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Non-local conservation laws arising in traffic modeling

Equations with non-local flux have been recently introduced in traffic flow modeling to account for the reaction of drivers or pedestrians to the surrounding density of other individuals. While pedestrians are likely to react to the presence of people all around them, drivers will mainly adapt their velocity to the downstream traffic, assigning a greater importance to closer vehicles. In particular, and in contrast to classical (without integral terms) macroscopic equations, these models are able to display finite acceleration of vehicles through Lipschitz bounds on the mean velocity and lane formation in crossing pedestrian flows. We will also present recent results on micro-macro limits of empirical measures converging to measure-valued solutions of the corresponding macroscopic evolution equation.