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Light pseudo-scalar meson mass: effect of temperature and magnetic field

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The effect of strong magnetic fields and temperature on the light pseudo-scalar mesons is calculated. The three-flavor effective Nambu-Jona-Lasinio model is used for the calculations since this effective model incorporates some important features of quantum chromodynamic theory (QCD), as the chiral symmetry-breaking mechanism and the Kobayashi-Maskawa-'t Hooft interaction and is a computationally viable model to treat QCD in the non-perturbative regime. The meson masses may be calculated by using different approaches. The most used ones are the pole and screening mass. This work will discuss meson mass calculations and consider the effect of finite temperature and strong magnetic fields. Some comparisons with lattice QCD results are presented in some cases.

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