

Multiscale models for vehicular traffic and crowd dynamics.

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Abstract

We will start by revising some macroscopic model, based on systems of conservation (or balance) laws, for network flows, such as road networks, supply chains, gas pipelines etc., see [6, 5, 1]. Such models were successfully employed in traffic monitoring projects [9, 2].

Then we will pass to measure solutions to nonlinear transport equations, which naturally allow multi-scale approaches. In particular we can integrate micro and macro scales in a unique representation, see [3]. We show how the Wasserstein metric is the natural one in this context and how to generalize it to deal with source terms [7, 8]. Finally, we show some examples of simulations for crowd dynamics and vehicular traffic [4].

Acknowledgments The author acknowledges the partial support of the NSF Project "KI-Net" Grant DMS # 1107444.

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