

Erratum: Twist-3 gluon fragmentation contribution to polarized hyperon production in unpolarized proton-proton collision [Phys. Rev. D **104**, 054023 (2021)]

Yuji Koike¹, Kenta Yabe², and Shinsuke Yoshida³

(Received 8 September 2026; published 24 September 2026)

DOI: [10.1103/j97r-lrt5](https://doi.org/10.1103/j97r-lrt5)

There were several typos in our paper, which we correct below. These corrections do not affect any results in the paper.

- (1) In Eq. (8), the QCD coupling g needs to be multiplied to $\bar{\psi}_j(\lambda w)t^a\psi_i(0)$ in the correlation function after the first equality, i.e., $\bar{\psi}_j(\lambda w)t^a\psi_i(0) \rightarrow g\bar{\psi}_j(\lambda w)t^a\psi_i(0)$.
- (2) In the right-hand side (rhs) of Eq. (28), $G_{\lambda\nu}^{cab}(k' - k, k')$ should be changed into $G_{\lambda\nu}^{cba}(k' - k, k')$, i.e., the upper color indices must be $cab \rightarrow cba$. Also in the rhs of Eq. (30), the plus sign in front of $(G_{\nu\mu}^{bac}(k', k))^*$ should be replaced by the minus sign. In our sequel paper [1], the same correct equations were also shown as Eqs. (16) and (18).
- (3) Corresponding to the above (2), Eqs. (A2) and (A4) should also be changed in the same way: In the rhs of (A2), $G_{q\bar{q} \rightarrow gg}^{\lambda\nu, cab}(k_2 - k_1, k_2)$ should be replaced by $G_{q\bar{q} \rightarrow gg}^{\lambda\nu, cba}(k_2 - k_1, k_2)$, and in the rhs of (A4), $+(G_{q\bar{q} \rightarrow gg}^{\nu\mu, bac}(k_2, k_1))^*$ should be replaced by $-(G_{q\bar{q} \rightarrow gg}^{\nu\mu, bac}(k_2, k_1))^*$.
- (4) In the caption of Fig. 11, “Combination of (a-2), (a-3), and (a-7) cancels that of (a-4), (a-6), and, (a-10), owing to (A18)” should read “The sums of diagrams (a-2), (a-3), and (a-7) and of diagrams (a-4), (a-6), and, (a-10) vanish separately owing to (A18).”
- (5) In the caption of Fig. 12, “Combination of (b-2), (b-4), and (b-10) cancels that of (b-3), (b-6), and (b-7), owing to (A18)” should read “The sums of diagrams (b-2), (b-4), and (b-10) and of diagrams (b-3), (b-6), and (b-7) vanish separately owing to (A18).”
- (6) In the caption of Fig. 13, “Contributions from (c1), (c-3), (c-6), and (c-1)4” should read “Contributions from (c-1), (c-3), (c-6), and (c-14).”
- (7) In Eq. (A8), the momentum k_1 needs to be replaced by the momentum P_h , i.e., Eq. (A8) should read

$$P^{\rho\gamma}(xp + x'p' - k_2) \equiv -g^{\rho\gamma} + \frac{(xp + x'p' - k_2)^\rho P_h^\gamma + (xp + x'p' - k_2)^\gamma P_h^\rho}{(xp + x'p' - k_2) \cdot P_h}. \quad (\text{A8})$$

- (8) Right after Eq. (A9), “... to the left of the cut ...” should read “... to the right of the cut ...”

[1] R. Ikarashi, Y. Koike, K. Yabe, and S. Yoshida, New derivation of the twist-3 gluon fragmentation contribution to polarized hyperon production, *Phys. Rev. D* **106**, 074006 (2022).