

1 Measurements of Global and Local Polarization of Hyperons in 2 200 GeV Isobar Collisions from STAR

3 Xingrui Gou for the STAR Collaboration

4 In heavy-ion collisions, the observation of the global and local polarization of hyperons has revealed the
5 existence of large vorticities perpendicular to reaction plane due to systems's orbital angular momentum
6 and along beam direction due to collective velocity field, respectively. With the high-statistics data from
7 isobar collisions of Ru+Ru and Zr+Zr at $\sqrt{s_{NN}} = 200$ GeV collected by the STAR experiment, we present
8 differential measurements of global polarization for $\Lambda/\bar{\Lambda}$ and Ξ^\pm as a function of centrality, p_T , and η .
9 These measurements allow us to study the possible magnetic field driven effects through the polarization
10 difference between Ru+Ru and Zr+Zr, owing to a larger magnetic field in the former. Furthermore, the
11 first measurements of Λ hyperon local polarization along beam direction relative to the third order event
12 plane as well as the second order event plane will be presented. A comparison of results from isobar
13 and Au+Au collisions provides important new insights into the collision system size dependence of the
14 vorticities in heavy-ion collisions.