Optimization Problems in Public Transport Networks and their Underlying Graphs

by Balázs Dávid

Public transport networks are complex systems, which provide a large number of challenging optimization problems, such as network and line planning, timetabling and the scheduling of vehicles and crews. Most of these problems are NP-hard even individually, but their interdependence makes achieving efficient integrated solutions especially difficult.

This talk will give an overview of the most important planning problems in public transport and the underlying graph representations. We will examine the complexity of these problems, look at efficient ways for modelling them and discuss possible solution methods.