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## In medium partial decay width of $\psi(4008)$ state decaying to $D\bar{D}$

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In the present investigation we use  $^3P_0$  model to calculate the partial decay width of  $\psi(4008)$  state decaying to  $D\bar{D}$  pairs in hot and dense nuclear medium. The impact of nuclear density and temperature is inculcated through the mass modification of pseudoscalar  $D$  meson, calculated using chiral hadronic SU(3) plus QCD sum rule approach. The results of the present work will prove as one step forward in-order to predict an exact state of  $\psi(4008)$  state.

**Author:** CHHABRA, rahul (Junior Research Fellow, Physics Department of NIT Jalandhar, Punjab India)

**Presenter:** CHHABRA, rahul (Junior Research Fellow, Physics Department of NIT Jalandhar, Punjab India)

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