

Abstract Submitted  
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**Direct measurement of fragmentation photons in p+p collisions at  $\sqrt{s_{NN}} = 200$  GeV with the PHENIX experiment** ALI HANKS, Columbia University, PHENIX COLLABORATION — Direct photon production is an important observable in heavy ion collisions, as photons are penetrating and therefore largely insensitive to final state effects that lead to jet quenching. Perturbative QCD calculations predict a contribution of up to 30% to the direct photon yield from photons produced through parton fragmentation. In heavy ion collisions this contribution can be modified due to additional stimulated photon bremsstrahlung as well as the energy loss of the partons through gluon radiation prior to fragmentation. A measure of photon-bremsstrahlung would provide direct observation of the scattering of jets in the medium. Thus measurements of the fragmentation component to direct photon yields in both p+p and Au+Au collisions will provide both an important test of pQCD predictions and of predictions for the nuclear modification factor. By selecting photons associated with jets on the near side using hadron-photon correlations, fragmentation photons can be measured directly. However, most photons correlated with jets come from  $\pi^0$ 's,  $\eta$ 's, and other hadronic decays and must be tagged and subtracted from the inclusive correlations. We present studies of this methodology and its application to recent p+p data at PHENIX.

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