

1 Recent results of inclusive jet production in
2 Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV by the
3 STAR experiment

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5 It has been established that the Quark-Gluon Plasma (QGP), an exotic state
6 of deconfined matter, is created in high-energy heavy-ion collisions. Jets are a
7 very important probe of this hot and dense nuclear matter, since they emerge
8 from the fragmentation of hard-scattered partons (quarks and gluons) that are
9 created during the early stages of the collisions. Therefore, measurements of
10 modifications to jet properties in heavy-ion collisions relative to those in proton-
11 proton collisions can provide insight into understanding interactions between
12 hard-scattered partons and the QGP.

13 This talk aims to present recent results of jet production in Au+Au collisions
14 at $\sqrt{s_{\text{NN}}} = 200$ GeV by the STAR Collaboration at the Relativistic Heavy Ion
15 Collider. We will focus on the measurement of inclusive jet production as a
16 function of transverse momentum (p_{T}) of jets and collision centrality. Jets
17 are reconstructed using charged tracks from the Time-Projection Chamber and
18 neutral energy from the Barrel Electromagnetic Calorimeter towers, using the
19 anti- k_{T} algorithm with jet resolution parameter $R = 0.2, 0.3,$ and 0.4 . The
20 large combinatorial background is suppressed by requiring a high- p_{T} leading
21 hadron in accepted jet candidates. Jet yield suppression is observed for central
22 relative to peripheral Au+Au collisions, which is attributed to medium-induced
23 parton energy loss. The measured distributions are compared to theoretical
24 calculations incorporating jet quenching, which will improve our understanding
25 of medium-induced energy loss of jets at RHIC energies.