

Mass modification of pions in presence of weak magnetic field

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In this work, the self energies of π^0 and π^\pm up to one loop order have been calculated in the limit of weak external magnetic field. The effective masses get an explicit magnetic field dependence which are modified significantly for the pseudoscalar coupling due to weak field approximation of the external field. However, for the pseudovector coupling, only a modest reduction in the effective masses are noted. These theoretical developments are relevant for the study of the phenomenological aspect of mesons in the context of neutron stars as well as heavy ion collisions.

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