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IHOP2

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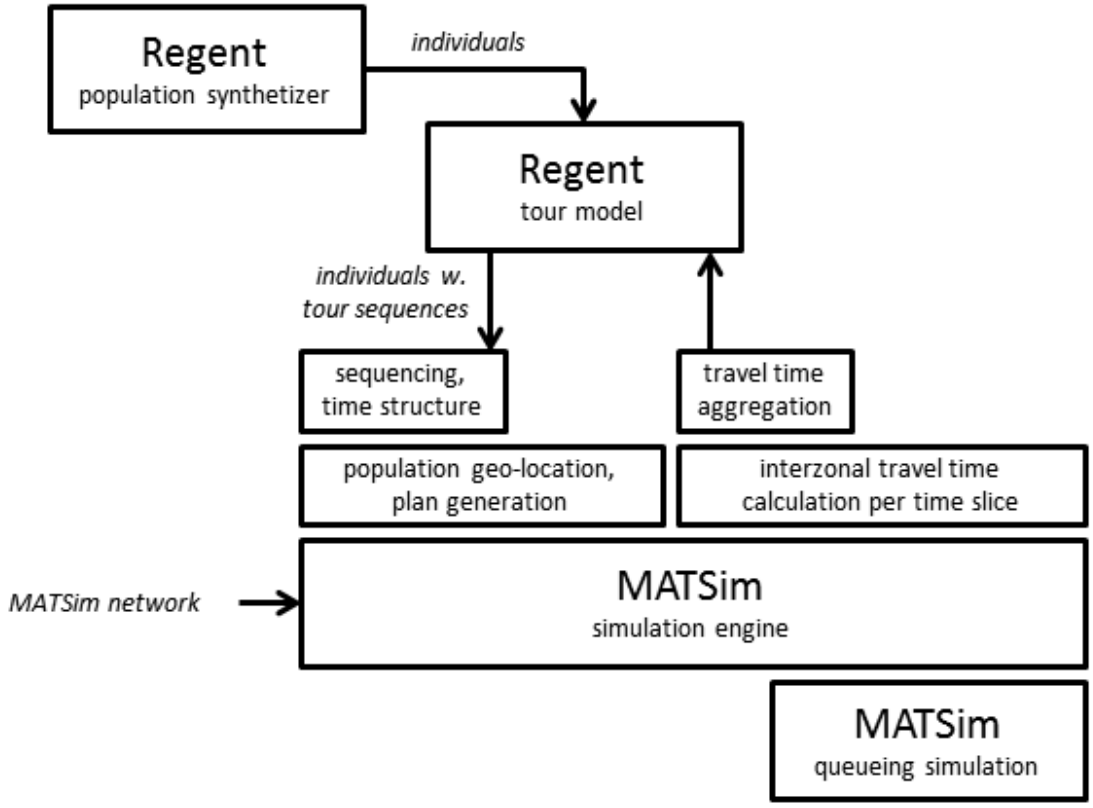
A simulated day in Stockholm

[movie]

Overview


Regent
population synthetizer
individuals
Regent
tour model
individuals w.
tour sequences
sequencing,
time structure
travel time
aggregation
population geo-location,
plan generation
interzonal travel time
calculation per time slice
MATSim network
MATSim
simulation engine
MATSim
queueing simulation

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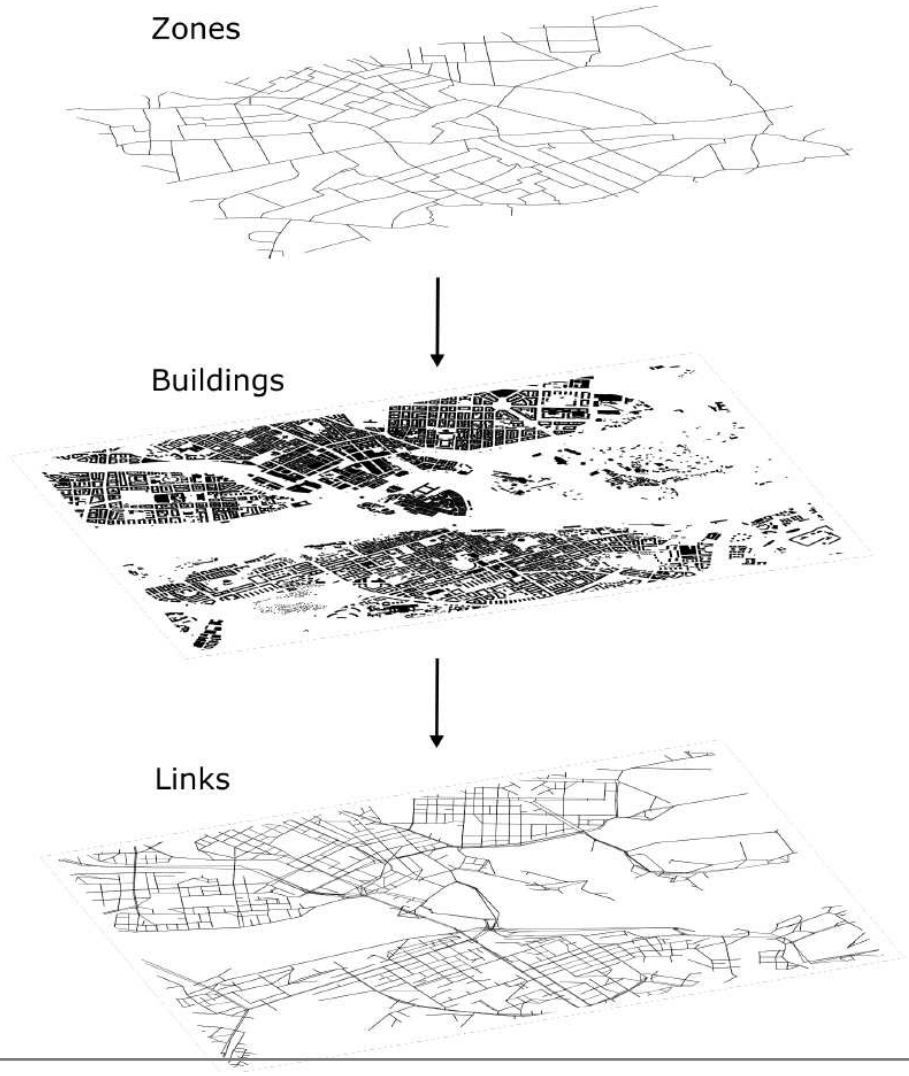
Adding spatial structure



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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

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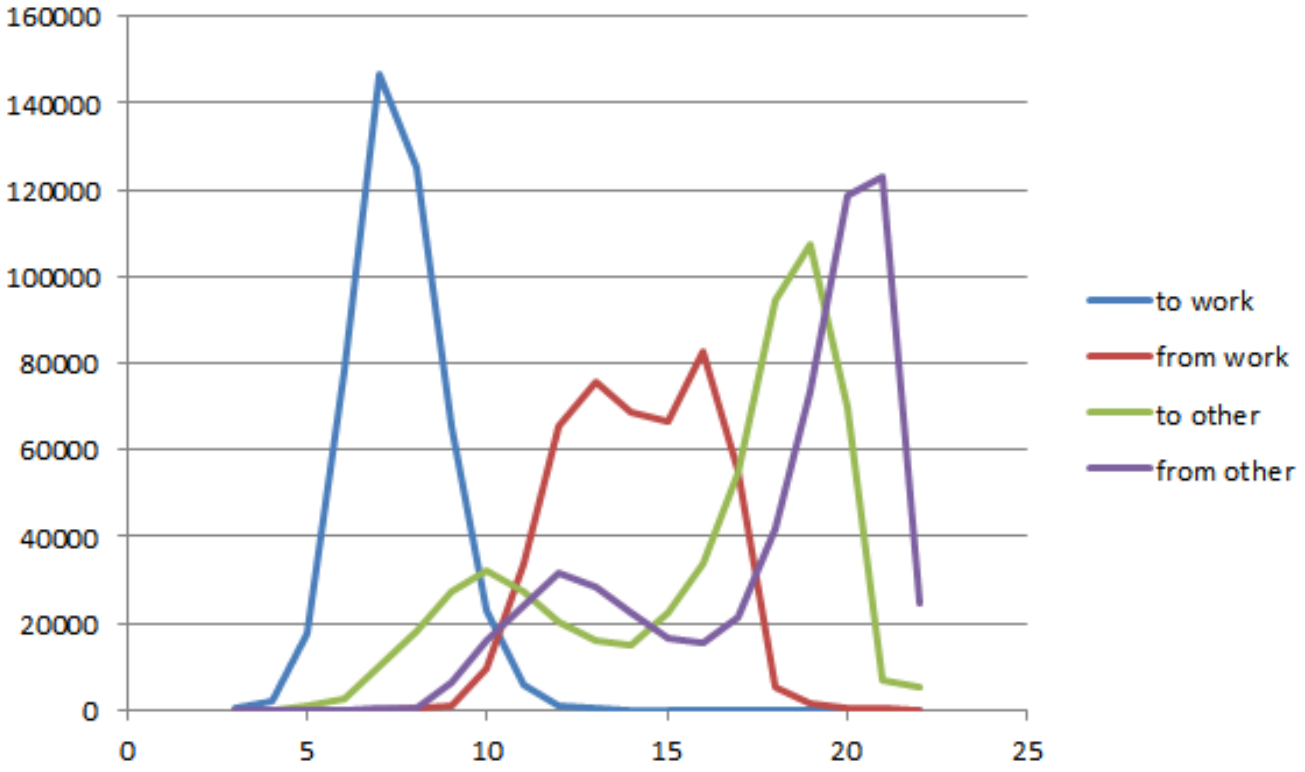
Simulated departure time distribution



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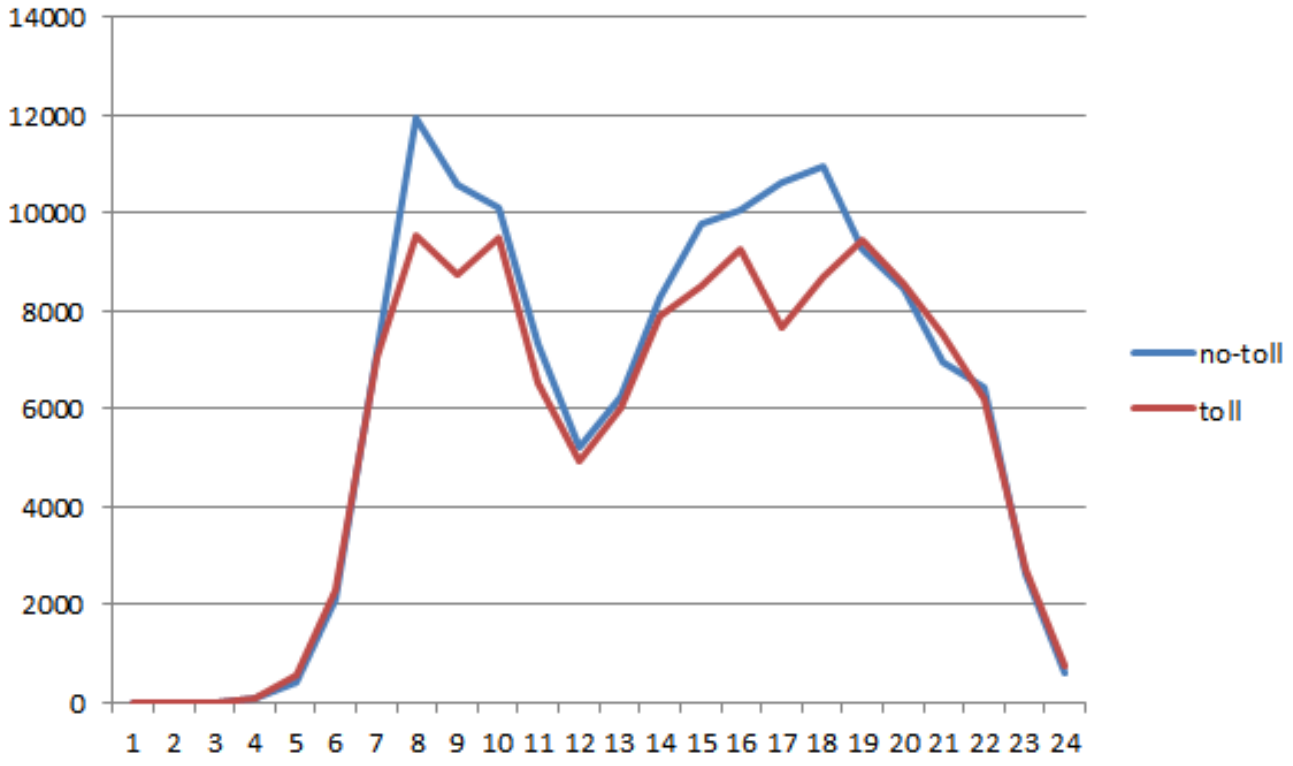
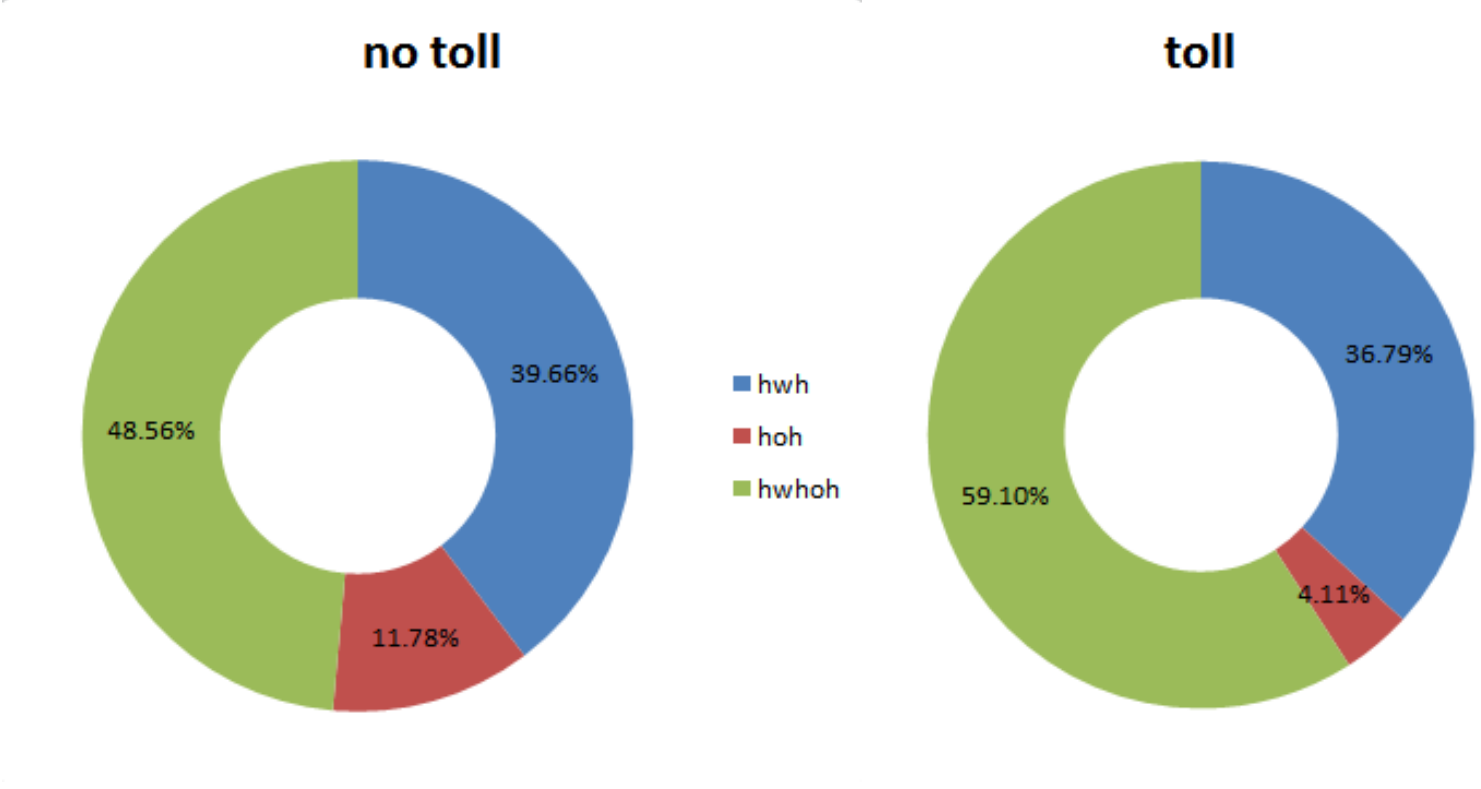
Toll: simulated cordon flows



Toll: simulated peak-hour travelers



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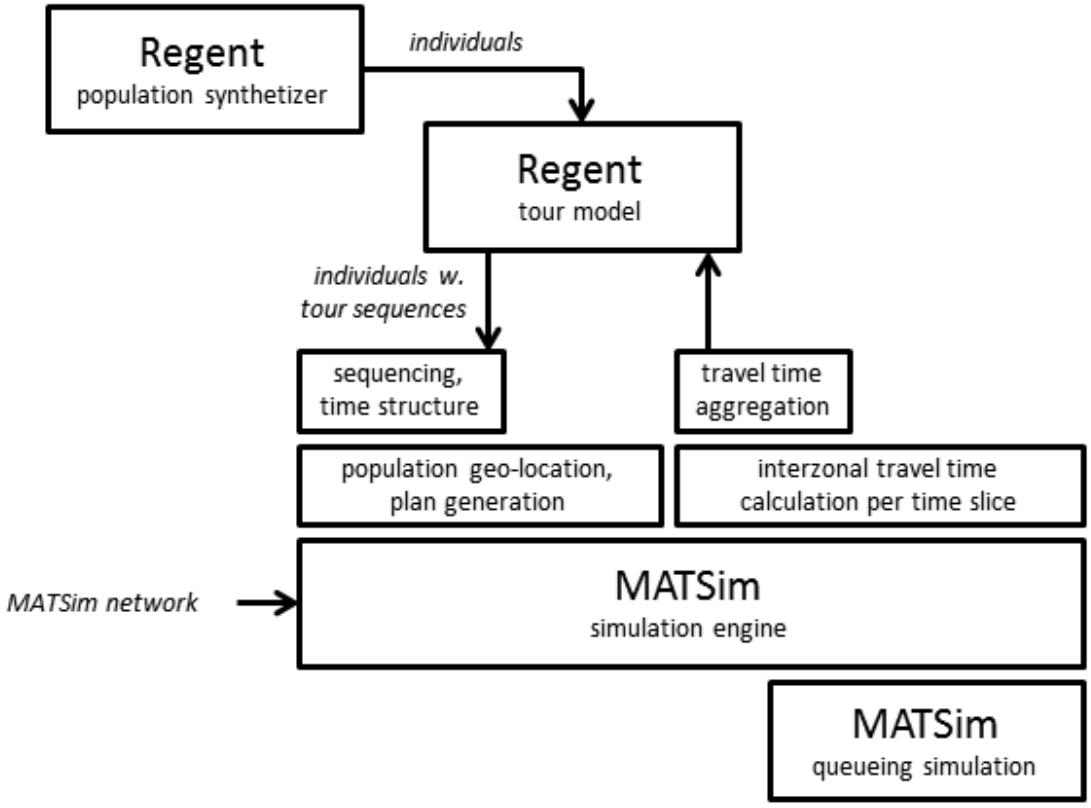

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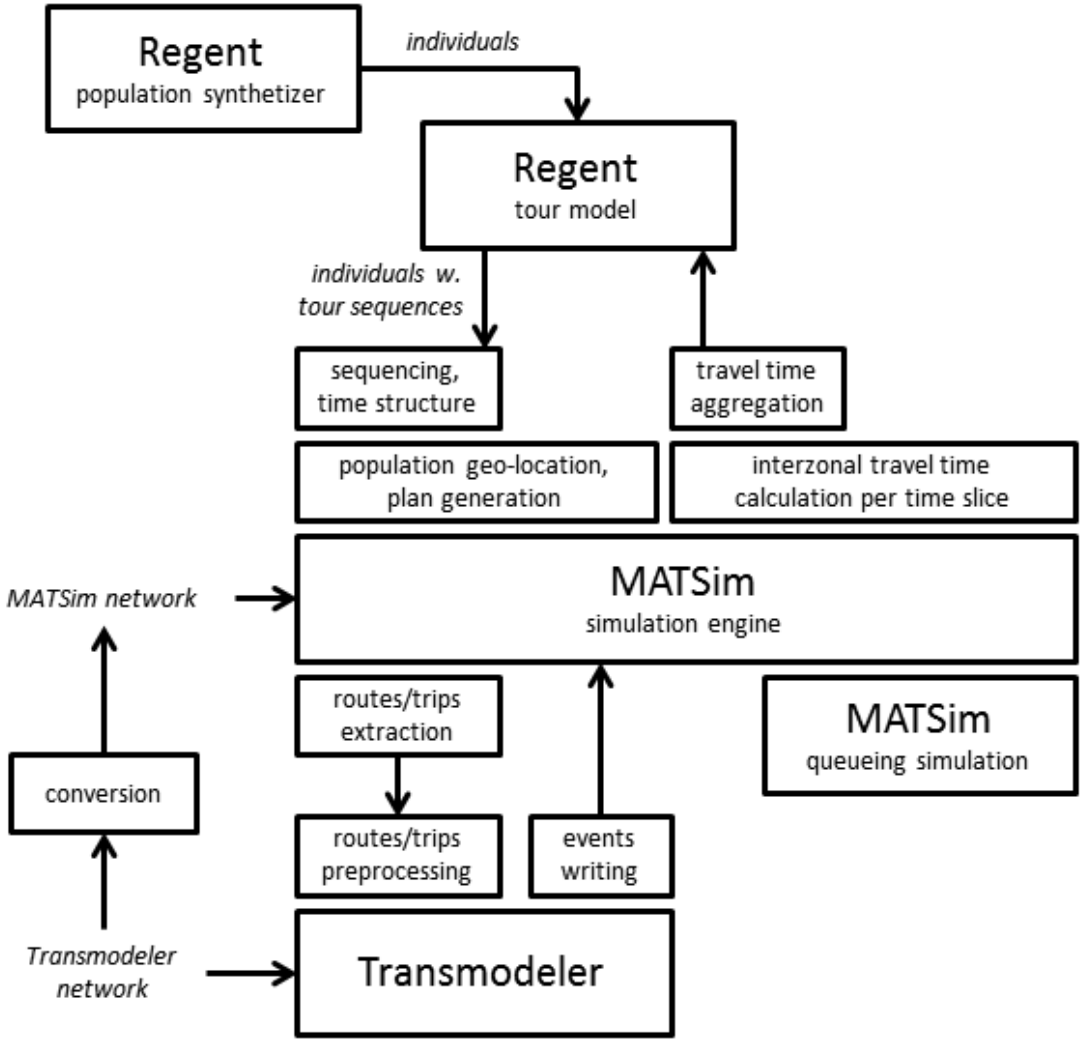
Overview



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Transmodeler

- 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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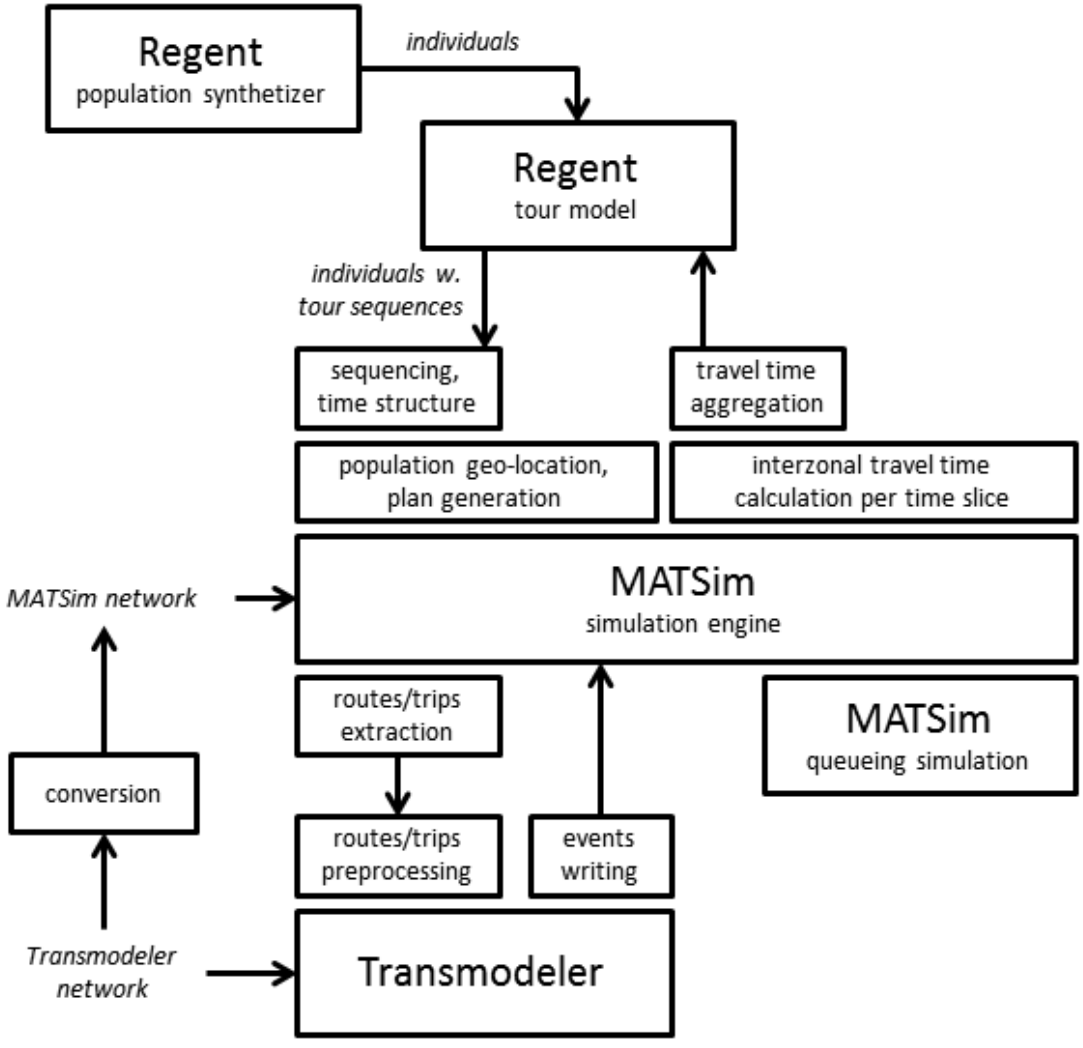

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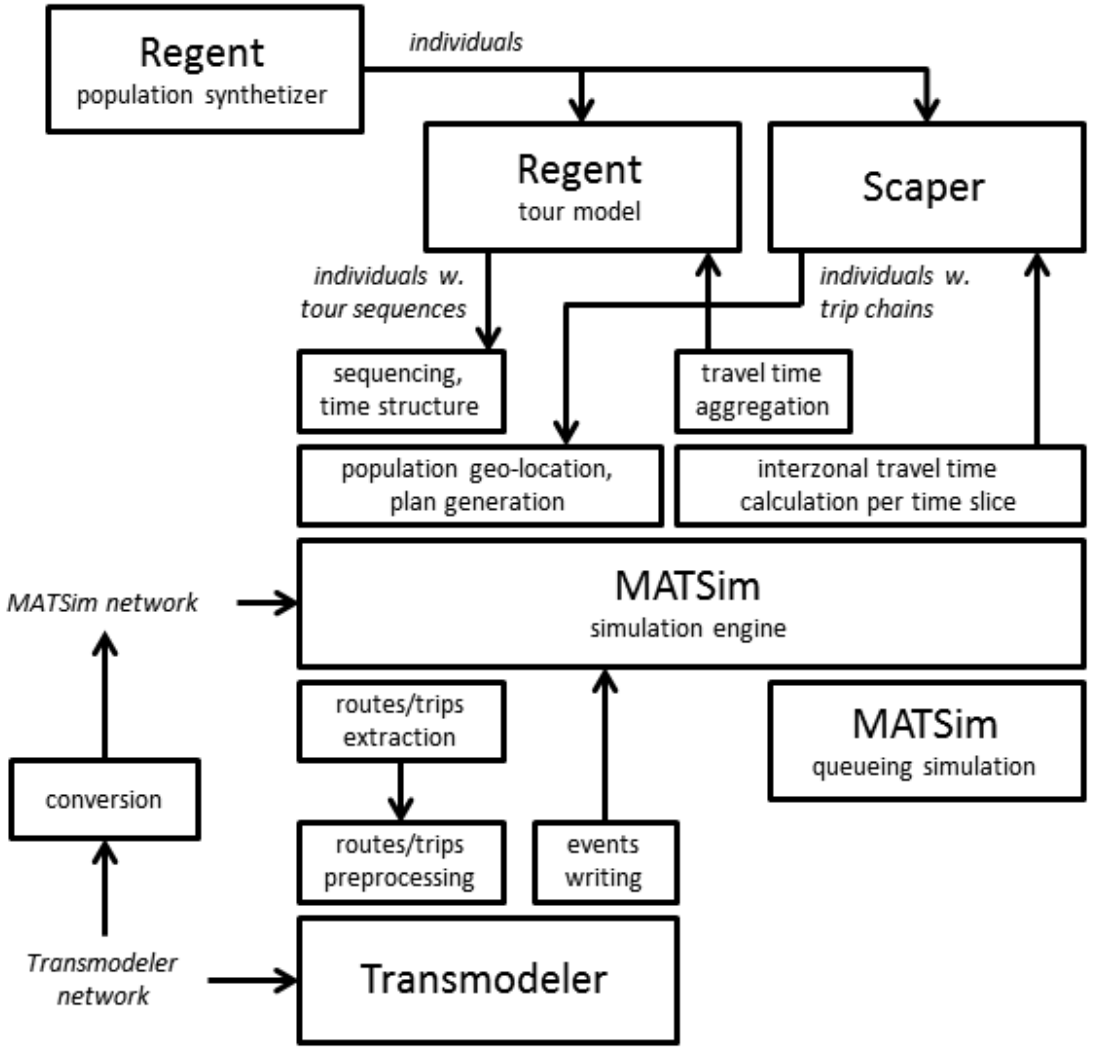

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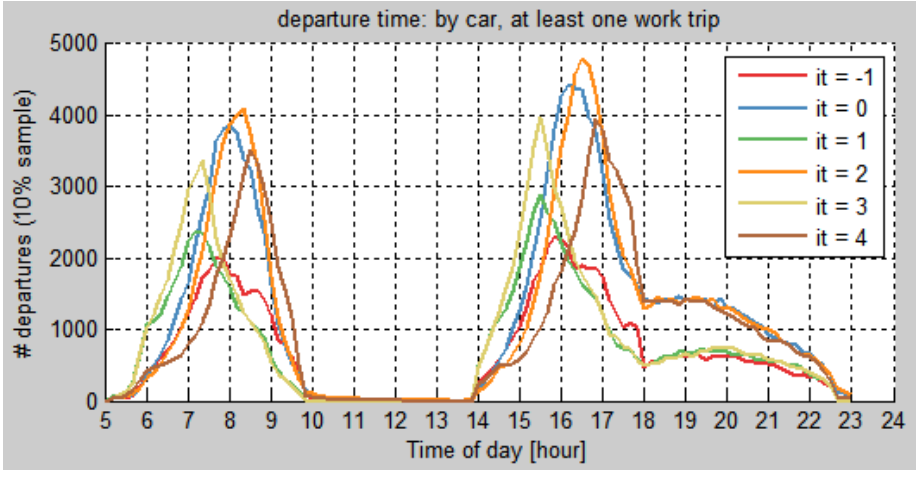
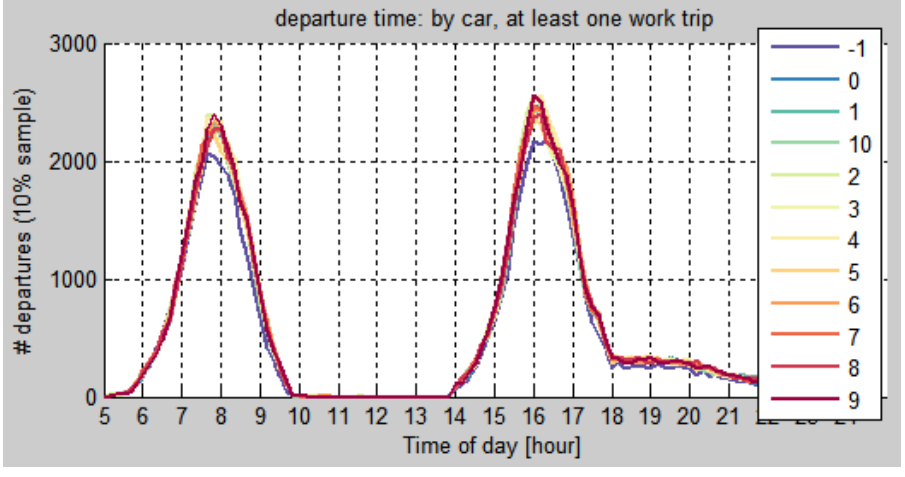
Re-estimation during iterations





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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