Erratum: A comparison of the rough sphere rotational diffusion model with experimental results for liquid methyl iodide

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Four corrigenda are noted:

In the abstract $0.98$ should be $0.99$.

In Eq. (8), $F(y) - \Psi_*$ should be $\Psi_* - F(y)$.

In Eq. (20), $\left[ \frac{y''''}{1 + (x')^2} \right]^{1/2}$ should be $\left[ \frac{y'''}{1 + (x')^2} \right]^{1/2}$.

On p. 5074, line 3, $10^{-6}$ m should be $10^{-5}$ m.


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The theoretical values of $\tau_1$ and $\tau_2$ for $\tau_w < 1.5 \times 10^{-13}$ s shown in Fig. 1 are in error. The corrected figure is given below. For $\tau_w \approx 4 \times 10^{-14}$ s, the theoretical $\tau_1$ and $\tau_2$ values are in agreement with the experimental infrared and Raman relaxation times. This $\tau_w$ is an order of magnitude closer to the experimental angular momentum relaxation time but is still a factor of three too small. This $\tau_w$ value also yields more physically reasonable values for the packing fraction and roughness. For a perfectly rough sphere of diameter 5.05 Å, the corresponding packing fraction is 0.68. The paper should conclude that Chandler's rough sphere rotational diffusion model gives a reasonable explanation of the motion of liquid methyl iodide.

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