



Erratum: Addressing energy density functionals in the language of path-integrals I: comparative study of diagrammatic techniques applied to the $(0 + 0)$ -D $O(N)$ -symmetric φ^4 -theory

Kilian Fraboulet^{1,2,3,a} , Jean-Paul Ebran^{1,2}

¹ CEA, DAM, DIF, 91297 Arpajon, France

² Université Paris-Saclay, CEA, Laboratoire Matière en Conditions Extrêmes, 91680 Bruyères-le-Châtel, France

³ Institut für Theoretische Physik and Center for Quantum Science, Universität Tübingen, Auf der Morgenstelle 14, 72076 Tübingen, Germany

© The Author(s), under exclusive licence to Società Italiana di Fisica and Springer-Verlag GmbH Germany, part of Springer Nature 2024

Erratum: Eur. Phys. J. A (2023) 59:91
<https://doi.org/10.1140/epja/s10050-023-00933-9>

A supersource \mathcal{J} was erroneously replaced by J in the first line of relation (143), which should therefore read:

$$\begin{aligned} \mathcal{G}_{\alpha\beta}(x, y) &= \frac{\delta^2 W_{\text{mix}}[\mathcal{J}, \mathcal{K}]}{\delta \mathcal{J}^\alpha(x) \delta \mathcal{J}^\beta(y)} \\ &= \frac{2}{\hbar} \frac{\delta W_{\text{mix}}[\mathcal{J}, \mathcal{K}]}{\delta \mathcal{K}^{\alpha\beta}(x, y)} - \frac{1}{\hbar} \Phi_\alpha(x) \Phi_\beta(y), \end{aligned} \quad (143)$$

and the comment on the $1/N$ -expansion in page 14 should read: “Note furthermore that the $1/N$ -expansion coincides with the collective LE at their first non-trivial orders according to Figs. 2 and 3 (recall that the derivation of the series underlying the $1/N$ -expansion for the studied toy model is outlined in Appendix B)”. These corrections have been implemented in the updated article.

The original article can be found online at <https://doi.org/10.1140/epja/s10050-023-00933-9>.

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