

PRODUCTION OF $K^*(892)$ MESONS IN CU+AU AND U+U COLLISIONS

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One of the first proposed signatures of quark-gluon plasma (QGP) formation in heavy ion collisions was strangeness enhancement [1]. Due to its strange quark content, the K^* meson is a good probe for the study of the QGP formed in heavy-ion collisions. K^* -meson production was previously measured by PHENIX [2] in symmetric Cu+Cu collisions at $\sqrt{s_{NN}} = 200$ GeV [3]. To continue the study of the QGP properties, we have performed analyses of K^* -meson production in asymmetric Cu+Au collisions at $\sqrt{s_{NN}} = 200$ GeV as well as collisions of highly deformed uranium nuclei at $\sqrt{s_{NN}} = 192$ GeV. In this talk, we present invariant transverse momentum spectra and nuclear modification factors of K^* -mesons measured in Cu+Au collisions at $\sqrt{s_{NN}} = 200$ GeV and U+U collisions at $\sqrt{s_{NN}} = 192$ GeV. In central Cu+Au and U+U collisions in the intermediate transverse momentum range, K^* -meson yields are less suppressed than the yields of non-strange mesons such as π^0 , η , and ω , which might indicate that additional particle production mechanisms are involved in K^* -meson production. Production of K^* -mesons in Cu+Cu, Cu+Au, and U+U collisions scales with number of participants and seems to depend on nuclear overlap size, but not on its geometry [4]. Implications for hadronization and strangeness production will be discussed.

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