

# Non-perturbative thermal QCD at very high temperatures: the case of mesonic screening masses

*Wednesday, 21 December 2022 10:00 (30 minutes)*

We present a 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 flavour non-singlet meson screening masses in the temperature range from approximately 1 GeV up to the electroweak scale in the theory with three massless quarks. On the one side, chiral symmetry restoration manifests itself in our results through the degeneracy of the vector and the axial vector channels and of the scalar and the pseudoscalar ones. On the other side, we observe a clear splitting between the vector and the pseudoscalar screening masses up to the highest temperature investigated. A comparison with the high-temperature effective theory shows that the known one-loop perturbative matching with QCD does not provide a satisfactory description of the non-perturbative data up to the highest temperature considered.

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