Meson spectrum in the SU(3) phase of finite temperature and finite density in the strong coupling lattice QCD

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Recently, we have investigated the chiral phase structure in the strong coupling region of lattice QCD with one species staggered fermion at finite temperature and finite quark density for color SU(3). Firstly, we show the effect of the lowest order correction of strong coupling expansion. Secondly, we develop the analytical method to extract the thermodynamic properties of meson mass spectrum. We find a typical transition of the meson spectrum to the chiral restoration phase depending on the first order or second order chiral phase transition region.