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Systematics of Hidden and Open Strangeness Production in Few GeV Heavy Ion Collisions

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Investigating strangeness production and propagation in heavy-ion collisions in the few GeV energy regime is a sensitive tool for studying the microscopic structure of nuclear matter at high baryo-chemical potential. In this contribution, we present preliminary results on the production of strange hadrons from a total of 3×10^9 most active Ag(1.58A GeV)+Ag events recorded with HADES in 2019 and compare their spectra and extracted multiplicities with results obtained from statistical hadronization models with different parameterizations. Special attention is paid to the comparison between different canonical descriptions in the context of strangeness suppression.

With respect to this, the $\phi(1020)/\Xi^-$- and $\phi(1020)/K^-$-ratios are utilized to test the consistency of the corresponding models in describing their relative yields. The significant softening of the K^- transverse spectra due to the $\phi(1020)$ feed-down is also discussed.

Furthermore, we discuss the centrality (A_{part}) dependence of strange-hadron multiplicities, which were found to follow a universal scaling for the collision system Au(1.23A GeV)+Au.

Category

Experiment

Collaboration (if applicable)

HADES

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