



Contribution ID: 64

Type: **not specified**

Low-mass electron pairs from Au+Au collisions at 1.23A GeV with HADES

Saturday, 24 September 2016 12:00 (20 minutes)

Lepton pairs are considered as ideal probe to access the microscopic properties of strongly-interacting matter under extreme conditions of temperature and density. The spectral distribution of lepton pairs in the region below the low mass vector mesons is characterized by an excess radiation above contributions from late meson decays (cocktail). It is theoretically well understood as a thermal radiation based on Vector Meson Dominance assuming a strong broadening of the in-medium ρ spectral function due to coupling to baryons and anti-baryons.

In continuation of a systematic investigation of the emissivity of strongly interacting matter, HADES has recently measured the dielectron emission in Au+Au collisions at 1.23A GeV beam energy. The first measurement for Au+Au completes the systematics of dilepton production in NN/pA/AA collisions in the SIS18 energy range.

This contribution will present new results for the Au+Au system based on a data sample of 5.0 billion events of the 40% most central collisions. Data are presented for four centrality bins and include also double-differential spectra like e.g. transverse momentum distributions for different invariant mass bins. The data will be confronted with available model calculations. The integrated excess yield will be put in context of the dilepton excitation function measured in the RHIC beam energy scan.

Presentation type

Oral

Summary

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Session Classification: Parallel Session II: EM Probes (II)