

Measurement of global polarization of Λ and $\overline{\Lambda}$ in Au+Au collisions from the RHIC Beam Energy Scan-II

Tong Fu (futong626@mail.sdu.edu.cn), for the STAR Collaboration Shandong University

Abstract

Significant global hyperon polarization has been observed in non-central heavy-ion collisions, providing evidence of the vorticity of quark-gluon plasma (QGP). This effect can serve as a new probe in exploring fluid properties of strongly interacting matter. We present high precision measurements of Λ and $\overline{\Lambda}$ global polarization in Au+Au collisions at $\sqrt{s_{NN}} = 7.7, 9.2, 11.5, 14.6$ and 17.3 GeV from RHIC BES-II with upgraded STAR detectors. These results offer new insights into the polarization mechanism and vorticity fields in heavy-ion collisions, enabling the study of possible magnetic field-driven effects through the polarization difference between Λ and $\overline{\Lambda}$ hyperons.

