The Institute of Environmental Physics of the University of Bremen has been operating a DOAS instrument in Ny-Ålesund since 1995. After a successful trial of the multi-channel UV/VIS scanning geo-
metry in April 1998 the instrument was equipped with a multi-array sensor in spring 1999, which was able to auto-
matically scan two lines of sight. In 2002 a new telescope was installed. In the automated measure-
ment mode this new telescope is scanning five viewing directions. Comparing the slant columns of the o-Axis measurements with the slant column of the zenith it is possible to locate the absorber in the atmosphere and for clear sky conditions even determine the pro-
files of absorbers.

In this section a tropospheric profile of strong pollution, i.e., enhanced NO, caused by a cruise ship, will be retrieved. Also an example of a BrO-event will be shown.

Retrieval

- IUP Bremen DOAS algorithm to derive slant columns of trace gases
- Radiative transport model SCIATRAN for Air Mass Factor (AMF) calculations to convert slant columns (SC) to vertical columns (VC)
- OMI: combined differential integral approach involving the Picard iterative approximation
- Full spherical, horizontal and full multiple scattering correction
- Combining different viewing directions to obtain the correct profiles of absorbers

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Instrument

- 2 Czerny–Turner Spectrographs: UV (324-411 nm), total length 500 mm, focal length 500 mm
- CCD 2048 x 512 pixel resp. 1024 x 256 pixel
- Spectral resolution: ~0.5 nm resp. ~0.7 nm
- 1 telescope for both instruments with 5 lines of sight: 3°, 6°, 10° and 16° elevation angle and zenith
- Temporal resolution: 5 min for a complete cycle
- Daily calibration measurements

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