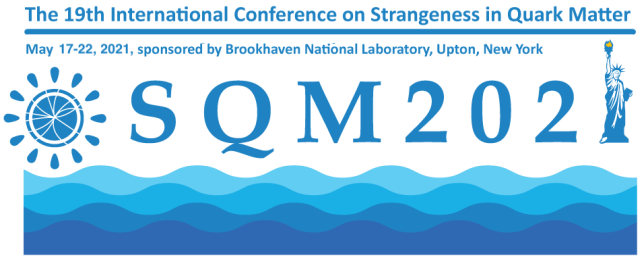

Contribution ID: **70** Type: **Theory talk**

Heavy quark transport in a magnetized quark-gluon plasma

Tuesday 18 May 2021 09:50 (20 minutes)

Heavy quarks (HQs) are mostly created in the very initial stages of the relativistic heavy-ion collisions and are identified as effective probes to study the properties of the quark-gluon plasma (QGP). It is believed that an intense magnetic field has been created in the early stages of non-central collisions. The interactions of the heavy quarks with the magnetized medium particles are embedded through the transport coefficients of the heavy quark. The drag and the momentum diffusion coefficients of the HQ in a strongly magnetized QGP are determined within the framework of Fokker-Planck dynamics while incorporating the thermal medium interactions through a quasiparticle model. The medium effects and the magnetic field are seen to have sizable effects on the temperature behaviour of the heavy quark transport coefficients in the magnetized medium. Further, the analysis has been extended to an expanding medium. The dependence of viscous effects has been explored in the heavy quark transport in the magnetized medium. The anisotropic transport coefficients of the heavy quark may have a visible impact on the measured observables associated with heavy quarks, such as flow coefficients and the nuclear suppression factor in the heavy-ion collisions at the RHIC and LHC.

Collaboration

Authors: Dr KURIAN , Manu (Indian Institute of Technology, Ganghinagar); Prof. CHANDRA, Vinod (IIT Gandhinagar, India); Prof. DAS, Santosh Kumar (School of Physical Science, Indian Institute of Technology Goa, India)

Presenter: Dr KURIAN , Manu (Indian Institute of Technology, Ganghinagar)

Session Classification: Charm Exotics