

Abstract Submitted
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Angular Correlations of High-pT Hadrons in PbPb and pp Simulations¹ GABRIEL BONILLA, UC Davis — The quark-gluon plasma has a role in understanding the strong force, which is described by the theory of quantum chromodynamics. To probe the quark-gluon plasma, heavy ions are collided at high energies to recreate the conditions present in the early universe. Experiments like the Compact Muon Solenoid (CMS) at the Large Hadron Collider examine the results of colliding heavy nuclei together at high energies to recreate the quark gluon plasma. One such observation is jet quenching, which is believed to occur when the jets of particles produced in the collision interact with the plasma and lose energy. In this project, we use the HYDJET (Hydrodynamics plus Jets) program to simulate the jet quenching effects. The simulated HYDJET results will be cross-referenced with the real results from the CMS experiment in order to achieve a deeper theoretical understanding of the quark gluon plasma. In particular, we will look at the angular correlations of the jets of particles created in such an event. We will look to see how these angular correlations behave as a function of centrality and transverse momentum to help us understand the mechanisms of energy loss.

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Gabriel Bonilla
UC Davis

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