



Contribution ID: 502

Type: **Parallel session talk**

## Characterization of heavy-quark fragmentation via jets and correlations with ALICE

*Friday 25 August 2023 10:00 (12 minutes)*

Fragmentation functions are one of the key components of the factorisation theorem used to calculate heavy-flavour hadron production cross-sections. Due to their non-perturbative nature, fragmentation functions are typically constrained in the clean environments of  $e^+e^-$  and  $e^-p$  collisions.

Recent measurements of charm-hadron spectra and of the ratios of charmed-hadron abundances in pp collisions have questioned the universality of fragmentation functions across leptonic and hadronic collision systems. In this talk, we present measurements of differential observables that consider the surrounding hadronic density in addition to the heavy-flavour hadron itself. These measurements allow for a closer connection to the charm fragmentation functions and stronger constraints on the properties of hadronization in hadronic collisions.

We report the final measurement of the fraction of longitudinal momentum of jets carried by  $D^0$  and  $D_s^+$  mesons as well as  $\Lambda_c^+$  baryons. We also report the final results of correlations between heavy-flavour decay electrons and charged particles from small to larger systems. The comparison of azimuthal correlations between  $\Lambda_c^+$  baryons with charged particles and D mesons with charged particles in pp collisions will also be shown. The latter will provide quantitative access to the angular profile,  $p_T$  and multiplicity distributions of the jets produced by the heavy-quark fragmentation.

### Collaboration / Activity

ALICE

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