

Energy loss and modification of photon-tagged jets with ATLAS

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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. This talk reports results from the large statistics pp and Pb+Pb data delivered by the LHC in 2015, including measurements of the overall parton energy loss (via the photon+jet p_T balance) and the modification of the component of the shower which remains correlated with the initial parton direction (via the longitudinal fragmentation function in cone). Since all results are fully corrected for detector effects with unfolding procedures, the talk also includes direct, systematic comparisons to state of the art theoretical models.

Summary

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