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Erratum to: Non-global structure of the O(#[subscript s][superscript 2] dijet soft function

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Erratum: Non-global structure of the $\mathcal{O}(\alpha_s^2)$ dijet soft function

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The position space results in eqs. (3.30)–(3.32) of ref. [1] are correct, but there are typos in the coefficients extracted in the $x_1 \gg x_2$ limit of $t_2(x_1/x_2)$, so eq. (3.33) should read:

$$s_2^{[2]} = -\frac{2\pi^2}{3} C_F C_A \,, \quad s_2^{[1]} = 2\left[C_F C_A \frac{(11\pi^2 - 3 - 18\zeta_3)}{9} + C_F T_R n_f \left(\frac{6 - 4\pi^2}{9} \right) \right], \quad (3.33)$$

$$s_2^{[0]} = -s_2^{[1]} \ln 2 - 4 C_F C_A F_N(1) - 4 C_F T_R n_f F_Q(1) + C_F C_A s_2^{[C_F C_A]} + C_F T_R n_f s_2^{[n_f]}.$$

Similarly, from taking the large $\ell_1 \gg \ell_2$ limit of the momentum space result in eq. (3.36), the coefficients in eq. (3.39) should read:

$$s_{2c}^{[0]} = -s_{2c}^{[1]} \ln 2 - 4 C_F C_A f_N(1) - 4 C_F T_R n_f f_Q(1) + C_F C_A s_{2\rho}^{[C_F C_A]} + C_F T_R n_f s_{2\rho}^{[n_f]}. \quad (3.39)$$

Finally, there are constant terms that should be added to the μ-dependent part of the momentum-space soft function, which appear from the conversion of logarithms from position to momentum space, so eq. (3.43) should read:

$$
\begin{aligned}
\mathcal{R}_c(\ell_1^c, \ell_2^c, \mu) = & -\frac{\alpha_s(\mu)C_F}{\pi}\left(L_1^2 + L_2^2 - \frac{\pi^2}{3}\right) \\
& + \frac{\alpha_s^2(\mu)}{(4\pi)^2}\left\{8C_F^2\left(L_1^2 + L_2^2\right)^2 + \left(\frac{88}{9}C_F C_A - \frac{32}{9}C_F T_R n_f\right)\left(L_1^3 + L_2^3\right)\right. \\
& + \left[-\frac{20\pi^2}{3}C_F^2 + C_F C_A\left(\frac{4\pi^2}{3} - \frac{268}{9}\right) + \frac{80}{9}C_F T_R n_f\right]\left(L_1^2 + L_2^2\right) \\
& + \left[64\zeta_3 C_F^2 + C_F C_A\left(\frac{808}{27} - \frac{22\pi^2}{9} - 28\zeta_3\right)\right. \\
& \left.- C_F T_R n_f\left(\frac{224}{27} - \frac{8\pi^2}{9}\right)\right](L_1 + L_2) - C_F^2\frac{28\pi^4}{45} \\
& \left.+ C_F C_A\left(\frac{352\zeta_3}{9} + \frac{268\pi^2}{27} - \frac{4\pi^4}{9}\right) - C_F T_R n_f\left(\frac{128\zeta_3}{9} + \frac{80\pi^2}{27}\right)\right\}. \quad (3.43)
\end{aligned}
$$

References

[1] A. Hornig, C. Lee, I. W. Stewart, J. R. Walsh and S. Zuberi, *Non-global structure of the $O(\alpha_s^2)$ dijet soft function*, *JHEP* **08** (2011) 054 [[arXiv:1105.4628](#)].