

March 2007
Heavy Flavor Averaging Group

Compilation of Charmless Hadronic *CP* Asymmetries

Charged *B* Modes

In PDG2006

New since PDG2006 (preliminary)

New since PDG2006 (published)

RPP#	Mode	PDG2006 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
182	$K^0\pi^+$	-0.02 ± 0.07	$-0.029 \pm 0.039 \pm 0.010$	$0.03 \pm 0.03 \pm 0.01$	$0.18 \pm 0.24 \pm 0.02$		0.009 ± 0.025
183	$K^+\pi^0$	0.04 ± 0.04	$0.016 \pm 0.041 \pm 0.012$	$0.07 \pm 0.03 \pm 0.01$	$-0.29 \pm 0.23 \pm 0.02$		0.047 ± 0.026
184	$\eta'K^+$	0.020 ± 0.025	$0.033 \pm 0.028 \pm 0.005$	$0.028 \pm 0.028 \pm 0.021$	$0.03 \pm 0.12 \pm 0.02$		0.031 ± 0.021
185	$\eta'K^{*+}$	New	$0.30^{+0.33}_{-0.37} \pm 0.02$				$0.30^{+0.33}_{-0.37}$
186	ηK^+	-0.25 ± 0.14	$-0.20 \pm 0.15 \pm 0.01$	$-0.39 \pm 0.16 \pm 0.03$			-0.29 ± 0.11
187	ηK^{*+}	0.13 ± 0.14	$0.01 \pm 0.08 \pm 0.02$	$0.03 \pm 0.10 \pm 0.01$			0.02 ± 0.06
–	$\eta K_0^{*+}(1430)$	New	$0.05 \pm 0.13 \pm 0.02$				0.05 ± 0.13
–	$\eta K_2^{*+}(1430)$	New	$-0.45 \pm 0.30 \pm 0.02$				-0.45 ± 0.30
188	ωK^+	-0.02 ± 0.13	$0.05 \pm 0.09 \pm 0.01$	$0.05^{+0.08}_{-0.07} \pm 0.01$			0.05 ± 0.06
192	$K^{*0}\pi^+$	0.07 ± 0.11	$0.07 \pm 0.08 \pm 0.07$	$-0.149 \pm 0.064 \pm 0.022$			-0.085 ± 0.057
193	$K^{*+}\pi^0$	New	$0.04 \pm 0.29 \pm 0.05$				0.04 ± 0.29
194	$K^+\pi^+\pi^-$	-0.013 ± 0.039	$-0.013 \pm 0.037 \pm 0.011$	$0.049 \pm 0.026 \pm 0.020$			0.023 ± 0.025
196	$K^+f_0(980)$	$0.09^{+0.14}_{-0.12}$	$0.09 \pm 0.10^{+0.10}_{-0.06}$	$-0.077 \pm 0.065^{+0.046}_{-0.026}$			$-0.026^{+0.068}_{-0.064}$
197	$f_2(1270)K^+$	New		$-0.59 \pm 0.22 \pm 0.04$			-0.59 ± 0.22
199	$K^+\rho^0$	$0.32^{+0.16}_{-0.15}$	$0.32 \pm 0.13^{+0.10}_{-0.08}$	$0.30 \pm 0.11^{+0.11}_{-0.05}$			$0.31^{+0.11}_{-0.10}$
203	$K_0^*(1430)^0\pi^+$	$-0.064^{+0.039}_{-0.041}$	$-0.064 \pm 0.032^{+0.023}_{-0.026}$	$0.076 \pm 0.038^{+0.028}_{-0.022}$			-0.002 ± 0.029
211	$K^0\rho^+$	New	$0.12 \pm 0.17 \pm 0.02$				0.12 ± 0.17
213	$K^{*+}\rho^0$	$0.20^{+0.32}_{-0.29}$	$0.20^{+0.32}_{-0.29} \pm 0.04$				$0.20^{+0.32}_{-0.29}$
214	$K^{*0}\rho^+$	New	$-0.01 \pm 0.16 \pm 0.02$				-0.01 ± 0.16
–	$K^{*+}f_0$	New	$-0.34 \pm 0.21 \pm 0.03$				-0.34 ± 0.21
218	K^+K^0	0.15 ± 0.33	$0.10 \pm 0.26 \pm 0.03$	$0.13^{+0.23}_{-0.24} \pm 0.02$			$0.12^{+0.17}_{-0.18}$
220	$K^+K_S^0K_S^0$	-0.04 ± 0.11	$-0.04 \pm 0.11 \pm 0.02$				-0.04 ± 0.11
228	$K^+K^-K^+$	-0.02 ± 0.08	$-0.02 \pm 0.03 \pm 0.02$				-0.02 ± 0.04
229	ϕK^+	0.01 ± 0.07	$0.046 \pm 0.046 \pm 0.017$	$0.01 \pm 0.12 \pm 0.05$		$-0.07 \pm 0.17^{+0.03}_{-0.02}$	0.034 ± 0.044
235	$K^{*+}K^+K^-$	New	$0.11 \pm 0.08 \pm 0.03$				0.11 ± 0.09
–	$K^{*+}\pi^+\pi^-$	New	$0.07 \pm 0.07 \pm 0.04$				0.07 ± 0.08
236	ϕK^{*+}	0.05 ± 0.11	$0.16 \pm 0.17 \pm 0.03$	$-0.02 \pm 0.14 \pm 0.03$			0.05 ± 0.11
239	$\phi\phi K^+$	New		$0.01^{+0.19}_{-0.16} \pm 0.02$			$0.01^{+0.19}_{-0.16}$
242	$K^+\eta\gamma$	-0.16 ± 0.10	$-0.09 \pm 0.12 \pm 0.01$	$-0.16 \pm 0.09 \pm 0.06$			-0.13 ± 0.08
243	$K^+\phi\gamma$	New	$-0.26 \pm 0.14 \pm 0.05$				-0.26 ± 0.15
254	$\pi^+\pi^0$	-0.02 ± 0.07	$-0.02 \pm 0.09 \pm 0.01$	$0.07 \pm 0.06 \pm 0.01$			0.04 ± 0.05
255	$\pi^+\pi^-\pi^+$	-0.01 ± 0.09	$-0.01 \pm 0.08 \pm 0.03$				-0.01 ± 0.09
256	$\rho^0\pi^+$	-0.07 ± 0.13	$-0.07 \pm 0.12^{+0.03}_{-0.06}$				$-0.07^{+0.12}_{-0.13}$
257	$f_0(980)\pi^+$	New	$-0.50 \pm 0.54 \pm 0.06$				-0.50 ± 0.54
258	$f_2(1270)\pi^+$	New	$-0.01 \pm 0.25^{+0.28}_{-0.32}$				$-0.01^{+0.38}_{-0.41}$
264	$\rho^+\pi^0$	0.15 ± 0.12	$-0.01 \pm 0.13 \pm 0.02$	$0.06 \pm 0.17^{+0.04}_{-0.05}$			0.02 ± 0.11
266	$\rho^+\rho^0$	-0.09 ± 0.16	$-0.12 \pm 0.13 \pm 0.10$	$0.00 \pm 0.22 \pm 0.03$			-0.08 ± 0.13
269	$\omega\pi^+$	0.10 ± 0.22	$-0.01 \pm 0.10 \pm 0.01$	$-0.02 \pm 0.09 \pm 0.01$	$-0.34 \pm 0.25 \pm 0.02$		-0.04 ± 0.06
270	$\omega\rho^+$	0.05 ± 0.26	$0.04 \pm 0.18 \pm 0.02$				0.04 ± 0.18
271	$\eta\pi^+$	-0.05 ± 0.10	$-0.13 \pm 0.12 \pm 0.01$	$-0.23 \pm 0.09 \pm 0.02$			-0.19 ± 0.07
272	$\eta'\pi^+$	0.14 ± 0.16	$0.14 \pm 0.16 \pm 0.01$	$0.20^{+0.37}_{-0.36} \pm 0.04$			0.15 ± 0.15
273	$\eta'\rho^+$	New	$-0.04 \pm 0.28 \pm 0.02$				-0.04 ± 0.28
274	$\eta\rho^+$	New	$0.02 \pm 0.18 \pm 0.02$	$-0.04^{+0.34}_{-0.32} \pm 0.01$			0.01 ± 0.16
286	$p\bar{p}\pi^+$	-0.16 ± 0.22		$-0.16 \pm 0.22 \pm 0.01$			-0.16 ± 0.22
289	$p\bar{p}K^+$	-0.05 ± 0.11	$-0.16 \pm 0.08 \pm 0.04$	$-0.05 \pm 0.11 \pm 0.01$			-0.12 ± 0.07
320	$K^+\ell\ell$	New	$-0.07 \pm 0.22 \pm 0.02$				-0.07 ± 0.22

B^\pm/B^0 Admixture

RPP#	Mode	PDG2006 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
58	$K^*\gamma$	-0.01 ± 0.07	$-0.013 \pm 0.036 \pm 0.010$	$-0.015 \pm 0.044 \pm 0.012$	$0.08 \pm 0.13 \pm 0.03$		-0.010 ± 0.028
70	$s\gamma$	0.00 ± 0.04	$0.025 \pm 0.050 \pm 0.015$	$0.002 \pm 0.050 \pm 0.030$	$-0.079 \pm 0.108 \pm 0.022$		0.004 ± 0.037
–	$(s+d)\gamma$	New	$-0.11 \pm 0.12 \pm 0.02$				-0.11 ± 0.12
107	$s\ell\ell$	-0.22 ± 0.26	$-0.22 \pm 0.26 \pm 0.02$				-0.22 ± 0.26
113	$K^*\ell\ell$	New	$0.03 \pm 0.23 \pm 0.03$				0.03 ± 0.23

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Compilation of Charmless Hadronic *CP* Asymmetries

Neutral *B* Modes

In PDG2006 New since PDG2006 (preliminary) New since PDG2006 (published)

RPP#	Mode	PDG2006 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
168	$K^+\pi^-$	-0.113 ± 0.020	$-0.108 \pm 0.024 \pm 0.008$	$-0.093 \pm 0.018 \pm 0.008$	$-0.04 \pm 0.16 \pm 0.02$	$-0.086 \pm 0.023 \pm 0.009$	-0.095 ± 0.013
171	$\eta' K^{*0}$	New	$-0.08 \pm 0.25 \pm 0.02$				-0.08 ± 0.25
172	ηK^{*0}	0.02 ± 0.11	$0.21 \pm 0.06 \pm 0.02$	$0.17 \pm 0.08 \pm 0.01$			0.19 ± 0.05
	$\eta K_0^{*0}(1430)$	New	$0.06 \pm 0.13 \pm 0.02$				0.06 ± 0.13
–	$\eta K_2^{*0}(1430)$	New	$-0.07 \pm 0.19 \pm 0.02$				-0.07 ± 0.19
180	$K^0 \overline{K^0}$	New		$-0.58_{-0.66}^{+0.73} \pm 0.01$			$-0.58_{-0.66}^{+0.73}$
183	$K^+\rho^-$	0.26 ± 0.15		$0.22_{-0.23-0.02}^{+0.22+0.06}$			0.22 ± 0.23
182	$K^+\pi^-\pi^0$	0.07 ± 0.11		$0.07 \pm 0.11 \pm 0.01$			0.07 ± 0.11
189	$K^{*+}\pi^-$	-0.05 ± 0.14	$-0.11 \pm 0.14 \pm 0.05$		$0.26_{-0.34-0.08}^{+0.33+0.10}$		-0.05 ± 0.14
199	$K^{*0}\rho^0$	New	$0.09 \pm 0.19 \pm 0.02$				0.09 ± 0.19
200	$K^{*0}f_0(980)$	New	$-0.17 \pm 0.28 \pm 0.02$				-0.17 ± 0.28
204	ϕK^{*0}	0.01 ± 0.07	$-0.03 \pm 0.07 \pm 0.03$	$0.02 \pm 0.09 \pm 0.02$			-0.01 ± 0.06
–	$\phi K_0^*(1430)^0$	New	$0.17 \pm 0.15 \pm 0.03$				0.17 ± 0.15
–	$\phi K_2^*(1430)^0$	New	$-0.12 \pm 0.14 \pm 0.04$				-0.12 ± 0.15
230	$\pi^0\pi^0$	0.3 ± 0.4	$0.33 \pm 0.36 \pm 0.08$	$0.44_{-0.62-0.06}^{+0.73+0.04}$			$0.36_{-0.31}^{+0.33}$

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

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