

Mass spectra of neutral mesons (K_0 , π_0 , η , η') and the related QCD phase transitions under strong magnetic fields

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Mass spectra of light mesons (K_0 , π_0 , η , η') under external magnetic fields are investigated in temperature-baryon chemical potential plane by using quark model. We observe that there appear mass jumps for mesons at their Mott transitions, which are induced by the Landau levels of their constituent quarks. The critical temperature of the Mott transition shows different behaviors, which first decreases and then increases with magnetic fields for π_0 meson, decreases monotonically for K_0 meson, but increases monotonically for η meson. We will also discuss the chiral symmetry restoration and UA(1) symmetry restoration phase transition in terms of mesons.

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