



DOAS observations of iodine oxide in coastal Antarctica during CHABLIS

Alfonso Saiz-Lopez (1), A. S. Mahajan (1), John M.C. Plane (1,2), R. A. Salmon (3), S. Bauguitte (3), and A. E. Jones (3)

(1) School of Chemistry, University of Leeds, United Kingdom, (2) School of Environmental Sciences, University of East Anglia, Norwich, United Kingdom, (3) British Antarctic Survey, Natural Environment Research Council, Cambridge, United Kingdom
(a.saiz-lopez@leeds.ac.uk / Fax: +44 113 3437934)

We report boundary layer differential optical absorption spectroscopy (DOAS) measurements of the iodine oxide (IO) radical at Halley Bay (75° S 25° W) in coastal Antarctica during the project CHABLIS (Chemistry of the Antarctic Boundary Layer and Interface with Snow). The year-round measurements were made using a long-path DOAS instrument, operating with an effective optical pathlength of 8 km and 4-5 m over the ice surface. The Halley Bay Station is located on the shelf ice in coastal Antarctica, at an approximate distance of 12 km from the ocean. The mixing ratio of IO is found to have a marked diurnal and seasonal variation. A one-dimensional model of the Antarctic boundary layer is employed to interpret the results and assess the impact of iodine chemistry upon boundary layer O_3 and HO_x (OH and HO_2) chemistry.