

Topology and axion's properties from lattice QCD with a dynamical charm

Wednesday, February 8, 2017 12:00 PM (20 minutes)

We study QCD for temperatures up to about 500 MeV using the lattice approach. We include two generations of dynamical quarks, with physical strange and charm masses, which are known to be relevant in the explored temperature range. Our lattice discretization - Wilson quarks with a twisted mass term - has good chiral properties at a moderate computational cost. The main focus is the measure of the topological susceptibility, which on one side helps understanding fundamental properties of the quark-gluon plasma, on the other constrains properties of the axion, one serious candidate for dark matter. We contrast and compare the results from several methods for the measurements of the topological susceptibility, and discuss the perspectives towards controlled results in the continuum limit for physical quark masses, and implications for the axions' search

Preferred Track

QCD at High Temperature

Collaboration

Not applicable

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