

Erratum

K. Haller and E. Lim-Lombridas, "Quantum Gauge Equivalence in QED," *Found. Phys.* **24**, 217 (1994).

There is a sign error in the definition of the gauge-invariant charged field. The expressions for gauge-invariant spinor fields should properly be reported as

$$\psi_{GI}(\mathbf{x}) = e^{-\mathcal{G}(\mathbf{x})} \psi(\mathbf{x})$$

instead of

$$\tilde{\psi}(\mathbf{x}) = e^{\mathcal{G}(\mathbf{x})} \psi(\mathbf{x})$$

as appears in Eq. (50). The field $\psi_{GI}(\mathbf{x})$ is gauge-invariant in the original untransformed representation—the representation in which $\mathcal{G} = \partial_i \Pi_i + j_0$ represents the Gauss's law operator—and it is obtained by transforming the spinor field $\psi(\mathbf{x})$, which is manifestly gauge-invariant in the "tilded" representation, to a form that is gauge-invariant in the original, untransformed representation. This transformation is described by

$$\psi_{GI}(\mathbf{x}) = U \psi(\mathbf{x}) U^{-1}$$

In contrast,

$$\tilde{\psi}(\mathbf{x}) = U^{-1} \psi(\mathbf{x}) U$$

is not gauge-invariant in the original untransformed representation. This sign error in the exponential of the gauge-invariant spinor field does not affect any of the other parts or the conclusions of this work.