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Event-by-Event Simulations of Early Gluon Fields in High Energy Nuclear Collisions MATTHEW NICKEL, Department of Physics, University of Dallas, STEVEN ROSE, RAINER FRIES, Cyclotron Institute and Department of Physics and Astronomy, Texas A&M University — Collisions of heavy ions are carried out at ultra relativistic speeds at the Relativistic Heavy Ion Collider and the Large Hadron Collider to create Quark Gluon Plasma. The earliest stages of such collisions are dominated by the dynamics of classical gluon fields. The McLerran-Venugopalan (MV) model of color glass condensate provides a model for this process. Previous research has provided an analytic solution for event averaged observables in the MV model. Using the High Performance Research Computing Center (HPRC) at Texas A&M, we have developed a C++ code to explicitly calculate the initial gluon fields and energy momentum tensor event by event using the analytic recursive solution. The code has been tested against previously known analytic results up to fourth order. We have also have been able to test the convergence of the recursive solution at high orders in time and studied the time evolution of color glass condensate.

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