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Measurement of jet internal structure in p+p, p+Pb, and Pb+Pb collisions with the ATLAS detector

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In Pb+Pb collisions at the LHC hot QCD matter, the quark-gluon plasma (QGP), is produced. One way to study this matter is by using QCD jets as probes. The rates of these jets have been found to be reduced over a wide kinematic range due to the loss of some of the jet's energy outside the jet cone. It is of great interest to have information on how the momentum of these jets is distributed to the particles inside the jet in order to gain understanding about the energy loss process. The longitudinal momentum fraction of charged particles in Pb+Pb, p+Pb, and p+p collisions have been measured by the ATLAS collaboration. Proton-proton and p+Pb collisions provide baseline measurements for the modifications in Pb+Pb collisions. In addition, p+Pb collisions should help to constrain the magnitude of nuclear modifications of parton distribution functions as well as to quantify a potential contribution of these modifications to the modifications of the jet fragmentation seen in Pb+Pb collisions. In 2015 a large sample of p+p collisions at 5.02 TeV were collected. This data provides a reference for the p+Pb fragmentation functions at the same collision energy. In this talk, we will present updated results on Pb+Pb fragmentation functions at 2.76 TeV and p+p and p+Pb fragmentation function measurements at 5.02 TeV.

Summary

Presentation type

Oral

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