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Minijet quenching in non-equilibrium quark-gluon plasma

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We study the energy deposition and thermalisation of high-momentum on-shell partons (minijets) travelling through a non-equilibrium Quark-Gluon Plasma using QCD kinetic theory. For thermal backgrounds, we show that the parton energy first flows to the soft sector by collinear cascade and then isotropises via elastic scatterings. In contrast, the momentum deposition from a minijet reaches the equilibrium distribution directly. For expanding non-equilibrium QGP, we study the time for a minijet perturbation to lose memory of its initial conditions, namely, the hydrodynamisation time. We show that the minijet evolution scales well with the relaxation time $\tau_R \propto \eta/s/T(\tau)$, where $T(\tau)$ is the effective temperature and η/s is the viscosity over entropy ratio.

Auteur principal: ZHOU, Luyao Fabian (ITP Heidelberg)

Co-auteurs: MAZELIAUSKAS, Aleksas (Universität Heidelberg); BREWER, Jasmine

Orateur: ZHOU, Luyao Fabian (ITP Heidelberg)

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