WWTF Project MA07-012

COCOMINT: Cooperative Communications in Traffic Telematics

Abstract

Motivation. At current traffic levels, traffic telematics is an essential prerequisite for better traffic control and enhanced safety. Conventional cellular communication systems are not powerful enough for establishing real-time traffic information systems. New cooperative communication systems allow overcoming this bottleneck for traffic jams and high cruising speeds.

Research Goals. Relevant properties of vehicle-to-vehicle communication channels will be measured, analyzed, and modeled mathematically. Cooperative signaling schemes and respective receiver algorithms will be designed, implemented, and tested.

Socio-Economic Perspective. Traffic control systems based on cooperative communications have the potential to significantly improve traffic flow, and thus will minimize health hazards by reducing the number of accidents and harmful emissions.

Keywords:
wireless cooperative communications, analysis and optimizationof communication networks, traffic telematics, virtualMIMO systems, mobile sensor networks, distributed algebraicspace-time codes, random set theory, non-coherentcapacity

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Further links about the involved persons and regarding the project you can find at
https://archiv.wwtf.at/programmes/mathematics/MA07-012