

Evaluation of the chiral condensate in cold quark matter and the pion-nucleon sigma term

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We calculate the chiral condensate in cold quark matter in Dyson-Schwinger equation approach of QCD. Different ansatz for the quark-gluon vertex and the effective interactions are investigated. Then, using a model-independent formula from the Feynmann-Hellmann theorem, we evaluate the pion-nucleon sigma term. We obtain the value of sigma term about 60 MeV, which weakly depends on our different model ansatz and is consistent with recent experimental results.

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