

Spin polarization from hadrons to (anti-)(hyper-)nuclei in high-energy nuclear collisions

Particles of non-zero spin produced in non-central heavy-ion collisions are expected to be polarized along the direction perpendicular to the reaction plane because of their spin-orbit interactions in the produced matter. In this talk, I will show that the hypertriton, which is the lightest hypernucleus, is also polarized in these collisions. I will demonstrate that the polarization and decay pattern of hypertriton provides a unique tool to decipher the spin structure of hypertriton wavefunction. I will further discuss the possibility of studying the spin correlations among nucleons and Λ hyperons in the produced hadronic matter from the measured Λ polarization in non-central heavy-ion collisions.

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