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The QCD topological susceptibility at high temperatures via staggered fermions spectral projectors

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The QCD topological observables are essential inputs to obtain theoretical predictions about axion phenomenology, which are of utmost importance for current and future experimental searches for this particle. Among them, we find the topological susceptibility, related to the axion mass.

We present lattice results for the topological susceptibility in QCD at high temperatures obtained discretizing this observable via spectral projectors on eigenmodes of the staggered Dirac operator, and we compare them with those obtained with the standard gluonic definition. The adoption of the spectral discretization is motivated by the large lattice artifacts affecting the standard gluonic susceptibility, related to the choice of non-chiral fermions in the lattice action.

In-person participation

Yes

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