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Fluctuations and Correlations in Parton Recombination STEFFEN BASS, CHIHO NONAKA, Duke University, RAINER FRIES, University of Minnesota, MASAYUKI ASAKAWA, Osaka University, BERNDT MUELLER, Duke University — Parton recombination models have been very successful in explaining data taken at RHIC on hadron spectra, nuclear modification factors and elliptic flow emission patterns in Au+Au collisions at transverse momenta above 2 GeV/c, which have exhibited features which could not be understood in the framework of basic perturbative QCD. Recently, however, more sophisticated dynamical correlation observables, such as jet-like two particle correlations have become available. I will show how these observables can be addressed by the recombination approach through incorporating two-particle correlations into the quark distributions which are used as initial condition for the calculation. In addition, I will discuss entropy-conservation and charge fluctuations in the recombination approach. Finally, I will investigate the possible effect realistic light-cone wave-functions including higher Fock-states may have on the well-known elliptic flow valence-quark number scaling law.

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