

Erratum: Refinements in electroweak contributions to the muon anomalous magnetic moment [Phys. Rev. D **67**, 073006 (2003)]

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In the second and third lines of Eq. (55) the subscripts π and μ should be interchanged. The correct version of that equation is

$$\Delta a_\mu^L[e, u, d] = -\frac{\alpha}{\pi} \frac{G_\mu m_\mu^2}{8\pi^2\sqrt{2}} \left\{ 2 \ln \frac{m_\pi^2}{m_\mu^2} + \frac{8}{3} + \frac{4}{3} \int_0^1 d\alpha (1+\alpha) \ln A + 4 \frac{m_\mu^2}{m_\pi^2} \left[\int_0^1 d\alpha (1-\alpha)^2 \ln A - \frac{1}{3} \ln \frac{m_\mu^2}{m_\pi^2} + \frac{2}{9} \right] \right\}. \quad (55)$$

As a consequence, Eqs. (56) and (60) should be replaced by

$$\Delta a_\mu^L[e, u, d] = -\frac{\alpha}{\pi} \frac{G_\mu m_\mu^2}{8\pi^2\sqrt{2}} \times 3.53 = -0.96 \times 10^{-11}, \quad (56)$$

$$\Delta a_\mu^{\text{EW}}[e, u, d] = -\frac{\alpha}{\pi} \frac{G_\mu m_\mu^2}{8\pi^2\sqrt{2}} \times 8.41 = -2.28 \times 10^{-11}, \quad (60)$$

and Eq. (117) should read

$$\Delta a_\mu^{\text{EW}}[e, u, d]_{\text{QCD}} - \Delta a_\mu^{\text{EW}}[e, u, d]_{\text{free quarks}} = +1.7 \times 10^{-11}. \quad (117)$$

These corrections are much smaller than the error bar assigned to the final result in Eq. (119) and thus, after roundoff, our final result is unchanged.

We also would like to acknowledge here the comment by M. Knecht, S. Peris, M. Perrottet, and E. de Rafael in J. High Energy Phys. 03 (2004) 035 in regard to our discussion (after Eq. (46)) of the operator $\tilde{F}^{\alpha\beta} \text{Tr} G_{\mu\nu} G^{\mu\nu}$. Although we did not account for its contribution anyway they correctly emphasized that this operator does not appear in the operator product expansion because of its chiral features. We thank Jens Erler for pointing out the mistake in Eq. (55).