CHAPTER 75

New York City

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The MATSim New York model was an example of an agent-based model based on a given activity-based demand generation process outcome: in this case, the NYBPM (New York Best Practice Model) of Parson Brinkerhoff (Vovsha et al., 2002; Parsons Brinckerhoff, 2005, 2009). It produced persons with individual activity chains; MATSim was chosen as the simulation-based alternative to conventional assignment processes.

Activity locations were selected on zonal level (3 824 zones), timings (i.e., start time and duration) were chosen using given distributions. As part of the conversion process to MATSim, locations were distributed within the zones, according to land use and buildings. For the route assignment, transport modes were converted into those supported by MATSim. The resulting population contained 5.3 million persons (25 % sample).

A multimodal network was created, containing car and public transport links, for the MATSim model. Car links were derived from the aggregated model network data, including capacity, number of lanes and speed limits. For the public transport network, a shape file containing every lines' routes was available. After converting and cleaning the data, the final multimodal network contained 498 000 nodes and 541 000 links. Based on further public transport-related data, a full schedule was created, including different public transport modes (bus, train, etc.).

An example for final model outcomes was shown in Figure 75.1 and Figure 75.2, depicting the car share of all performed trips within a region. Red indicated a high share, blue a low. In Figure 75.1, trips were aggregated on zonal level. In Figure 75.2, the MATSim model high resolution is shown; there, the trips were aggregated using hexagons with a side length of 500 meters instead of a zonal level.

Finally, Figure 75.3 shows traffic flows in Lower Manhattan. Cars were represented by rectangulars, public transport vehicles by arrows. Further model outcomes were presented by Balmer (2014). An online movie can be found at `http://senozon.com/news/2014-05/z%C3%BCrich-meets-new-york`

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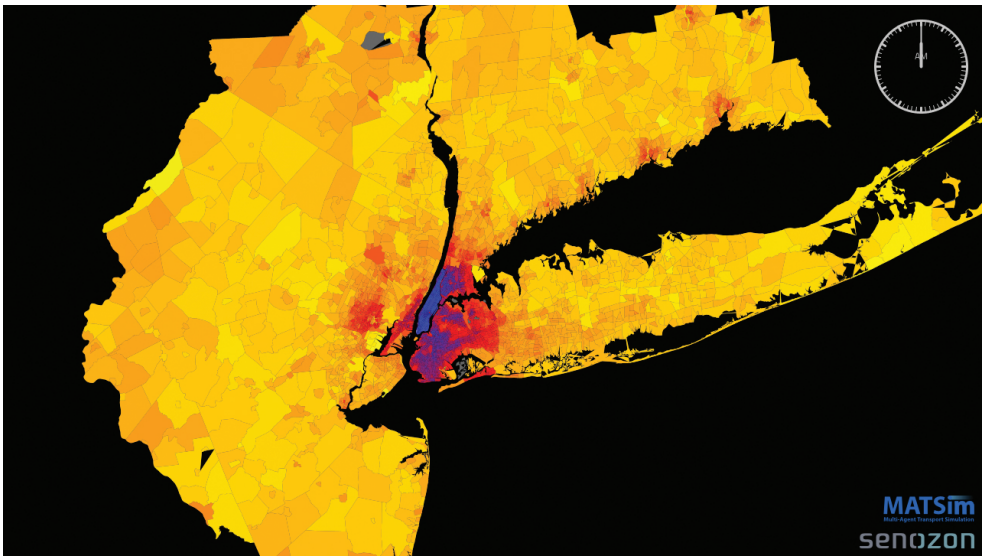

Figure 75.1: Car share (entire modeled area).

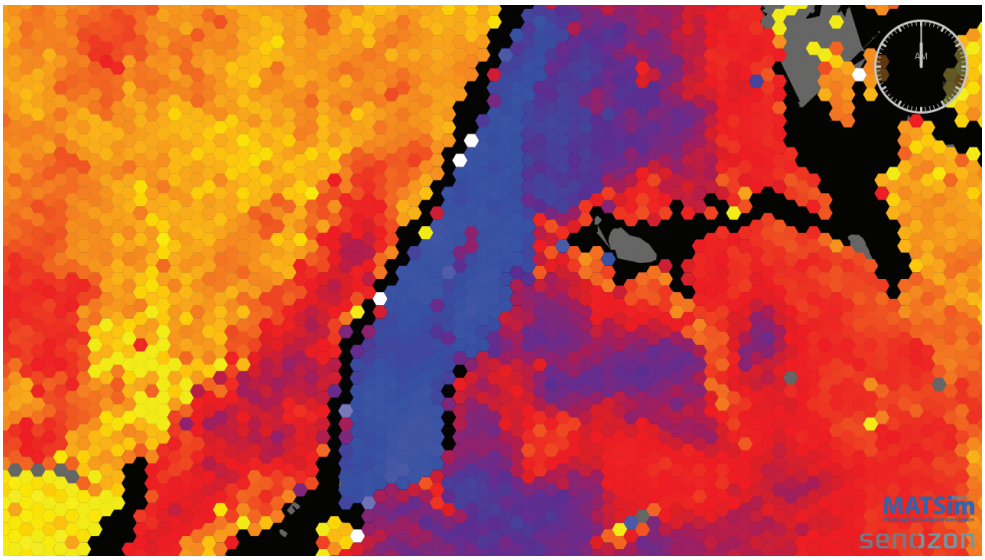

Figure 75.2: Car share (Manhattan).

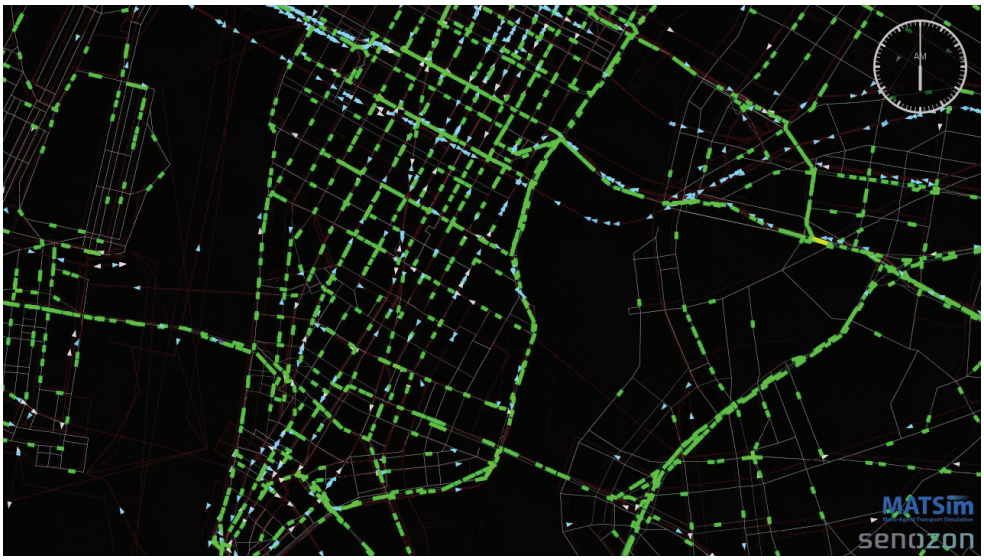

Figure 75.3: Traffic flows in Lower Manhattan.