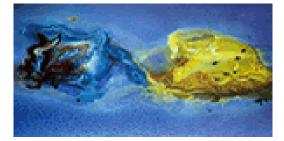
XIIIth Quark Confinement and the Hadron Spectrum



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A quark model description of X(4260)

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It is fairly well established that X(4260) does not correspond, regarding its mass and transition properties, to a conventional c-cbar state of the type provided for example by the Cornell [1] or the Godfrey-Isgur [2] models. This has motivated the development of other descriptions involving Fock space components (tetraquarks, meson molecules, hybrids...) different from c-cbar (see for example [3] and references therein).

Alternatively one may think of keeping a c-cbar description provided that the c-cbar static potential interaction includes the effect of other Fock components. This kind of decription has been developed for J⁺⁺ charmonium (as well as bottomonium) states through the so called Generalized Screened Potential Model (GSPM) [4]. In this model the effective potential incorporates the effects of single S-wave meson-meson thresholds in the way suggested by lattice QCD calculations. This allows for a universal treatment of states below and above open flavor meson-meson thresholds.

Dealing with 1⁻⁻ states is more complicated due to the presence of many meson-meson component thresholds. In this work we explore the application of the GSPM to X(4260) and show that a consistent description of the mass as well as the transition properties is feasible.

[1] E. Eichten, K. Gottfried, T. Kinoshita, K. D. Lane and T. M. Yan, Phys. Rev. D 17, 3090 (1978); Phys. Rev. D 21, 203 (1980).

[2] S. Godfrey and N. Isgur, Phys. Rev. D 32, 189 (1985).

[3] H-X. Chen, W. Chen, X. Liu and S-L. Zhu, Phys. Rep. 639, 1 (2016).

[4] P. González, Phys. Rev. D 92, 014017 (2015); J.Phys. G 41, 095001 (2014).

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