

Light-Meson Spectroscopy in Strong Magnetic Field

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The spectra of charged and neutral rho and pi-mesons in uniform homogeneous magnetic field (MF) are discussed in the framework of the path integral formalism and vacuum correlator method. The spectra of all 12 spin-isospin s-wave meson states were obtained analytically using the Hamiltonian for quarks with confinement potential in strong magnetic field. The states have 3 different types of asymptotics in strong MF: two of them are growing with MF and the last one tends to be a constant (zero mode). The mass of the zero mode becomes small in MF which can be the source of the meson collapse. It was shown that the potential collapse has two different sources (color Coulomb and hyperfine interactions) and it doesn't occur for the MF $< 2 \text{ GeV}^2$. The analytic data presented is in a good agreement with lattice calculations.

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