Methods of Railway Transportation Planning Based on Day-to-day Passengers' Demand

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Current railway trains are operated every day in accordance with a fixed timetable excluding extra trains operated during peak travel periods. This study aims to plan railway transportation flexibly in such a way as deciding which train is to be operated with how many cars according to the estimated number of passengers which vary with each day, each hour and each origin-destination stations. In this paper we discuss methods for timetabling, rolling stock scheduling and crew scheduling for such flexible transportation plan and report an evaluation result of the simulation of train transportation and passengers' behavior based on algorithms developed.