

1 Measurement of transverse polarization of $\Lambda/\bar{\Lambda}$
2 in pp collisions at STAR

3 Taoya Gao for the STAR Collaboration
Shandong University

4 Spontaneous polarization of $\Lambda/\bar{\Lambda}$ hyperon in unpolarized hadron-hadron reactions has been
5 observed experimentally for nearly half a century and still eludes a definitive explanation. Re-
6 cently significant transverse polarization of $\Lambda/\bar{\Lambda}$ was observed by the Belle experiment in un-
7 polarized e^+e^- annihilation, along the normal direction to the plane defined by the thrust axis
8 and the Λ momentum. A possible origin is the effect arising from polarizing fragmentation
9 functions (PFFs), which describe the production of polarized hadrons from the fragmentation
10 of an unpolarized parton. Presented in this talk is a status update on measurement of the
11 polarization of $\Lambda/\bar{\Lambda}$ transverse to the plane defined by the jet and Λ momentum in unpolarized
12 pp collisions collected at the STAR experiment at the center-of-mass energy of $\sqrt{s} = 200$ GeV,
13 with an integrated luminosity of 104 pb^{-1} . This is the first measurement in pp collisions and can
14 provide important constraints on the PFFs. The utilized data sample is the largest collected by
15 the STAR detector at RHIC for this collision system and energy.