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Z-Jet Correlations in pp and PbPb collisions at 5.02 TeV with CMS

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A typical approach to study the medium produced in heavy ion collisions is to understand the passage of elementary particles through it. As Z bosons do not participate in the strong interaction, Z+jet production is an important process for the study of the medium-induced energy loss of (predominantly) quark jets. Furthermore, unlike photons, Z bosons are not contaminated by background processes such as jet fragmentation and neutral meson decays, making Z+jet correlations a particularly powerful tool in energy loss studies. In this analysis, the first Z+jet correlation measurement using the high statistics PbPb and pp data taken at a center-of-mass energy of 5.02 TeV with the CMS in 2015 is reported, using both dielectron and dimuon Z decay channels. The evolution of azimuthal angular distributions and average momentum imbalance as a function of Z boson transverse momentum will be presented for $40 \text{ GeV}/c < Z p_T < 120 \text{ GeV}/c$.

Summary

Presentation type

Oral

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