

Abstract Submitted
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Studying B-Tagging Performance for new physics searches with the CMS Detector at the LHC¹ DAVID LAST, Carnegie Mellon Univ, CMS COLLABORATION — Theoretical models for BSM physics often predict new particles that predominantly decay to b-quarks. The CMS (Compact Muon Solenoid) detector at CERN is one of two general purpose detectors collecting data from the LHC (Large Hadron Collider). A subset of the data, known as “Scouting” is collected with lower trigger thresholds than the nominal data acquisition paths, which allows searches for new physics with final state jets in lower mass region. Examples include searches for resonances in dijets, three-jets and paired dijets. The b-tagged version of all these low-mass analyses will benefit from an independent understanding of the b-tagging performance of jets in the Scouting dataset. In this study, we examine the purity and efficiency of the CSV (Combined Secondary Vertex) variable in the Scouting dataset to identify a b-jet. We isolate a sample of jet-triplets rich in hadronic top quark decays without any requirement on the b-tagging within the triplet, and examine the CSV value of the b-jet from top decay.

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