



Differential study of Λ -hyperon polarization in a few-GeV regime within transport model approach

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We present a systematic study of Λ hyperon polarization in heavy-ion collisions at HADES energies within the framework of microscopic transport model UrQMD combined with the hadron-resonance gas statistical model. This study demands a complex analysis of the fireball evolution including time slices, extraction of temperature and chemical potentials, as well as freeze-out conditions of Λ hyperons and study of the formation and space-time evolution of thermal vorticity. Two systems and four impact parameters are considered: Au+Au at $\sqrt{s_{NN}} = 2.42$ GeV and Ag+Ag at $\sqrt{s_{NN}} = 2.55$ GeV with $b = 3.0, 5.5, 7.5, 9.0$ fm. Rapidity and transverse momentum dependence of the polarization are obtained and show a good agreement with preliminary experimental data as well as centrality and energy dependence of global polarization.

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