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The use of Cooperative approach in Intelligent Speed Adaptation

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Abstract: Traffic networks such as motorways requires new approaches to make the traffic flows on them more efficient and safer. Special solutions from intelligent transport systems (ITS) based on the use of modern information-communication technologies and advanced algorithms enable real-time traffic control such as Variable Speed Limit Control (VSLC). VSLC by periodically adjusting speed limits can increase the safety and induce higher throughput of the motorway especially in the case of a higher traffic load. A particularly, important area are cooperative systems that provide data exchange between vehicles, infrastructure (roads and related equipment) and other users (pedestrians, VRU, etc.). Intelligent speed adaptation (ISA) is a form of the VSLC, which directly sends the speed limit to the vehicle computer unlike VSLC, which post speed limits on the Variable messaging signs (VMS). Such technology enables vehicles to react upon imposed smooth speed limit value in contrast to the classical VSL with discrete speed limits. The main characteristics of Cooperative Systems Architecture of ISA and some directions in its development are described in the paper.

Keywords: cooperative systems, intelligent speed adaptation, variable speed limit control, communication

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