

4.217 Towards a global vectorial vehicular emissions inventory.

Early Career Scientist

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Abstract:

Air pollution modelers usually do not take too much care about the emissions input data. The principal justification is that EDGAR/MACCITY/GAINS emissions are better than nothing. Despite that this approach is understandable because they prefer to go into the deeper knowledge of air pollution modeling process, this limits the capacity of explaining its own predictions. It is been shown that vehicular emissions is the main source of pollution in cities, and also that vehicular emissions shape the daily cycle of air pollutant concentrations. Therefore, improving the vehicular emissions in any part of the world will improve the air quality simulations and capacity of explaining the air quality predictions. In this abstract, I'm presenting the basis and initial results of a global vectorial vehicular emissions inventory. Vectorial means street by street. We will develop a model to predict the distribution of age of use of vehicle-based on regional GDP. Traffic data comes from regional statistics and emission factors used in own territory, for instance, in North America emission factors from MOVES, Europe from Copert, Brazil from local source and the rest of the world from Copert. Emissions will be calibrated with fuel consumption from the energy balances from International Energy Agency, to ensure that the fuel consumed in each region/ country is representative. We believe that this work will produce a significant improvement on air quality simulations globally. As the output will be street, this will allow producing air quality input for any regions in the world and for any model. The emissions will be estimated using the VEIN model, developed by the author.