Abstract Submitted
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Analysis of two-particle jet correlations with a scaling formula[1]
MICHAEL TANNENBAUM, Brookhaven National Laboratory — At DNP06, a new formula for the distribution of an associated away-side particle with transverse momentum p_{T_a}, which is presumed to be a fragment of an away-jet with $\hat{p}_{T_a}$, triggered by a particle with transverse momentum p_{T_t}, presumably from a trigger-side jet with $\hat{p}_{T_t}$, was given: $dP_{p_{T_a}}/dx_E|_{p_{T_t}} \approx \frac{\langle m \rangle}{\hat{x}_h} \frac{(n-1)}{(1+x_E/\hat{x}_h)^n}$ where $x_E \approx p_{T_a}/p_{T_t}$ is the ratio of the transverse momenta of the particles, $\hat{x}_h = \hat{p}_{T_a}/\hat{p}_{T_t}$ is the ratio of the transverse momenta of the away-side to trigger-side jets, and $\langle m \rangle$ is the mean multiplicity of particles in the away jet. Many analyses of the away-jet p_{T_a} distributions in Au+Au collisions are available; but these tend to describe the effect of the medium with the variable $I_{AA}(x_E)$, the ratio of the x_E distribution in A+A collisions to that in p-p collisions, which typically shows an enhancement at low values of x_E and a suppression at higher values of x_E. Such behavior could be explained as a decrease in $\hat{x}_h$ in A+A collisions due to energy loss of the away jet in the medium. Fits of the above formula to the available data will be presented to establish whether: a) the away-jets simply lose energy; b) some of the away-jets lose energy, others punch-through without losing energy; etc.

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