

## Corrigendum to "Heterogeneous reaction of N<sub>2</sub>O<sub>5</sub> with airborne TiO<sub>2</sub> particles and its implication for stratospheric particle injection" published in Atmos. Chem. Phys., 14, 6035–6048, 2014

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## Corrigendum to

# “Heterogeneous reaction of $\text{N}_2\text{O}_5$ with airborne $\text{TiO}_2$ particles and its implication for stratospheric particle injection” published in Atmos. Chem. Phys., 14, 6035–6048, 2014

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In the original paper “Heterogeneous reaction of  $\text{N}_2\text{O}_5$  with airborne  $\text{TiO}_2$  particles and its implication for stratospheric particle injection” (published in Atmos. Chem. Phys., 14, 6035–6048, 2014), an error was made in calculating the heterogeneous loss rates of  $\text{N}_2\text{O}_5$  on  $\text{TiO}_2$  aerosol particles and therefore the uptake coefficients of  $\text{N}_2\text{O}_5$  onto  $\text{TiO}_2$  particles. This error was due to a mistake when we calculated the reaction times in the flow tube. The correct reaction times are all a factor of 1.5 smaller than those used in the original paper, and thus the correct heterogeneous loss rates and uptake coefficients of  $\text{N}_2\text{O}_5$  are a factor of 1.5 larger than those reported in the original paper.

The fourth sentence in the abstract should be changed to “The uptake coefficient of  $\text{N}_2\text{O}_5$  onto  $\text{TiO}_2$ ,  $\gamma(\text{N}_2\text{O}_5)$ , was determined to be  $\sim 1.5 \times 10^{-3}$  at low RH, increasing to  $\sim 4.5 \times 10^{-3}$  at 60 % RH.” The updated Table 1 with corrected values is provided in this corrigendum.

This error does not influence the main discussion and conclusions in the original paper, especially also not the modelling part of the paper where we consider two scenarios with two different  $\gamma(\text{N}_2\text{O}_5)$  (i.e.,  $1.0 \times 10^{-3}$  and  $5.0 \times 10^{-3}$ ), which cover all values reported in Table 1.

**Table 1.** Loss rate of  $\text{N}_2\text{O}_5$  on  $\text{TiO}_2$  ( $k_a$ ), total surface area of  $\text{TiO}_2$  particles in the flow tube ( $S_a$ ) and uptake coefficients of  $\text{N}_2\text{O}_5$  onto  $\text{TiO}_2$  aerosols,  $\gamma(\text{N}_2\text{O}_5)$  at different relative humidities. All the errors shown here are  $1\sigma$  statistically.

RH (%)	$k_a$ ( $\times 10^{-2} \text{ s}^{-1}$ )	$S_a$ ( $\times 10^{-3} \text{ cm}^2 \text{ cm}^{-3}$ )	$\gamma(\text{N}_2\text{O}_5)$ ( $\times 10^{-3}$ )	Average $\gamma(\text{N}_2\text{O}_5)$ ( $\times 10^{-3}$ )
$5 \pm 1$	$4.53 \pm 2.43$	$4.39 \pm 0.26$	$1.73 \pm 0.93$	$1.83 \pm 0.32$
	$3.96 \pm 0.87$	$3.79 \pm 0.06$	$1.74 \pm 0.39$	
	$3.66 \pm 1.67$	$3.02 \pm 0.10$	$2.03 \pm 0.92$	
$12 \pm 2$	$3.59 \pm 0.60$	$2.75 \pm 0.16$	$2.18 \pm 0.36$	$2.01 \pm 0.27$
	$4.29 \pm 0.54$	$3.80 \pm 0.52$	$1.89 \pm 0.24$	
	$3.98 \pm 0.33$	$2.89 \pm 0.33$	$2.30 \pm 0.20$	
	$2.76 \pm 0.36$	$2.70 \pm 0.14$	$1.71 \pm 0.23$	
$23 \pm 2$	$9.39 \pm 0.30$	$1.75 \pm 0.17$	$0.90 \pm 0.29$	$1.02 \pm 0.20$
	$3.41 \pm 0.42$	$4.89 \pm 0.21$	$1.16 \pm 0.02$	
$33 \pm 2$	$1.50 \pm 0.56$	$2.27 \pm 0.16$	$1.10 \pm 0.41$	$1.29 \pm 0.26$
	$1.91 \pm 0.45$	$2.01 \pm 0.12$	$1.59 \pm 0.38$	
	$1.61 \pm 0.39$	$2.23 \pm 0.09$	$1.20 \pm 0.30$	
$45 \pm 3$	$1.94 \pm 0.39$	$1.59 \pm 0.33$	$2.04 \pm 0.41$	$2.28 \pm 0.51$
	$3.80 \pm 0.90$	$3.00 \pm 0.05$	$2.12 \pm 0.47$	
	$4.37 \pm 0.84$	$2.86 \pm 0.05$	$2.55 \pm 0.50$	
	$3.99 \pm 0.87$	$2.75 \pm 0.02$	$2.43 \pm 0.53$	
$60 \pm 3$	$7.83 \pm 2.10$	$2.86 \pm 0.06$	$4.62 \pm 1.23$	$4.47 \pm 2.04$
	$5.76 \pm 1.56$	$2.24 \pm 0.09$	$4.34 \pm 1.17$	