Contribution ID: **89** Type: **not specified**

Transport model calculations of jet energy loss and jet shape modifications

Wednesday 15 January 2025 14:10 (18 minutes)

We have developed a consistent model that combines parton jet shower production from perturbative QCD and the complicated interactions between the full jet with the medium soft partons in a MultiPhase Transport (AMPT) model. In addition to the elastic binary collisions existing in the model, we have incorporated the crucial energy-momentum modifications of the parton showers via medium-induced multiple gluon radiation in the higher-twist formalism of jet energy loss. Given the remarkable success of AMPT in addressing the anisotropic bulk medium flow, and noting the importance of jet modifications on the space-time dynamics of medium, the unified jet-medium parton transport framework can be used to make realistic predictions of the jet based observables. We have compared the numerical results of the model with the experimental data in central Pb-Pb collisions at the LHC energy of 5.02 TeV, to ascertain the impact of the medium and in particular the medium-induced radiation effects, on the jet energy loss, dijet asymmetry, and modifications of the full jet shapes.

Author: Prof. PAL, Subrata (Tata Institute, Mumbai)

Co-author: Ms MAITY, Monideepa (Tata Institute, Mumbai)

Presenter: Prof. PAL, Subrata (Tata Institute, Mumbai)

Session Classification: Parallel D

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