

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 40

Typ: Talk

First measurement of jet angularities with D^0 -meson tagged jets with ALICE

Mittwoch, 29. März 2023 11:10 (20 Minuten)

The properties of partonic fragmentation in QCD are dependent on the flavours of the partons involved in the $1 \rightarrow 2$ splitting processes underpinning parton showers. These flavour dependencies arise due both to the different Casimir factors of quarks and gluons, as well as the mass of heavy quarks. Heavy-flavour jets provide a unique experimental tool to probe these flavour dependencies, particularly at low and intermediate transverse momenta where mass effects are significant. Here we report the first measurement of the angularity of jets tagged with a reconstructed D^0 meson, in the jet transverse momentum interval of 15-30 GeV/c. Generalised angularities are a set of IRC-safe jet-substructure observables which can be tuned in their sensitivity to the partonic fragmentation and hadronisation processes. Comparisons to angularity measurements in a flavour-untagged jet sample will probe both the flavour dependences due of the mass of the charm quark, as well as the high purity quark nature of the D^0 -tagged jet sample. Further comparisons to different MC generators will assess the role of these flavour dependencies in different parton shower prescriptions.

Experiment/Theory

ALICE

Affiliation

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Sitzung Einordnung: Parallel: Jets and their modification in QCD Matter

Track Klassifizierung: Jets and their modification in QCD matter