



Contribution ID: 209

Type: **Parallel Talk**

Photon-tagged measurements of jet quenching with the ATLAS detector

Wednesday 16 May 2018 09:20 (20 minutes)

Events containing a high transverse momentum (p_T) prompt photon offer a useful tool to study the dynamics of the hot, dense medium produced in heavy ion collisions. Because photons do not carry color charge, they are unaffected by the medium, and thus provide information about the momentum, direction, and flavor (quark or gluon) of the associated hard-scattered parton before it begins to shower and become quenched. In particular, the presence of a high- p_T photon can be used to select pp and Pb+Pb events with the same configuration before quenching, limiting the effects of selection biases present in other jet measurements. The large statistics pp and Pb+Pb data delivered by the LHC in 2015 thus allow for a detailed study of photon-tagged jet quenching effects, such as the overall parton energy loss and modified structure of the component of the shower which remains correlated with the initial parton direction (e.g. in cone). These can be explored as a function of photon p_T , centrality, and reaction plane. In this talk, the latest status of photon-tagged jet measurements in ATLAS will be presented, including a new measurement of how the fragmentation function for jets in photon-tagged events is modified. This measurement in particular reveals a non-trivial difference relative to the analogous observable for inclusive jets.

Content type

Experiment

Collaboration

ATLAS

Centralised submission by Collaboration

Presenter name already specified

Primary author: WOSIEK, Barbara Krystyna (Institute of Nuclear Physics Polish Academy of Sciences (PL))

Presenter: PEREPELITSA, Dennis (University of Colorado Boulder)

Session Classification: Jet modifications and high- p_T hadrons

Track Classification: Jet modifications and high- p_T hadrons