



Combined use of mobile based and satellite observations for the characterisation and quantification of Paris pollution during July 2009

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Megacities are localized, heterogeneous and variable sources of various air pollutants, having great impact on air quality and ultimately on climate. Within the European project MEGAPOLI we characterise and quantify the pollution levels and emissions for Paris during July 2009 using spectroscopic observations from satellite and ground based instruments mounted on a car.

The mobile observations are conducted on circles with different radii around Paris. From these observations together with meteorological information, the total emissions of trace gases like NO₂, HCHO or Glyoxal can be quantified. The car measurements are also used for validation of the satellite observations.

From the satellite observations the link from local to regional and global scales can be made. Especially the impact of important sources like megacities on the surrounding areas and also over longer distances can be studied. The combination with the mobile measurements adds information about heterogeneity within a satellite pixel and the diurnal cycle, which are not well captured from satellite observations.

Here we present first results from mobile-based Multi-Axis-DOAS (MAX-DOAS) observations of NO₂ and relate them to the results from satellite observations. For Paris, we analyzed temporal patterns, as well as spatial patterns. We provide an overview on our future activities within the MEGAPOLI project.