# Transverse Momentum Imbalance ($x_{j\gamma}$) for Jets Recoiling from Direct-photon and $\pi^0$ Triggers in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV in the STAR Experiment

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Jets recoiling from a direct-photon have long been seen as a golden probe of the quark gluon plasma created in relativistic heavy ion collisions, due to the ability to tightly constrain the initial hard scattering kinematics. Until recently, the ability to measure this channel and the ensuing observables at RHIC were largely statistics-limited, owing to the small cross-section of direct photon production compared to for example the most abundant di-jet cross-section. In this poster, we will present measurements of uncorrected full and charged recoil jets for both direct-photon and $\pi^0$ triggers, using the 13 nb$^{-1}$ of Au+Au data recorded in 2014 by the STAR experiment. The transverse momentum imbalance ($x_{J\gamma} = p_{T,Jet}/p_{T,\gamma}$) as previously measured by the ATLAS and CMS experiments will be presented with comparisons to baseline expectations. An outlook to $x_{J\gamma}$ with different constituent selections will also be shown.