Reply to Comment on "Tunneling Abstraction Reactions of Tritium Atoms with HD and with Mixtures of H_2 and D_2 in Superfluid and Normal-Fluid ^{3}He−^{4}He Media at 1.3 K"[1]

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Due to an unfortunate mistake in calculating the partition functions in our computational code, the calculated thermal rate constants were found to be incorrect. The correct values are presented here in Table 3. Also, Figure 5 should be replaced accordingly.

The statement that the adiabatic barrier height for the THD transition state is larger than that for TDH is found to be wrong. The latter is slightly larger than the former.

Nevertheless, we would like to emphasize that the conclusions of the paper are unchanged. We would like to thank Dr. Srinivasan and Prof. Truhlar for pointing out the quantitative disagreement in the calculated rate constants between our results and earlier computational results. We regret that we did not cite the paper by Truhlar and co-workers.[2]

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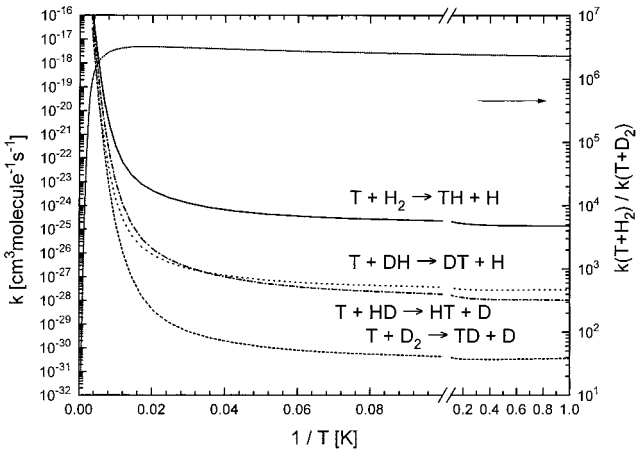

Figure 5. Arrhenius plot of thermal rate constants for T + H_2, D_2, and HD in the temperature range 10−300 K.

TABLE 3: Thermal Rate Constants *k*(*T*) Calculated with the Reduced Dimensionality Theory (in Units of cm^3 molecule^{-1} s^{-1})

T/K	T + H_2	T + D_2	T + DH	T + HD
300	2.8(−16)	2.9(−17)	2.6(−17)	9.6(−17)
200	1.8(−18)	6.4(−20)	8.3(−20)	4.1(−19)
100	3.2(−22)	1.9(−25)	2.0(−24)	1.1(−23)
50	4.4(−24)	4.3(−29)	8.8(−27)	1.5(−26)
10	2.3(−25)	4.4(−31)	3.8(−28)	2.9(−28)
5	1.7(−25)	3.3(−31)	3.0(−28)	1.3(−28)
1.3	1.4(−25)	3.5(−31)	2.8(−28)	1.1(−28)

(1) *J. Phys. Chem. A.* **1998**, *102*, 1501.
(2) *J. Phys. Chem.* **1983**, *87*, 3415.

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