Traffic Modelling for sustainability and environmental forecasting

Problem description

In a time of increased awareness of global environmental effects and an increasing effort to target areas that emit high amounts of emissions or damage global ecosystems, it is only logical that traffic and transportation is scrutinised on its part in this process. Being able to analyse traffic systems for their effect on the environment is therefore required. Most regular traffic models are designed and focussed on optimising traffic throughput and in some cases safety. Emissions focussed models also exist. However, there are a lack of modelling efforts focussed on emissions in combination with traffic efficiency. This is a challenge that remains open and needs addressing and is therefore the main focus of this project.

Objectives & Assignment

The objective of this project is to design a modelling framework and traffic model, based on existing modelling approaches, that is able to include and integrate aspects of sustainability with traffic flow optimization. This challenge starts by investigating what the potential environmental impact is of traffic and transportation on the environment, as well as reviewing what types of models, both for traffic and emissions, already exist and how they are used. A conceptual model should be designed based on these findings and a case can be performed to demonstrate the performance of the model.

This Master thesis can also include an internship with an external organisation.

External support

TBD

Information

Simeon Calvert - s.c.calvert@tudelft.nl
Prof. Lóri Tavasszy - L.A.Tavasszy@tudelft.nl