Contribution ID: **98** Type: **Oral presentation**

(Withdraw) TT->Wb+X VLQ Pair Production

The Standard Model (SM) of particle physics explains many natural phenomena yet remains incomplete. Vector-like quarks (VLQs) lie at the heart of many extensions to the SM seeking to address the hierarchy problem. VLQs could be produced either singly or in pairs, and then decay to a SM boson and a third-generation quark. While single-production depends on the coupling of the VLQ to the SM particles, pair-production via the QCD interaction provides a model-independent test for VLQs. This talk presents a search for pair-produced VLQs that decay into a W boson and a bottom quark, with one W decaying leptonically while the other decays hadronically. The analysis uses b-tagging algorithms, charge asymmetry metrics, multiple online triggers, and data driven corrections of the ttbar and W+jets background Monte Carlo samples to improve sensitivity during the analysis of the full LHC Run 2 ATLAS dataset.

Career stage

Graduate student

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