Erratum: Non-Gibbs states on a Bose-Hubbard lattice [Phys. Rev. A **99, 023603 (2019)]**

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We wish to correct misprints and errors of the original paper.

(1) Equations (11) and (33) are misprinted and should read

$$\ln Z(\beta, \alpha, M) = \ln Z_0(\alpha, M) - \beta \langle \hat{H} \rangle_0 + \beta^2 (\langle \hat{H}^2 \rangle_0 - \langle \hat{H} \rangle_0^2) / 2 + \dots, \quad (11)$$

$$W_{\text{cl}}(E, N, M) = \left(\frac{Ne}{M} \right)^M \exp \left[-\frac{M(\varepsilon - Un^2)^2}{2f_{\text{cl}}(n)} \right]. \quad (33)$$

(2) The two paragraphs around Eq. (42) should read as

“It is straightforward to extend the hopping network between sites. For instance, for binary interactions, a one-band Hamiltonian takes the form

$$\hat{H} = \sum_{i \neq j} J(i-j) \hat{a}_i^\dagger \hat{a}_j + \frac{1}{2} \sum_{i,j} U(i-j) \hat{a}_i^\dagger \hat{a}_j^\dagger \hat{a}_j \hat{a}_i. \quad (42)$$

Using the same method as in Sec. II, we arrive at non-Gibbs states above the line $\varepsilon = U_0 n^2$ with $U_0 \equiv U(0) + \frac{1}{2} \sum_{j \neq 0} U(j)$, which is assumed to be finite and positive.”

(3) The commutation relation between the phase $\hat{\varphi}_j$ and charge $\hat{q}_i$ on p. 6 is misprinted and should be written as $[\hat{q}_i, e^{i\hat{\varphi}_j}] = \delta_{ij} e^{i\hat{\varphi}_j}$.

These corrections do not affect the results and conclusions of the original paper.