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

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5 **Abstract**

6 Since the first surprising results on the spin structure of the proton by the EMC exper-
7 iment in the late 1980s, much progress has been made in understanding the origin of the
8 proton spin. However, the sea quark contribution to the proton spin, for example, the po-
9 larized distributions of the strange quark(anti-quark), $s(\bar{s})$, are still not well constrained by
10 experimental data. Since the $s(\bar{s})$ is expected to carry a substantial fraction of the spin of the
11 $\Lambda(\bar{\Lambda})$ hyperon, measurements of the longitudinal spin transfer, D_{LL} , and the transverse spin
12 transfer, D_{TT} , of the $\Lambda(\bar{\Lambda})$ hyperon in polarized proton-proton collisions can thus shed light
13 on the helicity and transversity distributions of the $s(\bar{s})$ and the corresponding polarized
14 fragmentation functions. In this talk, we will present the status of the $\Lambda(\bar{\Lambda})$ D_{LL} and D_{TT}
15 analyses using data collected at RHIC-STAR experiment in 2015, for the pseudo-rapidity
16 $|\eta| < 1.2$ and transverse momenta up to 8.0 GeV/c. This dataset is about twice as large as
17 that used for the previously published D_{LL} and D_{TT} results.