

## Neutral meson production in AgAg@1.58 A GeV

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Relativistic nucleus–nucleus collisions offer a unique possibility for studying nuclear matter under the influence of high temperature and pressure. During the collision a system of interacting nucleons, resonances, and mesons, called hadronic fireball, is created.

The Dielectron Spectrometer HADES operated at the SIS18 synchrotron of FAIR/GSI Darmstadt recently provided new intriguing results on production of electron pairs and strangeness from nucleus-nucleus collisions, as well as from reference elementary reactions, in energy region of 1–2 A-GeV. At 2019 it was complemented by a new electromagnetic calorimeter based on lead-glass modules, which allows to measure production of the  $\pi^0$  and  $\eta$  mesons via their two-photon decay. In this energy range,  $\pi^0$  and  $\eta$  mesons are the most abundantly produced mesons carrying information from the hadronic fireball. In addition, the knowledge of the neutral meson production is a mandatory prerequisite for the interpretation of dielectron data and at the same time almost no respective data are presently available for this energy range.

Recent result on  $\pi^0$  production in Ag + Ag collisions at 1.58 A-GeV with  $14 \times 10^9$  collected events will be presented. The yields, transverse mass and rapidity distributions will be shown and compared with existing data from other experiments as well as with transport model calculations.

### Collaboration

HADES

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