# Measurement of 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 and the partonic flavor bias. 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 talk, we will present measurements of semi-inclusive recoil jets for both direct-photon and $\pi^0$ triggers, using the 13 nb$^{-1}$ of data recorded in 2014 by the STAR experiment. An outlook towards future direct-photon measurements from STAR, including the transverse momentum imbalance ($x_{j\gamma} = p_{T,Jet}/p_{T,\gamma}$) as previously measured by the ATLAS and CMS experiments will also be discussed.