

**Erratum: Statistical mechanics from quantum envariance and exchange symmetry
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We correct typographical errors and clarify notational shorthand in our previous paper. None of the corrections affects the results or conclusions of the paper.

In Eq. (32), the partial trace over the environment was left implicit. Equation (32) should read

$$\rho_N = \text{Tr}_E(|\Psi_{SE}\rangle\langle\Psi_{SE}|). \quad (32)$$

In Eqs. (40)–(43), the notation mixed the dimensional entropy S_B and the dimensionless entropy $s_B = S_B/k_B$. With $\Omega_B = e^{s_B}$ and $\beta = 1/k_B T$, Eqs. (40) and (41) should read

$$s_B(E_{\text{tot}} - E_S, N_{\text{tot}} - N_S) \simeq s_B(E_{\text{tot}}, N_{\text{tot}}) - \beta E_S + \beta \mu N_S, \quad (40)$$

$$\beta = \left(\frac{\partial s_B}{\partial E_B} \right)_{N_B, V_B}, \quad \beta \mu = - \left(\frac{\partial s_B}{\partial N_B} \right)_{E_B, V_B}. \quad (41)$$

Equations (42) and (43) are unchanged.

In Eq. (52), the permutation label on the system ket was left implicit. Equation (52) should read

$$|\Psi_{SE}\rangle = \frac{1}{\sqrt{N_e! N_p!}} \sum_{\pi} |H, p, e\rangle_{\pi} \otimes |E_{\pi}\rangle. \quad (52)$$

The sign in Eq. (55) should be consistent with the definition $S_{\text{ent}} = -k_B \ln \Gamma_{\text{ind}}^{\text{ent}}$ in Eq. (54). Equation (55) should read

$$\Delta F = -T \Delta S_{\text{ent}} = +k_B T \ln \Gamma_{\text{ind}}^{\text{ent}}. \quad (55)$$

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