

Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



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Characterizing baryon dominated matter with HADES measurements

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In heavy-ion reactions at beam energies of a few GeV per nucleon on stationary targets, QCD matter is substantially compressed (2-3 times nuclear saturation density) while temperatures are expected not to exceed $T = 70$ MeV. Matter under such conditions is being studied with HADES at SIS18.

This contribution discusses new experimental results on the mechanisms of strangeness production, the emissivity of matter and the role of baryonic resonances herein. The multi-differential representations of hadron and dilepton spectra, collective effects and particle correlations will be confronted with results of other experiments as well as with hitherto model calculations.

To provide a deeper understanding of the temperature and density dependence of the intriguing results obtained in the Au+Au and Ar+KCl runs, HADES has recently completed a run studying Ag+Ag collisions at $\sqrt{s_{NN}} = 2.55$ GeV, optimized to reach a high enough beam energy for abundant strangeness and vector meson production while yet realizing a large interaction volume. The results obtained for heavy-ion collisions are confronted to studies of elementary reactions serving as a reference for medium effects.

Author: HARABASZ, Szymon (TU Darmstadt)

Presenter: HARABASZ, Szymon (TU Darmstadt)

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