



Calibrating the Network Transmission Model

Problem description

A recent development in the field of traffic flow theory is the Network Fundamental Diagram (NFD). This diagram shows the (car-)speed in an *area* (e.g., a city center) as function of the number of vehicles. A dynamic traffic model is developed based on these principles, the *Network Transmission Model*. It is not clear though how accurate the model is.

Assignment

In this study, you model a city (The Hague or Rotterdam) by the Network Transmission Model. By adapting the parameters in the model, you calibrate the model. As ground truth data and/or microsimulation can be used. Also the validation is part of the task: how good is the model in fact.

Main methodological questions in this assignment are the measure of performance and the goodness of fit: what is it what need to be represented, and how can that be quantified. Also extracting that from the data is expected to be a challenge.

Embedding / collaboration

There are many parties interested in the result of this study. During the thesis, work can be done at a consulting company (Grontmij) or at other international universities (Lyon, France).

Required skills and interests:

- Interests: traffic flow theory
- Interests: traffic simulation
- Good programming skills
- Good analytical skills

Supervision

Supervisor: Prof.dr.ir. Serge Hoogendoorn (Transport & Planning)

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