

Photon-tagged jet fragmentation functions and jet shapes in pp and PbPb collisions with the CMS detector

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One can impose constraints on theories for parton-medium interactions by measuring jet substructure observables, such as fragmentation functions or jet momentum density profiles. Tagging jets with an associated photon helps to reduce the ambiguities in such measurements, since the photon, not interacting with the QCD matter, gives precise information about the parton's momentum before traversing the medium. Furthermore, the parton produced in association with a photon is often a quark, providing a pure sample for quark-jet modification. The results of photon-tagged jet fragmentation functions and the first measurement of photon-tagged jet shapes in pp and PbPb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV collision energy using data collected by CMS will be reported.

Summary

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