

ERRATUM

Masataka Fukugita and Takahiro Kubota, Radiative Corrections to Neutrino-Nucleon Quasielastic Scattering, *Acta Phys. Pol. B***35**, 1687 (2004).

In the evaluation of the effects of weak magnetism in Sec. 6, Eq. (97) should read

$$\begin{aligned} & \sum_{\text{spin}} \left\{ \left(\mathcal{M}_p^{(v3,wm)} + \mathcal{M}_n^{(v3,wm)} \right) \mathcal{M}^{(0)*} + \left(\mathcal{M}_p^{(v3,wm)*} + \mathcal{M}_n^{(v3,wm)*} \right) \mathcal{M}^{(0)} \right\} \Big|_{g_A} \\ &= 32G_V^2 m_n m_p E E_\nu \left(\frac{e^2}{8\pi^2} \right) \frac{1}{m_N} \left[2g_A \left(m_p \mathcal{D}_\sigma^{(p)} + m_n \mathcal{D}_\sigma^{(n)} \right) (3 - \beta \cos \theta) \frac{1}{3} \langle \boldsymbol{\sigma} \rangle^2 \right. \\ & \left. + g_A \left(m_p \mathcal{E}^{(p)} - m_n \mathcal{E}^{(n)} \right) (3 - \beta \cos \theta) \frac{1}{3} \langle \boldsymbol{\sigma} \rangle^2 \right]. \end{aligned}$$

This corresponds to dropping the terms in the fourth line of (97) that are proportional to f_V in the original expression in agreement with the current algebra theorem discussed in Sec. 5, which dictates that the model-dependent corrections arise only from the term involving $-i\varepsilon^{\lambda\rho\mu\sigma}\gamma_\sigma\gamma^5 k_\rho$ in the last line of Eq. (61).

As a consequence, weak magnetism contributes only to the corrections for the Gamow–Teller transition, so that the formulae for Fermi transitions in Eqs. (107), (109) and (115) should be replaced, respectively, by

$$\begin{aligned} f_V^2 C^F &= 6f_V g_A \left(\mathcal{C}_\sigma^{(p,A)} + \mathcal{C}_\sigma^{(n,A)} \right), \\ C^F &= 1.751 + 0 = 1.751, \\ \delta_{\text{in}}^F &= 0.02322 - 1.16 \times 10^{-3} \times \log \left(\frac{M}{1\text{GeV}} \right) \\ &= 0.02322 \pm 0.0008, \end{aligned}$$

whereas all expressions for the Gamow–Teller transitions are intact. This agrees with the analysis of Marciano and Sirlin [9]. The number in the fifth line on page 1715, accordingly, should read 1.751 rather than 2.160, and those two lines below Eq. (121) should be 5.965, 0.24% and 5.951 instead of 5.966, 0.20% and 5.954, respectively.

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