

Microscopic derivation of a traffic flow model with a bifurcation

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Abstract

In this joint work with Nicolas Forcadel (Rouen) we derive rigorously a macroscopic traffic flow model with a bifurcation or a local perturbation from a microscopic one. The microscopic model is a simple follow-the-leader with random parameters. The random parameters are used as a statistical description of the road taken by a vehicle and its law of motion. The limit model is a deterministic and scalar Hamilton-Jacobi on a network with a flux limiter, the flux-limiter describing how much the bifurcation or the local perturbation slows down the vehicles.