



Correction: Single-boson exchange functional renormalization group application to the two-dimensional Hubbard model at weak coupling

Kilian Fraboulet^{1,a}, Sarah Heinzelmann¹, Pietro M. Bonetti², Aiman Al-Eryani¹, Demetrio Vilardi², Alessandro Toschi³, and Sabine Andergassen¹

¹ Institut für Theoretische Physik and Center for Quantum Science, Universität Tübingen, Auf der Morgenstelle 14, 72076 Tübingen, Germany

² Max Planck Institute for Solid State Research, Heisenbergstrasse 1, D-70569 Stuttgart, Germany

³ Institute of Solid State Physics, TU Wien, 1040 Vienna, Austria

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In the original article, three equations were erroneous: Eqs. (6), (13a) and (16). We give the corrected versions of these three equations below:

$$\begin{aligned} \mathcal{I}_{U_{\text{irr}}}(k_1, k_2, k_3) &= \mathcal{I}(k_1, k_2, k_3) - U + M_{k_1 k_3}^M(k_2 - k_3) \\ &+ \frac{1}{2} \left[M_{k_1 k_4}^M(k_3 - k_1) + M_{k_1 k_4}^D(k_3 - k_1) \right] \\ &+ M_{k_1 k_3}^{\text{SC}}(k_1 + k_2), \end{aligned} \quad (6)$$

$$I_{kk'}^M(Q) = V(k', k, k + Q), \quad (13a)$$

$$w^X(Q) = U + \mathcal{K}^{(1)X}(Q). \quad (16)$$

Since $\text{sgn}X$ is no longer present in Eq. (16), the comment “with the same convention of $\text{sgn}X$ as in Eq. (5).” right below it was removed as well.

Footnote 5 of the original article was pointing out an error in Ref. [35] (“We note that in Eq. (15) of Ref. [35], the term $-U$ is erroneously missing on the right-hand side.”), which has been eventually indicated with an erratum for the article in question. This footnote has thus been removed from the original article.

For more details, we refer to Sarah Heinzelmann’s PhD thesis [1].

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Reference

1. S. Heinzelmann, The single-boson exchange formalism and its application to the functional renormalization group, PhD Thesis, Universität Tübingen (2023)

Kilian Fraboulet and Sarah Heinzelmann have contributed equally to this work.

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^a e-mail: kilian.fraboulet@gmail.com (corresponding author)