

Abstract Submitted
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Comparing p+p simulations with published LHC data JOSHUA FRANDSEN, Lawrence Berkeley Natl Lab — The goal of this project is to explore one method to measure the properties of a fundamental state of matter that is formed at particle colliders known as the quark gluon plasma, utilizing data measured by the ALICE Collaboration at the CERN Large Hadron Collider. We utilize the well-understood phenomenon of jets, which are remnants of scattered quarks and gluons generated in high energy collisions of all kinds. In particular we utilize the interaction of such jets with quark gluon plasma. There are multiple methods for measuring such interactions, in this study we focus on the coincidence measurement of a high energy photon and its recoiling jet, an observable known as $\gamma + jet$. In order to determine if this channel can be measured using experimental data recorded by ALICE, simulations of collisions are carried out under conditions that match the real recorded data. However, validation of these predictions requires calibration of the simulation tools against other published measurements. This paper reports such a calibration for the PYTHIA event generator, by comparing simulated results to experimental data measured at the Large Hadron Collider.

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