Contribution ID: **426** Type: **Talk**

Investigation of jet quenching effects due to different energy loss mechanisms in heavy-ion collisions

Monday 12 December 2022 16:00 (15 minutes)

Jet energy loss is investigated using the nuclear modification factor (R_{AA}) observable in heavy ion collisions at RHIC and LHC energies. We employ Jet Energy-loss Tomography with a Statistically and Computationally Advanced Program Envelope (JETSCAPE) framework to depict jet quenching phenomena, to analyze the multi-stage jet evolution in quark-gluon plasma (QGP) medium. In this work, Pb-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV and Au-Au collisions at $\sqrt{s_{NN}}$ = 200 GeV are produced using the JETSCAPE framework for various jet energy loss models, including MATTER, LBT, Martini, and AdSCFT. Furthermore, jet interactions are compared for three centrality classes ranging from 0 to 10%, 30 to 40%, and 60 to 80% in both QGP medium and vacuum to investigate the nuclear modification factor. We also report the dependence of the transverse momentum of jets while comparing the different energy loss mechanisms.

Session

Heavy Ions and QCD

Authors: Mr SHAHI, Om (Birla Institute of Technology and Science, Pilani –Goa Campus); PALNI, Prabhakar (Goa University); Ms DESAI, Vaishnavi (Goa University)

Presenter: PALNI, Prabhakar (Goa University)

Session Classification: WG5-Heavy Ions and QCD