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Charged Kaon- and ϕ -reconstruction in Au+Au-collisions at 1.23 AGeV

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In Au+Au-collisions at 1.23 AGeV, the complete strangeness production is below its nucleon-nucleon threshold. In baryon dominated matter K^+ and K^- exhibit different properties, because K^- can be resonantly absorbed by nucleons. Although strangeness exchange reactions have been proposed to be the dominant channel for K^- production below threshold, the production yield could also be explained in Ar+KCl-reactions at 1.76 AGeV based on a statistical hadronization model fit to the measured particle yields. To take care for strangeness conservation, strangeness is calculated canonically within R_c , and therefore the ratio of ϕ/K^- is predicted to rise with decreasing beam energies and hence the feed-down of ϕ -mesons to Kaons becomes more important.

In April and May 2012, 7.3 billion Au(1.23 GeV per nucleon)+Au collisions have been recorded by the HADES detector. In this contribution, we present results of the charged kaon and ϕ -meson production and test the above discussed prediction.

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