Contribution ID: **25** Type: **not specified**

Anisotropy effects on heavy quark dynamics in Gribov modified gluon plasma

During the early stages of relativistic heavy ion collisions, the momentum distribution of the quark-gluon plasma is anisotropic in nature, which leads the system to instability owing to chromomagnetic plasma modes. We considered the anisotropic momentum distribution of the medium constituents, which can be obtained by squeezing or stretching the isotropic momentum distribution in one direction. We have estimated the anisotropy effects on the heavy quark dynamics utilizing the nonperturbative Gribov resummation approach in the ambit of the Fokker-Planck equation. In particular, the impact of the strength of the weak anisotropy on the heavy quark transport coefficient (two drag and four diffusion coefficient) has been studied, along with the angular dependence between the anisotropy vector and the heavy quark motion direction. Furthermore, the obtained drag coefficients have been utilized to estimate the energy loss of heavy quarks, combining both the elastic collisions and inelastic processes. It has been observed that both the momentum anisotropy and the angular dependence play a crucial role in the heavy quark dynamics.

Author: Dr SUMIT, Sumit (IIT Roorkee)

Co-author: HAQUE, Najmul (NISER, India)

Track Classification: 3. Hard probes - jets and electromagnetic probes, heavy flavor, quarkonia