

Abstract Submitted
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PHENIX measurement of system size dependence of low pT photon production ROLI ESHA, Stony Brook University, PHENIX COLLABORATION — Relativistic heavy ion collisions lead to the formation of a deconfined system of quarks and gluons, called the Quark Gluon Plasma. This thermalized medium emits photons as all the other stages of the collisions do. Photons, as opposed to partons, are color blind and do not interact strongly with the medium, thereby, carrying out the information about the partonic and hadronic phases including the dynamic evolution of the QGP. PHENIX has shown a large excess of direct photons at low transverse momentum compared to the N_{coll} -scaled pQCD expectations which is interpreted as thermal radiation of the system. The measurements of the integrated yield of low momentum direct photons through different collision species (Au+Au and Cu+Cu) have shown a universal scaling as a function of charged particle multiplicity. Data from small systems (p/d/ ^3He +Au) suggests a rapid turn on of the scaling behavior. This may imply that the bulk of the thermal photons are produced near the transition from QGP to hadron gas combined with an onset of QGP formation at low $dN_{ch}/d\eta$.

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