

# Jet radius dependence of dijet momentum balance and pair nuclear modification factor in Pb+Pb and pp collisions with the ATLAS detector

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Measurements of jets that traverse the QGP provide insights into the jet energy loss. Considering jets of various radii can help elucidate how the parton energy is transferred to the medium as well as the medium response. Measurements of the dijet momentum balance and pair nuclear modification factor are presented for anti-kt jets reconstructed with radius  $R = 0.2, 0.3, 0.5, 0.4,$  and  $0.6$ , obtained with the ATLAS detector at the LHC. The absolutely normalized momentum balance distributions are constructed to compare measurements of the dijet yields in Pb+Pb collisions directly to the dijet cross sections in pp collisions. For all jet radii considered here, there is a suppression of balanced dijets in Pb+Pb collisions compared to pp collisions, while for imbalanced dijets there is an enhancement. For imbalanced dijets, particularly at the lower selections on leading jet  $p_T$ , the level of modification decreases with increasing jet radius. For balanced jets there is a smaller jet radius dependence of the modification. Additionally, pair nuclear modification factors are measured. The subleading jet yields are found to be more suppressed than leading jet yields in dijets. A radial dependence of the pair nuclear modification factors is observed, with the suppression decreasing with increasing jet radius. These measurements will improve the understanding of the jet energy loss process.

## Category

Experiment

## Collaboration

ATLAS

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