



## **Research on modified the estimates of NO<sub>x</sub> emissions combined the OMI and ground-based DOAS technique**

Qiong Zhang (1,2), Ang Li\* (1), Pinhua Xie (1,3,4), Zhaokun Hu (1,2), Fengcheng Wu (1), and Jin Xu (1)

(1) Anhui Institute of Optics and Fine Mechanics, Key laboratory of Environmental Optics and Technology, Chinese Academy of Sciences, Hefei, 230031, China, (2) School of Graduate, University of Science and Technology of China, Hefei 230026, China, (3) CAS Center for Excellence in Regional Atmospheric Environment, Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, 361021, China, (4) School of Environmental Science and Optoelectronic Technology, University of Science and Technology of China, Hefei, 230026, China

A new method to calibrate nitrogen dioxide (NO<sub>2</sub>) lifetimes and emissions from point sources using satellite measurements base on the mobile passive differential optical absorption spectroscopy (DOAS) and multi axis differential optical absorption spectroscopy (MAX-DOAS) is described. It is based on using the Exponentially-Modified Gaussian (EMG) fitting method to correct the line densities along the wind direction by fitting the mobile passive DOAS NO<sub>2</sub> vertical column density (VCD). An effective lifetime and emission rate are then determined from the parameters of the fit. The obtained results were then compared with the results acquired by fitting OMI (Ozone Monitoring Instrument) NO<sub>2</sub> using the above fitting method, the NO<sub>x</sub> emission rate was about 195.8mol/s, 160.6mol/s, respectively. The reason why the latter less than the former may be because the low spatial resolution of the satellite.