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Title: Impact of a Truck as an Obstacle on Vehicle-to-Vehicle Communications in Rural and Highway Scenarios

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Abstract: Shadowing from other vehicles can degrade the performance of vehicle-to-vehicle communication systems significantly. It is thus important to characterize and model the influence of common shadowing objects like trucks in a proper way. However, the scenario of a truck as an obstacle in highly dynamic rural and highway environments is not yet well understood. In this paper we analyze the distance dependent path loss and the additional shadowing loss due to a truck through dynamic measurements. We further characterize the large scale fading and the delay and Doppler spreads as a measure of the channel dispersion in the time and frequency domains. It has been found that a truck as an obstacle reduces the received power by 12 and 13 dB on average, for roof antenna, in rural and highway scenarios, respectively. Also, the dispersion in time and frequency domains is highly increased when the line-of-sight is obstructed by the truck.

Bio: Dimitrios Vlastaras has since the early years of his life been interested in Technology, Electronics and Communications. His professional career in wireless communications began in 2008 when he worked as a System Tester for the verification department of Ericsson Mobile Platforms in Lund. Since 2013 he has been with the department of Electrical and Information Technology at Lund University where he currently he is working on his PhD degree in Electrical Engineering, more particular in wireless vehicular communication.