Full solution of the medium-induced radiation spectrum

Monday, 1 June 2020 12:00 (20 minutes)

New measurements of jet quenching observables at RHIC and at the LHC, such as jet substructure observables, demand an increased precision in the theory calculations describing medium-induced radiation of gluons. Closed expressions for the gluon spectrum including a full resummation of multiple scatterings have been known for the past 20 years, but have only been evaluated in specific limits either taking a few terms in an opacity expansion or by employing a gaussian approximation for the interaction potential — which misses important physical effects. We present here a new flexible method to compute the full spectrum for a realistic interaction potential, thus allowing us for the first time to properly quantify the effect of the all-order resummation of multiple scatterings. This new approach paves the way for precision phenomenological studies including multiple scattering effects such as coherence phenomena.

Collaboration (if applicable)

Track
- Jets and High Momentum Hadrons

Contribution type
- Contributed Talk

Primary authors: DOMINGUEZ, Fabio (Universidade de Santiago de Compostela); ANDRES, Carlota (Jefferson Lab); APOLINARIO, Liliana (LIP (PT))

Presenter: ANDRES, Carlota (Jefferson Lab)

Session Classification: Parallel

Track Classification: Jets and High Momentum Hadrons