are confident that the quality and reputation of the ATMOS symposium has been maintained. In ATMOS 2021, the new category of short papers has been inroduced, presenting preliminary results or work-in-progress on a specific topic.

We received in total 29 submissions from all over the world, 24 of them were regular submissions, the other 5 being short paper submissions. All submissions were reviewed by at least three PC members, and the unanimous impression was the excellent quality of the submissions that we finally accepted. The time limitations of a two-day symposium forced us to accept only 19 submissions (16 regular and 3 short papers).

The ATMOS 2021 best paper award was given to *Carlo S. Sartori, Pieter Smet and Greet Vanden Berghe*, for their paper *Efficient duration-based workload balancing for interdependent vehicle routes*. Special thanks go to the sponsor of this prize: TRUCKSTERS, a young and dynamic company that offers express international transport services with maximum safety, efficiency, and sustainability (`https://www.trucksters.io/`).

ATMOS 2021 had *Anita Schöbel* (University of Kaiserslautern and Fraunhofer Institute for Industrial Mathematics (ITWM), Germany) as a plenary ALGO 2021 speaker who gave a talk on *Approaches for integrated planning: The case of public transport optimization.*

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 2021, all authors who submitted papers, Anita Schöbel for accepting our invitation to be a plenary speaker, the members of

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the Program Committee and the additional reviewers for their valuable work in selecting the papers appearing in this volume, as well as Arlindo Oliveira (Chair of the ALGO 2021 Organizing Committee) and his team for hosting the symposium as part of ALGO 2021. 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 2021 in its OASIcs series.

August 2021

Matthias Müller-Hannemann and Federico Perea

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