

Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Near field properties in relativistic heavy ion collisions YANG LI, RAINER FRIES, JOSEPH KAPUSTA, University of Minnesota — We study the properties of the soft gluon field produced in relativistic heavy ion collisions. In the spirit of McLerran-Venugopalan model, we write the field potential in a power series of the proper time τ and solve the Yang-Mills equation along with color current conservation equations simultaneously. We find that the classical gluon field at small τ , i.e., the near field, is mainly longitudinal. We also calculate the energy-momentum tensor of the field. This gluon field will decay and thermalize into a quark gluon plasma. Our results can be used as the initial conditions for the consequent relativistic hydrodynamic description of the dense parton matter.

Yang Li
University of Minnesota

Date submitted: 21 Dec 2005

Electronic form version 1.4