Erratum: $B_c \rightarrow B_{s(d)}$ form factors from lattice QCD **[Phys. Rev. D **102**, 014513 (2020)]**

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(Received 2 April 2021; published 13 May 2021)

DOI: [10.1103/PhysRevD.103.099901](https://doi.org/10.1103/PhysRevD.103.099901)

There were minor numerical errors in plotting and exporting our form factors. Also, there was an error in the computation of observables from our form factors using Eq. (26) in our publication.¹ We correct these issues here.

Figures 21–24, 26, and 27 in our publication should be replaced with Figs. 1–3 here.

The ancillary file containing the coefficients required to reconstruct our form factors has been replaced in the Supplemental Material of the original paper. To assist those who wish to import the form factors from these coefficients, we provide values that the form factors should take for both $q^2 = 0$ and q^2_{max} in Table I.

We now address the computation of observables from our form factors. First, Table XI in our publication becomes Table II here. Then, combining these results with existing CKM matrix values [1] $V_{cs} = 0.997(17)$ and $V_{cd} = 0.218(4)$ yields the predictions

$$\begin{aligned}\Gamma(B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell) &= 26.25(90)(83) \times 10^9 \text{ s}^{-1}, \\ \Gamma(B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell) &= 1.650(61)(84) \times 10^9 \text{ s}^{-1},\end{aligned}\quad (1)$$

where the CKM matrix elements are responsible for the first error and the second error arises from our lattice calculations. We can convert these results for the decay width into branching fractions using the lifetime of the B_c meson, 513.49(12.4) fs [2]. This gives

$$\begin{aligned}\mathcal{B}(B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell) &= 0.01348(46)(33)(43), \\ \mathcal{B}(B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell) &= 0.000847(31)(43)(20),\end{aligned}\quad (2)$$

FIG. 1. Fits of f_0 and f_+ for $B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell$ tuned to the physical-continuum limit. The form factor is plotted against $z_p/|z_p(t_-)|$.

¹We thank Craig Roberts and collaborators for bringing this issue to our attention.

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where now the third uncertainty is from the lifetime. We also present the ratio of the $\Gamma|V|^{-2}$ for $B_c \rightarrow B_s$ to $B_c \rightarrow B_d$ taking correlations into account between the numerator and denominator. From the chained fit of $B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell$ and $B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell$ form factors, we obtain

$$\frac{\Gamma(B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell) |V_{cd}|^2}{\Gamma(B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell) |V_{cs}|^2} = 0.759(44). \quad (3)$$

FIG. 2. Fits of f_0 and f_+ for $B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell$ tuned to the physical-continuum limit.

FIG. 3. Final form factors from the chained fits. The left plot shows the form factors for $B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell$, and the right plot shows the form factors for $B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell$. In each plot, the form factor f_0 lies below the form factor f_+ . The form factors are plotted against the entire range of physical q^2 .

TABLE I. The form factors evaluated at $q^2 = 0$ and q_{max}^2 .

$q^2[\text{GeV}]^2$	f_0^s	f_+^s	f_0^d	f_+^d
0	0.621(10)	0.621(10)	0.555(16)	0.555(16)
q_{max}^2	0.817(11)	0.911(18)	0.756(16)	0.910(28)

TABLE II. Final results of the weighted integral of $|f_+(q^2)|^2$ over the physical range of squared 4-momentum transfer. Units are MeV.

	$B_c^+ \rightarrow B_s^0 \bar{\ell} \nu_\ell$	$B_c^+ \rightarrow B^0 \bar{\ell} \nu_\ell$
$\Gamma V ^{-2}$	$1.738(55) \times 10^{-11}$	$2.29(12) \times 10^{-11}$

- [1] M. Tanabashi *et al.* (Particle Data Group), [Phys. Rev. D **98**, 030001 \(2018\)](#).
[2] R. Aaij *et al.* (LHCb Collaboration), [Phys. Lett. B **742**, 29 \(2015\)](#).