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Low-mass, low-momentum virtual photon measurements with HADES

Dileptons are particularly valuable for investigating properties of hot and dense medium created in relativistic heavy-ion collisions. As they do not interact strongly with the medium, they carry undisturbed information about the QCD matter from which they are emitted.

By studying low-mass and low-momentum dileptons, we can gain insights into transport properties and potentially uncover new phases of QCD matter, such as the color superconducting phase.

In this contribution, we discuss the essential steps towards investigating such soft dileptons.

To achieve this, data from Ag+Ag collisions at $1.23 A$ GeV with a nominal magnetic field strength are compared to a dedicated run conducted with a reduced magnetic field (5% of B_{max}) to increase the acceptance of low-momentum pairs.

Additionally, we will present the new data collected in 2024 for Au+Au collisions at $0.8 A$ GeV with a lower magnetic field strength allowing us to study the low-mass and low-momentum dileptons in more detail.

Category

Experiment

Collaboration (if applicable)

HADES

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