

Abstract Submitted
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Application of two-point correlation and autocorrelation methods to the analysis of p-p and Au-Au collision data from STAR¹ ROBERT RAY, The University of Texas at Austin, STAR COLLABORATION — Analyses of relativistic heavy-ion collision data which obtain global information, such as the distribution and kind of particles produced, characteristic lengths of the collision system, average energy production, etc. report observables which reflect the aggregate result of a complex sequence of dynamical processes. Novel measurement quantities have been developed and applied to STAR data [1] which display more directly specific effects of the underlying dynamical processes, for example momentum dissipation and transport, color transport by way of minimum-bias jet-like structures (minijets), and evolution of hadronization geometry with collision centrality. Our results include: (1) large momentum scale correlations of the number of pairs of particles on transverse momentum (p_t), pseudorapidity (η), and azimuth (ϕ), (2) two-point (bin-to-bin) correlations of p_t on (η, ϕ) subspace, and (3) event-wise fluctuations of multiplicity, net charge, p_t , etc. as functions of (η, ϕ) bin size (scale). Examples will be shown and dominant features of the correlations interpreted for p-p and Au-Au collision data from STAR. [1] J. Adams et al. (STAR Collaboration), nucl-ex/0408012; nucl-ex/0411003; nucl-ex/0406035.

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