

1 Global polarization of hyperons in Au+Au 2 collisions at BES-II energies by the STAR 3 experiment

4 Egor Alpatov (for the STAR collaboration)

5 National Research Nuclear University MEPhI

6 In non-central collisions, a large orbital angular momentum is de-
7 posited into the system, generating vorticity that aligns hyperon spins
8 through spin-orbit coupling. A newly collected dataset of Au+Au col-
9 lisions at $\sqrt{s_{\text{NN}}} = 7.7, 9.2, 11.5, 14.6, 17.3, 19.6$, and 27 GeV from the
10 second phase of the RHIC Beam Energy Scan (BES-II), obtained with
11 upgraded detector systems, provides a unique opportunity to measure
12 the global polarization of $\Lambda(\bar{\Lambda})$, $\Xi^\pm$ and $\Omega^\pm$ hyperons with unprece-
13 dented precision at these energies. These results provide new insights
14 into the polarization mechanism and vorticity fields in heavy-ion colli-
15 sions as well as additional constraints on the properties and dynamics
16 of the hot and dense matter created in these collisions.