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

N. J. Boon and R. B. Hoyle

Citation: The Journal of Chemical Physics **141**, 099901 (2014); doi: 10.1063/1.4894754
View online: http://dx.doi.org/10.1063/1.4894754
View Table of Contents: http://scitation.aip.org/content/aip/journal/jcp/141/9?ver=pdfcov
Published by the AIP Publishing

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

N. J. Boon[a] and R. B. Hoyle[b]
Department of Mathematics, University of Surrey, Guildford GU2 7XH, United Kingdom

(Received 16 August 2014; accepted 22 August 2014; published online 2 September 2014)

[http://dx.doi.org/10.1063/1.4894754]

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

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

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

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

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

$$\begin{aligned} D = {} & \frac{d^2}{2} \sum_k \left(u^k_{n^k-1} P^k_{n^k-1} + w^k_0 P_0\right) \\ & + \frac{d^2}{Q_0} \sum_k \sum_{j\neq 0} G^k_j \left[w^k_0 C^k_{0,j} - u^k_{n^k-1} C^k_{n^k-1,j}\right] \\ & + \frac{dv}{Q_0} \sum_k \sum_i \sum_{j\neq 0} G^k_j C^k_{ij}. \end{aligned} \tag{65}$$

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

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

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

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

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

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

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

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

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

[a]n.boon@imperial.ac.uk
[b]r.hoyle@surrey.ac.uk

$$+ d^2 \sum_i \frac{1}{2} \sum_{j=0}^{i-1} [u_{ij} P_i + w_{ji} P_j],$$

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

$$- dv \sum_i B_i, \tag{A15}$$

$$D = d^2 \sum_i \sum_{j=0}^{i-1} \frac{1}{2}(u_{ij} P_i + w_{ji} P_j)$$

$$+ \frac{d^2}{Q_0} \sum_i \sum_{j=0}^{i-1} \sum_{k \neq 0} G_k [w_{ji} C_{jk} - u_{ij} C_{ik}]$$

$$+ \frac{dv}{Q_0} \sum_i \sum_{j \neq 0} G_j C_{ij}. \tag{A23}$$

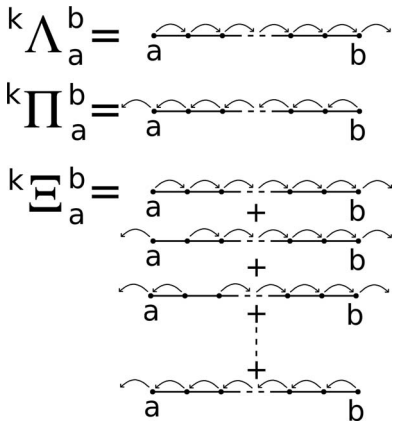

FIG. 4. A graphical representation of ${}^k\Lambda_a^b$ the rate path from a to b, ${}^k\Pi_a^b$ the reversed rate path from b to a, and ${}^k\Xi_a^b$ the sum of all rate path reversals between a and b all along a branch k.

Figure 4 has also been corrected to include missing arrows.

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