



Contribution ID: 267

Type: **Poster**

Direct-photon hadron correlations in $d+Au$ with PHENIX

Tuesday, 29 September 2015 16:30 (2 hours)

Measurements of direct photon tagged jets, in the form of photon-hadron correlations, are unique as an experimental tool for gaining access to the initial parton kinematics in a hard scattering. Once produced, these photons will not interact strongly with the medium produced in heavy-ion collisions, providing a calibrated measure of the pre-energy loss properties of the opposing parton and giving unique insight into how jets interact with the quark-gluon plasma (QGP). To understand the observed modification to jets opposite a direct photon, it is necessary to make similar base-line measurements within a reference system. Previously this was done using p+p collisions, however cold nuclear matter effects may also play a role, making similar baseline measurements in $d(p)+A$ important. Additionally, recent results from $d+Au$ and $p+Pb$ suggest that there may be medium-like effects present, making clean measurements of the initial parton energy in a hard scattering crucial. We present the most recent results for direct photon-hadron correlations in $d+Au$ from PHENIX.

On behalf of collaboration:

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Session Classification: Poster Session

Track Classification: Jets and High p_T Hadrons