

M2 Erasmus Mundus Complex Systems

“Open problems” project description

*Investigating bottom-up solutions to optimization
of rental Bikes repartition*

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Presentation of the project

- City bikes rental systems more and more current
- Corresponding planning questions, but also exploitation issues

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Existing work on the subject

- Works on planning, evaluation of pro and contra
- Statistical prediction of bikes flows and repartitions

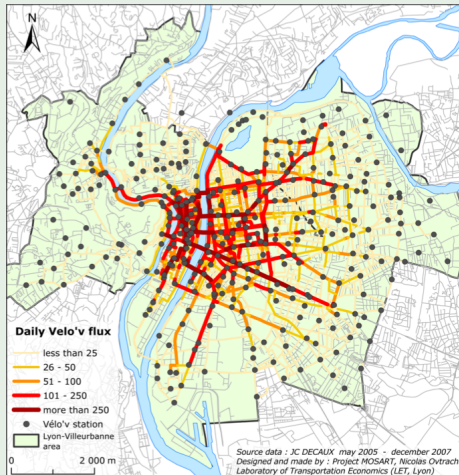
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Existing work: example

Pablo Jensen, Jean-Baptiste Rouquier, Nicolas Ovtracht, and Céline Robardet.

Characterizing the speed and paths of shared bicycle use in Lyon. Transportation research part D: transport and environment, 15(8):522–524, 2010.

Statistical analysis of bikes flows



- Investigation of bottom-up measures for bikes repartition optimization
- Construction of an agent-based model for the behavior of users
- Use of time-series data or statistical analysis of these data (in the frame of an other project) and GIS spatial data to have calibration on real data

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- Sensivity analysis, exploration of parameter space and calibration of the model on real data
- Investigation of some possible bottom-up measures
- Draw some conclusions on management of city rental bikes systems

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See written description of the project

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