

Abstract Submitted
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Momentum dissipation and evolution of the bulk-medium produced in Au-Au collisions at RHIC¹ MICHAEL DAUGHERITY, The University of Texas at Austin, STAR COLLABORATION — A summary of two-particle number and transverse momentum (p_t) correlation results is presented which provides evidence for and properties of the highly dissipative medium formed in RHIC collisions. Large momentum scale two-particle correlation measurements in Au-Au collisions at $\sqrt{s_{NN}} = 130$ GeV [1] have now been extended to 62 and 200 GeV, and to finer centrality bins. Number correlations on transverse momentum coordinates reveal strong momentum dissipation of low- Q^2 partons to the soft, bulk medium causing increased fluctuations. Similar correlation studies on pseudorapidity (η) and azimuth (ϕ) indicate dramatic evolution of the same-side, low- Q^2 parton correlation peak with centrality. Net-charge correlations reveal a qualitative change of hadronization geometry from one-dimensional longitudinal fragmentation in p-p to two-dimensional bulk fragmentation in central Au-Au. Other features of the net-charge correlation data imply the development of an opaque medium. Transverse momentum correlations on η, ϕ suggest that the bulk medium recoils collectively in response to parton stopping. Current results will be shown and the data compared to Hijing and other model predictions. [1] J. Adams et al., Phys. Lett. B634, 347 (2006); nucl-ex/0411003; nucl-ex/0408012.

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