Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of *CP* Asymmetries for B^+ modes (part 1)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	*BABAR*	Belle	CDF	LHCb	Our Avg.
$K^0\pi^+$	-0.017 ± 0.016	$-0.029 \pm 0.039 \pm 0.010$ [1]	$-0.011 \pm 0.021 \pm 0.006$ [2]		$-0.022 \pm 0.025 \pm 0.010$ [3]	-0.017 ± 0.016
$K^+\pi^0$	0.037 ± 0.021 ‡	$0.030 \pm 0.039 \pm 0.010$ [4]	$0.043 \pm 0.024 \pm 0.002$ [2]			0.040 ± 0.021
$\eta' K^+$	0.004 ± 0.011	$0.008^{+0.017}_{-0.018} \pm 0.009$ [5]	$0.028 \pm 0.028 \pm 0.021$ [6]		$-0.002 \pm 0.012 \pm 0.001 \pm 0.006$ [7]	0.003 ± 0.010
$\eta' K^{*+}$	-0.26 ± 0.27	$-0.26 \pm 0.27 \pm 0.02$ [8]				-0.26 ± 0.27
$\eta' K_0^*(1430)^+$	0.06 ± 0.20	$0.06 \pm 0.20 \pm 0.02$ [8]				0.06 ± 0.20
$\eta' K_2^*(1430)^+$	0.15 ± 0.13	$0.15 \pm 0.13 \pm 0.02$ [8]				0.15 ± 0.13
ηK^+	-0.37 ± 0.08	$-0.36 \pm 0.11 \pm 0.03$ [5]	$-0.38 \pm 0.11 \pm 0.01$ [9]			-0.37 ± 0.08
ηK^{*+}	0.02 ± 0.06	$0.01 \pm 0.08 \pm 0.02$ [10]	$0.03 \pm 0.10 \pm 0.01$ [11]			0.02 ± 0.06
$\eta K_0^*(1430)^+$	$0.05 \pm 0.13 \pm 0.02$	$0.05 \pm 0.13 \pm 0.02$ [10]				0.05 ± 0.13
$\eta K_2^*(1430)^+$	$-0.45 \pm 0.30 \pm 0.02$	$-0.45 \pm 0.30 \pm 0.02$ [10]				-0.45 ± 0.30
ωK^+	-0.02 ± 0.04	$-0.01 \pm 0.07 \pm 0.01$ [12]	$-0.03 \pm 0.04 \pm 0.01$ [13]			-0.02 ± 0.04
ωK^{*+}	0.29 ± 0.35	$0.29 \pm 0.35 \pm 0.02$ [14]				0.29 ± 0.35
$\omega K_0^*(1430)^+$	-0.10 ± 0.09	$-0.10 \pm 0.09 \pm 0.02$ [14]				-0.10 ± 0.09
$\omega K_2^*(1430)^+$	0.14 ± 0.15	$0.14 \pm 0.15 \pm 0.02$ [14]				0.14 ± 0.15
$K^{*0}\pi^+$	$-0.04 \pm 0.09^*$	$0.032 \pm 0.052^{+0.016}_{-0.013}$ [15]	$-0.149 \pm 0.064 \pm 0.022$ [16]			-0.038 ± 0.042
$K^{*+}\pi^0$	-0.06 ± 0.24	$-0.06 \pm 0.24 \pm 0.04$ [17]				-0.06 ± 0.24
$K^+\pi^+\pi^-$	0.027 ± 0.008	$0.028 \pm 0.020 \pm 0.023$ [15]	$0.049 \pm 0.026 \pm 0.020$ [16]		$0.025 \pm 0.004 \pm 0.008$ [18]	0.027 ± 0.008
$f_0(980)K^+$	-0.08 ± 0.09 †	$-0.106 \pm 0.050^{+0.036}_{-0.015}$ [15]	$-0.077 \pm 0.065^{+0.046}_{-0.026}$ [16]			$-0.095^{+0.049}_{-0.042}$
$f_2(1270)K^+$	$-0.68^{+0.19}_{-0.017}$	$-0.85 \pm 0.22^{+0.26}_{-0.13}$ [15]	$-0.59 \pm 0.22 \pm 0.04$ [16]			$-0.68^{+0.20}_{-0.18}$
$f_0(1370)K^+$	$0.28^{+0.30}_{-0.29}$	$0.28 \pm 0.26^{+0.15}_{-0.14}$ [15]				$0.28^{+0.30}_{-0.29}$
$\rho^0 K^+$	0.37 ± 0.10	$0.44 \pm 0.10^{+0.06}_{-0.14}$ [15]	$0.30 \pm 0.11^{+0.11}_{-0.05}$ [16]			0.37 ± 0.11
$K_0^*(1430)^0\pi^+$	0.055 ± 0.033	$0.032 \pm 0.035^{+0.034}_{-0.028}$ [15]	$0.076 \pm 0.038^{+0.028}_{-0.022}$ [16]			$0.055^{+0.034}_{-0.032}$
$K_2^*(1430)^0\pi^+$	$0.05^{+0.29}_{-0.24}$	$0.05 \pm 0.23^{+0.18}_{-0.08}$ [15]				$0.05^{+0.29}_{-0.24}$
$K^+\pi^0\pi^0$	-0.06 ± 0.07	$-0.06 \pm 0.06 \pm 0.04$ [17]				-0.06 ± 0.07
$\rho^+ K^0$	-0.12 ± 0.17	$-0.12 \pm 0.17 \pm 0.02$ [19]				-0.12 ± 0.17
$K^{*+}\pi^+\pi^-$	0.07 ± 0.08	$0.07 \pm 0.07 \pm 0.04$ [20]				0.07 ± 0.08
$K^{*+}\rho^0$	0.31 ± 0.13	$0.31 \pm 0.13 \pm 0.03$ [21]				0.31 ± 0.13
$f_0(980)K^{*+}$	-0.15 ± 0.12	$-0.15 \pm 0.12 \pm 0.03$ [21]				-0.15 ± 0.12
$a_1^+ K^0$	0.12 ± 0.11	$0.12 \pm 0.11 \pm 0.02$ [22]				0.12 ± 0.11
$b_1^+ K^0$	-0.03 ± 0.15	$-0.03 \pm 0.15 \pm 0.02$ [23]				-0.03 ± 0.15
$K^{*0}\rho^+$	-0.01 ± 0.16	$-0.01 \pm 0.16 \pm 0.02$ [24]				-0.01 ± 0.16
$b_1^0 K^+$	-0.46 ± 0.20	$-0.46 \pm 0.20 \pm 0.02$ [25]				-0.46 ± 0.20
$K^+\overline{K}^0$	0.04 ± 0.14	$0.10 \pm 0.26 \pm 0.03$ [1]	$0.014 \pm 0.168 \pm 0.002$ [2]		$-0.21 \pm 0.14 \pm 0.01$ [3]	-0.087 ± 0.100
$K^+K_SK_S$	$0.04^{+0.04}_{-0.05}$	$0.04^{+0.04}_{-0.05} \pm 0.02$ [26]				$0.04^{+0.04}_{-0.05}$
$K^+K^-\pi^+$	-0.12 ± 0.05	$0.00 \pm 0.10 \pm 0.03$ [27]	$-0.170 \pm 0.073 \pm 0.017$§ [28]		$-0.123 \pm 0.017 \pm 0.014$ [18]	-0.122 ± 0.021
$K^+K^-K^+$	-0.033 ± 0.008	$-0.017^{+0.019}_{-0.014} \pm 0.014$ [26]			$-0.036 \pm 0.004 \pm 0.007$ [18]	-0.033 ± 0.007
ϕK^+	$0.024 \pm 0.028^*$	$0.128 \pm 0.044 \pm 0.013$ [26]	$0.01 \pm 0.12 \pm 0.05$ [29]	$-0.07 \pm 0.17^{+0.03}_{-0.02}$ [30]	$0.017 \pm 0.011 \pm 0.002 \pm 0.006$ [7]	0.025 ± 0.012

* Errors from PDG include a scale factor.

† PDG takes the value from the *BABAR* amplitude analysis of $B^+ \to K^+K^-K^+$, while our numbers are from amplitude analyses of $B^+ \to K^+\pi^-\pi^+$.

‡ PDG uses also a result from CLEO.

§ CP asymetry is also measured in different bins of $m_{K^+K^-}$.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of CP Asymmetries for B^+ modes (part 2)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	*BABAR*	Belle	CDF	LHCb	Our Avg.
$K^{*+}K^+K^-$	0.11 ± 0.09	$0.11 \pm 0.08 \pm 0.03$ [20]				0.11 ± 0.09
ϕK^{*+}	-0.01 ± 0.08	$0.00 \pm 0.09 \pm 0.04$ [31]	$-0.02 \pm 0.14 \pm 0.03$ [32]			-0.01 ± 0.08
$\phi K_1(1270)^+$	0.15 ± 0.20	$0.15 \pm 0.19 \pm 0.05$ [33]				0.15 ± 0.20
$\phi K_0^*(1430)^+$	0.04 ± 0.15	$0.04 \pm 0.15 \pm 0.04$ [33]				0.04 ± 0.15
$\phi K_2^*(1430)^+$	-0.23 ± 0.20	$-0.23 \pm 0.19 \pm 0.06$ [33]				-0.23 ± 0.20
$\phi\phi K^+$	-0.10 ± 0.08	-0.10 ± 0.08 [34]				-0.10 ± 0.08
$K^{*+}\gamma$	0.18 ± 0.29	$0.18 \pm 0.28 \pm 0.07$ [35]	$0.011 \pm 0.023 \pm 0.003$ [36]			0.012 ± 0.023
$K^+\eta\gamma$	-0.12 ± 0.07	$-0.09 \pm 0.10 \pm 0.01$ [37]	$-0.16 \pm 0.09 \pm 0.06$ [38]			-0.12 ± 0.07
$K^+\phi\gamma$	$-0.13 \pm 0.11^*$	$-0.26 \pm 0.14 \pm 0.05$ [39]	$-0.03 \pm 0.11 \pm 0.08$ [40]			-0.13 ± 0.10
$\rho^+\gamma$	-0.11 ± 0.33		$-0.11 \pm 0.32 \pm 0.09$ [41]			-0.11 ± 0.33
$\pi^+\pi^0$	0.03 ± 0.04	$0.03 \pm 0.08 \pm 0.01$ [4]	$0.025 \pm 0.043 \pm 0.007$ [2]			0.026 ± 0.039
$\pi^+\pi^-\pi^+$	0.057 ± 0.013	$0.032 \pm 0.044^{+0.040}_{-0.037}$ [42]			$0.058 \pm 0.008 \pm 0.011$ [18]	0.057 ± 0.014
$\rho^0\pi^+$	$0.18^{+0.09}_{-0.17}$	$0.18 \pm 0.07^{+0.05}_{-0.15}$ [42]				$0.18^{+0.09}_{-0.17}$
$f_2(1270)\pi^+$	$0.41^{+0.31}_{-0.29}$	$0.41 \pm 0.25^{+0.18}_{-0.15}$ [42]				$0.41^{+0.31}_{-0.29}$
$\rho(1450)^0\pi^+$	$-0.06^{+0.36}_{-0.42}$	$-0.06 \pm 0.28^{+0.23}_{-0.32}$ [42]				$-0.06^{+0.36}_{-0.42}$
$f_0(1370)\pi^+$	0.72 ± 0.22	$0.72 \pm 0.15 \pm 0.16$ [42]				0.72 ± 0.22
$\pi^+\pi^-\pi^+(NR)$	$-0.14^{+0.23}_{-0.16}$	$-0.14 \pm 0.14^{+0.18}_{-0.08}$ [42]				$-0.14^{+0.23}_{-0.16}$
$\rho^+\pi^0$	0.02 ± 0.11	$-0.01 \pm 0.13 \pm 0.02$ [43]	$0.06 \pm 0.17^{+0.04}_{-0.05}$ [44]			0.02 ± 0.11
$\rho^+\rho^0$	-0.05 ± 0.05	$-0.054 \pm 0.055 \pm 0.010$ [45]	$0.00 \pm 0.22 \pm 0.03$ [46]			-0.051 ± 0.054
$\omega\pi^+$	-0.04 ± 0.06 †	$-0.02 \pm 0.08 \pm 0.01$ [12]	$-0.02 \pm 0.09 \pm 0.01$ [47]			-0.02 ± 0.06
$\omega\rho^+$	-0.20 ± 0.09	$-0.20 \pm 0.09 \pm 0.02$ [14]				-0.20 ± 0.09
$\eta\pi^+$	$-0.14 \pm 0.07^*$	$-0.03 \pm 0.09 \pm 0.03$ [5]	$-0.19 \pm 0.06 \pm 0.01$ [9]			-0.14 ± 0.05
$\eta\rho^+$	0.11 ± 0.11	$0.13 \pm 0.11 \pm 0.02$ [48]	$-0.04^{+0.34}_{-0.32} \pm 0.01$ [11]			0.11 ± 0.11
$\eta'\pi^+$	0.06 ± 0.16	$0.03 \pm 0.17 \pm 0.02$ [5]	$0.20^{+0.37}_{-0.36} \pm 0.04$ [6]			0.06 ± 0.15
$\eta'\rho^+$	0.26 ± 0.17	$0.26 \pm 0.17 \pm 0.02$ [8]				0.26 ± 0.17
$b_1^0\pi^+$	0.05 ± 0.16	$0.05 \pm 0.16 \pm 0.02$ [25]				0.05 ± 0.16
$p\bar{p}\pi^+$	0.00 ± 0.04	$0.04 \pm 0.07 \pm 0.04$ [49]	$-0.17 \pm 0.10 \pm 0.02$ ‡ [50]		$-0.041 \pm 0.039 \pm 0.005$ [51]	-0.041 ± 0.033
$p\bar{p}K^+$	$0.00 \pm 0.04^*$	$-0.16 \pm 0.08 \pm 0.04$ [52]	$-0.02 \pm 0.05 \pm 0.02$ ‡ [50]		$-0.021 \pm 0.020 \pm 0.004$ [51]	-0.027 ± 0.018
$p\bar{p}K^{*+}$	$0.21 \pm 0.16^*$	$0.32 \pm 0.13 \pm 0.05$ [49]	$-0.01 \pm 0.19 \pm 0.02$ [53]			0.21 ± 0.11
$p\bar{\Lambda}\gamma$	0.17 ± 0.17		$0.17 \pm 0.16 \pm 0.05$ [54]			0.17 ± 0.17
$p\bar{\Lambda}\pi^0$	0.01 ± 0.17		$0.01 \pm 0.17 \pm 0.04$ [54]			0.01 ± 0.17
$K^+\ell\ell$	-0.02 ± 0.08	$-0.03 \pm 0.14 \pm 0.01$ § [55]	$0.04 \pm 0.10 \pm 0.02$ [56]			0.02 ± 0.08
$K^+e^+e^-$	0.14 ± 0.14		$0.14 \pm 0.14 \pm 0.03$ [56]			0.14 ± 0.14
$K^+\mu^+\mu^-$	0.011 ± 0.017		$-0.05 \pm 0.13 \pm 0.03$ [56]		$0.012 \pm 0.017 \pm 0.001$ ¶ [57]	0.011 ± 0.017
$\pi^+\mu^+\mu^-$	-0.11 ± 0.12				$-0.11 \pm 0.12 \pm 0.01$ [58]	-0.11 ± 0.12
$K^{*+}\ell\ell$	-0.09 ± 0.14	$0.01^{+0.26}_{-0.24} \pm 0.02$ [59]	$-0.13^{+0.17}_{-0.16} \pm 0.01$ [56]			$-0.09^{+0.14}_{-0.13}$
$K^{*+}e^+e^-$	$-0.14^{+0.23}_{-0.22}$		$-0.14^{+0.23}_{-0.22} \pm 0.02$ [56]			$-0.14^{+0.23}_{-0.22}$
$K^{*+}\mu^+\mu^-$	-0.12 ± 0.24		$-0.12 \pm 0.24 \pm 0.02$ [56]		$-0.035 \pm 0.024 \pm 0.003$ ¶ [57]	-0.036 ± 0.024

* Errors from PDG include a scale factor.
† PDG uses also a result from CLEO.
‡ PDG swaps the Belle results corresponding to $A_{CP}(p\bar{p}\pi^+)$ and $A_{CP}(p\bar{p}K^+)$.
§ PDG uses also a previous result from *BABAR* ([59]).
¶ LHCb also quotes results in bins of $m(\ell^+\ell^-)^2$.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of *CP* Asymmetries for B^0 modes

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	*BABAR*	Belle	CDF	LHCb	Our Avg.
$K^+\pi^-$	-0.082 ± 0.006 †	$-0.107 \pm 0.016^{+0.006}_{-0.004}$ [60]	$-0.069 \pm 0.014 \pm 0.007$ [2]	$-0.083 \pm 0.013 \pm 0.004$[61]	$-0.080 \pm 0.007 \pm 0.003$ [62]	-0.082 ± 0.006
$\eta' K^{*0}$	$-0.07 \pm 0.18 \pm 0.23$	$0.02 \pm 0.23 \pm 0.02$ [8]	$-0.22 \pm 0.29 \pm 0.07$ [63]			-0.07 ± 0.18
$\eta' K_0^*(1430)^0$	-0.19 ± 0.17	$-0.19 \pm 0.17 \pm 0.02$ [8]				-0.19 ± 0.17
$\eta' K_2^*(1430)^0$	0.14 ± 0.18	$0.14 \pm 0.18 \pm 0.02$ [8]				0.14 ± 0.18
ηK^{*0}	0.19 ± 0.05	$0.21 \pm 0.06 \pm 0.02$ [10]	$0.17 \pm 0.08 \pm 0.01$ [11]			0.19 ± 0.05
$\eta K_0^*(1430)^0$	0.06 ± 0.13	$0.06 \pm 0.13 \pm 0.02$ [10]				0.06 ± 0.13
$\eta K_2^*(1430)^0$	-0.07 ± 0.19	$-0.07 \pm 0.19 \pm 0.02$ [10]				-0.07 ± 0.19
$b_1^- K^+$	-0.07 ± 0.12	$-0.07 \pm 0.12 \pm 0.02$ [25]				-0.07 ± 0.12
ωK^{*0}	0.45 ± 0.25	$0.45 \pm 0.25 \pm 0.02$ [14]				0.45 ± 0.25
$\omega K_0^*(1430)^0$	-0.07 ± 0.09	$-0.07 \pm 0.09 \pm 0.02$ [14]				-0.07 ± 0.09
$\omega K_2^*(1430)^0$	-0.37 ± 0.17	$-0.37 \pm 0.17 \pm 0.02$ [14]				-0.37 ± 0.17
$K^+\pi^-\pi^0$	0.00 ± 0.06	$-0.030^{+0.045}_{-0.051} \pm 0.055$ [64]	$0.07 \pm 0.11 \pm 0.01$ [65]			$0.000^{+0.059}_{-0.061}$
$\rho^- K^+$	0.20 ± 0.11	$0.20 \pm 0.09 \pm 0.08$ [66]	$0.22^{+0.22+0.06}_{-0.23-0.02}$ [65]			0.20 ± 0.11
$\rho(1450)^- K^+$	-0.10 ± 0.33	$-0.10 \pm 0.32 \pm 0.09$ [66]				-0.10 ± 0.33
$\rho(1700)^- K^+$	-0.36 ± 0.61	$-0.36 \pm 0.57 \pm 0.23$ [66]				-0.36 ± 0.61
$K^+\pi^-\pi^0(NR)$	0.10 ± 0.18	$0.10 \pm 0.16 \pm 0.08$ [66]				0.10 ± 0.18
$K^0\pi^+\pi^-$	-0.01 ± 0.05	$-0.01 \pm 0.05 \pm 0.01$ [67]				-0.01 ± 0.05
$K^{*+}\pi^-$	-0.22 ± 0.06 †	$-0.24 \pm 0.07 \pm 0.02$ ‡ [66]	$-0.21 \pm 0.11 \pm 0.07$ [68]		$-0.308 \pm 0.060 \pm 0.011 \pm 0.012$[1] [69]	-0.271 ± 0.044
$(K\pi)_0^+\pi^-$					$-0.032 \pm 0.047 \pm 0.016 \pm 0.027$[1] [69]	-0.032 ± 0.057
$K_2^*(1430)^+\pi^-$					$-0.29 \pm 0.22 \pm 0.09 \pm 0.03$[1] [69]	-0.29 ± 0.24
$K^*(1680)^+\pi^-$					$-0.07 \pm 0.13 \pm 0.02 \pm 0.03$[1] [69]	-0.07 ± 0.14
$f_0(980)K_s^0$					$0.28 \pm 0.27 \pm 0.05 \pm 0.14$[1] [69]	0.28 ± 0.31
$K_0^*(1430)^+\pi^-$	0.09 ± 0.07	$0.09 \pm 0.07 \pm 0.03$ [67]				0.09 ± 0.08
$K_0^*(1430)^0\pi^0$	-0.15 ± 0.11	$-0.15 \pm 0.10 \pm 0.04$ [66]				-0.15 ± 0.11
$K^{*0}\pi^0$	-0.15 ± 0.13	$-0.15 \pm 0.12 \pm 0.04$ [66]				-0.15 ± 0.13
$K^{*0}\pi^+\pi^-$	0.07 ± 0.05	$0.07 \pm 0.04 \pm 0.03$ [70]				0.07 ± 0.05
$K^{*0}\rho^0$	-0.06 ± 0.09	$-0.06 \pm 0.09 \pm 0.02$ [71]				-0.06 ± 0.09
$f_0(980)K^{*0}$	0.07 ± 0.10	$0.07 \pm 0.10 \pm 0.02$ [71]				0.07 ± 0.10
$K^{*+}\rho^-$	0.21 ± 0.15	$0.21 \pm 0.15 \pm 0.02$ [71]				0.21 ± 0.15
$K^{*0}K^+K^-$	0.01 ± 0.05	$0.01 \pm 0.05 \pm 0.02$ [70]				0.01 ± 0.05
$a_1^- K^+$	-0.16 ± 0.12	$-0.16 \pm 0.12 \pm 0.01$ [22]				-0.16 ± 0.12
ϕK^{*0}	0.00 ± 0.04	$0.01 \pm 0.06 \pm 0.03$ [72]	$-0.007 \pm 0.048 \pm 0.021$[73]		$-0.015 \pm 0.032 \pm 0.10$ ¶ [74]	-0.003 ± 0.038
$K^{*0}\pi^+K^-$	0.22 ± 0.39	$0.22 \pm 0.33 \pm 0.20$ [70]				0.22 ± 0.39
$\phi K_0^*(1430)^0$	0.12 ± 0.08	$0.20 \pm 0.14 \pm 0.06$ [72]	$0.093 \pm 0.094 \pm 0.017$ [73]			0.124 ± 0.081
$\phi K_2^*(1430)^0$	-0.11 ± 0.10	$-0.08 \pm 0.12 \pm 0.05$ [72]	$-0.155^{+0.152}_{-0.133} \pm 0.033$ [73]			$-0.113^{+0.102}_{-0.096}$
$K^{*0}\gamma$	-0.002 ± 0.015	$-0.016 \pm 0.022 \pm 0.007$[35]	$-0.013 \pm 0.017 \pm 0.004$[36]		$0.008 \pm 0.017 \pm 0.009$ [75]	-0.007 ± 0.011
$\pi^0\pi^0$	0.43 ± 0.24	$0.43 \pm 0.26 \pm 0.05$ [60]	$0.14 \pm 0.36 \pm 0.12$ [76]			0.33 ± 0.22
$a_1^\mp \pi^\pm$	-0.07 ± 0.06	$-0.07 \pm 0.07 \pm 0.02$ [25]	$-0.06 \pm 0.05 \pm 0.07$ [77]			-0.07 ± 0.06
$b_1^\mp \pi^\pm$	-0.05 ± 0.10	$-0.05 \pm 0.10 \pm 0.02$ [25]				-0.05 ± 0.10
$p\overline{p}K^{*0}$	0.05 ± 0.12	$0.11 \pm 0.13 \pm 0.06$ [49]	$-0.08 \pm 0.20 \pm 0.02$ [53]			0.05 ± 0.12
$p\overline{\Lambda}\pi^-$	0.04 ± 0.07	$-0.10 \pm 0.10 \pm 0.02$ § [78]	$-0.02 \pm 0.10 \pm 0.03$ [54]			-0.06 ± 0.07
$K^{*0}\ell\ell$	-0.05 ± 0.10	$0.02 \pm 0.20 \pm 0.02$ [59]	$-0.08 \pm 0.12 \pm 0.02$ [56]			-0.05 ± 0.10
$K^{*0}e^+e^-$	-0.21 ± 0.19		$-0.21 \pm 0.19 \pm 0.02$ [56]			-0.21 ± 0.19
$K^{*0}\mu^+\mu^-$	-0.034 ± 0.024		$0.00 \pm 0.15 \pm 0.03$ [56]		$-0.035 \pm 0.024 \pm 0.003$ ◇ [57]	-0.034 ± 0.024

Measurements of time-dependent *CP* asymmetries are listed in the Unitarity Triangle home page. (http://www.slac.stanford.edu/xorg/hfag/triangle/index.html)

† PDG uses also a result from CLEO.
‡ Average of *BABAR* results from $B^0 \to K^+\pi^-\pi^0$ and $B^0 \to K^0\pi^+\pi^-$.
§ PDG quotes the opposite asymmetry.
¶ Extracted from measured $\Delta A_{CP} = A_{CP}(\phi K^{*0}) - A_{CP}(J/\psi K^{*0}) = 0.015 \pm 0.032 \pm 0.005$.
◇ LHCb also quotes results in bins of $m(\ell^+\ell^-)^2$.
[1] Last error comes from the Dalitz plot model.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of *CP* Asymmetries for $B^{\pm}/B^0$ Admixture

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	*BABAR*	Belle	Our Avg.
$K^*\gamma$	-0.003 ± 0.017 †	$-0.003 \pm 0.017 \pm 0.007$[35]	$-0.004 \pm 0.014 \pm 0.003$[36]	-0.004 ± 0.011
$s\gamma$	0.015 ± 0.020	$0.017 \pm 0.019 \pm 0.010$ ‡[79]	$0.002 \pm 0.050 \pm 0.030$ [80]	0.015 ± 0.020
$(s+d)\gamma$	0.010 ± 0.031	$0.057 \pm 0.060 \pm 0.018$ §[81]	$0.022 \pm 0.039 \pm 0.009$ ◇[13]	0.032 ± 0.034
$s\eta$	$-0.13^{+0.04}_{-0.05}$		$-0.13 \pm 0.04^{+0.02}_{-0.03}$ [82]	$-0.13^{+0.04}_{-0.05}$
π^+X	0.10 ± 0.17	$0.10 \pm 0.16 \pm 0.05$ [83]		0.10 ± 0.17
$s\ell\ell$	0.04 ± 0.11	$0.04 \pm 0.11 \pm 0.01$ [84]		0.04 ± 0.11
$K^*e^+e^-$	-0.18 ± 0.15		$-0.18 \pm 0.15 \pm 0.01$ [56]	-0.18 ± 0.15
$K^*\mu^+\mu^-$	-0.03 ± 0.13		$-0.03 \pm 0.13 \pm 0.02$ [56]	-0.03 ± 0.13
$K\ell\ell$		$-0.03 \pm 0.14 \pm 0.01$ [55]		-0.03 ± 0.14
$K^*\ell\ell$	-0.04 ± 0.07	$0.03 \pm 0.13 \pm 0.01$ ¶ [55]	$-0.10 \pm 0.10 \pm 0.01$ [56]	-0.05 ± 0.08

† PDG includes also a result from CLEO.
‡ *BABAR* also measures the difference in direct *CP* asymmetry for charged and neutral B mesons: $\Delta A_{CP} = +(5.0 \pm 3.9 \pm 1.5)\%$.
§ There is another *BABAR* result using the recoil method (Phys. Rev. D 77, 051103), and a CLEO result (Phys. Rev. Lett. 86, 5661) that are used in the PDG average.
¶ Previous *BABAR* result is also included in the PDG Average.
◇ Requires $E_\gamma > 2.1$ GeV.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of *CP* Asymmetries for B_s^0 mesons

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	CDF	LHCb	Our Avg.
π^+K^-	0.26 ± 0.04	$0.22 \pm 0.07 \pm 0.02$[61]	$0.27 \pm 0.04 \pm 0.01$[62]	0.26 ± 0.04

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of *CP* Asymmetries for Λ_b^0 baryons

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	PDG2017 Avg.	CDF	LHCb	Our Avg.
$p\pi^-$	0.06 ± 0.08	$0.06 \pm 0.07 \pm 0.03$ [61]		0.06 ± 0.08
pK^-	-0.10 ± 0.09	$-0.10 \pm 0.08 \pm 0.04$[61]		-0.10 ± 0.09
$\overline{K^0}p\pi^-$	0.22 ± 0.13		$0.22 \pm 0.13 \pm 0.03$ [85]	0.22 ± 0.13
$\Lambda K^+\pi^-$	-0.53 ± 0.25		$-0.53 \pm 0.23 \pm 0.11$ [86]	-0.53 ± 0.26
ΛK^+K^-	-0.28 ± 0.12		$-0.28 \pm 0.10 \pm 0.07$ [86]	-0.28 ± 0.12
$pK^-\mu^+\mu^-$			$-0.035 \pm 0.05 \pm 0.002$[87]	-0.035 ± 0.050

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