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CERN

Title: Search for the production of rare processes with top-quarks at ATLAS

Abstract: Understanding the mechanisms that underlie the origin of the mass of fundamental particles is one of the most important and interesting questions being explored at the Large Hadron Collider (LHC). The large mass of the top quark makes it unique among particles, and we are only now beginning to probe its rarer couplings. Investigating its interactions with the Higgs boson can reveal whether the Higgs field is the unique source of the top quark's mass or whether there are new, unexpected interactions. Measurements of rare processes involving top quarks are essential tests of the validity of the SM, and may point to new physics. This talk will discuss the searches for a Standard Model Higgs boson produced in association with a pair of top-quarks (ttH) and the production of 4-top events using the 13 TeV Run 2 dataset of the ATLAS detector at the LHC.