Traffic on networks: modeling and analysis

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Abstract

We are interested in the traffic of cars on a network, like for instance a city. We describe traffic using hamilton-Jacobi equations, and propose new general junction conditions that can be fully characterized. In the framework of viscosity solutions for discontinuous hamiltonians, we also prove a general comparison principle using a new vertex test function. With this powerful tool in hands, we show how to homogenize a general traffic on a whole network like a city.