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Emission scenarios for air quality management and applications at local and regional scales including the effects of the future European emission regulation (2015) for the upper Rhine valley

J.-L. Ponche[1] and J.-F. Vinuesa[1,*]
[1]Laboratoire de Physico-Chimie de l'Atmosphère, Centre de Géochimie de la Surface, 1 rue Blessig, 67084 Strasbourg Cedex, France
[*] now at: Saint Anthony Falls Laboratory, University of Minnesota, Minneapolis, USA

Abstract. Air quality modeling associated with emission scenarios has become an important tool for air quality management. The set-up of realistic emission scenarios requires accurate emission inventories including the whole methodology used to calculate the emissions. This means a good description of the source characteristics including a detailed composition of the emitted fluxes. Two main approaches are used. The so-called bottom-up approach that relies on the modification of the characteristics of the sources and the top-down approach whose goal is generally to reach standard pollutant concentration levels. This paper is aimed at providing a general methodology for the elaboration of such emission scenarios and giving examples of applications at local and regional scales for air quality management. The first example concerns the impact of the installation of the urban tramway in place of the road traffic in the old centre of Strasbourg. The second example deals with the use of oxygenated and reformulated car fuels on local (Strasbourg urban area) and regional (upper Rhine valley) scales. Finally, we analyze in detail the impacts of the incoming European emission regulation for 2015 on the air quality of the upper Rhine valley.

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