

THREE-JET CROSS SECTION MEASUREMENT IN PROTON-PROTON COLLISIONS AT 7 TEV CENTER-OF-MASS ENERGY WITH ATLAS DETECTOR

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ATLAS experiment collected the integrated luminosity of 4.6 fb^{-1} in proton-proton collisions in the 2011 year of data taking with the centre-of-mass energy of 7 TeV. The measurements of the double- differential three-jet cross-section using collected data provide a valuable input for the determination of parton density functions. The measurement is performed as a function of the three-jet mass up to 5 TeV in bins of absolute rapidity separation between the three leading jets. A comparison of the measured data to the theory predictions at next-to-next-to-leading order accuracy corrected for non-perturbative effects, is provided. It shows a good agreement

between data and calculations with most of modern global PDF sets within their uncertainties. The dominant experimental uncertainty comes from the uncertainty in the jet energy scale.