Transverse Single-Spin asymmetries for $\pi^{\pm}$ production from pp collisions at $\sqrt{s_{NN}} = 200$ GeV.

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Single-spin asymmetries have been observed at forward angle pp collisions for charged pion production at $\sqrt{s_{NN}} = 19$ GeV [1] and for π^0 at 200 GeV [2]. The rather large asymmetries observed have several quite different theoretical explanations. Additional measurements to are needed to discriminate between these.

The BRAHMS experiment took a small sample of data at $0.15 < x_F < 0.35$ in the RHIC run-4 that allows a first measurement of $\pi^{\pm}$ transverse asymmetry. The spectrometer was operated at its most forward angle setting, 2.3^o. The particle identification is based on the Ring Imaging Cherenkov detector allowing for π-K separation to ≈ 35 GeV. The relative spin-luminosities are determined from several independent global detectors. Preliminary results will be presented and discussed in relation to pQCD models. In addition, prospects for further high statistics measurements in the upcoming RHIC run will be presented.

References

[1] D.L.Adams (E704) Phys.Lett B264,462(1991); Phys.ReV D53,4747 (1996).

[2] J.Adams (STAR collaboration) Phys.Rev.Lett 92,171801(2004)