

Measurements of Λ , Ξ and Ω Global Polarization in Au+Au collisions at BES-II energies from RHIC-STAR

The observation of hyperon global polarization along the system's angular momentum has revealed the existence of large vorticities in the medium created by heavy-ion collisions. In this talk, we present measurements of global polarization for Λ , Ξ , and Ω hyperons in Au+Au collisions at $\sqrt{s_{NN}} = 7.7, 9.2, 11.5, 14.6, 17.3, 19.6$, and 27 GeV, based on high-statistics data collected during the RHIC Beam Energy Scan Phase II (BES-II) with the upgraded STAR detector. The comparison between Λ and $\bar{\Lambda}$ polarizations offers potential access to magnetic-field-driven effects. The inclusion of multi-strange hyperons such as Ξ and Ω introduces additional sensitivity to the later-stage dynamics of the system, placing further constraints on the properties of the QGP and the evolution of its angular momentum. These results provide new insights into the polarization mechanism and the structure of the vorticity fields in heavy-ion collisions.

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