

## TRANSPORTATION SEMINAR

# Traffic and Vehicle Emissions: Empirical Evidence and Modeling Approaches

Friday, November 7, 2014  
3:00pm to 4:30pm

Please join us in College Avenue Commons room 425 📍



## Nagui Roupail

Professor of Civil Engineering, North Carolina State University

The Transportation sector in general and on-road vehicles in particular are major contributors to the National Emissions Inventory and responsible for about 27-30 % of all US Greenhouse gas emissions. For example, in the mid 2000's national on-road vehicles emitted 54,100 thousand short tons carbon monoxide (CO), 6,600 thousand short tons nitrogen oxides (NOx), and 3,850 thousand short tons volatile organic compounds (VOC). Highway vehicles contributed about 54% of CO, 36% of NOx and 22% of VOC emissions in the U.S. national emission inventory. Further, vehicles were the largest contributors for national CO and NOx emissions and the second largest for VOC emissions.

This presentation describes an ongoing research program at NC State University in the area of traffic activity and its impact on vehicle emissions and fuel use, which focuses on measuring and modeling vehicle emissions under real-world field settings using portable emission measurement systems (PEMS). Several applications are highlighted including the use of direct PEMS measurements for testing the effect of improved signalization, the development of modal emission models from empirical data including a simplified version of the MOVES EPA model, and the use of such data for improving the estimates derived from widely used micro and meso-simulation traffic models. The program is intended to provide a rigorous platform and methodology for assessing the environmental impact of Active Traffic Management strategies.



<http://goo.gl/A9e8aq>



Sponsored by GPSA.  
Event is open to the public.