

Search for new phenomena in final states with large jet multiplicities and missing transverse momentum using $\sqrt{s} = 7$ TeV pp collisions with the ATLAS detector

Aad, G., Abbott, B., Abdallah, J., Abdelalim, A. A., Abdesselam, A., Abi, B., ... & Barber, T. (2011). Search for new phenomena in final states with large jet multiplicities and missing transverse momentum using $\sqrt{s} = 7$ TeV pp collisions with the ATLAS detector. *Journal of High Energy Physics*, 2011(11), 1-38. <10.1007/JHEP11(2011)099> Accessed 22 Jul 2021.

Abstract

Results are presented of a search for any particle(s) decaying to six or more jets in association with missing transverse momentum. The search is performed using 1.34fb⁻¹ of $\sqrt{s} = 7$ TeV proton-proton collisions recorded by the ATLAS detector during 2011. Data-driven techniques are used to determine the backgrounds in kinematic regions that require at least six, seven or eight jets, well beyond the multiplicities required in previous analyses. No evidence is found for physics beyond the Standard Model. The results are interpreted in the context of a supersymmetry model (MSUGRA/CMSSM) where they extend previous constraints.

Keywords

Hadron-Hadron Scattering.