Daily urban mobility using agent-based modeling

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CSSS2013 Group Project

Context and problem

- General framework : problem of daily travels of individuals inside a city.
- Already a lot of literature (MIRO 2012, Mobisim 2013 , ...), complicated models in huge projects.
- Problematic : to obtain a simple model [F(S,S,C)] to express multimodal transport shares and local flows functions over a standard day.

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- Simple but rigourous model.
- Integration of real data (GIS work)
- Apply the model on a test case (e. g. optimal implantation of a new transportation infrastructure)

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Methodology

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1	Import Data	roads
		transports
		IRIS
2	Create agents	attributes : age, employment, incomes, nb of children
		timeschedules
3	Make agents evolve on the network	acording to their schedule
4	Add subway effect according to their timeschedule	existing lines
5	Applications of the model	Creation of a new subway line
		Change on the existing line
		Introduce new trafic constraints (one way, speed limit)

Figure: Model conception methodology

Theoretical issues

- Urban social systems are highly heterogeneous.
- Human decisions modeling.
- Scaling.

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- Group organisation: multi-disciplinary work
- Time
- Data collection and treatment

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- Reframed the problem.
- Collected the data.
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Perspectives

- Import data in NetLogo
- Create agents
- Make them interact between each other and with networks
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Questions

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