

Multiphase traffic theories and traffic oscillations

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In this talk microscopic, kinetic and macroscopic traffic models are reviewed. Macroscopic traffic equations with multivalued fundamental diagrams are derived from microscopic and kinetic models. This includes simple 'switching curve' models, ATD-type and SA-type models of Kerner and kinetic derived multivalued fundamental diagrams. For these models the appearance of phase transitions is investigated depending on the local density and velocity of the flow. Self excited oscillations are discussed as well as oscillations near (on ramp) bottle-necks.