Transverse Spin Transfer of Λ and $\overline{\Lambda}$ Hyperons in Transversely Polarized p+p Collisions at $\sqrt{s} = 200$ GeV at RHIC-STAR

Yike Xu, for the STAR Collaboration
Institute of Frontier and Interdisciplinary Science, Shandong University, Qingdao, China

Abstract

The transverse spin transfer, D_{TT}, of Λ and $\overline{\Lambda}$ hyperons in p+p collisions is expected to be sensitive to the s and $\bar{s}$ quark transversity distributions in the proton and to the transversely polarized fragmetation functions. STAR has published the first measurement of the transverse spin transfer of Λ and $\overline{\Lambda}$ hyperons in transversely polarized p+p collisions at $\sqrt{s} = 200$ GeV within pseudo-rapidity $|\eta| < 1.2$ and for the transverse momenta up to 8 GeV/c based on the data taken in 2012 [1]. In 2015, a data sample of about two times larger at $\sqrt{s} = 200$ GeV was collected by the STAR experiment. The status of the analysis of the transverse spin transfer of Λ and $\overline{\Lambda}$ hyperons based on this new data set will be presented.

References

[1] J. Adam *et al.* (STAR Collaboration), Phys. Rev. D **98**, 091103 (2018)