Contribution ID: **126** Type: **Oral report**

Search for top-quark decays tHq in ditau final state with 36 fbˆ{-1} of pp collision data at s =13 TeV with the ATLAS detector

Monday, 16 August 2021 16:25 (15 minutes)

A search for flavor-changing neutral current decays of a top quark into an up-type quark (q=u,c) and the Standard Model Higgs boson, t⟶Hq, is presented. The search is based on a dataset of pp collisions at s√=13 TeV recorded in 2015 and 2016 with the ATLAS detector at the CERN Large Hadron Collider and corresponds to an integrated luminosity of 36.1 fb−1. Two complementary analyses are performed that search for top-quark pair events in which one top quark decays into Wb and the other top quark decays into Hq, and target the H⟶bb¯ and H⟶τ+τ− decay modes, respectively. The combination of these searches with ATLAS searches in diphoton and multilepton final states yields observed (expected) 95% CL upper limits on the t⟶Hc and t⟶Hu branching ratios of 1.1X10−3 (8.3X10−4) and 1.2X10−3 (8.3X10−4), respectively. The corresponding combined observed (expected) upper limits on the |λtcH| and |λtuH| couplings are 0.064 (0.055) and 0.066 (0.055), respectively

Primary author: Dr CHEN, Xin (University of Wisconsin-Madison)

Co-author: XIA, mingming (Tsinghua University)

Presenter: XIA, mingming (Tsinghua University)

Session Classification: Parallel Session I：TeV and BSM Physics

Track Classification: 1. TeV 物理和超出标准模型新物理