

Abstract Submitted
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Monte Carlo Investigation of Quark Gluon Plasma¹ IAN HUNT-ISAAC, None — The Quark Gluon Plasma (QGP) is a hot, dense state of matter in which the Quarks and Gluons which make up Hadrons are freed hypothesized to be similar to the conditions of the very early universe. The QGP can be generated via the collision of Heavy Ions, Lead (Pb) for this work, at ultrarelativistic velocities. However in QGP is short lived so it cannot be investigated by external probes. Instead internal probes such as jets are used, jets are sprays of particles from a hard scattering of quarks and gluons. It is expected that Proton-Proton (pp) collisions do not generate a QGP so by comparing jet observable in PbPb and pp collisions, we can gain information about the medium. Through comparison of Monte Carlo simulations to data, information about medium can be deduced. For this work a framework to run PYTHIA, JEWEL, Q-PYTHIA, and PYQUEN was improved upon. The JEWEL generator was then used to investigate the 3-Jet to 2-Jet ratio R_{32} , a quantity thus far unstudied in Heavy Ion collisions which shows promise as a way to investigate the medium.

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Ian Hunt-Isaac
None

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