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Beyond mean field study of QCD phase transitions under external magnetic field

QCD phase structures under external magnetic field have attracted much attention in recent years. We study chiral symmetry restoration and quark deconfinement phase transitions beyond the mean field approximation in a magnetized PNJL model. Two kinds of fluctuation effects, the feedback from mesons to quarks and quark anomalous magnetic moment, are considered. We observe the inverse magnetic catalysis phenomena for the phase transitions in temperature and baryon chemical potential plane.

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