

High- p_T measurements in BRAHMS

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Hard-scattered partons in high-energy nuclear collisions are expected to lose energy through gluon bremsstrahlung in a dense medium. The process leads to suppression of high transverse momentum (p_T) hadrons relative to p+p collisions.¹ Measuring the suppression of hadron production at high p_T ($p_T > 2$ GeV/ c) in heavy-ion reactions can be therefore a probe for density of the medium created by the collision.

The BRAHMS experiment at RHIC uniquely measures identified charged hadrons over a broad range of p_T and rapidity with two movable spectrometers. We present p_T spectra of charged hadrons at several rapidities ($0 \leq y \leq 2.5$) in central Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. Comparisons of the spectra with measurements in p+p collisions at the same energy will be made and their characteristics of rapidity dependence at high- p_T ($p_T \approx 2 - 4$ GeV/ c) will be discussed. A detector upgrade for increasing the high- p_T particle identification coverage together with the anticipated improvement in RHIC luminosity will substantially extend the range of these measurement for Run3 (2002-2003).

¹X.N. Wang and Gyulassy, Phys. Rev. Lett. **68**, 1480 (1992)