Supplement of Atmos. Chem. Phys., 16, 15397–15412, 2016
http://www.atmos-chem-phys.net/16/15397/2016/
doi:10.5194/acp-16-15397-2016-supplement

Atmospheric Chemistry and Physics Open Access EGU

Supplement of

Heterogeneous reaction of $ClONO_2$ with TiO_2 and SiO_2 aerosol particles: implications for stratospheric particle injection for climate engineering

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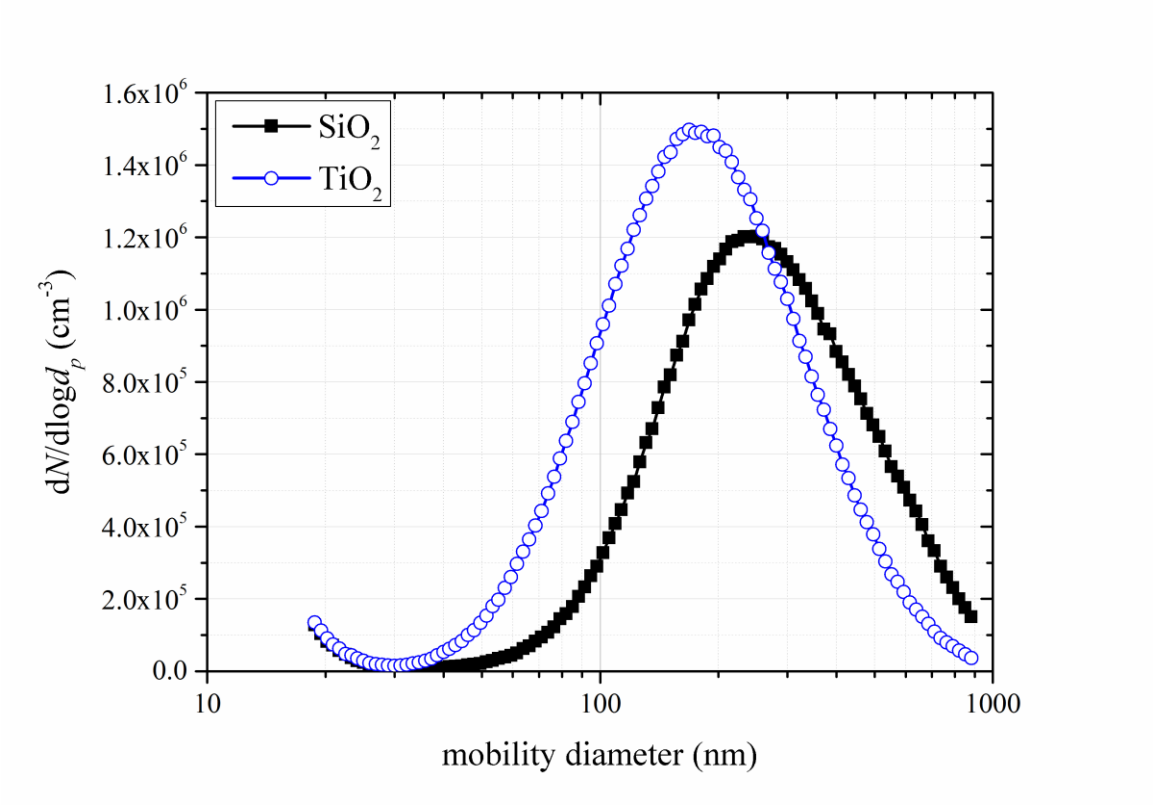

Figure S1. Typical number size distributions of SiO_2 and TiO_2 aerosol particles used in in this study.

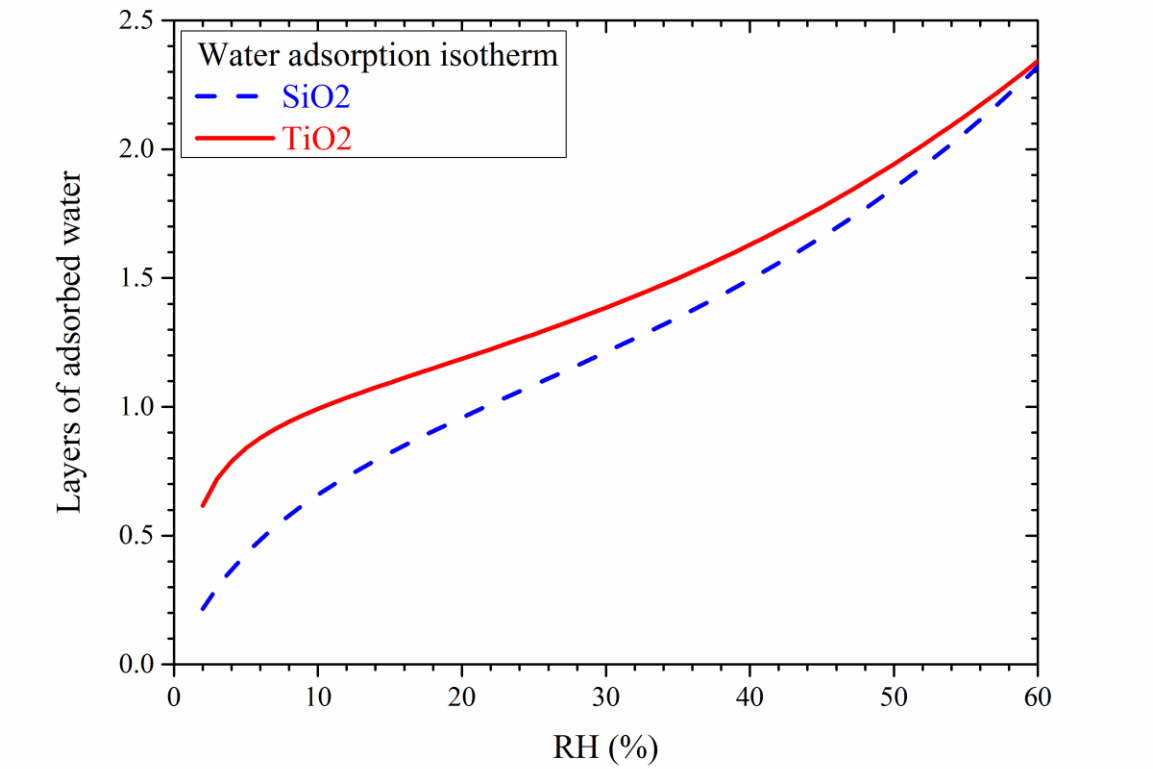

Figure S2. Water adsorption on SiO_2 and TiO_2 particles at different RH, reported by Goodman et al. (2001).

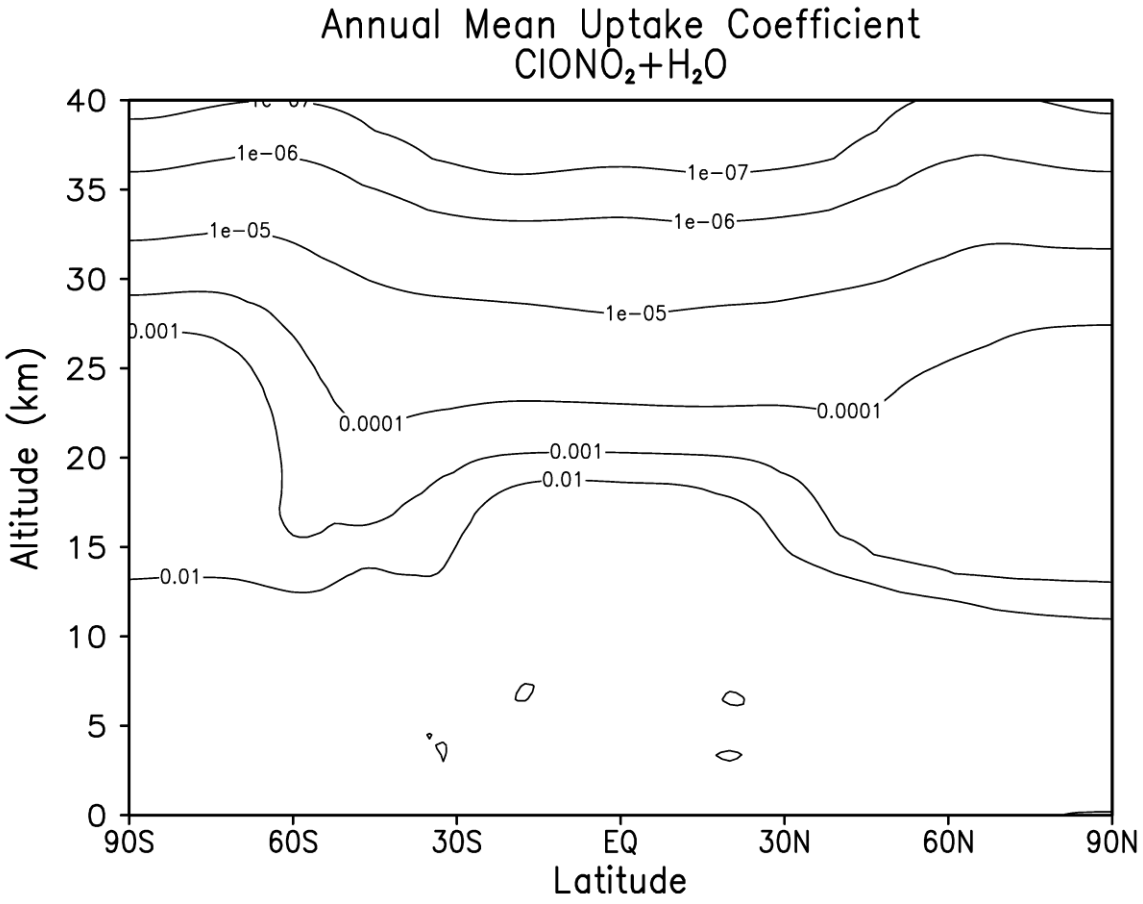

Figure S3. Uptake coefficients of $ClONO_2$ on sulfuric acid particles in the stratosphere for the reaction $ClONO_2 + H_2O + surface \rightarrow HNO_3 + HOCl$.

Reference:

Goodman, A. L., Bernard, E. T., and Grassian, V. H.: Spectroscopic study of nitric acid and water adsorption on oxide particles: Enhanced nitric acid uptake kinetics in the presence of adsorbed water, J. Phys. Chem. A, 105, 6443-6457, 2001.