

Abstract Submitted  
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**New Jet Physics with ATLAS** LILY ASQUITH, CERN — Measurements of jet shape and substructure variables for high  $p_T$  jets with  $35.0 \pm 1.1 \text{ pb}^{-1}$  of integrated luminosity collected in 2010 using the ATLAS detector are presented. Jet mass, width, eccentricity, planar flow and angularity are reconstructed using the anti- $k_T$  jet algorithm with resolution parameters of 0.6 and 1.0. The measurements are compared to those predicted by the PYTHIA and HERWIG++ Monte Carlo generators assuming the data are dominated by QCD dijet production, and in the case of jet masses, to analytic NLO QCD calculations for quark and gluon jets. Monte Carlo generators reproduce the gross features of jet masses and shapes seen in data, but do not reproduce some of the finer details of substructure distributions. The applicability of these variables to boosted particle searches is discussed.

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