

Time to relax and talk on Lambda polarization

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Content

Experiments that collide heavy nuclei at high energies have proven to be incredibly useful to study matter at its fundamental level. One of the most striking features of matter in heavy-ion collisions is that it forms the most perfect fluid that we know of and, consequently, can be described using the methods of hydrodynamics. Within this framework, the study of the thermal vorticity can lead to promising results when trying to describe observables such as the polarization of Λ hyperons. In fact, it can be argued that this alone is enough to predict the results of STAR and ALICE if instant equilibrium of the spin degrees of freedom is assumed. Here, we present a model aimed at determining the polarization of Λ hyperons by noting that the interaction region created in a collision leads to different degrees of polarization. We use the relaxation time calculated through finite-temperature methods and a core+corona picture to obtain the polarization of Λ 's and $\bar{\Lambda}$'s without the need of demanding the instant equilibration of spin degrees of freedom.

Area of contribution

Theory and Phenomenology

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