

April 2006
Heavy Flavor Averaging Group

Compilation of Charmless Hadronic *CP* Asymmetries

Charged *B* Modes

In PDG2004 New since PDG2004 (preliminary) New since PDG2004 (published)

RPP#	Mode	PDG2004 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
117	$K^0\pi^+$	0.03 ± 0.08	$-0.09 \pm 0.05 \pm 0.01$	$0.05 \pm 0.05 \pm 0.01$	$0.18 \pm 0.24 \pm 0.02$		-0.02 ± 0.04
118	$K^+\pi^0$	-0.10 ± 0.08	$0.06 \pm 0.06 \pm 0.01$	$0.04 \pm 0.04 \pm 0.02$	$-0.29 \pm 0.23 \pm 0.02$		0.04 ± 0.04
119	$\eta'K^+$	0.009 ± 0.035	$0.033 \pm 0.028 \pm 0.005$	$0.028 \pm 0.028 \pm 0.021$	$0.03 \pm 0.12 \pm 0.02$		0.031 ± 0.021
121	ηK^+	New	$-0.20 \pm 0.15 \pm 0.01$	$-0.55 \pm 0.19^{+0.04}_{-0.03}$			-0.33 ± 0.12
122	ηK^{*+}	New	$0.13 \pm 0.14 \pm 0.02$	$-0.09^{+0.16}_{-0.15} \pm 0.01$			$0.03^{+0.11}_{-0.10}$
123	ωK^+	$-0.21 \pm 0.28 \pm 0.03$	$0.05 \pm 0.09 \pm 0.01$	$0.05 \pm 0.08 \pm 0.01$			0.05 ± 0.06
125	$K^{*0}\pi^+$	New	$0.07 \pm 0.08 \pm 0.07$	$-0.149 \pm 0.064 \pm 0.021$			-0.086 ± 0.056
126	$K^{*+}\pi^0$	New	$0.04 \pm 0.29 \pm 0.05$				0.04 ± 0.29
127	$K^+\pi^+\pi^-$	$0.01 \pm 0.07 \pm 0.03$	$-0.013 \pm 0.037 \pm 0.011$	$0.049 \pm 0.026 \pm 0.020$			0.023 ± 0.025
129	$K^+f_0(980)$	New	$0.09 \pm 0.10^{+0.10}_{-0.06}$	$-0.077 \pm 0.065^{+0.046}_{-0.026}$			$-0.026^{+0.068}_{-0.064}$
130	$K^+\rho^0$	New	$0.32 \pm 0.13^{+0.10}_{-0.08}$	$0.30 \pm 0.11^{+0.11}_{-0.05}$			$0.31^{+0.11}_{-0.10}$
	$K_0^*(1430)^0\pi^+$	New	$-0.064 \pm 0.032^{+0.023}_{-0.026}$	$0.076 \pm 0.038^{+0.028}_{-0.022}$			-0.002 ± 0.029
	$f_2(1270)K^+$	New		$-0.59 \pm 0.22 \pm 0.04$			-0.59 ± 0.22
	$K^{*0}\rho^+$	New	$-0.01 \pm 0.15 \pm 0.01$				-0.01 ± 0.15
138	$K^{*+}\rho^0$	$0.20^{+0.32}_{-0.29} \pm 0.04$	$0.20^{+0.32}_{-0.29} \pm 0.04$				$0.20^{+0.32}_{-0.29}$
	$K^{*+}f_0$	New	$-0.34 \pm 0.21 \pm 0.02$				-0.34 ± 0.21
142	K^+K^0	New	$0.15 \pm 0.33 \pm 0.03$				0.15 ± 0.33
144	$K^+K_S K_S$	New	$-0.04 \pm 0.11 \pm 0.02$				-0.04 ± 0.11
152	$K^+K^-K^+$	$0.02 \pm 0.07 \pm 0.03$	$-0.02 \pm 0.03 \pm 0.02$				-0.02 ± 0.04
153	ϕK^+	0.03 ± 0.07	$0.054 \pm 0.056 \pm 0.012$	$0.01 \pm 0.12 \pm 0.05$		$-0.07 \pm 0.17^{+0.03}_{-0.02}$	0.037 ± 0.050
156	ϕK^{*+}	0.09 ± 0.15	$0.16 \pm 0.17 \pm 0.03$	$-0.02 \pm 0.14 \pm 0.03$			0.05 ± 0.11
	$K^+\eta\gamma$	New	$-0.09 \pm 0.12 \pm 0.01$				-0.09 ± 0.12
173	$\pi^+\pi^0$	0.05 ± 0.15	$-0.01 \pm 0.10 \pm 0.02$	$0.02 \pm 0.08 \pm 0.01$			0.01 ± 0.06
174	$\pi^+\pi^-\pi^+$	$-0.39 \pm 0.33 \pm 0.12$	$-0.01 \pm 0.08 \pm 0.03$				-0.01 ± 0.09
175	$\rho^0\pi^+$	New	$-0.07 \pm 0.12^{+0.03}_{-0.06}$				$-0.07^{+0.12}_{-0.13}$
176	$f_0(980)\pi^+$	New	$-0.50 \pm 0.54 \pm 0.61$				-0.50 ± 0.81
180	$\rho^+\pi^0$	New	$-0.01 \pm 0.13 \pm 0.02$	$0.06 \pm 0.19^{+0.04}_{-0.06}$			0.01 ± 0.11
182	$\rho^+\rho^0$	-0.09 ± 0.16	$0.10 \pm 0.14 \pm 0.09$	$0.00 \pm 0.22 \pm 0.03$			0.06 ± 0.13
185	$\omega\pi^+$	-0.21 ± 0.19	$-0.01 \pm 0.10 \pm 0.01$	$-0.03 \pm 0.09 \pm 0.02$	$-0.34 \pm 0.25 \pm 0.02$		-0.04 ± 0.07
186	$\omega\rho^+$	New	$0.04 \pm 0.18 \pm 0.02$				0.04 ± 0.18
187	$\eta\pi^+$	New	$-0.13 \pm 0.12 \pm 0.01$	$-0.10 \pm 0.11 \pm 0.02$			-0.11 ± 0.08
188	$\eta'\pi^+$	New	$0.14 \pm 0.16 \pm 0.01$	$0.20^{+0.37}_{-0.36} \pm 0.04$			0.15 ± 0.15
190	$\eta\rho^+$	New	$0.02 \pm 0.18 \pm 0.02$	$-0.17^{+0.33}_{-0.29} \pm 0.02$			-0.03 ± 0.16
232	$K^+\ell\ell$	New	$-0.07 \pm 0.22 \pm 0.02$				-0.07 ± 0.22

B^\pm/B^0 Admixture

RPP#	Mode	PDG2004 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
56	$K^*\gamma$	-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
67	$s\gamma$	$-0.079 \pm 0.108 \pm 0.022$	$0.025 \pm 0.050 \pm 0.015$	$0.002 \pm 0.050 \pm 0.030$	$-0.079 \pm 0.108 \pm 0.022$		0.004 ± 0.037
–	$(s + d)\gamma$	New	$-0.11 \pm 0.12 \pm 0.02$				-0.11 ± 0.12
103	$s\ell\ell$	New	$-0.22 \pm 0.26 \pm 0.02$				-0.22 ± 0.26
109	$K^{*+}\ell\ell$	New	$0.03 \pm 0.23 \pm 0.03$				0.03 ± 0.23

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Neutral *B* Modes

In PDG2004

New since PDG2004 (preliminary)

New since PDG2004 (published)

RPP#	Mode	PDG2004 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
123	$K^+\pi^-$	-0.09 ± 0.04	$-0.133 \pm 0.030 \pm 0.009$	$-0.113 \pm 0.022 \pm 0.008$	$-0.04 \pm 0.16 \pm 0.02$	$-0.058 \pm 0.039 \pm 0.007$	-0.108 ± 0.017
124	$K^0\pi^0$ †						
127	ηK^{*0}	New	$0.02 \pm 0.11 \pm 0.02$	$-0.04^{+0.11}_{-0.10} \pm 0.01$			-0.01 ± 0.08
136	$K^+\rho^-$	0.28 ± 0.19	$0.13^{+0.14}_{-0.17} \pm 0.14$	$0.22^{+0.22+0.06}_{-0.23-0.02}$			$0.17^{+0.15}_{-0.16}$
–	$K_0^*(1430)^+\pi^-$	New	$-0.07 \pm 0.12 \pm 0.08$				-0.07 ± 0.14
–	$K_0^*(1430)^0\pi^0$	New	$-0.34 \pm 0.15 \pm 0.11$				-0.34 ± 0.19
140	$K^{*+}\pi^-$	0.26 ± 0.35	$-0.11 \pm 0.14 \pm 0.05$		$0.26^{+0.33+0.10}_{-0.34-0.08}$		-0.05 ± 0.14
–	$K^+\pi^-\pi^0$	New		$0.07 \pm 0.11 \pm 0.01$			0.07 ± 0.11
141	$K^{*0}\pi^0$	New	$-0.01^{+0.24}_{-0.22} \pm 0.13$				$-0.01^{+0.27}_{-0.26}$
154	ϕK^{*0}	0.05 ± 0.10	$-0.01 \pm 0.09 \pm 0.02$	$0.02 \pm 0.09 \pm 0.02$			0.00 ± 0.07
177	$\pi^0\pi^0$	New	$0.12 \pm 0.56 \pm 0.06$	$0.44^{+0.53}_{-0.52} \pm 0.17$			$0.28^{+0.40}_{-0.39}$
196	$\rho^0\pi^0$	New		$-0.49^{+0.67}_{-0.81} \pm 0.200.24$			$-0.49^{+0.70}_{-0.83}$
197	$\rho^+\pi^-\dagger$						

† 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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