

**Erratum: “Exact dynamic properties of molecular motors” [J. Chem. Phys.137, 084102 (2012)]**

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## Erratum: “Exact dynamic properties of molecular motors” [J. Chem. Phys. 137, 084102 (2012)]

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The term  $\sum_i \sum_{j=0}^{i-1} u_{ji} P_j$  in Eq. (A3) of Ref. 1 should read  $\sum_i \sum_{j=0}^{i-1} u_{ij} P_j$ . (We inadvertently switched the indices  $i$  and  $j$ .) This error affects the following equations in the main text which should read:

$$v = d \sum_i \sum_{j=0}^{i-1} (u_{ij} P_i - w_{ji} P_j), \quad (14)$$

$$D = \frac{d^2}{2} \sum_i \sum_{j=0}^{i-1} (u_{ij} P_i + w_{ji} P_j) + \frac{d^2}{Q_0} \sum_i \sum_{j=0}^{i-1} \sum_{k \neq 0} G_k [w_{ji} C_{jk} - u_{ij} C_{ik}] + \frac{dv}{Q_0} \sum_i \sum_{j \neq 0} G_j C_{ij}, \quad (16)$$

$$D = \frac{d^2}{2} \sum_i (u_{i0} P_i + w_{0i} P_0) + \frac{d^2}{Q_0} \sum_i \sum_{k \neq 0} G_k [w_{0i} C_{0k} - u_{i0} C_{ik}] + \frac{dv}{Q_0} \sum_i \sum_{j \neq 0} G_j C_{ij}, \quad (49)$$

$$D = \frac{d^2}{2} (u_{n-1} P_{n-1} + w_0 P_0) + \frac{d^2}{Q_0} \sum_{j \neq 0} G_j [w_0 C_{0,j} - u_{n-1} C_{n-1,j}] + \frac{dv}{Q_0} \sum_i \sum_{j \neq 0} G_j C_{ij}, \quad (58)$$

$$D = \frac{d^2}{2} \sum_k (u_{n^k-1} P_{n^k-1} + w_0^k P_0) + \frac{d^2}{Q_0} \sum_k \sum_{j \neq 0} G_j^k [w_0^k C_{0,j}^k - u_{n^k-1}^k C_{n^k-1,j}^k] + \frac{dv}{Q_0} \sum_k \sum_i \sum_{j \neq 0} G_j^k C_{ij}^k. \quad (65)$$

In the appendix, the following equations (where typos have also been corrected) should read:

$$\sum_i \frac{dX_i}{dt} = \sum_i \sum_{j=0}^{i-1} (u_{ij} P_i - w_{ji} P_j), \quad (A3)$$

$$D = \frac{1}{2} \lim_{t \rightarrow \infty} \sum_i \left[ d^2 \frac{d\alpha_i}{dt} + 2dd_i \frac{dX_i}{dt} - 2vdX_i - 2vd_i P_i \right], \quad (A6)$$

$$\frac{d\alpha_i}{dt} = \sum_j (W_{ji} \alpha_j - W_{ij} \alpha_i) + \sum_{j=0}^{i-1} [w_{ji} (P_j - 2X_j) + u_{ij} (P_i + 2X_i)], \quad (A7)$$

$$D = \frac{d^2}{2} \lim_{t \rightarrow \infty} \sum_i \sum_{j=0}^{i-1} [w_{ji} (P_j - 2X_j) + u_{ij} (P_i + 2X_i)] + \lim_{t \rightarrow \infty} \sum_i \left( dd_i \frac{dX_i}{dt} - vdX_i - vd_i P_i \right), \quad (A8)$$

$$\sum_i g_i = \sum_i \sum_{j=0}^{i-1} (u_{ij} P_i - w_{ji} P_j), \quad (A9)$$

$$g_i = P_i \sum_k \sum_{j=0}^{k-1} (u_{kj} P_k - w_{jk} P_j), \quad (A10)$$

$$D = \frac{d^2}{2} \lim_{t \rightarrow \infty} \sum_i \sum_{j=0}^{i-1} [w_{ji} (P_j - 2X_j) + u_{ij} (P_i + 2X_i)] - d \lim_{t \rightarrow \infty} v \sum_i X_i,$$

$$= d^2 \lim_{t \rightarrow \infty} \sum_i \left( \sum_{j=0}^{i-1} [u_{ij} X_i - w_{ji} X_j] - \frac{v}{d} X_i \right) + d^2 \sum_i \frac{1}{2} \sum_{j=0}^{i-1} [u_{ij} P_i + w_{ji} P_j], \quad (A11)$$

$$D = d^2 \sum_i \left( \sum_{j=0}^{i-1} [u_{ij} B_i - w_{ji} B_j] - \frac{v}{d} B_i \right) + d^2 \frac{h_0}{P_0} \sum_i \left( \sum_{j=0}^{i-1} [u_{ij} P_i - w_{ji} P_j] - \frac{v}{d} P_i \right)$$

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$$\begin{aligned}
 & + d^2 \sum_i \frac{1}{2} \sum_{j=0}^{i-1} [u_{ij} P_i + w_{ji} P_j], \\
 & = d^2 \sum_i \sum_{j=0}^{i-1} \left[ u_{ij} B_i - w_{ji} B_j + \frac{1}{2} (u_{ij} P_i + w_{ji} P_j) \right] \\
 & - dv \sum_i B_i, \tag{A15}
 \end{aligned}$$

$$\begin{aligned}
 D & = d^2 \sum_i \sum_{j=0}^{i-1} \frac{1}{2} (u_{ij} P_i + w_{ji} P_j) \\
 & + \frac{d^2}{Q_0} \sum_i \sum_{j=0}^{i-1} \sum_{k \neq 0} G_k [w_{ji} C_{jk} - u_{ij} C_{ik}] \\
 & + \frac{dv}{Q_0} \sum_i \sum_{j \neq 0} G_j C_{ij}. \tag{A23}
 \end{aligned}$$

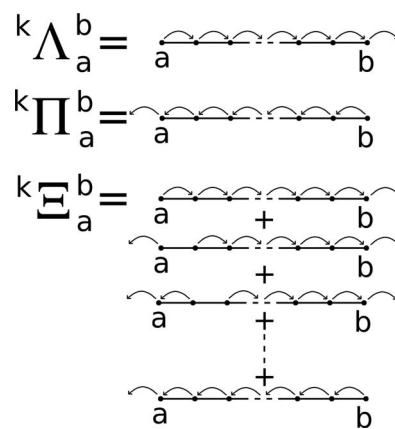


FIG. 4. A graphical representation of  ${}^k\Lambda_a^b$  the rate path from  $a$  to  $b$ ,  ${}^k\Pi_a^b$  the reversed rate path from  $b$  to  $a$ , and  ${}^k\Sigma_a^b$  the sum of all rate path reversals between  $a$  and  $b$  all along a branch  $k$ .

Figure 4 has also been corrected to include missing arrows.

<sup>1</sup>N. J. Boon and R. B. Hoyle, "Exact dynamic properties of molecular motors," *J. Chem. Phys.* **137**, 084102 (2012).