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Dijet imbalance for jets of various radii in Pb+Pb and pp collisions with the ATLAS detector

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Measurements of dijets that traverse a quark-gluon plasma can provide insights into the jet energy loss in heavy ion collisions. Furthermore, considering jets of various sizes can help elucidate how the parton energy is transferred to the medium as well as the medium response. Measurements of the dijet momentum imbalance and nuclear modification factors for leading and subleading jet pairs were obtained using data from the ATLAS detector at the LHC. These measurements used 1.72 nb^{-1} of Pb+Pb data collected in 2018, and 260 pb^{-1} of pp data collected in 2017, both at $\sqrt{s_{NN}} = 5.02 \text{ TeV}$. Jets were reconstructed with the anti- k_T algorithm using radii $R=0.2, 0.3, 0.5,$ and 0.6 , and were compared to previous results using $R=0.4$. The measurements were unfolded in the leading and subleading jet p_T to correct for the jet energy resolution. These measurements will improve the understanding of the jet energy loss process.

Category

Experiment

Collaboration (if applicable)

ATLAS Collaboration

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