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Thermalization. equilibration and particle production in quark-gluon plasma

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We discuss the problems of local thermalization, equilibration and particle productions in quark-gluon plasma produced in ultrarelativistic heavy ion collisions. We implement several kinds of initial conditions, which mimic the initial strong color glasma fields produced by the high energy collision. Once an initial condition for a fireball is specified, we use relativistic transport theory to simulate the dynamical evolution of the fireball, and to study in particular the thermalization and equilibration times, as well as the particle production by means of inelastic QCD processes and decay of the color flux tubes.

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