Erratum: Power-enhanced leading-logarithmic QED corrections to $B_q \rightarrow \mu^+\mu^-$

Martin Beneke, Christoph Bobeth and Robert Szafron[1]

Physik Department T31, Technische Universität München,
James-Franck-Straße 1, D-85748 Garching, Germany

E-mail: christoph.bobeth@tum.de, robert.szafron@cern.ch

The expression for $F(\omega, \omega')$ entering (A.36) and the QED term in (4.15) is incorrect. The correct expression differs from the QCD one for this function. The corrected anomalous dimension is given in section 2.2.4 of [2]. The anomalous dimension relevant to $\overline{B}_q \rightarrow \ell^+\ell^-$ is obtained from (2.23) in this reference by setting $Q_{M_1} = -Q_{M_2} \rightarrow Q_\ell$ and $Q_{\mathrm{sp}} = Q_d \rightarrow Q_q$. In [2], the collinear direction has been chosen for the M_1^+ meson, which corresponds to the anti-collinear sector of the anti-lepton in [1]. Therefore the statement after (2.30) in the published version and arXiv version 1 of [2] should read $Q_{M_2} \rightarrow -Q_\ell$ rather than $+Q_\ell$ and applies to $\overline{B}_q$ decay rather than B_q. In particular, the correct anomalous dimension includes support for $\omega < 0$. This correction does not affect the cusp terms and hence does not affect other equations and results in the paper.

References

[1] M. Beneke, C. Bobeth and R. Szafron, *Power-enhanced leading-logarithmic QED corrections to $B_q \rightarrow \mu^+\mu^-$*, *JHEP* **10** (2019) 232 [arXiv:1908.07011] [INSPIRE].

[2] M. Beneke, P. Böer, J.-N. Toelstede and K.K. Vos, *Light-cone distribution amplitudes of heavy mesons with QED effects*, *JHEP* **08** (2022) 020 [arXiv:2204.09091] [INSPIRE].

[1]Now at: Department of Physics, Brookhaven National Laboratory, Upton, N.Y., 11973, U.S.A.