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Type: Parallel Talk

PHENIX results on jet modification with π^0 - and photon-triggered two particle correlations in p+p, p(d)+Au, and Au(Cu)+Au collisions

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As a colorless probe, direct photons balance the p_T of the away-side jet at leading order. Direct photon-hadron correlations are thus an excellent probe for nuclear structure and QCD effects, including parton energy loss in the Quark-Gluon Plasma.

PHENIX has measured π^0 and direct photon-triggered two-particle azimuthal correlations in a variety of collision systems ranging from p+p to Au+Au at 200 GeV. In p+Au and d+Au collisions, no modification of the per-trigger jet yield or away-side correlation width compared to p+p collisions is observed for direct photon triggered correlations while an increase in the away-side width for π^0 triggered correlations in p+Au has been measured. In Au+Au and Cu+Au collisions, direct photons have been identified statistically as well as using an isolation cut. Combining data sets from different collision systems allows us to quantify the transition from suppression at high z_T ($p_{T,h}/p_{T,\text{gamma}}$) to the enhancement of low z_T particles relative to p+p, and to study this transition as a function of trigger p_T . The implication for our understanding of cold and hot nuclear matter from these measurements will be discussed.

Content type

Experiment

Collaboration

PHENIX

Centralised submission by Collaboration

Presenter name already specified

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