

Critical chiral hypersurface of the magnetized NJL model

Abstract

In pursuit of the sketching the effective magnetized QCD phase diagram, we found conditions on the critical coupling for chiral symmetry breaking in the Nambu-Jona-Lasinio model in a nontrivial thermo-magnetic environment. Critical values for the plasma parameters, namely, temperature and magnetic field strength for this to happen are hence found in the mean field limit. The magnetized phase diagram is drawn from the criticality condition for different models of the effective coupling describing the inverse magnetic catalysis effect.

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