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ATLAS Search for Resonance Decaying into Boosted Top Quark Pairs

Many Beyond Standard Model theories predict an increased number of boosted top quark events making the $t\bar{t}$ system an important stepping stone in the search for new physics. The ATLAS experiment has just finished its second run December 2018 with a total of 140 fb^{-1} worth of data collected through 2015-2018, with this luminosity, the run 2 data allows an analysis of a greater number of boosted Top quark events with $P_T > 500 \text{ GeV}$. This analysis focuses on highly boosted $t\bar{t}$ events decaying via an all hadronic channel being compared with predicted values near high $t\bar{t}$ invariant mass. The prediction values are calculated via Monte Carlo samples for the $t\bar{t}$ decays and a data driven estimate for multijet background. This poster summarizes a simple counting experiment done using a BumpHunter algorithm in a search for a general excess in boosted $t\bar{t}$ events.

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