Erratum: Real-time diagrammatic approach to transport through interacting quantum dots with normal and superconducting leads [Phys. Rev. B **77**, 134513 (2008)]

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The Bogoliubov transform in Eq. (3) should read

$$\begin{pmatrix} \gamma_{\eta k \uparrow} \\ \gamma^{\dagger}_{\eta - k \downarrow} \end{pmatrix} = \begin{pmatrix} u_{\eta k} & -v_{\eta k} S_{\eta} \\ v^{*}_{\eta k} S^{\dagger}_{\eta} & u^{*}_{\eta k} \end{pmatrix} \begin{pmatrix} c_{\eta k \uparrow} \\ c^{\dagger}_{\eta - k \downarrow} \end{pmatrix}. \tag{3}$$

The definition of the matrix elements of the reduced matrix, given at the end of the second paragraph in Section II B, should read $P^{\xi_1}_{\xi_2} \equiv \langle \xi_1 | \rho_{\text{red}} | \xi_2 \rangle$. As a consequence, its connection to the pair amplitude in the dot, stated after Eq. (22), should be $P^{\text{D}}_0 = \langle d_{\downarrow} d_{\uparrow} \rangle$.

There is a minus sign missing in Eqs. (17) and (18), respectively. They should read

$$J_{2\eta} = -\frac{e}{\hbar} \int \frac{d\omega}{2\pi} \Gamma_{\eta} \widetilde{D}_{\eta}(\omega) \text{Re} \left\{ \text{Tr} \left[\tau_3 \frac{\boldsymbol{\Delta}_{\eta}}{|\Delta_{\eta}|} \mathbf{G}^{<}(\omega) \right] \right\} \tag{17}$$

$$J_{\eta} = -\frac{2e}{\hbar} \Gamma_{\eta} |\langle d_{\downarrow} d_{\uparrow} \rangle| \sin(\Psi - \Phi_{\eta}). \tag{18}$$

Furthermore, the correct relation between current and isospin, given after Eq. (34c), is given by $J_{\text{R,L}} = \frac{2e}{\hbar} \Gamma_{\text{S}} (I_y \cos \frac{\Phi}{2} \mp I_x \sin \frac{\Phi}{2})$.

The Josephson current is defined such that it flows in the direction opposite to the phase gradient. Therefore, the relation between J_{jos} and $J_{\text{L,R}}$, given two lines before Eq. (19) and at the end of the first paragraph in Section III B, should read $J_{\text{jos}} = J_{\text{L}} = -J_{\text{R}}$ and $J_{\text{jos}} = (J_{\text{L}} - J_{\text{R}})/2$, respectively.

We wish to emphasize that none of the final results presented in our paper, either as formulas or figures are affected by this Erratum.