

Semesterarbeit

Evaluating delay management policies with probabilistic delays

In practice, passenger railways sometimes incur some delays. In such a situation, passengers traveling on a delayed train might miss a connection. Delay Management addresses the issue of deciding which connections should be maintained for transferring passengers, with the objective of minimizing the overall delay of the passengers. The offline problem where all the delays are known as part of the input is known to be NP-complete already for instances with a very simple structure.

There are many ways for addressing this problem. One option is to adapt the timetable in order to make it more tolerant towards delays with respect to the connections. Another option is to define delay policies that specify when a train should wait for a delayed connection.

In this semester thesis, we analyze the second approach. Given that trains are delayed with a certain probability distribution, what is the impact of a certain delay policy on the objective of minimizing the total passenger delay? The goal is to start with analyzing simple delay policies (such as always wait / never wait) on simple network structures, then extending the evaluation on more complex policies and networks.

For more information please contact: Michael Gatto, CAB H33.1, gatto@inf.ethz.ch.