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Measurement of virtual photons radiated from Au+Au collisions at $\sqrt{s}_{\text{beam}} = 1.23\text{A GeV}$ with HADES

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Dileptons are a unique probe to study microscopic properties of nuclear matter under extreme conditions of temperature and density achieved in heavy-ion collisions. The low-mass excess radiation (above cocktail) observed from SIS to top RHIC energies is well understood theoretically in terms of strict VMD assuming strong broadening of the in-medium ρ spectral function. This broadening is linked to the coupling of vector mesons to baryons and anti-baryons and is expected to be maximal in baryon-rich medium as formed at lowest beam energies.

This is the paramount topic of the experimental program of HADES conducted at SIS18 accelerator in GSI. Strong, non-linear system size dependence of the integrated yield above the NN reference has been extracted from former C+C and Ar+KCl runs [1].

This contribution will present results on virtual photon production from high statistics Au+Au at $\sqrt{s}_{\text{beam}} = 1.23\text{A GeV}$ data and confront them with the reference measured by HADES as well as with available model predictions. The integrated excess yield will be put in context of the dilepton excitation function measured in RHIC beam energy scan.

[1] G. Agakishiev et al. [HADES Collaboration], Phys. Rev. C **84** (2011) 014902

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