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## Measurement of low-momentum direct photons in Au+Au collisions at 200 GeV

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Direct photons are a useful probe to study the properties of QGP and the dynamic evolution of the collision system as they do not interact with the medium strongly. Low transverse momentum direct photons are believed to originate primarily from thermal radiation, however, calculations of thermal photon emission fall short in describing the measured direct photon yield and the anisotropy at the same time. The question is tied to the photon production mechanism in heavy ion collisions.

In this poster, more precise measurements of the direct photon momentum spectrum in the range of 0.8 – 10 GeV/c from the high statistics data taken by the PHENIX experiment in 2014 is presented. The effective temperature of the system formed in such heavy-ion collisions is studied. In addition, direct photon production as a function of collision system size is analyzed, wherein a power law scaling behavior is observed. The extracted fit parameter to the scaling will put more constraints on the current theoretical models.

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