

PRESSURE AND TEMPERATURE DEPENDENCE OF THE NEAR UV ABSORPTION CROSS SECTION OF HNO₃

J. A. PHILLIPS, *UCAR / NOAA Postdoctoral Research Fellow in Climate and Global Change, Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO 80309*; V. VAIDA, *Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO 80309*.

In the atmosphere, HNO₃ is an important reservoir species for the odd nitrogen (NO_x) and odd hydrogen (HO_x) families, both of which contribute to the destruction of stratospheric ozone. In the sunlit atmosphere, NO₂ and OH are liberated by photolysis of HNO₃. Therefore, in order to model the distribution of these species, accurate values for the photodissociation cross section of HNO₃ are necessary, particularly for wavelengths beyond 290 nm, which dominate the available light in the lower stratosphere. Previous investigations^a show significant discrepancies at wavelengths greater than 310 nm, and have also noted a marked temperature dependence in this region. In an effort to resolve these discrepancies, and determine if clusters of HNO₃ are affecting the previous measurements, we have reexamined the near UV absorbance cross section from 240 to 350 nm at a wide range of pressures and temperatures. Implications of these results for the observed diurnal variation of [OH] in the lower stratosphere will be discussed.

^aJ. B. Burkholder, R. K. Talukdar, A. R. Ravishankara, and S. Solomon, *J. Geophys. Res.* 98, 22937, (1993); O. Rattigan, E. R. Lutman, R. L. Jones, and R. A. Cox, *Ber. Bunsenges. Phys. Chem.* 96, 399, (1992); and references therein.