

TRAFFIC FLOW MODELS FOR CURRENT AND FUTURE MOBILITY CHALLENGES

Paola Goatin*

* Université Côte d'Azur, Inria, CNRS, LJAD
Sophia Antipolis, France

E-mail: paola.goatin@inria.fr, URL: <https://www-sop.inria.fr/members/Paola.Goatin/>

ABSTRACT

The mobility paradigms could undergo a significant transformation in the near future, as new technologies enable extended data collection and Vehicle-to-Vehicle (V2V) or Vehicle-to-Infrastructure (V2I) communication. This will offer novel means to control and optimize traffic flow. Within this context, mathematical models play an important role, allowing for the design and evaluation of new management approaches.

In this talk, I will present applications to road traffic regulation using Connected Automated Vehicles (CAVs) or dynamic routing. Our results are based on the development of specific macroscopic models accounting for the interacting dynamics of the different classes of users. Numerical experiments show that controlling a small fraction of users is, in general, sufficient to consistently improve the global system performance.