Heavy Flavor Averaging Group - B^+ Polarization Measurements - April 2, 2005

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.
–	$K^{*0}\rho^+$	New	$0.79 \pm 0.08 \pm 0.04$	$0.43 \pm 0.11^{+0.05}_{-0.02}$	0.66 ± 0.07
138	$K^{*+}\rho^0$	$0.96^{+0.04}_{-0.15} \pm 0.04$	$0.96^{+0.04}_{-0.15} \pm 0.04$		$0.96^{+0.06}_{-0.15}$
156	ϕK^{*+}	$0.46 \pm 0.12 \pm 0.03$	$0.46 \pm 0.12 \pm 0.03$	$0.52 \pm 0.08 \pm 0.03$	0.50 ± 0.07
182	$\rho^+\rho^0$	0.96 ± 0.06	$0.97^{+0.03}_{-0.07} \pm 0.04$	$0.95 \pm 0.11 \pm 0.02$	$0.97^{+0.05}_{-0.07}$
186	$\omega\rho^+$	New	$0.88^{+0.12}_{-0.15} \pm 0.03$		$0.88^{+0.12}_{-0.15}$

Heavy Flavor Averaging Group - B^+ Polarization Measurements - April 2, 2005

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

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

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

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

Heavy Flavor Averaging Group - B^0 Polarization Measurements - April 2, 2005

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.
154	ϕK^{*0}	0.57 ± 0.11	$0.52 \pm 0.05 \pm 0.02$	$0.45 \pm 0.05 \pm 0.02$	0.48 ± 0.04
203	$\rho^+\rho^-$	New	$0.99 \pm 0.03^{+0.04}_{-0.03}$		$0.99^{+0.05}_{-0.04}$

Heavy Flavor Averaging Group - B^0 Polarization Measurements - April 2, 2005

Full angular analysis of $B^0 \to \phi K^{*0}$

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

Parameter	PDG2004 Avg.	BABAR	Belle	New Avg.
$f_\perp = \Lambda_{\perp\perp}$	New	$0.22 \pm 0.05 \pm 0.02$	$0.31^{+0.06}_{-0.05} \pm 0.02$	0.26 ± 0.04
$\phi_\parallel$	New	$2.34^{+0.23}_{-0.20} \pm 0.05$	$2.40^{+0.28}_{-0.24} \pm 0.07$	$2.36^{+0.18}_{-0.16}$
$\phi_\perp$	New	$2.47 \pm 0.25 \pm 0.05$	$2.51 \pm 0.25 \pm 0.06$	2.49 ± 0.18
A^0_{CP}	New	$-0.06 \pm 0.10 \pm 0.01$	$0.13 \pm 0.12 \pm 0.04$	0.01 ± 0.08
$A^\perp_{CP}$	New	$-0.10 \pm 0.24 \pm 0.05$	$-0.20 \pm 0.18 \pm 0.04$	-0.16 ± 0.15
$\Delta\phi_\parallel$	New	$0.27^{+0.20}_{-0.23} \pm 0.05$	$-0.32 \pm 0.27 \pm 0.07$	0.03 ± 0.18
$\Delta\phi_\perp$	New	$0.36 \pm 0.25 \pm 0.05$	$-0.30 \pm 0.25 \pm 0.06$	0.03 ± 0.18
$f_\parallel = \Lambda_{\parallel\parallel}$	New	$0.26 \pm 0.05 \pm 0.02$	$0.24 \pm 0.06 \pm 0.02$	0.25 ± 0.04
$\mathcal{A}^0_T = -0.5\Lambda_{\perp 0}$	New	$0.11 \pm 0.05 \pm 0.01$	$-0.08 \pm 0.08 \pm 0.02$	0.06 ± 0.04
$\mathcal{A}^\parallel_T = -0.5\Lambda_{\perp\parallel}$	New	$-0.02 \pm 0.04 \pm 0.01$	$-0.01 \pm 0.05 \pm 0.01$	-0.02 ± 0.03
$\Lambda_{\parallel 0}$	New	$-0.50 \pm 0.12 \pm 0.03$	$-0.45 \pm 0.11 \pm 0.02$	-0.47 ± 0.08
Σ_{00}	New	$0.03 \pm 0.05 \pm 0.01$	$-0.06 \pm 0.05 \pm 0.01$	-0.02 ± 0.04
$\Sigma_{\parallel\parallel}$	New	$-0.05 \pm 0.06 \pm 0.01$	$-0.01 \pm 0.06 \pm 0.01$	-0.03 ± 0.04
$\Sigma_{\perp\perp}$	New	$0.02^{+0.06}_{-0.05} \pm 0.01$	$0.06 \pm 0.06 \pm 0.01$	0.04 ± 0.04
$\Sigma_{\perp 0}$	New	$-0.41 \pm 0.14 \pm 0.03$	$-0.41^{+0.16}_{-0.14} \pm 0.04$	$-0.41^{+0.11}_{-0.10}$
$\Sigma_{\perp\parallel}$	New	$-0.06^{+0.09}_{-0.08} \pm 0.02$	$-0.06 \pm 0.10 \pm 0.01$	$-0.06^{+0.07}_{-0.06}$
$\Sigma_{\parallel 0}$	New	$0.18^{+0.11}_{-0.13} \pm 0.03$	$-0.11 \pm 0.11 \pm 0.02$	0.01 ± 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.*), Phys. Rev. Lett. **93**, 231801 (2004).

[4] *BABAR* Collaboration (B. Aubert *et al.*), hep-ex/0408093 (ICHEP 2004 contributed paper).

[5] *BABAR* Collaboration (B. Aubert *et al.*), Phys. Rev. D **71**, 031103 (2005).

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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.*), hep-ex/0503013, 2005.

[13] K. Senyo (for the Belle collaboration), talk presented at Moriond EW, 2005.

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