

Heavy Flavor Averaging Group -  $B^+$  Polarization Measurements - Aug. 2006

Measurements of the longitudinal polarization fraction  $f_L$

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

RPP#	Mode	PDG2004 Avg.	BABAR	Belle	New Avg.
213	$K^{*+}\rho^0$	$0.96_{-0.15}^{+0.04} \pm 0.04$	$0.96_{-0.15}^{+0.04} \pm 0.05$		$0.96_{-0.16}^{+0.06}$
214	$K^{*0}\rho^+$	$0.43 \pm 0.11_{-0.02}^{+0.05}$	<b><math>0.52 \pm 0.10 \pm 0.04</math></b>	$0.43 \pm 0.11_{-0.02}^{+0.05}$	$0.48 \pm 0.08$
236	$\phi K^{*+}$	$0.50 \pm 0.07$	$0.46 \pm 0.12 \pm 0.03$	$0.52 \pm 0.08 \pm 0.03$	$0.50 \pm 0.07$
266	$\rho^+\rho^0$	$0.96 \pm 0.06$	<b><math>0.905 \pm 0.042_{-0.027}^{+0.023}</math></b>	$0.95 \pm 0.11 \pm 0.02$	$0.912_{-0.045}^{+0.044}$
270	$\omega\rho^+$	$0.88_{-0.15}^{+0.12} \pm 0.03$	<b><math>0.82 \pm 0.11 \pm 0.02</math></b>		$0.82 \pm 0.11$

Heavy Flavor Averaging Group -  $B^+$  Polarization Measurements - Aug. 2006

Full angular analysis of  $B^+ \rightarrow \phi K^{*+}$

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

Parameter	PDG2004 Avg.	BABAR	Belle	New Avg.
$f_{\perp}$	$0.19 \pm 0.08 \pm 0.02$		$0.19 \pm 0.08 \pm 0.02$	$0.19 \pm 0.08$
$\phi_{\parallel}$	$2.10 \pm 0.28 \pm 0.04$		$2.10 \pm 0.28 \pm 0.04$	$2.10 \pm 0.28$
$\phi_{\perp}$	$2.31 \pm 0.30 \pm 0.07$		$2.31 \pm 0.30 \pm 0.07$	$2.31 \pm 0.31$

BR,  $f_L$  and  $A_{CP}$  are tabulated separately.

## Heavy Flavor Averaging Group - $B^0$ Polarization Measurements - Aug. 2006

Measurements of the longitudinal polarization fraction  $f_L$   
 In PDG2004    New since PDG2004 (preliminary)    New since PDG2004 (published)

RPP#	Mode	PDG2004 Avg.	BABAR	Belle	CDF	New Avg.
199	$\overline{K^{*0}}\rho^0$	New	$0.57 \pm 0.09 \pm 0.08$			$0.57 \pm 0.12$
204	$\phi K^{*0}$	$0.48 \pm 0.04$	$0.52 \pm 0.05 \pm 0.02$	$0.45 \pm 0.05 \pm 0.02$	$0.57 \pm 0.10 \pm 0.05$	$0.49 \pm 0.04$
253	$\rho^0\rho^0$	New	$0.86_{-0.13}^{+0.11} \pm 0.05$			$0.86_{-0.14}^{+0.12}$
257	$\rho^+\rho^-$	$0.967_{-0.027}^{+0.022}$	$0.977 \pm 0.024_{-0.013}^{+0.015}$	$0.941_{-0.040}^{+0.034} \pm 0.030$		$0.968 \pm 0.023$

Heavy Flavor Averaging Group -  $B^0$  Polarization Measurements - Aug. 2006

Full angular analysis of  $B^0 \rightarrow \phi K^{*0}$   
 In PDG2004    New since PDG2004 (preliminary)    New since PDG2004 (published)

Parameter	PDG2004 Avg.	BABAR	Belle	CDF	New Avg.
$f_{\perp} = \Lambda_{\perp\perp}$	New	$0.26 \pm 0.05$	$0.31_{-0.05}^{+0.06} \pm 0.02$	<span style="color: blue;"><math>0.20 \pm 0.10 \pm 0.05</math></span>	$0.27_{-0.03}^{+0.04}$
$\phi_{\parallel}$	$2.36_{-0.16}^{+0.18}$	$2.34_{-0.20}^{+0.23} \pm 0.05$	$2.40_{-0.24}^{+0.28} \pm 0.07$	<span style="color: blue;"><math>2.97 \pm 0.52 \pm 0.26</math></span>	$2.41_{-0.16}^{+0.18}$
$\phi_{\perp}$	$2.49 \pm 0.18$	$2.47 \pm 0.25 \pm 0.05$	$2.51 \pm 0.25 \pm 0.06$	<span style="color: blue;"><math>2.77 \pm 0.37 \pm 0.37</math></span>	$2.52 \pm 0.17$
$A_{CP}^0$	$0.01 \pm 0.09$	$-0.06 \pm 0.10 \pm 0.01$	$0.13 \pm 0.12 \pm 0.04$		$0.01 \pm 0.08$
$A_{CP}^{\perp}$	$-0.16 \pm 0.15$	$-0.10 \pm 0.24 \pm 0.05$	$-0.20 \pm 0.18 \pm 0.04$		$-0.16 \pm 0.15$
$\Delta\phi_{\parallel}$	$0.02 \pm 0.28$	$0.27_{-0.23}^{+0.20} \pm 0.05$	$-0.32 \pm 0.27 \pm 0.07$		$0.03 \pm 0.18$
$\Delta\phi_{\perp}$	$0.03 \pm 0.33$	$0.36 \pm 0.25 \pm 0.05$	$-0.30 \pm 0.25 \pm 0.06$		$0.03 \pm 0.18$
$f_{\parallel} = \Lambda_{\parallel\parallel}$	New	$0.26 \pm 0.05 \pm 0.02$	$0.24 \pm 0.06 \pm 0.02$	<span style="color: blue;"><math>0.22 \pm 0.08 \pm 0.05</math></span>	$0.25 \pm 0.04$
$\mathcal{A}_T^0 = -0.5\Lambda_{\perp 0}$	New	$0.11 \pm 0.05 \pm 0.01$	$-0.08 \pm 0.08 \pm 0.02$		$0.06 \pm 0.04$
$\mathcal{A}_T^{\parallel} = -0.5\Lambda_{\perp\parallel}$	New	$-0.02 \pm 0.04 \pm 0.01$	$-0.01 \pm 0.05 \pm 0.01$		$-0.02 \pm 0.03$
$\Lambda_{\parallel 0}$	New	$-0.50 \pm 0.12 \pm 0.03$	$-0.45 \pm 0.11 \pm 0.02$		$-0.47 \pm 0.08$
$\Sigma_{00}$	New	$0.03 \pm 0.05 \pm 0.01$	$-0.06 \pm 0.05 \pm 0.01$		$-0.02 \pm 0.04$
$\Sigma_{\parallel\parallel}$	New	$-0.05 \pm 0.06 \pm 0.01$	$-0.01 \pm 0.06 \pm 0.01$		$-0.03 \pm 0.04$
$\Sigma_{\perp\perp}$	New	$0.02_{-0.05}^{+0.06} \pm 0.01$	$0.06 \pm 0.06 \pm 0.01$		$0.04 \pm 0.04$
$\Sigma_{\perp 0}$	New	$-0.41 \pm 0.14 \pm 0.03$	$-0.41_{-0.14}^{+0.16} \pm 0.04$		$-0.41_{-0.10}^{+0.11}$
$\Sigma_{\perp\parallel}$	New	$-0.06_{-0.08}^{+0.09} \pm 0.02$	$-0.06 \pm 0.10 \pm 0.01$		$-0.06_{-0.06}^{+0.07}$
$\Sigma_{\parallel 0}$	New	$0.18_{-0.13}^{+0.11} \pm 0.03$	$-0.11 \pm 0.11 \pm 0.02$		$0.01 \pm 0.09$

Results below the line have been derived from the primary results. BR,  $f_L$  and  $A_{CP}$  are tabulated separately.

# Charmless $VV$ Polarization Measurements:

## *BABAR* References

- [1] *BABAR* Collaboration (B. Aubert *et al.*), Phys. Rev. Lett. **91**, 171802 (2003).
- [2] *BABAR* Collaboration (B. Aubert *et al.*), Phys. Rev. Lett. **93**, 231804 (2004).
- [3] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0607098 (ICHEP06 contributed paper).
- [4] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0607097 (ICHEP06 contributed paper).
- [5] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0605017 (submitted to PRDRC).
- [6] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0607057 (submitted to PRL).
- [7] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0607092 (submitted to PRL).
- [8]
- [9]
- [10]

## Belle References

- [11] Belle Collaboration (J. Zhang, M. Nakao *et al.*), Phys. Rev. Lett. **91**, 221801 (2003).
- [12] Belle Collaboration, (K.-F. Chen *et al.*), Phys. Rev. Lett. **94**, 221804 (2005).
- [13] Belle Collaboration, (J. Zhang *et al.*), Phys. Rev. Lett. **95**, 141801 (2005).
- [14] Belle Collaboration, (A. Somov *et al.*), Phys. Rev. Lett. **96**, 171801 (2006).
- [15]
- [16]
- [17]
- [18]
- [19]
- [20]

## CDF References

[21] P. Bussey for the CDF Collaboration, ICHEP 2006.

[22]

[23]