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Measurement of prompt and non-prompt Lambda_c baryons elliptic flow in PbPb collisions at 5.36 TeV in 30–50% centrality class

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"Heavy quarks (charm and beauty) are useful probes for investigating the properties of the quark-gluon plasma (QGP) generated in ultra-relativistic heavy-ion collisions. Their participation in the collective motion of the medium can be assessed by measuring the charm-hadron elliptic-flow coefficient , originating from the initial-state spatial asymmetry in non-central heavy-ion collisions. These measurements provide fundamental inputs to constrain theoretical models describing the charm-quark transport in the QGP, as well as its possible thermalization in the medium. In addition, the comparison between meson and baryon can provide further insights into medium-induced phenomena, such as the radial flow and the charm-quark hadronization via coalescence.

In this contribution, the first measurements of charm baryon Λ_c in 30-50% centrality intervals of Pb–Pb collisions at $\sqrt{s_{NN}}$= 5.36 TeV collected by the ALICE experiment during the LHC Run 3 are shown. The measurements are compared to model predictions that incorporate various implementations of heavy-quark interaction and hadronization with the QGP constituents."

Presenter: XUE, Xufei