Erratum: Radius of convergence in lattice QCD at finite μ_B with rooted staggered fermions [Phys. Rev. D **101, 074511 (2020)]**

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A few numerical factors are reported incorrectly in the expressions for the fermion determinant obtained with the reduced matrix formalism, namely (i) the sign of the chemical potential on the right-hand sides of the inline equation on page 2, Sec. III, line 6, of Eq. (2), and of Eq. (5), and (ii) a factor of 2 in the upper-left block of the building blocks of the reduced matrix, Eq. (3). The sign factor (i) does not affect the results thanks to the C invariance of the theory; in particular, Eqs. (4) and (11) are unchanged. The factor (ii) was correctly taken into account in the numerical simulations. None of the conclusions are affected.

The following modifications restore correctness to the equations.

1. Defining

$$\det M(\hat{\mu}) \equiv \det[2(D_{\text{stag}}(a\mu) + am)],$$

the inline equation on page 2, Sec. III, line 6 should read

$$\det M(\hat{\mu}) = e^{kV\hat{\mu}} \det(P - e^{-\hat{\mu}}),$$

and the subsequent sentence “Expressed in terms of the reduced matrix” should more precisely read “Expressed in terms of the eigenvalues of the reduced matrix.” Equation (2) should read

$$\det M(\hat{\mu}) = e^{3V\hat{\mu}} \prod_{i=1}^{6V} (\xi_i - e^{-\hat{\mu}}),$$

and Eq. (5) should read

$$\sqrt{\frac{\det M(\hat{\mu})}{\det M(0)}}_{\text{rew}} \equiv e^{\frac{3}{2}V\hat{\mu}} \prod_i \sqrt{\frac{\xi_i - e^{-\hat{\mu}}}{\xi_i - 1}},$$

with ξ_i the eigenvalues of the reduced matrix P .

2. In the definition of P , Eq. (3), the diagonal blocks B_i should read

$$B_i = 2\eta_4(D^{(3)} + am)|_{t=i},$$

i.e., $\eta_4 B_i$ is twice the sum of the spatial derivatives and mass parts of the staggered matrix on the i th time slice. Consequently, the fourth and fifth lines of Eq. (A1) should read

$$B_a = 2\eta_4 \left(am + \frac{1}{2} \sum_{j=1}^3 \eta_j (e^{i\phi_a^{(j)}} T_j - e^{-i\phi_a^{(j)}} T_j^\dagger) \right),$$

$$\lambda_{a\vec{p}} = 2 \sqrt{(am)^2 + \sum_{j=1}^3 \sin^2(\phi_a^{(j)} + p_j)}.$$