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Erratum: Otho-Para H₂ Conversion by Proton Exchange at Low Temperature: An Accurate Quantum Mechanical Study [Phys. Rev. Lett. 107, 023201 (2011)]

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In the Letter [1], the rate coefficients in Fig. 2 were miscalculated. The corrected result is shown in the bottom figure. Actually, we used the cross sections shown in Fig. 1 [1] but we considered them in Å^2 and not in a_0^2 . This caused an artificial increase of rate coefficients. In the correct calculations of rate coefficients, we used the cross sections in a_0^2 . In connection with this revision, in the abstract the value of $4.15 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1}$ must be replaced by the value of $1.16 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1}$. At the 7th line from the top in the right column on page 3, the sentence is revised as “It slightly depends on temperature and keeps an almost constant value around $1.5 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$, which is about 1/17 of the (temperature independent) Langevin rate value ($2.5 \times 10^{-9} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$).” At the 5th line from the top in the left column on the last page, the sentence is revised as “For example, at 10 K, the TIQM rate coefficient is $1.16 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$ while the SM value is $2.97 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$, yielding a decrease of 60%. Similarly, at 100 K, we have respectively $1.55 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$ and $2.10 \times 10^{-10} \text{ cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$. The new rate is thus 1.35 times smaller at that temperature.”

The main conclusions of the Letter [1] are unchanged. The corrected rate coefficients are still very different from the previous published rate coefficients.

We wish to thank Ronald McCarroll for having spotted the error.

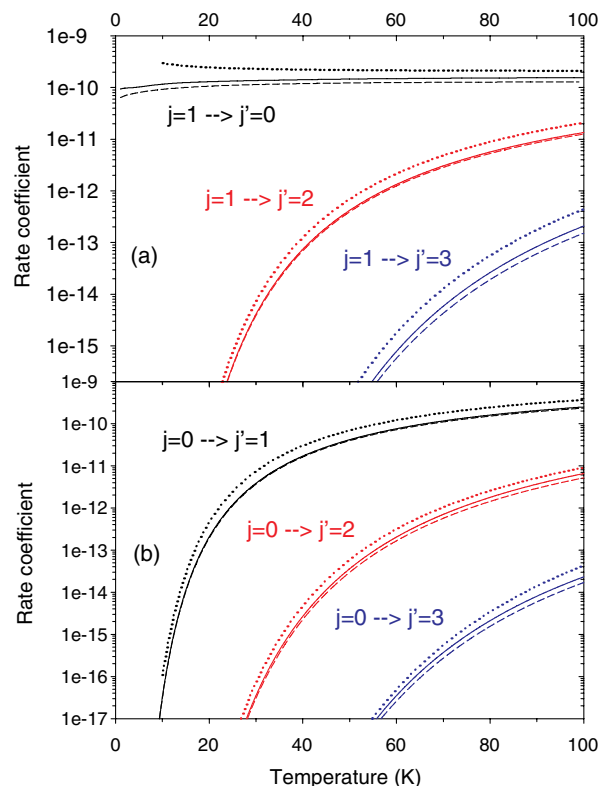


FIG. 2 (color online). TIQM (solid line), SQM (dashed line), and SM (dotted line) rate coefficients (in $\text{cm}^3 \cdot \text{molecule}^{-1} \cdot \text{s}^{-1}$) as a function of the temperature for $\text{H}^+ + \text{H}_2(v=0, j=1) \rightarrow \text{H}^+ + \text{H}_2(v=0, j')$ (a) and $\text{H}^+ + \text{H}_2(v=0, j=0) \rightarrow \text{H}^+ + \text{H}_2(v=0, j')$ (b).

[1] P. Honvault, M. Jorfi, T. Gonzalez-Lezana, A. Faure, L. Pagani, *Phys. Rev. Lett.* **107**, 023201 (2011).