Geophysical Research Abstracts
Vol. 14, EGU2012-11591, 2012
EGU General Assembly 2012

Fast and optimized methodology to generate road traffic emission inventories and their uncertainties

N. Blond (1,2), B. Q. Ho (3), A. Clappier (1,2)

(1) Laboratoire Image Ville Environnement, ERL7230, Centre National de Recherche Scientifique, Strasbourg, France (nadege.blond@live-cnrs.unistra.fr), (2) ERL7230, Université de Strasbourg, Strasbourg, France, (3) Institute of Environment and Resources, Vietnam National University of Ho Chi Minh City, 142 To Hien Thanh Street, ward 14, District 10, Ho Chi Minh City, Vietnam

Road traffic emissions are one of the main sources of air pollution in the cities. They are also the main sources of uncertainties in the air quality numerical models used to forecast and define abatement strategies. Until now, the available models for generating road traffic emission always required a big effort, money and time. This inhibits decisions to preserve air quality, especially in developing countries where road traffic emissions are changing very fast. In this research, we developed a new model designed to fast produce road traffic emission inventories. This model, called EMISENS, combines the well-known top-down and bottom-up approaches to force them to be coherent. A Monte Carlo methodology is included for computing emission uncertainties and the uncertainty rate due to each input parameters. This paper presents the EMISENS model and a demonstration of its capabilities through an application over Strasbourg region (Alsace), France. Same input data as collected for Circul'air model (using bottom-up approach) which has been applied for many years to forecast and study air pollution by the Alsatian air quality agency, ASPA, are used to evaluate the impact of several simplifications that a user could operate . These experiments give the possibility to review older methodologies and evaluate EMISENS results when few input data are available to produce emission inventories, as in developing countries and assumptions need to be done. We show that same average fraction of mileage driven with a cold engine can be used for all the cells of the study domain and one emission factor could replace both cold and hot emission factors.