



Meeting participants

PMO107 - Practice of Optimization in Transportation

The 107th meeting of GOR working group “Practice of Mathematical Optimization” took place on September 28 & 29, 2023 in the “Skylobby” of ÖBB in Vienna, Austria. The meeting has been held as a joint workshop of PMO and the annual ÖGOR meeting hosted by ÖBB, jointly organized by Ulrich Pferschy (ÖGOR), Bertram Wassermann (ÖBB), Julia Kallrath (GOR) and Jens Schulz (GOR). Under the topic **Practice of Optimization in Transportation**, 75 participants from academia and industry joined this workshop.

We have exchanged knowledge about Operations Research methods to deal with practical applications in transportation and explored the challenges and opportunities in optimizing transportation networks to improve efficiency, reduce costs, and minimize environmental impact. The speakers presented and discussed cutting-edge research and practical applications of mathematical optimization techniques specifically tailored for transportation systems. The sessions covered topics such as optimization models for transportation planning, routing and scheduling in logistics, fleet management and vehicle routing algorithms, multi-modal transportation optimization, traffic flow modeling and control as well as hybrid approaches and applications of machine learning and artificial intelligence in transportation optimization. Presentations are listed in chronological order:

Meeting of GOR working group “Practice of Mathematical Optimization”:

Bertram Wassermann & Johannes Hofrichter (ÖBB)
Operations Research at ÖBB

Stefan Voß

Robust Optimization for Vehicle Routing and Vehicle Scheduling with Uncertainty in the Number of Vehicles

Alexander Bosse & Dirk Mattfeld

Tactical Planning of a Flexible Transit Service

Niels Lindner

Recent Advances in Railway Timetable Optimization

Dominik Leib

A multicriteria approach to a multimodal transportation planning problem

Kanchan Joshi & Jan Fabian Ehmke

A bi-objective locomotive scheduling problem using time-space network formulations

Martin Knoll & Sander van Aken

Developing an OR-based software product to support network planners at FlixBus

Jakob Rosenberger, Matthias Rößler

Robustness proof for traction unit circulations and shift plans in an agent-based simulation model depicting the railway system in Austria

Fatih Kocatürk

Energy Consumption Prediction Models for Locomotives Used in Railway Freight Transportation

On Thursday afternoon, the participants enjoyed a guided tour through Vienna central station and to Verkehrsleitzentrale of ÖBB. The conference dinner took place in Salmbräu, in cellar area downstairs a rustic and cosy venue with wooden benches, serving its own beers and hearty home-style dishes.

ÖGOR Annual Meeting

On Friday afternoon, the annual ÖGOR meeting took place organized and moderated by Ulrich Pferschy with the following invited presentations.

Stefan Irnich (University of Mainz)

New Models and Methods for Picker Routing and Order Batching

Eranda Dragoti-Cela (Graz University of Technology)

A tour around optimization problems over permutations

Elisabeth Zehendner (Österreichische Post AG)

How to forecast parcel quantities at node level in a distribution network

Presentations by the winners of the ÖGOR-Dissertation and Master-thesis prizes have been held. The prizes have been sponsored by **scc EDV-Beratung AG**. Congratulations to the winners!

(reported by Jens Schulz)
