Erratum: Thermal pairing treatment within the path integral formalism [Chin. Phys. C, 48 (11): 114102 (2024)]

M. Fellah N.H. Allal† M.R. Oudih

Laboratoire de Physique Théorique- Faculté de Physique- USTHB, BP32 El-Alia, 16111 Bab-Ezzouar - Algiers - ALGERIA

DOI: 10.1088/1674-1137/ae18a9 **CSTR:** 32044.14.ChinesePhysicsC.50039001

The paragraph between equations (A9) and (A11) in Appendix A on page 10 of the published version is partially incorrect. In particular, the formal expression of the operator $\mathcal{S}_j$ is incomplete. This paragraph should then be read as follows:

$$\mathrm{i}\mathcal{S}_j = \exp\left[\mathrm{i}\frac{\pi}{2}\left(a_j + a_j^{+}\right)\right]\exp\left[\mathrm{i}\frac{\pi}{2}\left(a_{\tilde{j}} + a_{\tilde{j}}^{\pm}\right)\right]. \tag{A9}$$

That is,

$$\mathcal{S}_j = \exp\left[\mathrm{i}\frac{\pi}{2}\left(a_j + a_j^{+} + a_{\tilde{j}} + a_{\tilde{j}}^{\pm} - \frac{\pi}{2}S_j - 1\right)\right] \tag{A10}$$

where we used the Glauber identity.

And therefore

$$U = \exp\left[\mathrm{i}\frac{\pi}{2}\sum_j\left(a_j + a_j^{+} + a_{\tilde{j}} + a_{\tilde{j}}^{\pm} - \frac{\pi}{2}S_j - 1\right)\right]. \tag{A11}$$

It should be noted that this has no effect on the remainder of the calculations since we used the form given in Eq. (6) for $\mathcal{S}_j$.

The authors apologize for any inconvenience caused.

Received 22 October 2025; Accepted 27 October 2025; Accepted manuscript online 28 October 2025

† E-mail: allaln@yahoo.com