

Sept. 2008

Heavy Flavor Averaging Group

Compilation of CP Asymmetries for B^+ modes

In PDG2008

New since PDG2008 (preliminary)

New since PDG2008 (published)

RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
207	$K^0\pi^+$	0.009 ± 0.029	$-0.029 \pm 0.039 \pm 0.010$	$0.03 \pm 0.03 \pm 0.01$	$0.18 \pm 0.24 \pm 0.02$		0.009 ± 0.029
208	$K^+\pi^0$	0.027 ± 0.032	$0.030 \pm 0.039 \pm 0.010$	$0.07 \pm 0.03 \pm 0.01$	$-0.29 \pm 0.23 \pm 0.02$		0.050 ± 0.029
209	$\eta'K^+$	0.016 ± 0.019	$0.010 \pm 0.022 \pm 0.006$	$0.028 \pm 0.028 \pm 0.021$	$0.03 \pm 0.12 \pm 0.02$		0.016 ± 0.019
210	$\eta'K^{*+}$	$0.30^{+0.33}_{-0.37} \pm 0.02$	$0.30^{+0.33}_{-0.37} \pm 0.02$				$0.30^{+0.33}_{-0.37}$
211	ηK^+	-0.27 ± 0.09	$-0.22 \pm 0.11 \pm 0.01$	$-0.39 \pm 0.16 \pm 0.03$			-0.27 ± 0.09
212	ηK^{*+}	0.02 ± 0.06	$0.01 \pm 0.08 \pm 0.02$	$0.03 \pm 0.10 \pm 0.01$			0.02 ± 0.06
213	$\eta K_0^*(1430)^+$	$0.05 \pm 0.13 \pm 0.02$	$0.05 \pm 0.13 \pm 0.02$				0.05 ± 0.13
214	$\eta K_2^*(1430)^+$	$-0.45 \pm 0.30 \pm 0.02$	$-0.45 \pm 0.30 \pm 0.02$				-0.45 ± 0.30
215	ωK^+	0.02 ± 0.05	$-0.01 \pm 0.07 \pm 0.01$	$0.05^{+0.08}_{-0.07} \pm 0.01$			0.02 ± 0.05
219	$K^{*0}\pi^+$	-0.08 ± 0.10	$0.032 \pm 0.052^{+0.16}_{-0.13}$	$-0.032 \pm 0.059^{+0.044}_{-0.033}$			$-0.020^{+0.067}_{-0.061}$
220	$K^{*+}\pi^0$	$0.04 \pm 0.29 \pm 0.05$	$0.04 \pm 0.29 \pm 0.05$				0.04 ± 0.29
221	$K^+\pi^+\pi^-$	0.023 ± 0.031	$0.028 \pm 0.020 \pm 0.023$	$0.049 \pm 0.026 \pm 0.020$			0.038 ± 0.023
223	$f_0(980)K^+$	$-0.04^{+0.08}_{-0.07}$	$-0.106 \pm 0.050^{+0.036}_{-0.015}$	$-0.008 \pm 0.052 \pm 0.027$			$-0.055^{+0.042}_{-0.042}$
224	$f_2(1270)K^+$	$-0.59 \pm 0.22 \pm 0.036$	$-0.85 \pm 0.22^{+0.26}_{-0.13}$	$-0.59 \pm 0.22 \pm 0.04$			$-0.68^{+0.20}_{-0.18}$
227	$f_0(1500)K^+ \dagger$	New	$0.28 \pm 0.26^{+0.15}_{-0.14}$	$0.071 \pm 0.121^{+0.027}_{-0.031}$			0.102 ± 0.114
229	$K^+\rho^0$	$0.31^{+0.11}_{-0.09}$	$0.44 \pm 0.10^{+0.06}_{-0.14}$	$0.405 \pm 0.101^{+0.036}_{-0.077}$			$0.419^{+0.081}_{-0.104}$
230	$K_0^*(1430)^0\pi^+$	0.00 ± 0.07	$0.032 \pm 0.035^{+0.034}_{-0.028}$	$0.063 \pm 0.046^{+0.030}_{-0.029}$			$0.045^{+0.037}_{-0.035}$
231	$K_2^*(1430)^0\pi^+$	New	$0.05 \pm 0.23^{+0.18}_{-0.08}$				$0.05^{+0.29}_{-0.24}$
238	$K^0\rho^+$	$-0.12 \pm 0.17 \pm 0.02$	$-0.12 \pm 0.17 \pm 0.02$				-0.12 ± 0.17
239	$K^{*+}\pi^+\pi^-$	$0.07 \pm 0.07 \pm 0.04$	$0.07 \pm 0.07 \pm 0.04$				0.07 ± 0.08
240	$K^{*+}\rho^0$	$0.20^{+0.32}_{-0.29} \pm 0.04$	$0.20^{+0.32}_{-0.29} \pm 0.04$				$0.20^{+0.32}_{-0.29}$
241	f_0K^{*+}	$-0.34 \pm 0.21 \pm 0.03$	$-0.34 \pm 0.21 \pm 0.03$				-0.34 ± 0.21
242	$a_1^+K^0$	$0.12 \pm 0.11 \pm 0.02$	$0.12 \pm 0.11 \pm 0.02$				0.12 ± 0.11
243	$K^{*0}\rho^+$	$-0.01 \pm 0.16 \pm 0.02$	$-0.01 \pm 0.16 \pm 0.02$				-0.01 ± 0.16
247	$K^+\overline{K^0}$	$0.12 \pm 0.16 \pm 0.02$	$0.10 \pm 0.26 \pm 0.03$	$0.13^{+0.23}_{-0.24} \pm 0.02$			$0.12^{+0.17}_{-0.18}$
249	$K^+K_S K_S$	$-0.046 \pm 0.20 \pm 0.02$	$-0.04 \pm 0.11 \pm 0.02$				-0.04 ± 0.11
251	$K^+K^-\pi^+$	$0.00 \pm 0.10 \pm 0.03$	$0.00 \pm 0.10 \pm 0.03$				0.00 ± 0.10
257	$b_1^0K^+$	$-0.46 \pm 0.20 \pm 0.02$	$-0.46 \pm 0.20 \pm 0.02$				-0.46 ± 0.20
-	$b_1^+K^0$	New	$-0.03 \pm 0.15 \pm 0.02$				-0.03 ± 0.15
261	$K^+K^-K^+$	$-0.017 \pm 0.026 \pm 0.015$	$-0.02 \pm 0.03 \pm 0.02$				-0.02 ± 0.04
262	ϕK^+	0.01 ± 0.06	$0.046 \pm 0.046 \pm 0.017$	$0.01 \pm 0.12 \pm 0.05$		$-0.07 \pm 0.17^{+0.03}_{-0.02}$	0.034 ± 0.044
270	$K^{*+}K^+K^-$	$0.11 \pm 0.08 \pm 0.03$	$0.11 \pm 0.08 \pm 0.03$				0.11 ± 0.09
271	ϕK^{*+}	-0.01 ± 0.08	$0.00 \pm 0.09 \pm 0.04$	$-0.02 \pm 0.14 \pm 0.03$			-0.01 ± 0.08
-	$\phi K_1(1270)^+$	New	$0.15 \pm 0.19 \pm 0.05$				0.15 ± 0.20
-	$\phi K_0^*(1430)^+$	New	$0.04 \pm 0.15 \pm 0.04$				0.04 ± 0.15
273	$\phi K_2^*(1430)^+$	New	$-0.23 \pm 0.19 \pm 0.05$				-0.23 ± 0.20
274	$\phi\phi K^+$	New		$0.01^{+0.19}_{-0.16} \pm 0.02$			$0.01^{+0.19}_{-0.16}$
278	$K^+\eta\gamma$	-0.16 ± 0.10	$-0.09 \pm 0.10 \pm 0.01$	$-0.16 \pm 0.09 \pm 0.06$			-0.12 ± 0.07
280	$K^+\phi\gamma$	$-0.26 \pm 0.14 \pm 0.05$	$-0.26 \pm 0.14 \pm 0.05$				-0.26 ± 0.15
292	$\pi^+\pi^0$	0.01 ± 0.06	$0.03 \pm 0.08 \pm 0.01$	$0.07 \pm 0.06 \pm 0.01$			0.06 ± 0.05
293	$\pi^+\pi^-\pi^+$	$-0.007 \pm 0.0077 \pm 0.025$	$-0.01 \pm 0.08 \pm 0.03$				-0.01 ± 0.09
294	$\rho^0\pi^+$	$-0.074 \pm 0.120^{+0.035}_{-0.055}$	$-0.07 \pm 0.12^{+0.03}_{-0.06}$				$-0.07^{+0.12}_{-0.13}$
295	$f_0(980)\pi^+$	New	$-0.50 \pm 0.54 \pm 0.06$				-0.50 ± 0.54
296	$f_2(1270)\pi^+$	$-0.004 \pm 0.247^{+0.28}_{-0.32}$	$-0.01 \pm 0.25^{+0.28}_{-0.32}$				$-0.01^{+0.38}_{-0.41}$
302	$\rho^+\pi^0$	0.02 ± 0.11	$-0.01 \pm 0.13 \pm 0.02$	$0.06 \pm 0.17^{+0.04}_{-0.05}$			0.02 ± 0.11
304	$\rho^+\rho^0$	-0.08 ± 0.13	$-0.12 \pm 0.13 \pm 0.10$	$0.00 \pm 0.22 \pm 0.03$			-0.08 ± 0.13
308	$b_1^0\pi^+$	$0.05 \pm 0.16 \pm 0.02$	$0.05 \pm 0.16 \pm 0.02$				0.05 ± 0.16
309	$\omega\pi^+$	-0.04 ± 0.06	$-0.02 \pm 0.08 \pm 0.01$	$-0.02 \pm 0.09 \pm 0.01$	$-0.34 \pm 0.25 \pm 0.02$		-0.04 ± 0.06
310	$\omega\rho^+$	$0.04 \pm 0.18 \pm 0.02$	$0.04 \pm 0.18 \pm 0.02$				0.04 ± 0.18
311	$\eta\pi^+$	-0.05 ± 0.10	$-0.08 \pm 0.10 \pm 0.01$	$-0.23 \pm 0.09 \pm 0.02$			-0.16 ± 0.07
312	$\eta'\pi^+$	-0.16 ± 0.07	$0.21 \pm 0.17 \pm 0.01$	$0.20^{+0.37}_{-0.36} \pm 0.04$			0.21 ± 0.15
313	$\eta'\rho^+$	$-0.04 \pm 0.28 \pm 0.02$	$-0.04 \pm 0.28 \pm 0.02$				-0.04 ± 0.28
314	$\eta\rho^+$	0.01 ± 0.16	$0.13 \pm 0.11 \pm 0.02$	$-0.04^{+0.34}_{-0.32} \pm 0.01$			0.11 ± 0.11
327	$p\bar{p}\pi^+$	0.00 ± 0.04	$0.04 \pm 0.07 \pm 0.04$	$-0.17 \pm 0.10 \pm 0.02$			-0.04 ± 0.06
330	$p\bar{p}K^+$	-0.16 ± 0.07	$-0.16 \pm 0.08 \pm 0.04$	$-0.02 \pm 0.05 \pm 0.02$			-0.06 ± 0.05
335	$p\bar{p}K^{*+}$	$0.32 \pm 0.13 \pm 0.05$	$0.32 \pm 0.13 \pm 0.05$	$-0.01 \pm 0.19 \pm 0.02$			0.21 ± 0.11
338	$p\bar{\Lambda}\gamma$	$0.17 \pm 0.16 \pm 0.05$		$0.17 \pm 0.16 \pm 0.05$			0.17 ± 0.17
339	$p\bar{\Lambda}\pi^0$	$0.01 \pm 0.17 \pm 0.04$		$0.01 \pm 0.17 \pm 0.04$			0.01 ± 0.17
371	$K^+\ell\ell$	$-0.07 \pm 0.22 \pm 0.02$	$-0.07 \pm 0.22 \pm 0.02$	$-0.04 \pm 0.10 \pm 0.02$			-0.05 ± 0.09
376	$K^{*+}\ell\ell$	$0.03 \pm 0.23 \pm 0.03$		$-0.13 \pm 0.17 \pm 0.02$			-0.13 ± 0.17

Sept. 2008
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Compilation of *CP* Asymmetries for B^0 modes

In PDG2008 New since PDG2008 (preliminary) New since PDG2008 (published)

RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
198	$K^+\pi^-$	-0.101 ± 0.015	$-0.107 \pm 0.016^{+0.006}_{-0.004}$	$-0.094 \pm 0.018 \pm 0.008$	$-0.04 \pm 0.16 \pm 0.02$	$-0.086 \pm 0.023 \pm 0.009$	$-0.098^{+0.012}_{-0.011}$
201	$\eta'K^{*0}$	$-0.08 \pm 0.25 \pm 0.02$	$-0.08 \pm 0.25 \pm 0.02$				-0.08 ± 0.25
203	ηK^{*0}	0.19 ± 0.05	$0.21 \pm 0.06 \pm 0.02$	$0.17 \pm 0.08 \pm 0.01$			0.19 ± 0.05
204	$\eta K_0^*(1430)^0$	$0.06 \pm 0.13 \pm 0.02$	$0.06 \pm 0.13 \pm 0.02$				0.06 ± 0.13
205	$\eta K_2^*(1430)^0$	$-0.07 \pm 0.19 \pm 0.02$	$-0.07 \pm 0.19 \pm 0.02$				-0.07 ± 0.19
216	$K^+\pi^-\pi^0$	$0.07 \pm 0.11 \pm 0.01$	$0.030^{+0.045}_{-0.051} \pm 0.055$	$0.07 \pm 0.11 \pm 0.01$			$0.042^{+0.059}_{-0.061}$
217	$K^+\rho^-$	-0.08 ± 0.24	$0.14 \pm 0.06 \pm 0.01$	$0.22^{+0.22+0.06}_{-0.23-0.02}$			0.15 ± 0.06
218	$K^+\pi^-\pi^0(NR)$	New	$0.07 \pm 0.15 \pm 0.04$				0.07 ± 0.15
-	$K_0^*(1430)^0\pi^0$	New	$-0.16 \pm 0.09 \pm 0.04$				-0.16 ± 0.10
224	$K^{*0}\pi^-$	-0.05 ± 0.14	$-0.30 \pm 0.11 \pm 0.03$		$0.26^{+0.33+0.10}_{-0.34-0.08}$		-0.25 ± 0.11
232	$K^{*0}\pi^0$	New	$-0.15 \pm 0.12 \pm 0.02$				-0.15 ± 0.12
233	$K_0^*(1430)^+\pi^-$	New	$0.07 \pm 0.05 \pm 0.01$				0.07 ± 0.05
240	$K^{*0}\pi^+\pi^-$	$0.07 \pm 0.04 \pm 0.03$	$0.07 \pm 0.04 \pm 0.03$				0.07 ± 0.05
241	$K^{*0}\rho^0$	$0.09 \pm 0.19 \pm 0.02$	$0.09 \pm 0.19 \pm 0.02$				0.09 ± 0.19
242	$f_0(980)K^{*0}$	New	$-0.17 \pm 0.28 \pm 0.02$				-0.17 ± 0.28
244	$a_1^+K^-$	$-0.16 \pm 0.12 \pm 0.01$	$-0.16 \pm 0.12 \pm 0.01$				-0.16 ± 0.12
245	$b_1^-K^+$	$0.07 \pm 0.12 \pm 0.02$	$0.07 \pm 0.12 \pm 0.02$				0.07 ± 0.12
247	ϕK^{*0}	0.01 ± 0.06	$0.01 \pm 0.06 \pm 0.03$	$0.02 \pm 0.09 \pm 0.02$			0.01 ± 0.05
258	$\phi K_0^*(1430)^0$	New	$0.20 \pm 0.14 \pm 0.06$				0.20 ± 0.15
263	$\phi K_2^*(1430)^0$	$-0.12 \pm 0.14 \pm 0.04$	$-0.08 \pm 0.12 \pm 0.04$				-0.08 ± 0.13
240	$K^{*0}K^+K^-$	$0.01 \pm 0.05 \pm 0.02$	$0.01 \pm 0.05 \pm 0.02$				0.01 ± 0.05
248	$K^{*0}\pi^+K^-$	$0.22 \pm 0.33 \pm 0.20$	$0.22 \pm 0.33 \pm 0.20$				0.22 ± 0.39
285	$\pi^0\pi^0$		$0.43 \pm 0.26 \pm 0.05$	$0.44^{+0.73+0.04}_{-0.62-0.06}$			$0.43^{+0.25}_{-0.24}$
316	$b_1^\mp\pi^\pm$	$-0.05 \pm 0.10 \pm 0.02$	$-0.05 \pm 0.10 \pm 0.02$				-0.05 ± 0.10
330	$p\bar{p}K^{*0}$	$0.11 \pm 0.13 \pm 0.06$	$0.11 \pm 0.13 \pm 0.06$	$-0.08 \pm 0.20 \pm 0.02$			0.05 ± 0.12
335	$p\bar{\Lambda}\pi^-$	$-0.02 \pm 0.10 \pm 0.03$		$-0.02 \pm 0.10 \pm 0.03$			-0.02 ± 0.10
376	$K^0\ell\ell$	New		$-0.08 \pm 0.12 \pm 0.02$			-0.08 ± 0.12
381	$K^{*0}\ell\ell$	New		$-0.10 \pm 0.10 \pm 0.02$			-0.10 ± 0.10

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

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

RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
62	$K^*\gamma$	-0.010 ± 0.028	$-0.013 \pm 0.036 \pm 0.010$	$-0.015 \pm 0.044 \pm 0.012$	$0.08 \pm 0.13 \pm 0.03$		-0.010 ± 0.028
74	$s\gamma$	0.01 ± 0.04	$-0.011 \pm 0.030 \pm 0.014$	$0.002 \pm 0.050 \pm 0.030$	$-0.079 \pm 0.108 \pm 0.022$		-0.012 ± 0.028
–	$(s+d)\gamma$	$-0.110 \pm 0.115 \pm 0.017$	$-0.11 \pm 0.12 \pm 0.02$				-0.11 ± 0.12
111	$s\ell\ell$	$-0.22 \pm 0.26 \pm 0.02$	$-0.22 \pm 0.26 \pm 0.02$				-0.22 ± 0.26
118	$K^*\ell\ell$	New	$0.03 \pm 0.23 \pm 0.03$				0.03 ± 0.23

Compilation of *CP* Asymmetries for B_s modes

RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	CDF	New Avg.
20	$K^+\pi^-$	New				$0.39 \pm 0.15 \pm 0.08$	0.39 ± 0.17

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