

Erratum: Multichannel Dyson equations for even- and odd-order Green's functions: Application to double excitations [Phys. Rev. B 111, 195133 (2025)]

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(Received 5 September 2025; published 22 September 2025)

DOI: [10.1103/314x-95m7](https://doi.org/10.1103/314x-95m7)

We correct an error in Eqs. (40) and (42)–(45) of the article, namely, a missing overlap matrix S on the right-hand side of all equations and a factor containing occupation number differences f_{ij} on the right-hand side of Eqs. (42)–(45). We also correct the prefactors in the off-diagonal elements of Eq. (38). The correct equations read

$$H_4^{\text{eff}}(\omega) = \begin{pmatrix} \delta_{jo}\delta_{lk}\Delta\epsilon_{jl} - f_{jl}\tilde{\Sigma}_{jl;ok}^{2p} & -f_{jl}\tilde{\Sigma}_{jl;m>ok>p}^{2p/4p} \\ -f_{in}f_{il}f_{jn}\tilde{\Sigma}_{i>jl>n;ok}^{4p/2p} & \delta_{im}\delta_{jo}\delta_{lk}\delta_{np}(\Delta\epsilon_{in} + \Delta\epsilon_{jl}) - f_{in}f_{il}f_{jn}\tilde{\Sigma}_{i>jl>n;m>ok>p}^{4p} \end{pmatrix}$$

for Eq. (38),

$$[\bar{H}_4^{\text{eff}} - \mathbf{1}\omega]_{\mu\nu}^{-1} = \sum_{\lambda\lambda'} \frac{A_{\lambda}^{\mu} S_{\lambda\lambda'}^{-1} A_{\lambda'}^{*\nu}}{E_{\lambda} - \omega}$$

for Eq. (40), with $S_{\lambda\lambda'} = \sum_{\mu} A_{\lambda}^{*\mu} A_{\lambda'}^{\mu}$ the overlap matrix, and

$$\begin{aligned} L_{jl;ok}^{2p}(\omega) &= \sum_{\lambda\lambda'} \frac{A_{\lambda}^{jl} S_{\lambda\lambda'}^{-1} A_{\lambda'}^{*ok}}{E_{\lambda} - \omega} f_{ok}, \\ L_{jl;m>ok>p}^{2p/4p}(\omega) &= \sum_{\lambda\lambda'} \frac{A_{\lambda}^{jl} S_{\lambda\lambda'}^{-1} A_{\lambda'}^{*mokp}}{E_{\lambda} - \omega} f_{mp} f_{mk} f_{op}, \\ L_{i>jl>n;ok}^{4p/2p}(\omega) &= \sum_{\lambda\lambda'} \frac{A_{\lambda}^{ijln} S_{\lambda\lambda'}^{-1} A_{\lambda'}^{*ok}}{E_{\lambda} - \omega} f_{ok}, \\ L_{i>jl>n;m>ok>p}^{4p}(\omega) &= \sum_{\lambda\lambda'} \frac{A_{\lambda}^{ijln} S_{\lambda\lambda'}^{-1} A_{\lambda'}^{*mokp}}{E_{\lambda} - \omega} f_{mp} f_{mk} f_{op} \end{aligned}$$

for Eqs. (42)–(45). These are only misprints in the article and do not affect any of the results, which were obtained from Eq. (39) using the correct effective Hamiltonian.