

Directed transport of Brownian particles in a changing temperature field

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Corrigendum

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Equation (3.8c) 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:

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

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

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

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:

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

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

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

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