



MAX-DOAS measurements in the dryland capital Ulaanbaatar

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The Multi-AXis Differential Optical Absorption Spectroscopy (MAX-DOAS) method observes scattered sun light under various, mostly slant viewing angles. From the measured spectra the atmospheric profiles of trace gases and aerosols can be simultaneously retrieved.

We performed such measurements in the city of Ulaanbaatar at three different locations, one in upwind direction, one in the city center and one in downwind direction (relative to the main wind direction). Measurements were conducted between May 2013 and February 2014. Ulaanbaatar is an emission hotspot within a pristine steppe and mountain environment. Therefore, these measurements can be used to estimate the emissions of the city and for validation of satellite data.

The main focus of the study is on the analysis of nitrogen dioxide (NO₂) and possibly formaldehyde (HCHO). Here we present first results of these measurements.