

On the fluctuation-dissipation theorem for soft fermionic excitations in a hot QCD plasma

Two ways of deriving the fluctuation-dissipation theorem (FDT) for soft fermion excitations in a hot non-Abelian plasma being in a thermal equilibrium are discussed. The first of them is based on the extended (pseudo)classical model in describing a quark-gluon suggested by us, while the second one rests on the standard technique of calculation of the FDT for thermodynamically equilibrium systems. It is shown that the full accounting all subtleties that are common to the fermion system under consideration, results in perfect coincidence of thus obtained FDTs. This provides a rather strong argument for the validity of the pseudoclassical model suggested.

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