

Abstract Submitted
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Strategies for btagging calibration using data at CMS PRATIMA
JINDAL, Purdue University Calumet, CMS COLLABORATION — A reliable estimate of the performance of b -jet Identification algorithms is crucial for a wide range of physics processes like the decay of top quarks, Higgs boson searches, and various supersymmetric processes. CMS has prepared several strategies to extract efficiencies and rejection rates from data, which should work even on the first data ($10 pb^{-1}$). Three methods are being presented here. The first extracts rejection rates from light quarks looking at tracks with negative impact parameter, and using these distributions to model the mistag rate due to detector effects like resolutions and badly reconstructed tracks. The second method uses jet samples with reconstructed muons; by tagging a b -jet and selection based on the p_T of the muon relative to the jet, a system of equations can be constructed which leads to the direct extraction of efficiencies and rejections. The third method uses $t\bar{t}$ events with semi leptonic or fully leptonic W decays, and uses likelihood-based and event counting based methods to estimate the efficiencies. The strategies described here are studied taking into account the possible startup scenarios of LHC, and are currently being expanded to take into account the miscalibration scenarios which CMS can show at the startup.

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