



## **A new Comparison of OMI satellite observations with mobile MAX-DOAS and Determination of NO<sub>x</sub> emissions from Paris using during two Megapoli campaigns**

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From MAX-DOAS observations the tropospheric columns of various trace gases can be determined. If car MAX-DOAS measurements are performed around emission sources, it is possible to calculate the respective emissions from the difference of the flux into and the flux out of the surrounded area by combining the trace gas observations with wind data. We apply this technique to car MAX-DOAS observations of NO<sub>2</sub> during two extensive measurement campaigns in the framework of the Megapoli project in Summer 2009 and Winter 2009/10. From measurements at large circles around the city we quantify the entire emissions of Paris.

To determine the NO<sub>x</sub> emissions from the measured NO<sub>2</sub> column densities two corrections have to be applied: First, the partitioning between NO and NO<sub>2</sub> has to be considered. Second, because of the rather short lifetime of tropospheric NO<sub>x</sub>, the effect of removal of NO<sub>x</sub> between emission and measurement has to be corrected.

We present the derived NO<sub>x</sub> emissions for Paris for both Megapoli campaigns and compare them with emission inventories and simulations of the Chimere model. We also use the car MAX-DOAS observations for validation of tropospheric NO<sub>2</sub> columns derived from the OMI satellite instrument.