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Measurement of the $b\bar{b}$ dijet cross section in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector

The dijet production cross section for jets containing a b-hadron (b-jets) has been measured in proton-proton collisions with a centre-of-mass energy of 7 TeV, using the ATLAS detector at the LHC. The data used correspond to an integrated luminosity of 4.2/fb.

The cross section is measured for events with two identified b-jets with a transverse momentum $p_T > 20$ GeV. At least one of the jets in the event is required to have $p_T > 270$ GeV. The cross section is measured differentially as a function of dijet invariant mass, dijet transverse momentum, boost of the dijet system and the rapidity difference, azimuthal angle and angular distance between the b-jets.

The results are compared to different predictions of leading order and next-to-leading order perturbative quantum chromodynamics matrix elements supplemented with models for parton-showers and hadronization.

Experimental Collaboration

ATLAS

Presenter: VERDUCCI, Monica (Universita e INFN, Roma Tre (IT))

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