

Abstract Submitted
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System Size Dependence of Chemical and Kinetic Freeze-Out in Heavy Ion Collisions¹ ORPHEUS MALL, University of California, Davis, STAR COLLABORATION — Heavy Ion collisions have been performed at RHIC with Cu and Au nuclei to date. The two systems differ in initial energy density and provide further understanding of the quark matter phase diagram. A statistical thermal model study of charged hadron ratios provides chemical freeze-out properties of the two systems. Boltzmann blast-wave studies of the two systems at top RHIC energies show that the kinetic freeze-out properties scale with total charged multiplicity at midrapidity. We present results from two low energy runs at RHIC in Au+Au collisions at 19.6 GeV and Cu+Cu collisions at 22.4 GeV. Particle spectra for π^\pm , K^\pm , p and \bar{p} are studied as a function of $(m_T - m_0)$ up to ~ 1 GeV measured using ionization energy loss in the STAR Time Projection Chamber. We report the chemical freeze-out temperature T_{ch} vs. the baryon chemical potential μ_B , and the kinetic freeze-out temperature T_{kin} vs. the blast velocity $\langle \beta_T \rangle$, and other results. Our results are compared with RHIC data at various energies and world data.

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