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D mesons v_2 measurement with Q-cumulants and Scalar Product methods in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the ALICE experiment

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The ALICE experiment at the Large Hadron Collider (LHC) has been designed in order to characterize the quark gluon plasma (QGP) in high-energy heavy-ion collisions. D mesons are powerful probes of the medium since the charm quarks are produced at the early stage of the collision and experience its entire evolution. In particular, the anisotropy parameter v_2 of D mesons is sensitive to the degree of thermalization of charm quarks within the QGP medium.

The performance of the Q-cumulants and Scalar Product methods used to measure the v_2 of D mesons at mid-rapidity in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV will be shown.

In particular, results for D^0 and D^* obtained in the $D^0 \rightarrow K\pi$ and $D^* \rightarrow D^0\pi$ decay channels will be reported.

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