Measurement of transverse polarization of $\Lambda/\bar{\Lambda}$ within jet in pp collisions at 200 GeV

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Spontaneous polarization of Λ in unpolarized hadron-hadron reactions was observed over four decades ago and still puzzles us, as we do not yet have a definitive explanation for its origin. Recently significant transverse polarization of $\Lambda/\bar{\Lambda}$ was observed by the Belle experiment in unpolarized e^+e^- annihilation, along the axis normal to the plane defined by the thrust axis and the Λ momentum. The possible origin is the production of transversely polarized hadrons from the fragmentation of an unpolarized parton described by polarizing Fragmentation Functions (PFFs). In this talk, we will present the first measurement of transverse polarization of $\Lambda/\bar{\Lambda}$ inside a jet in unpolarized pp collisions. The Λ polarization is expressed as a function of the fraction of jet momentum carried by Λ (z), and the Λ transverse momentum relative to the jet axis (j_T), which could provide important constraints for the PFFs. The plane was chosen as the reference onto which Λ polarization was projected. This measurement uses unpolarized pp collision at the center-of-mass energy of $\sqrt{s} = 200$ GeV, collected by the STAR detector at RHIC in 2015. This is the largest STAR $\sqrt{s} = 200$ GeV pp data set, corresponding to an integrated luminosity of 104 pb^{-1}.