Geophysical Research Abstracts, Vol. 7, 08899, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08899

Night-time chlorine monoxide observations by the Odin satellite and implications for the Cl_2O_2/ClO equilibrium

G. Berthet (1,2), F. Lefèvre (2), P. Ricaud (3), and the ODIN satellite team

(1) DAMTP, University of Cambridge, UK, (2) Service d'Aéronomie, Institut Pierre-Simon Laplace, Paris, France, (3) Laboratoire d'Aérologie, Toulouse, France (gberthet@aero.jussieu.fr)

We use measurements of chlorine monoxide ClO (a "key" species directly implied in the ozone-destroying cycles) by the SMR instrument onboard the Odin satellite for the 2002-2003 winter in the Northern Hemisphere to study the night-time thermal equilibrium between ClO and its dimer Cl_2O_2. SMR measurements obtained for a wide range of stratospheric temperatures are compared with chemical-transport model outputs calculated at the same time and geographical positions using various values of the equilibrium constant found in the literature. As in previous works our study suggests that the current Cl_2O_2/ClO equilibrium constant has to be revised downwards.