

# Improving railway services during infrastructure maintenance possessions



Rotterdam Centraal/Den Haag Centraal-Utrecht Centraal

zaterdag 3 tot en met maandag 5 juni

Beperkt treinverkeer businzet en/of omreizen, extra reistijd 15-30 min.

## Problem description

In order to provide high quality railway services, railway infrastructure needs regular and frequent maintenance. As a result, in the Netherlands, every weekend, multiple train lines are having reduced number of services, get cancelled, rerouted or shortened which all cause uncertainty and discomfort to passengers and freight operators. If you think that railway companies could do better in scheduling possessions and/or adjusting railway services, then there is a project waiting for you. In this project, you will develop models and algorithms for adjusting railway timetables and routing plans that provide better services to customers.

## Previous work

Van Aken, S., Bešinović, N., Goverde, R.M.P. (2017). Solving large-scale timetable adjustment problem under infrastructure maintenance possessions. *Journal of Rail Transport Planning & Management*, 7(3), 141-156.

Van Aken S., Bešinović, N., Goverde, R.M.P. (2017). Designing alternative railway timetables under infrastructure maintenance possessions. *Transportation Research Part B: Methodological*, 98, 224-238.

## Assignment

- Literature study of existing articles
- Data preparation
- Develop a new approach for timetable adjustments
- Write a report and a scientific paper

## Background

A student is expected to have knowledge and interest in mathematical optimization, data analysis, and programming. The project builds on recent developments of the Digital Rail Traffic Lab with NS and ProRail. It can be conducted as final thesis project or research project. The research will be preformed within T&P.

## Information

Digital Rail Traffic Lab (DRTLlab) [www.tudelft.nl/drtlab/](http://www.tudelft.nl/drtlab/)

Thesis supervision: Prof. dr. Rob Goverde, Dr. Nikola Bešinović

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