Errata

Erratum: Semiclassical theory of rotationally induced nonadiabatic transitions [Phys. Rev. A **24**, 2963 (1981)]

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The phase τ^B in Eq. (36) defined by Eq. (38g) should be deleted.¹ Since τ^B happens to be small in the examples studied in this paper, this correction does not affect any conclusion of the paper. $e^{-2\delta}$ in Eq. (24) should read $e^{2\delta}$.

¹H. Nakamura, Phys. Rev. A **28**, 486 (1983) (following erratum).

Erratum: Dynamical-state representation and nonadiabatic electronic transitions in atomic collisions [Phys. Rev. A **26**, 3125 (1982)]

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The following corrections should be made:

- (1) Equations (2.4) and (2.19): delete minus sign.
- (2) Equation (2.17): multiply $-\hbar^2/2\mu R^2$ to the right-hand side.
- (3) Equations (3.2): replace the exponent by

$$i \int_A^\infty [k_n^K(R) - k_n^K(\infty)] dR - ik_n^K(\infty)A + i\frac{K}{2}\pi.$$

- (4) Equations (3.3) and (3.21): delete τ , τ_A , and τ_B , and add $i(\pi/2)$ to each exponent.
- (5) Equations (3.4), (3.22), and (3.23): replace $\phi_0(\phi_0^{A,B})$ by $-\phi_s(-\phi_s^{A,B})$.
- (6) Equations (3.14): change σ to σ_0 , and replace the exponent of the factored-out exponential by

$$2i \left[\int_{T_1}^\infty [k_1^K(R) - k_1^K(\infty)] dR - k_1^K(\infty)T_1 + (K + \frac{1}{2})\frac{\pi}{2} \right].$$

- (7) Equation (3.17): as in (6), replace the exponent by

$$2i \left[\int_{T_2}^\infty [k_2^K(R) - k_2^K(\infty)] dR - k_2^K(\infty)T_2 + (K + \frac{1}{2})\frac{\pi}{2} \right].$$

Corrections (4) and (5) (deletion of τ and replacement of ϕ_0 by $-\phi_s$) are made because the diagonal S -matrix elements (3.14) and (3.17), with other corrections, do not lead to the correct expressions of the S -matrix elements for elastic scattering in the adiabatic ($\delta \rightarrow \infty$) and the diabatic ($\delta \rightarrow 0$) limit, although these corrections do not seem to be mathematically obvious (see also Ref. 13). Actually, if we use the so-called comparison equation method, the formulas given in the paper seem to be all right except for the other corrections. In the comparison equation method the four-transition-point problem is split into two two-transition-point problems, each of which is reduced to the Weber equation. The phase ϕ_0 originates from the Stokes phenomenon of the Weber function. The phase τ , on the other hand, originates from a connection between the solutions in each two-transition-point problem. The phase ϕ_s is equal to $\tau - \phi_0$.