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Monte Carlo study of Quark Gluon Plasma using photon jet observables TIAN XING, Univ of Illinois - Urbana — Relativistic heavy ion collisions create an exotic state of deconfined, nuclear matter called quark gluon plasma (QGP), providing an opportunity to study the strong interaction. In some particularly hard scattered events, a parton with high transverse momentum (p_{T}) interacts with this medium before fragmenting into a spray of particles, called a jet. Jet properties of heavy ion collisions can be modified relative to expectations from pp collisions; this effect is called jet quenching. Measurement of the jet internal structure can provide information about this effect and about the medium itself. On the other hand, studying systems whose jets are recoiled against photons coming from an initial scattering offers a way to calibrate the momentum of the modified jet. Since photons do not carry color charge, they escape the QGP with their initial momentum intact. On this poster, results using the Monte Carlo event generators Pythia and JEWEL will be presented for fragmentation functions and jet suppression from photon-jet events, alongside experimental data from CMS and ATLAS at a center of mass energy of 2.76 TeV. Predictions are also presented for lead-lead collisions at a center of mass energy of 5.02 TeV.

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