



Contribution ID: 648

Type: Poster

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

Wednesday 6 April 2022 19:06 (4 minutes)

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 baryonic 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.

Primary authors: Mr VITIUK, Oleksandr (University of Wrocław, Institute of Theoretical Physics); BRAVINA, Larisa; ZABRODIN, Evgeny (University of Oslo)

Presenter: Mr VITIUK, Oleksandr (University of Wrocław, Institute of Theoretical Physics)

Session Classification: Poster Session 2 T02

Track Classification: Chirality, vorticity and spin polarization