

Erratum: *B* meson semileptonic form factors from unquenched lattice QCD [Phys. Rev. D 73, 074502 (2006)]

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Because of a normalization error in one of our analysis codes many results for the form factor f_{\perp} were evaluated incorrectly. In particular, Table IV should be replaced by

f_{\perp} [GeV ^{-1/2}]				
$u_0 am_f$	$u_0 am_q$	$p_{\pi} = (001)$	(011)	(111)
0.005	0.005	1.543(205)	0.994(62)	0.892(68)
0.007	0.007	1.082(31)	0.857(44)	0.750(83)
0.010	0.005	1.128(37)	0.936(51)	0.715(66)
0.010	0.010	1.235(90)	0.929(52)	0.778(74)
0.010	0.020	1.029(21)	0.864(27)	0.733(40)
0.020	0.020	1.097(140)	0.844(34)	0.688(35)

The corrected form factors $f_{+}(q^2)$ and $f_0(q^2)$ in the chiral limit become (previous Table V):

q^2 [GeV ²]	$f_{+}(q^2)$	$f_0(q^2)$
17.34	1.101(53)	0.561(26)
18.39	1.273(99)	0.600(21)
19.45	1.458(142)	0.639(23)
20.51	1.627(185)	0.676(41)
21.56	1.816(126)	0.714(56)

We restrict the range in q^2 to values where simulation data before chiral extrapolation are available for all light quark masses and omit two lower q^2 points that were obtained previously through small extrapolations in E_{π} .

The new error budget is given by (previous Table VI):

Source of error	Size of error (%)
Statistics + chiral extrapolations	10
Two-loop matching	9
Discretization	3
Relativistic	1
Total	14

and the partially integrated differential decay rates become (previous Table VII):

Fit	$f_{+}(q^2 = 0)$	$\int_{0 \leq q^2 \leq q_{\max}^2} \frac{d\Gamma}{dq^2} / V_{ub} ^2$ [ps ⁻¹]	16 GeV ² $\leq q^2 \leq q_{\max}^2$
BZ	0.31(5)(4)	9.10(1.82)(2.55)	2.07(41)(39)
BK	0.31(5)(4)	9.30(1.86)(2.60)	2.13(43)(40)
SE	0.30(5)(4)	9.35(1.87)(2.62)	2.02(40)(38)

Equation (22) should be replaced by

$$\frac{1}{|V_{ub}|^2} \int_{16 \text{ GeV}^2}^{q_{\max}^2} \frac{d\Gamma}{dq^2} dq^2 = 2.07(41)(39) \text{ ps}^{-1}, \quad (22)$$

which signifies an increase on our previous incorrect value (1.46(23)(27) ps⁻¹) by 1.7 times the previously quoted total error.

The new Eq. (22) leads to a new Eq. (23),

$$|V_{ub}| = 3.55(25)(50) \times 10^{-3}, \quad q^2 \geq 16 \text{ GeV}^2. \quad (23)$$

Accordingly, the last two sentences in the Abstract should be changed to, "...We calculate the form factors $f_+(q^2)$ and $f_0(q^2)$ in the chiral limit for the range $16 \text{ GeV}^2 \leq q^2 < q_{\text{max}}^2$ and obtain $\int_{16 \text{ GeV}^2}^{q_{\text{max}}^2} [d\Gamma/dq^2]dq^2/|V_{ub}|^2 = 2.07(57) \text{ ps}^{-1}$. Combining this with a preliminary average by the Heavy Flavor Averaging Group (HFAG'05) of recent branching fraction data for exclusive B semileptonic decays from the *BABAR*, *Belle*, and *CLEO* collaborations, leads to $|V_{ub}| = 3.55(25)(50) \times 10^{-3}$."