

Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Measuring transversity in polarized p+p collisions with di-hadron correlations at $\sqrt{s} = 200$ and 500 GeV at the STAR experiment KEITH LANDRY, UCLA, STAR COLLABORATION — The transversity distribution $h_1(x)$ of a transversely polarized proton describes the fraction of partons with polarization parallel to the parent proton, carrying a momentum fraction x of the parent proton. This distribution is fundamental for our understanding of the proton spin structure but still very much unknown for values of x larger than about 0.15. In order to understand transversity better, we study transversely spin-polarized proton collisions at STAR, as polarized p+p collisions at RHIC can access this x region and, with a higher scale and transverse momentum, probe a different kinematic regime than SIDIS. We find sizable spin asymmetries in di-hadron correlations, which can be used to directly probe the transversity distribution of quarks inside protons because they arise from a transversely spin polarized quark fragmenting into two hadrons by the Interference Fragmentation Function. This talk will present precision measurements of di-hadron correlations which from the STAR experiment at RHIC, which are sensitive to transversity.

Keith Landry
UCLA

Date submitted: 09 Jan 2015

Electronic form version 1.4