

QCD Phase Diagram in an Extended Effective Lagrangian Approach

Thursday, 28 June 2018 16:00 (30)

The phase diagram for strongly interacting matter is currently the subject of intense study from both the experimental and theoretical sides. In the low-energy regime, due to the non-perturbative nature of QCD, several alternative theoretical approaches have become popular. An extension of the NJL model to include all the spin-0 terms, without and with explicit chiral symmetry breaking, which are of the same order as the 't Hooft flavor determinant in a $1/N_c$ expansion enabled in an unprecedented success in reproducing the low lying scalar and pseudoscalar meson spectra. When used in conjunction with results coming from lattice QCD this model provides us the tools to test the basic underlying mechanisms at play and enable an easy way to explore the phase diagram [1].

Here we will present some recent results pertaining the thermodynamical properties of a strongly interacting medium under equilibrium in the presence and absence of a background magnetic field using this model and some comparisons to lattice QCD results. We will focus in particular in the phase diagram and fluctuations of conserved charges.

[1] J. Moreira, J. Morais, B. Hiller, A. A. Osipov, and A. H. Blin, Phys. Rev. D 91, 116003

Primary author(s) : MOREIRA, João (CFisUC)

Co-author(s) : BLIN, Alex H. (CFisUC); OSIPOV, Alexander A. (JINR); HILLER, Brigitte (CFisUC); MORAIS, Jorge (CFisUC)

Presenter(s) : MOREIRA, João (CFisUC)

Session Classification : Parallel