Abstract Submitted
for the TSS18 Meeting of
The American Physical Society

Search for stop and gluino production with improved top quark identification using machine learning[1] KENNETH CALL, KENICHI HATAKEYAMA, NATHANIEL PASTIKA, Baylor University, CMS COLLABORATION — Some well motivated models of Supersymmetry(SUSY) propose that the superpartners of the heavy 3rd generation quarks (top and bottom), called the stop and sbottom squarks, will have their masses at the TeV-scale, within the reach of experiments at the LHC. We expect that their decay would result in an excess of events with top and bottom quarks. Identifying top quarks is an ongoing topic of research. We present a method of identifying top quarks using machine learning, and present the results of a search for gluino and stop production decaying into all hadronic final states using data collected by the CMS detector at the LHC of proton-proton collisions at a center of mass energy of 13 TeV and integrated luminosity of 35.9 fb^{-1}.

[1]This research is supported by the U.S. Department of Energy (award: DE-SC0007861

Kenneth Call
Baylor University

Date submitted: 02 Mar 2018 Electronic form version 1.4