MRC Performance Benefit in V2V Communication Systems in Urban Traffic Scenarios

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Abstract:

The reliability of future vehicular communication systems suffers considerably in Non-line of Sight (NLOS) situations due to poor Signal-to-Noise Ratio (SNR) conditions. One strategy to increase the effective SNR at the receiver is to employ receive diversity techniques. Field trials with real vehicles and different antenna configurations are cost-intensive and require a lot of effort. By means of a simulation-based approach, this paper analyzes the performance benefit of receive diversity for vehicular communications using Maximum Ratio Combining (MRC). The results can support developers and manufacturers during the design process of multiple-antenna solutions for vehicular communications.