
Multi-agent based simulation of individual traffic in Berlin

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Multi-agent simulations of traffic are widely expected to become an important tool for transportation planning in the mid-term future. In order to evaluate the practical usability of this simulation approach, one has to analyze

- if it can be set up using commonly available data,
- if it is able to run large real-world-scenarios in terms of computational tractability and
- if the results are realistic and meaningful enough to replace traditional modelling approaches.

This paper reports on the first results of a study evaluating the feasibility of a large-scale multi-agent-simulation based on the example of Berlin. The study covers the creation of a synthetic population of about 3,5 Mio. agents, the generation and localisation of activities from demographic data, running the simulation with the MATsim software currently developed at ETH Zurich and TU Berlin and comparing the simulation results with the output of traditional models (VISUM) and traffic counts.

The simulation process implemented in MATsim is based on an iterative feedback procedure, allowing the agents to learn to take different routes or to modify their plans in terms of time and location of activities.

The results of this study will also be compared to similar study from Zurich (CH) in order to investigate the transferability of multi-agent simulation models between study regions. Future extensions of the study will possibly include public transport simulation, commercial traffic, aspects of land-use models and impact assessment.

References:

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