# Assignment for different modes of transport

Problem description

Current traffic and transport models are normally suited for one mode of transport. Most models focus on person car traffic and do not have much interaction with other modes for person transport, such as public transport or bike, but also not with truck traffic or even broader with freight transport. Other models just focus on public transport or freight and have the same handicap that interaction between modes is missing or is modelled in a very simple way. On the other hand some concepts used in models for different modes are the same. An example of that is the assignment of traffic (or vehicles). The development of (dynamic) assignment models for car traffic has a long history and the same is true for public transport and freight. All have their own methods and characteristics. The question is what they can learn from each other and how the interaction between them can take shape.

Assignment

The first part of the research is a comparison between the assignment methods used in models for different transport modes. Some aspects will be mode-related, but others could be general and it that case it will be interesting to know what models can learn from each other. Most assignment models consist of three parts, which are shown in the figure. For the route set generation it is interesting to see how it is done in the different models and how do the different models deal with typical issues such as the number of routes and the overlap in routes. And the same question can be asked for the other parts (route choice and network loading).

The second part is a case study, in which the different assignment methods have to be applied for a network with cars, public transport and bicycles to see how they work, what the advantages and disadvantages are and how they can be integrated.
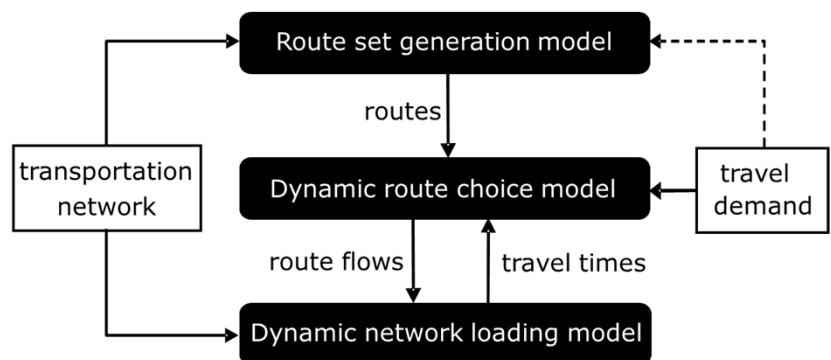
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