

# Study of collective phenomena via the production of heavy quarks and quarkonia in hadronic collisions with ALICE

*Friday 19 July 2024 17:53 (17 minutes)*

Open heavy flavor and quarkonium have long been identified as ideal probes for understanding the quark-gluon plasma (QGP). Heavy quarks are produced in the early stage of the heavy-ion collisions, therefore they experience the evolution of the medium produced, providing an important tool to investigate the properties of the QGP. In particular, the magnitude of the elliptic flow measured at the LHC is interpreted as a signature of the charm-quark thermalization in the QGP. This is reflected in the azimuthal anisotropies of the final particles, such as elliptic and triangular flows. Interestingly, the observation of collective-like effects in high-multiplicity pp and p-Pb collisions provides new insights on the evolution of QGP-related observables going from large to small collision systems. A better understanding of heavy quark energy loss, quarkonium dissociation, and production mechanism can therefore be obtained with those system-size dependent observables. In this talk, I will present recent measurement of the  $J/\psi$  and open heavy-flavor flow measurements in pp, p-Pb, and Pb-Pb collisions carried out by the ALICE collaboration.

## Alternate track

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