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# Scheduling the Two-Way Traffic on a Single-Track Railway with a Siding

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## Abstract

The paper is concerned with scheduling the two-way traffic between two stations connected by a single-track railway with a siding. It is shown that if, for each station, the order in which trains leave this station is known or can be found, then for various objective functions an optimal schedule can be constructed in polynomial time using the method of dynamic programming. Based on this result, the paper also presents a polynomial-time algorithm minimising the weighted number of late trains.

## Keywords

dynamic programming   polynomial algorithm   railway planning   scheduling theory

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