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Phenomenological models of dihadron correlations on transverse rapidity from charged hadron production in Au+Au collisions at 200 GeV[1] LANNY RAY, ALEX JENTSCH, The University of Texas at Austin — Two-particle correlations on transverse momentum (p_t), or transverse rapidity (y_t), provide experimental access to dynamical processes beyond that which can be studied with angular correlations or single-particle spectra alone. The correlations on (y_{t1}, y_{t2}) are generated by non-statistical, event-wise fluctuations in the y_t spectrum of the produced particles. We consider two scenarios which can produce such fluctuations: (1) a hydrodynamic picture with varying initial conditions in which the freeze-out temperature fluctuates from event-to-event or within each event (hot and cold spots), along with fluctuations in radial flow velocity; (2) a fragmentation picture in which the p_t distribution from soft, longitudinal color-strings fluctuates and the number and Q^2 of transversely fragmenting jets fluctuates. We show that phenomenological models based on each scenario are capable of describing the correlation data. The fluctuation amplitudes required to describe the data in the respective models can be compared to that allowed in dynamically based, theoretical models in order to either constrain or falsify those theories. Our results will be compared with theoretical predictions.

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