Directed transport of Brownian particles in a changing temperature field

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Corrigendum

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Equation (3.8*c*) should read:

$$\bar{J}_2 = -\left[\bar{T}_0\frac{\partial\bar{\rho}_2}{\partial X} + \bar{T}_1\frac{\partial\bar{\rho}_1}{\partial X} + \bar{T}_2\frac{\partial\bar{\rho}_0}{\partial X} + \phi_c\frac{\partial\bar{V}}{\partial X}\bar{\rho}_2\right].$$

Equation (3.12) should read:

$$\varepsilon : \begin{cases} \dfrac{\partial\bar{\rho}_1}{\partial\tau} = \sigma\dfrac{\partial}{\partial X}\left[\bar{T}_0\dfrac{\partial\bar{\rho}_2}{\partial X} + \bar{T}_1\dfrac{\partial\bar{\rho}_1}{\partial X} + \bar{T}_2\dfrac{\partial\bar{\rho}_0}{\partial X} + \phi_c\dfrac{\partial\bar{V}}{\partial X}\bar{\rho}_2\right] \\ \dfrac{\partial\bar{T}_1}{\partial\tau} = \dfrac{\partial^2\bar{T}_2}{\partial X^2} + \sigma\mu\dfrac{\partial\bar{V}}{\partial X}\left[\bar{T}_0\dfrac{\partial\bar{\rho}_2}{\partial X} + \bar{T}_1\dfrac{\partial\bar{\rho}_1}{\partial X} + \bar{T}_2\dfrac{\partial\bar{\rho}_0}{\partial X} + \phi_c\dfrac{\partial\bar{V}}{\partial X}\bar{\rho}_2\right]. \end{cases}$$

In equation (3.13) the following two conditions should be added:

$$\bar{\rho}_2(t, X_n) = \bar{\rho}_2(t, X_n + 1), \qquad \text{and} \qquad \int_0^1 \bar{\rho}_2(t, X)\,\mathrm{d}X = 0.$$

The second condition on the third line of equation (3.14) should read:

$$\frac{\partial\bar{T}_2}{\partial X}(t, X_n) = \frac{\partial\bar{T}_2}{\partial X}(t, X_n + 1).$$

Equation (4.40) should read:

$$\frac{\mathrm{d}}{\mathrm{d}\tau}\int_{X_n}^{X_n+1}\bar{T}_1(\tau, X)\,\mathrm{d}X = -\sigma\mu\int_{X_n}^{X_n+1}\frac{\partial\bar{V}}{\partial X}(\tau, X)\bar{J}_2(\tau, X)\,\mathrm{d}X.$$

Equation (4.41) and the text above should read:

Since the potential $\bar{V}$ and the current $\bar{J}_2$ are periodic in space, integration by parts of the right-hand side of equation (4.40) yields

$$\frac{\mathrm{d}}{\mathrm{d}\tau}\int_{X_n}^{X_n+1}\bar{T}_1(\tau, X)\,\mathrm{d}X = \sigma\mu\int_{X_n}^{X_n+1}\bar{V}(\tau, X)\frac{\partial\bar{J}_2}{\partial X}(\tau, X)\,\mathrm{d}X.$$

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