

Inclusive charged-jet production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV measured by STAR

STAR Collaboration

We report the measurement of inclusive charged-jet production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV by the STAR experiment at RHIC. Jets are reconstructed with the anti- k_T recombination algorithm with jet resolution parameter $R = 0.2, 0.3,$ and 0.4 using charged tracks within the pseudo-rapidity $|\eta| < 1$ and low transverse momentum constituent cut, $p_T > 0.2$ GeV/ c . The large background yield uncorrelated with the jet signal is suppressed by requiring a high- p_T leading hadron in accepted jet candidates. The bias imposed by this requirement is assessed and the p_T -region in which this bias is small is identified. Inclusive charged-jet distributions are reported for $p_T^{jet} < 25$ GeV/ c in peripheral and $p_T^{jet} < 30$ GeV/ c in central Au+Au collisions, respectively. Charged-jet yield suppression is observed for central Au+Au collisions relative to that in both peripheral Au+Au and p+p collisions. These measurements are compared to inclusive hadron measurements in Au+Au collisions at RHIC and inclusive hadron and jet measurements in Pb+Pb collisions at the LHC, together with theoretical model calculations incorporating jet quenching.