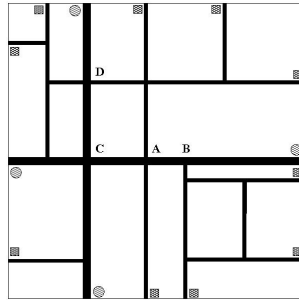


VanetMobiSim

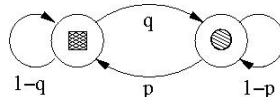
Validation: TSIS-CORSIM

- **VanetMobiSim** is a generator of realistic vehicular movement traces for network simulators
- Free, open source and fully documented, see <http://vanet.eurecom.fr>
- **VanetMobiSim** is validated by comparing its mobility patterns with **TSIS-CORSIM**
- The **Corridor Simulator (CORSIM)** is a realistic traffic simulation tool
- **CORSIM** has been validated using real urban traces
- **CORSIM** has been created for civil engineers
 - no straight interface for network simulators
 - long calibration time
- **CORSIM** is **not free** !

Validation: Topology definition



Validation: Activity Sequence



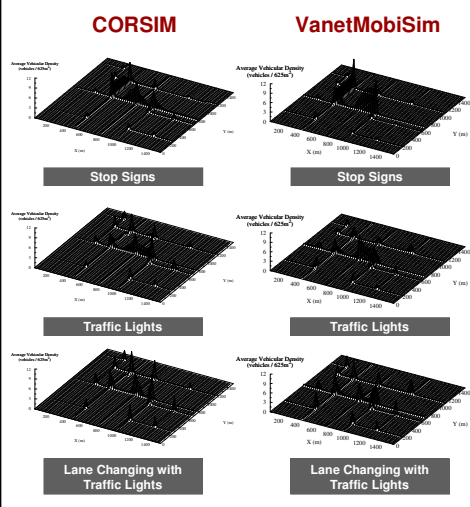
Acknowledgments

- **CORSIM** has been made available by the **Network Research Lab** at the **University of California** in Los Angeles (**UCLA**).

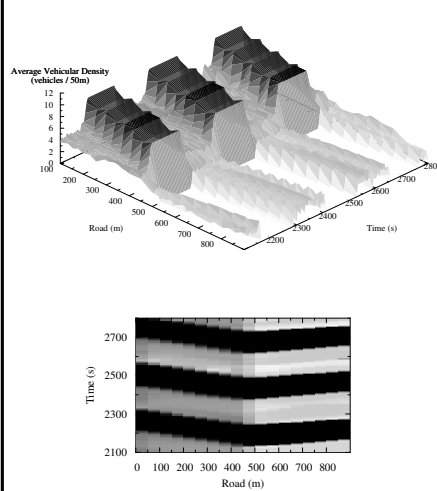
Validation: Scenarios

- Road-based **Speed limitations**:
 - Thin segments: **54km/h**
 - Thick segments: **72km/h**
- **Trip Generation**:
 - Activity sequence based trips
 - Speed-based shortest paths
- **Spatial distribution**
 - Stop signs intersections
 - Traffic lights intersections
 - Lane changing with traffic lights
- **Shockwave effect**
 - Periodic density perturbation
 - Periodic speed perturbation

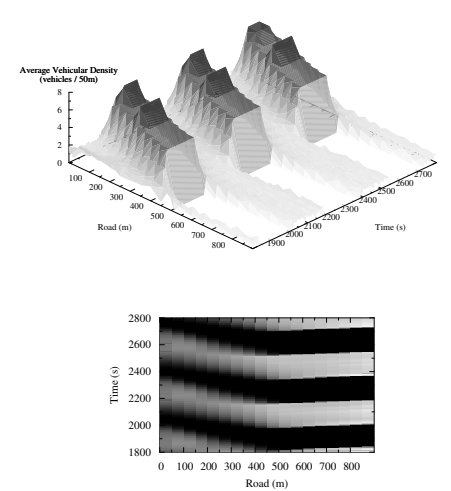
Validation: Spatial Distribution



Shockwave effect: CORSIM

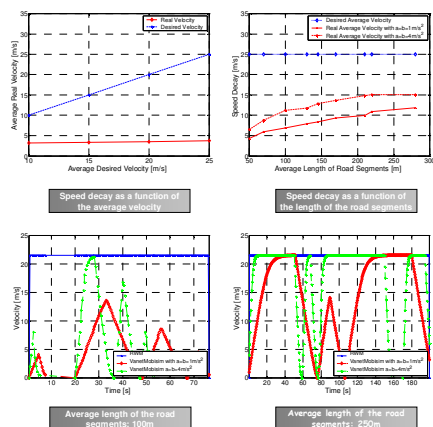


Shockwave effect: VanetMobiSim



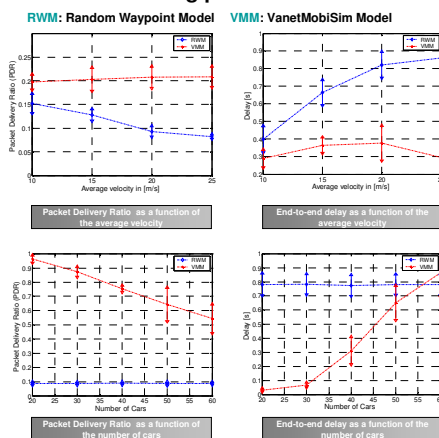
Effect on Mobility: Speed Decay

- Effect of realistic mobility patterns on the true velocity (speed decay)



Effect on Routing Protocols

- Effect of realistic mobility patterns on the AODV routing protocol



References

- Website: <http://vanet.eurecom.fr>
- J. Härrri, M. Fiore, F. Filali, C. Bonnet, "VanetMobiSim: Generating Realistic Mobility Patterns for VANETS", 4th ACM VANET'06
- M. Fiore, J. Härrri, F. Filali, C. Bonnet, "Vehicular Mobility Simulation for VANETS", 40th IEEE ANSS'07
- J. Härrri, F. Filali, C. Bonnet, "On Meaningful Parameters for Routing in VANET Urban Environments under Realistic Mobility Patterns", 1st IEEE AutoNet'06.

Contributors

- ✉ Jérôme Härrri: haerri@eurecom.fr
- ✉ Marco Fiore: fiore@tlc.polito.it
- ✉ Prof. F. Filali: filali@eurecom.fr
- ✉ Prof. C. Bonnet: bonnet@eurecom.fr