

A three-level framework for performance-based railway timetabling - DTU Orbit (09/11/2017)

A three-level framework for performance-based railway timetabling

The performance of railway operations depends highly on the quality of the railway timetable. In particular for dense railway networks it can be challenging to obtain a stable robust conflict-free and energy-efficient timetable with acceptable infrastructure occupation and short journey times. This paper presents a performance-based railway timetabling framework integrating timetable construction and evaluation on three levels: microscopic, macroscopic, and a corridor fine-tuning level, where each performance indicator is optimized or evaluated at the appropriate level. A modular implementation of the three-level framework is presented and demonstrated on a case study on the Dutch railway network illustrating the feasibility of this approach to achieve the highest timetabling design level.

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