



The Role of Local and Global Strangeness Neutrality at the Inhomogeneous Freeze-Out in Relativistic Heavy Ion Collisions

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The decoupling surface in relativistic heavy-ion collisions may not be homogeneous. Rather, inhomogeneities should form when a rapid transition from high to low entropy density occurs. We analyze the hadron “chemistry” from high-energy heavy-ion reactions for the presence of such density inhomogeneities. We show that due to the non-linear dependence of the particle densities on the temperature and baryon-chemical potential such inhomogeneities should be visible even in the integrated, inclusive abundances. We analyze experimental

data from Pb+Pb collisions at CERN-SPS and Au+Au collisions at BNL-RHIC to determine the amplitude of inhomogeneities and the role of local and global strangeness neutrality.

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