



## **Lessons from In-situ Measurements of Bromine Monoxide in the Lower Stratosphere**

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Studies based on recent satellite and balloon borne UV/VIS spectroscopic measurements of bromine monoxide, BrO, lead to rather different values for total stratospheric bromine and require an average tropospheric BrO mixing ratio of around 1pptv in order to be consistent (Salawitch et al. 2005, Sinnhuber et al. 2005). In order to provide an independent check on these data in-situ measurements of BrO performed in the last few years in different locations ranging from arctic polar to tropical regions have been quality checked and compared for their latitudinal variation in the lower stratosphere.

The measurements have been carried out by means of a balloon-borne and an airborne instrument employing the chemical-conversion resonance-fluorescence method (Brune et al. 1989). Results from laboratory calibrations and in-flight performance of the instruments have been used to quality-select data. The data sets obtained generally suggest lower BrO mixing ratios in the 18-20km altitude regime than derived from most of the UV/VIS measurements. Calibration procedures and data analysis will be discussed and derived data sets will be presented.

Brune, W.H. et al., 1989, In situ observations of BrO over antarctica: ER-2 aircraft results from 54°S to 72°S latitude, *J. Geophys. Res.*, 94, 16639-16647.

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Sinnhuber, B.-M. et al., 2005, Global observations of stratospheric bromine monoxide from SCIAMACHY, *Geophys. Res. Lett.*, 32, L20810, doi:10.1029/2005GL023839.