Erratum: One loop corrections to quantum hadrodynamics with vector mesons [Phys. Rev. C 58, 1853 (1998)]

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After repeated rechecking of the $\mathcal{O}(g_\rho^2 g_\pi^2)$ in the $\pi\pi$ scattering amplitude in the chiral limit, some corrections were found in Eqs. (8)–(10) of [1]. They should read as follows:

$$\delta\beta = \frac{g_\rho^2}{m_\rho^2}\left(1+\frac{1}{16\pi^2}\frac{m_\sigma^2}{F^2}\left\{4+6\frac{m_\rho^2}{m_\sigma^2}\ln\frac{m_\sigma^2}{m_\rho^2}+9\frac{m_\rho^2}{m_\sigma^2}\left[\Gamma\left(\frac{\epsilon}{2}\right)+\ln 4\pi-\ln\frac{m_\sigma^2}{\mu^2}+\frac{5}{6}\right]\right\}\right)$$
$$+2\frac{g_\rho^2}{m_\rho^2}\delta_{g_\rho}+\left(8\frac{g_\rho^2}{m_\rho^2}-\frac{1}{\sigma_0^2}\right)\delta_z+\frac{2}{\sigma_0^2}(\delta_\mu+\delta_\lambda), \tag{1}$$

$$\delta\alpha_1 = -\frac{1}{F^2}\frac{g_\rho^2}{m_\rho^2}\frac{6}{16\pi^2}\left[\Gamma\left(\frac{\epsilon}{2}\right)+\ln 4\pi-\ln\frac{m_\sigma^2}{\mu^2}+\frac{11}{27}+\frac{1}{3}\ln\frac{m_\sigma^2}{m_\rho^2}\right]$$
$$-8\frac{g_\rho^2}{m_\rho^2}\frac{\delta_{g_\rho}}{m_\sigma^2}+2\frac{g_\rho^2}{m_\rho^2}\frac{\delta_z}{m_\sigma^2}-4\frac{g_\rho^2}{m_\rho^2}\frac{\delta_\mu}{m_\sigma^2}+\frac{2}{m_\sigma^2\sigma_0^2}(2\delta_\mu+\delta_\lambda), \tag{2}$$

$$\delta\alpha_2 = \frac{1}{F^2}\frac{g_\rho^2}{m_\rho^2}\frac{1}{16\pi^2}\left[\frac{17}{9}-\ln\frac{m_\sigma^2}{m_\rho^2}\right]+2\frac{g_\rho^2}{m_\rho^2}\frac{\delta_{g_\rho}}{m_\sigma^2}, \tag{3}$$

with $\sigma_0 \equiv M/g_\pi$ and $1/F^2 \equiv 1/\sigma_0^2 + g_\rho^2/m_\rho^2$ to $\mathcal{O}(g_\pi^2 g_\rho^2)$. An effective action calculated from the QHD-III Lagrangian to one loop and to $\mathcal{O}(g_\rho^2 g_\pi^2)$ produces the same divergent terms as in Eqs. (1)–(3). The conclusions of [1] are unchanged.

[1] G. Prézeau, Phys. Rev. C **58**, 1853 (1998).

