Erratum: Solution of the Ising model with Brascamp-Kunz boundary conditions by the transfer matrix method [APS Open Sci. 1, 000125 (2026)]

De-Zhang Li and Xin Wang

(Received 23 October 2026; published 10 November 2026)

DOI: 10.1103/9nq3-3jbz

Some errors have been found in the original paper and are corrected here. The results and findings of the work remain unchanged.

In the last paragraph of page 12, "In the space of $|00\rangle$ and $|11\rangle$ …" should be replaced with "In the space of $|11\rangle$ and $|00\rangle$ …".

The last equation in Eq. (61) should be replaced by

$$V_{2,l}^{+}=\begin{pmatrix} e^{2K_2^*} & \\ & e^{-2K_2^*}\end{pmatrix}.$$

Equations (63) and (64) should be replaced by

$$\lim_{K_3\to+\infty}\frac{1}{e^{4K_3}}\left[(V_{2,l}^{+})^{1/2}V_{1,l}^{\prime\prime+}(V_{2,l}^{+})^{1/2}\right]\left[(V_{2,l}^{+})^{1/2}V_{1,l}^{\prime+}(V_{2,l}^{+})^{1/2}\right]=\frac{1}{4}\sin\frac{(2l-1)\pi}{2N}\begin{pmatrix} g_l & h_l\\ -m_l & n_l\end{pmatrix},$$

with

$$\begin{aligned} g_l &= (e^{4K_2^*}-1)\sin\frac{(2l-1)\pi}{2N},\\ h_l &= 2\sinh 2K_2^*\left(1-\cos\frac{(2l-1)\pi}{2N}\right),\\ m_l &= 2\sinh 2K_2^*\left(1+\cos\frac{(2l-1)\pi}{2N}\right),\\ n_l &= (e^{-4K_2^*}-1)\sin\frac{(2l-1)\pi}{2N}.\end{aligned}$$

Equation (66) should be replaced by

$$\cosh\epsilon_l=\cosh 2K_1\cosh 2K_2^*+\sinh 2K_1\sinh 2K_2^*\cos\frac{(2l-1)\pi}{2N}.$$

Published by the American Physical Society under the terms of the Creative Commons Attribution 4.0 International license. Further distribution of this work must maintain attribution to the author(s) and the published article's title, journal citation, and DOI.

Equation (68) should be replaced by

$$p_l = \sinh 2K_1 \sin \frac{(2l-1)\pi}{2N},$$

$$r_l = e^{\epsilon_l} - e^{2K_2^*}\left(\cosh 2K_1 + \sinh 2K_1 \cos \frac{(2l-1)\pi}{2N}\right),$$

$$s_l = e^{-\epsilon_l} - e^{2K_2^*}\left(\cosh 2K_1 + \sinh 2K_1 \cos \frac{(2l-1)\pi}{2N}\right).$$

Equation (71) should be replaced by

$$①_l = e^{2MK_1 \cos \frac{(2l-1)\pi}{2N}} \times \frac{\sin^2 \frac{(2l-1)\pi}{2N} (2 \sinh 2K_2^*)^2}{4}$$

$$\times \prod_{j=1}^{M} 2\left(\cosh 2K_1 \cosh 2K_2^* + \sinh 2K_1 \sinh 2K_2^* \cos \frac{(2l-1)\pi}{2N} - \cos \frac{j\pi}{M+1}\right).$$

Since $\cos \frac{[2(N+1-l)-1]\pi}{2N} = -\cos \frac{(2l-1)\pi}{2N}$, the result of product $\prod_{l=1}^{N}(\cdots)$ in Eq. (75) is still correct. Therefore, the partition function and the corresponding discussion and summary are not affected.