



KNMI NO₂ sonde results from DISCOVER-AQ: An intercomparison of NO₂ profiles and columns

Deborah Claire Stein-Zweers (1), Ankie Piters (1), Mirjam den Hoed (1), Marc Allaart (1), Richard Clark (2), Folkert Boersma (1), and Andrew Weinheimer (3)

(1) KNMI-Royal Netherlands Meteorological Institute, De Bilt, The Netherlands (stein@knmi.nl), (2) Millersville University, Millersville, USA (Richard.Clark@millersville.edu), (3) NCAR-National Center for Atmospheric Research, Boulder, USA (wein@ncar.edu)

During the latest DISCOVER-AQ (Deriving Information on Surface Conditions from Column and Vertically Resolved Observations Relevant to Air Quality) measurement campaign taking place in Central California (Jan-Feb 2013), NO₂ sondes from KNMI were deployed on board a tethersonde balloon as well as aircraft to measure high vertical resolution profiles of NO₂. Data from the NO₂ sondes has been compared to several other measurements of NO₂ from ground, aircraft and satellite. The aim of this work is to carry out instrumental intercomparisons, compare how in-situ NO₂ profiles compare to satellite column measurements of NO₂ (particularly that of OMI), and to describe the impacts of urban sources of NO₂ (LA Basin, Fresno-Bakersfield corridor) on semi-rural measurement sites. The KNMI OMI DOMINO NO₂ product is analyzed for the duration of the field campaign including the a-priori profile shapes assumed for DOMINO. Results from the unique KNMI NO₂-sonde deployed on a tethersonde vertical profiling platform during this campaign are shown and compared to the DOMINO retrieval profile shapes and related TM4/5 profile shapes.