Contribution ID: **254** Type: **1a) Initial state (TALK)**

Transport of Heavy Quarks Across Glasma

Tuesday 2 October 2018 12:05 (20 minutes)

The quark-gluon plasma, which is produced at an early stage of ultrarelativistic heavy-ion collisions, is expected to be initially strongly populated with chromodynamic fields. We address the question how heavy quarks interact with such a turbulent plasma in comparison with an equilibrated one of the same energy density. For this purpose we derive a Fokker-Planck transport equation of heavy quarks embedded in a plasma of light quarks and gluons. We first discuss the equilibrium plasma and then the turbulent one applying the same approach, where the heavy quarks interact not with the plasma constituents but rather with the long wavelength classical fields. We first consider the three schematic models of isotropic trubulent plasma and then the simplified model of glasma with the chromodynamic fields only along the beam direction. The momentum broadening and collisional energy loss of a test heavy quark are computed and compared to those of equilibrium plasma of the same energy density. It is argued that in spite of its short lifetime the glasma can provide a significant contribution to the collisional and radiative energy loss of heavy quarks.

Summary

Primary author: MROWCZYNSKI, Stanislaw (Jan Kochanowski University)

Presenter: MROWCZYNSKI, Stanislaw (Jan Kochanowski University)

Session Classification: Parallel 1