

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Instabilities of Initial Gauge Field Configurations in Heavy Ion Collisions H. FUJII, University of Tokyo, K. ITAKURA, KEK, A. IWAZAKI, Nishogakusha University — The color-glass-condensate effective theory predicts that strong longitudinal chromo-electric and magnetic fields are generated in the initial stage of high-energy nuclear collisions. We investigate analytically time-evolution of such unique gauge field configurations, and point out that unstable fluctuations are inherent to the longitudinal chromomagnetic background because of the non-abelian field nature, which was first recognized by Nielsen and Olesen (N-O) in a different context some time ago. We argue that characteristic features of the instabilities observed in the preceding simulations can be explained by identifying them as the N-O instability, and discuss possible implications to thermalization mechanism of the colliding system.

Hirotsugu Fujii
University of Tokyo

Date submitted: 01 Jul 2009

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