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Global Polarizations of Phi-meson and Lambda in Heavy Ion Collisions

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In non-central relativistic heavy ion collisions, the created matter possesses a large initial orbital angular momentum. Particles produced in the collisions could be polarized globally in the direction of the orbital angular momentum due to spin-orbit coupling. Recently, the STAR experiment has presented the polarization signals for Λ hyperons and possible spin alignment signals for phi mesons. These results opened a new direction for better understanding the medium properties in such collisions.
In this talk, we will present the results of our study on the polarizations of both phi-mesons and Lambda hyperons. A multi-phase transport (AMPT) model is used in our analysis, and these results will be compared with published data. We will focus on the effects of finite experimental coverage on the global polarizations

Content type

Experiment

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