

Chiral symmetry breaking and restoration with mixing between quarkonium and tetraquark

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In the framework of two flavor quark-meson model we study the effect of mixing between effective quarkonium and tetraquark fields on chiral phase transition. The physical mass spectrum of mesons put a tight constraint on the parameter set of our model. We find a sufficiently strong cubic self interaction of the tetraquark field can drive the chiral phase transition to first order even at zero quark chemical potential. Weak or absence of the cubic self interaction term of the tetraquark field make the chiral phase transition crossover at vanishing density.

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