E-Pico Master's Thesis

Mixed traffic analysis with nonlinear tools

Nowadays, the increasingly computational power offered by microprocessors allows for the employment of complex control strategies for autonomous vehicles. The utilization of Adaptive Cruise Control for semi-autonomous and full autonomous driving purposes is expected to have a wide diffusion in the next years, and to improve traffic conditions. In this context, a transient phase in which both human-driven and autonomous vehicles travel on our roads is going to happen, denoted as Mixed-Traffic scenario. Goal of the thesis is to study the literature on this topic and to exploit nonlinear tools for the stability analysis of mixed platoons, that is platoons with both autonomous and non-autonomous vehicles.

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