

# Search for Chargino Neutralino production in final states with a W boson and and Higgs boson.

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Supersymmetry (SUSY) is an extension of the Standard Model (SM), and its searches are a central part of ATLAS physics program. We report the most recent results in searches of the chargino and neutralino production where the chargino decays in a W boson and the lightest SUSY particle, while the neutralino decays in the lightest SUSY particle and a SM Higgs boson. The search was based on the analysis of  $36.1 \text{ fb}^{-1}$  of data, collected at pp collision at  $\sqrt{s} = 13 \text{ TeV}$ , and recorded by the ATLAS experiment. Fully hadronic, semileptonic, diphoton, and multilepton (electrons, muons) final states with missing transverse momentum are considered in this search. Higgs bosons in the final state are identified by either two jets originating from bottom quarks ( $h \rightarrow b\bar{b}$ ), two photons ( $h \rightarrow \gamma\gamma$ ), or leptons from the decay modes  $h \rightarrow WW$ ,  $h \rightarrow ZZ$  or  $h \rightarrow \tau\tau$ . As no SUSY signal was observed, we will report the confidence level limits in the context of simplified SUSY models.

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