



Tropospheric NO₂ above Paris

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Using the SAOZ (Système d'Analyse par Observation Zenithale) instrument, tropospheric nitrogen dioxide (NO₂) in Paris has been investigated. The zenith sky spectrometer SAOZ measures in the UV-Visible (300-600 nm) with a resolution of 1 nm. It uses the DOAS (Differential Optical Absorption Spectroscopy) method to derive total column amounts of ozone and NO₂. NO₂ is an important chemical species in both the stratosphere and in the troposphere. In the troposphere, it is a significant indicator of poor air quality, as it pollutes the air mainly as a result of road traffic and energy production. To derive the tropospheric column amount from the SAOZ measurement, first the stratospheric column amount was calculated and then subtracted from the total column amount. The quality of the SAOZ tropospheric column amount was investigated by the evaluation of the SAOZ daily cycle and weekly cycle as well as by the comparison with in situ measurements of AirParif, the organization, that is responsible for monitoring air quality in the Paris region. As a next step we compared the SAOZ remote sensing data with satellite data derived from OMI (Ozone Monitoring Instrument) on NASA's Aura satellite, (launched on 15 July 2004). This comparison showed good correlation, especially in the summer.