

## **Communication Scheduling and Control of a Platoon of Vehicles in VANETs**

This paper is concerned with the problem of vehicular platoon control in vehicular ad hoc networks subject to capacity limitation and random packet dropouts. By introducing binary sequences as the basis of network access scheduling and modeling random packet dropouts as independent Bernoulli processes, we derive a closed-form methodology for vehicular platoon control. In particular, an interesting framework for network access scheduling and platoon control codesign is established based on a set of priority rules for network access control. The resulting platoon control and scheduling algorithm can resolve network access conflicts in vehicular ad hoc networks and guarantee string stability and zero steady-state spacing errors. The effectiveness of the method is demonstrated by numerical simulations and experiments with laboratory-scale Arduino cars.