

Non-perturbative thermal QCD at very high temperatures

Saturday 20 July 2024 17:00 (15 minutes)

We present a novel strategy based on the step-scaling technique to study non-perturbatively thermal QCD up to very high temperatures. As a first concrete application, we compute the meson and baryonic screening masses with a precision of a few per mille in the temperature range from approximately 1 GeV up to the electroweak scale in the theory with three massless quarks. We observe a clear splitting between the vector and the pseudoscalar meson screening masses up to the highest temperature investigated. A comparison with the high-temperature effective theory shows that the one-loop perturbative matching with QCD does not provide a satisfactory description of the non-perturbative data up to the highest temperature considered.

Alternate track

1. Heavy Ions

I read the instructions above

Yes

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