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A simulated day in Stockholm

[movie]
Overview

Regent
population synthetizer

Regent
tour model

individuals

sequencing,
time structure

travel time
aggregation

individuals w.
tour sequences

population geo-location,
plan generation

interzonal travel time
calculation per time slice

MATSim network

MATSim
simulation engine

MATSim
queueing simulation
Adding spatial structure

Zones

Buildings

Links
Adding time structure

• only the following activity sequences are allowed
  ▶ home
  ▶ home-work-home
  ▶ home-other-home
  ▶ home-work-home-other-home

• the following *ad hoc* time constraints hold for all agents
  ▶ ~8 h of work between 7:30 and 17:30 (10 h)
  ▶ ~1.5 h of other between 7:30 and 21:30 (14 h)

• time, distance, cost coefficients taken from Contram
• toll profile as of 2015
Simulated departure time distribution
Toll: simulated cordon flows
Toll: simulated peak-hour travelers
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MATSim network

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queueing simulation
• Transmodeler/MATSim iterations (on Olivier’s computer)
  ▶ assigning 50% of population (to account for network reduction)
  ▶ one iteration (only route choice) takes around 2 hours
  ▶ needs more than 16 GB of memory
  ▶ gridlocking affects resource consumption

• “pure” MATSim iterations (on Ida’s computer)
  ▶ assigning 5% of population and scaling network accordingly
  ▶ one iteration (route and time choice) takes around 2 minutes

• need a better MATSim→Transmodeler preprocessing strategy
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MATSim network

corversion

MATSim
simulation engine

routes/trips extraction

MATSim
queueing simulation

routes/trips preprocessing

events writing

Transmodeler network

Transmodeler

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Re-estimation during iterations

![Graphs showing departure times by car, at least one work trip through iterations.](image)

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Next steps

- set up some kind of “(IHOP) simulation server”
- “incremental assignment” in Transmodeler
- look into economic model consistency
- include public transport simulation (project SMART-PT)
  - every bus, subway, commuter train
  - schedule-fine simulation
  - congestion in vehicles and at stops
- eventually, calibration