



Contribution ID: 531

Type: Poster

Heavy flavor production in heavy ion collisions with JETSCAPE

Friday 8 April 2022 14:24 (4 minutes)

The dynamics of shower development for a jet traveling through the quark-gluon plasma (QGP) involves a variety of scales, including the mass for heavy flavors in jets. During the high virtuality portion of the jet evolution, the mass of the heavy quark affects longitudinal drag and diffusion, stimulating additional radiation. These emissions partially compensate the reduction in radiation from the dead cone effect. In the lower virtuality part of the shower evolution, when the mass is comparable to the transverse momentum of the parton, scattering and radiation processes off heavy quarks are different than off light quarks. All these factors result in a different shower development for heavy-flavor tagged jets. The QGP evolution is modeled on an event by event basis using the JETSCAPE Framework. Energy-momentum exchange with the medium, essential for the study of jet modification, proceeds using a weak coupling recoil approach. We present a multi-stage calculation that explores the importance of differences between various heavy quark energy-loss mechanisms. Those differences have been explored using leading hadron and open heavy flavor observables.

Primary author: NATTRASS, Christine (University of Tennessee (US))

Presenter: FAN, Wenkai

Session Classification: Poster Session 3 T11_3

Track Classification: Heavy flavors, quarkonia, and strangeness production