Erratum: Measurement of the CKM matrix element $|V_{cb}|$ from $B^0 \to D^{*-}\ell^+\nu_\ell$ at Belle [Phys. Rev. D 100, 052007 (2019)]

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There was an error in the calculation of the value of N_{B^0} in the original transcript. The value of f_{00} was erroneously set to 0.500 in the code (the value used in Monte Carlo studies), not the world average value of 0.486 as specified in the transcript. The effect of this change is to increase the quoted values of $F(1)|V_{cb}|\eta_{\rm EW}$ by 1.4% and the branching fraction by 2.9%. The associated relative systematic uncertainties remain unchanged from the original transcript. Below, we report on the resulting changes in the measurement. The fit results from the Caprini-Lellouch-Neubert (CLN) and Boyd, Grinstein and Lebed (BGL) parameterizations are given in Tables I and II, respectively.

I. RESULTS

The full results for the fit to the CLN parametrization are given below, where the first uncertainty is statistical, and the second systematic:

$$\mathcal{F}(1)|V_{cb}|\eta_{\rm EW} \times 10^3 = 35.56 \pm 0.15 \pm 0.57, \tag{1}$$

$$\mathcal{B}(B^0 \to D^{*-}\ell^+\nu_\ell) = (5.04 \pm 0.02 \pm 0.16)\%. \tag{2}$$

TABLE I. Fit results for the four subsamples in the CLN parametrization, errors are statistical errors only.

	SVD1 e	SVD1 μ	SVD2 e	SVD2 μ
$\mathcal{F}(1)\lvert V_{cb}\rvert\eta_{\rm EW} \times 10^3$	35.16 ± 0.49	35.51 ± 0.51	35.75 ± 0.23	35.48 ± 0.25
$\mathcal{B}(B^0 \to D^{*-}\ell^+\nu_\ell)$ [%]	5.03 ± 0.06	5.10 ± 0.06	5.07 ± 0.03	5.00 ± 0.03

TABLE II. Fit results for the electron and muon subsamples in the BGL parametrization where the following parameters are floated: $\tilde{a}_0^f$, $\tilde{a}_1^f$, $\tilde{a}_1^{F_1}$, $\tilde{a}_2^{F_1}$, $\tilde{a}_0^g$ along with $\mathcal{F}(1)|V_{cb}|\eta_{\rm EW}$ (derived from $\tilde{a}_0^f$). The error shown in the table are the statistical errors only.

	e	μ
$\tilde{a}_0^f \times 10^2$	-0.0514 ± 0.0005	-0.0512 ± 0.0006
$\tilde{a}_1^f \times 10^2$	-0.0683 ± 0.0223	-0.0635 ± 0.0256
$\tilde{a}_1^{F_1} \times 10^2$	-0.0296 ± 0.0087	-0.0251 ± 0.0097
$\tilde{a}_2^{F_1} \times 10^2$	$+0.3456 \pm 0.1698$	$+0.3168 \pm 0.1898$
$\tilde{a}_0^g \times 10^2$	-0.0876 ± 0.0024	-0.1008 ± 0.0027
$\mathcal{F}(1)\lvert V_{cb}\rvert\eta_{\rm EW} \times 10^3$	35.51 ± 0.31	35.34 ± 0.36
$\mathcal{B}(B^0 \to D^{*-}\ell^+\nu_\ell)$ [%]	5.05 ± 0.02	5.02 ± 0.03

The full results for the fit to the BGL parametrization are given below, where the first uncertainty is statistical, and the second systematic:

$$\tilde{a}_0^f \times 10^3 = -0.513 \pm 0.004 \pm 0.008, \tag{3}$$

$$\tilde{a}_1^f \times 10^3 = -0.66 \pm 0.17 \pm 0.09, \tag{4}$$

$$\tilde{a}_1^{F_1} \times 10^3 = -0.274 \pm 0.065 \pm 0.023, \tag{5}$$

$$\tilde{a}_2^{F_1} \times 10^3 = +3.32 \pm 1.27 \pm 0.46, \tag{6}$$

$$\tilde{a}_0^g \times 10^3 = -0.942 \pm 0.018 \pm 0.013, \tag{7}$$

$$\mathcal{F}(1)|V_{cb}|\eta_{\mathrm{EW}} \times 10^3 = 35.44 \pm 0.23 \pm 0.60, \tag{8}$$

$$\mathcal{B}(B^0 \to D^{*-}\ell^+\nu_\ell) = (5.04 \pm 0.02 \pm 0.16)\%. \tag{9}$$

Taking the value of $\mathcal{F}(1) = 0.906 \pm 0.013$ from lattice QCD in Ref. [1] and $\eta_{\mathrm{EW}} = 1.0066$ from Ref. [2], we find the following values for $|V_{cb}|$: $(39.0 \pm 0.2 \pm 0.6 \pm 0.6) \times 10^{-3}$ (CLN + LQCD) and $(38.9 \pm 0.3 \pm 0.7 \pm 0.6) \times 10^{-3}$ (BGL + LQCD), where the uncertainties are statistical, systematic, and from lattice QCD, respectively. The value of $|V_{cb}|$ from the CLN and BGL parametrizations are consistent with the world average and remain to be in tension with inclusive $|V_{cb}|$ [3].

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