

**Erratum: Measurement of transverse single-spin asymmetries for
 J/ψ production in polarized $p + p$ collisions at $\sqrt{s} = 200$ GeV
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We previously reported measurements of transverse single-spin asymmetries, A_N , in J/ψ production from transversely polarized $p + p$ collisions at $\sqrt{s} = 200$ GeV with data taken by the PHENIX experiment at the Relativistic Heavy Ion Collider in 2006 and 2008. Subsequently, we have found errors in the analysis procedures for the 2008 data, which resulted in an erroneous value for the extracted A_N . The errors affected the sorting of events into the correct left or right, and forward or backward, bins. This produced an incorrect value for the 2008 result, but the 2006 result is unaffected. We have conducted two independent reanalyses with these errors corrected, and we present here the corrected values for the 2008 data and the combined results for 2006 and 2008. Figures 1 and 2 here replace Figs. 3 and 4 in this paper. Tables I, II, and III here replace Tables I, II, and V, respectively, in this paper.

We also made a small change in the way $\langle x_F \rangle$ is calculated; this did not affect the asymmetries. In this paper, we calculated $\langle x_F \rangle$ separately for the north and south muon spectrometers, but this does not exactly represent the way the data are combined to form an asymmetry; we fixed this here in Tables I, II, and III. The new combined spin asymmetry in the forward region is $A_N = -0.026 \pm 0.026$ (stat) ± 0.003 (sys). Since this asymmetry is consistent with zero, we no longer claim that our results suggest a possible nonzero trigluon correlation function in transversely polarized protons.

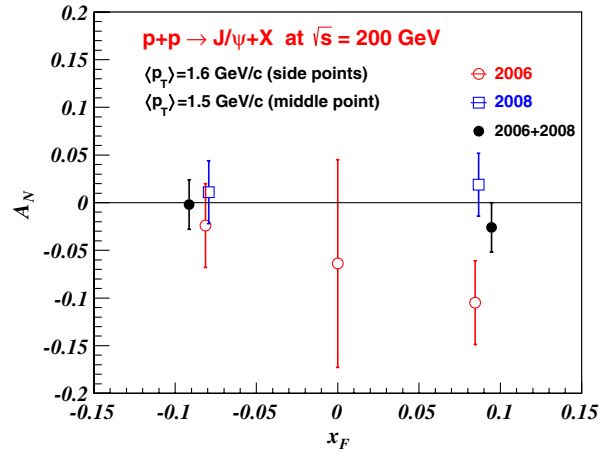


FIG. 1 (color online). Transverse single-spin asymmetry in J/ψ production as a function of x_F for 2006 and 2008 data sets separately, and the combined result; the points for the combined result have been offset by 0.01 in x_F for visibility. The error bars shown are statistical and type A systematic uncertainties, added in quadrature. Type B systematic uncertainties are not included but are 0.003 or less in absolute magnitude and can be found in Table III. Not shown is an additional uncertainty in the scale of the ordinate due to correlated polarization uncertainties of 3.4%, 3.0%, and 2.4% for the 2006, 2008, and combined 2006 + 2008 data sets, respectively.

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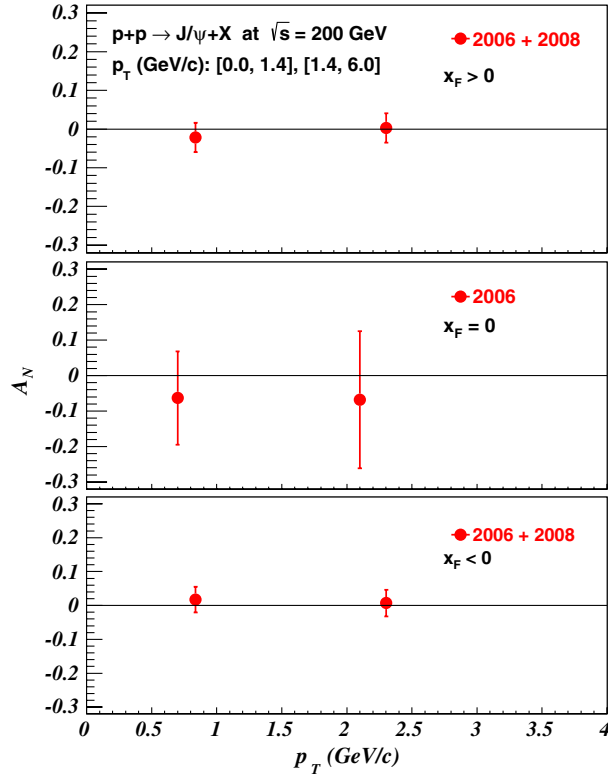


FIG. 2 (color online). Transverse single-spin asymmetry of J/ψ mesons plotted against J/ψ transverse momentum. See Table III for mean x_F values for each point. The error bars shown are statistical and type A systematic uncertainties, added in quadrature. Type B systematic uncertainties are not included but are 0.002 or less in absolute magnitude and can be found in Table III. An additional uncertainty in the scale of the ordinate due to correlated polarization uncertainties is 2.4% (3.4%) for the points with $|x_F| > 0$. ($x_F = 0$ is not shown.)

TABLE I. Background asymmetries as a function of p_T for PHENIX muon spectrometers. The uncertainties given are statistical.

p_T (GeV/c)	$\langle x_F \rangle$	Data set	A_N^{BG}
0–6	–0.083	2006	-0.003 ± 0.028
	–0.084	2008	0.041 ± 0.035
	0.083	2006	-0.008 ± 0.028
	0.084	2008	-0.010 ± 0.036
0–1.4	–0.083	2006	-0.021 ± 0.034
	–0.085	2008	0.033 ± 0.043
	0.083	2006	0.002 ± 0.034
	0.085	2008	0.023 ± 0.044
1.4–6	–0.083	2006	0.001 ± 0.053
	–0.084	2008	0.019 ± 0.075
	0.083	2006	-0.039 ± 0.053
	0.084	2008	-0.038 ± 0.076

TABLE II. Total background fractions as a function of p_T for muon spectrometers on the north and south sides of PHENIX. Backgrounds were higher in the 2006 data set, because the less restrictive trigger requirement allowed more random track combinations.

p_T (GeV/ c)	Data set	Detector	Background fraction (%)
0–6	2006	South	21.7 ± 0.6
	2006	North	19.1 ± 0.4
	2008	South	16.2 ± 0.2
	2008	North	14.1 ± 0.2
0–1.4	2006	South	23.2 ± 0.7
	2006	North	22.0 ± 0.7
	2008	South	15.9 ± 0.3
	2008	North	15.6 ± 0.3
1.4–6	2006	South	20.1 ± 0.8
	2006	North	14.1 ± 0.5
	2008	South	15.7 ± 0.4
	2008	North	9.7 ± 0.2

TABLE III. A_N vs p_T in forward, backward, and midrapidity. Systematic uncertainties in the last two columns are due to the geometric scale factor and the polarization, respectively. There are additional type C uncertainties due to the polarization of 3.4%, 3.0%, and 2.4% for the 2006, 2008, and combined 2006 and 2008 results, respectively.

p_T (GeV/ c)	Data sample	$\langle x_F \rangle$	A_N	δA_N (stat.)	δA_N (type A syst.)	δA_N^f (%) (type B syst.)	δA_N^p (%) (type B syst.)
0–6	2006	−0.083	−0.024	0.044	0.003	0.6	2.3
	2008	−0.084	0.011	0.033	0.004	0.4	3.4
	2006 + 2008	−0.084	−0.002	0.026	0.002	0.4	2.8
	2006	0.000	−0.064	0.106	0.026	0.6	2.3
	2006	0.083	−0.105	0.044	0.005	0.6	2.3
	2008	0.084	0.019	0.033	0.003	0.4	3.3
	2006 + 2008	0.084	−0.026	0.026	0.003	0.4	2.7
	2006	−0.083	0.050	0.067	0.007	0.6	2.3
0–1.4	2008	−0.085	0.001	0.047	0.008	0.4	3.4
	2006 + 2008	−0.084	0.017	0.038	0.005	0.4	2.8
	2006	0.000	−0.063	0.128	0.031	0.6	2.3
	2006	0.083	−0.065	0.066	0.005	0.6	2.3
	2008	0.085	0.0003	0.047	0.003	0.4	3.4
	2006 + 2008	0.084	−0.022	0.038	0.003	0.4	2.7
	2006	−0.083	−0.073	0.065	0.002	0.6	2.3
	2008	−0.084	0.051	0.048	0.010	0.4	3.5
1.4–6	2006 + 2008	−0.084	0.007	0.039	0.002	0.4	2.8
	2006	0.000	−0.068	0.188	0.045	1.2	2.3
	2006	0.083	−0.046	0.064	0.005	0.6	2.3
	2008	0.084	0.030	0.047	0.007	0.4	3.3
	2006 + 2008	0.084	0.003	0.038	0.004	0.4	2.7