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Effect of viscosity on jet thermalization in hot QCD plasma.

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We perform numerical investigations in the framework of QCD kinetic theory to examine the energy and angular characteristics of high energetic parton, acting as representative for a jet formed in heavy-ion collisions. The parton traverses through Quark-Gluon Plasma (QGP), enabling us to analyze the behavior of the medium. The parton's energy loss, arising from medium-induced radiation, is computed using the first-order opacity expansion. The calculation takes into account the impact of viscosity in a dynamically screened medium exhibiting boost-invariant longitudinal expansion. The numerical analysis includes Grad's 14-moment approach and the Chapman-Enskog-like technique within the framework of relativistic dissipative hydrodynamics. We study the effects of viscous modification on the expanding medium as well as single particle phase space distribution of the hard parton, which eventually modifies the jet cone angle. The results also highlight the crucial role of jet cone size on jet quenching observables.

Author: RODRIGUES, Sally

Co-author: Dr SARKAR, Sreemoyee (MPSTME)

Presenter: RODRIGUES, Sally

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