

Update on the application of Matsim in Lyon

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Three parallel tracks

- Short-term (day), activity-based, simulation w/ MATSIM
- Long-term (year), land-use integration, simulation w/ URBANSIM
- Calibration of time-dependent traffic simulations w/ METROPOLIS, MATSIM, ...

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 - GPS map-matching website online

Synthetic population

(Wisinee's presentation)

Properties

- Utility: Let $U_{ij} = -C_{ij} - r_i + w_j + \mu \varepsilon_{ij}$

- Assume job is fixed+logit: $P_{(i|j)}(\mathbf{r}) = \frac{e\left(\frac{-C_{ij}-r_i}{\mu}\right)}{\sum_{k=1..N} e\left(\frac{-C_{kj}-r_k}{\mu}\right)}$

- O-D matrix: $T_{ij}(\mathbf{r}) = J_j P_{(i|j)}(\mathbf{r})$

- Job and housing markets at equilibrium: $H_i = \sum_{j=1..N} P_{(i|j)} J_j$

- Let $x_i = e\left(\frac{-r_i}{\mu}\right)$, $c_{ij} = e\left(\frac{-C_{ij}}{\mu}\right)$.

- $$\begin{cases} H_i = x_i \sum_{j=1..N} \frac{J_j c_{ij}}{Z_j} \\ Z_j(\mathbf{x}) = \sum_{i=1..N} x_i c_{ij} \end{cases}$$
 N equ., fixed point problem.

Primary location choice

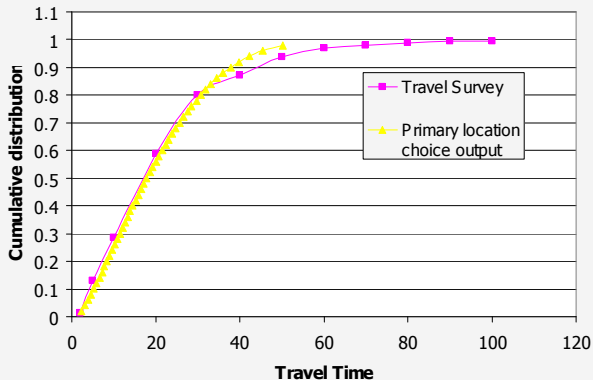
Properties

- Assigns primary locations w/ logit
- Controls capacities (i.e. #jobs)
- Requires aggregation layer (i.e. municipalities)
- Calibration: 1 logit scale parameter

Current status

- Used for plans in Lyon: work, education purpose
- Plausible results calibrated w/ survey
- ... not yet generalized

Primary location choice - calibration



Comparison travel time distribution between travel survey and the output from primary location choice

Calibration - time dependent simulations

(GPS map-matching website)

Concluding remarks

- documentation (??)
- performance (memory)
- parking modeling (primloc? double parking?)
- choice modeling (knowledge)
- experiment manager (?)