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Pseudoscalar D and B mesons in the hot dense and nonstrange symmetric medium[1] RAHUL CHHABRA, ARVIND KUMAR, National Institute of Technology, Jalandhar, Punjab India — We investigate the effect of temperature and density on the shift in the masses and decay constants of the pseudoscalar D and B mesons in the nonstrange symmetric medium. We use chiral SU(3) model to calculate the medium modified scalar and isoscalar fields σ, ζ, δ and χ. We use these modified fields to calculate the in-medium quark and gluon condensates by solving the coupled equations of motions in the chiral SU(3) model. We obtain the medium modified mass and decay constant through these medium modified condensates using the QCD sum rules. Further we use the $^3P_0$ model by taking the internal structure of the mesons to calculate the in-medium decay width of the higher charmonium states $\chi(3556), \psi(3686)$ and $\psi(3770)$ to the $D\bar{D}$ pairs, through the in-medium mass of D meson and neglecting the mass modification of higher charmonium states. We also compare the present data with the previous results. These results of present investigation may be important to explain the possible outcomes of the experiments like CBM, Panda at GSI.

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