

Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

Longitudinal Spin Transfer of Hyperons in Polarized Proton-proton Collisions at $\sqrt{s}=200$ GeV QINGHUA XU, LBNL, STAR COLLABORATION — The study of the spin content of the nucleon with polarized proton collisions forms one of the main goals of the STAR (Solenoid Tracker At RHIC) spin physics program. The longitudinal spin transfer D_{LL} of the Lambda and anti-Lambda hyperons at large transverse momenta is sensitive to the helicity distribution functions of strange quarks and anti-quarks, and to polarized fragmentation functions. This contribution reports on the measurement of D_{LL} in inclusive Λ and $\bar{\Lambda}$ production in longitudinally polarized proton-proton collisions at a center of mass energy of $\sqrt{s}=200$ GeV. The data were collected in the year 2005 with proton beam polarizations of about 50%, and a sampled integrated luminosity of about 3 pb^{-1} . The $\Lambda(\bar{\Lambda})$ candidates were reconstructed via the dominant decay channel $\Lambda \rightarrow p\pi^-$ ($\bar{\Lambda} \rightarrow \bar{p}\pi^+$) at mid-rapidity ($|\eta| < 1$) using the STAR Time Projection Chamber. Preliminary results on D_{LL} , covering transverse momenta up to 4 GeV/c, will be presented together with an outlook on future hyperon spin transfer measurements.

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Date submitted: 02 Jul 2007

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