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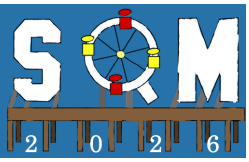

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In-medium modification of azimuthal correlations of charm mesons and charged particles in light- and heavy-ion collisions with ALICE

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Due to their large masses, heavy quarks (charm and beauty) are predominantly produced in the initial hard-scattering processes. They serve as effective probes of the quark–gluon plasma (QGP) expected to form in heavy-ion collisions, as they traverse and interact with the constituents of the medium throughout its entire evolution. In these collisions, the measurement of the angular correlations of charm mesons with charged hadrons complements the measurement of single-particle observables as the nuclear modification factor and the elliptic flow providing insights into the interplay between parton energy loss in the medium and hadronisation mechanisms.

In this contribution, we present the azimuthal correlation of prompt D_s^+–h and prompt D^+–h pairs in Pb–Pb (O–O) collisions. These measurements provide a multidifferential characterisation of the charm hadronisation process and new insights into charm-jet structure. A comparison between the two mesons allows us to study the different properties of charm jets when charm hadronises to a strange rather than a non-strange hadron. In addition, azimuthal correlation distributions of heavy-flavour hadron decay electrons–h pairs in pp, p–Pb and Pb–Pb collisions will be reported to investigate possible medium-induced modifications. The results are compared to Monte Carlo simulations to provide further constraints on charm fragmentation and hadronisation models.

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