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RECENT RESULTS OF INCLUSIVE JET PRODUCTION IN AU+AU COLLISIONS AT √S NN = 200 GEV BY THE STAR EXPERIMENT

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It has been established that the Quark-Gluon Plasma (QGP), an exotic state of deconfined matter, is created in high-energy heavy-ion collisions. Jets are a very important probe of this hot and dense nuclear matter, since they emerge from the fragmentation of hard-scattered partons (quarks and gluons) that are created during the early stages of the collisions. Therefore, measurements of modifications to jet properties in heavy-ion collisions relative to those in proton-proton collisions can provide insight into understanding interactions between hard-scattered partons and the QGP.
This talk aims to present recent results of jet production in Au+Au collisions at √s NN = 200 GeV by the STAR Collaboration at the Relativistic Heavy Ion Collider. We will focus on the measurement of inclusive jet production as a function of transverse momentum (p T) of jets and collision centrality. Jets are reconstructed using charged tracks from the Time-Projection Chamber and neutral energy from the Barrel Electromagnetic Calorimeter towers, using the anti-k T algorithm with jet resolution parameter R = 0.2, 0.3, and 0.4. The large combinatorial background is suppressed by requiring a high-p T leading hadron in accepted jet candidates. Jet yield suppression is observed for central relative to peripheral Au+Au collisions, which is attributed to medium-induced parton energy loss. The measured distributions are compared to theoretical calculations incorporating jet quenching, which will improve our understanding of medium-induced energy loss of jets at RHIC energies.

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