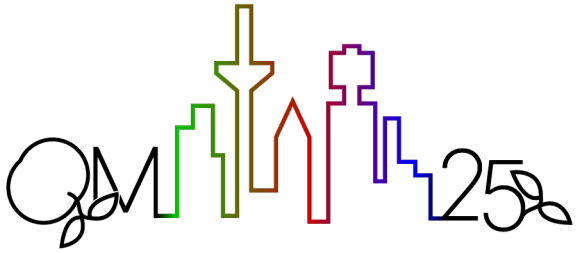

Contribution ID: **74** Type: **Oral**

Initial stage jet momentum broadening in a light-front Hamiltonian approach

We study the momentum broadening of a high energy quark jet in the high-density gluon medium created right after the collision of two ultrarrelativistic heavy nuclei, the Glasma. Previous Glasma studies consider the jet as a classical probe particle, for which position and momentum are simultaneously determined. In this talk, we use the light-front QCD Hamiltonian formalism to treat the jet as a fully quantum state and compute its real-time evolution while propagating through the Glasma classical background fields, that appear as an interaction potential in the quantum evolution of the jet. We present results for the momentum broadening and jet quenching parameter $\hat{q}$ experimented by a jet at approximately mid-rapidity. We then pay special attention to the anisotropies in the momentum broadening between the longitudinal and transverse directions with respect to the collision axis. In opposition to the classical jet analyses, we find that, as the momentum modes of the boost-invariant Glasma are distributed mainly along the transverse direction, the momentum broadening is larger in the transverse than in the longitudinal direction.

Category

Theory

Collaboration (if applicable)

Primary authors: SALGADO LOPEZ, Carlos Albert (Universidade de Santiago de Compostela (ES)); LAMAS, Carlos (IGFAE-USC); AVRAMESCU, Dana (University of Jyväskylä); LI, Meijian (University of Santiago de Compostela); LAPPI, Tuomas

Presenter: LAMAS, Carlos (IGFAE-USC)

Track Classification: Jets