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Differentially investigating flavour effects in QCD showers and hadronisation with heavy-flavour jets in ALICE

The evolution of parton showers in QCD is underpinned by the flavour of their initiating partons. Casmir colour effects (different for quarks vs gluons) and mass effects (driven by the dead cone of heavy quarks), impact the properties of the resultant showers. In this talk we present a suite of measurements of heavy-flavour tagged jets in pp collisions, tagged by the presence of a reconstructed D^0 meson, which probe these effects. These include measurements of the first perturbative splitting selected by the Soft Drop algorithm, which map onto the properties of the charm splitting function. We further present measurements of the energy-energy correlator, which allow us to separately probe these flavour effects at the perturbative and non-perturbative scales, and the difference between a variety of jet-axis definitions which vary in their sensitivity to soft emissions in jets. In addition to these observables, we also present measurements of the longitudinal-momentum fraction carried by jets tagged with Λ^{+c} baryons and D^0 mesons. Such measurements probe the non-universalities observed in baryonisation between hadronic and leptonic collisions.

Secondary track

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