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# Lyon North realistic trip data set during the morning peak

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This data set is generated based on raw data collected by LICIT laboratory (<https://licit-lyon.eu/>) in Lyon reported in the study of Krug J, Burianne A, and Leclercq L: Reconstituting demand patterns of the city of Lyon by using multiple GIS data sources, technical report, University of Lyon, ENTPE, LICIT. The demand profile is based on the results of EMD (Enquetes menage déplacements) to generate the OD matrix. The trip-based OD matrix is the transformation in individual trips of the zonal OD matrix.

## Description of the demand profile:

Lyon North network covers 25 km<sup>2</sup> and includes 1,883 nodes and 3,383 links. The map is shown in Figure 1(a). The original demand setting includes all trips during the morning peak hours from 6:30 AM to 10:40 AM, 62,450 trips. It has been calibrated to represent realistic traffic conditions. All trips have an origin and destination on the real network and a departure times. At the link level of the network (Figure 1(b)), the origins set contains 94 points and the destinations set includes 227 points. This data set represents two demand scenarios either with predefined departure time or predefined desired arrival time for the morning peak hours. Some trips have origins or destinations outside the covered area (51,215 trips). First scenario contains 11,235 trips are fully interior. The second scenario contains all trips. For both scenarios, the original departure time is disregarded and a desired arrival time is assigned. We divide them into seven classes with different desired arrival times. The desired arrival time of each user is deduced from the real arrival time of the user based on real data. The geographical coordinates system is RGF93 / Lambert-93. This dataset is used in [1].

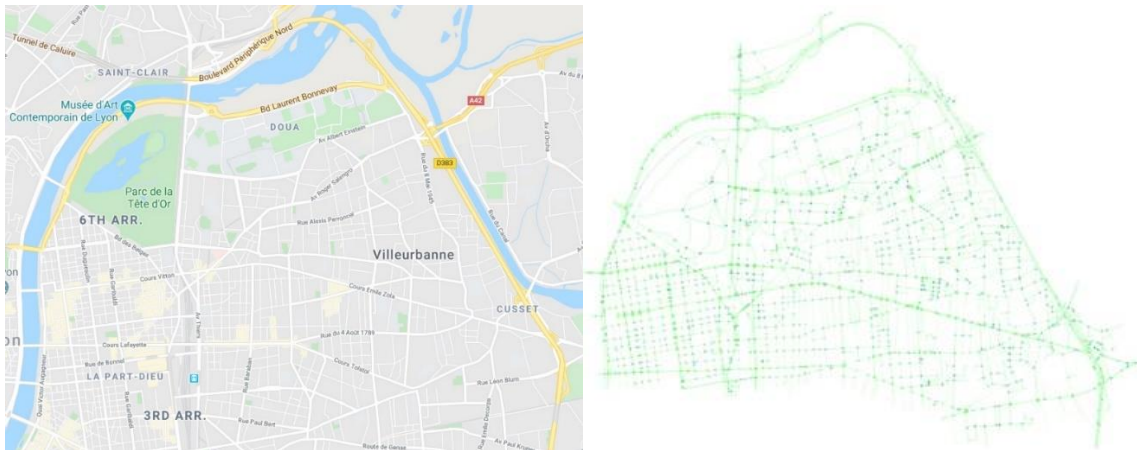


Figure 1: (a) Mapping data ©Google 2020; (b) The traffic network using in micro-simulation.

## Data set and references:

Referencing: You can find the data set, DOI and BibTex in the following link and please cite the following paper for the description:

Link to the data: <https://research-data.ifsttar.fr/dataset.xhtml?persistentId=doi:10.25578/HWN8KE>

- [1] Ameli, M., Faradonbeh, M.S.S., Lebacque, J.P., Abouee-Mehrzi, H. and Leclercq, L., 2022. Departure Time Choice Models in Urban Transportation Systems Based on Mean Field Games. *Transportation Science*, <https://doi.org/10.1287/trsc.2022.1147>.

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## Data files:

The index of trips are determined by the row number.

- Scenario 1: 11,235 interior trips
  - DepartureTime\_interior.csv [hh:mm:ss]
  - EstimatedDesiredArrivalTime\_interior.csv [hh:mm:ss]
  - TripLength\_interior.csv [meter]
  
- Scenario 2: 62,450 trips
  - DepartureTime.csv [hh:mm:ss]
  - EstimatedDesiredArrivalTime.csv [hh:mm:ss]
  - TripLength.csv [meter]

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