

Measurement of angular correlations of jets in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector

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A measurement of angular correlations of jets in hadron collisions is presented. This measurement is sensitive to QCD dynamics and to the strong coupling constant, while being only weakly sensitive to parton distribution functions. The observable is the number of neighboring jets above a given transverse momentum threshold which accompany a given jet within a distance ΔR in the plane of rapidity and azimuthal angle. The ensemble average over all jets in an inclusive jet sample, $R_{\Delta R}$, is measured and the results are presented as a function of transverse momentum of the inclusive jets, in different regions of ΔR and for different transverse momentum requirements for the neighboring jets. The measurement is based on a data set corresponding to an integrated luminosity of 20 fb^{-1} collected with the ATLAS detector at the Large Hadron Collider in pp collisions at $\sqrt{s} = 8$ -TeV. The results are compared to the predictions of a perturbative QCD calculation in next-to-leading order in the strong coupling constant, corrected for non-perturbative effects.

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