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Calibration of the ATLAS b-tagging algorithm in dense jet environments

The calibration of the ATLAS b-tagging algorithm in environments characterised by large jet multiplicity is presented. The calibration uses reconstructed $t\bar{t}$ candidate events collected by the ATLAS detector in proton-proton collisions at 13 TeV, with a final state containing one charged lepton, missing transverse momentum and at least four jets. The b-tagging efficiencies are measured not only as a function of the most relevant kinematic quantities, such as the transverse momentum or the pseudo-rapidity of the jets, but also as a function of quantities that are sensitive to close-by jet activity. The results extend the regions in which it is possible to extract data-to-simulation b-tagging scale factors, compared to b-tagging calibrations based on dileptonic $t\bar{t}$ events.

Experimental Collaboration

ATLAS Collaboration

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