USC University of Southern California

USC Viterbi School of Engineering

Ming Hsieh Department of Electrical Engineering

Real-time MIMO Vehicle-to-Vehicle Channel Measurements

Rui Wang, Andreas F. Molisch Electrical Engineering / WiDeS

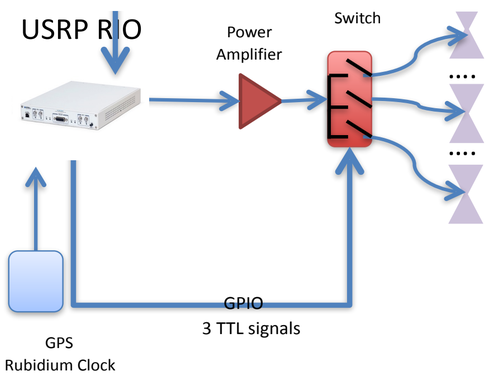
Motivation & Introduction

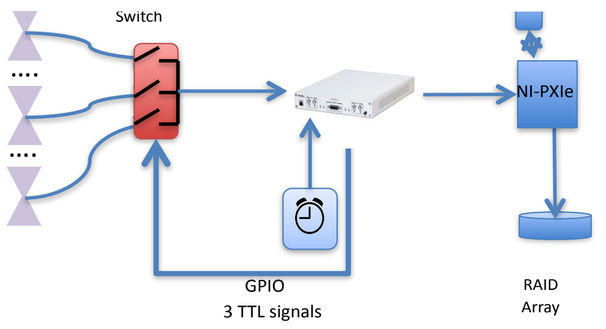
- Intelligent transportation systems
- Safety applications
- V2V channel model
- High resolution parameter estimation for MIMO measurements

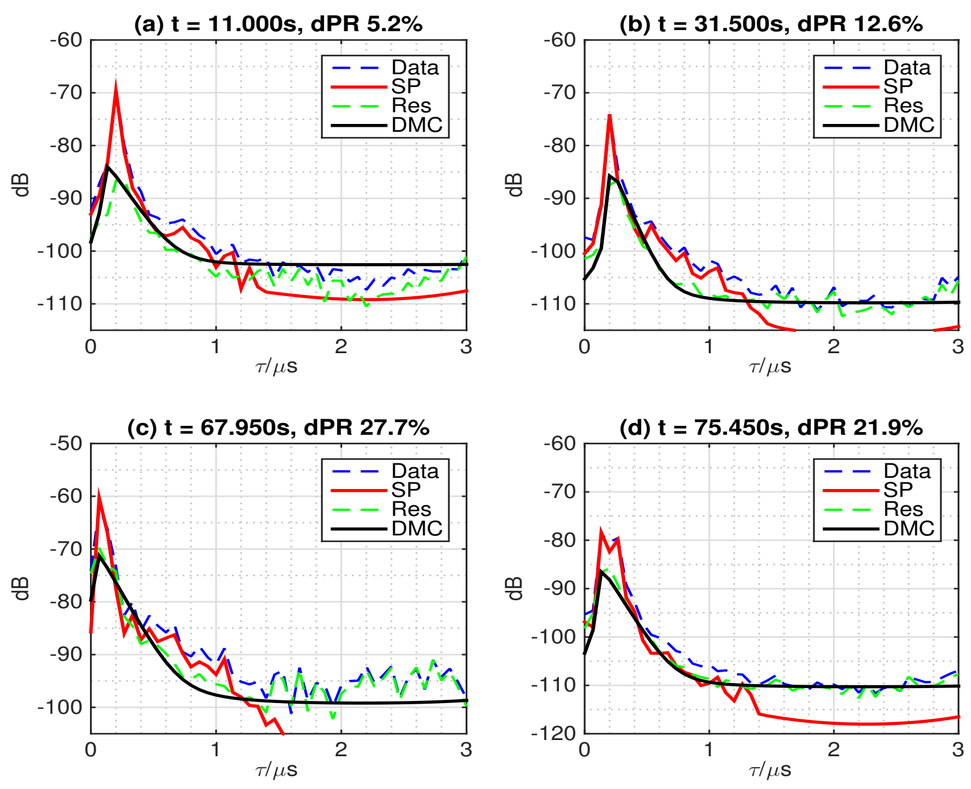
Experiments

- Car-to-car, truck-to-car, truck-to-truck
- Urban, suburban, highway, tunnel
- Convoy, opposite direction, passing lane
- 2 million MIMO snapshots for C2C, 5 million MIMO snapshots for T2C, T2T

Data







Discussion & Future Work

- Statistical time-variant channel models for V2V propagation channel
- Realistic system performance analysis of 802.11p in safety-related applications
- Vehicular network measurements and performance analysis

Rui Wang (Email: wang78@usc.edu, Cell: (213)-3007399.
The work is sponsored by NSF-MRI and METRANS grants

Ming Hsieh Institute
Ming Hsieh Department of Electrical Engineering