

# Guilhem Mariotte

**PhD, Civil engineer and modeling / simulation tool developer**



## skills

Modeling, numerical simulation, scientific computing, data analysis.

## work experience

2020–	<b>NEOVYA Mobility by Technology</b> <i>R&amp;D Engineer</i> Urban projects in traffic simulation Environmental assessment with traffic-related air quality and noise	Lyon, France
2018–2020	<b>Transport and Traffic Engineering Lab (LICIT), ENTPE, IFSTTAR</b> <i>Post-doc</i> Macroscopic traffic models, coupling with emission models Route choice models, choice survey and statistical analysis	Lyon, France
2015–2018	<b>Transport and Traffic Engineering Lab (LICIT), ENTPE, IFSTTAR</b> <i>PhD thesis</i> Dynamic Modeling of Large-Scale Urban Transportation Systems Development of a simulation platform in Matlab ERC European project, 6 scientific papers	Lyon, France
2014	<b>Itasca Consultant</b> <i>Design engineer (internship)</i> Effect of pore pressures on block stability in underground storage caverns. Collaboration with Geostock (Paris, France) Geotechnic simulation with distinct element modeling in UDEC	Lyon, France
2014	<b>Ineris</b> <i>Design engineer (internship)</i> Characterization of the acoustic emission produced by rock block fall Design of an experiment	Nancy, France
2012–2013	<b>China Railway Major Bridge Institute</b> <i>Design engineer (internship)</i> Foundation design based on Eurocode 7 and geostatistic analysis, application to an arch bridge on Dongting lake (Hunan, China) Full geotechnical study on deep foundation design Analysis of geological data by using the Kriging method	Wuhan, China

## background

2015–2018	<b>Ph.D</b> in Civil engineering Modeling and simulation of road traffic	University of Lyon, ENTPE, IFSTTAR, Lyon, France
2013–2014	<b>M.Sc.</b> in Civil engineering Geotechnics, Hydrology and Risk management	Université de Lorraine, École de Géologie, Nancy, France
2010–2014	<b>Civil engineer</b> Geo-engineering dpt: civil engineering, hydrology, computer science, statistics	École des Mines de Nancy, France

## interests

**professional:** traffic and transportation engineering, geotechnical engineering, risk management, statistic analysis, open source tool development, reproducible research.

**personal:** musical practice and composition, drawing, graphical design, Chinese calligraphy, philosophy of science, astronomy, running, hiking.

## contact

guilhem.mariotte  
@neovya.fr

guilhemmariotte.com/en

Lyon, France

## languages

French •••••  
English •••••  
Chinese ○••••  
German ○○•••  
Spanish ○○○••

## scientific computing

Matlab, Scilab  
Mathematica  
R, UDEC

## programming

Python, VB.NET, Java  
Javascript, HTML-CSS

## office

LaTeX, LibreOffice  
Gimp, Inkscape

## publications

- Mariotte, G.**, Leclercq, L., Gonzalez Ramirez, H., Krug, J. & Bécarie, C. (2021). Assessing traveler compliance with the social optimum: A stated preference study. *Travel Behaviour and Society*, 23:177–191, doi: 10.1016/j.tbs.2020.12.005
- Mariotte, G.**, Paipuri, M. & Leclercq, L. (2020). Dynamics of Flow Merging and Diverging in MFD-Based Systems: Validation vs. Microsimulation. *Frontiers in Future Transportation*, vol. 1, doi: 10.3389/ffutr.2020.604088
- Ingole, D., **Mariotte, G.** & Leclercq, L. (2020). Minimizing network-wide emissions by optimal routing through inner-city gating. *Transportation Research Part D: Transport and Environment*, 86:102411, doi: 10.1016/j.trd.2020.102411
- Mariotte, G.**, Leclercq, L., Batista, S. F. A., Krug, J. & Paipuri, M. (2020). Calibration and validation of multi-reservoir MFD models: A case study in Lyon. *Transportation Research Part B: Methodological*, 136:62–86, doi: 10.1016/j.trb.2020.03.006
- Ingole, D., **Mariotte, G.** & Leclercq, L. (2020). Perimeter gating control and citywide dynamic user equilibrium: A macroscopic modeling framework. *Transportation Research Part C: Emerging Technologies*, 111:22–49, doi: 10.1016/j.trc.2019.11.016
- Mariotte, G.** & Leclercq, L. (2019). Flow exchanges in multi-reservoir systems with spillbacks. *Transportation Research Part B: Methodological*, 122:327–349, doi: 10.1016/j.trb.2019.02.014
- Ingole, D., **Mariotte, G.** & Leclercq, L. (2019). Nonlinear Model Predictive Control to reduce network-wide traffic emission. *IFAC-PapersOnLine*, 52(6):19–24, doi: 10.1016/j.ifacol.2019.08.142
- Mariotte, G.** & Leclercq, L. (2019). Heterogeneous perimeter flow distributions and MFD-based traffic simulation. *Transportmetrica B: Transport Dynamics*, 7(1):1378–1401, doi: 10.1080/21680566.2019.1627954
- Mariotte, G.**, Leclercq, L. & Laval, J. A. (2017). Macroscopic urban models: Analytical and numerical investigations of existing models. *Transportation Research Part B: Methodological*, 101:245–267, doi: 10.1016/j.trb.2017.04.002
- Leclercq, L., Sénécat, A. & **Mariotte, G.** (2017). Dynamic macroscopic simulation of on-street parking search: a trip-based approach. *Transportation Research Part B: Methodological*, 101:268–282, doi: 10.1016/j.trb.2017.04.004