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Analysis of rho condensation in a Nambu-Jona-Lasinio model

A non-local Nambu-Jona-Lasinio model can be derived from QCD in the low-energy limit. In this way, it is possible to fix all the free parameters of the model with physical ones. We use this approach to derive a local limit to the Nambu-Jona-Lasinio model with the parameters those obtained from QCD in order to fix the physical parameters of ρ condensation. ρ condensation is a consequence of the highly non-trivial behavior of the QCD vacuum in presence a very strong magnetic field giving rising to superconductive behavior in quark matter. We extend previous computations with an analysis of the ρ decay and considering finite temperature effects.

Primary author: Dr FRASCA, Marco (MBDA)

Presenter: Dr FRASCA, Marco (MBDA)