Erratum: Enhanced thermopower under a time-dependent gate voltage [Phys. Rev. B 83, 153417 (2011)]

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In Eq. (12) of our original paper, the expression of the time-dependent heat current through the left ($p = L$) and right ($p = R$) reservoirs had a missing term.

The correct expression is

$$\langle I_p^h(t)\rangle = -\frac{\Gamma_p}{h}\left[2\int_{-\infty}^{\infty}(\varepsilon-\mu_p)f_p(\varepsilon)\mathrm{Im}\{A(\varepsilon,t)\}d\varepsilon + \sum_{p'=L,R}\Gamma_{p'}\int_{-\infty}^{\infty}(\varepsilon-\mu_p)f_{p'}(\varepsilon)|A(\varepsilon,t)|^2 d\varepsilon\right.$$
$$\left. + \sum_{p'=L,R}\Gamma_{p'}\int_{-\infty}^{\infty} f_{p'}(\varepsilon)\mathrm{Im}\{A(\varepsilon,t)\hbar\partial_t A^*(\varepsilon,t)\}d\varepsilon\right]. \quad (12)$$

The third term will only appear in the case where the spectral function A has a time dependency. In the stationary limit, only the two first terms remain.

Taking this contribution into account, the behavior of the heat current as a function of time changed: Figure 1 presented here replaces Fig. 3 (right panel) of our original paper. We observe that the correction due to the third term in Eq. (12) induces a change of sign in the left heat current as observed for the left charge current (see left panel of Fig. 3 in our original paper).

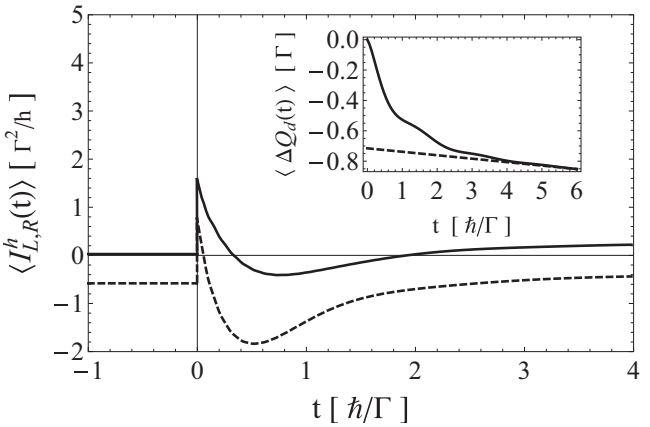

FIG. 1. Heat current through the left lead (solid line) and the right lead (dashed line) as a function of time t, for $\Gamma_R = \Gamma_L$, $t_0 = 0$, $\tilde{\varepsilon}_0 = 0.5$, $\tilde{\gamma}_0 = 2.5$, $k_B T_L = 1$, $k_B T_R = 0$, and $\mu_{L,R} = \pm 0.5$ (the unit of energy is Γ). The inset shows the variation of the dot heat as a function of time (solid line) and its stationary limit at $t \to \infty$ (dashed line).

In addition, the inset of Fig. 3 (right panel) of our original paper is replaced by the inset of Fig. 1 which shows the dot heat only for $t > t_0$, and the comment given in the last paragraph in the left column of page 3 of our original paper is modified as follows: ... the time evolution of $\langle \Delta Q_d(t)\rangle = \langle Q_d(t)\rangle - \langle Q_d(0)\rangle$ is shown for $t > t_0$ only. Indeed, the heat in the dot is not continuous at $t = t_0$ due to the steplike variation in time of the gate potential: the total energy is not conserved.

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