



Contribution ID: 346

Type: Poster

Energy-energy correlator measurements for D^0 -tagged jets in pp collisions at 13 TeV with ALICE.

Tuesday 5 September 2023 17:30 (2h 10m)

Energy-energy correlators (EEC) offer a novel way to study the structure of jets. Defined as the energy-weighted cross section of particle pairs inside jets, the correlation strength as a function of the pair opening angle allows a distinct separation of the perturbative and non-perturbative regimes. The evolution of parton dynamics in jets to their confinement into hadrons can be studied. Measurements of jets initiated by heavy quarks play an important role in the testing of pQCD calculations and represent a critical component of the studies of quark-gluon plasma (QGP) created in heavy-ion collisions. We present the first measurements of the EECs for D^0 -tagged jets in pp collisions at 13 TeV with the ALICE experiment at the LHC. By comparing our results with EEC's in inclusive (gluon-dominated) jets, we can search for modifications in the radiation pattern of jets due to mass effects such as the dead cone. We also compare with perturbative QCD predictions to measure the onset of non-perturbative physics. These measurements will also serve as a baseline for future studies in heavy-ion collisions, allowing for disentanglement of the dynamics of the dead cone from interactions with the quark-gluon plasma.

Category

Experiment

Collaboration (if applicable)

ALICE

Author: LIANG-GILMAN, Beatrice (University of California Berkeley (US))

Presenter: LIANG-GILMAN, Beatrice (University of California Berkeley (US))

Session Classification: Poster Session

Track Classification: Heavy Flavor