AZIMUTHAL CORRELATION OF $D\bar{D}$ MESONS BY HEAVY ION COLLISIONS AT HIGH ENERGIES

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Abstract

The correlation of charmed $D\bar{D}$ mesons produced by heavy ion-ion collisions at the central rapidity region ($-1 < Y < 1$) is studied. The azimuthal correlation of two heavy quarks produced by hadron-nucleon collisions at the plane transverse to the beam has been analyzed in [1,2] and [3,4]. The sharp enhancement of the distribution of two $D\bar{D}$ mesons over the azimuthal angles difference $\Delta\varphi$ at $\Delta\varphi = 0$ has been exhibited at these papers. This effect has been measured by $WA - 92$ and BEATRICE Collaborations [5] in $\pi^- N$ collision at $\sqrt{s} = 26$ GeV. The question arises what can be happened by heavy ion collisions at high energies. By calculating the $D\bar{D}$ correlation within the approach developed in [6,7] and [8] a big suppression of this enhancement especially at LHC energy is shown. It is exhibited this effect can be caused by a possible formation of the QGP.

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