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## Exploring jet modification via $\gamma$ -hadron and $\pi^0$ -hadron correlations in Au+Au collisions at PHENIX

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PHENIX has quantified the modification of jets in heavy-ion collisions due to partonic energy loss in the quark gluon plasma (QGP) by measuring the distribution of hadrons relative to a trigger particle, such as a high momentum photon or  $\pi^0$ . These two-particle correlations have revealed that high momentum hadrons are suppressed, while yield of low momentum hadrons is enhanced. This enhancement is most pronounced at relatively large angles away from the opposing jet axis. More recent analyses have further investigated and quantified this phenomena by studying the yield modification as a function of the azimuthal angle ( $I_{AA}$  vs  $\Delta\phi$ ). The larger data sets collected by PHENIX in 2014 and 2016 enhance the statistical precision and enable more differential measurements, which provide insight to how the jets substructure is modified by the QGP and crucial constraints on models of partonic energy loss and medium response. This talk will report the latest analyses of  $\pi^0$ -hadron and  $\gamma$ -hadron correlations in Au+Au collisions measured by PHENIX, and discuss how these results impact our understanding of jet modification and partonic energy loss in the QGP and the medium response to jets.

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