Contribution ID: **130** Type: **not specified**

Effects of magnetic field on the evolution of energy density fluctuations

We study the effects of a static and uniform magnetic field on the evolution of energy density fluctuations present in a medium. By numerically solving the relativistic Boltzmann-Vlasov equation within the relaxation time approximation, we explicitly show that magnetic fields can affect the characteristics of energy density fluctuations at the timescale the system achieves local thermodynamic equilibrium. A detailed momentum mode analysis of fluctuations reveals that a magnetic field increases the damping of mode oscillations, especially for the low momentum modes. This leads to a reduction in the ultraviolet (high momentum) cutoff of fluctuations and also slows down the dissipation of relatively low momentum fluctuation modes. We discuss the phenomenological implications of our study on various sources of fluctuations in relativistic heavy-ion collisions.

Author: Dr DAVE, Shreyansh Shankar (Madanapalle Institute of Technology & Science, Andhra Pradesh)

Co-author: Prof. PAL, Subrata (Tata Institute of Fundamental Research, Mumbai)

Presenter: Dr DAVE, Shreyansh Shankar (Madanapalle Institute of Technology & Science, Andhra Pradesh)

Track Classification: 2. Initial State - pre-equilibrium dynamics, baryon stopping, intense electromagnetic field