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X(3872) and Bound State Problem of D^0D^{*0}($\bar{D}^0D^{*0}$)

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摘要 We have performed a dynamical calculation of the bound state problem of D0$\bar{D}$*0 by considering the pion and sigma meson exchange potential. Our preliminary analysis disfavors the molecular interpretation of X(3872) if we use the experimental D*Dπ coupling constant g=0.59 and a reasonable cutoff around 1 GeV, which is the typical hadronic scale. In contrast, there probably exists a loosely bound S wave BB* molecular state. Such a molecular state would be rather stable since its dominant decay mode is the radiative decay through B*→Bγ.

关键词 X(3872) bound state molecule

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