

Meson spectrum in an unquenched quark model

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The unquenched quark model for meson is explored in the present work. The quark-pair creation operator, which mix the two-quark and four-quark components, from 3P0 model is modified by considering effects of the created quark pair's energy and the separation between the created quark pair and the valence quark pair. All the wave functions needed are obtained by solving the corresponding Schrodinger equation with the help of the Gaussian expansion method. The results show that the unquenched quark model is convergent and some exotic states, for example X(3872) can be described well in the unquenched quark model.

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