## Search for pair production of gluinos decaying via stop and sbottom in events with b-jets and large missing transverse momentum in pp collisions at root s=13 TeV with the ATLAS detector

Aad, G., Abbott, B., Abdallah, J., Abeloos, B., Aben, R., AbouZeid, O. S., ... & Barreiro, F. (2016). Search for pair production of gluinos decaying via stop and sbottom in events with b-jets and large missing transverse momentum in p p collisions at s = 13 TeV with the ATLAS detector. Physical review D, 94(3), 032003. Accessed 23 Apr 2021.

## Abstract

A search for supersymmetry involving the pair production of gluinos decaying via third-generation squarks to the lightest neutralino ( $^{\sim}\chi01$ ) is reported. It uses an LHC proton-proton data set at a center-of-mass energy  $\sqrt{s}$ =13 TeV with an integrated luminosity of 3.2 fb–1 collected with the ATLAS detector in 2015. The signal is searched for in events containing several energetic jets, of which at least three must be identified as b jets, large missing transverse momentum, and, potentially, isolated electrons or muons. Large-radius jets with a high mass are also used to identify highly boosted top quarks. No excess is found above the predicted background. For  $^{\sim}\chi01$  masses below approximately 700 GeV, gluino masses of less than 1.78 TeV and 1.76 TeV are excluded at the 95% C.L. in simplified models of the pair production of gluinos decaying via sbottom and stop, respectively. These results significantly extend the exclusion limits obtained with the  $\sqrt{s}$ =8 TeV data set.