

Preparation for open charm elliptic flow measurement via D-meson decay to hadrons with ALICE

A Large Ion Collider Experiment (ALICE) at the Large Hadron Collider (LHC) has been built in order to identify and characterize the quark gluon plasma (QGP) in high-energy nuclear collisions. As charm quarks are produced at the early stage of the collision, they serve as ideal probes for a QGP. The ALICE detector with its powerful capabilities such as particle identification, vertexing at sub-millimeter precision and tracking in a high multiplicity environment addresses the charm sector in nuclear collisions. It is still an open question whether charm quarks take part in the collective motion of the expanding fireball in ultrarelativistic heavy ion collisions. The determination of the anisotropy parameter v_2 of the D-mesons D^+ , D^0 and D^{*+} will provide a decisive answer. We report on the current status of the development of the tools for the D-meson v_2 -measurement at ALICE for the three charmed mesons in various hadronic decay channels. We will show performance plots obtained with these tools from the 2010 lead-lead run at $\sqrt{s_{NN}} = 2.76$ TeV and will give an outlook for the upcoming high statistics lead-lead run at the end of this year.

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Track Classification: Heavy flavor and quarkonia production