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Jet quenching in glasma

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We discuss the transverse momentum broadening of hard probes traversing an evolving glasma, which is the earliest phase of the matter produced in relativistic heavy-ion collisions. The coefficient $\hat{q}$ is calculated using the Fokker-Planck equation, and an expansion in the proper time τ which is applied to describe the temporal evolution of the glasma. The correlators of the chromodynamic fields that determine the Fokker-Planck collision terms, which in turn provide $\hat{q}$, are computed to fifth order in τ. The momentum broadening is shown to rapidly grow in time and reach a magnitude of several $\mathrm{GeV}^2/\mathrm{fm}$. We show that the transient pre-equilibrium phase provides a contribution to the energy loss of hard probes which is comparable to that of the long lasting, hydrodynamically evolving, equilibrium phase.

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