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The Azimuthal Angle Dependence of Lambda (anti-Lambda) Polarization in Au+Au Collisions from STAR

Tuesday 15 May 2018 19:10 (30 minutes)

The STAR experiment at RHIC has observed for the first time a significant alignment between the angular momentum of the medium produced in non-central collisions [1] and the spin of $\Lambda(\overline{\Lambda})$ hyperons (J=1/2), revealing that the matter produced in heavy-ion collisions is by far the most vortical system ever observed. Such vorticity is expected to be maximal at the equator, and due to the low viscosity of the system, the vorticity may not be propagated efficiently to the poles. This may lead to a larger in-plane than out-of-plane polarization for Λ hyperons.

In this poster, we will present the azimuthal angle (with respect to the reaction plane) dependence of Λ and $\overline{\Lambda}$ polarization in 20-50% central Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV. The implications of our results will be discussed.

Reference
[1] L. Adamczyk et al. (STAR Collaboration), Nature 548, 62 (2017).

Content type

Experiment

Collaboration

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Centralised submission by Collaboration

Presenter name already specified

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