

Nuclear modification of charm quarks in Pb-Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV at LHC

The charm quarks are expected to be produced at the initial fusion of the ultrarelativistic heavy-ion collisions. Just after the production, they will propagate through the Quark Gluon Plasma (QGP) and will lose energy by colliding with quarks and gluons and radiating gluons.

We calculate the nuclear modification factor R_{AA} of charm quarks, produced from the initial fusion of partons in a nuclear collision, at $\sqrt{s_{NN}}=2.76$ TeV Pb-Pb collision at LHC at more forward rapidities .

At the relativistic heavy-ion collisions, nuclear shadowing effect will also play an important role. In this study, we take into account the effect of collisional and radiative energy loss of the charm quarks while passing through the QGP and also the gluon shadowing effect while calculating R_{AA} .

We have considered some of the important formalisms available in the literature for the calculation of medium-induced radiative and collisional energy loss. The shadowing effect is introduced by using EKS 98 parameterization for structure functions.

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Track Classification: Heavy flavor and quarkonia production