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Photon-hadron correlations and jet fragmentation in Au+Au 200 GeV collisions measured with PHENIX ZACHARY ROWAN, CUNY-Baruch Coll, PHENIX COLLABORATION — Because of the observed jet suppression in heavy ion collisions, typical jet reconstruction, or high pt hadron jet tagging, results in a surface bias. Prompt photons, produced in the Compton scattering and annihilation of quarks, easily escape the quark gluon plasma and, when used to tag away side jets, introduce no such bias. However a bias towards quark jets is introduced as the Compton production process dominates, making these tagging methods complimentary. With the additional benefit of the photon p_T being a suitable proxy for the jet p_T, photon-hadron correlations in Au+Au 200 GeV collisions are analyzed with PHENIX. Through the analysis of mixed events with reaction plane classification, the background contribution to the azimuthal correlation function can be removed, revealing an away side jet peak. By characterizing the structure in multiple centrality classes; photon emission angles measured with respect to reaction plane orientation; and photon energies, the collision geometry and relative levels of bremsstrahlung and fragmentation photons can be varied, allowing for a detailed study of path length dependent jet fragmentation. The status of this analysis will be discussed.

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