

Abstract Submitted
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Monte Carlo Study of Quark & Gluon Jets at $\sqrt{s} = 2.76$ & 7 TeV With Inclusive Jet Comparison to ATLAS Measurements MATTHEW MISTRO, University of Illinois, Urbana-Champaign — In the study of heavy ion collisions, pp collisions are a necessity of understanding as a baseline due to producing minimal hot dense matter. Different Monte Carlo simulations with various tunes are studied for these pp collisions at $\sqrt{s} = 2.76$ & 7 TeV. The primal focus being on the charged multiplicity as a function of the ratio of the charged particles transverse momenta, p_T^{ch} , to the originating jet transverse momentum, p_T^{jet} , referred to as z . As they cannot directly be seen at the LHC, simulations find the differences of said functions to originating from a quark or gluon jet for varied p_T^{jet} cuts of $40 < p_T^{jet} < 260$ GeV. The inclusive fragmentation functions are compared to measurements from the ATLAS collaboration, and simulation based solutions to isolating quark jets via photon processes are compared to that of hard QCD quark jets.

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