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## Measurement of Jet Track Functions and their Renormalization Group Flows in ATLAS Run 2 Data

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Measurements of jet substructure are key to probing the energy frontier at colliders, and many of them use track-based observables which take advantage of the angular precision of tracking detectors. Theoretical calculations of track-based observables require “track functions”, which characterize the transverse momentum fraction  $r_q$  carried by charged hadrons from a fragmenting quark or gluon. This work presents a direct measurement of  $r_q$  distributions in dijet events from the  $140 \text{ fb}^{-1}$  of  $\sqrt{s} = 13 \text{ TeV}$  proton-proton collisions collected by the ATLAS detector. The data are corrected for detector effects using a machine learning-based method. The scale evolution of the moments of the  $r_q$  distribution provides direct access to non-linear renormalization group evolution equations of QCD, and is compared with analytic predictions. When incorporated into future theoretical calculations, these results will enable a precision program of theory-data comparison for track-based jet substructure observables.

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