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Hyperon-type dependence of global polarization in heavy-ion collisions

In heavy-ion collisions, the spin polarization of Λ hyperon is an important measure to probe the vorticity of the quark-gluon plasma. On the other hand, other hyperons such as Σ^- and Ξ^- should also possess the global polarization similar to Λ .

In this talk, I will show our recent theoretical results on the global polarization of Λ , Σ^- and Ξ^- hyperons in non-central Au+Au collisions in the energy range 7.7–200 GeV. The effect of resonance decays on the global polarization of Λ and Σ^- is also investigated. Our results provide a quantitative relation between the global polarization of Λ , Σ^- and Ξ^- hyperons. This provides us a means to further test the vorticity interpretation of the global polarization in experiments.

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