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QCD mesonic screening masses using Gribov quantization

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The screening masses of mesons provide a gauge invariant and definite order parameter of chiral symmetry restoration. Different mesonic correlation lengths for flavor non-singlets, at least up to NLO, are well-defined gauge invariant physical quantities calculated earlier using the perturbative resummation techniques. The NLO perturbative results match the available non-perturbative lattice QCD results at the high-temperature regime. We have studied the spatial correlation lengths of various mesonic observables using the non-perturbative Gribov resummation, both for quenched QCD and (2 + 1) flavor QCD. The study follows the analogies with the NRQCD effective theory, a well-known theory for studying heavy quarkonia at zero temperature.

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