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

*Wednesday, 20 October 2021 16:48 (18 minutes)*

The transverse spin transfer,  $D_{TT}$ , of  $\Lambda$  and  $\bar{\Lambda}$  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 fragmentation functions. The STAR experiment has published the first measurement of the transverse spin transfer of  $\Lambda$  and  $\bar{\Lambda}$  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. In 2015, a data sample of  $p+p$  collisions at  $\sqrt{s} = 200$  GeV, about two times larger than the 2012 data, was collected. The preliminary result of the transverse spin transfer,  $D_{TT}$ , of  $\Lambda$  and  $\bar{\Lambda}$  hyperon versus transverse momentum, based on 2015 data, will be presented. The status of investigating  $D_{TT}$  versus fractional momentum of the hyperon within a jet will also be reported.

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