Abstract Submitted
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Kinetic Evolution and Bose-Einstein Condensation in the Glasma[1] JINFENG LIAO, Indiana University & RBRC — We study the evolution of a dense system of gluons, such as those produced in the early stages (the Glasma) of ultra-relativistic heavy ion collisions. We describe the approach to thermal equilibrium using the small angle approximation for gluon scattering in a Boltzmann equation that includes the effects of Bose statistics. Simple power counting arguments indicate that the gluon system as in the Glasma is over-occupied and driven towards the formation of a Bose–Einstein condensate. We derive and solve the transport equation for initial conditions that correspond to the overpopulated Glasma and present numerical evidence that such over-populated systems reach the onset of Bose-Einstein condensation in a finite time. The approach to condensation is characterized by a scaling behavior that we briefly analyze. Finally we analyze the effects of the inelastic, number changing, processes on the dynamical formation of the Bose-Einstein condensate by analytically deriving the $2 \leftrightarrow 3$ kernel under the collinear and small angle approximations and numerically solving it. References: J. Blaizot, J. Liao and L. McLerran, arXiv:1305.2119; X. Huang and J. Liao, arXiv:1303.7214; J. Blaizot, F. Gelis, J. Liao, L. McLerran and R. Venugopalan, arXiv:1107.5296.

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