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A study of the strange vector meson spin alignment with the AMPT model

Summary

Observables sensitive to the vorticity allow us to study the fundamental property of the hot and dense nuclear matter created in high-energy nuclear collisions.Global polarization parameters of identified particles can be extracted from the azimuthal distribution of particles with respect to the event plane.The spin alignment of vector meson such as ϕ meson and $K^\star$ could be sensitive to the vorticity of the colliding system and its space-time evolution.In this presentation, we will present results from a multi-phase transport (AMPT) model that is modified to include the spin alignment information of ϕ and $K^\star$ mesons. We will discuss the extraction of spin alignment parameters from event plane reconstruction, and study how hadron interactions could influence the spin alignment observables based on final state particles.

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