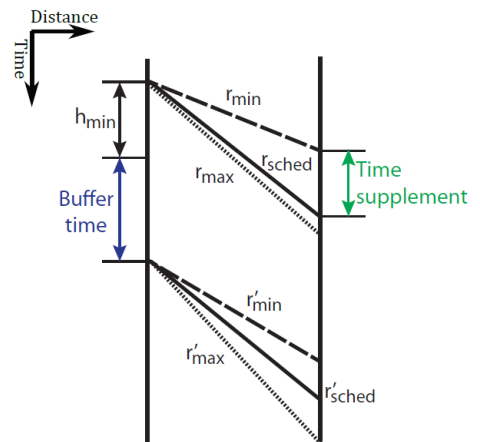


Designing optimal buffer times in railway timetables at NS



Problem description

When creating new timetables, NS uses an accurate running time calculation and microscopic section occupation for headway times. On top of the technical minimal headway times, we apply a buffer time of 60 seconds on every headway time. This buffer time is used to accommodate variation in both driving behaviour and small deviations in process times. The same value for every headway is used because we have no better information on how to differentiate this value. One way to get more insight into the desirable size of buffer times is by conduction a lot of stochastic simulation experiments, but another way would be to base this on realisation data. During a previous research project, we obtained a lot of realisation data of headway times. We are looking for a methodology that can differentiate buffer times based on realisation data as an input for our future timetable designs.

Background

The department "NO Ontwerpen", responsible for the design of the NS timetable, is looking for an intern to execute this MSc project. We are looking for a master student with interests in railway transportation and who has knowledge (or can easily learn) the Dutch signaling and train protection system.

Information

Digital Rail Traffic Lab (DRTLlab) www.tudelft.nl/drtlab/

Thesis supervision: Prof. dr. Rob Goverde

Contact:

- **TU Delft:** R.M.P.Goverde@tudelft.nl

- **NS:** Patrick Looij (patrick.looij@ns.nl), Bart de Keijzer (bart.dekeijzer@ns.nl)