



Infrared behavior of dispersion relations in hot QCD and scalar QED

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Condition: New. Publisher/Verlag: Scholar's Press | In this book, we calculate: (i) The damping rate of ultrasoft gluons in the context of hard-thermal-loop summed perturbation of massless quantum chromodynamics (QCD) at high temperature. (ii) The damping rate and energy of ultrasoft scalars in the context of massless scalar quantum electrodynamics (scalar QED) at high temperature too. In the case of QCD, an expansion in powers of the ultrasoft external momentum is used, before the Matsubara sums are done. The persistence of infrared sensitivity in the final result may then be partly attributed to this method of calculation. In the context of scalar QED, the calculation is done in two ways: first with the expansion before the Matsubara sums and then with the expansion after. The same results are obtained by both methods. Hence, the early momentum expansion is not responsible for the infrared sensitivity. | Format: Paperback | Language/Sprache: english | 148 pp.

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